Rancho Calera Specific Plan
140-Lot Subdivision

Air Quality & Greenhouse Gas Impact Assessment
March 2021

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Rancho Calera Specific Plan / 84-Lot Subdivision
Air Quality & Greenhouse Gas Impact Assessment

Study Team

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Executive Summary

This Air Quality & Greenhouse Gas Impact Assessment has been prepared for the purpose of identifying potential project-specific or site-specific air quality impacts that may result from a proposed 140-lot subdivision (Project) within the Rancho Calera Specific Plan. Tentative Subdivision Map (TSM) 18-0006 consists of 140 residential subdivision lots on approximately 13 acres. This TSM would be considered Phase 1 of residential construction for the Rancho Calera Specific Plan. The Project site is located at the northwest intersection of Figtree Boulevard and Avenue 26 with Reagan Elementary School located to the north of the site. The lots range in size from approximately 6,000 square feet to approximately 13,000 square feet.

The City of Chowchilla is located in one of the most polluted air basins in the country – the San Joaquin Valley Air Basin (SJVAB). The surrounding topography includes foothills and mountains to the east and west. These mountain ranges direct air circulation and dispersion patterns. Temperature inversions can trap air within the Valley, thereby preventing the vertical dispersal of air pollutants. In addition to topographic conditions, the local climate can also contribute to air quality problems. Climate in Chowchilla is classified as Mediterranean, with moist cool winters and dry warm summers.

Air quality within the Project area is addressed through the efforts of various federal, state, regional, and local government agencies. These agencies work jointly, as well as individually, to improve air quality through legislation, regulations, planning, policy-making, education, and a variety of programs.

IMPACTS

Short-Term (Construction) Emissions

Short-term impacts are mainly related to the construction phase of a project and are recognized to be short in duration. Construction air quality impacts are generally attributable to dust generated by equipment and vehicles. Table E-1 shows the estimated construction emissions that would be generated from the Project. Results of the analysis show that emissions generated from the construction phase of the Project will not exceed the San Joaquin Valley Air Pollution Control District (SJVAPCD) emission thresholds.

Table E-1
Project Construction Emissions (tons/year)

Summary Report	CO	NO_X	ROG	SO_X	PM_{10}	$PM_{2.5}$	CO2e
Project Construction Emissions	8.46	8.61	3.30	0.02	1.18	0.71	1437.60
SJVAPCD Level of Significance	100	10	10	27	15	15	None
Does the Project Exceed Standard?	No	No	No	No	No	No	No

Source: CalEEMod

Long-Term Emissions

Long-Term emissions from the Project would be generated primarily by mobile source (vehicle) emissions from the Project site and area sources such as lawn maintenance equipment.

1. Localized Mobile Source Emissions – Ozone/Particulate Matter

Operational emissions associated with the Project are shown in Table E-2. Results indicate that the annual operational emissions from the Project will be less than the SJVAPCD emission thresholds for criteria pollutants.

Table E-2
Project Operational Emissions (tons/year)

Summary Report	CO	NO_X	ROG	SO_X	PM_{10}	$PM_{2.5}$	CO2e
Project Opeational Emissions	10.36	3.66	2.23	0.04	2.28	1.24	2839.82
SJVAPCD Level of Significance	100	10	10	27	15	15	None
Does the Project Exceed Standard?	No	No	No	No	No	No	No

Source: CalEEMod

2. Toxic Air Contaminants (TAC)

An evaluation of nearby land uses shows that the Project will not place sensitive receptors in the vicinity of existing toxic sources. Therefore, TAC's from sources in the study area will not significantly impact the Project. In addition, the Project will not generate TAC's that would have a significant impact on the environment or adjacent sensitive receptors.

3. Odors

The Project will not generate odorous emissions given the nature or characteristics of residential developments. The intensity of an odor source's operations and its proximity to sensitive receptors influences the potential significance of odor emissions. The SJVAPCD has identified some common types of facilities that have been known to produce odors in the SJV Air Basin. The types of facilities that are known to produce odors are not located within two (2) miles of the Project, and therefore these existing odor sources will not affect the Project or its future users.

4. Naturally Occurring Asbestos (NOA)

Asbestos is a term used for several types of naturally occurring fibrous minerals found in many parts of California. The most common type of asbestos is chrysotile, but other types are also found in California. Construction of the Project may cause asbestos to become airborne due to the construction activities that will occur on site. The Project would be required to submit a Dust Control Plan under the SJVAPCD's Rule 8021. Compliance with Rule 8021 would limit fugitive dust emissions from construction, demolition, excavation, extraction, and other earthmoving activities associated with the Project.

5. Greenhouse Gas Emissions

CARB, in consultation with MPOs, has provided each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in the region for the years 2020 and 2035. For the Madera County Transportation Commission (MCTC) region, CARB set targets at five (5) percent per capita decrease in 2020 and a ten (10) percent per capita decrease in 2035 from a base year of 2005. MCTC's 2018 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS), which was adopted in July 2018, projects that the Madera County region would achieve the prescribed emissions targets.

In 2009, the SJVAPCD adopted the following guidance documents applicable to projects within the San Joaquin Valley:

- ✓ Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA (SJVAPCD 2009), and
- ✓ District Policy: Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency (SJVAPCD 2009).

This guidance and policy are the reference documents referenced in the SJVAPCD's Guidance for Assessing and Mitigating Air Quality Impacts adopted in March 2015 (SJVAPCD 2015). Consistent with the District Guidance and District Policy above, SJVAPCD (2015) acknowledges the current absence of numerical thresholds, and recommends a tiered approach to establish the significance of the GHG impacts on the environment:

i. If a project complies with an approved GHG emission reduction plan or GHG mitigation program which avoids or substantially reduces GHG emissions within the geographic area in which the project is located, then the project would be determined to have a less than significant individual and cumulative impact for GHG emissions;
ii. If a project does not comply with an approved GHG emission reduction plan or mitigation

program, then it would be required to implement Best Performance Standards (BPS); and

iii. If a project is not implementing BPS, then it should demonstrate that its GHG emissions would be reduced or mitigated by at least 29 percent compared to Business as Usual (BAU).

The City of Chowchilla General Plan indicated that the City would develop a Greenhouse Gas Inventory and subsequent Climate Action Plan (CAP) that identifies desired goals for reducing manmade greenhouse gas (GHG) emissions, establishes resiliency and adaptation programs to prepare for potential impacts of climate change, and provides a phased implementation plan to achieve these goals. At the time of this report, the City of Chowchilla is still in the process of developing the GHG Inventory and CAP.

As noted previously, the maximum amount of commercial space for the Rancho Calera Specific Plan was reduced by 186,595 square feet and the Park/Open space was reduced by 11.4 acres while the total acreage dedicated to Public Facilities and Street Dedication increased by 6.8 and 9.2 acres, respectively. The traffic analysis prepared for the Project demonstrates that the reduction of commercial space and increase in park space will result in 2,630 fewer daily trips. The total GHG emissions would be less than the approved Rancho Calera Specific Plan since the proposed land use changes would result in fewer trips.

In December 2008, the South Coast Air Quality Management District (SCAQMD) Governing Board adopted the staff proposal for an interim GHG significance threshold for projects where the SCAQMD is lead agency. The SCAQMD guidance identifies a threshold of 10,000 MTCO2eq./year for GHG for construction emissions amortized over a 30-year project lifetime, plus annual operation emissions. Though the Project is under SJVAPCD jurisdiction, the SCAQMD GHG threshold provides some perspective on the GHG emissions generated by the Project. Table E-3 shows the yearly GHG emissions generated by the Project as determined by the CalEEMod model, which is approximately 71% less than the threshold identified by the SCAQMD.

Table E-3
Project Operational Greenhouse Gas Emissions

Summary Report	CO_2e
Project Operational Emissions Per Year	2888 MT/yr

Source: CalEEMod

CEQA ENVIRONMENTAL CHECKLIST

In accordance with the California Environmental Quality Act (CEQA), the effects of the Project were evaluated to determine if they will result in Project-Specific significant adverse impacts on the environment that are peculiar to the Project or its site that differ from those impacts already analyzed and disclosed in the City's General Plan EIR. The criteria used to determine the significance of an impact with respect to air quality and greenhouse gas emissions are summarized below.

1. Air Quality

The criteria used to determine the significance of an air quality impact are based on the following thresholds of significance, which come from Appendix G of the CEQA Guidelines. Accordingly, air quality impacts resulting from the Project are considered significant if the Project would:

- ✓ Conflict with or obstruct implementation of the applicable air quality plan?

The primary way of determining consistency with the air quality plan's (AQP's) assumptions is determining consistency with the applicable General Plan to ensure that the Project's population density and land use are consistent with the growth assumptions used in the AQPs for the air basin.

As required by California law, city and county General Plans contain a Land Use Element that details the types and quantities of land uses that the city or county estimates will be needed for future growth, and that designate locations for land uses to regulate growth. MCTC uses the growth projections and land use information in adopted general plans to estimate future average daily trips and then VMT, which are then provided to SJVAPCD to estimate future emissions in the AQPs. Existing and future pollutant emissions computed in the AQP are based on land uses from area general plans. AQPs detail the control measures and emission reductions required for reaching attainment of the air standards.

The applicable General Plan for the project is the City of Chowchilla 2040 General Plan, which was adopted in 2011. The Rancho Calera Specific Plan was originally adopted by the City in May 2011 and assessed as a component of the 2040 General Plan EIR. The Project is consistent with the currently adopted General Plan for the City of Chowchilla and is therefore consistent with the population growth and VMT applied in the plan. Therefore, the Project is consistent with the growth assumptions used in the applicable AQPs. As a result, the Project will not conflict with or obstruct implementation of any air quality plans. Therefore, no mitigation is needed.

- ✓ Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?

The Madera County area is nonattainment for Federal and State air quality standards for ozone, in attainment of Federal standards and nonattainment for State standards for PM10, and nonattainment for Federal and State standards for PM2.5. The SJVAPCD has prepared the 2016 and 2013 Ozone Plans, 2007 PM10 Maintenance Plan, and 2012 PM2.5 Plan to achieve Federal and State standards for improved air quality in the SJVAB regarding ozone and PM. Inconsistency with any of the plans would be considered a cumulatively adverse air quality impact. As discussed in Section 4.1.1, the Project is consistent with the currently adopted General Plan for the City of Chowchilla and is therefore consistent with the population growth and VMT applied in the plan. Therefore, the Project is consistent with the growth assumptions used in the 2016 and 2013 Ozone Plan, 2007 PM10 Maintenance Plan, and 2012 PM2.5 Plan.

Project specific emissions that exceed the thresholds of significance for criteria pollutants would be expected to result in a cumulatively considerable net increase of any criteria pollutant for which the County is in non-attainment under applicable federal or state ambient air quality standards. It should be noted that a project isn't characterized as cumulatively insignificant when project emissions fall below thresholds of significance. As discussed in Section 3.1, the SJVAPCD has established thresholds of significance for determining environmental significance which are provided in Table 6.

As discussed in Section 3.2 and 3.3 of the report, results of the analysis show that emissions generated from construction and operation of the Project will be less than the applicable SJVAPCD emission thresholds for criteria pollutants. Therefore, no mitigation is needed.

✓ Expose sensitive receptors to substantial pollutant concentrations?

Sensitive receptors refer to those segments of the population most susceptible to poor air quality (i.e., children, the elderly, and those with pre-existing serious health problems affected by air quality). Land uses that have the greatest potential to attract these types of sensitive receptors include schools, parks, playgrounds, daycare centers, nursing homes, hospitals, and residential communities. From a health risk perspective, the proposed Project is a Type B project in that it may potentially place sensitive receptors in the vicinity of existing sources.

The first step in evaluating the potential for impacts to sensitive receptors for TACs from the Project is to perform a screening level analysis. For Type B projects, one type of screening tool is found in the CARB Handbook: Air Quality and Land Use Handbook: A Community Perspective. This handbook includes a table with recommended buffer distances associated with various types of common sources. The screening level analysis for the Project shows that TACs are not a concern based upon the recommendations provided. An evaluation of nearby land uses considering CARB's Pollution Mapping Tool shows that the Project will not place sensitive receptors in the vicinity of existing toxic sources. Therefore, TAC's from sources in the study area will not significantly impact the Project. In addition, the Project will not generate TAC's that would have a significant impact on the environment or adjacent sensitive receptors. Therefore, no mitigation is needed.

Short-Term Impacts

The annual emissions from the construction phase of the Project will be less than the applicable SJVAPCD emission thresholds for criteria pollutants as shown in Table E-1. Therefore, construction emissions associated with the Project are considered less than significant.

Long-Term Impacts

Long-Term emissions from the Project are generated primarily by mobile source (vehicle) emissions from the Project site and area sources such as lawn maintenance equipment. Emissions from long-term operations generally represent a project's most substantial air quality impact. Table E-2 summarizes the Project's operational impacts by pollutant. Results indicate that the annual operational emissions from the Project will be less than the SJVAPCD emission thresholds for criteria pollutants. Therefore, operational emissions associated with the Project are considered less than significant.

- ✓ Result in other emissions such as those leading to odors adversely affecting a substantial number of people?

The Project will not generate odorous emissions given the nature or characteristics of residential developments. The intensity of an odor source's operations and its proximity to sensitive receptors influences the potential significance of odor emissions. The SJVAPCD has identified some common types of facilities that have been known to produce odors in the SJV Air Basin. The types of facilities that are known to produce odors are shown in Table 5 along with a reasonable distance from the source within which, the degree of odors could possibly be significant. None of the facilities shown in Table 5 are located within two (2) miles of the Project. Therefore, no mitigation is needed.

2. *Greenhouse Gas Emissions*

The criteria used to determine the significance of a greenhouse gas impact are based on the following thresholds of significance, which come from Appendix G of the CEQA Guidelines. Accordingly, greenhouse gas impacts resulting from the Project are considered significant if the Project would:

- ✓ Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

The SJVAPCD acknowledges the current absence of numerical thresholds and recommends a tiered approach to establish the significance of the GHG impacts on the environment:

i. If a project complies with an approved GHG emission reduction plan or GHG mitigation program which avoids or substantially reduces GHG emissions within the geographic area in which the project is located, then the project would be determined to have a less than significant individual and cumulative impact for GHG emissions;
ii. If a project does not comply with an approved GHG emission reduction plan or mitigation program, then it would be required to implement Best Performance Standards (BPS); and
iii. If a project is not implementing BPS, then it should demonstrate that its GHG emissions would be reduced or mitigated by at least 29 percent compared to Business as Usual (BAU).

The City of Chowchilla General Plan indicated that the City would develop a Greenhouse Gas Inventory and subsequent Climate Action Plan (CAP) that identifies desired goals for reducing manmade greenhouse gas (GHG) emissions, establishes resiliency and adaptation programs to prepare for potential impacts of climate change, and provides a phased implementation plan to achieve these goals. At the time of this report, the City of Chowchilla is still in the process of developing the GHG Inventory and CAP.

As noted previously, the maximum amount of commercial space for the Rancho Calera Specific Plan was reduced by 186,595 square feet and the Park/Open space was reduced by 11.4 acres while the total acreage dedicated to Public Facilities and Street Dedication increased by 6.8 and 9.2 acres, respectively. The traffic analysis prepared for the Project demonstrates that the reduction of commercial space and increase in park space will result in 2,630 fewer daily trips. The total GHG emissions would be less than the approved Rancho Calera Specific Plan since the proposed land use changes would result in fewer trips.

The SCAQMD guidance identifies a threshold of 10,000 MTCO2eq./year for GHG for construction emissions amortized over a 30-year project lifetime, plus annual operation emissions. Though the Project is under SJVAPCD jurisdiction, the SCAQMD GHG threshold provides some perspective on the GHG emissions generated by the Project. Table E-3 shows the yearly GHG emissions generated by the Project as determined by the CalEEMod model, which is approximately 82% less than the threshold identified by the SCAQMD.

The resulting permanent greenhouse gas increases related to Project operations would be within the greenhouse gas increases analyzed in the General Plan EIR, so there would be no increase in severity to the previously-identified greenhouse gas impacts, and implementation of the Project will not result in Project-specific or site-specific significant adverse impacts from greenhouse gas emissions within the Project study area. Therefore, no mitigation measures are needed.

✓ Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

California passed the California Global Warming Solutions Act of 2006. AB 32 requires that statewide GHG emissions be reduced to 1990 levels by 2020. Under AB 32, CARB must adopt regulations by January 1, 2011 to achieve reductions in GHGs to meet the 1990 emission cap by 2020. On December 11, 2008, CARB adopted its initial Scoping Plan, which functions as a roadmap of CARB's plans to achieve GHG reductions in California required by AB 32 through subsequently enacted regulations. CARB's 2017 Climate Change Scoping Plan builds on the efforts and plans encompassed in the initial Scoping Plan.

SB 375 requires MPOs to adopt a SCS or APS that will prescribe land use allocation in that MPO's regional transportation plan. CARB, in consultation with MPOs, has provided each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in the region for the years 2020 and 2035. For the MCTC region, CARB set targets at five (5) percent per capita decrease in 2020 and a ten (10) percent per capita decrease in 2035 from a base year of 2005. MCTC's 2018 RTP/SCS, which was adopted in July 2018, projects that the Madera County region would achieve the prescribed emissions targets.

Executive Order B-30-15 establishes a California greenhouse gas reduction target of 40 percent below 1990 levels by 2030 to ensure California meets its target of reducing greenhouse gas emissions to 80 percent below 1990 levels by 2050. Executive Order B-30-15 requires MPO's to implement measures that will achieve reductions of greenhouse gas emissions to meet the 2030 and 2050 greenhouse gas emissions reductions targets.

As required by California law, city and county General Plans contain a Land Use Element that details the types and quantities of land uses that the city or county estimates will be needed for future growth, and that designate locations for land uses to regulate growth. MCTC uses the growth projections and land use information in adopted general plans to estimate future average daily trips and then VMT, which are then provided to SJVAPCD to estimate future emissions in the AQPs. The applicable General Plan for the project is the City of Chowchilla 2040 General Plan, which was adopted in 2011.

The Project is consistent with the currently adopted General Plan for the City of Chowchilla and the adopted 2018 RTP/SCS and is therefore consistent with the population growth and VMT applied in those plan documents. Therefore, the Project is consistent with the growth assumptions used in the applicable AQP. It should also be noted that yearly GHG emissions generated by the Project (Table E-3) are approximately 82% less than the threshold identified by the SCAQMD.

CARB's 2017 Climate Change Scoping Plan builds on the efforts and plans encompassed in the initial Scoping Plan. The current plan has identified new policies and actions to accomplish the State's 2030 GHG limit. Below is a list of applicable strategies in the Scoping Plan and the Project's consistency with those strategies.

- California Light-Duty Vehicle GHG Standards – Implement adopted standards and planned second phase of the program. Align zero-emission vehicle, alternative and renewable fuel and vehicle technology programs for long-term climate change goals.

- The Project is consistent with this reduction measure. This measure cannot be implemented by a particular project or lead agency since it is a statewide measure. When this measure is implemented, standards would be applicable to light-duty vehicles that would access the residential development. The Project would not conflict or obstruct this reduction measure.

- Energy Efficiency – Pursuit of comparable investment in energy efficiency from all retail providers of electricity in California. Maximize energy efficiency building and appliance standards.

    - The Project is consistent with this reduction measure. Though this measure applies to the State to increase its energy standards, the Project would comply with this measure through existing regulation. The Project would not conflict or obstruct this reduction measure.

- Low Carbon Fuel – Development and adoption of the low carbon fuel standard.

    - The Project is consistent with this reduction measure. This measure cannot be implemented by a particular project or lead agency since it is a statewide measure. When this measure is implemented, standards would be applicable to the fuel used by vehicles that would access the residential development. The Project would not conflict or obstruct this reduction measure.

Based on the assessment above, the Project will not conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases. The Project furthers the achievement of the County's greenhouse gas reduction goals. Therefore, any impacts would be less than significant.

1.0 Introduction

Rancho Calera is a 561-acre adopted master planned community east of SR 99 within the City of Chowchilla. The Rancho Calera Specific Plan was originally adopted by the City in May 2011 and assessed as a component of the 2040 General Plan environmental impact report (EIR). The Applicant is proposing changes to the adopted plan as detailed below. Tentative Subdivision Map (TSM) 18-0006 consists of 140 residential subdivision lots. This TSM would be considered Phase 1 of residential construction for the Rancho Calera Specific Plan.

1.1 Description of the Region/Project

The Rancho Calera Specific Plan, an Environmental Impact Report, a Statement of Overriding Consideration, and a Mitigation and Monitoring Reporting Program for the Rancho Calera project were approved by the Chowchilla City Council on May 2, 2011. The approved Rancho Calera project is a planned residential community, consisting of a mixture of residential, commercial, and civic land uses with a projected build-out population of approximately 6,000 residents. The approved project contained 576 acres with 2,042 residential units and approximately 495,000 square feet of commercial space. The Specific Plan includes a community park, school facilities, the Rancho Calera Riverwalk, and promenades.

Pembrook Development, the property owner and Applicant, has requested amendments to the approved Rancho Calera Specific Plan. The maximum number of residential units which could be constructed within the project area remains 2,042 dwelling units, but the maximum commercial space was reduced by 186,595 square feet. The total acreage dedicated to parks/open space decreased by 11.4 acres. Additionally, the public facilities land use designation has been increased by 6.8 acres and the total street dedication has increased by 9.2 acres. Figures 1, 2, 3 and 4 show the location of the Project long with major roadways and highways, as well as the Existing Specific Plan Land Use Map, and the Proposed Specific Plan Land Use Map.

This Air Quality & Greenhouse Gas Impact Assessment has been prepared for the purpose of identifying potential project-specific or site-specific air quality impacts that may result from a proposed 140-lot subdivision (Project) within the Rancho Calera Specific Plan. As noted above, TSM 18-0006 consists of 140 residential subdivision lots. This TSM would be considered Phase 1 of residential construction for the Rancho Calera Specific Plan. The Project site is located at the northwest intersection of Figtree Boulevard and Avenue 26 with Reagan Elementary School located to the north of the site. The lots range in size from approximately 6,000 square feet to approximately 13,000 square feet. This Air Quality analysis will also include a comparison of air emissions associated with the decrease in commercial and Park/Open Space versus the increase in Public Facilities and Street Dedication.

The City of Chowchilla is located in one of the most polluted air basins in the country – the San Joaquin Valley Air Basin (SJVAB). The surrounding topography includes foothills and mountains to the east and west. These mountain ranges direct air circulation and dispersion patterns.

Temperature inversions can trap air within the Valley, thereby preventing the vertical dispersal of air pollutants. In addition to topographic conditions, the local climate can also contribute to air quality problems. Climate in Chowchilla is classified as Mediterranean, with moist cool winters and dry warm summers.

1.2 Regulatory

Air quality within the Project area is addressed through the efforts of various federal, state, regional, and local government agencies. These agencies work jointly, as well as individually, to improve air quality through legislation, regulations, planning, policy-making, education, and a variety of programs. The agencies primarily responsible for improving the air quality within the City of Chowchilla are discussed below along with their individual responsibilities.

1.2.1 *Federal Agencies*

✓ **U.S. Environmental Protection Agency (EPA)**

The Federal Clean Air Bill first adopted in 1967 and periodically amended since then, established federal ambient air quality standards. A 1987 amendment to the Bill set a deadline for the attainment of these standards. That deadline has since passed. The other Clean Air Act (CAA) Bill Amendments, passed in 1990, share responsibility with the State in reducing emissions from mobile sources. The U.S. Environmental Protection Agency (EPA) is responsible for enforcing the 1990 amendments.

The CAA and the national ambient air quality standards identify levels of air quality for six "criteria" pollutants, which are considered the maximum levels of ambient air pollutants considered safe, with an adequate margin of safety, to protect public health and welfare. The six criteria pollutants include ozone, carbon monoxide (CO), nitrogen dioxide, sulfur dioxide, particulate matter, and lead.

CAA Section 176(c) (42 U.S.C. 7506(c)) and EPA transportation conformity regulations (40 CFR 93 Subpart A) require that each new RTP and Transportation Improvement Program (TIP) be demonstrated to conform to the State Implementation Plan (SIP) before the RTP and TIP are approved by the Metropolitan planning organization (MPO) or accepted by the U.S. Department of Transportation (DOT). The conformity analysis is a federal requirement designed to demonstrate compliance with the National Ambient Air Quality Standards (NAAQS). However, because the State Implementation Plan (SIP) for particulate matter 10 microns or less in diameter (PM10), particulate matter 2.5 microns or less in diameter (PM2.5), and Ozone address attainment of both the State and federal standards, for these pollutants, demonstrating conformity to the federal standards is also an indication of progress toward attainment of the State standards. Compliance with the State air quality standards is provided on the pages following this federal conformity discussion.

The EPA approved San Joaquin Valley reclassification of the ozone (8-hour) designation to extreme nonattainment in the Federal Register on May 5, 2010, even though the San Joaquin Valley was initially classified as serious nonattainment for the 1997 8-hour ozone standard. In accordance with the CAA, EPA uses the design value at the time of standard promulgation to assign nonattainment areas to one of several classes that reflect the severity of the nonattainment problem; classifications range from marginal nonattainment to extreme nonattainment. In the Federal Register on October 26, 2015, the EPA revised the primary and secondary standard to 0.070 parts per million (ppm) to provide increased public health protection against health effects associated with long- and short-term exposures. The previous ozone standard was set in 2010 at 0.075 ppm.

The City of Chowchilla is located in a nonattainment area for the 8-hour ozone standard, 1997, 2006 and 2012 PM2.5 standards, and has a maintenance plan for PM10 standard.

1.2.2 *Federal Regulations*

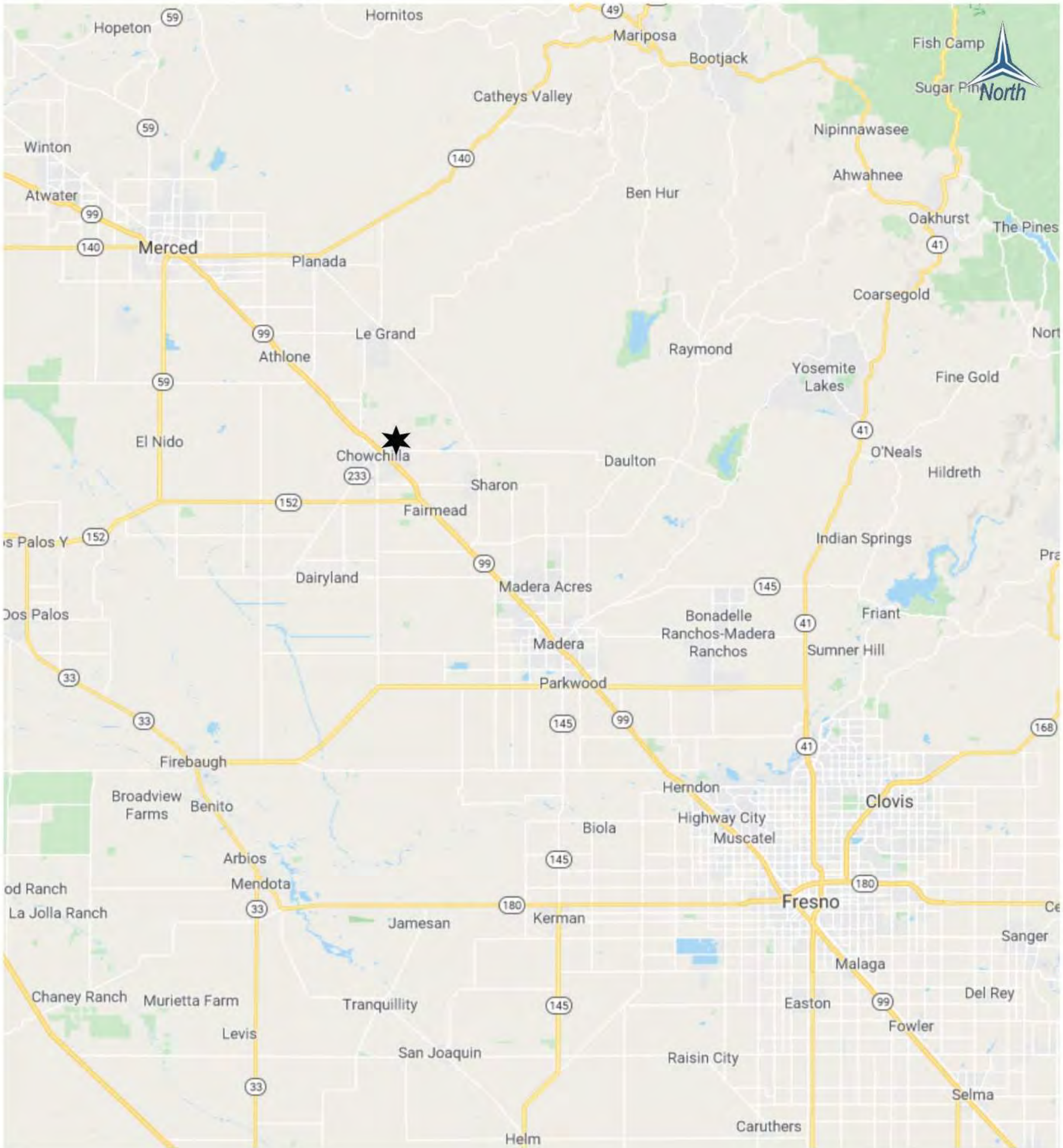
✓ **State Implementation Plan (SIP)/ Air Quality Management Plans (AQMPs)**

To ensure compliance with the NAAQS, EPA requires states to adopt SIP aimed at improving air quality in areas of nonattainment or a Maintenance Plan aimed at maintaining air quality in areas that have attained a given standard. New and previously submitted plans, programs, district rules, state regulations, and federal controls are included in the SIPs. Amendments made in 1990 to the federal CAA established deadlines for attainment based on an area's current air pollution levels. States must enact additional regulatory programs for nonattainment's areas in order to adhere with the CAA Section 172. In California, the SIPs must adhere to both the NAAQS and the California Ambient Air Quality Standards (CAAQS).

To ensure that State and federal air quality regulations are being met, Air Quality Management Plans (AQMPs) are required. AQMPs present scientific information and use analytical tools to identify a pathway towards attainment of NAAQS and CAAQS. The San Joaquin Valley Air Pollution Control District (SJVAPCD) develops the AQMPs for the region where the Madera County Transportation Commission (MCTC) operates. The regional air districts begin the SIP process by submitting their AQMPs to the California Air Resources Board (CARB). CARB is responsible for revising the SIP and submitting it to EPA for approval. EPA then acts on the SIP in the Federal Register. The items included in the California SIP are listed in the Code of Federal Regulations Title 40, Chapter 1, Part 52, Subpart 7, Section 52.220.

Rancho Calera Specific Plan / 140-Lot Subdivision
Regional Location

Figure 1



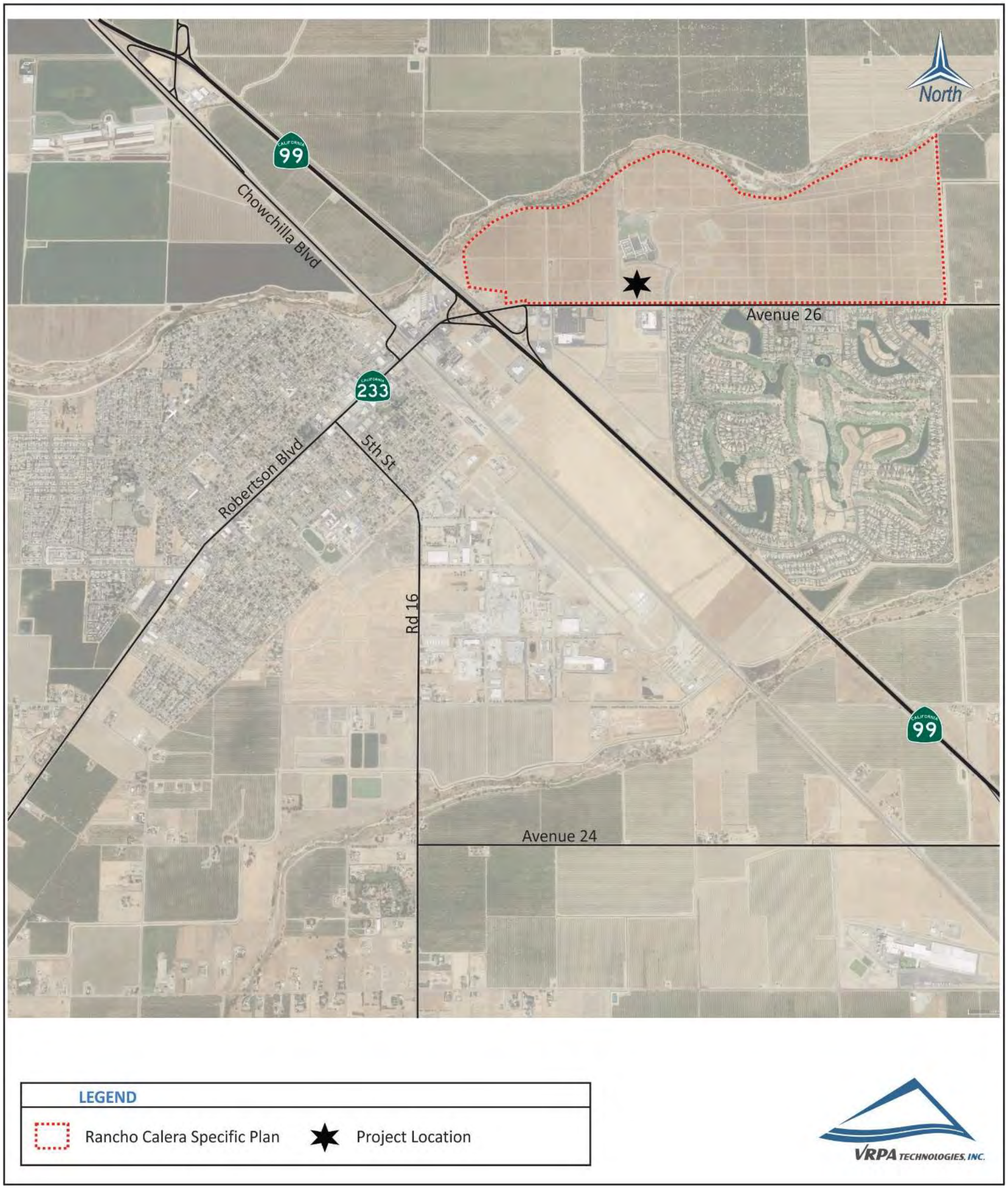
LEGEND

★ Project Location

VRPA TECHNOLOGIES, INC.

Rancho Calera Specific Plan / 140-Lot Subdivision
Project Location

Figure 2



Rancho Calera Specific Plan / 140-Lot Subdivision
Existing Specific Plan Land Use Map

Figure 3

Rancho Calera Specific Plan / 140-Lot Subdivision
Proposed Specific Plan Land Use Map

Figure
4

- **Transportation Control Measures**

  One particular aspect of the SIP development process is the assessment of available transportation control measures (TCMs) as a part of making progress towards clean air goals. TCMs are defined in Section 108(f)(1) of the CAA and are strategies designed to reduce vehicle miles traveled, vehicle idling, and associated air pollution. These goals are generally achieved by developing attractive and convenient alternatives to single-occupant vehicle use. Examples of TCMs include ridesharing programs, transportation infrastructure improvements such as adding bicycle and carpool lanes, and expansion of public transit.

- **Energy Policy Act of 1992 (EPAct)**

  The Energy Policy Act of 1992 (EPAct) was passed to reduce the country's dependence on foreign petroleum and improve air quality. EPAct includes several parts intended to build an inventory of alternative fuel vehicles (AFVs) in large, centrally fueled fleets in metropolitan areas. EPAct requires certain federal, state, and local government and private fleets to purchase a percentage of light duty AFVs capable of running on alternative fuels each year. In addition, financial incentives are included in EPAct. Federal tax deductions will be allowed for businesses and individuals to cover the incremental cost of alternative fueled vehicles (AFVs). States are also required by the act to consider a variety of incentive programs to help promote AFVs.

1.2.3 *State Agencies*

- **California Air Resources Board (CARB)**

  CARB is the agency responsible for coordination and oversight of State and local air pollution control programs in California and for implementing its own air quality legislation called the California Clean Air Act (CCAA), adopted in 1988. CARB was created in 1967 from the merging of the California Motor Vehicle Pollution Control Board and the Bureau of Air Sanitation and its Laboratory.

  CARB has primary responsibility in California to develop and implement air pollution control plans designed to achieve and maintain the NAAQS established by the EPA. Whereas CARB has primary responsibility and produces a major part of the SIP for pollution sources that are statewide in scope, it relies on the local air districts to provide additional strategies for sources under their jurisdiction. CARB combines its data with all local district data and submits the completed SIP to the EPA. The SIP consists of the emissions standards for vehicular sources and consumer products set by CARB, and attainment plans adopted by the Air Pollution Control Districts (APCDs) and Air Quality Management District's (AQMDs) and approved by CARB.

  States may establish their own standards, provided the State standards are at least as stringent as the NAAQS. California has established California Ambient Air Quality Standards

(CAAQS) pursuant to California Health and Safety Code (CH&SC) [§39606(b)] and its predecessor statutes.

The CH&SC [§39608] requires CARB to "identify" and "classify" each air basin in the State on a pollutant-by-pollutant basis. Subsequently, CARB designated areas in California as nonattainment based on violations of the CAAQSs. Designations and classifications specific to the SJVAB can be found in the next section of this document. Areas in the State were also classified based on severity of air pollution problems. For each nonattainment class, the CCAA specifies air quality management strategies that must be adopted. For all nonattainment categories, attainment plans are required to demonstrate a five-percent-per-year reduction in nonattainment air pollutants or their precursors, averaged every consecutive three-year period, unless an approved alternative measure of progress is developed. In addition, air districts in violation of CAAQS are required to prepare an Air Quality Attainment Plan (AQAP) that lays out a program to attain and maintain the CCAA mandates.

CARB, in consultation with MPOs, has provided each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in the region for the years 2020 and 2035. For the Madera County Transportation Commission (MCTC) region, CARB set targets at five (5) percent per capita decrease in 2020 and a ten (10) percent per capita decrease in 2035 from a base year of 2005. MCTC's 2018 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS), which was adopted in July 2018, projects that the Madera County region would achieve the prescribed emissions targets.

Other CARB duties include monitoring air quality. CARB has established and maintains, in conjunction with local APCDs and AQMDs, a network of sampling stations (called the State and Local Air Monitoring [SLAMS] network), which monitor the present pollutant levels in the ambient air.

Madera County is in the CARB-designated, SJVAB. A map of the SJVAB is provided in Figure 5. In addition to Madera County, the SJVAB includes Fresno, Kern, Kings, Merced, San Joaquin, Stanislaus, and Tulare Counties. Federal and State standards for criteria pollutants are provided in Table 1.

1.2.4 *State Regulations*

✓ **CARB Mobile-Source Regulation**

The State of California is responsible for controlling emissions from the operation of motor vehicles in the State. Rather than mandating the use of specific technology or the reliance on a specific fuel, CARB's motor vehicle standards specify the allowable grams of pollutant per mile driven. In other words, the regulations focus on the reductions needed rather than on the manner in which they are achieved.

✓ **California Clean Air Act**

The CCAA was first signed into law in 1988. The CCAA provides a comprehensive framework for air quality planning and regulation, and spells out, in statute, the state's air quality goals, planning and regulatory strategies, and performance. The CCAA establishes more stringent ambient air quality standards than those included in the Federal CAA. CARB is the agency responsible for administering the CCAA. CARB established ambient air quality standards pursuant to the CH&SC [§39606(b)], which are similar to the federal standards. The SJVAPCD is one of 35 AQMDs that have prepared air quality management plans to accomplish a five percent (5%) annual reduction in emissions documenting progress toward the State ambient air quality standards.

✓ **Tanner Air Toxics Act**

California regulates Toxic Air Contaminants (TACs) primarily through the Tanner Air Toxics Act (AB 1807) and the Air Toxics Hot Spots Information and Assessment Act of 1987 (AB 2588). The Tanner Act sets forth a formal procedure for CARB to designate substances as TACs. This includes research, public participation, and scientific peer review before CARB can designate a substance as a TAC. To date, CARB has identified more than 21 TACs and has adopted EPA's list of Hazardous Air Pollutants (HAPs) as TACs. Once a TAC is identified, CARB then adopts an Airborne Toxics Control Measure (ATCM) for sources that emit that particular TAC. If there is a safe threshold for a substance at which there is no toxic effect, the control measure must reduce exposure below that threshold. If there is no safe threshold, the measure must incorporate Best Available Control Technology (BACT) to minimize emissions.

AB 2588 requires that existing facilities that emit toxic substances above a specified level prepare a toxic-emission inventory, prepare a risk assessment if emissions are significant, notify the public of significant risk levels, and prepare and implement risk reduction measures. CARB has adopted diesel exhaust control measures and more stringent emission standards for various on-road mobile sources of emissions, including transit buses and off-road diesel equipment (e.g., tractors, generators).

These rules and standards provide for:

- More stringent emission standards for some new urban bus engines, beginning with 2002 model year engines.
- Zero-emission bus demonstration and purchase requirements applicable to transit agencies
- Reporting requirements under which transit agencies must demonstrate compliance with the urban transit bus fleet rule.

✓ **AB 1493 (Pavley)**

AB 1493 (Pavley) enacted on July 22, 2002, required CARB to develop and adopt regulations that reduce greenhouse gases emitted by passenger vehicles and light duty trucks. Regulations adopted by CARB would apply to 2009 and later model year vehicles. CARB estimated that the regulation would reduce climate change emissions from light duty passenger vehicles by an estimated 18 percent in 2020 and by 27 percent in 2030 [Association of Environmental Professionals (AEP) 2007)]. In 2005, the CARB requested a waiver from U.S. EPA to enforce the regulation, as required under the CAA. Despite the fact that no waiver had ever been denied over a 40-year period, the then Administrator of the EPA sent Governor Schwarzenegger a letter in December 2007, indicating he had denied the waiver. On March 6, 2008, the waiver denial was formally issued in the Federal Register. Governor Schwarzenegger and several other states immediately filed suit against the federal government to reverse that decision. On January 21, 2009, CARB requested that EPA reconsider denial of the waiver. EPA scheduled a re-hearing on March 5, 2009. On June 30, 2009, EPA granted a waiver of CAA preemption to California for its greenhouse gas emission standards for motor vehicles beginning with the 2009 model year.

- ✓ **Assembly Bill 32 (California Global Warming Solutions Act of 2006)**

California passed the California Global Warming Solutions Act of 2006 (AB 32; California Health and Safety Code Division 25.5, Sections 38500 - 38599). AB 32 establishes regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and establishes a cap on statewide GHG emissions. AB 32 required that statewide GHG emissions be reduced to 1990 levels by 2020. December 31, 2020 is the deadline for achieving the 2020 GHG emissions cap. To effectively implement the cap, AB 32 directs CARB to develop and implement regulations to reduce statewide GHG emissions from stationary sources. AB 32 specifies that regulations adopted in response to AB 1493 should be used to address GHG emissions from vehicles. However, AB 32 also includes language stating that if the AB 1493 regulations cannot be implemented, then CARB should develop new regulations to control vehicle GHG emissions under the authorization of AB 32.

AB 32 requires CARB to adopt a quantified cap on GHG emissions representing 1990 emissions levels and disclose how it arrived at the cap; institute a schedule to meet the emissions cap; and develop tracking, reporting, and enforcement mechanisms to ensure that the state reduces GHG emissions enough to meet the cap. AB 32 also includes guidance on instituting emissions reductions in an economically efficient manner, along with conditions to ensure that businesses and consumers are not unfairly affected by the reductions. Using these criteria to reduce statewide GHG emissions to 1990 levels by 2020 would represent an approximate 25 to 30 percent reduction in current emissions levels. However, CARB has discretionary authority to seek greater reductions in more significant and growing GHG sectors, such as transportation, as compared to other sectors that are not anticipated to significantly increase emissions.

CARB's 2017 Climate Change Scoping Plan builds on the efforts and plans encompassed in the initial Scoping Plan adopted in December of 2008. The current plan has identified new policies and actions to accomplish the State's 2030 GHG limit.

Rancho Calera Specific Plan / 140-Lot Subdivision
San Joaquin Valley Air Basin

Figure 5

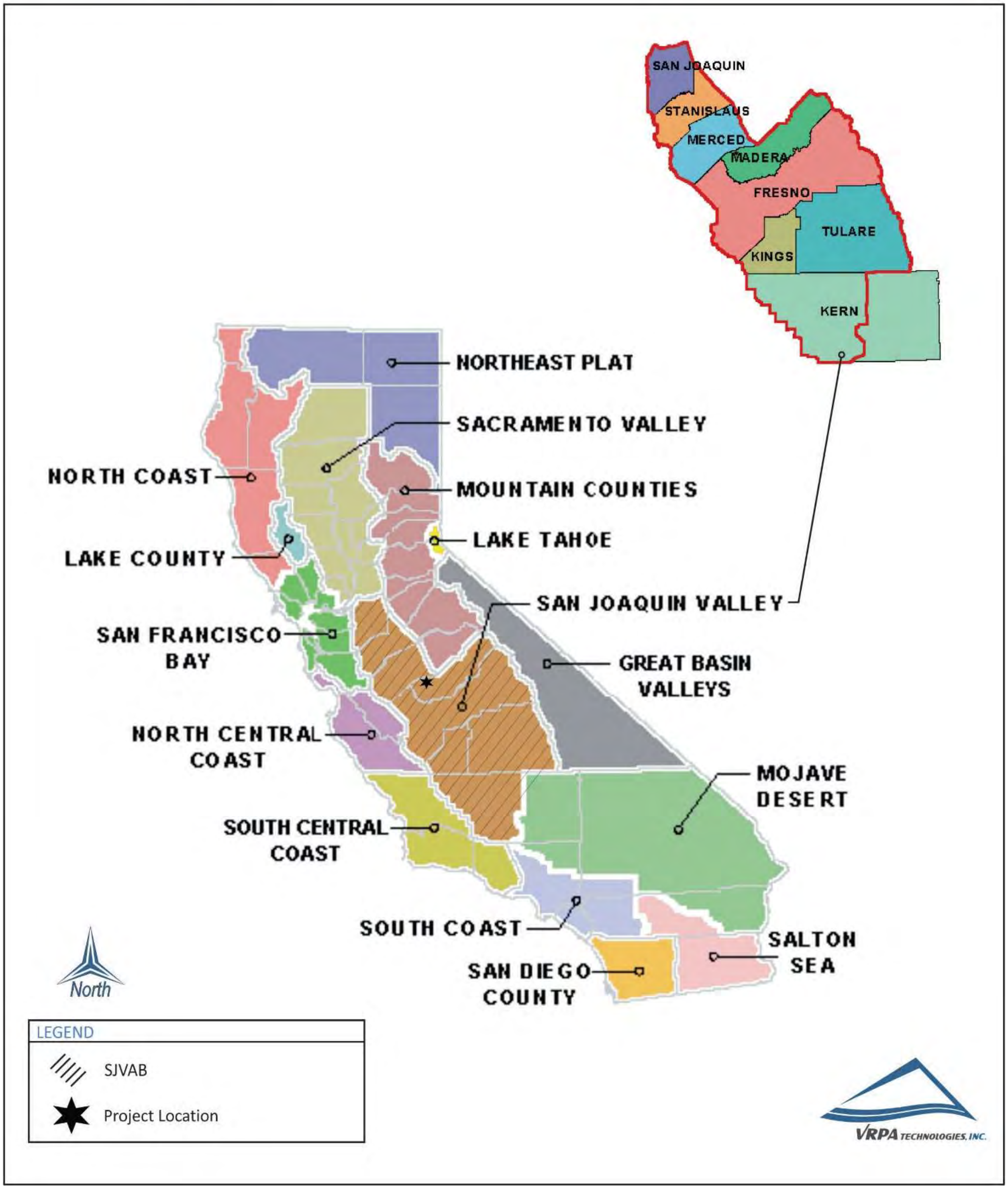


Table 1
Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards [1]		National Standards [2]		
		Concentration [3]	Method [4]	Primary [3,5]	Secondary [3,6]	Method [7]
Ozone (O_3) [8]	1 Hour	0.09 ppm (180 µg/m^3)	Ultraviolet Photometry	--	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.070 ppm (137 µg/m^3)		0.070 ppm (137 µg/m^3)		
Respirable Particulate Matter (PM10) [9]	24 Hour	50 µg/m^3	Gravimetric or Beta Attenuation	150 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m^3		--		
Fine Particulate Matter (PM2.5) [9]	24 Hour	--	--	35 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m^3	Gravimetric or Beta Attenuation	12.0 µg/m^3	15 µg/m^3	
Carbon Monoxide (CO)	1 Hour	20 ppm (23 mg/m^3)	Non-Dispersive Infrared Photometry (NDIR)	35 ppm (40 mg/m^3)	--	Non-Dispersive Infrared Photometry (NDIR)
	8 Hour	9.0 ppm (10 mg/m^3)		9 ppm (10 mg/m^3)	--	
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m^3)		--	--	
Nitrogen Dioxide (NO_2) [10]	1 Hour	0.18 ppm (339 µg/m^3)	Gas Phase Chemiluminescence	100 ppb (188 µg/m^3)	--	Gas Phase Chemiluminescence
	Annual Arithmetic Mean	0.030 ppm (57 µg/m^3)		0.053 ppm (100 µg/m^3)	Same as Primary Standard	
Sulfur Dioxide (SO_2) [11]	1 Hour	0.25 ppm (655 µg/m^3)	Ultraviolet Fluorescence	75 ppb (196 µg/m^3)	--	Ultraviolet Fluorescence; Spectrophotometry (Pararosaniline Method)
	3 Hour	--		--	0.5 ppm (1300 µg/m^3)	
	24 Hour	0.04 ppm (105 µg/m^3)		0.14 ppm (for cetain areas) [11]	--	
	Annual Arithmetic Mean	--		0.030 ppm (for cetain areas) [11]	--	
Lead [12,13]	30 Day Average	1.5 µg/m^3	Atomic Absorption	--	--	High Volume Sampler and Atomic Absorption
	Calendar Quarter	--		1.5 µg/m^3 (for certain areas)[11]	Same as Primary Standard	
	Rolling 3-Month Average	--		0.15 µg/m^3		
Visibility Reducing Particles [14]	8 Hour	See footnote 14	Beta Attenuation and Transmittance through Filter Tape	No National Standards		
Sulfates	24 Hour	25 µg/m^3	Ion Chromatography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m^3)	Ultraviolet Fluorescence			
Vinyl Chloride [12]	24 Hour	0.01 ppm (26 µg/m^3)	Gas Chromatography			

See footnotes on next page …

Footnotes:

1. California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, and particulate matter (PM10, PM2.5, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.
2. National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM10, the 24 hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m3 is equal to or less than one. For PM2.5, the 24 hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact the U.S. EPA for further clarification and current national policies.
3. Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.
4. Any equivalent measurement method which can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used.
5. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.
6. National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
7. Reference method as described by the U.S. EPA. An “equivalent method” of measurement may be used but must have a “consistent relationship to the reference method” and must be approved by the U.S. EPA.
8. On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.
9. On December 14, 2012, the national annual PM2.5 primary standard was lowered from 15 µg/m3 to 12.0 µg/m3. The existing national 24-hour PM2.5 standards (primary and secondary) were retained at 35 µg/m3, as was the annual secondary standard of 15 µg/m3. The existing 24-hour PM10 standards (primary and secondary) of 150 µg/m3 also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.
10. To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national 1-hour standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national 1-hour standard to the California standards the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.
11. On June 2, 2010, a new 1-hour SO2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO2 national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

Note that the 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.
12. The ARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.
13. The national standard for lead was revised on October 15, 2008 to a rolling 3-month average. The 1978 lead standard (1.5 µg/m3 as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.
14. In 1989, the ARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

- **Senate Bill 375**

SB 375, signed in September 2008 (Chapter 728, Statutes of 2008), aligns regional transportation planning efforts, regional GHG reduction targets, and land use and housing allocation. SB 375 requires Metropolitan Planning Organizations (MPOs) to adopt a sustainable communities strategy (SCS) or alternative planning strategy (APS) that will prescribe land use allocation in that MPO's regional transportation plan. CARB, in consultation with MPOs, has provided each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in the region for the years 2020 and 2035. For the Madera County Transportation Commission (MCTC) region, CARB set targets at five (5) percent per capita decrease in 2020 and a ten (10) percent per capita decrease in 2035 from a base year of 2005. MCTC's 2018 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS), which was adopted in July 2018, projects that the Madera County region would achieve the prescribed emissions targets.

This law also extends the minimum time period for the regional housing needs allocation cycle from five years to eight years for local governments located within an MPO that meets certain requirements. City or county land use policies (including general plans) are not required to be consistent with the regional transportation plan (and associated SCS or APS). However, new provisions of CEQA incentivize (through streamlining and other provisions) qualified projects that are consistent with an approved SCS or APS, categorized as "transit priority projects."

- **Executive Order B-30-15**

Executive Order B-30-15, which was signed by Governor Brown in 2016, establishes a California greenhouse gas reduction target of 40 percent below 1990 levels by 2030 to ensure California meets its target of reducing greenhouse gas emissions to 80 percent below 1990 levels by 2050. Executive Order B-30-15 requires MPO's to implement measures that will achieve reductions of greenhouse gas emissions to meet the 2030 and 2050 greenhouse gas emissions reductions targets.

- **California Global Warming Solutions Act of 2006: emissions limit, or SB 32**

SB 32 is a California Senate bill expanding upon AB 32 to reduce greenhouse gas (GHG) emissions. The lead author is Senator Fran Pavley and the principal co-author is Assembly member Eduardo Garcia. SB 32 was signed into law on September 8, 2016, by Governor Brown. SB 32 sets into law the mandated reduction target in GHG emissions as written into Executive Order B-30-15. SB 32 requires that there be a reduction in GHG emissions to 40% below the 1990 levels by 2030. Greenhouse gas emissions include carbon dioxide, methane, nitrous oxide, sulfur hexafluoride, hydrofluorocarbons, and perfluorocarbons. The California Air Resources Board (CARB) is responsible for ensuring that California meets this goal. The provisions of SB 32 were added to Section 38566 of the Health and Safety Code subsequent to the bill's approval. The bill went into effect January 1, 2017. SB 32 builds onto Assembly Bill (AB) 32 written by Senator Fran Pavley and Assembly Speaker Fabian Nunez passed into law on September 27, 2006. AB 32 required California to reduce greenhouse gas emissions to 1990 levels by 2020 and SB 32 continues that timeline to reach the targets set in Executive Order B-30-15. SB 32 provides another intermediate target between the 2020 and 2050 targets set in Executive Order S-3-05.

1.2.5 *Regional Agencies*

✓ **San Joaquin Valley Air Pollution Control District**

The SJVAPCD is the agency responsible for monitoring and regulating air pollutant emissions from stationary, area, and indirect sources within Madera County and throughout the SJVAB. The District also has responsibility for monitoring air quality and setting and enforcing limits for source emissions. CARB is the agency with the legal responsibility for regulating mobile source emissions. The District is precluded from such activities under State law.

The District was formed in mid-1991 and prepared and adopted the San Joaquin Valley Air Quality Attainment Plan (AQAP), dated January 30, 1992, in response to the requirements of the State CCAA. The CCAA requires each non-attainment district to reduce pertinent air contaminants by at least five percent (5%) per year until new, more stringent, 1988 State air quality standards are met.

Activities of the SJVAPCD include the preparation of plans for the attainment of ambient air quality standards, adoption and enforcement of rules and regulations concerning sources of air pollution, issuance of permits for stationary sources of air pollution, inspection of stationary sources of air pollution and response to citizen complaints, monitoring of ambient air quality and meteorological conditions, and implementation of programs and regulations required by the FCAA and CCAA.

The SJVAPCD has prepared the following State Implementation Plans to address ozone, PM-10 and PM2.5 that currently apply to Chowchilla non-attainment area:

- The 2016 Ozone Plan (2008 standard) was adopted by SJVAPCD on June 16, 2016 and subsequently adopted by ARB on July 21, 2016.
- The 2013 1-Hour Ozone Plan (revoked 1997 standard) was adopted by the SJVAPCD on September 19, 2013. EPA withdrew its approval of the plan due to litigation. The District plans to submit a "redesignation substitute" to EPA to maintain its attainment status for this revoked ozone standard.
- The 2007 PM-10 Maintenance Plan (as revised in 2015) was approved by EPA on July 8, 2016 (effective September 30, 2016).
- The 2012 PM2.5 Plan (as revised in 2015) was approved by EPA on August 16, 2016 (effective September 30, 2016).

The SJVAPCD Plans identified above represent SJVAPCD's plan to achieve both state and federal air quality standards. The regulations and incentives contained in these documents must be legally enforceable and permanent. These plans break emissions reductions and compliance into different emissions source categories.

The SJVAPCD also prepared the *Guide for Assessing and Mitigation Air Quality Impacts* (GAMAQI), dated March 19, 2015. The GAMAQI is an advisory document that provides Lead Agencies, consultants, and project applicants with analysis guidance and uniform procedures for addressing air quality impacts in environmental documents. Local jurisdictions are not required to utilize the methodology outlined therein. This document describes the criteria that SJVAPCD uses when reviewing and commenting on the adequacy of environmental documents. It recommends thresholds for determining whether or not projects would have significant adverse environmental impacts, identifies methodologies for predicting project emissions and impacts, and identifies measures that can be used to avoid or reduce air quality impacts.

1.2.6 *Regional Regulations*

The SJVAPCD has adopted numerous rules and regulations to implement its air quality plans. Following, are significant rules that will apply to the Project.

✓ **Regulation VIII – Fugitive PM10 Prohibitions**

Regulation VIII is comprised of District Rules 8011 through 8081, which are designed to reduce PM_{10} emissions (predominantly dust/dirt) generated by human activity, including construction and demolition activities, road construction, bulk materials storage, paved and unpaved roads, carryout and track out, landfill operations, etc. The proposed Project will be required to comply with this regulation. Regulation VIII control measures are provided below:

1. *All disturbed areas, including storage piles, which are not being actively utilized for construction purposes, shall be effectively stabilized of dust emissions using water, chemical stabilizer/suppressant, covered with a tarp or other suitable cover or vegetative ground cover.*
2. *All on-site unpaved roads and off-site unpaved access roads shall be effectively stabilized of dust emissions using water or chemical stabilizer/suppressant.*
3. *All land clearing, grubbing, scraping, excavation, land leveling, grading, cut & fill, and demolition activities shall be effectively controlled of fugitive dust emissions utilizing application of water or by presoaking.*
4. *When materials are transported off-site, all material shall be covered, or effectively wetted to limit visible dust emissions, and at least six inches of freeboard space from the top of the container shall be maintained.*
5. *All operations shall limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at the end of each workday. The use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions. Use of blower devices is expressly forbidden.*
6. *Following the addition of materials to, or the removal of materials from, the surface of*

outdoor storage piles, said piles shall be effectively stabilized of fugitive dust emissions utilizing sufficient water or chemical stabilizer/suppressant.

7. *Within urban areas, track out shall be immediately removed when it extends 50 or more feet from the site and at the end of each workday.*

✓ **Rule 8021 – Construction, Demolition, Excavation, and Other Earthmoving Activities**

District Rule 8021 requires owners or operators of construction projects to submit a Dust Control Plan to the District if at any time the project involves non-residential developments of five or more acres of disturbed surface area or moving, depositing, or relocating of more than 2,500 cubic yards per day of bulk materials on at least three days of the project. The proposed Project will meet these criteria and will be required to submit a Dust Control Plan to the District in order to comply with this rule.

✓ **Rule 4641 – Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations**

If asphalt paving will be used, then paving operations of the proposed Project will be subject to Rule 4641. This rule applies to the manufacture and use of cutback asphalt, slow cure asphalt and emulsified asphalt for paving and maintenance operations.

✓ **Rule 9510 – Indirect Source Review (ISR)**

The purpose of this rule is to fulfill the District's emission reduction commitments in the PM10 and Ozone Attainment Plans, achieve emission reductions from construction activities, and to provide a mechanism for reducing emissions from the construction of and use of development projects through off-site measures. The rule is expected to reduce nitrogen oxides and particulates throughout the San Joaquin Valley by more than 10 tons per day. Rule 9510 requires single-family development projects larger than 50 residential units to reduce smog-forming and particulate emissions generated by their projects. The Project includes the development of 140 single family dwelling units and will be required to comply with this rule.

1.2.7 *Local Plans*

✓ **City of Chowchilla General Plan**

California State Law requires every city and county to adopt a comprehensive General Plan to guide its future development. The General Plan essentially serves as a "constitution for development"— the document that serves as the foundation for all land use decisions. The City of Chowchilla 2040 General Plan includes various elements, including air quality and greenhouse gases, that address local concerns and provides goals and policies to achieve its development goals.

2.0 Environmental Setting

This section describes existing air quality within the San Joaquin Valley Air Basin and in Madera County, including the identification of air pollutant standards, meteorological and topological conditions affecting air quality, and current air quality conditions. Air quality is described in relation to ambient air quality standards for criteria pollutants such as, ozone, carbon monoxide, and particulate matter. Air quality can be directly affected by the type and density of land use change and population growth in urban and rural areas.

2.1 Geographical Location

The SJVAB is comprised of eight counties: Fresno, Kern, Kings, Madera, Merced, San Joaquin, Stanislaus, and Tulare. Encompassing 24,840 square miles, the San Joaquin Valley is the second largest air basin in California. Cumulatively, counties within the Air Basin represent approximately 16 percent of the State's geographic area. The Air Basin is bordered by the Sierra Nevada Mountains on the east (8,000 to 14,492 feet in elevation), the Coastal Range on the west (4,500 feet in elevation), and the Tehachapi Mountains on the south (9,000 feet elevation). The San Joaquin Valley is open to the north extending to the Sacramento Valley Air Basin.

2.2 Topographic Conditions

Madera County is located within the San Joaquin Valley Air Basin [as determined by the California Air Resources Board (CARB)]. Air basins are geographic areas sharing a common "air shed." A description of the Air Basin in the County, as designated by CARB, is provided in the paragraph below. Air pollution is directly related to the region's topographic features, which impact air movement within the Basin.

Wind patterns within the SJVAB result from marine air that generally flows into the Basin from the San Joaquin River Delta. The Coastal Range hinders wind access into the Valley from the west, the Tehachapi's prevent southerly passage of airflow, and the high Sierra Nevada Mountain Range provides a significant barrier to the east. These topographic features result in weak airflow that becomes restricted vertically by high barometric pressure over the Valley. As a result, the SJVAB is highly susceptible to pollutant accumulation over time. Most of the surrounding mountains are above the normal height of summer inversion layers (1,500-3,000 feet).

2.3 Climate Conditions

Madera County is located in one of the most polluted air basins in the country. Temperature inversions can trap air within the Valley, thereby preventing the vertical dispersal of air pollutants. In addition to topographic conditions, the local climate can also contribute to air quality problems. Climate in Madera County is classified as Mediterranean, with moist cool winters and dry warm summers.

Ozone, classified as a "regional" pollutant, often afflicts areas downwind of the original source of precursor emissions. Ozone can be easily transported by winds from a source area. Peak ozone levels tend to be higher in the southern portion of the Valley, as the prevailing summer winds sweep precursors downwind of northern source areas before concentrations peak. The separate designations reflect the fact that ozone precursor transport depends on daily meteorological conditions.

Other primary pollutants, carbon monoxide (CO), for example, may form high concentrations when wind speed is low. During the winter, Madera County experiences cold temperatures and calm conditions that increase the likelihood of a climate conducive to high CO concentrations.

Precipitation and fog tend to reduce or limit some pollutant concentrations. Ozone needs sunlight for its formation, and clouds and fog block the required radiation. CO is slightly water-soluble, so precipitation and fog tends to "reduce" CO concentrations in the atmosphere. PM10 is somewhat "washed" from the atmosphere with precipitation. Precipitation in the San Joaquin Valley is strongly influenced by the position of the semi-permanent subtropical high-pressure belt located off the Pacific coast. In the winter, this high- pressure system moves southward, allowing Pacific storms to move through the San Joaquin Valley. These storms bring in moist, maritime air that produces considerable precipitation on the western, upslope side of the Coast Ranges. Significant precipitation also occurs on the western side of the Sierra Nevada. On the valley floor, however, there is some down slope flow from the Coast Ranges and the resultant evaporation of moisture from associated warming results in a minimum of precipitation. Nevertheless, the majority of the precipitation falling in the San Joaquin Valley is produced by those storms during the winter. Precipitation during the summer months is in the form of convective rain showers and is rare. It is usually associated with an influx of moisture into the San Joaquin Valley through the San Francisco area during an anomalous flow pattern in the lower layers of the atmosphere. Although the hourly rates of precipitation from these storms may be high, their rarity keeps monthly totals low.

Precipitation on the San Joaquin Valley floor and in the Sierra Nevada decreases from north to south. Stockton in the north receives about 20 inches of precipitation per year, Fresno in the center, receives about 10 inches per year, and Bakersfield at the southern end of the valley receives less than 6 inches per year. This is primarily because the Pacific storm track often passes through the northern part of the state while the southern part of the state remains protected by the Pacific High. Precipitation in the San Joaquin Valley Air Basin (SJVAB) is confined primarily to the winter months with some also occurring in late summer and fall. Average annual rainfall for the entire San Joaquin Valley is approximately 5 to 16 inches. Snowstorms, hailstorms, and ice storms occur infrequently in the San Joaquin Valley and severe occurrences of any of these are very rare.

The winds and unstable air conditions experienced during the passage of storms result in periods of low pollutant concentrations and excellent visibility. Between winter storms, high pressure and light winds allow cold moist air to pool on the San Joaquin Valley floor. This creates strong low-level temperature inversions and very stable air conditions. This situation leads to the San Joaquin Valley's famous Tule Fogs. The formation of natural fog is caused by local cooling of the atmosphere until it is saturated (dew point temperature). This type of fog, known as radiation fog is more likely to occur inland. Cooling may also be accomplished by heat radiation losses or by horizontal movement of a mass of air over a colder surface. This second type of fog, known as advection fog, generally occurs along the coast.

Conditions favorable to fog formation are also conditions favorable to high concentrations of CO and PM10. Ozone levels are low during these periods because of the lack of sunlight to drive the photochemical reaction. Maximum CO concentrations tend to occur on clear, cold nights when a strong surface inversion is present and large numbers of fireplaces are in use. A secondary peak in CO concentrations occurs during morning commute hours when a large number of motorists are on the road and the surface inversion has not yet broken.

The water droplets in fog, however, can act as a sink for CO and nitrogen oxides (NOx), lowering pollutant concentrations. At the same time, fog could help in the formation of secondary particulates such as ammonium sulfate. These secondary particulates are believed to be a significant contributor of winter season violations of the PM10 and PM2.5 standards.

2.4 Anthropogenic (Man-made) Sources

In addition to climatic conditions (wind, lack of rain, etc.), air pollution can be caused by anthropogenic or man-made sources. Air pollution in the SJVAB can be directly attributed to human activities, which cause air pollutant emissions. Human causes of air pollution in the Valley consist of population growth, urbanization (gas-fired appliances, residential wood heaters, etc.), mobile sources (i.e., cars, trucks, airplanes, trains, etc.), oil production, agriculture, and other socioeconomic activities. The most significant factors, which are accelerating the decline of air quality in the SJVAB, are the Valley's rapid population growth and its associated increases in traffic, urbanization, and industrial activity.

Carbon monoxide emissions overwhelmingly come from mobile sources in the San Joaquin Valley; on-road vehicles contributed 34 percent, while other mobile vehicles, such as trains, planes, and off-road vehicles, contribute another 20 percent in 2012 according to emission projections from the CARB. Motor vehicles account for significant portions of regional gaseous and particulate emissions. Local large employers such as industrial plants can also generate substantial regional gaseous and particulate emissions. In addition, construction and agricultural activities can generate significant temporary gaseous and particulate emissions (dust, ash, smoke, etc.).

Ozone is the result of a photochemical reaction between Oxides of nitrogen (NOx) and Reactive Organic Gases (ROG). Mobile sources contribute 84 percent of all NOx emitted from anthropogenic sources based on data provided in Appendix B of the Air District's 2016 Ozone

Plan. In addition, mobile sources contribute 26 percent of all the ROG emitted from sources within the San Joaquin Valley.

The principal factors that affect air quality in and around Madera County are:

1. The sink effect, climatic subsidence and temperature inversions and low wind speeds
2. Automobile and truck travel
3. Increases in mobile and stationary pollutants generated by local urban growth

Automobiles, trucks, buses and other vehicles using hydrocarbon (HC) fuels release exhaust products into the air. Each vehicle by itself does not release large quantities; however, when considered as a group, the cumulative effect is significant.

Other sources may not seem to fit into any one of the major categories or they may seem to fit in a number of them. These could include agricultural uses, dirt roads, animal shelters; animal feed lots, chemical plants and industrial waste disposal, which may be a source of dust, odors, or other pollutants. For Madera County, this category includes several agriculturally related activities, such as plowing, harvesting, dusting with herbicides and pesticides and other related activities. Finally, industrial contaminants and their potential to produce various effects depend on the size and type of industry, pollution controls, local topography, and meteorological conditions. Major sources of industrial emissions in Madera County consist of agricultural production and processing operations, wine production, and marketing operations.

The primary contributors of PM10 emissions in the San Joaquin Valley are farming activities (22%) and road dust, both paved and unpaved (35%) in 2020 according to emission projections from the CARB. Fugitive windblown dust from "open" fields contributed 14 percent of the PM10.

The four major sources of air pollutant emissions in the SJVAB include industrial plants, motor vehicles, construction activities, and agricultural activities. Industrial plants account for significant portions of regional gaseous and particulate emissions. Motor vehicles, including those from large employers, generate substantial regional gaseous and particulate emissions. Finally, construction and agricultural activities can generate significant temporary gaseous and particulate emissions (dust, ash, smoke, etc.). In addition to these primary sources of air pollution, urban areas upwind from Madera County, including areas north and west of the San Joaquin Valley, can cause or generate emissions that are transported into Madera County. All four of the major pollutant sources affect ambient air quality throughout the Air Basin.

2.4.1 *Motor Vehicles*

Automobiles, trucks, buses and other vehicles using hydrocarbon fuels release exhaust products into the air. Each vehicle by itself does not release large quantities; however, when considered as a group, the cumulative effect is significant.

2.4.2 *Agricultural and Other Miscellaneous Activities*

Other sources may not seem to fit into any one of the major categories or they may seem to fit in a number of them. These could include agricultural uses, dirt roads, animal shelters, animal feed lots, chemical plants and industrial waste disposal, which may be a source of dust, odors, or other pollutants. For Madera County, this category includes several agriculturally related activities, such as plowing, harvesting, dusting with herbicides and pesticides and other related activities.

2.4.3 *Industrial Plants*

Industrial contaminants and their potential to produce various effects depend on the size and type of industry, pollution controls, local topography, and meteorological conditions. Major sources of industrial emissions in Madera County consist of agricultural production and processing operations, wine production, and marketing operations.

2.5 San Joaquin Valley Air Basin Monitoring

SJVAPCD and the CARB maintain numerous air quality monitoring sites throughout each County in the Air Basin to measure ozone, PM2.5, and PM10. It is important to note that the federal ozone 1-hour standard was revoked by the EPA and is no longer applicable for federal standards. The closest monitoring station to the Project is located at Madera's Avenue 14 and Pump Yard Monitoring Station. The station monitors particulates, ozone, carbon monoxide, and nitrogen dioxide. Monitoring data for the past three years is summarized in Table 2.

Table 3 identifies the Madera County's attainment status. As indicated, the SJVAB is nonattainment for Ozone (1 hour and 8 hour) and PM. In accordance with the FCAA, EPA uses the design value at the time of standard promulgation to assign nonattainment areas to one of several classes that reflect the severity of the nonattainment problem; classifications range from marginal nonattainment to extreme nonattainment. The FCAA contains provisions for changing the classifications using factors such as clean air progress rates and requests from States to move areas to a higher classification.

On April 16, 2004 EPA issued a final rule classifying the SJVAB as extreme nonattainment for Ozone, effective May 17, 2004 (69 FR 20550). The (federal) 1-hour ozone standard was revoked on June 6, 2005. However, many of the requirements in the 1-hour attainment plan (SIP) continue to apply to the SJVAB. The current ozone plan is the (federal) 8-hour ozone plan adopted in 2007. The SJVAB was reclassified from a "serious" nonattainment area for the 8-hour ozone standard to "extreme" effective June 4, 2010.

Table 2
Maximum Pollutant Levels at Madera's 28261 Avenue 14 and Pump Yard Monitoring Station

Pollutant	Time Averaging	2017 Maximums	2018 Maximums	2019 Maximums	Standards National	Standards State
Ozone (O_3)	1 hour	0.101 ppm	0.097 ppm	0.091 ppm	-	0.09 ppm
Ozone (O_3)	8 hour	0.092 ppm	0.082 ppm	0.082 ppm	0.070 ppm	0.070 ppm
Nitrogen Dioxide (NO_2)	1 hour	46.0 ppb	46.5 ppb	31.5 ppb	100 ppb	0.18 ppm
Nitrogen Dioxide (NO_2)	Annual Average	6.0 ppb	6.0 ppb	6.0 ppb	0.053 ppm	0.030 ppm
Particulates (PM_{10})	24 hour	149.5 $\mu g/m^3$	*	*	150 $\mu g/m^3$	50 $\mu g/m^3$
Particulates (PM_{10})	Federal Annual Arithmetic Mean	35.3 $\mu g/m^3$	*	*	-	20 $\mu g/m^3$
Particulates ($PM_{2.5}$)	24 hour	70.6 $\mu g/m^3$	81.7 $\mu g/m^3$	33.2 $\mu g/m^3$	35 $\mu g/m^3$	-
Particulates ($PM_{2.5}$)	Federal Annual Arithmetic Mean	12.4 $\mu g/m^3$	13.9 $\mu g/m^3$	*	12 $\mu g/m^3$	12 $\mu g/m^3$

Source: California Air Resources Board (ADAM) Air Pollution Sum

* Means there was insufficient data available to determine the value.

Table 3
Madera County Attainment Status

Pollutant	Designation/Classification	
	Federal Standards	State Standards
Ozone - 1 Hour	Revoked in 2005	Nonattainment/Severe
Ozone - 8 Hour	Nonattainment/Extreme [a]	No State Standard
PM10	Attainment	Nonattainment
PM2.5	Nonattainment	Nonattainment
Carbon Monoxide	Unclassified/Attainment	Unclassified
Nitrogen Dioxide	Unclassified/Attainment	Attainment
Sulfur Dioxide	Unclassified/Attainment	Attainment
Lead (Particulate)	Unclassified/Attainment	Attainment
Hydrogen Sulfide	No Federal Standard	Unclassified
Sulfates	No Federal Standard	Attainment
Visibility Reducing Particles	No Federal Standard	Unclassified

Source: ARB Website, 2021

a. Though the Valley was initially classified as serious nonattainment for the 1997 8-hour ozone standard, EPA approved Valley reclassification to extreme nonattainment in the Federal Register on May 5, 2010 (effective June 4, 2010).

Notes:

National Designation Categories

Non-Attainment Area: Any area that does not meet (or that contributes to ambient air quality in a nearby area that does not meet) the national primary or secondary ambient air quality standard for the pollutant.

Unclassified/Attainment Area: Any area that cannot be classified on the basis of available information as meeting or not meeting the national primary or secondary ambient air quality standard for the pollutant or meets the national primary or secondary ambient air quality standard for the pollutant.

State Designation Categories

Unclassified: A pollutant is designated unclassified if the data are incomplete and do not support a designation of attainment or non-attainment.

Attainment: A pollutant is designated attainment if the State standard for that pollutant was not violated at any site in the area during a three-year period.

Non-attainment: A pollutant is designated non-attainment if there was at least one violation of a State standard for that pollutant in the area.

Non-Attainment/Transitional: A subcategory of the non-attainment designation. An area is designated non-attainment/transitional to signify that the area is close to attaining the standard for the pollutant.

2.6 Air Quality Standards

The FCAA, first adopted in 1963, and periodically amended since then, established National Ambient Air Quality Standards (NAAQS). A set of 1977 amendments determined a deadline for the attainment of these standards. That deadline has since passed. Other CAA amendments, passed in 1990, share responsibility with the State in reducing emissions from mobile sources.

In 1988, the State of California passed the CCAA (State 1988 Statutes, Chapter 568), which set forth a program for achieving more stringent California Ambient Air Quality Standards. The CARB implements State ambient air quality standards, as required in the CCAA, and cooperates with the federal government in implementing pertinent sections of the FCAA Amendments (FCAAA). Further, CARB regulates vehicular emissions throughout the State. The SJVAPCD regulates stationary sources, as well as some mobile sources. Attainment of the more stringent State PM10 Air Quality Standards is not currently required.

The EPA uses six "criteria pollutants" as indicators of air quality and has established for each of them a maximum concentration above which adverse effects on human health may occur. These threshold concentrations are called the NAAQS.

The SJVAPCD operates regional air quality monitoring networks that provide information on average concentrations of pollutants for which State or federal agencies have established ambient air quality standards. Descriptions of nine pollutants of importance in Madera County follow.

2.6.1 *Ozone (1-hour and 8-hour)*

The most severe air quality problem in the Air Basin is the high level of ozone. Ozone occurs in two layers of the atmosphere. The layer surrounding the earth's surface is the troposphere. Here, ground level, or "bad" ozone, is an air pollutant that damages human health, vegetation, and many common materials. It is a key ingredient of urban smog. The troposphere extends to a level about 10 miles up, where it meets the second layer, the stratosphere. The stratospheric, or "good" ozone layer, extends upward from about 10 to 30 miles and protects life on earth from the sun's harmful ultraviolet rays.

"Bad" ozone is what is known as a photochemical pollutant. It needs reactive organic gases (ROG), NOx, and sunlight. ROG and NOx are emitted from various sources throughout Tulare County. In order to reduce ozone concentrations, it is necessary to control the emissions of these ozone precursors.

Significant ozone formation generally requires an adequate amount of precursors in the atmosphere and several hours in a stable atmosphere with strong sunlight. High ozone concentrations can form over large regions when emissions from motor vehicles and stationary sources are carried hundreds of miles from their origins.

Ozone is a regional air pollutant. It is generated over a large area and is transported and spread by wind. Ozone, the primary constituent of smog, is the most complex, difficult to control, and pervasive of the criteria pollutants. Unlike other pollutants, ozone is not emitted directly into the air by specific sources. Ozone is created by sunlight acting on other air pollutants (called precursors), specifically NOx and ROG. Sources of precursor gases to the photochemical reaction that form ozone number in the thousands. Common sources include consumer products, gasoline vapors, chemical solvents, and combustion products of various fuels. Originating from gas stations, motor vehicles, large industrial facilities, and small businesses such as bakeries and dry cleaners, the ozone-forming chemical reactions often take place in another location, catalyzed by sunlight and heat. High ozone concentrations can form over large regions when emissions from motor vehicles and stationary sources are carried hundreds of miles from their origins. Approximately 50 million people lived in counties with air quality levels above the EPA's health-based national air quality standard in 1994. The highest levels of ozone were recorded in Los Angeles, closely followed by the San Joaquin Valley. High levels also persist in other heavily populated areas, including the Texas Gulf Coast and much of the Northeast.

While the ozone in the upper atmosphere absorbs harmful ultraviolet light, ground-level ozone is damaging to the tissues of plants, animals, and humans, as well as to a wide variety of inanimate materials such as plastics, metals, fabrics, rubber, and paints. Societal costs from ozone damage include increased medical costs, the loss of human and animal life, accelerated replacement of industrial equipment, and reduced crop yields.

- ✓ ***Health Effects***

  While ozone in the upper atmosphere protects the earth from harmful ultraviolet radiation, high concentrations of ground-level ozone can adversely affect the human respiratory system. Many respiratory ailments, as well as cardiovascular disease, are aggravated by exposure to high ozone levels. Ozone also damages natural ecosystems, such as: forests and foothill communities; agricultural crops; and some man-made materials, such as rubber, paint, and plastic. High levels of ozone may negatively affect immune systems, making people more susceptible to respiratory illnesses, including bronchitis and pneumonia. Ozone accelerates aging and exacerbates pre-existing asthma and bronchitis and, in cases with high concentrations, can lead to the development of asthma in active children. Active people, both children and adults, appear to be more at risk from ozone exposure than those with a low level of activity. Additionally, the elderly and those with respiratory disease are also considered sensitive populations for ozone.

  People who work or play outdoors are at a greater risk for harmful health effects from ozone. Children and adolescents are also at greater risk because they are more likely than adults to spend time engaged in vigorous activities. Research indicates that children under 12 years of age spend nearly twice as much time outdoors daily than adults. Teenagers spend at least twice as much time as adults in active sports and outdoor activities. In addition, children inhale more air per pound of body weight than adults, and they breathe more rapidly than adults. Children are less likely than adults to notice their own symptoms and avoid harmful exposures.

Ozone is a powerful oxidant—it can be compared to household bleach, which can kill living cells (such as germs or human skin cells) upon contact. Ozone can damage the respiratory tract, causing inflammation and irritation, and it can induce symptoms such as coughing, chest tightness, shortness of breath, and worsening of asthmatic symptoms. Ozone in sufficient doses increases the permeability of lung cells, rendering them more susceptible to toxins and microorganisms. Exposure to levels of ozone above the current ambient air quality standard leads to lung inflammation and lung tissue damage and a reduction in the amount of air inhaled into the lungs.

The CARB found ozone standards in Madera County nonattainment of Federal and State standards.

2.6.2 *Suspended PM (PM10 and PM2.5)*

Particulate matter pollution consists of very small liquid and solid particles that remain suspended in the air for long periods. Some particles are large or concentrated enough to be seen as soot or smoke. Others are so small they can be detected only with an electron microscope. Particulate matter is a mixture of materials that can include smoke, soot, dust, salt, acids, and metals. Particulate matter is emitted from stationary and mobile sources, including diesel trucks and other motor vehicles; power plants; industrial processes; wood-burning stoves and fireplaces; wildfires; dust from roads, construction, landfills, and agriculture; and fugitive windblown dust. PM10 refers to particles less than or equal to 10 microns in aerodynamic diameter. PM2.5 refers to particles less than or equal to 2.5 microns in aerodynamic diameter and are a subset of PM10. Particulates of concern are those that are 10 microns or less in diameter. These are small enough to be inhaled, pass through the respiratory system and lodge in the lungs, possibly leading to adverse health effects.

In the western United States, there are sources of PM10 in both urban and rural areas. Because particles originate from a variety of sources, their chemical and physical compositions vary widely. The composition of PM10 and PM2.5 can also vary greatly with time, location, the sources of the material and meteorological conditions. Dust, sand, salt spray, metallic and mineral particles, pollen, smoke, mist, and acid fumes are the main components of PM10 and PM2.5. In addition to those listed previously, secondary particles can also be formed as precipitates from chemical and photochemical reactions of gaseous sulfur dioxide (SO_2) and NOx in the atmosphere to create sulfates (SO_4) and nitrates (NO_3). Secondary particles are of greatest concern during the winter months where low inversion layers tend to trap the precursors of secondary particulates.

The District's 2008 PM2.5 Plan built upon the aggressive emission reduction strategy adopted in the 2007 Ozone Plan and strives to bring the valley into attainment status for the 1997 NAAQS for PM2.5. The District's 2012 PM2.5 Plan provides multiple control strategies to reduce emissions of PM2.5 and other pollutants that form PM2.5. The plan's comprehensive control strategy includes regulatory actions, incentive programs, technology advancement, policy and legislative positions, public outreach, participation and communication, and additional strategies.

✓ ***Health Effects***

PM10 and PM2.5 particles are small enough—about one-seventh the thickness of a human hair, or smaller—to be inhaled and lodged in the deepest parts of the lung where they evade the respiratory system's natural defenses. Health problems begin as the body reacts to these foreign particles. Acute and chronic health effects associated with high particulate levels include the aggravation of chronic respiratory diseases, heart and lung disease, and coughing, bronchitis, and respiratory illnesses in children. Recent mortality studies have shown a statistically significant direct association between mortality and daily concentrations of particulate matter in the air. Non-health-related effects include reduced visibility and soiling of buildings. PM10 can increase the number and severity of asthma attacks, cause or aggravate bronchitis and other lung diseases, and reduce the body's ability to fight infections. PM10 and PM2.5 can aggravate respiratory disease and cause lung damage, cancer, and premature death.

Although particulate matter can cause health problems for everyone, certain people are especially vulnerable to adverse health effects of PM10. These "sensitive populations" include children, the elderly, exercising adults, and those suffering from chronic lung disease such as asthma or bronchitis. Of greatest concern are recent studies that link PM10 exposure to the premature death of people who already have heart and lung disease, especially the elderly. Acidic PM10 can also damage manmade materials and is a major cause of reduced visibility in many parts of the United States.

The CARB found PM10 standards in Madera County in attainment of Federal standards and nonattainment for State standards. The CARB found PM2.5 standards in Madera County nonattainment of Federal and State standards.

2.6.3 *Carbon Monoxide (CO)*

Carbon monoxide (CO) is emitted by mobile and stationary sources as a result of incomplete combustion of hydrocarbons or other carbon-based fuels. CO is an odorless, colorless, poisonous gas that is highly reactive. CO is a byproduct of motor vehicle exhaust, contributes more than two thirds of all CO emissions nationwide. In cities, automobile exhaust can cause as much as 95 percent of all CO emissions. These emissions can result in high concentrations of CO, particularly in local areas with heavy traffic congestion. Other sources of CO emissions include industrial processes and fuel combustion in sources such as boilers and incinerators. Despite an overall downward trend in concentrations and emissions of CO, some metropolitan areas still experience high levels of CO.

✓ ***Health Effects***

CO enters the bloodstream and binds more readily to hemoglobin than oxygen, reducing the oxygen-carrying capacity of blood and thus reducing oxygen delivery to organs and tissues. The health threat from CO is most serious for those who suffer from cardiovascular disease. Healthy individuals are also affected but only at higher levels of exposure. At high concentrations, CO can cause heart difficulties in people with chronic diseases and can impair mental abilities. Exposure to elevated CO levels is associated with visual impairment, reduced work capacity, reduced manual dexterity, poor learning ability, difficulty performing complex tasks, and in prolonged, enclosed exposure, death.

The adverse health effects associated with exposure to ambient and indoor concentrations of CO are related to the concentration of carboxyhemoglobin (COHb) in the blood. Health effects observed may include an early onset of cardiovascular disease; behavioral impairment; decreased exercise performance of young, healthy men; reduced birth weight; sudden infant death syndrome (SIDS); and increased daily mortality rate.

Most of the studies evaluating adverse health effects of CO on the central nervous system examine high-level poisoning. Such poisoning results in symptoms ranging from common flu and cold symptoms (shortness of breath on mild exertion, mild headaches, and nausea) to unconsciousness and death.

The CARB found CO standards in Madera County as unclassified/attainment of Federal standards and unclassified for State standards.

2.6.4 *Nitrogen Dioxide (NO2)*

Nitrogen oxides (NOx) is a family of highly reactive gases that are primary precursors to the formation of ground-level ozone and react in the atmosphere to form acid rain. NOx is emitted from combustion processes in which fuel is burned at high temperatures, principally from motor vehicle exhaust and stationary sources such as electric utilities and industrial boilers. A brownish gas, NOx is a strong oxidizing agent that reacts in the air to form corrosive nitric acid, as well as toxic organic nitrates. EPA regulates only nitrogen dioxide (NO2) as a surrogate for this family of compounds because it is the most prevalent form of NOx in the atmosphere that is generated by anthropogenic (human) activities.[1]

✓ ***Health Effects***

NOx is an ozone precursor that combines with Reactive Organic Gases (ROG) to form ozone.

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1 United States Environmental Protection Agency (EPA), Nitrogen Oxides (NOx). Why and How They Are Controlled, 456/F-99-006R, November 2019

See the ozone section above for a discussion of the health effects of ozone.

Direct inhalation of NOx can also cause a wide range of health effects. NOx can irritate the lungs, cause lung damage, and lower resistance to respiratory infections such as influenza. Short-term exposures (e.g., less than 3 hours) to low levels of nitrogen dioxide (NO2) may lead to changes in airway responsiveness and lung function in individuals with preexisting respiratory illnesses. These exposures may also increase respiratory illnesses in children. Long-term exposures to NO2 may lead to increased susceptibility to respiratory infection and may cause irreversible alterations in lung structure. Other health effects associated with NOx are an increase in the incidence of chronic bronchitis and lung irritation. Chronic exposure to NO2 may lead to eye and mucus membrane aggravation, along with pulmonary dysfunction. NOx can cause fading of textile dyes and additives, deterioration of cotton and nylon, and corrosion of metals due to production of particulate nitrates. Airborne NOx can also impair visibility. NOx is a major component of acid deposition in California. NOx may affect both terrestrial and aquatic ecosystems. NOx in the air is a potentially significant contributor to a number of environmental effects such as acid rain and eutrophication in coastal waters. Eutrophication occurs when a body of water suffers an increase in nutrients that reduce the amount of oxygen in the water, producing an environment that is destructive to fish and other animal life.

NO2 is toxic to various animals as well as to humans. Its toxicity relates to its ability to combine with water to form nitric acid in the eye, lung, mucus membranes, and skin. Studies of the health impacts of NO2 include experimental studies on animals, controlled laboratory studies on humans, and observational studies.

In animals, long-term exposure to NOx increases susceptibility to respiratory infections, lowering their resistance to such diseases as pneumonia and influenza. Laboratory studies show susceptible humans, such as asthmatics, exposed to high concentrations of NO2, can suffer lung irritation and, potentially, lung damage. Epidemiological studies have also shown associations between NO2 concentrations and daily mortality from respiratory and cardiovascular causes as well as hospital admissions for respiratory conditions.

NOx contributes to a wide range of environmental effects both directly and when combined with other precursors in acid rain and ozone. Increased nitrogen inputs to terrestrial and wetland systems can lead to changes in plant species composition and diversity. Similarly, direct nitrogen inputs to aquatic ecosystems such as those found in estuarine and coastal waters can lead to eutrophication as discussed above. Nitrogen, alone or in acid rain, also can acidify soils and surface waters. Acidification of soils causes the loss of essential plant nutrients and increased levels of soluble aluminum, which is toxic to plants. Acidification of surface waters creates conditions of low pH and levels of aluminum that are toxic to fish and other aquatic organisms.

The CARB found NO2 standards in Madera County as unclassified/attainment of Federal standards and attainment for State standards.

2.6.5 *Sulfur Dioxide (SO2)*

The major source of sulfur dioxide (SO2) is the combustion of high-sulfur fuels for electricity generation, petroleum refining and shipping. High concentrations of SO2 can result in temporary breathing impairment for asthmatic children and adults who are active outdoors. Short-term exposures of asthmatic individuals to elevated SO2 levels during moderate activity may result in breathing difficulties that can be accompanied by symptoms such as wheezing, chest tightness, or shortness of breath. Other effects that have been associated with longer-term exposures to high concentrations of SO2, in conjunction with high levels of PM, include aggravation of existing cardiovascular disease, respiratory illness, and alterations in the lungs' defenses. SO2 also is a major precursor to PM2.5, which is a significant health concern and a main contributor to poor visibility. In humid atmospheres, sulfur oxides can react with vapor to produce sulfuric acid, a component of acid rain.

The CARB found SO2 standards in the Madera County as unclassified for Federal standards and attainment for State standards.

2.6.6 *Lead (Pb)*

Lead, a naturally occurring metal, can be a constituent of air, water, and the biosphere. Lead is neither created nor destroyed in the environment, so it essentially persists forever. Lead was used until recently to increase the octane rating in automobile fuel. Since the 1980s, lead has been phased out in gasoline, reduced in drinking water, reduced in industrial air pollution, and banned or limited in consumer products. Gasoline-powered automobile engines were a major source of airborne lead through the use of leaded fuels; however, the use of leaded fuel has been mostly phased out. Since this has occurred the ambient concentrations of lead have dropped dramatically.

Exposure to lead occurs mainly through inhalation of air and ingestion of lead in food, water, soil, or dust. It accumulates in the blood, bones, and soft tissues and can adversely affect the kidneys, liver, nervous system, and other organs. Excessive exposure to lead may cause neurological impairments such as seizures, mental retardation, and behavioral disorders. Even at low doses, lead exposure is associated with damage to the nervous systems of fetuses and young children. Effects on the nervous systems of children are one of the primary health risk concerns from lead. In high concentrations, children can even suffer irreversible brain damage and death. Children 6 years old and under are most at risk, because their bodies are growing quickly.

The CARB found Lead standards in Madera County as unclassified/attainment of Federal standards and attainment for State standards.

2.6.7 *Toxic Air Contaminants (TAC)*

In addition to the criteria pollutants discussed above, Toxic Air Contaminants (TAC) are another group of pollutants of concern. TAC are injurious in small quantities and are regulated despite the absence of criteria documents. The identification, regulation and monitoring of TAC is relatively recent compared to that for criteria pollutants. Unlike criteria pollutants, TAC are regulated on the basis of risk rather than specification of safe levels of contamination. The ten TAC are acetaldehyde, benzene, 1,3-butadiene, carbon tetrachloride, hexavalent chromium, para-dichlorobenzene, formaldehyde, methylene chloride, perchloroethylene, and diesel particulate matter (diesel PM). Caltrans' guidance for transportation studies references the Federal Highway Administration (FHWA) memorandum titled "Interim Guidance on Air Toxic Analysis in NEPA Documents" which discusses emissions quantification of six "priority" compounds of 21 Mobile Source Air Toxics (MSAT) identified by the United States Environmental Protection Agency (USEPA). The six "priority" compounds are diesel exhaust (particulate matter and organic gases), benzene, 1,3-butadiene, acetaldehyde, formaldehyde, and acrolein.

Some studies indicate that diesel PM poses the greatest health risk among the TAC listed above. A 10-year research program (California Air Resources Board 1998) demonstrated that diesel PM from diesel-fueled engines is a human carcinogen and that chronic (long-term) inhalation exposure to diesel PM poses a chronic health risk. In addition to increasing the risk of lung cancer, exposure to diesel exhaust can have other health effects. Diesel exhaust can irritate the eyes, nose, throat, and lungs, and it can cause coughs, headaches, lightheadedness, and nausea. Diesel exhaust is a major source of fine particulate pollution as well, and studies have linked elevated particle levels in the air to increased hospital admissions, emergency room visits, asthma attacks, and premature deaths among those suffering from respiratory problems.

Diesel PM differs from other TAC in that it is not a single substance but a complex mixture of hundreds of substances. Although diesel PM is emitted by diesel-fueled, internal combustion engines, the composition of the emissions varies, depending on engine type, operating conditions, fuel composition, lubricating oil, and whether an emission control system is present. Unlike the other TAC, however, no ambient monitoring data are available for diesel PM because no routine measurement method currently exists. The CARB has made preliminary concentration estimates based on a diesel PM exposure method. This method uses the CARB emissions inventory's PM10 database, ambient PM10 monitoring data, and the results from several studies to estimate concentrations of diesel PM. Table 4 depicts the CARB Handbook's recommended buffer distances associated with various types of common sources.

Existing air quality concerns within Madera County and the entire SJVAB are related to increases of regional criteria air pollutants (e.g., ozone and particulate matter), exposure to toxic air contaminants, odors, and increases in greenhouse gas emissions contributing to climate change. The primary source of ozone (smog) pollution is motor vehicles. Particulate matter is caused by dust, primarily dust generated from construction and grading activities, and smoke which is emitted from fireplaces, wood-burning stoves, and agricultural burning.

TABLE 4
Recommendations on Siting New Sensitive Land Uses Such As Residences, Schools, Daycare Centers, Playgrounds, or Medical Facilities*

SOURCE CATEGORY	ADVISORY RECOMMENDATIONS
Freeways and High-Traffic Roads [1]	- Avoid siting new sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles/day.
Distribution Centers	- Avoid siting new sensitive land uses within 1,000 feet of a distribution center (that accommodates more than 100 trucks per day, more than 40 trucks with operating transport refrigeration units (TRUs) per day, or where TRU unit operations exceed 300 hours per week). - Take into account the configuration of existing distribution centers and avoid locating residences and other new sensitive land uses near entry and exit points.
Rail Yards	- Avoid siting new sensitive land uses within 1,000 feet of a major service and maintenance rail yard. - Within one mile of a rail yard, consider possible siting limitations and mitigation approaches.
Ports	- Avoid siting of new sensitive land uses immediately downwind of ports in the most heavily impacted zones. Consult local air districts or the ARB on the status of pending analyses of health risks.
Refineries	- Avoid siting new sensitive land uses immediately downwind of petroleum refineries. Consult with local air districts and other local agencies to determine an appropriate separation.
Chrome Platers	- Avoid siting new sensitive land uses within 1,000 feet of a chrome plater.
Dry Cleaners Using Perchloroethylene	- Avoid siting new sensitive land uses within 300 feet of any dry cleaning operation. For operations with two or more machines, provide 500 feet. For operations with 3 or more machines, consult with the local air district. - Do not site new sensitive land uses in the same building with perchloroethylene dry cleaning operations.
Gasoline Dispensing Facilities	- Avoid siting new sensitive land uses within 300 feet of a large gas station (defined as a facility with a throughput of 3.6 million gallons per year or greater). A 50 foot separation is recommended for typical gas dispensing facilities.

1: The recommendation to avoid siting new sensitive land uses within 500 feet of a freeway was identified in CARB's Air Quality and Land Use Handbook published in 2005. CARB recently published a technical advisory to the Air Quality and Land Use Handbook indicating that new research has demonstrated promising strategies to reduce pollution exposure along transportation corridors.

*Notes:
- These recommendations are advisory. Land use agencies have to balance other considerations, including housing and transportation needs, economic development priorities, and other quality of life issues.
- Recommendations are based primarily on data showing that the air pollution exposures addressed here (i.e., localized) can be reduced as much as 80% with the recommended separation.
- The relative risk for these categories varies greatly (see Table 1-2). To determine the actual risk near a particular facility, a site-specific analysis would be required. Risk from diesel PM will decrease over time as cleaner technology phases in.
- These recommendations are designed to fill a gap where information about existing facilities may not be readily available and are not designed to substitute for more specific information if it exists. The recommended distances take into account other factors in addition to available health risk data (see individual category descriptions).
- Site-specific project design improvements may help reduce air pollution exposures and should also be considered when siting new sensitive land uses.
- This table does not imply that mixed residential and commercial development in general is incompatible. Rather it focuses on known problems like dry cleaners using perchloroethylene that can be addressed with reasonable preventative actions.
- A summary of the basis for the distance recommendations can be found in the ARB Handbook: Air Quality and Land Use Handbook: A Community Health Perspective.

Source: SJVAPCD 2021

2.6.8 *Odors*

Typically, odors are regarded as an annoyance rather than a health hazard. However, manifestations of a person's reaction to foul odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache).

With respect to odors, the human nose is the sole sensing device. The ability to detect odors varies considerably among the population and overall is quite subjective. Some individuals have the ability to smell minute quantities of specific substances; others may not have the same sensitivity but may have sensitivities to odors of other substances. In addition, people may have different reactions to the same odor; in fact, an odor that is offensive to one person (e.g., from a fast-food restaurant) may be perfectly acceptable to another. It is also important to note that an unfamiliar odor is more easily detected and is more likely to cause complaints than a familiar one. This is because of the phenomenon known as odor fatigue, in which a person can become desensitized to almost any odor and recognition only occurs with an alteration in the intensity.

Quality and intensity are two properties present in any odor. The quality of an odor indicates the nature of the smell experience. For instance, if a person describes an odor as flowery or sweet, then the person is describing the quality of the odor. Intensity refers to the strength of the odor. For example, a person may use the word "strong" to describe the intensity of an odor. Odor intensity depends on the odorant concentration in the air.

When an odorous sample is progressively diluted, the odorant concentration decreases. As this occurs, the odor intensity weakens and eventually becomes so low that the detection or recognition of the odor is quite difficult. At some point during dilution, the concentration of the odorant reaches a detection threshold. An odorant concentration below the detection threshold means that the concentration in the air is not detectable by the average human.

The intensity of an odor source's operations and its proximity to sensitive receptors influences the potential significance of odor emissions. The SJVAPCD has identified some common types of facilities that have been known to produce odors in the SJVAB. The types of facilities that are known to produce odors are shown in Table 5 along with a reasonable distance from the source within which, the degree of odors could possibly be significant. The Project does not propose any uses that would be potential odor sources; however, the information presented in Table 5 will be used as a screening level analysis to determine if the Project would be impacted by existing odor sources in the study area. Such information is presented for informational purposes, but it is noted that the environment's effect on the Project, including exposure to potential odors, would not be an impact for CEQA purposes.

TABLE 5
Screening Levels for Potential Odor Sources

Type of Facility	Distance
Wastewater Treatment Facilities	2 miles
Sanitary Landfill	1 mile
Transfer Station	1 mile
Compositing Facility	1 mile
Petroleum Refinery	2 miles
Asphalt Batch Plant	1 mile
Chemical Manufacturing	1 mile
Fiberglass Manufacturing	1 mile
Painting/Coating Operations (e.g. auto body shops)	1 mile
Food Processing Facility	1 mile
Feed Lot/Dairy	1 mile
Rendering Plant	1 mile

Source: SJVAPCD 2021

2.6.9 *Naturally Occurring Asbestos (NOA)*

Asbestos is a term used for several types of naturally-occurring fibrous minerals found in many parts of California. The most common type of asbestos is chrysotile, but other types are also found in California. Asbestos is commonly found in ultramafic rock and near fault zones. The amount of asbestos that is typically present in these rocks ranges from less than 1% up to approximately 25% and sometimes more. It is released from ultramafic rock when it is broken or crushed. This can happen when cars drive over unpaved roads or driveways, which are surfaced with these rocks, when land is graded for building purposes, or at quarrying operations. Asbestos is also released naturally through weathering and erosion. Once released from the rock, asbestos can become airborne and may stay in the air for long periods of time. Asbestos is hazardous and can cause lung disease and cancer dependent upon the level of exposure. The longer a person is exposed to asbestos and the greater the intensity of the exposure, the greater the chances for a health problem.

The proposed Project's construction phase may cause asbestos to become airborne due to the construction activities that will occur on site. The Project would be required to submit a Dust Control Plan under the SJVAPCD's Rule 8021.

2.6.10 *Greenhouse Gas Emissions*

Gases that trap heat in the atmosphere are often called greenhouse gases. Some greenhouse gases such as carbon dioxide occur naturally and are emitted to the atmosphere through natural processes and human activities. Other greenhouse gases (e.g., fluorinated gases) are created and emitted solely through human activities. The principal greenhouse gases that enter the atmosphere because of human activities are:

- **Carbon Dioxide (CO_2):** Carbon dioxide enters the atmosphere through the burning of fossil fuels (oil, natural gas, and coal), solid waste, trees and wood products, and also as a result of other chemical reactions (e.g., manufacture of cement, asphalt paving, truck trips). Carbon dioxide is also removed from the atmosphere (or "sequestered") when it is absorbed by plants as part of the biological carbon cycle.
- **Methane (CH_4):** Methane is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock and other agricultural practices and by the decay of organic waste in municipal solid waste landfills.
- **Nitrous Oxide (N_2O):** Nitrous oxide is emitted during agricultural and industrial activities, as well as during combustion of fossil fuels and solid waste.
- **Fluorinated Gases:** Hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride are synthetic, powerful greenhouse gases that are emitted from a variety of industrial processes. Fluorinated gases are sometimes used as substitutes for ozone-depleting substances (i.e., CFCs, HCFCs, and halons). These gases are typically emitted in smaller quantities, but because they are potent greenhouse gases, they are sometimes referred to as High Global Warming Potential gases ("High GWP gases").

3.0 Air-Quality Impacts

3.1 Methodology

The impact assessment for air quality focuses on potential effects the Project might have on air quality within the Madera County region. The SJVAPCD has established thresholds of significance for determining environmental significance. These thresholds separate a project's short-term emissions from its long-term emissions. The short-term emissions are mainly related to the construction phase of a project, which are recognized to be short in duration. The long-term emissions are primarily related to the activities that will occur indefinitely as a result of Project operations. Impacts will be evaluated both on the basis of CEQA Appendix G criteria and SJVAPCD significance criteria. The impacts to be evaluated will be those involving construction and operational emissions of criteria pollutants. The SJVAPCD has established thresholds for certain pollutants shown in Table 6.

Table 6
SJVAPCD Air Quality Thresholds of Significance

Project Type	Ozone Precursor Emissions (tons/year)					
	CO	NO_X	ROG	SO_X	PM_{10}	$PM_{2.5}$
Construction Emissions	100	10	10	27	15	15
Operational Emissions (Permitted Equipment and Activities)	100	10	10	27	15	15
Operational Emissions (Non-Permitted Equipment and Activities)	100	10	10	27	15	15

Source: SJVAPCD 2021

3.1.1 *CalEEMod*

CalEEMod is a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and greenhouse gas (GHG) emissions associated with both construction and operations from a variety of land use projects. The model quantifies direct emissions from construction and operations (including vehicle use), as well as indirect emissions, such as GHG emissions from energy use, solid waste disposal, vegetation planting and/or removal, and water use.

The model is an accurate and comprehensive tool for quantifying air quality impacts from land use projects throughout California. The model can be used for a variety of situations where an air quality analysis is necessary or desirable such as CEQA and NEPA documents, pre-project planning, compliance with local air quality rules and regulations, etc.

3.2 Short-Term Impacts

Short-term impacts are mainly related to the construction phase of a project and are recognized to be short in duration. Construction air quality impacts are generally attributable to dust and exhaust pollutants generated by equipment and vehicles. Fugitive dust is emitted both during construction activity and as a result of wind erosion over exposed earth surfaces. Clearing and earth moving activities do comprise major sources of construction dust emissions, but traffic and general disturbances of soil surfaces also generate significant dust emissions. Further, dust generation is dependent on soil type and soil moisture. Exhaust pollutants are the non-useable gaseous waste products produced during the combustion process. Engine exhaust contains CO, HC, and NOx pollutants which are harmful to the environment.

Adverse effects of construction activities cause increased dust-fall and locally elevated levels of total suspended particulate. Dust-fall can be a nuisance to neighboring properties or previously completed developments surrounding or within the Project area and may require frequent washing during the construction period.

PM10 emissions can result from construction activities of the Project. The SJVAPCD has determined that compliance with Regulation VIII and other control measures will constitute sufficient mitigation to reduce PM10 impacts to a level considered less-than significant for most development projects. Even with implementation of District Regulation VIII and District Rule 9510, large development projects may not be able to reduce project specific construction impacts below District thresholds of significance.

Ozone precursor emissions are also an impact of construction activities and can be quantified through calculations. Numerous variables factored into estimating total construction emission include: level of activity, length of construction period, number of pieces and types of equipment in use, site characteristics, weather conditions, number of construction personnel, and amount of materials to be transported onsite or offsite. Additional exhaust emissions would be associated with the transport of workers and materials. Because the specific mix of construction equipment is not presently known for this Project, construction emissions were estimated using CalEEMod Model defaults for construction equipment.

Table 7 shows the CalEEMod estimated construction emissions that would be generated from construction of the Project. Results of the analysis show that emissions generated from construction of the Project will not exceed the SJVAPCD emission thresholds.

Table 7
Project Construction Emissions (tons/year)

Summary Report	CO	NO_X	ROG	SO_X	PM_{10}	$PM_{2.5}$	CO2e
Project Construction Emissions	8.46	8.61	3.30	0.02	1.18	0.71	1437.60
SJVAPCD Level of Significance	100	10	10	27	15	15	None
Does the Project Exceed Standard?	No	No	No	No	No	No	No

Source: CalEEMod

3.3 Long-Term Emissions

Long-Term emissions from the Project would be generated primarily by mobile source (vehicle) emissions from the Project site and area sources such as lawn maintenance equipment.

3.3.1 *Localized Operational Emissions – Ozone/Particulate Matter*

Significance criteria have been established for criteria pollutant emissions as documented in Section 3.1. Operational emissions have been estimated for the Project using the CalEEMod Model and detailed results are included in Appendix A of this report.

Results of the CalEEMod analysis are shown in Table 8. Results indicate that the annual operational emissions from the Project will be less than the SJVAPCD emission thresholds for criteria pollutants.

Table 8
Project Operational Emissions (tons/year)

Summary Report	CO	NO_X	ROG	SO_X	PM_{10}	$PM_{2.5}$	CO2e
Project Opeational Emissions	10.36	3.66	2.23	0.04	2.28	1.24	2839.82
SJVAPCD Level of Significance	100	10	10	27	15	15	None
Does the Project Exceed Standard?	No	No	No	No	No	No	No

Source: CalEEMod

3.3.2 *Localized Operational Emissions*

✓ **Carbon Monoxide**

The SJVAPCD is currently in unclassified/attainment for Federal standards and attainment for State standards for CO. An analysis of localized CO concentrations is typically warranted to ensure that standards are maintained. As noted above, the maximum amount of commercial space for the Rancho Calera Specific Plan was reduced by 186,595 square feet and the Park/Open space was reduced by 11.4 acres while the total acreage dedicated to Public Facilities and Street Dedication increased by 6.8 and 9.2 acres, respectively. The traffic analysis prepared for the Project demonstrates that the reduction of commercial space and increase in park space will result in 2,630 fewer daily trips. The overall CO concentrations at roadways and intersections in the study area would be reduced or less than the approved Rancho Calera Specific Plan since the proposed land use changes would result in fewer trips.

✓ **Toxic Air Contaminants (TAC)**

The SJVAPCD's Guidance Document, Guidance for Assessing and Mitigating Air Quality Impacts – 2015, identifies the need for projects to analyze the potential for adverse air quality impacts to sensitive receptors. Sensitive receptors refer to those segments of the population most susceptible to poor air quality (i.e., children, the elderly, and those with pre-existing serious health problems affected by air quality). Land uses that have the greatest potential to attract these types of sensitive receptors include schools, parks, playgrounds, daycare centers, nursing homes, hospitals, and residential communities. From a health risk perspective, the Project is a Type B project in that it may potentially place sensitive receptors in the vicinity of existing sources.

The SJVAPCD's current thresholds of significance for TAC emissions from the operations of both permitted and non-permitted sources are presented below:

- Carcinogens: Maximally Exposed Individual risk equals or exceeds 10 in one million
- Chronic: Hazard Index equals or exceeds 1 for the Maximally Exposed Individual
- Acute: Hazard Index equals or exceeds 1 for the Maximally Exposed Individual

Carcinogenic (cancer) risk is expressed as cancer cases per one million. Noncarcinogenic (acute and chronic) hazard indices (HI) are expressed as a ratio of expected exposure levels to acceptable exposure levels.

These metrics are generally applied to the maximally exposed individual (MEI). There are separate MEIs for residential exposure (i.e., residential areas) and for worker exposure (i.e., off-site workplaces). Residential exposure is for a worst-case exposure duration of 24 hours a day, 350 days a year for 70 years. For off-site workplaces, the exposure is 8 hours a day, 245 days a year for 40 years.

Although the effects of the environment, including existing air quality conditions, on the Project are not impacts for CEQA purposes, the following analysis is presented for informational purposes and to demonstrate compliance with SJCAPCD guidance. The first step in evaluating the potential for impacts to sensitive receptors for TACs from the Project is to perform a screening level analysis. For Type B projects, one type of screening tool is found in the CARB Handbook: Air Quality and Land Use Handbook: A Community Perspective. This handbook includes a table (depicted in Table 4) with recommended buffer distances associated with various types of common sources. The screening level analysis for the Project shows that TACs are not a concern based upon the recommendations provided in Table 4. An evaluation of nearby land uses considering CARB's Pollution Mapping Tool shows that the Project will not place sensitive receptors in the vicinity of existing toxic sources. Table 4 indicates that new sensitive land uses should not be sited within 500 feet of a freeway/urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles/day. The Project is located more than 2,500 feet from the SR 99 freeway. Therefore, TAC's from sources in the study area will not significantly impact the Project. In addition, the Project will not generate TAC's that would have a significant impact on the environment or adjacent sensitive receptors.

✓ **Odors**

Typically, odors are regarded as an annoyance rather than a health hazard. However, manifestations of a person's reaction to foul odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache).

Quality and intensity are two properties present in any odor. The quality of an odor indicates the nature of the smell experience. For instance, if a person describes an odor as flowery or sweet, then the person is describing the quality of the odor. Intensity refers to the strength of the odor. For example, a person may use the word "strong" to describe the intensity of an odor. Odor intensity depends on the odorant concentration in the air.

When an odorous sample is progressively diluted, the odorant concentration decreases. As this occurs, the odor intensity weakens and eventually becomes so low that the detection or recognition of the odor is quite difficult. At some point during dilution, the concentration of the odorant reaches a detection threshold. An odorant concentration below the detection threshold means that the concentration in the air is not detectable by the average human.

While offensive odors rarely cause any physical harm, they can be very unpleasant, leading to considerable distress among the public and often generating citizen complaints to local governments and the SJVAPCD. Any project with the potential to frequently expose members of the public to objectionable odors should be deemed to have a significant impact. Because the project is a residential development, it is not expected to generate significant odors.

The SJVAPCD requires that an analysis of potential odor impacts be conducted for the following two situations:

- Generators – projects that would potentially generate odorous emissions proposed to be located near existing sensitive receptors or other land uses where people may congregate, and
- Receivers – residential or other sensitive receptor projects or other projects built for the intent of attracting people locating near existing odor sources.

The Project will not generate odorous emissions given the nature or characteristics of residential developments. The intensity of an odor source's operations and its proximity to sensitive receptors influences the potential significance of odor emissions. The SJVAPCD has identified some common types of facilities that have been known to produce odors in the SJV Air Basin. The types of facilities that are known to produce odors are shown in Table 5 above along with a reasonable distance from the source within which, the degree of odors could possibly be significant. None of the facilities shown in Table 5 are located within two (2) miles of the Project.

✓ **Naturally Occurring Asbestos (NOA)**

Asbestos is a term used for several types of naturally occurring fibrous minerals found in many parts of California. The most common type of asbestos is chrysotile, but other types are also found in California. Construction of the Project may cause asbestos to become airborne due to the construction activities that will occur on site. The Project would be required to submit a Dust Control Plan under the SJVAPCD's Rule 8021. Compliance with Rule 8021 would limit fugitive dust emissions from construction, demolition, excavation, extraction, and other earthmoving activities associated with the Project.

✓ **Greenhouse Gas Emissions**

CARB, in consultation with MPOs, has provided each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in the region for the years 2020 and 2035. For the Madera County Transportation Commission (MCTC) region, CARB set targets at five (5) percent per capita decrease in 2020 and a ten (10) percent per capita decrease in 2035 from a base year of 2005. MCTC's 2018 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS), which was adopted in July 2018, projects that the Madera County region would achieve the prescribed emissions targets.

In 2009, the SJVAPCD adopted the following guidance documents applicable to projects within the San Joaquin Valley:

- ✓ Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA (SJVAPCD 2009), and
- ✓ District Policy: Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency (SJVAPCD 2009).

This guidance and policy are the reference documents referenced in the SJVAPCD's Guidance for Assessing and Mitigating Air Quality Impacts adopted in March 2015 (SJVAPCD 2015). Consistent with the District Guidance and District Policy above, SJVAPCD (2015) acknowledges the current absence of numerical thresholds, and recommends a tiered approach to establish the significance of the GHG impacts on the environment:

i. If a project complies with an approved GHG emission reduction plan or GHG mitigation program which avoids or substantially reduces GHG emissions within the geographic area in which the project is located, then the project would be determined to have a less than significant individual and cumulative impact for GHG emissions;
ii. If a project does not comply with an approved GHG emission reduction plan or mitigation program, then it would be required to implement Best Performance Standards (BPS); and
iii. If a project is not implementing BPS, then it should demonstrate that its GHG emissions

would be reduced or mitigated by at least 29 percent compared to Business as Usual (BAU).

In the event that a local air district's guidance for addressing GHG impacts does not use numerical GHG emissions thresholds, at the lead agency's discretion, a neighboring air district's GHG threshold may be used to determine impacts. In December 2008, the South Coast Air Quality Management District (SCAQMD) Governing Board adopted the staff proposal for an interim GHG significance threshold for projects where the SCAQMD is lead agency. The SCAQMD guidance identifies a threshold of 10,000 MTCO2eq./year for GHG for construction emissions amortized over a 30-year project lifetime, plus annual operation emissions. This threshold is often used by agencies, such as the California Public Utilities Commission, to evaluate GHG impacts in areas that do not have specific thresholds (CPUC 2015)[2]. Though the Project is under SJVAPCD jurisdiction, the SCAQMD GHG threshold provides some perspective on the GHG emissions generated by the Project. Table 9 shows the yearly GHG emissions generated by the Project as determined by the CalEEMod model, which is approximately 71% less than the threshold identified by the SCAQMD.

Table 9
Project Operational Greenhouse Gas Emissions

Summary Report	CO_2e
Project Operational Emissions Per Year	2888 MT/yr

Source: CalEEMod

3.3.3 *Indirect Source Review*

The Project is subject to the SJVAPCD's ISR program, which is also known as Rule 9510. Rule 9510 and the Administrative ISR Fee Rule (Rule 3180) are the result of state requirements outlined in the California Health and Safety Code, Section 40604 and the State Implementation Plan (SIP). The purpose of the SJVAPCD's ISR program is to reduce emissions of NOx and PM10 from new projects. In general, new development contributes to the air-pollution problem in the Valley by increasing the number of vehicles and vehicle miles traveled.

Utilizing the ISR Fee Estimator calculator available on the SJVAPCD website, it was determined that the Project's total cost for emission reductions is $217,651.20 without implementation of emission reduction measures. The ISR Fee Estimator worksheets are included in Appendix B. The fee noted above may be reduced dependent upon the formal ISR review process.

2 California Public Utilities Commission (CPUC). 2015. Section 4.7, "Greenhouse Gases." Final Environmental Impact Report for the Santa Barbara County Reliability Project. May 2015. Accessed January 18, 2018. http://www.cpuc.ca.gov/environment/info/ene/sbcrp/SBCRP_FEIR.html.

3.4 Evaluation of Air Emissions Associated with Specific Plan Amendments

As noted previously, the property owner and applicant has requested amendments to the approved Rancho Calera Specific Plan. The maximum number of residential units which could be constructed within the project area remains 2,042 dwelling units, but the maximum commercial space was reduced by 186,595 square feet and the total acreage dedicated to parks/open space decreased by 11.4 acres. Additionally, the public facilities land use designation and total street dedication has been increased by 6.8 and 9.2 acres, respectively.

The analysis below provides a comparison of air emissions associated with the decrease in commercial and Park/Open Space versus the increase in Public Facilities and Street Dedication. The CalEEMod program was used to estimate emissions associated with the Commercial, Park/Open Space, and Public Facilities uses while the Sacramento Metropolitan Air Quality Management District Road Construction emissions model was used to estimate emissions associated with the increase in Street Dedication.

To estimate emissions associated with the amendments to the approved Rancho Calera Specific Plan, the following assumptions were made:

- ✓ Strip Mall Land Use in CalEEMod was used for Commercial – Decrease of 186,595 square feet
- ✓ City Park Land Use in CalEEMod was used for Park/Open Space – Decrease of 11.4 acres
- ✓ Government Office Building (100,000 sq.ft.) and Elementary School (500 students) Land Uses in CalEEMod were used for Public Facilities – Increase in 6.8 acres
- ✓ 1.5 Mile New Road Construction in the Road Construction Emissions Model was used for Street Dedication – Increase of 9.2 acres

Estimated air emissions associated with the change in land use intensities is shown in Tables 10 and 11 below. Results of the analysis indicate that total emissions from the increase in Public Facilities and Street Dedication will be less than the emissions associated with the Commercial and Park/Open Space uses. The overall emissions in the study area would be reduced or less than the approved Rancho Calera Specific Plan since the proposed land use changes would result in fewer emissions.

Table 10
Comparison of Construction Emissions

Summary Report	CO	NO_X	ROG	SO_X	PM_{10}	$PM_{2.5}$	CO2e
Commercial and Park/Open Space Construction Emissions	11.14	11.90	14.38	0.03	2.03	0.94	2849.96
Public Facilities and Street Dedication Construction Emissions	7.04	8.38	1.82	0.02	1.73	0.69	1262.54

Source: CalEEMod / Sacramento Metropolitan Air Quality Management District Road Construction Emissions Model

Table 11
Comparison of Operational Emissions

Summary Report	CO	NO_X	ROG	SO_X	PM_{10}	$PM_{2.5}$	CO2e
Commercial and Park/Open Space Operational Emissions	15.58	16.18	5.00	0.07	4.53	1.25	7608.81
Public Facilities and Street Dedication Operational Emissions	12.01	11.80	2.01	0.06	3.63	1.00	5994.93

Source: CalEEMod

4.0 Impact Determinations and Recommended Mitigation

In accordance with CEQA, when a proposed project is consistent with a General Plan for which an EIR has been certified, the effects of that project are evaluated to determine if they will result in project-specific significant adverse impacts on the environment. Accordingly, this analysis identifies any potential environmental effects that are peculiar to the Project or its site that differ from those impacts already analyzed and disclosed in the City's General Plan EIR. The criteria used to determine the significance of an air quality or greenhouse gas impact are based on the following thresholds of significance, which come from Appendix G of the CEQA Guidelines and the General Plan EIR. Accordingly, air quality or greenhouse gas impacts resulting from the Project are considered significant if the Project would:

Air Quality

a) Conflict with or obstruct implementation of the applicable air quality plan?
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?
c) Expose sensitive receptors to substantial pollutant concentrations?
d) Result in other emissions such as those leading to odors adversely affecting a substantial number of people?

Greenhouse Gas Emissions

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

4.1 Air Quality

4.1.1 *Conflict with or obstruct implementation of the applicable air quality plan*

The primary way of determining consistency with the air quality plan's (AQP's) assumptions is determining consistency with the applicable General Plan to ensure that the Project's population density and land use are consistent with the growth assumptions used in the AQPs for the air basin.

As required by California law, city and county General Plans contain a Land Use Element that details the types and quantities of land uses that the city or county estimates will be needed for future growth, and that designate locations for land uses to regulate growth. MCTC uses the growth projections and land use information in adopted general plans to estimate future average daily trips and then VMT, which are then provided to SJVAPCD to estimate future emissions in the AQPs. Existing and future pollutant emissions computed in the AQP are based on land uses from area general plans. AQPs detail the control measures and emission reductions required for reaching attainment of the air standards.

The applicable General Plan for the project is the City of Chowchilla 2040 General Plan, which was adopted in 2011. The Rancho Calera Specific Plan was originally adopted by the City in May 2011 and assessed as a component of the 2040 General Plan EIR. The Project is consistent with the currently adopted General Plan for the City of Chowchilla and is therefore consistent with the population growth and VMT applied in the plan. Therefore, the Project is consistent with the growth assumptions used in the applicable AQPs. As a result, the Project will not conflict with or obstruct implementation of any air quality plans. Therefore, no mitigation is needed.

4.1.2 *Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard*

The Madera County area is nonattainment for Federal and State air quality standards for ozone, in attainment of Federal standards and nonattainment for State standards for PM10, and nonattainment for Federal and State standards for PM2.5. The SJVAPCD has prepared the 2016 and 2013 Ozone Plans, 2007 PM10 Maintenance Plan, and 2012 PM2.5 Plan to achieve Federal and State standards for improved air quality in the SJVAB regarding ozone and PM. Inconsistency with any of the plans would be considered a cumulatively adverse air quality impact. As discussed in Section 4.1.1, the Project is consistent with the currently adopted General Plan for the City of Chowchilla and is therefore consistent with the population growth and VMT applied in the plan. Therefore, the Project is consistent with the growth assumptions used in the 2016 and 2013 Ozone Plan, 2007 PM10 Maintenance Plan, and 2012 PM2.5 Plan.

Project specific emissions that exceed the thresholds of significance for criteria pollutants would be expected to result in a cumulatively considerable net increase of any criteria pollutant for which the County is in non-attainment under applicable federal or state ambient air quality standards. It should be noted that a project isn't characterized as cumulatively insignificant when project emissions fall below thresholds of significance. As discussed in Section 3.1, the SJVAPCD has established thresholds of significance for determining environmental significance which are provided in Table 6.

As discussed above in Section 3.2 and 3.3, results of the analysis show that emissions generated from construction and operation of the Project will be less than the applicable SJVAPCD emission thresholds for criteria pollutants. Therefore, no mitigation is needed.

4.1.3 *Expose sensitive receptors to substantial pollutant concentrations*

Sensitive receptors refer to those segments of the population most susceptible to poor air quality (i.e., children, the elderly, and those with pre-existing serious health problems affected by air quality). Land uses that have the greatest potential to attract these types of sensitive receptors include schools, parks, playgrounds, daycare centers, nursing homes, hospitals, and residential communities. From a health risk perspective, the proposed Project is a Type B project in that it may potentially place sensitive receptors in the vicinity of existing sources.

The first step in evaluating the potential for impacts to sensitive receptors for TACs from the Project is to perform a screening level analysis. For Type B projects, one type of screening tool is found in the CARB Handbook: Air Quality and Land Use Handbook: A Community Perspective. This handbook includes a table (depicted in Table 4) with recommended buffer distances associated with various types of common sources. The screening level analysis for the Project shows that TACs are not a concern based upon the recommendations provided in Table 4. An evaluation of nearby land uses considering CARB's Pollution Mapping Tool shows that the Project will not place sensitive receptors in the vicinity of existing toxic sources. Table 4 indicates that new sensitive land uses should not be sited within 500 feet of a freeway/urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles/day. The Project is located more than 2,500 feet from the SR 99 freeway. Therefore, TAC's from sources in the study area will not significantly impact the Project. In addition, the Project will not generate TAC's that would have a significant impact on the environment or adjacent sensitive receptors. Therefore, no mitigation is needed.

Short-Term Impacts

The annual emissions from the construction phase of the Project will be less than the applicable SJVAPCD emission thresholds for criteria pollutants as shown in Table 7. Therefore, construction emissions associated with the Project are considered less than significant.

Long-Term Impacts

Long-Term emissions from the Project are generated primarily by mobile source (vehicle) emissions from the Project site and area sources such as lawn maintenance equipment. Emissions from long-term operations generally represent a project's most substantial air quality impact. Table 8 summarizes the Project's operational impacts by pollutant. Results indicate that the annual operational emissions from the Project will be less than the SJVAPCD emission thresholds for criteria pollutants. Therefore, operational emissions associated with the Project are considered less than significant.

4.1.4 *Result in other emissions such as those leading to odors adversely affecting a substantial number of people*

The SJVAPCD requires that an analysis of potential odor impacts be conducted for the following two situations:

- ✓ Generators – projects that would potentially generate odorous emissions proposed to be located near existing sensitive receptors or other land uses where people may congregate, and

- ✓ Receivers – residential or other sensitive receptor projects or other projects built for the intent of attracting people located near existing odor sources.

The Project will not generate odorous emissions given the nature or characteristics of residential developments. The intensity of an odor source's operations and its proximity to sensitive receptors influences the potential significance of odor emissions. The SJVAPCD has identified some common types of facilities that have been known to produce odors in the SJV Air Basin. The types of facilities that are known to produce odors are shown in Table 5 above along with a reasonable distance from the source within which, the degree of odors could possibly be significant. None of the facilities shown in Table 5 are located within two (2) miles of the Project. Therefore, no mitigation is needed.

4.2 Greenhouse Gas Emissions

4.2.1 *Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment*

The SJVAPCD acknowledges the current absence of numerical thresholds and recommends a tiered approach to establish the significance of the GHG impacts on the environment:

i. If a project complies with an approved GHG emission reduction plan or GHG mitigation program which avoids or substantially reduces GHG emissions within the geographic area in which the project is located, then the project would be determined to have a less than significant individual and cumulative impact for GHG emissions;
ii. If a project does not comply with an approved GHG emission reduction plan or mitigation program, then it would be required to implement Best Performance Standards (BPS); and
iii. If a project is not implementing BPS, then it should demonstrate that its GHG emissions would be reduced or mitigated by at least 29 percent compared to Business as Usual (BAU).

The City of Chowchilla General Plan indicated that the City would develop a Greenhouse Gas Inventory and subsequent Climate Action Plan (CAP) that identifies desired goals for reducing manmade greenhouse gas (GHG) emissions, establishes resiliency and adaptation programs to prepare for potential impacts of climate change, and provides a phased implementation plan to achieve these goals. At the time of this report, the City of Chowchilla is still in the process of developing the GHG Inventory and CAP.

As noted previously, the maximum amount of commercial space for the Rancho Calera Specific Plan was reduced by 186,595 square feet and the Park/Open space was reduced by 11.4 acres while the total acreage dedicated to Public Facilities and Street Dedication increased by 6.8 and 9.2 acres, respectively. The traffic analysis prepared for the Project demonstrates that the reduction of commercial space and increase in park space will result in 2,630 fewer daily trips. The total GHG emissions would be less than the approved Rancho Calera Specific Plan since the proposed land use changes would result in fewer trips.

The SCAQMD guidance identifies a threshold of 10,000 MTCO2eq./year for GHG for construction emissions amortized over a 30-year project lifetime, plus annual operation emissions. Though the Project is under SJVAPCD jurisdiction, the SCAQMD GHG threshold provides some perspective on the GHG emissions generated by the Project. Table 9 shows the yearly GHG emissions generated by the Project as determined by the CalEEMod model, which is approximately 71% less than the threshold identified by the SCAQMD.

The resulting permanent greenhouse gas increases related to Project operations would be within the greenhouse gas increases analyzed in the General Plan EIR, so there would be no increase in severity to the previously-identified greenhouse gas impacts, and implementation of the Project will not result in Project-specific or site-specific significant adverse impacts from greenhouse gas emissions within the Project study area. Therefore, no mitigation measures are needed.

4.2.2 *Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases*

California passed the California Global Warming Solutions Act of 2006. AB 32 requires that statewide GHG emissions be reduced to 1990 levels by 2020. Under AB 32, CARB must adopt regulations by January 1, 2011 to achieve reductions in GHGs to meet the 1990 emission cap by 2020. On December 11, 2008, CARB adopted its initial Scoping Plan, which functions as a roadmap of CARB’s plans to achieve GHG reductions in California required by AB 32 through subsequently enacted regulations. CARB’s 2017 Climate Change Scoping Plan builds on the efforts and plans encompassed in the initial Scoping Plan.

SB 375 requires MPOs to adopt a SCS or APS that will prescribe land use allocation in that MPO's regional transportation plan. CARB, in consultation with MPOs, has provided each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in the region for the years 2020 and 2035. For the MCTC region, CARB set targets at five (5) percent per capita decrease in 2020 and a ten (10) percent per capita decrease in 2035 from a base year of 2005. MCTC’s 2018 RTP/SCS, which was adopted in July 2018, projects that the Madera County region would achieve the prescribed emissions targets.

Executive Order B-30-15 establishes a California greenhouse gas reduction target of 40 percent below 1990 levels by 2030 to ensure California meets its target of reducing greenhouse gas emissions to 80 percent below 1990 levels by 2050. Executive Order B-30-15 requires MPO's to implement measures that will achieve reductions of greenhouse gas emissions to meet the 2030 and 2050 greenhouse gas emissions reductions targets.

As required by California law, city and county General Plans contain a Land Use Element that details the types and quantities of land uses that the city or county estimates will be needed for future growth, and that designate locations for land uses to regulate growth. MCTC uses the growth projections and land use information in adopted general plans to estimate future average daily trips and then VMT, which are then provided to SJVAPCD to estimate future emissions in the AQPs. The applicable General Plan for the project is the City of Chowchilla 2040 General Plan, which was adopted in 2011.

The Project is consistent with the currently adopted General Plan for the City of Chowchilla and the adopted 2018 RTP/SCS and is therefore consistent with the population growth and VMT applied in those plan documents. Therefore, the Project is consistent with the growth assumptions used in the applicable AQP. It should also be noted that yearly GHG emissions generated by the Project (Table 9) are approximately 71% less than the threshold identified by the SCAQMD (see the discussion for Impact 4.2.1 above).

CARB's 2017 Climate Change Scoping Plan builds on the efforts and plans encompassed in the initial Scoping Plan. The current plan has identified new policies and actions to accomplish the State's 2030 GHG limit. Below is a list of applicable strategies in the Scoping Plan and the Project's consistency with those strategies.

- ✓ California Light-Duty Vehicle GHG Standards – Implement adopted standards and planned second phase of the program. Align zero-emission vehicle, alternative and renewable fuel and vehicle technology programs for long-term climate change goals.

  - The Project is consistent with this reduction measure. This measure cannot be implemented by a particular project or lead agency since it is a statewide measure. When this measure is implemented, standards would be applicable to light-duty vehicles that would access the residential development. The Project would not conflict or obstruct this reduction measure.

- ✓ Energy Efficiency – Pursuit of comparable investment in energy efficiency from all retail providers of electricity in California. Maximize energy efficiency building and appliance standards.

  - The Project is consistent with this reduction measure. Though this measure applies to the State to increase its energy standards, the Project would comply with this measure through existing regulation. The Project would not conflict or obstruct this reduction measure.

- ✓ Low Carbon Fuel – Development and adoption of the low carbon fuel standard.

    - The Project is consistent with this reduction measure. This measure cannot be implemented by a particular project or lead agency since it is a statewide measure. When this measure is implemented, standards would be applicable to the fuel used by vehicles that would access the residential development. The Project would not conflict or obstruct this reduction measure.

Based on the assessment above, the Project will not conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases. The Project furthers the achievement of the County's greenhouse gas reduction goals. Therefore, any impacts would be less than significant.

APPENDIX A

CalEEMod Emissions Worksheets

Rancho Calera - 140-Lot Subdivision

Madera County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	140.00	Dwelling Unit	45.45	252,000.00	400

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.9	**Precipitation Freq (Days)**	51
Climate Zone	3			**Operational Year**	2025
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Vehicle Trips - ITE 10th Edition Trip Rates

Construction Phase - Project Outlook

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	740.00	700.00
tblConstructionPhase	NumDays	50.00	20.00
tblConstructionPhase	PhaseEndDate	3/7/2025	12/1/2024
tblConstructionPhase	PhaseEndDate	10/4/2024	6/30/2024
tblConstructionPhase	PhaseEndDate	7/9/2021	5/29/2021
tblConstructionPhase	PhaseEndDate	12/3/2021	10/24/2021
tblConstructionPhase	PhaseEndDate	12/20/2024	9/15/2024
tblConstructionPhase	PhaseEndDate	8/20/2021	7/11/2021
tblConstructionPhase	PhaseStartDate	12/21/2024	9/16/2024
tblConstructionPhase	PhaseStartDate	12/4/2021	10/25/2021
tblConstructionPhase	PhaseStartDate	8/21/2021	7/12/2021
tblConstructionPhase	PhaseStartDate	10/5/2024	7/1/2024
tblConstructionPhase	PhaseStartDate	7/10/2021	5/30/2021
tblProjectCharacteristics	OperationalYear	2018	2025
tblVehicleTrips	ST_TR	9.91	9.54
tblVehicleTrips	SU_TR	8.62	8.55
tblVehicleTrips	WD_TR	9.52	9.44
tblWoodstoves	NumberCatalytic	45.45	27.27
tblWoodstoves	NumberNoncatalytic	45.45	27.27

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.3061	3.1448	2.1866	4.2500e-003	0.6180	0.1449	0.7629	0.2897	0.1339	0.4236	0.0000	373.7012	373.7012	0.1072	0.0000	376.3804
2022	0.2534	2.2457	2.3481	4.5400e-003	0.0647	0.1061	0.1708	0.0175	0.0999	0.1173	0.0000	397.6989	397.6989	0.0775	0.0000	399.6365
2023	0.2323	2.0375	2.3094	4.5100e-003	0.0647	0.0915	0.1562	0.0175	0.0861	0.1036	0.0000	394.8877	394.8877	0.0757	0.0000	396.7801
2024	2.5084	1.2530	1.6110	3.0100e-003	0.0378	0.0547	0.0925	0.0102	0.0513	0.0615	0.0000	263.4077	263.4077	0.0560	0.0000	264.8069
Total	**3.3003**	**8.6810**	**8.4550**	**0.0163**	**0.7852**	**0.3972**	**1.1824**	**0.3349**	**0.3712**	**0.7060**	**0.0000**	**1,429.6956**	**1,429.6956**	**0.3163**	**0.0000**	**1,437.6039**

2.1 Overall Construction

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.3061	3.1448	2.1866	4.2500e-003	0.6180	0.1449	0.7629	0.2897	0.1339	0.4236	0.0000	373.7008	373.7008	0.1072	0.0000	376.3800
2022	0.2534	2.2457	2.3480	4.5400e-003	0.0647	0.1061	0.1708	0.0175	0.0998	0.1173	0.0000	397.6986	397.6986	0.0775	0.0000	399.6361
2023	0.2323	2.0375	2.3094	4.5100e-003	0.0647	0.0915	0.1562	0.0175	0.0861	0.1036	0.0000	394.8874	394.8874	0.0757	0.0000	396.7797
2024	2.5084	1.2530	1.6110	3.0100e-003	0.0378	0.0547	0.0925	0.0102	0.0513	0.0615	0.0000	263.4075	263.4075	0.0560	0.0000	264.8067
Total	**3.3003**	**8.6810**	**8.4550**	**0.0163**	**0.7852**	**0.3972**	**1.1824**	**0.3349**	**0.3712**	**0.7060**	**0.0000**	**1,429.6942**	**1,429.6942**	**0.3163**	**0.0000**	**1,437.6025**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.8138	0.1467	6.1079	0.0169		0.8333	0.8333		0.8333	0.8333	110.2451	62.3471	172.5921	0.5182	1.1100e-003	185.8775
Energy	0.0242	0.2071	0.0881	1.3200e-003		0.0168	0.0168		0.0168	0.0168	0.0000	623.3966	623.3966	0.0219	7.9900e-003	626.3248
Mobile	0.3928	3.3084	4.1634	0.0207	1.4147	0.0135	1.4282	0.3800	0.0126	0.3926	0.0000	1,919.6232	1,919.6232	0.1147	0.0000	1,922.4903
Waste						0.0000	0.0000		0.0000	0.0000	29.2307	0.0000	29.2307	1.7275	0.0000	72.4178
Water						0.0000	0.0000		0.0000	0.0000	2.8939	20.2136	23.1075	0.2981	7.2100e-003	32.7087
Total	**2.2308**	**3.6622**	**10.3594**	**0.0389**	**1.4147**	**0.8636**	**2.2783**	**0.3800**	**0.8627**	**1.2427**	**142.3696**	**2,625.5805**	**2,767.9501**	**2.6804**	**0.0163**	**2,839.8192**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.8138	0.1467	6.1079	0.0169		0.8333	0.8333		0.8333	0.8333	110.2451	62.3471	172.5921	0.5182	1.1100e-003	185.8775
Energy	0.0242	0.2071	0.0881	1.3200e-003		0.0168	0.0168		0.0168	0.0168	0.0000	623.3966	623.3966	0.0219	7.9900e-003	626.3248
Mobile	0.3928	3.3084	4.1634	0.0207	1.4147	0.0135	1.4282	0.3800	0.0126	0.3926	0.0000	1,919.6232	1,919.6232	0.1147	0.0000	1,922.4903
Waste						0.0000	0.0000		0.0000	0.0000	29.2307	0.0000	29.2307	1.7275	0.0000	72.4178
Water						0.0000	0.0000		0.0000	0.0000	2.8939	20.2136	23.1075	0.2981	7.2100e-003	32.7087
Total	**2.2308**	**3.6622**	**10.3594**	**0.0389**	**1.4147**	**0.8636**	**2.2783**	**0.3800**	**0.8627**	**1.2427**	**142.3696**	**2,625.5805**	**2,767.9501**	**2.6804**	**0.0163**	**2,839.8192**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	5/1/2021	5/29/2021	5	20	
2	Site Preparation	Site Preparation	5/30/2021	7/11/2021	5	30	
3	Grading	Grading	7/12/2021	10/24/2021	5	75	
4	Building Construction	Building Construction	10/25/2021	6/30/2024	5	700	
5	Paving	Paving	7/1/2024	9/15/2024	5	55	
6	Architectural Coating	Architectural Coating	9/16/2024	12/1/2024	5	55	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 187.5

Acres of Paving: 0

Residential Indoor: 510,300; Residential Outdoor: 170,100; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

<u>OffRoad Equipment</u>

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	50.00	15.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0317	0.3144	0.2157	3.9000e-004		0.0155	0.0155		0.0144	0.0144	0.0000	34.0008	34.0008	9.5700e-003	0.0000	34.2400
Total	**0.0317**	**0.3144**	**0.2157**	**3.9000e-004**		**0.0155**	**0.0155**		**0.0144**	**0.0144**	**0.0000**	**34.0008**	**34.0008**	**9.5700e-003**	**0.0000**	**34.2400**

3.2 Demolition - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category						tons/yr								MT/yr		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.3000e-004	4.0000e-004	4.4400e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.2000e-003	3.2000e-004	1.0000e-005	3.3000e-004	0.0000	1.0665	1.0665	3.0000e-005	0.0000	1.0673
Total	**6.3000e-004**	**4.0000e-004**	**4.4400e-003**	**1.0000e-005**	**1.1900e-003**	**1.0000e-005**	**1.2000e-003**	**3.2000e-004**	**1.0000e-005**	**3.3000e-004**	**0.0000**	**1.0665**	**1.0665**	**3.0000e-005**	**0.0000**	**1.0673**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category						tons/yr								MT/yr		
Off-Road	0.0317	0.3144	0.2157	3.9000e-004		0.0155	0.0155		0.0144	0.0144	0.0000	34.0007	34.0007	9.5700e-003	0.0000	34.2400
Total	**0.0317**	**0.3144**	**0.2157**	**3.9000e-004**		**0.0155**	**0.0155**		**0.0144**	**0.0144**	**0.0000**	**34.0007**	**34.0007**	**9.5700e-003**	**0.0000**	**34.2400**

3.2 Demolition - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.3000e-004	4.0000e-004	4.4400e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.2000e-003	3.2000e-004	1.0000e-005	3.3000e-004	0.0000	1.0665	1.0665	3.0000e-005	0.0000	1.0673
Total	**6.3000e-004**	**4.0000e-004**	**4.4400e-003**	**1.0000e-005**	**1.1900e-003**	**1.0000e-005**	**1.2000e-003**	**3.2000e-004**	**1.0000e-005**	**3.3000e-004**	**0.0000**	**1.0665**	**1.0665**	**3.0000e-005**	**0.0000**	**1.0673**

3.3 Site Preparation - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2710	0.0000	0.2710	0.1490	0.0000	0.1490	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0583	0.6075	0.3173	5.7000e-004		0.0307	0.0307		0.0282	0.0282	0.0000	50.1536	50.1536	0.0162	0.0000	50.5591
Total	**0.0583**	**0.6075**	**0.3173**	**5.7000e-004**	**0.2710**	**0.0307**	**0.3017**	**0.1490**	**0.0282**	**0.1772**	**0.0000**	**50.1536**	**50.1536**	**0.0162**	**0.0000**	**50.5591**

3.3 Site Preparation - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1300e-003	7.2000e-004	8.0000e-003	2.0000e-005	2.1500e-003	2.0000e-005	2.1700e-003	5.7000e-004	2.0000e-005	5.9000e-004	0.0000	1.9197	1.9197	6.0000e-005	0.0000	1.9211
Total	**1.1300e-003**	**7.2000e-004**	**8.0000e-003**	**2.0000e-005**	**2.1500e-003**	**2.0000e-005**	**2.1700e-003**	**5.7000e-004**	**2.0000e-005**	**5.9000e-004**	**0.0000**	**1.9197**	**1.9197**	**6.0000e-005**	**0.0000**	**1.9211**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2710	0.0000	0.2710	0.1490	0.0000	0.1490	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0583	0.6075	0.3173	5.7000e-004		0.0307	0.0307		0.0282	0.0282	0.0000	50.1535	50.1535	0.0162	0.0000	50.5590
Total	**0.0583**	**0.6075**	**0.3173**	**5.7000e-004**	**0.2710**	**0.0307**	**0.3017**	**0.1490**	**0.0282**	**0.1772**	**0.0000**	**50.1535**	**50.1535**	**0.0162**	**0.0000**	**50.5590**

3.3 Site Preparation - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1300e-003	7.2000e-004	8.0000e-003	2.0000e-005	2.1500e-003	2.0000e-005	2.1700e-003	5.7000e-004	2.0000e-005	5.9000e-004	0.0000	1.9197	1.9197	6.0000e-005	0.0000	1.9211
Total	**1.1300e-003**	**7.2000e-004**	**8.0000e-003**	**2.0000e-005**	**2.1500e-003**	**2.0000e-005**	**2.1700e-003**	**5.7000e-004**	**2.0000e-005**	**5.9000e-004**	**0.0000**	**1.9197**	**1.9197**	**6.0000e-005**	**0.0000**	**1.9211**

3.4 Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.3253	0.0000	0.3253	0.1349	0.0000	0.1349	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1572	1.7400	1.1579	2.3300e-003		0.0745	0.0745		0.0685	0.0685	0.0000	204.3562	204.3562	0.0661	0.0000	206.0085
Total	**0.1572**	**1.7400**	**1.1579**	**2.3300e-003**	**0.3253**	**0.0745**	**0.3997**	**0.1349**	**0.0685**	**0.2034**	**0.0000**	**204.3562**	**204.3562**	**0.0661**	**0.0000**	**206.0085**

3.4 Grading - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.1300e-003	1.9900e-003	0.0222	6.0000e-005	5.9700e-003	5.0000e-005	6.0200e-003	1.5900e-003	4.0000e-005	1.6300e-003	0.0000	5.3325	5.3325	1.6000e-004	0.0000	5.3365
Total	**3.1300e-003**	**1.9900e-003**	**0.0222**	**6.0000e-005**	**5.9700e-003**	**5.0000e-005**	**6.0200e-003**	**1.5900e-003**	**4.0000e-005**	**1.6300e-003**	**0.0000**	**5.3325**	**5.3325**	**1.6000e-004**	**0.0000**	**5.3365**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.3253	0.0000	0.3253	0.1349	0.0000	0.1349	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1572	1.7400	1.1579	2.3300e-003		0.0745	0.0745		0.0685	0.0685	0.0000	204.3559	204.3559	0.0661	0.0000	206.0083
Total	**0.1572**	**1.7400**	**1.1579**	**2.3300e-003**	**0.3253**	**0.0745**	**0.3997**	**0.1349**	**0.0685**	**0.2034**	**0.0000**	**204.3559**	**204.3559**	**0.0661**	**0.0000**	**206.0083**

3.4 Grading - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.1300e-003	1.9900e-003	0.0222	6.0000e-005	5.9700e-003	5.0000e-005	6.0200e-003	1.5900e-003	4.0000e-005	1.6300e-003	0.0000	5.3325	5.3325	1.6000e-004	0.0000	5.3365
Total	**3.1300e-003**	**1.9900e-003**	**0.0222**	**6.0000e-005**	**5.9700e-003**	**5.0000e-005**	**6.0200e-003**	**1.5900e-003**	**4.0000e-005**	**1.6300e-003**	**0.0000**	**5.3325**	**5.3325**	**1.6000e-004**	**0.0000**	**5.3365**

3.5 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0475	0.4358	0.4144	6.7000e-004		0.0240	0.0240		0.0225	0.0225	0.0000	57.9093	57.9093	0.0140	0.0000	58.2586
Total	**0.0475**	**0.4358**	**0.4144**	**6.7000e-004**		**0.0240**	**0.0240**		**0.0225**	**0.0225**	**0.0000**	**57.9093**	**57.9093**	**0.0140**	**0.0000**	**58.2586**

3.5 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.3600e-003	0.0407	9.6300e-003	1.1000e-004	2.4800e-003	1.2000e-004	2.6000e-003	7.2000e-004	1.2000e-004	8.4000e-004	0.0000	10.0751	10.0751	8.1000e-004	0.0000	10.0953
Worker	5.2200e-003	3.3200e-003	0.0370	1.0000e-004	9.9600e-003	8.0000e-005	0.0100	2.6500e-003	7.0000e-005	2.7200e-003	0.0000	8.8875	8.8875	2.6000e-004	0.0000	8.8941
Total	**6.5800e-003**	**0.0440**	**0.0467**	**2.1000e-004**	**0.0124**	**2.0000e-004**	**0.0126**	**3.3700e-003**	**1.9000e-004**	**3.5600e-003**	**0.0000**	**18.9626**	**18.9626**	**1.0700e-003**	**0.0000**	**18.9894**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0475	0.4358	0.4144	6.7000e-004		0.0240	0.0240		0.0225	0.0225	0.0000	57.9093	57.9093	0.0140	0.0000	58.2585
Total	**0.0475**	**0.4358**	**0.4144**	**6.7000e-004**		**0.0240**	**0.0240**		**0.0225**	**0.0225**	**0.0000**	**57.9093**	**57.9093**	**0.0140**	**0.0000**	**58.2585**

3.5 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.3600e-003	0.0407	9.6300e-003	1.1000e-004	2.4800e-003	1.2000e-004	2.6000e-003	7.2000e-004	1.2000e-004	8.4000e-004	0.0000	10.0751	10.0751	8.1000e-004	0.0000	10.0953
Worker	5.2200e-003	3.3200e-003	0.0370	1.0000e-004	9.9600e-003	8.0000e-005	0.0100	2.6500e-003	7.0000e-005	2.7200e-003	0.0000	8.8875	8.8875	2.6000e-004	0.0000	8.8941
Total	**6.5800e-003**	**0.0440**	**0.0467**	**2.1000e-004**	**0.0124**	**2.0000e-004**	**0.0126**	**3.3700e-003**	**1.9000e-004**	**3.5600e-003**	**0.0000**	**18.9626**	**18.9626**	**1.0700e-003**	**0.0000**	**18.9894**

3.5 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2218	2.0300	2.1272	3.5000e-003		0.1052	0.1052		0.0990	0.0990	0.0000	301.2428	301.2428	0.0722	0.0000	303.0471
Total	**0.2218**	**2.0300**	**2.1272**	**3.5000e-003**		**0.1052**	**0.1052**		**0.0990**	**0.0990**	**0.0000**	**301.2428**	**301.2428**	**0.0722**	**0.0000**	**303.0471**

3.5 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.5000e-003	0.2003	0.0451	5.5000e-004	0.0129	5.6000e-004	0.0135	3.7300e-003	5.3000e-004	4.2600e-003	0.0000	51.9110	51.9110	4.1200e-003	0.0000	52.0140
Worker	0.0251	0.0154	0.1757	4.9000e-004	0.0518	3.9000e-004	0.0522	0.0138	3.6000e-004	0.0141	0.0000	44.5451	44.5451	1.2200e-003	0.0000	44.5755
Total	**0.0316**	**0.2157**	**0.2208**	**1.0400e-003**	**0.0647**	**9.5000e-004**	**0.0656**	**0.0175**	**8.9000e-004**	**0.0184**	**0.0000**	**96.4561**	**96.4561**	**5.3400e-003**	**0.0000**	**96.5894**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2218	2.0300	2.1272	3.5000e-003		0.1052	0.1052		0.0990	0.0990	0.0000	301.2425	301.2425	0.0722	0.0000	303.0467
Total	**0.2218**	**2.0300**	**2.1272**	**3.5000e-003**		**0.1052**	**0.1052**		**0.0990**	**0.0990**	**0.0000**	**301.2425**	**301.2425**	**0.0722**	**0.0000**	**303.0467**

3.5 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.5000e-003	0.2003	0.0451	5.5000e-004	0.0129	5.6000e-004	0.0135	3.7300e-003	5.3000e-004	4.2600e-003	0.0000	51.9110	51.9110	4.1200e-003	0.0000	52.0140
Worker	0.0251	0.0154	0.1757	4.9000e-004	0.0518	3.9000e-004	0.0522	0.0138	3.6000e-004	0.0141	0.0000	44.5451	44.5451	1.2200e-003	0.0000	44.5755
Total	**0.0316**	**0.2157**	**0.2208**	**1.0400e-003**	**0.0647**	**9.5000e-004**	**0.0656**	**0.0175**	**8.9000e-004**	**0.0184**	**0.0000**	**96.4561**	**96.4561**	**5.3400e-003**	**0.0000**	**96.5894**

3.5 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2045	1.8700	2.1117	3.5000e-003		0.0910	0.0910		0.0856	0.0856	0.0000	301.3462	301.3462	0.0717	0.0000	303.1383
Total	**0.2045**	**1.8700**	**2.1117**	**3.5000e-003**		**0.0910**	**0.0910**		**0.0856**	**0.0856**	**0.0000**	**301.3462**	**301.3462**	**0.0717**	**0.0000**	**303.1383**

3.5 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.5500e-003	0.1536	0.0372	5.3000e-004	0.0129	1.6000e-004	0.0131	3.7300e-003	1.5000e-004	3.8700e-003	0.0000	50.6792	50.6792	2.9200e-003	0.0000	50.7523
Worker	0.0233	0.0138	0.1605	4.7000e-004	0.0518	3.8000e-004	0.0522	0.0138	3.5000e-004	0.0141	0.0000	42.8624	42.8624	1.0800e-003	0.0000	42.8895
Total	**0.0278**	**0.1674**	**0.1977**	**1.0000e-003**	**0.0647**	**5.4000e-004**	**0.0652**	**0.0175**	**5.0000e-004**	**0.0180**	**0.0000**	**93.5416**	**93.5416**	**4.0000e-003**	**0.0000**	**93.6417**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2045	1.8700	2.1117	3.5000e-003		0.0910	0.0910		0.0856	0.0856	0.0000	301.3458	301.3458	0.0717	0.0000	303.1380
Total	**0.2045**	**1.8700**	**2.1117**	**3.5000e-003**		**0.0910**	**0.0910**		**0.0856**	**0.0856**	**0.0000**	**301.3458**	**301.3458**	**0.0717**	**0.0000**	**303.1380**

3.5 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.5500e-003	0.1536	0.0372	5.3000e-004	0.0129	1.6000e-004	0.0131	3.7300e-003	1.5000e-004	3.8700e-003	0.0000	50.6792	50.6792	2.9200e-003	0.0000	50.7523
Worker	0.0233	0.0138	0.1605	4.7000e-004	0.0518	3.8000e-004	0.0522	0.0138	3.5000e-004	0.0141	0.0000	42.8624	42.8624	1.0800e-003	0.0000	42.8895
Total	**0.0278**	**0.1674**	**0.1977**	**1.0000e-003**	**0.0647**	**5.4000e-004**	**0.0652**	**0.0175**	**5.0000e-004**	**0.0180**	**0.0000**	**93.5416**	**93.5416**	**4.0000e-003**	**0.0000**	**93.6417**

3.5 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0957	0.8739	1.0508	1.7500e-003		0.0399	0.0399		0.0375	0.0375	0.0000	150.7019	150.7019	0.0356	0.0000	151.5928
Total	**0.0957**	**0.8739**	**1.0508**	**1.7500e-003**		**0.0399**	**0.0399**		**0.0375**	**0.0375**	**0.0000**	**150.7019**	**150.7019**	**0.0356**	**0.0000**	**151.5928**

3.5 Building Construction - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.1700e-003	0.0762	0.0170	2.7000e-004	6.4500e-003	8.0000e-005	6.5200e-003	1.8600e-003	7.0000e-005	1.9400e-003	0.0000	25.1480	25.1480	1.5100e-003	0.0000	25.1859
Worker	0.0109	6.2600e-003	0.0753	2.3000e-004	0.0259	1.9000e-004	0.0261	6.8800e-003	1.8000e-004	7.0600e-003	0.0000	21.0174	21.0174	5.0000e-004	0.0000	21.0300
Total	**0.0131**	**0.0824**	**0.0922**	**5.0000e-004**	**0.0323**	**2.7000e-004**	**0.0326**	**8.7400e-003**	**2.5000e-004**	**9.0000e-003**	**0.0000**	**46.1654**	**46.1654**	**2.0100e-003**	**0.0000**	**46.2158**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0957	0.8738	1.0508	1.7500e-003		0.0399	0.0399		0.0375	0.0375	0.0000	150.7017	150.7017	0.0356	0.0000	151.5927
Total	**0.0957**	**0.8738**	**1.0508**	**1.7500e-003**		**0.0399**	**0.0399**		**0.0375**	**0.0375**	**0.0000**	**150.7017**	**150.7017**	**0.0356**	**0.0000**	**151.5927**

3.5 Building Construction - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.1700e-003	0.0762	0.0170	2.7000e-004	6.4500e-003	8.0000e-005	6.5200e-003	1.8600e-003	7.0000e-005	1.9400e-003	0.0000	25.1480	25.1480	1.5100e-003	0.0000	25.1859
Worker	0.0109	6.2600e-003	0.0753	2.3000e-004	0.0259	1.9000e-004	0.0261	6.8800e-003	1.8000e-004	7.0600e-003	0.0000	21.0174	21.0174	5.0000e-004	0.0000	21.0300
Total	**0.0131**	**0.0824**	**0.0922**	**5.0000e-004**	**0.0323**	**2.7000e-004**	**0.0326**	**8.7400e-003**	**2.5000e-004**	**9.0000e-003**	**0.0000**	**46.1654**	**46.1654**	**2.0100e-003**	**0.0000**	**46.2158**

3.6 Paving - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0272	0.2619	0.4022	6.3000e-004		0.0129	0.0129		0.0119	0.0119	0.0000	55.0730	55.0730	0.0178	0.0000	55.5183
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0272**	**0.2619**	**0.4022**	**6.3000e-004**		**0.0129**	**0.0129**		**0.0119**	**0.0119**	**0.0000**	**55.0730**	**55.0730**	**0.0178**	**0.0000**	**55.5183**

3.6 Paving - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3800e-003	7.9000e-004	9.5500e-003	3.0000e-005	3.2900e-003	2.0000e-005	3.3100e-003	8.7000e-004	2.0000e-005	9.0000e-004	0.0000	2.6676	2.6676	6.0000e-005	0.0000	2.6692
Total	**1.3800e-003**	**7.9000e-004**	**9.5500e-003**	**3.0000e-005**	**3.2900e-003**	**2.0000e-005**	**3.3100e-003**	**8.7000e-004**	**2.0000e-005**	**9.0000e-004**	**0.0000**	**2.6676**	**2.6676**	**6.0000e-005**	**0.0000**	**2.6692**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0272	0.2619	0.4022	6.3000e-004		0.0129	0.0129		0.0119	0.0119	0.0000	55.0729	55.0729	0.0178	0.0000	55.5182
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0272**	**0.2619**	**0.4022**	**6.3000e-004**		**0.0129**	**0.0129**		**0.0119**	**0.0119**	**0.0000**	**55.0729**	**55.0729**	**0.0178**	**0.0000**	**55.5182**

3.6 Paving - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3800e-003	7.9000e-004	9.5500e-003	3.0000e-005	3.2900e-003	2.0000e-005	3.3100e-003	8.7000e-004	2.0000e-005	9.0000e-004	0.0000	2.6676	2.6676	6.0000e-005	0.0000	2.6692
Total	**1.3800e-003**	**7.9000e-004**	**9.5500e-003**	**3.0000e-005**	**3.2900e-003**	**2.0000e-005**	**3.3100e-003**	**8.7000e-004**	**2.0000e-005**	**9.0000e-004**	**0.0000**	**2.6676**	**2.6676**	**6.0000e-005**	**0.0000**	**2.6692**

3.7 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	2.3652					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.9700e-003	0.0335	0.0498	8.0000e-005		1.6800e-003	1.6800e-003		1.6800e-003	1.6800e-003	0.0000	7.0215	7.0215	4.0000e-004	0.0000	7.0313
Total	**2.3702**	**0.0335**	**0.0498**	**8.0000e-005**		**1.6800e-003**	**1.6800e-003**		**1.6800e-003**	**1.6800e-003**	**0.0000**	**7.0215**	**7.0215**	**4.0000e-004**	**0.0000**	**7.0313**

3.7 Architectural Coating - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.2000e-004	5.3000e-004	6.3700e-003	2.0000e-005	2.1900e-003	2.0000e-005	2.2100e-003	5.8000e-004	1.0000e-005	6.0000e-004	0.0000	1.7784	1.7784	4.0000e-005	0.0000	1.7795
Total	**9.2000e-004**	**5.3000e-004**	**6.3700e-003**	**2.0000e-005**	**2.1900e-003**	**2.0000e-005**	**2.2100e-003**	**5.8000e-004**	**1.0000e-005**	**6.0000e-004**	**0.0000**	**1.7784**	**1.7784**	**4.0000e-005**	**0.0000**	**1.7795**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	2.3652					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.9700e-003	0.0335	0.0498	8.0000e-005		1.6800e-003	1.6800e-003		1.6800e-003	1.6800e-003	0.0000	7.0214	7.0214	4.0000e-004	0.0000	7.0313
Total	**2.3702**	**0.0335**	**0.0498**	**8.0000e-005**		**1.6800e-003**	**1.6800e-003**		**1.6800e-003**	**1.6800e-003**	**0.0000**	**7.0214**	**7.0214**	**4.0000e-004**	**0.0000**	**7.0313**

3.7 Architectural Coating - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.2000e-004	5.3000e-004	6.3700e-003	2.0000e-005	2.1900e-003	2.0000e-005	2.2100e-003	5.8000e-004	1.0000e-005	6.0000e-004	0.0000	1.7784	1.7784	4.0000e-005	0.0000	1.7795
Total	**9.2000e-004**	**5.3000e-004**	**6.3700e-003**	**2.0000e-005**	**2.1900e-003**	**2.0000e-005**	**2.2100e-003**	**5.8000e-004**	**1.0000e-005**	**6.0000e-004**	**0.0000**	**1.7784**	**1.7784**	**4.0000e-005**	**0.0000**	**1.7795**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.3928	3.3084	4.1634	0.0207	1.4147	0.0135	1.4282	0.3800	0.0126	0.3926	0.0000	1,919.6232	1,919.6232	0.1147	0.0000	1,922.4903
Unmitigated	0.3928	3.3084	4.1634	0.0207	1.4147	0.0135	1.4282	0.3800	0.0126	0.3926	0.0000	1,919.6232	1,919.6232	0.1147	0.0000	1,922.4903

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	1,321.60	1,335.60	1197.00	3,737,525	3,737,525
Total	1,321.60	1,335.60	1,197.00	3,737,525	3,737,525

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	7.30	7.50	42.30	19.60	38.10	86	11	3

4.4 Fleet Mix

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.550892	0.030057	0.166000	0.105135	0.016269	0.004636	0.013801	0.100346	0.002670	0.001604	0.006650	0.001183	0.000756

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	383.5380	383.5380	0.0173	3.5900e-003	385.0408
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	383.5380	383.5380	0.0173	3.5900e-003	385.0408
NaturalGas Mitigated	0.0242	0.2071	0.0881	1.3200e-003		0.0168	0.0168		0.0168	0.0168	0.0000	239.8586	239.8586	4.6000e-003	4.4000e-003	241.2840
NaturalGas Unmitigated	0.0242	0.2071	0.0881	1.3200e-003		0.0168	0.0168		0.0168	0.0168	0.0000	239.8586	239.8586	4.6000e-003	4.4000e-003	241.2840

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	4.49478e+006	0.0242	0.2071	0.0881	1.3200e-003		0.0168	0.0168		0.0168	0.0168	0.0000	239.8586	239.8586	4.6000e-003	4.4000e-003	241.2840
Total		**0.0242**	**0.2071**	**0.0881**	**1.3200e-003**		**0.0168**	**0.0168**		**0.0168**	**0.0168**	**0.0000**	**239.8586**	**239.8586**	**4.6000e-003**	**4.4000e-003**	**241.2840**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Single Family Housing	4.49478e +006	0.0242	0.2071	0.0881	1.3200e-003		0.0168	0.0168		0.0168	0.0168	0.0000	239.8586	239.8586	4.6000e-003	4.4000e-003	241.2840
Total		**0.0242**	**0.2071**	**0.0881**	**1.3200e-003**		**0.0168**	**0.0168**		**0.0168**	**0.0168**	**0.0000**	**239.8586**	**239.8586**	**4.6000e-003**	**4.4000e-003**	**241.2840**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	1.3184e +006	383.5380	0.0173	3.5900e-003	385.0408
Total		**383.5380**	**0.0173**	**3.5900e-003**	**385.0408**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	1.3184e+006	383.5380	0.0173	3.5900e-003	385.0408
Total		**383.5380**	**0.0173**	**3.5900e-003**	**385.0408**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.8138	0.1467	6.1079	0.0169		0.8333	0.8333		0.8333	0.8333	110.2451	62.3471	172.5921	0.5182	1.1100e-003	185.8775
Unmitigated	1.8138	0.1467	6.1079	0.0169		0.8333	0.8333		0.8333	0.8333	110.2451	62.3471	172.5921	0.5182	1.1100e-003	185.8775

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.2365					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.9842					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.5619	0.1347	5.0693	0.0168		0.8276	0.8276		0.8276	0.8276	110.2451	60.6490	170.8941	0.5165	1.1100e-003	184.1388
Landscaping	0.0312	0.0120	1.0385	5.0000e-005		5.7600e-003	5.7600e-003		5.7600e-003	5.7600e-003	0.0000	1.6980	1.6980	1.6300e-003	0.0000	1.7387
Total	**1.8138**	**0.1467**	**6.1079**	**0.0169**		**0.8333**	**0.8333**		**0.8333**	**0.8333**	**110.2451**	**62.3471**	**172.5921**	**0.5182**	**1.1100e-003**	**185.8775**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.2365					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.9842					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.5619	0.1347	5.0693	0.0168		0.8276	0.8276		0.8276	0.8276	110.2451	60.6490	170.8941	0.5165	1.1100e-003	184.1388
Landscaping	0.0312	0.0120	1.0385	5.0000e-005		5.7600e-003	5.7600e-003		5.7600e-003	5.7600e-003	0.0000	1.6980	1.6980	1.6300e-003	0.0000	1.7387
Total	**1.8138**	**0.1467**	**6.1079**	**0.0169**		**0.8333**	**0.8333**		**0.8333**	**0.8333**	**110.2451**	**62.3471**	**172.5921**	**0.5182**	**1.1100e-003**	**185.8775**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	23.1075	0.2981	7.2100e-003	32.7087
Unmitigated	23.1075	0.2981	7.2100e-003	32.7087

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	9.12156 / 5.75055	23.1075	0.2981	7.2100e-003	32.7087
Total		**23.1075**	**0.2981**	**7.2100e-003**	**32.7087**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	9.12156 / 5.75055	23.1075	0.2981	7.2100e-003	32.7087
Total		**23.1075**	**0.2981**	**7.2100e-003**	**32.7087**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	29.2307	1.7275	0.0000	72.4178
Unmitigated	29.2307	1.7275	0.0000	72.4178

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	144	29.2307	1.7275	0.0000	72.4178
Total		**29.2307**	**1.7275**	**0.0000**	**72.4178**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	144	29.2307	1.7275	0.0000	72.4178
Total		**29.2307**	**1.7275**	**0.0000**	**72.4178**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

APPENDIX B

ISR Fee Worksheets

Emissions Estimator Worksheet

3/10/2021

Applicant/Business Name:	Rancho Calera Specific Plan - 140 Lot Subdivision
Project Name:	140 Lot Subdivision
Project Location:	City of Chowchilla
District Project ID No.:	

Project Construction Emissions

If applicant selected Construction Clean Fleet Mitigation Measure - Please select "Yes" from dropdown menu: No

Project Phase Name	ISR Phase	Construction Start Date	NOx Unmitigated Baseline[1] (TPY)	NOx Mitigated Baseline[2] (TPY)	NOx Achieved On-site Reductions[3] (tons)	NOx Required Off-site Reductions[4] (tons)	NOx Emission Reductions Required by Rule[5]	PM10 Unmitigated Baseline[1] (TPY)	PM10 Mitigated Baseline[2] (TPY)	PM10 Achieved On-site Reductions[3] (tons)	PM10 Required Off-site Reductions[4] (tons)	PM10 Emission Reductions Required by Rule[5]
	1	5/1/2021	8.6810	8.6810	0.0000	1.7362	1.7362	1.1824	1.1824	0.0000	0.5321	0.5321
	2				0.0000	0.0000	0.0000			0.0000	0.0000	0.0000
	3				0.0000	0.0000	0.0000			0.0000	0.0000	0.0000
	4				0.0000	0.0000	0.0000			0.0000	0.0000	0.0000
	5				0.0000	0.0000	0.0000			0.0000	0.0000	0.0000
	6				0.0000	0.0000	0.0000			0.0000	0.0000	0.0000
	7				0.0000	0.0000	0.0000			0.0000	0.0000	0.0000
	8				0.0000	0.0000	0.0000			0.0000	0.0000	0.0000
	9				0.0000	0.0000	0.0000			0.0000	0.0000	0.0000
	10				0.0000	0.0000	0.0000			0.0000	0.0000	0.0000
		Total	**8.6810**	**8.6810**	**0.0000**	**1.7362**	1.7362	**1.1824**	**1.1824**	**0.0000**	**0.5321**	0.5321

Total Achieved On-Site Reductions (tons)

ISR Phase	NOx	PM10
1	0.0000	0.0000
2	0.0000	0.0000
3	0.0000	0.0000
4	0.0000	0.0000
5	0.0000	0.0000
6	0.0000	0.0000
7	0.0000	0.0000
8	0.0000	0.0000
9	0.0000	0.0000
10	0.0000	0.0000
Total	**0.0000**	**0.0000**

Project Operations Emissions (Area + Mobile)

Project Phase Name	ISR Phase	Operation Start Date	NOx Unmitigated Baseline[1] (TPY)	NOx Mitigated Baseline[2] (TPY)	NOx Achieved On-site Reductions[3] (tons)	NOx Required Off-site Reductions[4] (tons)	NOx Total Emission Reductions Required by Rule[6]	NOx Average Annual Emission Reductions Required by Rule[7]	PM10 Unmitigated Baseline[1] (TPY)	PM10 Mitigated Baseline[2] (TPY)	PM10 Achieved On-site Reductions[3] (tons)	PM10 Required Off-site Reductions[4] (tons)	PM10 Total Emission Reductions Required by Rule[6]	PM10 Average Annual Emission Reductions Required by Rule[7]
	1	1/1/2025	3.6622	3.6622	0.0000	9.1555	9.1555	0.9156	2.2783	2.2783	0.0000	11.3915	11.3915	1.1392
	2				0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
	3				0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
	4				0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
	5				0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
	6				0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
	7				0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
	8				0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
	9				0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
	10				0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
		Total	**3.6622**	**3.6622**	**0.0000**	**9.1555**	**9.1555**	**0.9156**	**2.2783**	**2.2783**	**0.0000**	**11.3915**	**11.3915**	**1.1392**

Total Required Off-Site Reductions (tons)

ISR Phase	NOx	PM10
1	10.8917	11.9236
2	0.0000	0.0000
3	0.0000	0.0000
4	0.0000	0.0000
5	0.0000	0.0000
6	0.0000	0.0000
7	0.0000	0.0000
8	0.0000	0.0000
9	0.0000	0.0000
10	0.0000	0.0000
Total	**10.8917**	**11.9236**

Notes:

TPY: Tons Per Year

(1) **Unmitigated Baseline:** The project's baseline emissions generated with no on-site emission reduction measures.

(2) **Mitigated Baseline:** The project's baseline emissions generated after on-site emisison reduction measures have been applied.

(3) **Achieved On-site Reductions:** The project's emission reductions achieved after on-site emission reduction measures have been applied.

(4) **Required Off-site Reductions:** The project's remaining emission reductions required by Rule 9510 if on-site emission reduction measures did not achieive the required rule reductions.

(5) **Emission Reductions Required by Rule:** The project's emission reductions required (20% NOx and 45% PM10) for construction from the unmitigated baseline.

(6) **Total Emission Reductions Required by Rule:** The project's emission reductions required (33.3% NOx and 50% PM10) for operations from the unmitigated baseline over a 10-year period.

(7) **Average Annual Emission Reductions Required by Rule:** The project's total emission reduction for operations required by Rule 9510 divided by 10 years.

Fee Estimator Worksheet

3/10/2021

Applicant/Business Name:	Rancho Calera Specific Plan - 140 Lot Subdivision
Project Name:	140 Lot Subdivision
Project Location:	City of Chowchilla
District Project ID No.:	

NOTES:

(1) The start date for each ISR phase is shown in TABLE 1.

(2) If you have chosen a **ONE-TIME** payment for the project, then the total amount due for ALL PHASES is shown under TABLE 2.

(3) If you have chosen a **DEFERRED** payment schedule or would like to propose a **DEFERRED** payment schedule for the project, the total amount due for a specific year is shown in TABLE 3 according to the schedule in TABLE 1.

* If you have not provided a proposed payment date, the District sets a default invoice date of 60 days prior to start of the ISR phase.

If applicant selected Fee Deferral Schedule - Please select "Yes" from dropdown menu	Yes

TABLE 1 - PROJECT INFORMATION				TABLE 2 - No Fee Deferral Schedule (FDS)		TABLE 2 - NO FDS
Project Phase Name	ISR Phase	Start Date per Phase	Scheduled Payment Date*	Pollutant	Required Offsite Reductions (tons)	2017
	1	5/1/21	1/1/2021	NOx	10.8917	10.8917
				PM10	11.9236	11.9236
	2			NOx	0.0000	0.0000
				PM10	0.0000	0.0000
	3			NOx	0.0000	0.0000
				PM10	0.0000	0.0000
	4			NOx	0.0000	0.0000
				PM10	0.0000	0.0000
	5			NOx	0.0000	0.0000
				PM10	0.0000	0.0000
	6			NOx	0.0000	0.0000
				PM10	0.0000	0.0000
	7			NOx	0.0000	0.0000
				PM10	0.0000	0.0000
	8			NOx	0.0000	0.0000
				PM10	0.0000	0.0000
	9			NOx	0.0000	0.0000
				PM10	0.0000	0.0000
	10			NOx	0.0000	0.0000
				PM10	0.0000	0.0000
TOTAL (tons)				NOx	10.8917	10.8917
				PM10	11.9236	11.9236

Offsite Fee by Pollutant ($)	NOx	$101,837
	PM10	$107,443
Administrative Fee ($)		$8,371.20
Offsite Fee ($)		$209,280.00
Total Project Offsite Fee ($)		$217,651.20

TABLE 3 - APPROVED FEE DEFERRAL SCHEDULE (FDS) BY PAYMENT YEAR											
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
						10.8917					
						11.9236					
	0.0000	0.0000	0.0000	0.0000	0.0000	10.8917	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	11.9236	0.0000	0.0000	0.0000	0.0000	0.0000
	$0	$0	$0	$0	$0	$101,837	$0	$0	$0	$0	$0
	$0	$0	$0	$0	$0	$107,443	$0	$0	$0	$0	$0
	$0.00	$0.00	$0.00	$0.00	$0.00	$8,371.20	$0.00	$0.00	$0.00	$0.00	$0.00
	$0.00	$0.00	$0.00	$0.00	$0.00	$217,651.20	$0.00	$0.00	$0.00	$0.00	$0.00
						$217,651.20					

Rule 9510 Fee Schedule ($/ton)		
Year	Nox	PM10
2019 and Beyond	$9,350	$9,011

APPENDIX C

Land Use Comparison Emission Worksheets

Rancho Calera - Commercial and Park/Open Space

Madera County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Strip Mall	186.60	1000sqft	4.28	186,595.00	0
City Park	11.40	Acre	11.40	496,584.00	0

1.2 Other Project Characteristics

Urbanization Urban **Wind Speed (m/s)** 2.9 **Precipitation Freq (Days)** 51

Climate Zone 3 **Operational Year** 2025

Utility Company Pacific Gas & Electric Company

CO2 Intensity (lb/MWhr) 641.35 **CH4 Intensity (lb/MWhr)** 0.029 **N2O Intensity (lb/MWhr)** 0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Project Assumptions

Vehicle Trips -

Construction Phase -

Table Name	Column Name	Default Value	New Value
tblLandUse	BuildingSpaceSquareFeet	0.00	496,584.00
tblLandUse	GreenSpaceSquareFeet	496,584.00	0.00
tblProjectCharacteristics	OperationalYear	2018	2025

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.3377	3.4225	2.4103	5.3700e-003	0.6774	0.1460	0.8235	0.3059	0.1350	0.4408	0.0000	477.6031	477.6031	0.1135	0.0000	480.4413
2022	0.4050	3.6081	3.4058	0.0102	0.3738	0.1114	0.4852	0.1016	0.1049	0.2065	0.0000	927.6069	927.6069	0.1094	0.0000	930.3425
2023	0.3633	3.0911	3.2495	0.0100	0.3738	0.0942	0.4679	0.1016	0.0886	0.1902	0.0000	909.4930	909.4930	0.0993	0.0000	911.9761
2024	13.2707	1.7751	2.0767	5.8200e-003	0.2020	0.0561	0.2581	0.0548	0.0526	0.1075	0.0000	525.4923	525.4923	0.0681	0.0000	527.1958
Total	**14.3766**	**11.8969**	**11.1422**	**0.0315**	**1.6270**	**0.4078**	**2.0348**	**0.5639**	**0.3811**	**0.9449**	**0.0000**	**2,840.1952**	**2,840.1952**	**0.3904**	**0.0000**	**2,849.9557**

2.1 Overall Construction

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.3377	3.4225	2.4103	5.3700e-003	0.6774	0.1460	0.8235	0.3059	0.1350	0.4408	0.0000	477.6027	477.6027	0.1135	0.0000	480.4409
2022	0.4050	3.6081	3.4057	0.0102	0.3738	0.1114	0.4852	0.1016	0.1049	0.2065	0.0000	927.6065	927.6065	0.1094	0.0000	930.3421
2023	0.3633	3.0911	3.2495	0.0100	0.3738	0.0942	0.4679	0.1016	0.0886	0.1902	0.0000	909.4926	909.4926	0.0993	0.0000	911.9758
2024	13.2707	1.7751	2.0767	5.8200e-003	0.2020	0.0561	0.2581	0.0548	0.0526	0.1075	0.0000	525.4921	525.4921	0.0681	0.0000	527.1955
Total	**14.3766**	**11.8969**	**11.1422**	**0.0315**	**1.6270**	**0.4078**	**2.0348**	**0.5639**	**0.3811**	**0.9449**	**0.0000**	**2,840.1938**	**2,840.1938**	**0.3904**	**0.0000**	**2,849.9543**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	3.1433	2.0000e-005	1.8100e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.5400e-003	3.5400e-003	1.0000e-005	0.0000	3.7700e-003
Energy	0.0108	0.0982	0.0825	5.9000e-004		7.4700e-003	7.4700e-003		7.4700e-003	7.4700e-003	0.0000	560.2026	560.2026	0.0225	6.2000e-003	562.6141
Mobile	1.8422	16.0810	15.4997	0.0739	4.4784	0.0461	4.5245	1.2028	0.0431	1.2459	0.0000	6,869.9154	6,869.9154	0.5624	0.0000	6,883.9756
Waste						0.0000	0.0000		0.0000	0.0000	39.9689	0.0000	39.9689	2.3621	0.0000	99.0213
Water						0.0000	0.0000		0.0000	0.0000	4.3848	44.2114	48.5962	0.4524	0.0111	63.1975
Total	**4.9963**	**16.1793**	**15.5840**	**0.0745**	**4.4784**	**0.0536**	**4.5320**	**1.2028**	**0.0506**	**1.2534**	**44.3538**	**7,474.3329**	**7,518.6866**	**3.3994**	**0.0173**	**7,608.8122**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	3.1433	2.0000e-005	1.8100e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.5400e-003	3.5400e-003	1.0000e-005	0.0000	3.7700e-003
Energy	0.0108	0.0982	0.0825	5.9000e-004		7.4700e-003	7.4700e-003		7.4700e-003	7.4700e-003	0.0000	560.2026	560.2026	0.0225	6.2000e-003	562.6141
Mobile	1.8422	16.0810	15.4997	0.0739	4.4784	0.0461	4.5245	1.2028	0.0431	1.2459	0.0000	6,869.9154	6,869.9154	0.5624	0.0000	6,883.9756
Waste						0.0000	0.0000		0.0000	0.0000	39.9689	0.0000	39.9689	2.3621	0.0000	99.0213
Water						0.0000	0.0000		0.0000	0.0000	4.3848	44.2114	48.5962	0.4524	0.0111	63.1975
Total	**4.9963**	**16.1793**	**15.5840**	**0.0745**	**4.4784**	**0.0536**	**4.5320**	**1.2028**	**0.0506**	**1.2534**	**44.3538**	**7,474.3329**	**7,518.6866**	**3.3994**	**0.0173**	**7,608.8122**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	5/1/2021	5/28/2021	5	20	
2	Site Preparation	Site Preparation	5/29/2021	7/9/2021	5	10	
3	Grading	Grading	7/10/2021	10/22/2021	5	30	
4	Building Construction	Building Construction	10/23/2021	6/28/2024	5	300	
5	Paving	Paving	6/29/2024	9/13/2024	5	20	
6	Architectural Coating	Architectural Coating	9/14/2024	11/29/2024	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 75

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 1,024,769; Non-Residential Outdoor: 341,590; Striped Parking Area: 0 (Architectural Coating – sqft)

<u>OffRoad Equipment</u>

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	268.00	112.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	54.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0317	0.3144	0.2157	3.9000e-004		0.0155	0.0155		0.0144	0.0144	0.0000	34.0008	34.0008	9.5700e-003	0.0000	34.2400
Total	**0.0317**	**0.3144**	**0.2157**	**3.9000e-004**		**0.0155**	**0.0155**		**0.0144**	**0.0144**	**0.0000**	**34.0008**	**34.0008**	**9.5700e-003**	**0.0000**	**34.2400**

3.2 Demolition - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.3000e-004	4.0000e-004	4.4400e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.2000e-003	3.2000e-004	1.0000e-005	3.3000e-004	0.0000	1.0665	1.0665	3.0000e-005	0.0000	1.0673
Total	**6.3000e-004**	**4.0000e-004**	**4.4400e-003**	**1.0000e-005**	**1.1900e-003**	**1.0000e-005**	**1.2000e-003**	**3.2000e-004**	**1.0000e-005**	**3.3000e-004**	**0.0000**	**1.0665**	**1.0665**	**3.0000e-005**	**0.0000**	**1.0673**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0317	0.3144	0.2157	3.9000e-004		0.0155	0.0155		0.0144	0.0144	0.0000	34.0007	34.0007	9.5700e-003	0.0000	34.2400
Total	**0.0317**	**0.3144**	**0.2157**	**3.9000e-004**		**0.0155**	**0.0155**		**0.0144**	**0.0144**	**0.0000**	**34.0007**	**34.0007**	**9.5700e-003**	**0.0000**	**34.2400**

3.2 Demolition - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.3000e-004	4.0000e-004	4.4400e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.2000e-003	3.2000e-004	1.0000e-005	3.3000e-004	0.0000	1.0665	1.0665	3.0000e-005	0.0000	1.0673
Total	**6.3000e-004**	**4.0000e-004**	**4.4400e-003**	**1.0000e-005**	**1.1900e-003**	**1.0000e-005**	**1.2000e-003**	**3.2000e-004**	**1.0000e-005**	**3.3000e-004**	**0.0000**	**1.0665**	**1.0665**	**3.0000e-005**	**0.0000**	**1.0673**

3.3 Site Preparation - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2710	0.0000	0.2710	0.1490	0.0000	0.1490	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0583	0.6075	0.3173	5.7000e-004		0.0307	0.0307		0.0282	0.0282	0.0000	50.1536	50.1536	0.0162	0.0000	50.5591
Total	**0.0583**	**0.6075**	**0.3173**	**5.7000e-004**	**0.2710**	**0.0307**	**0.3017**	**0.1490**	**0.0282**	**0.1772**	**0.0000**	**50.1536**	**50.1536**	**0.0162**	**0.0000**	**50.5591**

3.3 Site Preparation - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1300e-003	7.2000e-004	8.0000e-003	2.0000e-005	2.1500e-003	2.0000e-005	2.1700e-003	5.7000e-004	2.0000e-005	5.9000e-004	0.0000	1.9197	1.9197	6.0000e-005	0.0000	1.9211
Total	**1.1300e-003**	**7.2000e-004**	**8.0000e-003**	**2.0000e-005**	**2.1500e-003**	**2.0000e-005**	**2.1700e-003**	**5.7000e-004**	**2.0000e-005**	**5.9000e-004**	**0.0000**	**1.9197**	**1.9197**	**6.0000e-005**	**0.0000**	**1.9211**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2710	0.0000	0.2710	0.1490	0.0000	0.1490	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0583	0.6075	0.3173	5.7000e-004		0.0307	0.0307		0.0282	0.0282	0.0000	50.1535	50.1535	0.0162	0.0000	50.5590
Total	**0.0583**	**0.6075**	**0.3173**	**5.7000e-004**	**0.2710**	**0.0307**	**0.3017**	**0.1490**	**0.0282**	**0.1772**	**0.0000**	**50.1535**	**50.1535**	**0.0162**	**0.0000**	**50.5590**

3.3 Site Preparation - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1300e-003	7.2000e-004	8.0000e-003	2.0000e-005	2.1500e-003	2.0000e-005	2.1700e-003	5.7000e-004	2.0000e-005	5.9000e-004	0.0000	1.9197	1.9197	6.0000e-005	0.0000	1.9211
Total	**1.1300e-003**	**7.2000e-004**	**8.0000e-003**	**2.0000e-005**	**2.1500e-003**	**2.0000e-005**	**2.1700e-003**	**5.7000e-004**	**2.0000e-005**	**5.9000e-004**	**0.0000**	**1.9197**	**1.9197**	**6.0000e-005**	**0.0000**	**1.9211**

3.4 Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.3253	0.0000	0.3253	0.1349	0.0000	0.1349	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1572	1.7400	1.1579	2.3300e-003		0.0745	0.0745		0.0685	0.0685	0.0000	204.3562	204.3562	0.0661	0.0000	206.0085
Total	**0.1572**	**1.7400**	**1.1579**	**2.3300e-003**	**0.3253**	**0.0745**	**0.3997**	**0.1349**	**0.0685**	**0.2034**	**0.0000**	**204.3562**	**204.3562**	**0.0661**	**0.0000**	**206.0085**

3.4 Grading - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.1300e-003	1.9900e-003	0.0222	6.0000e-005	5.9700e-003	5.0000e-005	6.0200e-003	1.5900e-003	4.0000e-005	1.6300e-003	0.0000	5.3325	5.3325	1.6000e-004	0.0000	5.3365
Total	**3.1300e-003**	**1.9900e-003**	**0.0222**	**6.0000e-005**	**5.9700e-003**	**5.0000e-005**	**6.0200e-003**	**1.5900e-003**	**4.0000e-005**	**1.6300e-003**	**0.0000**	**5.3325**	**5.3325**	**1.6000e-004**	**0.0000**	**5.3365**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.3253	0.0000	0.3253	0.1349	0.0000	0.1349	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1572	1.7400	1.1579	2.3300e-003		0.0745	0.0745		0.0685	0.0685	0.0000	204.3559	204.3559	0.0661	0.0000	206.0083
Total	**0.1572**	**1.7400**	**1.1579**	**2.3300e-003**	**0.3253**	**0.0745**	**0.3997**	**0.1349**	**0.0685**	**0.2034**	**0.0000**	**204.3559**	**204.3559**	**0.0661**	**0.0000**	**206.0083**

3.4 Grading - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.1300e-003	1.9900e-003	0.0222	6.0000e-005	5.9700e-003	5.0000e-005	6.0200e-003	1.5900e-003	4.0000e-005	1.6300e-003	0.0000	5.3325	5.3325	1.6000e-004	0.0000	5.3365
Total	**3.1300e-003**	**1.9900e-003**	**0.0222**	**6.0000e-005**	**5.9700e-003**	**5.0000e-005**	**6.0200e-003**	**1.5900e-003**	**4.0000e-005**	**1.6300e-003**	**0.0000**	**5.3325**	**5.3325**	**1.6000e-004**	**0.0000**	**5.3365**

3.5 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0475	0.4358	0.4144	6.7000e-004		0.0240	0.0240		0.0225	0.0225	0.0000	57.9093	57.9093	0.0140	0.0000	58.2586
Total	**0.0475**	**0.4358**	**0.4144**	**6.7000e-004**		**0.0240**	**0.0240**		**0.0225**	**0.0225**	**0.0000**	**57.9093**	**57.9093**	**0.0140**	**0.0000**	**58.2586**

3.5 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0102	0.3039	0.0719	7.9000e-004	0.0185	9.3000e-004	0.0194	5.3500e-003	8.9000e-004	6.2400e-003	0.0000	75.2273	75.2273	6.0300e-003	0.0000	75.3780
Worker	0.0280	0.0178	0.1985	5.3000e-004	0.0534	4.2000e-004	0.0538	0.0142	3.8000e-004	0.0146	0.0000	47.6372	47.6372	1.4000e-003	0.0000	47.6723
Total	**0.0381**	**0.3217**	**0.2704**	**1.3200e-003**	**0.0719**	**1.3500e-003**	**0.0732**	**0.0195**	**1.2700e-003**	**0.0208**	**0.0000**	**122.8645**	**122.8645**	**7.4300e-003**	**0.0000**	**123.0503**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0475	0.4358	0.4144	6.7000e-004		0.0240	0.0240		0.0225	0.0225	0.0000	57.9093	57.9093	0.0140	0.0000	58.2585
Total	**0.0475**	**0.4358**	**0.4144**	**6.7000e-004**		**0.0240**	**0.0240**		**0.0225**	**0.0225**	**0.0000**	**57.9093**	**57.9093**	**0.0140**	**0.0000**	**58.2585**

3.5 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0102	0.3039	0.0719	7.9000e-004	0.0185	9.3000e-004	0.0194	5.3500e-003	8.9000e-004	6.2400e-003	0.0000	75.2273	75.2273	6.0300e-003	0.0000	75.3780
Worker	0.0280	0.0178	0.1985	5.3000e-004	0.0534	4.2000e-004	0.0538	0.0142	3.8000e-004	0.0146	0.0000	47.6372	47.6372	1.4000e-003	0.0000	47.6723
Total	**0.0381**	**0.3217**	**0.2704**	**1.3200e-003**	**0.0719**	**1.3500e-003**	**0.0732**	**0.0195**	**1.2700e-003**	**0.0208**	**0.0000**	**122.8645**	**122.8645**	**7.4300e-003**	**0.0000**	**123.0503**

3.5 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2218	2.0300	2.1272	3.5000e-003		0.1052	0.1052		0.0990	0.0990	0.0000	301.2428	301.2428	0.0722	0.0000	303.0471
Total	**0.2218**	**2.0300**	**2.1272**	**3.5000e-003**		**0.1052**	**0.1052**		**0.0990**	**0.0990**	**0.0000**	**301.2428**	**301.2428**	**0.0722**	**0.0000**	**303.0471**

3.5 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0485	1.4954	0.3367	4.0900e-003	0.0963	4.1700e-003	0.1004	0.0278	3.9900e-003	0.0318	0.0000	387.6024	387.6024	0.0307	0.0000	388.3710
Worker	0.1346	0.0827	0.9418	2.6400e-003	0.2775	2.1000e-003	0.2796	0.0738	1.9300e-003	0.0757	0.0000	238.7616	238.7616	6.5100e-003	0.0000	238.9245
Total	**0.1832**	**1.5781**	**1.2785**	**6.7300e-003**	**0.3738**	**6.2700e-003**	**0.3800**	**0.1016**	**5.9200e-003**	**0.1075**	**0.0000**	**626.3640**	**626.3640**	**0.0373**	**0.0000**	**627.2954**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2218	2.0300	2.1272	3.5000e-003		0.1052	0.1052		0.0990	0.0990	0.0000	301.2425	301.2425	0.0722	0.0000	303.0467
Total	**0.2218**	**2.0300**	**2.1272**	**3.5000e-003**		**0.1052**	**0.1052**		**0.0990**	**0.0990**	**0.0000**	**301.2425**	**301.2425**	**0.0722**	**0.0000**	**303.0467**

3.5 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0485	1.4954	0.3367	4.0900e-003	0.0963	4.1700e-003	0.1004	0.0278	3.9900e-003	0.0318	0.0000	387.6024	387.6024	0.0307	0.0000	388.3710
Worker	0.1346	0.0827	0.9418	2.6400e-003	0.2775	2.1000e-003	0.2796	0.0738	1.9300e-003	0.0757	0.0000	238.7616	238.7616	6.5100e-003	0.0000	238.9245
Total	**0.1832**	**1.5781**	**1.2785**	**6.7300e-003**	**0.3738**	**6.2700e-003**	**0.3800**	**0.1016**	**5.9200e-003**	**0.1075**	**0.0000**	**626.3640**	**626.3640**	**0.0373**	**0.0000**	**627.2954**

3.5 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2045	1.8700	2.1117	3.5000e-003		0.0910	0.0910		0.0856	0.0856	0.0000	301.3462	301.3462	0.0717	0.0000	303.1383
Total	**0.2045**	**1.8700**	**2.1117**	**3.5000e-003**		**0.0910**	**0.0910**		**0.0856**	**0.0856**	**0.0000**	**301.3462**	**301.3462**	**0.0717**	**0.0000**	**303.1383**

3.5 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0340	1.1471	0.2777	3.9900e-003	0.0963	1.1600e-003	0.0974	0.0278	1.1100e-003	0.0289	0.0000	378.4045	378.4045	0.0218	0.0000	378.9502
Worker	0.1248	0.0740	0.8601	2.5400e-003	0.2775	2.0400e-003	0.2796	0.0738	1.8700e-003	0.0757	0.0000	229.7424	229.7424	5.8100e-003	0.0000	229.8876
Total	**0.1588**	**1.2211**	**1.1377**	**6.5300e-003**	**0.3738**	**3.2000e-003**	**0.3770**	**0.1016**	**2.9800e-003**	**0.1046**	**0.0000**	**608.1468**	**608.1468**	**0.0276**	**0.0000**	**608.8378**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2045	1.8700	2.1117	3.5000e-003		0.0910	0.0910		0.0856	0.0856	0.0000	301.3458	301.3458	0.0717	0.0000	303.1380
Total	**0.2045**	**1.8700**	**2.1117**	**3.5000e-003**		**0.0910**	**0.0910**		**0.0856**	**0.0856**	**0.0000**	**301.3458**	**301.3458**	**0.0717**	**0.0000**	**303.1380**

3.5 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0340	1.1471	0.2777	3.9900e-003	0.0963	1.1600e-003	0.0974	0.0278	1.1100e-003	0.0289	0.0000	378.4045	378.4045	0.0218	0.0000	378.9502
Worker	0.1248	0.0740	0.8601	2.5400e-003	0.2775	2.0400e-003	0.2796	0.0738	1.8700e-003	0.0757	0.0000	229.7424	229.7424	5.8100e-003	0.0000	229.8876
Total	**0.1588**	**1.2211**	**1.1377**	**6.5300e-003**	**0.3738**	**3.2000e-003**	**0.3770**	**0.1016**	**2.9800e-003**	**0.1046**	**0.0000**	**608.1468**	**608.1468**	**0.0276**	**0.0000**	**608.8378**

3.5 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0957	0.8739	1.0508	1.7500e-003		0.0399	0.0399		0.0375	0.0375	0.0000	150.7019	150.7019	0.0356	0.0000	151.5928
Total	**0.0957**	**0.8739**	**1.0508**	**1.7500e-003**		**0.0399**	**0.0399**		**0.0375**	**0.0375**	**0.0000**	**150.7019**	**150.7019**	**0.0356**	**0.0000**	**151.5928**

3.5 Building Construction - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0162	0.5687	0.1265	1.9800e-003	0.0481	5.7000e-004	0.0487	0.0139	5.5000e-004	0.0145	0.0000	187.7720	187.7720	0.0113	0.0000	188.0545
Worker	0.0584	0.0335	0.4034	1.2500e-003	0.1388	1.0300e-003	0.1398	0.0369	9.5000e-004	0.0378	0.0000	112.6531	112.6531	2.7000e-003	0.0000	112.7206
Total	**0.0745**	**0.6022**	**0.5299**	**3.2300e-003**	**0.1869**	**1.6000e-003**	**0.1885**	**0.0508**	**1.5000e-003**	**0.0523**	**0.0000**	**300.4251**	**300.4251**	**0.0140**	**0.0000**	**300.7751**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0957	0.8738	1.0508	1.7500e-003		0.0399	0.0399		0.0375	0.0375	0.0000	150.7017	150.7017	0.0356	0.0000	151.5927
Total	**0.0957**	**0.8738**	**1.0508**	**1.7500e-003**		**0.0399**	**0.0399**		**0.0375**	**0.0375**	**0.0000**	**150.7017**	**150.7017**	**0.0356**	**0.0000**	**151.5927**

3.5 Building Construction - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0162	0.5687	0.1265	1.9800e-003	0.0481	5.7000e-004	0.0487	0.0139	5.5000e-004	0.0145	0.0000	187.7720	187.7720	0.0113	0.0000	188.0545
Worker	0.0584	0.0335	0.4034	1.2500e-003	0.1388	1.0300e-003	0.1398	0.0369	9.5000e-004	0.0378	0.0000	112.6531	112.6531	2.7000e-003	0.0000	112.7206
Total	**0.0745**	**0.6022**	**0.5299**	**3.2300e-003**	**0.1869**	**1.6000e-003**	**0.1885**	**0.0508**	**1.5000e-003**	**0.0523**	**0.0000**	**300.4251**	**300.4251**	**0.0140**	**0.0000**	**300.7751**

3.6 Paving - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0272	0.2619	0.4022	6.3000e-004		0.0129	0.0129		0.0119	0.0119	0.0000	55.0730	55.0730	0.0178	0.0000	55.5183
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0272**	**0.2619**	**0.4022**	**6.3000e-004**		**0.0129**	**0.0129**		**0.0119**	**0.0119**	**0.0000**	**55.0730**	**55.0730**	**0.0178**	**0.0000**	**55.5183**

3.6 Paving - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3800e-003	7.9000e-004	9.5500e-003	3.0000e-005	3.2900e-003	2.0000e-005	3.3100e-003	8.7000e-004	2.0000e-005	9.0000e-004	0.0000	2.6676	2.6676	6.0000e-005	0.0000	2.6692
Total	**1.3800e-003**	**7.9000e-004**	**9.5500e-003**	**3.0000e-005**	**3.2900e-003**	**2.0000e-005**	**3.3100e-003**	**8.7000e-004**	**2.0000e-005**	**9.0000e-004**	**0.0000**	**2.6676**	**2.6676**	**6.0000e-005**	**0.0000**	**2.6692**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0272	0.2619	0.4022	6.3000e-004		0.0129	0.0129		0.0119	0.0119	0.0000	55.0729	55.0729	0.0178	0.0000	55.5182
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0272**	**0.2619**	**0.4022**	**6.3000e-004**		**0.0129**	**0.0129**		**0.0119**	**0.0119**	**0.0000**	**55.0729**	**55.0729**	**0.0178**	**0.0000**	**55.5182**

3.6 Paving - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3800e-003	7.9000e-004	9.5500e-003	3.0000e-005	3.2900e-003	2.0000e-005	3.3100e-003	8.7000e-004	2.0000e-005	9.0000e-004	0.0000	2.6676	2.6676	6.0000e-005	0.0000	2.6692
Total	**1.3800e-003**	**7.9000e-004**	**9.5500e-003**	**3.0000e-005**	**3.2900e-003**	**2.0000e-005**	**3.3100e-003**	**8.7000e-004**	**2.0000e-005**	**9.0000e-004**	**0.0000**	**2.6676**	**2.6676**	**6.0000e-005**	**0.0000**	**2.6692**

3.7 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	13.0620					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.9700e-003	0.0335	0.0498	8.0000e-005		1.6800e-003	1.6800e-003		1.6800e-003	1.6800e-003	0.0000	7.0215	7.0215	4.0000e-004	0.0000	7.0313
Total	**13.0669**	**0.0335**	**0.0498**	**8.0000e-005**		**1.6800e-003**	**1.6800e-003**		**1.6800e-003**	**1.6800e-003**	**0.0000**	**7.0215**	**7.0215**	**4.0000e-004**	**0.0000**	**7.0313**

3.7 Architectural Coating - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.9700e-003	2.8600e-003	0.0344	1.1000e-004	0.0118	9.0000e-005	0.0119	3.1400e-003	8.0000e-005	3.2300e-003	0.0000	9.6033	9.6033	2.3000e-004	0.0000	9.6091
Total	**4.9700e-003**	**2.8600e-003**	**0.0344**	**1.1000e-004**	**0.0118**	**9.0000e-005**	**0.0119**	**3.1400e-003**	**8.0000e-005**	**3.2300e-003**	**0.0000**	**9.6033**	**9.6033**	**2.3000e-004**	**0.0000**	**9.6091**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	13.0620					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.9700e-003	0.0335	0.0498	8.0000e-005		1.6800e-003	1.6800e-003		1.6800e-003	1.6800e-003	0.0000	7.0214	7.0214	4.0000e-004	0.0000	7.0313
Total	**13.0669**	**0.0335**	**0.0498**	**8.0000e-005**		**1.6800e-003**	**1.6800e-003**		**1.6800e-003**	**1.6800e-003**	**0.0000**	**7.0214**	**7.0214**	**4.0000e-004**	**0.0000**	**7.0313**

3.7 Architectural Coating - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.9700e-003	2.8600e-003	0.0344	1.1000e-004	0.0118	9.0000e-005	0.0119	3.1400e-003	8.0000e-005	3.2300e-003	0.0000	9.6033	9.6033	2.3000e-004	0.0000	9.6091
Total	**4.9700e-003**	**2.8600e-003**	**0.0344**	**1.1000e-004**	**0.0118**	**9.0000e-005**	**0.0119**	**3.1400e-003**	**8.0000e-005**	**3.2300e-003**	**0.0000**	**9.6033**	**9.6033**	**2.3000e-004**	**0.0000**	**9.6091**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.8422	16.0810	15.4997	0.0739	4.4784	0.0461	4.5245	1.2028	0.0431	1.2459	0.0000	6,869.9154	6,869.9154	0.5624	0.0000	6,883.9756
Unmitigated	1.8422	16.0810	15.4997	0.0739	4.4784	0.0461	4.5245	1.2028	0.0431	1.2459	0.0000	6,869.9154	6,869.9154	0.5624	0.0000	6,883.9756

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	21.55	259.35	190.84	170,153	170,153
Strip Mall	8,269.89	7,844.45	3812.14	11,661,579	11,661,579
Total	8,291.44	8,103.80	4,002.97	11,831,732	11,831,732

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
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00	45	40	15

4.4 Fleet Mix

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.550892	0.030057	0.166000	0.105135	0.016269	0.004636	0.013801	0.100346	0.002670	0.001604	0.006650	0.001183	0.000756

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	453.2599	453.2599	0.0205	4.2400e-003	455.0359
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	453.2599	453.2599	0.0205	4.2400e-003	455.0359
NaturalGas Mitigated	0.0108	0.0982	0.0825	5.9000e-004		7.4700e-003	7.4700e-003		7.4700e-003	7.4700e-003	0.0000	106.9427	106.9427	2.0500e-003	1.9600e-003	107.5782
NaturalGas Unmitigated	0.0108	0.0982	0.0825	5.9000e-004		7.4700e-003	7.4700e-003		7.4700e-003	7.4700e-003	0.0000	106.9427	106.9427	2.0500e-003	1.9600e-003	107.5782

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					
Strip Mall	2.00403e+006	0.0108	0.0982	0.0825	5.9000e-004		7.4700e-003	7.4700e-003		7.4700e-003	7.4700e-003	0.0000	106.9427	106.9427	2.0500e-003	1.9600e-003	107.5782
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0108**	**0.0982**	**0.0825**	**5.9000e-004**		**7.4700e-003**	**7.4700e-003**		**7.4700e-003**	**7.4700e-003**	**0.0000**	**106.9427**	**106.9427**	**2.0500e-003**	**1.9600e-003**	**107.5782**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Strip Mall	2.00403e +006	0.0108	0.0982	0.0825	5.9000e-004		7.4700e-003	7.4700e-003		7.4700e-003	7.4700e-003	0.0000	106.9427	106.9427	2.0500e-003	1.9600e-003	107.5782
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0108**	**0.0982**	**0.0825**	**5.9000e-004**		**7.4700e-003**	**7.4700e-003**		**7.4700e-003**	**7.4700e-003**	**0.0000**	**106.9427**	**106.9427**	**2.0500e-003**	**1.9600e-003**	**107.5782**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	1.55807e +006	453.2599	0.0205	4.2400e-003	455.0359
Total		**453.2599**	**0.0205**	**4.2400e-003**	**455.0359**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	1.55807e +006	453.2599	0.0205	4.2400e-003	455.0359
Total		**453.2599**	**0.0205**	**4.2400e-003**	**455.0359**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	3.1433	2.0000e-005	1.8100e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.5400e-003	3.5400e-003	1.0000e-005	0.0000	3.7700e-003
Unmitigated	3.1433	2.0000e-005	1.8100e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.5400e-003	3.5400e-003	1.0000e-005	0.0000	3.7700e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.4750					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.6682					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.7000e-004	2.0000e-005	1.8100e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.5400e-003	3.5400e-003	1.0000e-005	0.0000	3.7700e-003
Total	**3.1433**	**2.0000e-005**	**1.8100e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**3.5400e-003**	**3.5400e-003**	**1.0000e-005**	**0.0000**	**3.7700e-003**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.4750					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.6682					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.7000e-004	2.0000e-005	1.8100e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.5400e-003	3.5400e-003	1.0000e-005	0.0000	3.7700e-003
Total	**3.1433**	**2.0000e-005**	**1.8100e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**3.5400e-003**	**3.5400e-003**	**1.0000e-005**	**0.0000**	**3.7700e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	48.5962	0.4524	0.0111	63.1975
Unmitigated	48.5962	0.4524	0.0111	63.1975

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 13.5829	13.8300	6.3000e-004	1.3000e-004	13.8842
Strip Mall	13.8212 / 8.47105	34.7662	0.4517	0.0109	49.3133
Total		**48.5962**	**0.4524**	**0.0111**	**63.1975**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 13.5829	13.8300	6.3000e-004	1.3000e-004	13.8842
Strip Mall	13.8212 / 8.47105	34.7662	0.4517	0.0109	49.3133
Total		**48.5962**	**0.4524**	**0.0111**	**63.1975**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	39.9689	2.3621	0.0000	99.0213
Unmitigated	39.9689	2.3621	0.0000	99.0213

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.98	0.1989	0.0118	0.0000	0.4928
Strip Mall	195.92	39.7700	2.3503	0.0000	98.5285
Total		**39.9689**	**2.3621**	**0.0000**	**99.0213**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.98	0.1989	0.0118	0.0000	0.4928
Strip Mall	195.92	39.7700	2.3503	0.0000	98.5285
Total		**39.9689**	**2.3621**	**0.0000**	**99.0213**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Rancho Calera - School/Public Facilities

Madera County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Government Office Building	100.00	1000sqft	5.80	100,000.00	0
Elementary School	500.00	Student	1.00	41,801.69	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.9	**Precipitation Freq (Days)**	51
Climate Zone	3			**Operational Year**	2025
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Project Assumptions

Vehicle Trips -

Construction Phase -

Table Name	Column Name	Default Value	New Value
tblLandUse	LotAcreage	2.30	5.80
tblLandUse	LotAcreage	0.96	1.00
tblProjectCharacteristics	OperationalYear	2018	2025

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.2127	2.0191	1.6570	3.2400e-003	0.1934	0.0979	0.2913	0.0935	0.0915	0.1850	0.0000	285.1585	285.1585	0.0622	0.0000	286.7126
2022	1.1037	1.0760	1.1287	2.2300e-003	0.0309	0.0495	0.0804	8.4000e-003	0.0465	0.0549	0.0000	196.0841	196.0841	0.0389	0.0000	197.0560
Total	**1.3164**	**3.0951**	**2.7857**	**5.4700e-003**	**0.2242**	**0.1474**	**0.3717**	**0.1019**	**0.1380**	**0.2399**	**0.0000**	**481.2427**	**481.2427**	**0.1010**	**0.0000**	**483.7686**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.2127	2.0191	1.6570	3.2400e-003	0.1934	0.0979	0.2913	0.0935	0.0915	0.1850	0.0000	285.1583	285.1583	0.0622	0.0000	286.7123
2022	1.1037	1.0760	1.1287	2.2300e-003	0.0309	0.0495	0.0804	8.4000e-003	0.0465	0.0549	0.0000	196.0839	196.0839	0.0389	0.0000	197.0558
Total	**1.3164**	**3.0951**	**2.7857**	**5.4700e-003**	**0.2242**	**0.1474**	**0.3717**	**0.1019**	**0.1380**	**0.2399**	**0.0000**	**481.2422**	**481.2422**	**0.1010**	**0.0000**	**483.7681**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.6529	5.0000e-005	5.5000e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0107	0.0107	3.0000e-005	0.0000	0.0114
Energy	0.0128	0.1160	0.0975	7.0000e-004		8.8200e-003	8.8200e-003		8.8200e-003	8.8200e-003	0.0000	485.2228	485.2228	0.0187	5.6700e-003	487.3797
Mobile	1.3480	11.6876	11.9081	0.0573	3.5804	0.0362	3.6165	0.9616	0.0338	0.9954	0.0000	5,327.0410	5,327.0410	0.4081	0.0000	5,337.2431
Waste						0.0000	0.0000		0.0000	0.0000	37.4011	0.0000	37.4011	2.2103	0.0000	92.6596
Water						0.0000	0.0000		0.0000	0.0000	6.6871	48.7505	55.4376	0.6890	0.0167	77.6322
Total	**2.0136**	**11.8037**	**12.0111**	**0.0580**	**3.5804**	**0.0450**	**3.6254**	**0.9616**	**0.0426**	**1.0043**	**44.0882**	**5,861.0250**	**5,905.1132**	**3.3261**	**0.0223**	**5,994.9259**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.6529	5.0000e-005	5.5000e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0107	0.0107	3.0000e-005	0.0000	0.0114
Energy	0.0128	0.1160	0.0975	7.0000e-004		8.8200e-003	8.8200e-003		8.8200e-003	8.8200e-003	0.0000	485.2228	485.2228	0.0187	5.6700e-003	487.3797
Mobile	1.3480	11.6876	11.9081	0.0573	3.5804	0.0362	3.6165	0.9616	0.0338	0.9954	0.0000	5,327.0410	5,327.0410	0.4081	0.0000	5,337.2431
Waste						0.0000	0.0000		0.0000	0.0000	37.4011	0.0000	37.4011	2.2103	0.0000	92.6596
Water						0.0000	0.0000		0.0000	0.0000	6.6871	48.7505	55.4376	0.6890	0.0167	77.6322
Total	**2.0136**	**11.8037**	**12.0111**	**0.0580**	**3.5804**	**0.0450**	**3.6254**	**0.9616**	**0.0426**	**1.0043**	**44.0882**	**5,861.0250**	**5,905.1132**	**3.3261**	**0.0223**	**5,994.9259**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	5/1/2021	5/28/2021	5	20	
2	Site Preparation	Site Preparation	5/29/2021	6/11/2021	5	10	
3	Grading	Grading	6/12/2021	7/9/2021	5	20	
4	Building Construction	Building Construction	7/10/2021	5/27/2022	5	230	
5	Paving	Paving	5/28/2022	6/24/2022	5	20	
6	Architectural Coating	Architectural Coating	6/25/2022	7/22/2022	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 10

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 212,703; Non-Residential Outdoor: 70,901; Striped Parking Area: 0 (Architectural Coating – sqft)

<u>OffRoad Equipment</u>

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	50.00	23.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0317	0.3144	0.2157	3.9000e-004		0.0155	0.0155		0.0144	0.0144	0.0000	34.0008	34.0008	9.5700e-003	0.0000	34.2400
Total	**0.0317**	**0.3144**	**0.2157**	**3.9000e-004**		**0.0155**	**0.0155**		**0.0144**	**0.0144**	**0.0000**	**34.0008**	**34.0008**	**9.5700e-003**	**0.0000**	**34.2400**

3.2 Demolition - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.3000e-004	4.0000e-004	4.4400e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.2000e-003	3.2000e-004	1.0000e-005	3.3000e-004	0.0000	1.0665	1.0665	3.0000e-005	0.0000	1.0673
Total	**6.3000e-004**	**4.0000e-004**	**4.4400e-003**	**1.0000e-005**	**1.1900e-003**	**1.0000e-005**	**1.2000e-003**	**3.2000e-004**	**1.0000e-005**	**3.3000e-004**	**0.0000**	**1.0665**	**1.0665**	**3.0000e-005**	**0.0000**	**1.0673**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0317	0.3144	0.2157	3.9000e-004		0.0155	0.0155		0.0144	0.0144	0.0000	34.0007	34.0007	9.5700e-003	0.0000	34.2400
Total	**0.0317**	**0.3144**	**0.2157**	**3.9000e-004**		**0.0155**	**0.0155**		**0.0144**	**0.0144**	**0.0000**	**34.0007**	**34.0007**	**9.5700e-003**	**0.0000**	**34.2400**

3.2 Demolition - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.3000e-004	4.0000e-004	4.4400e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.2000e-003	3.2000e-004	1.0000e-005	3.3000e-004	0.0000	1.0665	1.0665	3.0000e-005	0.0000	1.0673
Total	**6.3000e-004**	**4.0000e-004**	**4.4400e-003**	**1.0000e-005**	**1.1900e-003**	**1.0000e-005**	**1.2000e-003**	**3.2000e-004**	**1.0000e-005**	**3.3000e-004**	**0.0000**	**1.0665**	**1.0665**	**3.0000e-005**	**0.0000**	**1.0673**

3.3 Site Preparation - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0194	0.2025	0.1058	1.9000e-004		0.0102	0.0102		9.4000e-003	9.4000e-003	0.0000	16.7179	16.7179	5.4100e-003	0.0000	16.8530
Total	**0.0194**	**0.2025**	**0.1058**	**1.9000e-004**	**0.0903**	**0.0102**	**0.1006**	**0.0497**	**9.4000e-003**	**0.0591**	**0.0000**	**16.7179**	**16.7179**	**5.4100e-003**	**0.0000**	**16.8530**

3.3 Site Preparation - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.8000e-004	2.4000e-004	2.6700e-003	1.0000e-005	7.2000e-004	1.0000e-005	7.2000e-004	1.9000e-004	1.0000e-005	2.0000e-004	0.0000	0.6399	0.6399	2.0000e-005	0.0000	0.6404
Total	**3.8000e-004**	**2.4000e-004**	**2.6700e-003**	**1.0000e-005**	**7.2000e-004**	**1.0000e-005**	**7.2000e-004**	**1.9000e-004**	**1.0000e-005**	**2.0000e-004**	**0.0000**	**0.6399**	**0.6399**	**2.0000e-005**	**0.0000**	**0.6404**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0194	0.2025	0.1058	1.9000e-004		0.0102	0.0102		9.4000e-003	9.4000e-003	0.0000	16.7178	16.7178	5.4100e-003	0.0000	16.8530
Total	**0.0194**	**0.2025**	**0.1058**	**1.9000e-004**	**0.0903**	**0.0102**	**0.1006**	**0.0497**	**9.4000e-003**	**0.0591**	**0.0000**	**16.7178**	**16.7178**	**5.4100e-003**	**0.0000**	**16.8530**

3.3 Site Preparation - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.8000e-004	2.4000e-004	2.6700e-003	1.0000e-005	7.2000e-004	1.0000e-005	7.2000e-004	1.9000e-004	1.0000e-005	2.0000e-004	0.0000	0.6399	0.6399	2.0000e-005	0.0000	0.6404
Total	**3.8000e-004**	**2.4000e-004**	**2.6700e-003**	**1.0000e-005**	**7.2000e-004**	**1.0000e-005**	**7.2000e-004**	**1.9000e-004**	**1.0000e-005**	**2.0000e-004**	**0.0000**	**0.6399**	**0.6399**	**2.0000e-005**	**0.0000**	**0.6404**

3.4 Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0655	0.0000	0.0655	0.0337	0.0000	0.0337	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0229	0.2474	0.1586	3.0000e-004		0.0116	0.0116		0.0107	0.0107	0.0000	26.0537	26.0537	8.4300e-003	0.0000	26.2644
Total	**0.0229**	**0.2474**	**0.1586**	**3.0000e-004**	**0.0655**	**0.0116**	**0.0771**	**0.0337**	**0.0107**	**0.0443**	**0.0000**	**26.0537**	**26.0537**	**8.4300e-003**	**0.0000**	**26.2644**

3.4 Grading - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.3000e-004	4.0000e-004	4.4400e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.2000e-003	3.2000e-004	1.0000e-005	3.3000e-004	0.0000	1.0665	1.0665	3.0000e-005	0.0000	1.0673
Total	**6.3000e-004**	**4.0000e-004**	**4.4400e-003**	**1.0000e-005**	**1.1900e-003**	**1.0000e-005**	**1.2000e-003**	**3.2000e-004**	**1.0000e-005**	**3.3000e-004**	**0.0000**	**1.0665**	**1.0665**	**3.0000e-005**	**0.0000**	**1.0673**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0655	0.0000	0.0655	0.0337	0.0000	0.0337	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0229	0.2474	0.1586	3.0000e-004		0.0116	0.0116		0.0107	0.0107	0.0000	26.0537	26.0537	8.4300e-003	0.0000	26.2643
Total	**0.0229**	**0.2474**	**0.1586**	**3.0000e-004**	**0.0655**	**0.0116**	**0.0771**	**0.0337**	**0.0107**	**0.0443**	**0.0000**	**26.0537**	**26.0537**	**8.4300e-003**	**0.0000**	**26.2643**

3.4 Grading - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.3000e-004	4.0000e-004	4.4400e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.2000e-003	3.2000e-004	1.0000e-005	3.3000e-004	0.0000	1.0665	1.0665	3.0000e-005	0.0000	1.0673
Total	**6.3000e-004**	**4.0000e-004**	**4.4400e-003**	**1.0000e-005**	**1.1900e-003**	**1.0000e-005**	**1.2000e-003**	**3.2000e-004**	**1.0000e-005**	**3.3000e-004**	**0.0000**	**1.0665**	**1.0665**	**3.0000e-005**	**0.0000**	**1.0673**

3.5 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1188	1.0895	1.0360	1.6800e-003		0.0599	0.0599		0.0563	0.0563	0.0000	144.7733	144.7733	0.0349	0.0000	145.6465
Total	**0.1188**	**1.0895**	**1.0360**	**1.6800e-003**		**0.0599**	**0.0599**		**0.0563**	**0.0563**	**0.0000**	**144.7733**	**144.7733**	**0.0349**	**0.0000**	**145.6465**

3.5 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.2100e-003	0.1560	0.0369	4.1000e-004	9.5000e-003	4.8000e-004	9.9800e-003	2.7500e-003	4.5000e-004	3.2000e-003	0.0000	38.6211	38.6211	3.0900e-003	0.0000	38.6985
Worker	0.0131	8.3100e-003	0.0926	2.5000e-004	0.0249	1.9000e-004	0.0251	6.6200e-003	1.8000e-004	6.8000e-003	0.0000	22.2189	22.2189	6.5000e-004	0.0000	22.2352
Total	**0.0183**	**0.1643**	**0.1295**	**6.6000e-004**	**0.0344**	**6.7000e-004**	**0.0351**	**9.3700e-003**	**6.3000e-004**	**0.0100**	**0.0000**	**60.8400**	**60.8400**	**3.7400e-003**	**0.0000**	**60.9337**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1188	1.0895	1.0360	1.6800e-003		0.0599	0.0599		0.0563	0.0563	0.0000	144.7731	144.7731	0.0349	0.0000	145.6463
Total	**0.1188**	**1.0895**	**1.0360**	**1.6800e-003**		**0.0599**	**0.0599**		**0.0563**	**0.0563**	**0.0000**	**144.7731**	**144.7731**	**0.0349**	**0.0000**	**145.6463**

3.5 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.2100e-003	0.1560	0.0369	4.1000e-004	9.5000e-003	4.8000e-004	9.9800e-003	2.7500e-003	4.5000e-004	3.2000e-003	0.0000	38.6211	38.6211	3.0900e-003	0.0000	38.6985
Worker	0.0131	8.3100e-003	0.0926	2.5000e-004	0.0249	1.9000e-004	0.0251	6.6200e-003	1.8000e-004	6.8000e-003	0.0000	22.2189	22.2189	6.5000e-004	0.0000	22.2352
Total	**0.0183**	**0.1643**	**0.1295**	**6.6000e-004**	**0.0344**	**6.7000e-004**	**0.0351**	**9.3700e-003**	**6.3000e-004**	**0.0100**	**0.0000**	**60.8400**	**60.8400**	**3.7400e-003**	**0.0000**	**60.9337**

3.5 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0896	0.8198	0.8591	1.4100e-003		0.0425	0.0425		0.0400	0.0400	0.0000	121.6558	121.6558	0.0292	0.0000	122.3844
Total	**0.0896**	**0.8198**	**0.8591**	**1.4100e-003**		**0.0425**	**0.0425**		**0.0400**	**0.0400**	**0.0000**	**121.6558**	**121.6558**	**0.0292**	**0.0000**	**122.3844**

3.5 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.0200e-003	0.1240	0.0279	3.4000e-004	7.9800e-003	3.5000e-004	8.3300e-003	2.3100e-003	3.3000e-004	2.6400e-003	0.0000	32.1449	32.1449	2.5500e-003	0.0000	32.2087
Worker	0.0101	6.2300e-003	0.0710	2.0000e-004	0.0209	1.6000e-004	0.0211	5.5600e-003	1.5000e-004	5.7000e-003	0.0000	17.9894	17.9894	4.9000e-004	0.0000	18.0016
Total	**0.0142**	**0.1303**	**0.0989**	**5.4000e-004**	**0.0289**	**5.1000e-004**	**0.0294**	**7.8700e-003**	**4.8000e-004**	**8.3400e-003**	**0.0000**	**50.1343**	**50.1343**	**3.0400e-003**	**0.0000**	**50.2103**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0896	0.8198	0.8591	1.4100e-003		0.0425	0.0425		0.0400	0.0400	0.0000	121.6556	121.6556	0.0292	0.0000	122.3842
Total	**0.0896**	**0.8198**	**0.8591**	**1.4100e-003**		**0.0425**	**0.0425**		**0.0400**	**0.0400**	**0.0000**	**121.6556**	**121.6556**	**0.0292**	**0.0000**	**122.3842**

3.5 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.0200e-003	0.1240	0.0279	3.4000e-004	7.9800e-003	3.5000e-004	8.3300e-003	2.3100e-003	3.3000e-004	2.6400e-003	0.0000	32.1449	32.1449	2.5500e-003	0.0000	32.2087
Worker	0.0101	6.2300e-003	0.0710	2.0000e-004	0.0209	1.6000e-004	0.0211	5.5600e-003	1.5000e-004	5.7000e-003	0.0000	17.9894	17.9894	4.9000e-004	0.0000	18.0016
Total	**0.0142**	**0.1303**	**0.0989**	**5.4000e-004**	**0.0289**	**5.1000e-004**	**0.0294**	**7.8700e-003**	**4.8000e-004**	**8.3400e-003**	**0.0000**	**50.1343**	**50.1343**	**3.0400e-003**	**0.0000**	**50.2103**

3.6 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0110	0.1113	0.1458	2.3000e-004		5.6800e-003	5.6800e-003		5.2200e-003	5.2200e-003	0.0000	20.0276	20.0276	6.4800e-003	0.0000	20.1895
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0110**	**0.1113**	**0.1458**	**2.3000e-004**		**5.6800e-003**	**5.6800e-003**		**5.2200e-003**	**5.2200e-003**	**0.0000**	**20.0276**	**20.0276**	**6.4800e-003**	**0.0000**	**20.1895**

3.6 Paving - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.8000e-004	3.6000e-004	4.0500e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.2000e-003	3.2000e-004	1.0000e-005	3.3000e-004	0.0000	1.0280	1.0280	3.0000e-005	0.0000	1.0287
Total	**5.8000e-004**	**3.6000e-004**	**4.0500e-003**	**1.0000e-005**	**1.1900e-003**	**1.0000e-005**	**1.2000e-003**	**3.2000e-004**	**1.0000e-005**	**3.3000e-004**	**0.0000**	**1.0280**	**1.0280**	**3.0000e-005**	**0.0000**	**1.0287**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0110	0.1113	0.1458	2.3000e-004		5.6800e-003	5.6800e-003		5.2200e-003	5.2200e-003	0.0000	20.0275	20.0275	6.4800e-003	0.0000	20.1895
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0110**	**0.1113**	**0.1458**	**2.3000e-004**		**5.6800e-003**	**5.6800e-003**		**5.2200e-003**	**5.2200e-003**	**0.0000**	**20.0275**	**20.0275**	**6.4800e-003**	**0.0000**	**20.1895**

3.6 Paving - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.8000e-004	3.6000e-004	4.0500e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.2000e-003	3.2000e-004	1.0000e-005	3.3000e-004	0.0000	1.0280	1.0280	3.0000e-005	0.0000	1.0287
Total	**5.8000e-004**	**3.6000e-004**	**4.0500e-003**	**1.0000e-005**	**1.1900e-003**	**1.0000e-005**	**1.2000e-003**	**3.2000e-004**	**1.0000e-005**	**3.3000e-004**	**0.0000**	**1.0280**	**1.0280**	**3.0000e-005**	**0.0000**	**1.0287**

3.7 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.9859					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.0500e-003	0.0141	0.0181	3.0000e-005		8.2000e-004	8.2000e-004		8.2000e-004	8.2000e-004	0.0000	2.5533	2.5533	1.7000e-004	0.0000	2.5574
Total	**0.9879**	**0.0141**	**0.0181**	**3.0000e-005**		**8.2000e-004**	**8.2000e-004**		**8.2000e-004**	**8.2000e-004**	**0.0000**	**2.5533**	**2.5533**	**1.7000e-004**	**0.0000**	**2.5574**

3.7 Architectural Coating - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.9000e-004	2.4000e-004	2.7000e-003	1.0000e-005	8.0000e-004	1.0000e-005	8.0000e-004	2.1000e-004	1.0000e-005	2.2000e-004	0.0000	0.6853	0.6853	2.0000e-005	0.0000	0.6858
Total	**3.9000e-004**	**2.4000e-004**	**2.7000e-003**	**1.0000e-005**	**8.0000e-004**	**1.0000e-005**	**8.0000e-004**	**2.1000e-004**	**1.0000e-005**	**2.2000e-004**	**0.0000**	**0.6853**	**0.6853**	**2.0000e-005**	**0.0000**	**0.6858**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.9859					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.0500e-003	0.0141	0.0181	3.0000e-005		8.2000e-004	8.2000e-004		8.2000e-004	8.2000e-004	0.0000	2.5533	2.5533	1.7000e-004	0.0000	2.5574
Total	**0.9879**	**0.0141**	**0.0181**	**3.0000e-005**		**8.2000e-004**	**8.2000e-004**		**8.2000e-004**	**8.2000e-004**	**0.0000**	**2.5533**	**2.5533**	**1.7000e-004**	**0.0000**	**2.5574**

3.7 Architectural Coating - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.9000e-004	2.4000e-004	2.7000e-003	1.0000e-005	8.0000e-004	1.0000e-005	8.0000e-004	2.1000e-004	1.0000e-005	2.2000e-004	0.0000	0.6853	0.6853	2.0000e-005	0.0000	0.6858
Total	**3.9000e-004**	**2.4000e-004**	**2.7000e-003**	**1.0000e-005**	**8.0000e-004**	**1.0000e-005**	**8.0000e-004**	**2.1000e-004**	**1.0000e-005**	**2.2000e-004**	**0.0000**	**0.6853**	**0.6853**	**2.0000e-005**	**0.0000**	**0.6858**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.3480	11.6876	11.9081	0.0573	3.5804	0.0362	3.6165	0.9616	0.0338	0.9954	0.0000	5,327.0410	5,327.0410	0.4081	0.0000	5,337.2431
Unmitigated	1.3480	11.6876	11.9081	0.0573	3.5804	0.0362	3.6165	0.9616	0.0338	0.9954	0.0000	5,327.0410	5,327.0410	0.4081	0.0000	5,337.2431

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Elementary School	645.00	0.00	0.00	1,015,847	1,015,847
Government Office Building	6,893.00	0.00	0.00	8,443,336	8,443,336
Total	7,538.00	0.00	0.00	9,459,183	9,459,183

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
Elementary School	9.50	7.30	7.30	65.00	30.00	5.00	63	25	12
Government Office Building	9.50	7.30	7.30	33.00	62.00	5.00	50	34	16

4.4 Fleet Mix

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.550892	0.030057	0.166000	0.105135	0.016269	0.004636	0.013801	0.100346	0.002670	0.001604	0.006650	0.001183	0.000756

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	358.9290	358.9290	0.0162	3.3600e-003	360.3353
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	358.9290	358.9290	0.0162	3.3600e-003	360.3353
NaturalGas Mitigated	0.0128	0.1160	0.0975	7.0000e-004		8.8200e-003	8.8200e-003		8.8200e-003	8.8200e-003	0.0000	126.2938	126.2938	2.4200e-003	2.3200e-003	127.0443
NaturalGas Unmitigated	0.0128	0.1160	0.0975	7.0000e-004		8.8200e-003	8.8200e-003		8.8200e-003	8.8200e-003	0.0000	126.2938	126.2938	2.4200e-003	2.3200e-003	127.0443

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					
Elementary School	1.05466e+006	5.6900e-003	0.0517	0.0434	3.1000e-004		3.9300e-003	3.9300e-003		3.9300e-003	3.9300e-003	0.0000	56.2805	56.2805	1.0800e-003	1.0300e-003	56.6149
Government Office Building	1.312e+006	7.0700e-003	0.0643	0.0540	3.9000e-004		4.8900e-003	4.8900e-003		4.8900e-003	4.8900e-003	0.0000	70.0133	70.0133	1.3400e-003	1.2800e-003	70.4294
Total		**0.0128**	**0.1160**	**0.0975**	**7.0000e-004**		**8.8200e-003**	**8.8200e-003**		**8.8200e-003**	**8.8200e-003**	**0.0000**	**126.2938**	**126.2938**	**2.4200e-003**	**2.3100e-003**	**127.0443**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Elementary School	1.05466e +006	5.6900e-003	0.0517	0.0434	3.1000e-004		3.9300e-003	3.9300e-003		3.9300e-003	3.9300e-003	0.0000	56.2805	56.2805	1.0800e-003	1.0300e-003	56.6149
Government Office Building	1.312e +006	7.0700e-003	0.0643	0.0540	3.9000e-004		4.8900e-003	4.8900e-003		4.8900e-003	4.8900e-003	0.0000	70.0133	70.0133	1.3400e-003	1.2800e-003	70.4294
Total		**0.0128**	**0.1160**	**0.0975**	**7.0000e-004**		**8.8200e-003**	**8.8200e-003**		**8.8200e-003**	**8.8200e-003**	**0.0000**	**126.2938**	**126.2938**	**2.4200e-003**	**2.3100e-003**	**127.0443**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Elementary School	301808	87.7995	3.9700e-003	8.2000e-004	88.1435
Government Office Building	932000	271.1295	0.0123	2.5400e-003	272.1919
Total		**358.9290**	**0.0162**	**3.3600e-003**	**360.3353**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Elementary School	301808	87.7995	3.9700e-003	8.2000e-004	88.1435
Government Office Building	932000	271.1295	0.0123	2.5400e-003	272.1919
Total		**358.9290**	**0.0162**	**3.3600e-003**	**360.3353**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.6529	5.0000e-005	5.5000e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0107	0.0107	3.0000e-005	0.0000	0.0114
Unmitigated	0.6529	5.0000e-005	5.5000e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0107	0.0107	3.0000e-005	0.0000	0.0114

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0986					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.5538					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.1000e-004	5.0000e-005	5.5000e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0107	0.0107	3.0000e-005	0.0000	0.0114
Total	**0.6529**	**5.0000e-005**	**5.5000e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0107**	**0.0107**	**3.0000e-005**	**0.0000**	**0.0114**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0986					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.5538					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.1000e-004	5.0000e-005	5.5000e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0107	0.0107	3.0000e-005	0.0000	0.0114
Total	**0.6529**	**5.0000e-005**	**5.5000e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0107**	**0.0107**	**3.0000e-005**	**0.0000**	**0.0114**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	55.4376	0.6890	0.0167	77.6322
Unmitigated	55.4376	0.6890	0.0167	77.6322

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Elementary School	1.21212 / 3.11688	5.4662	0.0397	9.8000e-004	6.7514
Government Office Building	19.866 / 12.1759	49.9714	0.6493	0.0157	70.8808
Total		**55.4376**	**0.6890**	**0.0167**	**77.6322**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Elementary School	1.21212 / 3.11688	5.4662	0.0397	9.8000e-004	6.7514
Government Office Building	19.866 / 12.1759	49.9714	0.6493	0.0157	70.8808
Total		**55.4376**	**0.6890**	**0.0167**	**77.6322**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	37.4011	2.2103	0.0000	92.6596
Unmitigated	37.4011	2.2103	0.0000	92.6596

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Elementary School	91.25	18.5229	1.0947	0.0000	45.8898
Government Office Building	93	18.8782	1.1157	0.0000	46.7698
Total		**37.4011**	**2.2103**	**0.0000**	**92.6596**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Elementary School	91.25	18.5229	1.0947	0.0000	45.8898
Government Office Building	93	18.8782	1.1157	0.0000	46.7698
Total		**37.4011**	**2.2103**	**0.0000**	**92.6596**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Road Construction Emissions Model, Version 9.0.0

Daily Emission Estimates for -> Street Dedication Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	1.00	7.42	10.58	10.45	0.45	10.00	2.48	0.40	2.08	0.02	1,777.40	0.43	0.04	1,801.02
Grading/Excavation	4.96	40.94	53.84	12.31	2.31	10.00	4.17	2.09	2.08	0.09	8,433.94	2.47	0.11	8,528.69
Drainage/Utilities/Sub-Grade	4.17	35.46	42.96	11.91	1.91	10.00	3.84	1.76	2.08	0.07	6,988.60	1.58	0.09	7,056.11
Paving	1.64	17.97	15.56	0.90	0.90	0.00	0.80	0.80	0.00	0.03	2,911.68	0.74	0.06	2,947.20
Maximum (pounds/day)	4.96	40.94	53.84	12.31	2.31	10.00	4.17	2.09	2.08	0.09	8,433.94	2.47	0.11	8,528.69
Total (tons/construction project)	0.50	4.25	5.28	1.36	0.23	1.12	0.45	0.21	0.23	0.01	849.30	0.22	0.01	858.44

Notes:

Project Start Year ->	2021
Project Length (months) ->	12
Total Project Area (acres) ->	9
Maximum Area Disturbed/Day (acres) ->	1
Water Truck Used? ->	Yes

	Total Material Imported/Exported Volume (yd^3/day)		Daily VMT (miles/day)			
Phase	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	0	0	0	0	280	40
Grading/Excavation	0	0	0	0	760	40
Drainage/Utilities/Sub-Grade	0	0	0	0	680	40
Paving	0	0	0	0	520	40

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> Street Dedication Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.01	0.10	0.14	0.14	0.01	0.13	0.03	0.01	0.03	0.00	23.46	0.01	0.00	21.57
Grading/Excavation	0.26	2.16	2.84	0.65	0.12	0.53	0.22	0.11	0.11	0.00	445.31	0.13	0.01	408.52
Drainage/Utilities/Sub-Grade	0.19	1.64	1.98	0.55	0.09	0.46	0.18	0.08	0.10	0.00	322.87	0.07	0.00	295.74
Paving	0.03	0.36	0.31	0.02	0.02	0.00	0.02	0.02	0.00	0.00	57.65	0.01	0.00	52.94
Maximum (tons/phase)	0.26	2.16	2.84	0.65	0.12	0.53	0.22	0.11	0.11	0.00	445.31	0.13	0.01	408.52
Total (tons/construction project)	0.50	4.25	5.28	1.36	0.23	1.12	0.45	0.21	0.23	0.01	849.30	0.22	0.01	778.77

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.

Road Construction Emissions Model Version 9.0.0
Data Entry Worksheet

Note: Required data input sections have a yellow background.
Optional data input sections have a blue background. Only areas with a yellow or blue background can be modified. Program defaults have a white background.
The user is required to enter information in cells D10 through D24, E28 through G35, and D38 through D41 for all project types.
Please use "Clear Data Input & User Overrides" button first before changing the Project Type or begin a new project.

To begin a new project, click this button to clear data previously entered. This button will only work if you opted not to disable macros when loading this spreadsheet.

SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

Input Type

Project Name	Street Dedication	
Construction Start Year	2021	Enter a Year between 2014 and 2040 (inclusive)
Project Type	1	1) New Road Construction : Project to build a roadway from bare ground, which generally requires more site preparation than widening an existing roadway 2) Road Widening : Project to add a new lane to an existing roadway 3) Bridge/Overpass Construction : Project to build an elevated roadway, which generally requires some different equipment than a new roadway, such as a crane 4) Other Linear Project Type: Non-roadway project such as a pipeline, transmission line, or levee construction
Project Construction Time	12.00	months
Working Days per Month	22.00	days (assume 22 if unknown)
Predominant Soil/Site Type: Enter 1, 2, or 3 (for project within "Sacramento County", follow soil type selection instructions in cells E18 to E20 otherwise see instructions provided in cells J18 to J22)	1	1) Sand Gravel : Use for quaternary deposits (Delta/West County) 2) Weathered Rock-Earth : Use for Laguna formation (Jackson Highway area) or the Ione formation (Scott Road, Rancho Murieta) 3) Blasted Rock : Use for Salt Springs Slate or Copper Hill Volcanics (Folsom South of Highway 50, Rancho Murieta)
Project Length	1.50	miles
Total Project Area	9.20	acres
Maximum Area Disturbed/Day	1.00	acre
Water Trucks Used?	1	1. Yes 2. No

Please note that the soil type instructions provided in cells E18 to E20 are specific to Sacramento County. Maps available from the California Geologic Survey (see weblink below) can be used to determine soil type outside Sacramento County.

http://www.conservation.ca.gov/cgs/information/geologic_mapping/Pages/googlemaps.aspx#regionalseries

Material Hauling Quantity Input

Material Type	Phase	Haul Truck Capacity (yd^3) (assume 20 if unknown)	Import Volume (yd^3/day)	Export Volume (yd^3/day)
Soil	Grubbing/Land Clearing	20.00		
	Grading/Excavation	20.00		
	Drainage/Utilities/Sub-Grade	20.00		
	Paving	20.00		
Asphalt	Grubbing/Land Clearing	20.00		
	Grading/Excavation	20.00		
	Drainage/Utilities/Sub-Grade	20.00		
	Paving	20.00		

Mitigation Options

On-road Fleet Emissions Mitigation		Select "2010 and Newer On-road Vehicles Fleet" option when the on-road heavy-duty truck fleet for the project will be limited to vehicles of model year 2010 or newer
Off-road Equipment Emissions Mitigation		Select "20% NOx and 45% Exhaust PM reduction" option if the project will be required to use a lower emitting off-road construction fleet. The SMAQMD Construction Mitigation Calculator can be used to confirm compliance with this mitigation measure (http://www.airquality.org/Businesses/CEQA-Land-Use-Planning/Mitigation). Select "Tier 4 Equipment" option if some or all off-road equipment used for the project meets CARB Tier 4 Standard

The remaining sections of this sheet contain areas that can be modified by the user, although those modifications are optional.

Note: The program's estimates of construction period phase length can be overridden in cells D50 through D53, and F50 through F53.

Construction Periods	User Override of Construction Months	Program Calculated Months	User Override of Phase Starting Date	Program Default Phase Starting Date
Grubbing/Land Clearing		1.20		1/1/2021
Grading/Excavation		4.80		2/7/2021
Drainage/Utilities/Sub-Grade		4.20		7/3/2021
Paving		1.80		11/8/2021
Totals (Months)	12			

Note: Soil Hauling emission default values can be overridden in cells D61 through D64, and F61 through F64.

Soil Hauling Emissions	User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT
User Input					
Miles/round trip: Grubbing/Land Clearing		30.00		0	0.00
Miles/round trip: Grading/Excavation		30.00		0	0.00
Miles/round trip: Drainage/Utilities/Sub-Grade		30.00		0	0.00
Miles/round trip: Paving		30.00		0	0.00

Emission Rates	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Grubbing/Land Clearing (grams/mile)	0.04	0.42	3.06	0.11	0.05	0.02	1,779.29	0.00	0.28	1,862.69
Grading/Excavation (grams/mile)	0.04	0.42	3.06	0.11	0.05	0.02	1,779.29	0.00	0.28	1,862.69
Draining/Utilities/Sub-Grade (grams/mile)	0.04	0.42	3.06	0.11	0.05	0.02	1,779.29	0.00	0.28	1,862.69
Paving (grams/mile)	0.04	0.42	3.06	0.11	0.05	0.02	1,778.31	0.00	0.28	1,861.66
Grubbing/Land Clearing (grams/trip)	0.00	0.00	3.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	3.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	3.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	3.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Note: Asphalt Hauling emission default values can be overridden in cells D91 through D94, and F91 through F94.

Asphalt Hauling Emissions	User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT
User Input					
Miles/round trip: Grubbing/Land Clearing		30.00		0	0.00
Miles/round trip: Grading/Excavation		30.00		0	0.00
Miles/round trip: Drainage/Utilities/Sub-Grade		30.00		0	0.00
Miles/round trip: Paving		30.00		0	0.00

Emission Rates	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Grubbing/Land Clearing (grams/mile)	0.04	0.42	3.06	0.11	0.05	0.02	1,779.29	0.00	0.28	1,862.69
Grading/Excavation (grams/mile)	0.04	0.42	3.06	0.11	0.05	0.02	1,779.29	0.00	0.28	1,862.69
Draining/Utilities/Sub-Grade (grams/mile)	0.04	0.42	3.06	0.11	0.05	0.02	1,779.29	0.00	0.28	1,862.69
Paving (grams/mile)	0.04	0.42	3.06	0.11	0.05	0.02	1,778.31	0.00	0.28	1,861.66
Grubbing/Land Clearing (grams/trip)	0.00	0.00	3.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	3.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	3.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	3.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Note: Worker commute default values can be overridden in cells D121 through D126.

Worker Commute Emissions	User Override of Worker Commute Default Values	Default Values	Calculated Daily Trips	Calculated Daily VMT
User Input				
Miles/ one-way trip		20		
One-way trips/day		2		
No. of employees: Grubbing/Land Clearing		7	14	280.00
No. of employees: Grading/Excavation		19	38	760.00
No. of employees: Drainage/Utilities/Sub-Grade		17	34	680.00
No. of employees: Paving		13	26	520.00

Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.02	1.10	0.10	0.05	0.02	0.00	339.80	0.00	0.01	342.28
Grading/Excavation (grams/mile)	0.02	1.10	0.10	0.05	0.02	0.00	339.80	0.00	0.01	342.28
Draining/Utilities/Sub-Grade (grams/mile)	0.02	1.10	0.10	0.05	0.02	0.00	339.80	0.00	0.01	342.28
Paving (grams/mile)	0.02	1.10	0.10	0.05	0.02	0.00	339.44	0.00	0.01	341.92
Grubbing/Land Clearing (grams/trip)	1.18	2.95	0.34	0.00	0.00	0.00	72.81	0.08	0.04	85.39
Grading/Excavation (grams/trip)	1.18	2.95	0.34	0.00	0.00	0.00	72.81	0.08	0.04	85.39
Draining/Utilities/Sub-Grade (grams/trip)	1.18	2.95	0.34	0.00	0.00	0.00	72.81	0.08	0.04	85.39
Paving (grams/trip)	1.17	2.94	0.34	0.00	0.00	0.00	72.74	0.08	0.04	85.29
Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.05	0.77	0.07	0.03	0.01	0.00	212.00	0.01	0.01	213.92
Tons per const. Period - Grubbing/Land Clearing	0.00	0.01	0.00	0.00	0.00	0.00	2.80	0.00	0.00	2.82
Pounds per day - Grading/Excavation	0.13	2.09	0.19	0.08	0.03	0.01	575.43	0.02	0.02	580.65
Tons per const. Period - Grading/Excavation	0.01	0.11	0.01	0.00	0.00	0.00	30.38	0.00	0.00	30.66
Pounds per day - Drainage/Utilities/Sub-Grade	0.12	1.87	0.17	0.07	0.03	0.01	514.86	0.01	0.01	519.53
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.01	0.09	0.01	0.00	0.00	0.00	23.79	0.00	0.00	24.00
Pounds per day - Paving	0.09	1.43	0.13	0.05	0.02	0.00	393.31	0.01	0.01	396.87
Tons per const. Period - Paving	0.00	0.03	0.00	0.00	0.00	0.00	7.79	0.00	0.00	7.86
Total tons per construction project	0.01	0.24	0.02	0.01	0.00	0.00	64.76	0.00	0.00	65.34

Note: Water Truck default values can be overridden in cells D153 through D156, I153 through I156, and F153 through F156.

Water Truck Emissions	User Override of Default # Water Trucks	Program Estimate of Number of Water Trucks	User Override of Truck Round Trips/Vehicle/Day	Default Values Round Trips/Vehicle/Day	Calculated Trips/day	User Override of Miles/Round Trip	Default Values Miles/Round Trip	Calculated Daily VMT
User Input								
Grubbing/Land Clearing - Exhaust		1		5	5		8.00	40.00
Grading/Excavation - Exhaust		1		5	5		8.00	40.00
Drainage/Utilities/Subgrade		1		5	5		8.00	40.00
Paving		1		5	5		8.00	40.00

Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.04	0.42	3.06	0.11	0.05	0.02	1,779.29	0.00	0.28	1,862.69
Grading/Excavation (grams/mile)	0.04	0.42	3.06	0.11	0.05	0.02	1,779.29	0.00	0.28	1,862.69
Draining/Utilities/Sub-Grade (grams/mile)	0.04	0.42	3.06	0.11	0.05	0.02	1,779.29	0.00	0.28	1,862.69
Paving (grams/mile)	0.04	0.42	3.06	0.11	0.05	0.02	1,778.31	0.00	0.28	1,861.66
Grubbing/Land Clearing (grams/trip)	0.00	0.00	3.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	3.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	3.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	3.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.00	0.04	0.31	0.01	0.00	0.00	156.91	0.00	0.02	164.26
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	2.07	0.00	0.00	2.17
Pounds per day - Grading/Excavation	0.00	0.04	0.31	0.01	0.00	0.00	156.91	0.00	0.02	164.26
Tons per const. Period - Grading/Excavation	0.00	0.00	0.02	0.00	0.00	0.00	8.28	0.00	0.00	8.67
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.04	0.31	0.01	0.00	0.00	156.91	0.00	0.02	164.26
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.01	0.00	0.00	0.00	7.25	0.00	0.00	7.59
Pounds per day - Paving	0.00	0.04	0.31	0.01	0.00	0.00	156.82	0.00	0.02	164.17
Tons per const. Period - Paving	0.00	0.00	0.01	0.00	0.00	0.00	3.11	0.00	0.00	3.25
Total tons per construction project	0.00	0.00	0.04	0.00	0.00	0.00	20.71	0.00	0.00	21.68

Note: Fugitive dust default values can be overridden in cells D183 through D185.

Fugitive Dust	User Override of Max Acreage Disturbed/Day	Default Maximum Acreage/Day	PM10 pounds/day	PM10 tons/per period	PM2.5 pounds/day	PM2.5 tons/per period
Fugitive Dust - Grubbing/Land Clearing		1.00	10.00	0.13	2.08	0.03
Fugitive Dust - Grading/Excavation		1.00	10.00	0.53	2.08	0.11
Fugitive Dust - Drainage/Utilities/Subgrade		1.00	10.00	0.46	2.08	0.10

Off-Road Equipment Emissions

Grubbing/Land Clearing Override of Default Number of Vehicles	Default Number of Vehicles *Program-estimate*	Mitigation Option Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default Equipment Tier	Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Model Default Tier	Crawler Tractors	0.55	2.44	6.97	0.26	0.24	0.01	760.36	0.25
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Model Default Tier	Excavators	0.23	3.27	2.15	0.10	0.10	0.01	500.19	0.16
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	3		Model Default Tier	Signal Boards	0.17	0.90	1.08	0.04	0.04	0.00	147.94	0.02
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab

Number of Vehicles	Equipment Tier	Type		ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
Grubbing/Land Clearing	pounds per day	0.95	6.61	10.20	0.41	0.38	0.02	1,408.50	0.42
Grubbing/Land Clearing	tons per phase	0.01	0.09	0.13	0.01	0.01	0.00	18.59	0.01

Grading/Excavation	Default Number of Vehicles	Mitigation Option Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default Equipment Tier	Type	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
Override of Default Number of Vehicles	*Program-estimate*				pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0		Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Model Default Tier	Crawler Tractors	0.55	2.44	6.97	0.26	0.24	0.01	760.36	0.25
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	3		Model Default Tier	Excavators	0.69	9.82	6.46	0.31	0.29	0.02	1,500.58	0.49
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Model Default Tier	Graders	0.45	1.77	5.92	0.19	0.17	0.01	641.68	0.21
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	2		Model Default Tier	Rollers	0.38	3.76	3.85	0.24	0.22	0.01	508.18	0.16
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Model Default Tier	Rubber Tired Loaders	0.34	1.60	3.86	0.13	0.12	0.01	605.23	0.20
	2		Model Default Tier	Scrapers	1.86	14.01	21.41	0.83	0.77	0.03	2,935.83	0.95
	3		Model Default Tier	Signal Boards	0.17	0.90	1.08	0.04	0.04	0.00	147.94	0.02
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	2		Model Default Tier	Tractors/Loaders/Backhoes	0.37	4.52	3.79	0.22	0.21	0.01	601.80	0.19
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab

Number of Vehicles	Equipment Tier	Type		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
				pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
Grading/Excavation	pounds per day	4.82	38.81	53.34	2.23	2.05	0.08	7,701.60	2.46
Grading/Excavation	tons per phase	0.25	2.05	2.82	0.12	0.11	0.00	406.64	0.13

Drainage/Utilities/Subgrade Override of Default Number of Vehicles	Default Number of Vehicles *Program-estimate*	Mitigation Option Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default Equipment Tier		ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Model Default Tier	Air Compressors	0.29	2.42	2.04	0.13	0.13	0.00	375.26	0.03
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Model Default Tier	Generator Sets	0.36	3.68	3.17	0.17	0.17	0.01	623.04	0.03
	1		Model Default Tier	Graders	0.45	1.77	5.92	0.19	0.17	0.01	641.68	0.21
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Model Default Tier	Plate Compactors	0.04	0.21	0.25	0.01	0.01	0.00	34.48	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Model Default Tier	Pumps	0.38	3.74	3.21	0.18	0.18	0.01	623.04	0.03
			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Model Default Tier	Rough Terrain Forklifts	0.12	2.29	1.61	0.06	0.06	0.00	333.77	0.11
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	2		Model Default Tier	Scrapers	1.86	14.01	21.41	0.83	0.77	0.03	2,935.83	0.95
	3		Model Default Tier	Signal Boards	0.17	0.90	1.08	0.04	0.04	0.00	147.94	0.02
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	2		Model Default Tier	Tractors/Loaders/Backhoes	0.37	4.52	3.79	0.22	0.21	0.01	601.80	0.19
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment

If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab

Number of Vehicles	Equipment Tier	Type		ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
Drainage/Utilities/Sub-Grade	pounds per day	4.05	33.55	42.48	1.83	1.72	0.07	6,316.84	1.57
Drainage/Utilities/Sub-Grade	tons per phase	0.19	1.55	1.96	0.08	0.08	0.00	291.84	0.07

Paving Override of Default Number of Vehicles	Default Number of Vehicles *Program-estimate*	Mitigation Option Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default Equipment Tier	Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Model Default Tier	Pavers	0.24	2.90	2.58	0.12	0.11	0.00	455.07	0.15
	1		Model Default Tier	Paving Equipment	0.19	2.54	1.93	0.10	0.09	0.00	394.46	0.13
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	3		Model Default Tier	Rollers	0.57	5.64	5.75	0.35	0.32	0.01	762.27	0.25
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	3		Model Default Tier	Signal Boards	0.17	0.90	1.08	0.04	0.04	0.00	147.94	0.02
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	2		Model Default Tier	Tractors/Loaders/Backhoes	0.37	4.52	3.78	0.22	0.20	0.01	601.82	0.19
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab

Number of Vehicles	Equipment Tier	Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
Paving	pounds per day	1.55	16.51	15.12	0.84	0.77	0.02	2,361.56	0.73
Paving	tons per phase	0.03	0.33	0.30	0.02	0.02	0.00	46.76	0.01
Total Emissions all Phases (tons per construction period) =>		0.48	4.01	5.21	0.22	0.21	0.01	763.83	0.22

N2O	CO2e
pounds/day	pounds/day
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.01	768.56
0.00	0.00
0.00	505.59
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	148.69
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00

N2O	CO2e
pounds/day	pounds/day
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00

0.01	1,422.84
0.00	18.78

N2O	CO2e
pounds/day	pounds/day
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.01	768.56
0.00	0.00
0.01	1,516.76
0.00	0.00
0.00	0.00
0.01	648.60
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	513.65
0.00	0.00
0.00	0.00
0.01	611.76
0.03	2,967.48
0.00	148.69
0.00	0.00
0.00	0.00
0.00	0.00
0.01	608.28
0.00	0.00
0.00	0.00

N2O	CO2e
pounds/day	pounds/day
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00

0.07	7,783.78
0.00	410.98

N2O	CO2e
pounds/day	pounds/day
0.00	0.00
0.00	376.75
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	625.23
0.01	648.60
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	34.65
0.00	0.00
0.00	625.28
0.00	0.00
0.00	337.37
0.00	0.00
0.00	0.00
0.03	2,967.48
0.00	148.69
0.00	0.00
0.00	0.00
0.00	0.00
0.01	608.28
0.00	0.00
0.00	0.00

N2O	CO2e
pounds/day	pounds/day
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00

0.05	6,372.32
0.00	294.40

N2O	CO2e
pounds/day	pounds/day
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	459.97
0.00	398.71
0.00	0.00
0.00	0.00
0.00	0.00
0.01	770.48
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	148.69
0.00	0.00
0.00	0.00
0.00	0.00
0.01	608.30
0.00	0.00
0.00	0.00
N2O	CO2e
pounds/day	pounds/day
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.02	2,386.16
0.00	47.25
0.01	771.41

Equipment default values for horsepower and hours/day can be overridden in cells D403 through D436 and F403 through F436.

Equipment	User Override of Horsepower	Default Values Horsepower	User Override of Hours/day	Default Values Hours/day
Aerial Lifts		63		8
Air Compressors		78		8
Bore/Drill Rigs		221		8
Cement and Mortar Mixers		9		8
Concrete/Industrial Saws		81		8
Cranes		231		8
Crawler Tractors		212		8
Crushing/Proc. Equipment		85		8
Excavators		158		8
Forklifts		89		8
Generator Sets		84		8
Graders		187		8
Off-Highway Tractors		124		8
Off-Highway Trucks		402		8
Other Construction Equipment		172		8
Other General Industrial Equipment		88		8
Other Material Handling Equipment		168		8
Pavers		130		8
Paving Equipment		132		8
Plate Compactors		8		8
Pressure Washers		13		8
Pumps		84		8
Rollers		80		8
Rough Terrain Forklifts		100		8
Rubber Tired Dozers		247		8
Rubber Tired Loaders		203		8
Scrapers		367		8
Signal Boards		6		8
Skid Steer Loaders		65		8
Surfacing Equipment		263		8
Sweepers/Scrubbers		64		8
Tractors/Loaders/Backhoes		97		8
Trenchers		78		8
Welders		46		8

END OF DATA ENTRY SHEET

March 11, 2021

Annalisa Perea, AICP, LEED, AP
Senior Planner
QK, Inc.
601 E Pollasky Avenue, Suite 301
Clovis, CA 93612

Re: Energy Assessment for the Rancho Calera Specific Plan / 140-Lot Subdivision

Dear Ms. Perea:

VRPA Technologies, Inc. (VRPA) prepared the following Energy Assessment for the Rancho Calera Specific Plan / 140-Lot Subdivision (Project). Tentative Subdivision Map (TSM) 18-0006 consists of 140 residential subdivision lots on approximately 13 acres. This TSM would be considered Phase 1 of residential construction for the Rancho Calera Specific Plan.

In accordance with CEQA, the effects of a project are evaluated to determine if they will result in significant adverse impacts on the environment. The criteria used to determine the significance of an energy impact are based on the following thresholds of significance, which come from Appendix G of the CEQA Guidelines. Accordingly, energy impacts resulting from the Project are considered significant if the Project would:

a) result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation?
b) conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

Energy is fundamental to the economy and the quality of life of the Madera County region. The primary energy source for the U.S. is petroleum (also referred to as “oil”), which is refined to produce fuels like gasoline, diesel, and jet fuel. Oil is a finite, nonrenewable energy source. World consumption of petroleum products has grown steadily since 1983; as of 2016, world consumption of oil had reached 96 million barrels per day by 2016 (IEA Oil Market Report). The world supply of oil is anticipated to peak (i.e., reach the point of maximum production) sometime between now and 2042, before beginning a terminal decline that will put a significant strain on the economy if not anticipated and mitigated. However, the timing of the peak depends on multiple, uncertain factors that will affect how quickly remaining oil is consumed, such as the amount of oil that still remains in the ground; how much of the amount in the ground can be extracted and produced based on technological, economic, and environmental feasibility; and future demand for oil.

California’s transportation sector is equally dependent upon oil, with petroleum-based fuels currently providing nearly all (96 percent) of California’s transportation energy needs (CEC 2018). Furthermore, transportation-related activities represent almost half (48 percent) of California’s petroleum-based fuel

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www.vrpatechnologies.com

consumption. California refineries increasingly rely on imported petroleum products to meet this demand. In 2003 the CEC and ARB adopted a two-part strategy to reduce the state's petroleum demand: promoting improved vehicle efficiency and increasing the use of alternative fuels. In 2006, CEC and ARB set a goal that 20 percent of all transportation energy in 2020 comes from alternative fuels. State plans, programs, and regulations to implement this strategy are further discussed in the Regulatory Setting section below.

Similar to California and the U.S. as a whole, the Madera region relies primarily on oil to meet its transportation needs. Motor vehicles are the largest consumer of fuels in the region's transportation sector. After gasoline, diesel fuel is the most utilized transportation energy source. The primary consumers of diesel fuel in the transportation sector are heavy-duty trucks, with medium-duty trucks, buses, light-duty passenger cars, and railway locomotives accounting for remaining diesel fuel consumption.

Alternative fuels are defined as fuels not derived from petroleum, such as natural gas, ethanol, and electricity. However, like petroleum, alternative fuels like natural gas and ethanol (which is primarily composed of diesel fuel) are also nonrenewable, finite resources. Electricity is also considered nonrenewable when generated from natural gas or coal, but considered renewable when generated from sources like solar, hydroelectric, or wind energy. Most alternative fuel facilities in the region supply compressed natural gas (CNG) or electricity. The region's limited alternative fuel infrastructure severely constrains the use of alternative fuel passenger vehicles.

Although average fuel efficiency for autos and trucks has experienced some improvements during the last quarter-century, fuel consumption associated with the large increase in VMT has exceeded the fuel consumption reductions achieved by improved efficiency, and the total amount of annual fuel consumption has continued to increase. The equipment and vehicles involved in the construction of residential and commercial development also consume energy. Currently, construction equipment and vehicles are generally dependent on petroleum-based fuels.

Vehicle fuel consumption for Madera County was provided in the MCTC 2018 RTP/SCS. Table 1 quantifies the projected vehicle fuel consumption in gallons per day. Total fuel consumption is projected to decrease from 319,100 gallons in 2010 and 299,700 in 2016 to 229,100 gallons in 2042, representing a decrease of 28% and 24% compared to 2042. Diesel fuel consumption is expected to increase by 20% between 2010 and 2042, while gasoline consumption is projected to decrease by 45% percent during the same time. It should be noted that the fuel consumption estimate is an overestimate, as "Pavley and Low Carbon Fuels" will have an impact on fleet efficiency.

The fuel consumption outputs reflect a decreasing trend of fuel consumption per capita. This analysis shows that with implementation of the various multi-modal improvements (bike/pedestrian facilities, transit infrastructure/service, etc.), considering future land use development under the 2018 RTP/SCS, VMT and fuel consumption will decrease.

Table 1
Madera County Vehicle Fuel Consumption

TYPE	2010	2016	2020	2035	2042
Gasoline (gal/day)	236,300	205,400	184,800	126,700	129,400
Diesel (gal/day)	82,800	94,300	102,000	96,400	99,700
Total Fuel (gal/day)	319,100	299,700	286,800	223,100	229,100
Total Fuel per capita (gal/day)	2.03	1.89	1.74	1.11	1.04

Source: MCTC 2018 RTP/SCS

Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation?

Short-Term (Construction)

Short-term impacts are mainly related to the construction phase of a project and are recognized to be short in duration. Energy impacts from Construction are generally attributable to the manufacture and transportation of building materials, preparation of the site for grading activities, utility installation, paving, and building construction and architectural coating. It should be noted that the Project is subject to California Code of Regulations (CCR), Title 24 building standards. The Title 24 California Building Standards Code is a wide-ranging set of requirements for energy conservation and green design that apply to the structural, mechanical, electrical, and plumbing systems in a building.

The operation of off-road equipment, trucks, and worker traffic would be the primary source of energy consumption during the construction of the Project. Energy consumption generated during the construction phase was estimated using CalEEMod Model defaults for construction equipment since the specific mix of construction equipment is not presently known for this Project. It should be noted that energy usage from construction of the Project would be temporary in nature and would cease upon completion of the Project.

The estimated consumption of diesel fuel, considering the construction schedule and hours of use determined by CalEEMod, is 2,181 gallons for the development/construction of the Project.

Vehicle Miles Traveled (VMT) estimates during the construction of the Project were also determined by data points in the CalEEMod program. Worker, vendor, and haul trips would result in 10,986 VMT for the duration of construction activities. As noted in Table 2 below, construction trips would account for approximately 508 gallons of motor vehicle fuel.

Long-Term

As noted previously, the Project includes the development of 140 single family dwelling units. Electricity and Natural Gas would be used for residential heating and cooling, lighting, appliances, and water heating. Table 3 provides an estimate of energy use for the proposed Project. Estimated electricity, natural gas, and motor vehicle gasoline consumption were derived from estimates included in the CalEEMod program. As shown below, the Project would consume approximately 1,318,400 kWh of electricity, 4,494,780 Btu of natural gas, and 145,260 gallons of gasoline per year.

Table 2
Project Construction Energy Consumption

ACTIVITY	VARIABLE	CONSUMPTION RATE	TOTAL CONSUMPTION
Construction Equipment - Diesel	Equipment Use - hp-hr	0.05 gallons/hp-hr	2,181 gallons (diesel)
	Hours of Use	148 hours	
Construction Worker VMT	VMT	VMT = 10,001 mpg = 25.73	389 gallons (gasoline)
Construction Vendor VMT	VMT	VMT = 986 mpg = 8.29	119 gallons (diesel)

Source: CalEEMod 2016.3.2 / Emfac 2017 Madera County 2020
Notes:
hp-hr = horsepower per hour
VMT = Vehicle Miles Traveles
mpg = miles per gallon

Table 3
Project Operational Energy Consumption

LAND USE	ELECTRICITY USE (kWh/year)	NATURAL GAS (Btu/year)	VEHICLE GASOLINE (gallons/year)
84 Single-Family Dwelling Units	1,318,400	4,494,780	145,260

Source: CalEEMod 2016.3.2 / Emfac 2017 Madera County 2020
Notes:
kWh = kilowatt hours
Btu = British thermal units

As noted above, the Project is subject to CCR, Title 24 building standards. Compliance with Title 24 of the CCR would improve energy efficiency and consumption. As a result, construction of the Project will not result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation.

Operation of the Project would include the use of electricity and natural Gas for residential heating and cooling, lighting, appliances, and water heating. As discussed above, the Title 24 California Building Standards Code is a wide-ranging set of requirements for energy conservation and green design that apply to the structural, mechanical, electrical, and plumbing systems in a building. As a result, the electricity and natural gas use will not result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation.

The Energy Policy and Conservation Act of 1975 sought to ensure that all vehicles sold in the U.S. would meet certain fuel economy goals. Through this Act, Congress established the first fuel economy standards for on-road motor vehicles in the U.S. Pursuant to the Act, the National Highway Traffic and Safety Administration, which is part of the USDOT, is responsible for establishing additional vehicle standards and for revising existing standards. Since 1990, the fuel economy standard for new passenger cars has been 27.5 mpg. Since 1996, the fuel economy standard for new light trucks (gross vehicle weight of 8,500 pounds or less) has been 20.7 mpg. The Energy Independence and Security Act of 2007 seeks to achieve energy security in the United States by increasing renewable fuel production, improving energy efficiency and performance, protecting consumers, improving vehicle fuel economy, and promoting research on greenhouse gas capture and storage. The average fuel economy for light-duty vehicles (autos, pickups, vans, and SUVs) in the United States has gradually increased from about 14.9 mpg in 1980 to 22.3 mpg in 2017 based on data provided by the U.S. Department of Transportation, National Highway Traffic Safety Administration, Fleet Fuel Economy Performance Report, available at https://one.nhtsa.gov/cafe_pic/CAFE_PIC_fleet_LIVE.html.

The Project will result in an annual VMT increase of 3,737,525 considering CalEEMod calculations, which results in 145,260 gallons of gasoline per year as noted in Table 3 (assuming 25.73 mpg). However, new vehicles accessing the Project site would be in compliance with the federal fuel economy standards described above. As a result, fuel efficiency from vehicles accessing the site would increase over the life of the Project. Therefore, energy impacts related to fuel consumption during Project operations would be less than significant.

Based on the assessment above, the Project will not Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation. Therefore, any impacts would be less than significant.

Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

As discussed above in Section 5.1, the Project is subject to CCR, Title 24 building standards. Compliance with Title 24 of the CCR would improve energy efficiency and consumption. Therefore, the Project would be consistent with applicable plans related to renewable energy and energy efficiency. As a result, the Project will not conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

If you have any questions or require further information, please contact me at (559) 271-1200 extension 2.

Sincerely,

Jason Ellard, Transportation Engineer
VRPA Technologies, Inc.

cogstone
PALEONTOLOGY - ARCHAEOLOGY - HISTORY

CULTURAL AND PALEONTOLOGICAL RESOURCES ASSESSMENT REPORT FOR PROPOSED CHANGES TO THE RANCHO CALERA SPECIFIC PLAN, CITY OF CHOWCHILLA, MADERA COUNTY, CALIFORNIA

Prepared for:
QK Inc.
901 E Main St
Visalia, CA 93292

Authors:
John Gust, Ph.D.
Kim Scott, M.S.

Principal Investigators:
Kim Scott, M.S., Qualified Principal Paleontologist
John Gust, Ph.D., Principal Archaeologist

Date
July 2020

Cogstone Project Number: 4890
Type of Study: Cultural and paleontological resources assessment
Archaeological Sites: None
***Paleontological localities*:** None within study area, one within ¼ mile of the project
USGS 7.5' Quadrangles: Le Grand, Plainsburg
Area: 561 acres
Key Words: specific plan update, cultural resources assessment, paleontological resources assessment, Yokut territory; Holocene alluvium, late Pleistocene Modesto Formation, middle Pleistocene Riverbank Formation

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SUMMARY OF FINDINGS

The purpose of this study is to assess the potential impacts to cultural and paleontological resources during excavations of the Rancho Calera Specific Plan Project (Project) located within the City of Chowchilla, Madera County, California. This assessment report complies with the requirements of the California Environmental Quality Act (CEQA) with the City of Chowchilla acting as the lead agency.

The Project Area is situated on 561 acres located north of Avenue 26 within the City of Chowchilla. Proposed updates to the specific plan include adding two large retention basins, increasing the acreage dedicated to residential use without changes to the maximum 2,042 domestic units, decreasing the collective acreage of parkland and open space, decreasing the square footage dedicated to commercial use, removal of the East Robertson Bridge, added landscape and water conservation requirements, and discouraging use of straight streets and encouraging construction of cul-de-sacs.

Paleontological Resources

The Project Area is mapped as Holocene alluvium less than 11,700 years old, late Pleistocene Modesto Formation deposited between 9,000 and 45,000 years ago, and middle Pleistocene Riverbank Formation deposited between 130,000 and 450,000 years ago.

The paleontological records search revealed no fossils from the Holocene alluvium, however these deposits overlie sensitive sediments at variable depths. Numerous fossils are known from the Modesto Formation within ten miles of the Project with one locality recovered from ¼ mile north of the Project. Fossils of extinct late Pleistocene animals from the Modesto Formation nearby include giant ground sloth, dire wolf, Columbian mammoth, two types of horse, yesterday’s camel, llama, and ancient bison. Additional fossils of coyote, cougar, mule deer, and three types of rabbit, as well as multiple species of rodent, bird, reptile, and amphibian, were also recovered. With one exception, all local fossils from the Modesto Formation were recovered from depths of more than five feet below the historic ground surface.

The nearest fossil confirmed from the Riverbank Formation was a horse from Fresno County. Fossils of extinct Pleistocene animals from the Riverbank Formation in Sacramento include Harlan’s ground sloth, dire wolf, Columbian mammoth, horse, yesterday’s camel, and ancient bison. Additional fossils of coyote, antelope, deer, rabbit, gartersnake, Sacramento blackfish, and multiple species of rodent were also recovered.

Holocene sediments are too young to contain fossils and are a assigned a low potential for fossils. The Riverbank Formation is assigned a low potential for fossils due to the lack of fossils recovered from it locally. Given the depths at which fossils have been previously found in the

Modesto Formation, sediments less than five feet below the historic ground surface are assigned low potential, while everything deeper is assigned a moderate but patchy potential.

The following Mitigation Measures are recommended for paleontological resources:

Prior to the issuance of grading permits, the Project applicant shall retain a qualified paleontologist to develop and implement a Paleontological Mitigation Plan, which shall include the following minimum elements:

- The qualified Principal Investigator for Paleontology shall have:
  - an advanced degree (Masters or higher) in geology, paleontology, biology or related disciplines (exclusive of archaeology or anthropology) and
  - at least two years professional experience with paleontological (not including cultural) resources at the Principal Investigator level.
- All mass grading activities five feet or more below the historic grade of the Modesto Formation shall be monitored full-time by a qualified paleontological monitor.
- Excavations in the low sensitivity Holocene alluvium, Riverbank Formation, and less than five feet deep into the Modesto Formation have a lower potential to contain fossils but should be spot checked for fossils during grading.
- Drilling, pot holing, pile driving and similar activities do not require paleontological monitoring.
- If fossils are discovered, the paleontological monitor has the authority to temporarily divert work within 25 feet of the find to allow recovery of the fossils and evaluation of the fossil locality.
- Fossil localities shall require documentation, including stratigraphic columns and samples for micro-paleontological analyses and for dating.
- Fossils shall be prepared to the point of identification and evaluated for significance.
- Significant fossils shall be cataloged and identified prior to being donated to an appropriate scientific repository.
- The final report shall interpret any paleontological resources discovered in the regional context and provide the catalog and all specialists' reports as appendices.

Cultural Resources

Cogstone requested a search for archaeological and historical records on April 17, 2020 at the Southern San Joaquin Valley Information Center (SSJVIC) of the California Historical Resource Inventory System (CHRIS) located on the campus of California State University, Bakersfield. The results of the record search indicated that six studies have been completed previously within the Project Area. No cultural resources are located within the Project boundaries. However, three cultural resources are located within a half-mile of the Project Area. These resources are all historic linear built environment resources. A Sacred Lands File (SLF) search conducted by the Native American Heritage Commission (NAHC) on April 17, 2020 was negative for known tribal cultural resources.

No cultural resources have been previously recorded within the Project Area. These negative findings along with a review of existing literature and historic USDA aerial photographs indicate that the potential for subsurface cultural resource deposits is low.

The proposed changes to the Rancho Calera Specific Plan are unlikely to have a negative effect on cultural resources within the Project Area. No further cultural resources work is recommended for this Project.

In the event of an unanticipated discovery, all work must be suspended within 50 feet of the find until a qualified archaeologist evaluates it. In the unlikely event that human remains are encountered during Project development, all work must cease near the find immediately.

INTRODUCTION

PURPOSE OF STUDY

The purpose of this study is to assess the potential impacts to cultural and paleontological resources during excavations of the Rancho Calera Specific Plan Project (Project) located within the City of Chowchilla (City), Madera County, California (Figure 1). The City is the lead agency under CEQA.

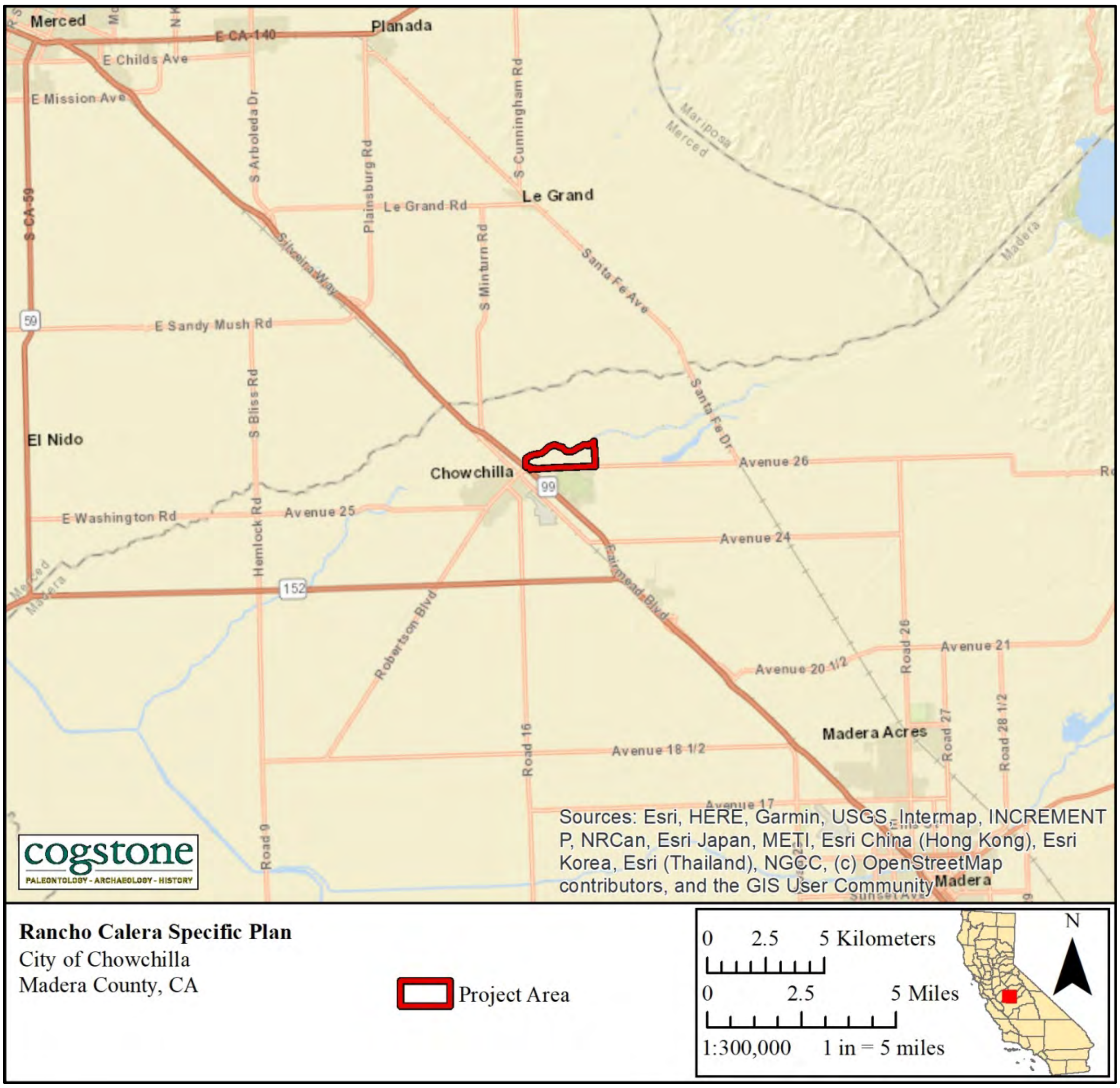
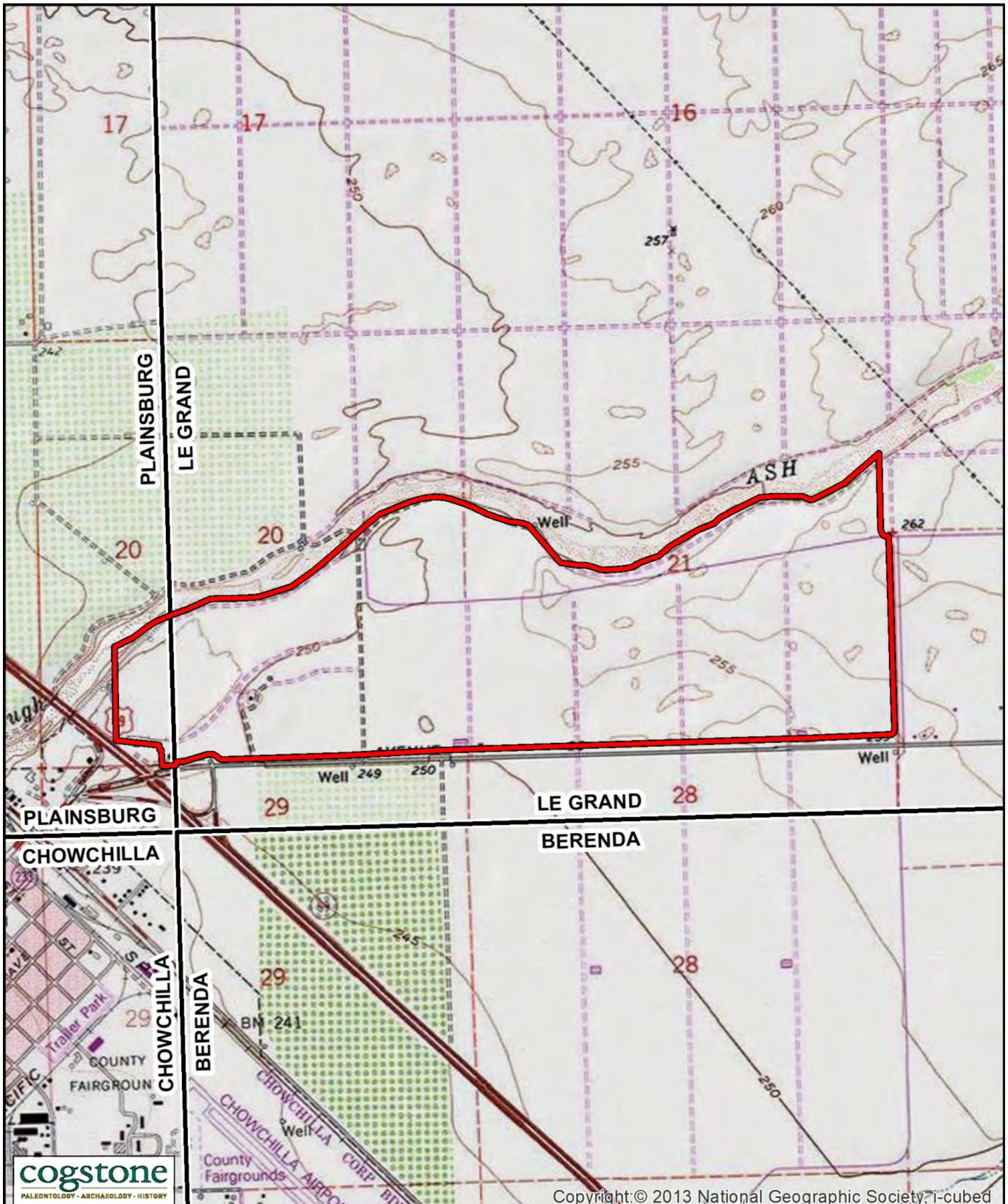


Figure 1. Project vicinity map

PROJECT LOCATION AND DESCRIPTION

The Project Area is situated on 561 acres located north of Avenue 26 within the City of Chowchilla. It can also be found on the Le Grand 7.5' United Stated Geological Survey (USGS) topographic quadrangle within portions of Sections 20 and 21 of Township 9 South, Range 16 East, Mount Diablo Baseline and Meridian (Figures 2 and 3).

When the Rancho Calera Specific Plan was originally approved in 2011, it was in support of a 576-acre master planned community that would include residential and commercial areas with additional land set aside for trails and other green areas. The size of the Project Area has been reduced by 15 acres, reflecting donation of land on which Ronald Reagan Elementary School was built. Proposed changes to the specific plan include adding two large retention basins, increasing the acreage dedicated to residential use without changes to the maximum 2,042 domestic units, decreasing the collective acreage of parkland and open space, decreasing the square footage dedicated to commercial use, removal of the East Robertson Bridge, added landscape and water conservation requirements, and discouraging use of straight streets and encouraging construction of cul-de-sacs. The effects on land use that would result from these proposed changes are summarized in Table 1.



Rancho Calera Specific Plan
City of Chowchilla
Madera County, CA

Project Area
USGS Quads

USGS 7.5' Quads:
BERENDA
CHOWCHILLA
LE GRAND
PLAINSBURG

0 0.25 0.5 Miles
0 0.25 0.5 Kilometers
N
1:24,000 1 in = 2,000 ft

Figure 2. Project location

Figure 3. Aerial map

Table 1. Land Use Summary (Previously Adopted vs. Proposed)

Land Use Summary						
Land Use Designation	**Approved Acreage**	**Proposed Approx. Acres**	**Approved Maximum Dwelling Units (DU)**	**Proposed Maximum DU**	**Approved Maximum Square Footage (SF)**	**Proposed Maximum SF**
Residential	**366.7**	**378**	**2,042**	**2,042**		
Low Density Residential		203		1,008		
Medium Density Residential		166		814		
High Density Residential		9		200		
Commercial	**38.9**	**23**			**495,000**	**308,405**
Mixed Use		3		20		47,045
Service Commercial		20				
Public/Quasi-Public						
Park and Open Space	**77.4**	**66**				
Minor Community Park		13				
Neighborhood Parks		23				
Riverwalk		25				
Promenades		5				
Public Facilities (School and Public Safety Facility)	**11.2**	**18**				
Streets	**66.8**	**76**				
Total	**576**	**561**	**2,042**	**2,042**	**495,000**	**308,405**

PROJECT PERSONNEL

Cogstone prepared this report. Short resumes for Project Personnel are provided in Appendix A.

- John Gust served as the Principal Archaeologist for the Project and co-authored this report. Dr. Gust has a Ph.D in Anthropology with an emphasis in archaeology from the University of California, Riverside, an M.A. in Geography from the University of Colorado, Colorado Springs, and has over eight years of experience in archaeology.

- Kim Scott served as the Principal Paleontologist for the Project and co-authored this report. Ms. Scott has an M.S. in Biology with an emphasis in paleontology from California State University, San Bernardino, a B.S. in Geology with an emphasis in paleontology from the University of California, Los Angeles, and over 26 years of experience in California paleontology and geology.

- Molly Valasik served as the Task Manager for this Project and reviewed this report. Ms. Valasik has an M.A. in Anthropology from Kent State University in Ohio and over 10 years of experience in California archaeology.

- Eric Scott reviewed the paleontology sections of this report. Mr. Scott has an M.A. in anthropology, with an emphasis in biological paleoanthropology, from the University of California, Los Angeles, and more than 36 years of experience in California paleontology.

- Logan Freeberg prepared the geographic information system (GIS) maps used throughout this report. Mr. Freeberg has a B.A. in anthropology from the University of California, Santa Barbara and a certificate in GIS from California State University, Fullerton, as well as 15 years of experience in California archaeology.

REGULATORY ENVIRONMENT

STATE LAWS AND REGULATIONS

CALIFORNIA ENVIRONMENTAL QUALITY ACT

CEQA states that: It is the policy of the state that public agencies should not approve projects as proposed if there are feasible alternatives or feasible mitigation measures available which would substantially lessen the significant environmental effects of such projects, and that the procedures required are intended to assist public agencies in systematically identifying both the significant effects of proposed project and the feasible alternatives or feasible mitigation measures which will avoid or substantially lessen such significant effects.

CEQA declares that it is state policy to: "take all action necessary to provide the people of this state with...historic environmental qualities." It further states that public or private projects financed or approved by the state are subject to environmental review by the state. All such projects, unless entitled to an exemption, may proceed only after this requirement has been satisfied. CEQA requires detailed studies that analyze the environmental effects of a proposed project. In the event that a project is determined to have a potential significant environmental effect, the act requires that alternative plans and mitigation measures be considered.

TRIBAL CULTURAL RESOURCES

As of 2015, CEQA established 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" (Public Resources Code, § 21084.2). In order to be considered a "tribal cultural resource," a resource must be either:

(1) listed, or determined to be eligible for listing, on the national, state, or local register of historic resources, or
(2) a resource that the lead agency chooses, in its discretion, to treat as a tribal cultural resource.

To help determine whether a project may have such an effect, the lead agency must consult with any California Native American tribe that requests consultation and is traditionally and culturally affiliated with the geographic area of a proposed project. If a lead agency determines that a project may cause a substantial adverse change to tribal cultural resources, the lead agency must consider measures to mitigate that impact. Public Resources Code §20184.3 (b)(2) provides examples of mitigation measures that lead agencies may consider to avoid or minimize impacts to tribal cultural resources.

PUBLIC RESOURCES CODE

Section 5097.5: No person shall knowingly and willfully excavate upon, or remove, destroy, injure or deface any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological site, including fossilized footprints, inscriptions made by human agency, or any other archaeological, paleontological or historical feature, situated on public lands (lands under state, county, city, district or public authority jurisdiction, or the jurisdiction of a public corporation), except with the express permission of the public agency having jurisdiction over such lands. Violation of this section is a misdemeanor. As used in this section, "public lands" means lands owned by, or under the jurisdiction of, the state, or any city, county, district, authority, or public corporation, or any agency thereof.

California Register of Historical Resources

The California Register of Historical Resources (CRHR) is a listing of all properties considered to be significant historical resources in the state. The California Register includes all properties listed or determined eligible for listing on the National Register, including properties evaluated under Section 106, and State Historical Landmarks number No. 770 and above. The California Register statute specifically provides that historical resources listed, determined eligible for listing on the California Register by the State Historical Resources Commission, or resources that meet the California Register criteria are resources which must be given consideration under CEQA (see above). Other resources, such as resources listed on local registers of historic registers or in local surveys, may be listed if they are determined by the State Historic Resources Commission to be significant in accordance with criteria and procedures to be adopted by the Commission and are nominated; their listing in the California Register, is not automatic.

Resources eligible for listing include buildings, sites, structures, objects, or historic districts that retain historical integrity and are historically significant at the local, state or national level under one or more of the following four criteria:

1) It is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States;
2) It is associated with the lives of persons important to local, California, or national history;
3) It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master or possesses high artistic values; or
4) It has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation.

In addition to having significance, resources must have integrity for the period of significance. The period of significance is the date or span of time within which significant events transpired, or significant individuals made their important contributions. Integrity is the authenticity of a historical resource's physical identity as evidenced by the survival of characteristics or historic fabric that existed during the resource's period of significance.

Alterations to a resource or changes in its use over time may have historical, cultural, or architectural significance. Simply, resources must retain enough of their historic character or appearance to be recognizable as historical resources and to convey the reasons for their significance. A resource that has lost its historic character or appearance may still have sufficient integrity for the California Register, if, under Criterion 4, it maintains the potential to yield significant scientific or historical information or specific data.

NATIVE AMERICAN HUMAN REMAINS

Sites that may contain human remains important to Native Americans must be identified and treated in a sensitive manner, consistent with state law (i.e., Health and Safety Code §7050.5 and Public Resources Code §5097.98), as reviewed below:

In the event that human remains are encountered during project development and in accordance with the Health and Safety Code Section 7050.5, the County Coroner must be notified if potentially human bone is discovered. The Coroner will then determine within two working days of being notified if the remains are subject to his or her authority. If the Coroner recognizes the remains to be Native American, he or she shall contact the Native American Heritage Commission (NAHC) by phone within 24 hours, in accordance with Public Resources Code Section 5097.98. The NAHC will then designate a Most Likely Descendant (MLD) with respect to the human remains. The MLD then has the opportunity to recommend to the property owner or the person responsible for the excavation work means for treating or disposing, with appropriate dignity, the human remains and associated grave goods.

CALIFORNIA ADMINISTRATIVE CODE, TITLE 14, SECTION 4307

This section states that "No person shall remove, injure, deface or destroy any object of paleontological, archeological or historical interest or value."

DEFINITION AND EVALUATION OF SCIENTIFIC SIGNIFICANCE FOR FOSSILS

Only qualified, trained paleontologists with specific expertise in the type of fossils being evaluated can determine the scientific significance of paleontological resources. Fossils are considered to be scientifically significant if one or more of the following criteria apply:

1. The fossils provide information on the evolutionary relationships and developmental trends among organisms, living or extinct;
2. The fossils provide data useful in determining the age(s) of the rock unit or sedimentary stratum, including data important in determining the depositional history of the region and the timing of geologic events therein;
3. The fossils provide data regarding the development of biological communities or interaction between paleobotanical and paleozoological biotas;
4. The fossils demonstrate unusual or spectacular circumstances in the history of life;
5. The fossils are in short supply and/or in danger of being depleted or destroyed by the elements, vandalism, or commercial exploitation, and are not found in other geographic locations (Scott and Springer 2003, Scott et al. 2004).

Scientific significance is assessed subsequent to recovery and identification of fossils, typically by the scientific institution receiving the fossils. Typically all identifiable vertebrate fossils are to be curated in perpetuity at an accredited repository after excavations have finished. Nonvertebrate fossils (plants, shells, trace fossils, etc.) may be collected as a representative sample when numerous fossils of the same species are present. Although initial identifications can be made in the field, final determination on fossil identifications and significance must be made by the repository.

In the case of unidentifiable fossils, unless they can be used for radiometric dating these typically do not meet the significance criteria listed above. In the case of isolated finds or single bones, while they may not initially appear to meet the scientific significance criteria listed above by themselves, they cannot immediately be discounted as not scientifically significant. This is because the evaluation of evolutionary relationships, development of biological communities, interaction between paleobotanical and paleozoological biotas, or unusual or spectacular circumstances in the history of life (criteria 1, 3, and 4 above) require a large quantity of data to assess. The accumulation of information on localities of similar age with identifiable fossils recovered in a geographic area is necessary to build these data sets.

BACKGROUND

GEOLOGICAL SETTING

The Project Area is located within the San Joaquin Valley, which is the southern half of the Great Valley Geomorphic Province. The Great Valley, also known as the Central Valley or the San Joaquin-Sacramento Valley, is an alluvial plain extending from the Tehachapi Mountains on the south to the Klamath Mountains on the north, a distance of about 450 miles. Located between the Sierra Nevada to the east and the Coast Ranges to the west, the valley has an average width of about 50 miles. The valley floor can be divided into four geomorphic units, dissected uplands, low alluvial plains and fans, river flood plains and channels, and overflow lands and lake bottoms (Poland and Evenson 1966). Structurally, the valley is a northwest trending elongated asymmetrical trough that has been filled with a thick sequence of sediments ranging in age from Jurassic to Recent (Hackel 1966).

The proposed Project is located on the eastern side of the Great Valley within the lower alluvial plain and channels geomorphic unit. The lower alluvial plain has a gentle gradient and in the Project Area varies from approximately 180 to 205 feet above sea level over a distance of about six miles. The alluvial plain and distributary channels are underlain by alluvium of Pleistocene to Recent age.

PROJECT STRATIGRAPHY

Alluvial deposits in the proposed Project region consist of unconsolidated to moderately consolidated arkosic sediments derived from the Sierra Nevada that display upward coarsening (progradational) sequences, unconformities, and buried and relict paleosols. Marchand (1976a and 1976b) divided these deposits into stratigraphic units based on a combination of facies, geomorphology, superposition, and soils. The degree of soil development on the sequence of terraces in the region was used by Harden (1982) to describe an index of soil development for the Merced River chronosequence.

Geologic mapping by Marchand (1976a and 1976b) indicates that Holocene alluvium is present in the stream channels crossing the Project Area and that the late Pleistocene Modesto Formation underlies the alluvial plain in the Project Area. The middle Pleistocene Riverbank Formation is encountered in the southern portion of the proposed Project (Figure 4). Although referred to as formations, these stratigraphic units are not lithostratigraphic formations, but allostratigraphic units in current usage (see North American Commission on Stratigraphic Nomenclature 1983).

HOLOCENE RIVER TERRACE

Holocene alluvium in the stream channels and low river terraces in the Project Area consists of young, unweathered and unconsolidated alluvial sand, silt, and gravel. These deposits are less than 11,000 years old (Marchand 1976a and 1976b, Marchand and Allwardt 1981).

MODESTO FORMATION

The late Pleistocene Modesto Formation is estimated to be between 9,000 and 45,000 years old and has been divided into informal upper and lower members, both of which occur in the Project Area. These members have been further subdivided into units. The members and units are distinguished chiefly on the basis of topographic position, expression and degree of soil development, and specific soil types. In the Project Area, the upper member is subdivided into units m2 and m2e. Unit m2 consists of alluvial sand, silt, and gravel of channels, terraces, and upper fans with Hanford and Pachappa soils in the study area. Unit m2e is characterized as eolian sand associated with subdued, stabilized dunes and Delhi soils in the study area. The lower member is represented by units m1 and mle. Unit m1 consists of alluvial sand, silt, and gravel of channels, terraces, and upper fans with Borden soils in the study area. Unit m1e is described moderately well-sorted eolian sand with Atwater soils in the study area (Marchand 1976a and 1976b, Marchand and Allwardt 1981).

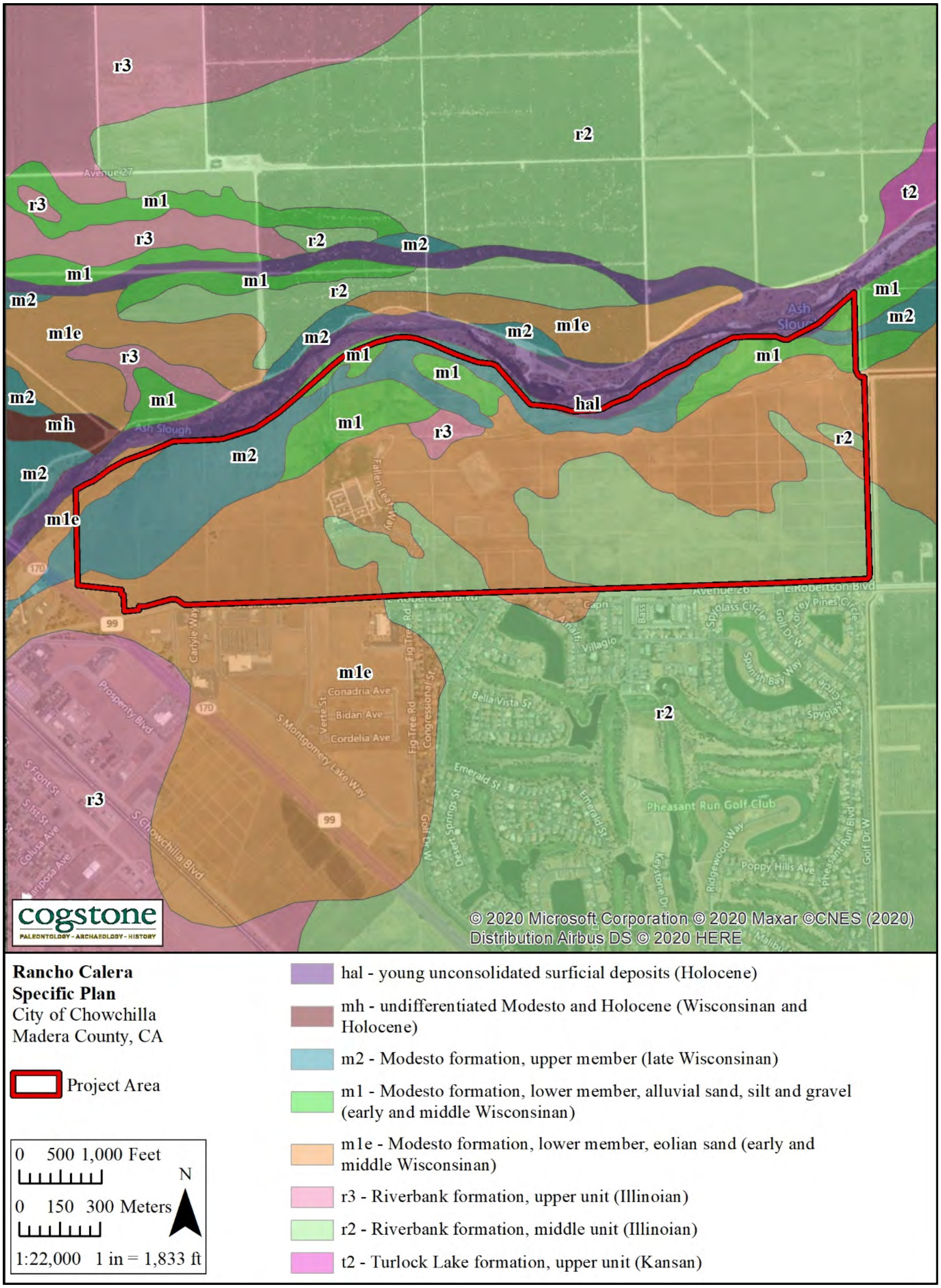


Figure 4. Project geology map

Riverbank Formation

Three members of the Riverbank Formation have been recognized, and both the upper (r3) and middle (r2) units are mapped in the proposed Project Area. The upper member, r3, consists of alluvial sand, silt and gravel with Madera soils in the study area. The middle member, r2, consists of alluvial sand, silt, and gravel with San Joaquin soils in the study area. The Riverbank Formation is estimated at between 130,000 and 450,000 years old (Marchand 1976a and 1976b, Marchand and Allwardt 1981).

ENVIRONMENTAL SETTING

Current Topography and Water Sources

Located in the Fresno Flats Basin, elevation in the Project is 2,240 feet above mean sea level. The Fresno River flows from its confluence with Nelder Creek in the north through Oakhurst, and then westward for over 60 miles to the San Joaquin River. Numerous tributaries extend north and east of the river, including three in Oakhurst—Oak, China, and Rancheria creeks. Recent maps identify the confluence of Nelder Creek with Oak Creek as the start of the Fresno River, and map Oak Creek as the Fresno River (USGS 2012).

Climate, Current Land Use, and Flora/ Fauna

The subhumid, Mediterranean climate in the Project vicinity is characterized by hot, dry summers and cool, moist winters. Mean annual precipitation ranges from 15 to 45 inches, with rain or snow falling mainly from November through March. Mean annual temperature is 60 degrees Fahrenheit. The average temperature for July is about 90 degrees Fahrenheit and for January is about 43 degrees Fahrenheit. The frost-free season varies from 175 to 260 days a year. As discussed by Hull (2007:26), the current climatic pattern and zonation of biotic communities were apparently in place by the Middle Holocene circa 1,000 cal B.C.; although there have been several periods of severe droughts during the Late Holocene after circa A.D. 892.

Located just east of the junction of California Highways 233 (Robertson Blvd; Avenue 26) and 99 (Golden State Highway) the Project is located northeast of downtown Chowchilla, California. Current land uses in the vicinity of the Project include a large subdivision to the south, commercial buildings to the east, and undeveloped land with portions of cleared land to the west. Ash Slough forms the northern and partial western boundaries of the Project. Agricultural land sits east of the Project and extend north of Ash Slough. The remaining portion of the western boundary is characterized open, cleared ground.

Historically, the Project vicinity was characterized by vegetation communities that included blue and interior live oak, gray pine, buckeye, ceanothus, birchleaf mountain mahogany, and manzanita. Annual grasses and forbs comprised the ground cover in open areas, with important corridors of riparian habitat along the creeks and river. Conifer forests at higher elevations and scattered meadow wetlands would have also been key resource settings. With this mosaic of ecological communities, and in view of the ethnographic descriptions of the Foothill Yokuts (Kroeber 1925; Spier 1978) who historically occupied the Project region and nearby villages on the Fresno River and Coarse Gold and Picayune creeks, it would appear the Project vicinity would have provided a very productive environment for its prehistoric occupants, one well suited to a hunting-gathering economy with a variety of fish, water birds, small and large mammals, and edible plant species.

PREHISTORIC SETTING

PALEOINDIAN AND LOWER ARCHAIC PERIODS (11,500–5,550 CAL B.C.)

Few archaeological sites that predate 5,000 years ago have been discovered in the region. Near the end of the Pleistocene (approximately 9,050 cal B.C.) and during the early Middle Holocene (approximately 5,550 cal B.C.), there were periods of climate change and associated alluvial deposition throughout the central California lowlands (Rosenthal et al. 2007:151). Recent geo-archaeological studies (e.g., Meyer and Rosenthal 2008; Rosenthal and Meyer 2004a, 2004b; White 2003) have verified that large segments of the Late Pleistocene landscape were removed or buried by periodic episodes of deposition or erosion during the Middle Holocene. These studies confirm estimates advanced by Moratto (1984:214) that Paleoindian and Lower Archaic sites were buried during the last 5,000 to 6,000 years by deposits of Holocene alluvium up to 10 meters thick along the lower stretches of the Sacramento River and San Joaquin River drainage systems.

Archaeological evidence for the Paleoindian Period is scant and is comprised primarily by fluted projectile points, which are morphologically similar to the well-dated Clovis points found elsewhere in North America (Rosenthal et al. 2007:151; Dillon 2002). In the Central Valley, fluted points have been identified at only three archaeological localities, and in each case the points were recovered from remnant features of the Pleistocene landscape. The three localities are the Woolfsen Mound (CA-MER-215) in Merced County, Tracey Lake in San Joaquin County, and the Tulare Lake basin in Kings County.

The Lower Archaic Period is also mainly represented by isolated finds, such as at the Tulare Lake basin in the southern San Joaquin Valley (Rosenthal et al. 2007:151-152). As a consequence of the natural alluvial deposition processes, only one site on the valley floor has produced cultural material dating to this period. Located in Kern County on the ancient shoreline of Buena Vista Lake, stratified cultural deposits at CA-KER-116 yielded stone tools (stemmed projectile point and crescents) and the remains of birds, fish and shellfish but no plant remains or milling tools. At two Lower Archaic Period sites in the foothills of Calaveras County (Skyrocket CA-CAL-629/630; LaJeunesse and Pryor 1996) and eastern Contra Costa County

(CA-CCO-637; Meyer and Rosenthal 1998), abundant handstones and milling slabs have been recovered.

MIDDLE ARCHAIC PERIOD (5550–550 CAL B.C.)

Middle Archaic Period archaeological sites are more common in the foothills, particularly in buried contexts between circa 4,050 and 2,050 cal B.C., and are relatively scarce on the valley floor due to burial by natural processes (Rosenthal et al. 2007:153). The change in climate and rising sea levels at the start of the Middle Holocene led to the development of the extensive marshland known as the Sacramento–San Joaquin Delta (Atwater and Belknap 1980; Goman and Wells 2000). The archaeological record indicates groups followed a seasonal foraging strategy and exploited a wide range of natural resources, including a variety of large and small mammals, fish, waterfowl, and plant resources (Fredrickson 1973; Heizer 1949; Ragir 1972; Moratto 1984). It is also likely that groups occupied higher elevations in the summer and shifted to lower elevations during the winters (Moratto1984:206), and that residential stability along river corridors within the Central Valley increased during this period (Rosenthal et al. 2007:153).

Faunal remains recovered from Middle Archaic sites include tule elk, deer, pronghorn, and rabbits, while fish remains include salmon, sturgeon, and smaller fishes. Seeds or acorns apparently formed an important part of the diet during this period (Moratto 1984:201; Rosenthal et al. 2007:153, 155). The remains of acorns and pine nuts have been recovered from foothill sites in Calaveras (CA-CAL-629/630 and CA-CAL-789) and Fresno (CAL-FRE-61) counties, and milling implements found at sites include grinding slabs (metates) and handstones (manos), as well as mortars and pestles.

Projectile points common in Middle Archaic sites are classified within the Sierra Contracting Stem and Houx Contracting Stem series (Justice 2002:266, 276). Spears, angling hooks, composite bone hooks, and baked clay artifacts that may have been used as net or line sinkers represent the variety of fishing implements found at sites dating to this period. Other baked clay items include pipes and discoids, as well as cooking “stones.” Impressions of twined basketry, bone tools, shell beads, and ground and polished charmstones have also been recovered. A variety of grave goods accompanied burials in cemetery areas, which were separate from habitation areas.

The presence during the Middle Archaic of an established trade network is indicated by a variety of exotic cultural materials, including obsidian tools, quartz crystals, and *Olivella* shell beads. Obsidian sources during this period included quarries in the eastern Sierra, Cascades, and North Coast Ranges (Rosenthal et al. 2007:153, 155).

UPPER ARCHAIC PERIOD (550 CAL B.C.–CAL A.D. 1100)

The Upper Archaic Period is better understood than any of the preceding periods (Rosenthal et al. 2007:155-157). Technology is more specialized during this period, with innovations and new types of bone tools, *Olivella* shell beads, *Haliotis* ornaments, charmstones, and ceremonial blades. An abundance of grinding tools (mortars and pestles) and plant remains, accompanied by a decrease in slab milling stones and handstones, indicates a shift to a greater reliance on acorns as a dietary staple during the Upper Archaic Period (Fredrickson 1973:125; Moratto 1984:209; Wohlgemuth 2004; Rosenthal et al. 2007:156). Archaeologists generally agree that milling slabs and handstones may have been used primarily for grinding wild grass grains and seeds, while mortars and pestles are better suited to crushing and grinding acorns (Moratto 1984:209-210).

A wide variety of natural resources were exploited during this period. Subsistence strategies varied regionally, focusing on seasonally available resources suited for harvesting in bulk, such as salmon, shellfish, deer, rabbits, and acorns (Rosenthal et al. 2007:156). Numerous large shell mounds dating to this period are located near fresh or salt water and indicate exploitation of a variety of aquatic resources was relatively intensive. The accumulations of cultural debris and habitation features, such as rock-lined ovens, house floors, burials, hearths and fire-cracked rock, reflect long-term residential occupation (Bouey 1995:348-349).

In the western margins of the San Joaquin Valley, discrete cemeteries date to the Upper Archaic Period at sites in Contra Costa and Merced counties (CA-CCO-696, CA-MER-3, CA-MER 94) (Meyer and Rosenthal 1998; Olsen and Payen 1969; Pritchard 1970). In the southern San Joaquin Valley, sedentary villages on the shores of Buena Vista Lake were occupied year-round (Rosenthal et al. 2007:157). Trade in marine shell beads and obsidian, among other items, continued to be important. Established obsidian trade routes brought this valuable toolstone from the North Coast Ranges and the east side of the Sierra Nevada Range to the Central Valley.

EMERGENT/LATE PREHISTORIC PERIOD (CAL A.D. 1100–HISTORIC CONTACT)

The archaeological record in the Central Valley for the Emergent or Late Prehistoric Period documents an increase in the diversity and number of artifacts and in the number of archaeological sites (Rosenthal et al. 2007:157-159). Along with an increase in sedentism and population that led to the development of social stratification, with an elaborate ceremonial and social organization, a number of cultural innovations shaped the Emergent Period. These include the introduction of the bow and arrow and more diverse fishing equipment (bone fish hooks, harpoons, and gorge hooks). Diagnostic projectile points include the Gunther barbed series in the early part of the period, the unique Stockton serrated developed in the Delta region, Desert-side notched later in the period, and Cottonwood series in the Tulare and Buena Vista basins. Fishing, hunting, and gathering plant foods continue as the foci of subsistence practices, including intensive harvesting of acorns and an increased emphasis on fishing (Rosenthal et al. 2007:158-159). Hopper mortars and shaped mortars and pestles, as well as bone awls used for producing coiled baskets, are also common components of the artifact assemblages. Locally made Cosumnes Brownware has been recovered from some sites in the lower Sacramento

Valley, while pottery in the Tulare basin was obtained through trade. Baked clay balls, which were probably used for cooking in the absence of stone, remain common.

Cultural items associated with ceremonials and rituals include flanged tubular pipes and baked clay effigies representing humans and animals, among others. Clamshell disk beads were used as a form of currency and accompanied the development of extensive exchange networks. Mortuary practices included flexed burials, the cremation of high-status individuals, and pre-interment burning of offerings in grave pits (Fredrickson 1973:127-129; Moratto 1984:211). House floors or other structural remains have been discovered at sites in the valley and foothills, including sites in Calaveras, Kern, Merced, and Sacramento counties (e.g., CA-CAL-1180/H, CA-KER-39, CA-MER-3, CA-MER-113, CA-SAC-29, CA-SAC-267) (Rosenthal et al. 2007:158). Overall, the cultural patterns known from historic period Native American groups inhabiting the Central Valley are reflected in the subsistence and land use patterns practiced during the Emergent Period (Rosenthal et al. 2007:157-158).

ETHNOGRAPHY

Historically, the Yokuts people collectively inhabited the San Joaquin Valley as well as the eastern foothills of the Sierra Nevada from the Calaveras River southward to the Kern River (Kroeber 1925; Latta 1977; Wallace 1978). The Yokuts language belongs to the broader Penutian family. Ethnographers and linguists have traditionally divided Yokuts into three geographic groups, based on linguistic similarities and differences: Northern Valley, Southern Valley, and Foothill (Figure 5). The Project Area is located in the area historically occupied by the Northern Valley Yokuts. Their territory extended southward from the Calaveras River to the upper San Joaquin River and from the crest of the Coast (Diablo) Range east to the Sierra Nevada foothills. The San Joaquin River was the core of their territory.

Information on the Yokuts lifeways has been compiled by Kroeber (1925:474-543), Wallace (1978:462-470), and Latta (1977). In general, the Northern Valley Yokuts are not well documented by ethnographers because of their rapid decimation as a result of disease, missionization, and Euro-American settlement.

The Northern Valley Yokuts consisted of 11 or more tribes, each containing 300 or so people (Wallace 1978:462-466). Most members lived within a single settlement that often had the same name as the political unit. These villages were generally established villages on low, natural rises along the major watercourses. The eastern side of the San Joaquin River, with its permanent waterways flowing from the Sierra Nevada, was more heavily populated than the land to the west of the river, where semi-permanent watercourses predominate. A village generally contained at least three types of structures—oval single-family dwellings made of tule, ceremonial chambers, and sweathouses (Wallace 1978:465).

The fundamental economy of the Yokuts was subsistence fishing, hunting, and collecting plant foods and, similar to the majority of native Californians, they relied on acorns, collected in the fall and then stored in granaries, as the staple food (Wallace 1978:464). During the fall and spring runs, salmon was a dietary mainstay. Wildfowl, such as geese and ducks, were also an important staple. Additional dietary plant parts included grass seeds, berries, and tule roots. Large game included deer, elk, antelope, and black bears.

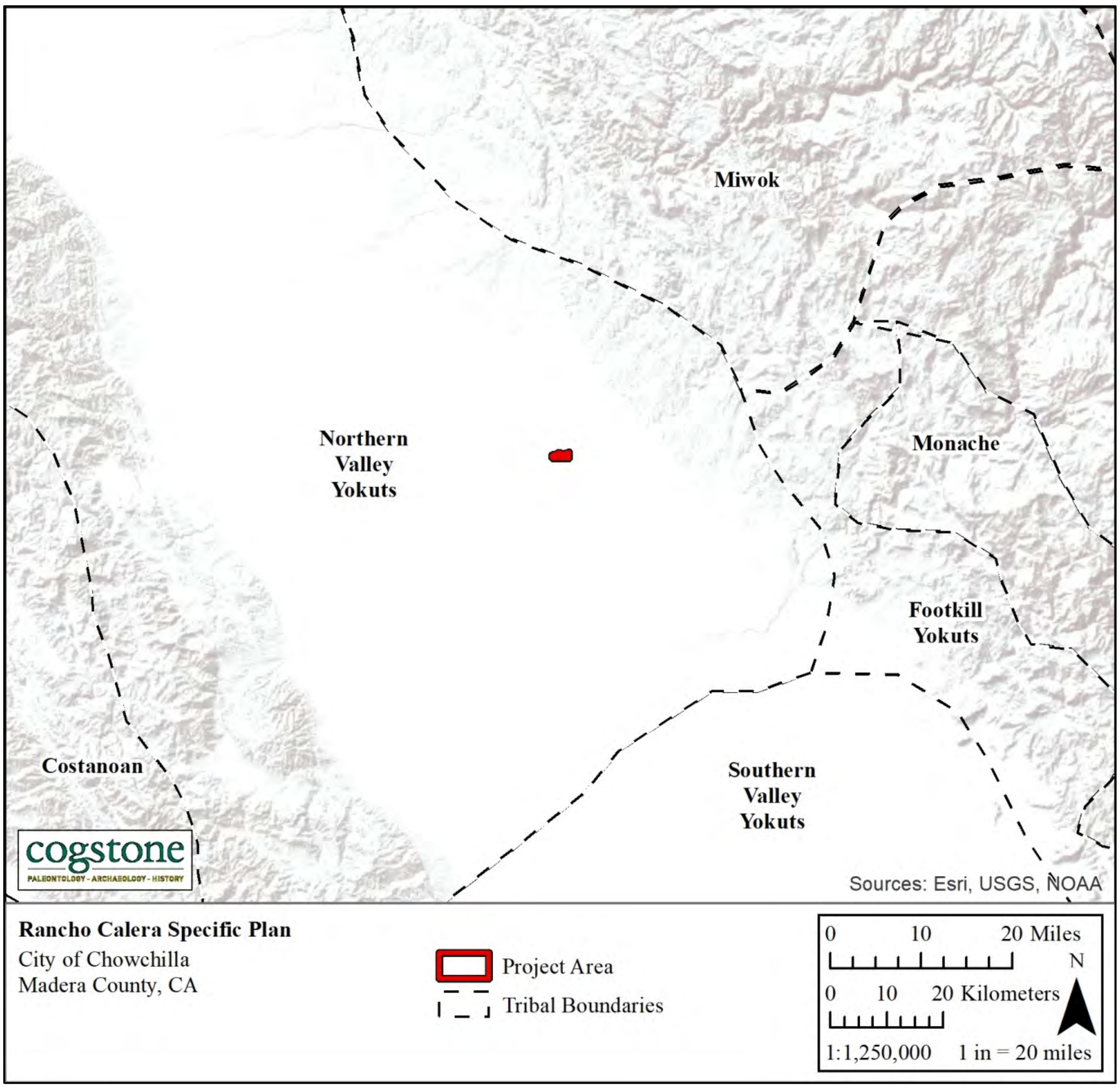


Figure 5. Tribal territory map

A wide variety of tools, implements, and enclosures were used by the Northern Valley Yokuts to gather, collect, and process food resources (Kroeber 1925:527; Latta 1977; Wallace 1978:464-465). These included bows and arrows, nets, traps, slings, and blinds for hunting land mammals and birds; and harpoons, hooks, and nets, as well as tule rafts, for catching fish. Sharpened digging sticks and woven tools (seed beaters, burden baskets, and carrying nets) would have been used to collect plant resources and a variety of implements (stone mortars and pestles, bedrock and portable mortars, stone knives, and bone tools) used for processing resources. The Northern Valley Yokuts traded with neighboring groups for bows and arrows, baskets, shell ornaments and beads, obsidian, and mussels and abalone (Wallace 1978:465). Trade was facilitated by riverine access and the trails that led west to the coast.

The San Joaquin Valley was never settled during the Spanish and Mexican periods, but influences from the coastal missions and presidios were felt inland by the late 1700s. By 1805, Northern Valley Yokuts were transported to the San José, Santa Clara, Soledad, San Juan Bautista, and San Antonio missions that were established during the Spanish era (Wallace 1978:468-469). Later, disease and military raids claimed many lives during the period of Mexican colonization, followed by displacement during the early American Period by gold seekers and farmers.

Pre-contact population density for Northern Valley Yokuts has been estimated at 25,000 to 31,000 (Wallace 1978:463). In 1852, representatives of only three Northern Valley Yokuts tribes remained to sign one of a series of statewide treaties, but the treaty was never ratified (Wallace 1978:469). Today, people of Yokuts descent live on the Tule River Reservation in Tulare County and on three rancherias: Picayune in Madera County at Coarsegold, Santa Rosa in Kings County, and Table Mountain in Fresno County near Friant. Some Foothill Yokuts also live with Central Sierran Miwok on the Tuolumne Rancheria in Tuolumne County

HISTORIC SETTING

Regional History during Spanish, Mexican and American Periods

The first expedition into the Central Valley was led by Spanish Lieutenant Gabriel Moraga in 1808. Scouting for new mission locations and also searching for runaway Native American neophytes from the coastal missions, they traveled south as far as the Merced River and explored parts of the American, Calaveras, Cosumnes, Feather, Mokelumne, Sacramento, and Stanislaus rivers to the north. In 1813, during another expedition, Moraga gave the name San Joaquin to the large river that flows northward through the southern portion of the Central Valley. Luis Arguello led the final Spanish expedition into the interior of Alta California in 1817. They traveled up the Sacramento River, past today's City of Sacramento and though Yolo County, to the mouth of the Feather River, before returning to the coast (Beck and Haase 1974:18, 20; Gunsky 1989:3-4; Hoover et al. 2002:369).

After Mexico gained independence from Spain in 1822, the Mission lands were secularized under the Secularization Act of 1833, but much of the land was transferred to political appointees. A series of large land grants (ranchos) that transferred Mission properties to private ownership were awarded by the various governors of California. Land grants were also awarded in the interior to increase the population away from the coastal areas that were settled during the Spanish Period. Captain John Sutter received the two largest land grants in the Sacramento Valley. In 1839, Sutter founded a trading and agricultural empire called *New Helvetia*, which was headquartered at Sutter's Fort near the divergence of the Sacramento and American rivers, in Valley Nisenan territory. Land grants were issued along the San Joaquin River in today's Merced, San Joaquin, and Stanislaus counties, but none were located within Madera County (Beck and Haase 1974).

The Mexican Period also marks the exploration by American fur trappers west of the Sierra Nevada Mountains. Jedediah Smith was the first trapper to enter California; his small party trapped and explored along the Sierra Nevada in 1826 and then entered the Sacramento Valley in 1827. Jedediah Smith also traveled through the San Joaquin Valley, and passed through present-day Madera County in 1827 and 1828. Today's county was traversed again by the 1844 expedition led by John C. Frémont (Hoover et al. 2002: 179, 210).

The signing of the Treaty of Guadalupe Hidalgo in February 1848 ended the Mexican-American War, and Mexico relinquished California to the United States. The same year, gold was discovered on the American River at Sutter's Mill near Coloma. One year later, nearly 90,000 people had journeyed to the gold fields of California. California became the 31st state in 1850, and three years later the population of the state exceeded 300,000. In 1854, Sacramento became the state capital. Thousands of new settlers and immigrants poured into the state after the transcontinental railroad was completed in 1869, spurring California's economic growth.

LOCAL HISTORY

Madera County was organized from a part of Fresno County in 1853 and lies in the geographical center of the state. It was named after the Spanish word for "wood" or "timber." Beginning with the 1850s Gold Rush, timber has been an important economic resource for the County and for today's City of Madera. The County's first sawmill was constructed in the foothill mining district near present-day Oakhurst. Placer mining camps developed along the upper Fresno and San Joaquin rivers and on Coarsegold Creek at Coarsegold (also known as Texas Flat). Other camps in this district were named Fresno Flats (today's Oakhurst), Grub Gulch, Fine Gold, and Temperance Flat. Fresno Flats also housed one of several trading posts operated by Major James D. Savage in the southern Mother Lode during the Gold Rush era. By the late 1870s, a stage road that passed through Fresno Flats and Coarsegold had been constructed from Madera to Yosemite Valley (Hoover et al. 2002:179-180).

After the Southern Pacific line of the Central Pacific Railroad was completed through the County in 1872, the ability to transport lumber long distances further fueled the regional economy. To meet the demand for lumber by the states east of the Sierra Nevada, and to facilitate the transportation of cut trees to the railroad, a 63-mile flume was constructed at a cost of a half million dollars. Completed in 1874, the town of Madera was settled and grew around the lower end of the flume near the railroad stop and the Fresno River (Hoover et al. 2002:180-181). The town was incorporated in 1907 and has been the county seat since it was officially laid out by the California Lumber Company in 1876.

The first agricultural settlement in the County was founded approximately nine miles from Chowchilla at Borden (originally Alabama Settlement) in 1858/1859 by settlers from Alabama (Hoover et al. 2002:181). Many of the miners that migrated south from the Columbia-Sonora goldfields in the 1850s and 1860s also settled on the valley floor and farmed or raised livestock. Established in the 1870s, the agricultural settlements of Berenda and Fairmead were also located along the railroad line. Named after the Spanish word for antelope, “berrendo,” “Berendo” changed its name to Berenda in 1919 (Durham 1998:74). Agriculture continues to play a significant role in the regional economy, although agricultural and grazing land in the Madera area is being converted to other uses. Between 1984 and 2006, over 1,300 acres of agricultural and grazing land per year was converted in Madera County to mainly rural residential and commercial uses (City of Madera 2009:8-3).

PROJECT AREA HISTORY

The Project Area has not been used extensively in the last 100 years. A section road is visible on the 1918 La Grand 7.5-munute topographic map where State Route 233 (Avenue 26, Robertson Boulevard) sits today along the southern border of the Project Area. The 1946 United States Department of Agriculture aerial photograph of the Project Area (NETR Online 2020) depicts small dirt roads and a single small structure at the northern edge of the Project Area, slightly south of Ash Slough, and portions of the Project Area are shown to be in agricultural cultivation in the 1946 Le Grand 7.5-minute topographic map. Little change in land use is noted after 1946.

LITERATURE AND RECORDS SEARCHES

PALEONTOLOGICAL RECORD SEARCH

A records search was requested from the Natural History Museum of Los Angeles County (McLeod 2020; Appendix B). Additional searches were conducted in online databases of the University of California Museum of Paleontology (UCMP 2020), the California Academy of Sciences Paleontology database (CalAcad 2020), and the PaleoBiology database (PBDB 2020), as well as published and unpublished materials.

One recorded fossil locality is known from Project sediments within a 1½-mile radius of the study area (Hay 1927, Jefferson 1991a and 1991b, Gust, Scott, and Richards 2012, Ogletree pers. comm. 2015, Finger 2015, McLeod 2020). Additionally, numerous fossils of Pleistocene animals have been recovered from the Modesto Formation between southern Merced and Chowchilla during the construction of the new Le Grand and East Sandy Mush overpasses (Gust, Scott, and Richards 2012, Ogletree pers. comm. 2015).

HOLOCENE ALLUVIUM

The Holocene alluvium is too young to contain fossils, however these deposits overlie sensitive sediments at variable depths.

MODESTO FORMATION

With one exception, the Modesto Formation localities listed were recovered from depths of more than five feet below the historic ground surface. A fossil of elephant ([1]†Proboscidea) is known from the Modesto Formation about ¼ mile north of the eastern end of the Project in Ash Slough (LACM 7254; McLeod 2020).

The number of fossils recovered from the Modesto Formation in Merced County has increased greatly in the past few years. At Le Grand Road/Arboleda Drive along SR-99, the following was found in basins excavated in association with the construction of the new Le Grand Road overpass. These fossils are now at the University of California in Merced.

Except for one locality found in a paleosol, all fossils were recovered from sandy stream and adjacent slow moving water and flooding (overbank) environments. Most fossils were not recovered from the streams themselves but instead were from the adjacent sediments. The presence of abundant root traces and caliche (calcium carbonate) provides evidence of plant presence in the areas adjacent to the streams where fossils were recovered.

[1] † - Indicates that the species, or for higher taxonomy, the species recovered is extinct.

A total of 1667 fossils were identified from the 2012 excavations for the Arboleda project. Large mammals identified include giant ground sloth (†*Paramylodon harlani*), Columbian mammoth (†*Mammuthus columbi*), at least two types of horse (†*Equus occidentalis* and †*E. conversidens*), yesterday's camel (†*Camelops hesternus*), llama (†*Hemiauchenia* sp.), ancient bison (†*Bison antiquus*), and deer (*Odocoileus hemionius*). In addition, partial specimens were assigned to †Proboscidea (fossil elephant, probably mammoth) and †Ungulata (horse, camel or bison). Carnivores identified include dire wolf (†*Canis dirus*), coyote (*Canis latrans*) and cougar (*Felis concolor*).

Small mammals identified include jackrabbit (*Lepus californicus*), Audubon's and Bachman's rabbits (*Sylvilagus auduboni* and *S. bachmani*), rabbits of indeterminate species (*Sylvilagus* sp.), ground squirrel (*Spermophilus* sp.), kangaroo rat (*Dipodomys* sp.), pack rat (*Neotoma* sp.), and pocket gopher (*Thomomys bottae*). Mice include the meadow mouse or vole (*Microtus* sp.), pocket mouse (*Perognathus* sp.), deer mouse (*Peromyscus* sp.), and harvest mouse (*Reithrodontomys* sp.).

Birds identified include Canada goose (*Branta canadensis*), California quail (*Calipepla californica*), western scrub jay (*Aphelocoma californica*), northern mockingbird (*Mimus polyglottos*), American robin (*Turdus migratorius*), western meadowlark (*Sturnella neglecta*) and sparrow (*Zonotrichia* sp.). Fishes were restricted to minnows (Cyprinidae) and three-spine stickleback (*Gasterosteus aculeatus*).

Western pond turtle (*Actinemys marmorata*) appears to be the only type of turtle present. Other reptiles were only identified to group. These are snakes of the gopher snake family (Colubridae) and rattlesnake (*Crotalus* sp.). Similarly, specimens of frog and toad are present but could not be identified more specifically.

The presence of bison and dire wolf together indicates the fossil fauna is within the Rancholabrean Land Mammal Age. The overall assemblage indicates a grassland environment with creeks and streams. [Gust, Scott and Richards 2012]

MODESTO OR RIVERBANK FORMATION

At Plainsburg Road/Sandy Mush Road along SR-99 numerous Pleistocene fossils, including the palate and tusk of a subadult mammoth, were found in basins excavated in association with the construction of the new Sandy Mush Road overpass (Ogletree pers. comm. 2015). Potentially fossiliferous sediment in the Project Area included both Modesto (m2, m1, mh) and Riverbank formation (r3) deposits (Gust and Scott 2012).

RIVERBANK FORMATION

In Fresno County the Riverbank Formation has produced fossils of horse (†*Equus* sp.; UCMP 2020). In Sacramento County, the Riverbank Formation has produced fossils of Harlan's ground sloth (†*Paramylodon harlani*), dire wolf (†*Canis dirus*), coyote (*Canis latrans*), Columbian mammoth (†*Mammuthus columbi*), horse (†*Equus* sp.), yesterday's camel (†*Camelops hesternus*), ancient bison (†*Bison antiquus*), antelope (Antilocapridae), deer (Cervidae), rabbit (Leporidae), pocket gopher (*Thomomys* sp.), woodrat (*Neotoma* sp.), squirrel (*Sciurus* sp.), broad-footed mole (*Scapanus latimanus*), gartersnake (*Thamnophis* sp.), and Sc(*Orthodon* sp.; Hilton et al. 2000).

Fossils from the Fairmead Landfill between Chowchilla and Madera California are all from a slightly older Pleistocene formation, the Turlock Lake Formation (Dundas et al. 1996).

CULTURAL RECORD SEARCH

CALIFORNIA HISTORIC RESOURCES INFORMATION SYSTEM

Cogstone requested a search for archaeological and historical records on April 17, 2020 at the Southern San Joaquin Valley Information Center (SSJVIC) of the California Historical Resource Inventory System (CHRIS) located on the campus of California State University, Bakersfield. The Project Area is located within the Le Grand USGS 7.5-minute topographic map. The results of the record search indicated that six cultural resource investigations have been completed previously within the Project Area, and six cultural resource investigations have been completed previously within a half-mile radius of the Project Area (Table 2).

Table 2. Previous Cultural Resource Studies

Report No. MA-	Author(s)	Title	Year	Distance from PA
00036	Self, William	Class I Overview, Santa Fe Pacific Pipeline Partners, L.P., Proposed Concord to Colton Pipeline Project	1995	Within PA
00083	Hatoff, Brian, Barb Voss, Sharon Waechter, Stephen Wee, and Vance Benté	Cultural Resources Inventory Report for the Proposed Mojave Northward Expansion Project	1995	0.25-0.5
00260	Nissley, Claudia A., Gerrit L. Fenenga, and Philip J. Wilke	Final Report of Archaeological Reconnaissance of the Fresno River, Ash Slough, and Berenda Slough, San Joaquin Valley, California	1975	0.25-0.5
00304	Napton, L. Kyle	Cultural Resource Investigation of the Eastside Annexation Area, 1370 Acres in Chowchilla, Madera County, California	1989	PA-0.5
00354	McManus, Jim	Negative Archaeological Survey Report to Modify Bridge #41-45, Left and Right	1986	0.25-0.5

Report No. MA-	Author(s)	Title	Year	Distance from PA
00969	Wren, Donald G.	A Cultural Resource Study: A Resurvey of Land APN 014-010-003, Madera County, California	2003	Within PA
00970	Wren, Donald G.	A Cultural Resource Study: A Resurvey of Land APN 026-130-017 & 026-130-013, Chowchilla, California	2003	Within PA
00981	Dexter, Sean D.	Cultural Resources Technical Report Ash Slough Management, City of Chowchilla: FEMA-1267-DR-CA, HMGP# 1267-447-008	2004	PA-0.5
00992	Treber, Brian	Lease of Several Vacant Parcels for a New Main Post Office in the City of Chowchilla, Madera County	2000	0.25-0.5
01017	Metzler, Valerie A. and Beth A. Gordon	New Tower Submission Packet, FCC Form 620, for FAT052C/Chowchilla	2005	0.25-0.5
01026	Arrington, Cindy, Bryon Bass, Joan Brown, Chris Corey, and Kevin Hunt	Cultural Resources Final Report of Monitoring and Findings for the Qwest Network Construction Project, State of California	2006	0.25-0.5
01026A	SWCA Environmental Consultants	Qwest Fiber Optic Project Cultural Resources Protocols	2000	0.25-0.5
01031	Hatoff, Brian W.	Phase I Environmental Site Assessment: Chowchilla DT, 122 Trinity Avenue, Chowchilla, California	2006	0.25-0.5
01032	Bonner, Wayne H.	Records Search Results and Site Visit for Cricket Telecommunications Facility Candidate FAT-052E (Chowchilla), No Site Address, Chowchilla, Madera County, California	2005	0.25-0.5
01130	Kaijankoski, Philip	Fresno Reliability Transmission Project	2010	0.25-0.5
01201	Meyer, Jack, D. Craig Young, and Jeffrey Rosenthal	Volume I: A Geoarchaeological Overview and Assessment of Caltrans Districts 6 and 9 - Cultural Resources Inventory of Caltrans District 6/9 Rural Conventional Highways - EA 06-0A7408 TEA Grant	2010	Within PA
01201A	Meyer, Jack, D. Craig Young, and Jeffrey Rosenthal	Volume II: Appendices A Geoarchaeological Overview and Assessment of Caltrans District 6 and 9 - Cultural Resources Inventory of Caltrans District 6/9 Rural Conventional Highways - EA 06-0A7408 TEA Grant	2010	Within PA
01232	Bassett, Everett	Cultural Resources Inventory Report for the LeGrand-Chowchilla 115 kV Reliability Project, Merced and Madera Counties, California	2013	0.25-0.5
01267	Connolly, Michael	Cultural Resources Technical Report Avenue 26 and Road 29 Rehabilitation Project CA Flap Mad 26(1), Madera County, California	2017	0.25-0.5

The records search also determined that there are no previously recorded cultural resource located within the Project boundaries. However, three cultural resources are located within a half-mile of the Project Area. These resources are all historic linear built environment resources (Table 3).

Table 3. Cultural Resource Sites

Primary No. (P-20)	Trinomial No. (CA-MAD-)	Resource Type	Resource Description	Year Recorded	NRHP/CRHR Status	HRI No.	Distance from PA (miles)
002512	-	Historic Site	Roads/Trails/Railroad grades. Southern Pacific RR Bridge	2003	-	-	0.25-0.5
002519	-	Historic Site	Roads/Trails/Railroad grades	1989, 2009	-	-	0.25-0.5
003120	002840H	Historic Site	Highway/Trail. Avenue 26 Road	2016	-	-	0-0.25

OTHER CULTURAL RECORDS SOURCES

In addition to the SSJVIC, John Gust consulted a variety of sources in April 2020 to obtain information regarding the cultural context of the Project Area (Table 4). Sources included the National Register of Historic Places (NRHP), the California Register of Historic Resources (CRHR), California Historical Resource Inventory (CHRI), California Historical Landmarks (CHL), and California Point of Historical Interest (CPHI). Specific information about the Project Area, obtained from historic-era maps and aerial photographs, is presented in the Project Area History section.

Table 4. Additional Sources Consulted

Source	Results
National Register of Historic Places (NRHP)	Negative
Historic USGS Topographic Maps	See Project Area History section.
Historic US Department of Agriculture Aerial Photographs	See Project Area History section.
California Register of Historic Resources (CRHR)	Negative
California Historical Resource Inventory (CHRI)	Negative
California Historical Landmarks (CHL)	Negative
California Point of Historical Interest (CPHI)	Robertson Boulevard/State Highway 233 (P724) borders the southern edge of Project Area
Bureau of Land Management (BLM) General Land Office Records	Positive: see Table 5

Table 5. BLM Land Patents

Name	Year	Accession Number	Township; Range; Section
Isaac Friedlander	1869	CACAAA 113180, CACAAA 113181, CACAAA 113182, CACAAA 113183, CACAAA	T: 9S; R: 16E, Sections 20 and 21

Name	Year	Accession Number	Township; Range; Section
		113184, CACAAA 113246	
Horatio Stebbins	1869	CACAAA 113090	T: 9S; R: 16E, Section 21

SACRED LANDS FILE SEARCH

A Sacred Lands File (SLF) search was requested from the Native American Heritage Commission (NAHC) on April 17, 2020. The NAHC responded on April 20, 2020 stating that the Project Area is negative for known tribal cultural resources.

PALEONTOLOGICAL SENSITIVITY

A multilevel ranking system was developed by professional resource managers within the Bureau of Land Management (BLM) as a practical tool to assess the sensitivity of sediments for fossils. The Potential Fossil Yield Classification (PFYC) system (BLM 2016; Appendix C) is a multi-level scale based on demonstrated yield of fossils. The PFYC system provides additional guidance regarding assessment and management for different fossil yield rankings.

The probability for finding significant fossils in a Project Area can be broadly predicted from previous records of fossils recovered from the geologic units present in and/or adjacent to the study area. The geological setting and the number of known fossil localities help determine the paleontological sensitivity according to PFYC criteria.

Geologic units are classified according to the relative abundance of vertebrate fossils or scientifically significant invertebrate or plant fossils and their sensitivity to adverse impacts within the known extent of the geological unit. Although significant localities may occasionally occur in a geologic unit, a few widely scattered important fossils or localities do not necessarily indicate a higher PFYC value; instead, the relative abundance of localities is intended to be the major determinant for the value assignment.

The Holocene alluvium is ranked as low potential (PFYC 2) as it is too young to contain fossils. The Riverbank Formation is assigned a low potential (PFYC 2) due to the lack of fossils recovered from it locally. The potential to impact fossils in Pleistocene sediments can vary with the depth of impacts, previous disturbance and presence of non-fossiliferous sediments. Based on the depths of previously recovered finds from the Modesto Formation in the area, all grading activities more than five feet below the historic grade have the potential to impact fossils. As such, while the shallower sediments of the Modesto Formation are assigned a low potential (PFYC 2), deposits more than five feet below the historic grade are assigned a moderate but patchy potential (PFYC 3a; Table 6, Figure 6).

Table 6. Paleontological Sensitivity Rankings

Formation	Map symbol	PFYC rankings					
		5 very high	4 high	3a moderate; patchy	3b moderate; undemonstrated	2 low	1 very low
Holocene alluvium	hal					all	
Modesto Formation	m1, m1e, m2, m2e			more than 5 feet deep		less than 5 feet deep	
Riverbank Formation	r2, r3					all	

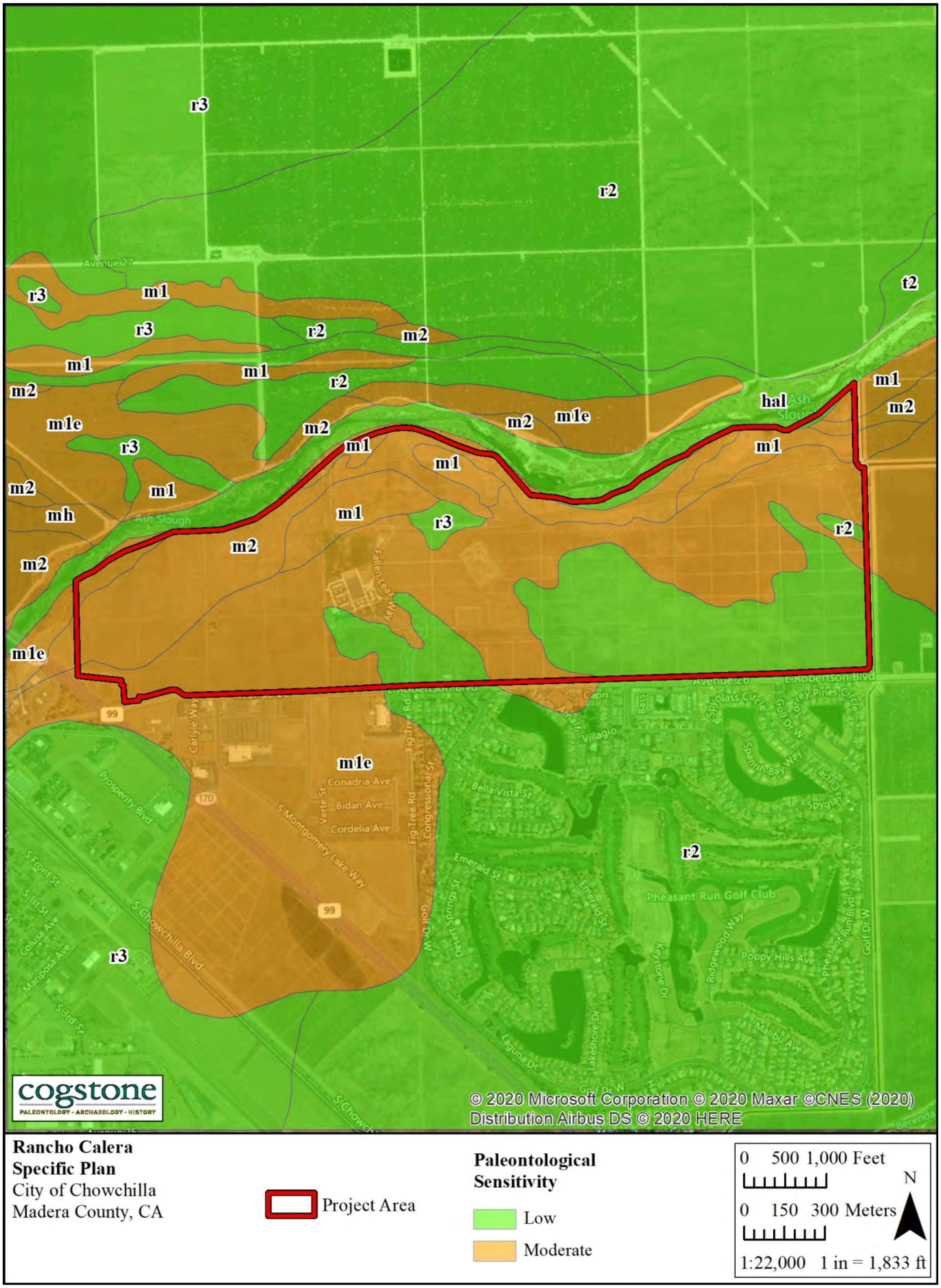


Figure 6. Paleontological sensitivity map

STUDY FINDINGS AND CONCLUSIONS

PALEONTOLOGICAL STUDY RESULTS

Sediments near to the study area that are similar to those found within the Project have been demonstrated to be paleontologically sensitive. The potential to impact fossils in Pleistocene sediments can vary with the depth of impacts, previous disturbance, and presence of non-fossiliferous sediments. All grading activities more than five feet below the historic grade in the moderate but patchy sensitivity Modesto Formation have the potential to impact fossils and should be monitored full-time. Excavations in the low sensitivity Holocene alluvium, Riverbank Formation, and less than five feet deep into the Modesto Formation have a lower potential to contain fossils but should be spot checked for fossils during grading.

Drilling, pot holing, pile driving, and similar activities, regardless of depth, have a low potential to produce fossils meeting significance criteria because any fossils brought up by the auger during drilling will not have information about formation, depth or context. The only instance in which such fossils will meet significance criteria is if the fossil is a species new to the region.

The following Mitigation Measures are recommended for paleontology:
Prior to the issuance of grading permits, the Project applicant shall retain a qualified paleontologist to develop and implement a Paleontological Mitigation Plan, which shall include the following minimum elements:

- The qualified Principal Investigator for Paleontology shall have:
    - an advanced degree (Masters or higher) in geology, paleontology, biology or related disciplines (exclusive of archaeology or anthropology) and
    - at least two years professional experience with paleontological (not including cultural) resources at the Principal Investigator level.
- All mass grading activities five feet or more below the historic grade of the Modesto Formation shall be monitored full-time by a qualified paleontological monitor.
- Excavations in the low sensitivity Holocene alluvium, Riverbank Formation, and less than five feet deep into the Modesto Formation have a lower potential to contain fossils but should be spot checked for fossils during grading.
- Drilling, pot holing, pile driving and similar activities do not require paleontological monitoring.
- If fossils are discovered, the paleontological monitor has the authority to temporarily divert work within 25 feet of the find to allow recovery of the fossils and evaluation of the fossil locality.
- Fossil localities shall require documentation, including stratigraphic columns and samples for micro-paleontological analyses and for dating.

- Fossils shall be prepared to the point of identification and evaluated for significance.
- Significant fossils shall be cataloged and identified prior to being donated to an appropriate scientific repository.
- The final report shall interpret any paleontological resources discovered in the regional context and provide the catalog and all specialists' reports as appendices.

CULTURAL RESOURCES STUDY RESULTS

Identification efforts for the Project included a review of existing literature and historic maps, and a review of a record search conducted at the SSJVIC. No cultural resources have been previously recorded within the Project Area. These negative findings along with a review of historic USDA aerial photographs indicate that the potential for subsurface cultural resource deposits is low.

The proposed changes to the Rancho Calera Specific Plan are unlikely to have a negative effect on cultural resources within the Project Area. No further cultural resources work is recommended for this Project.

In the event of an unanticipated discovery, all work must be suspended within 50 feet of the find until a qualified archaeologist evaluates it. In the unlikely event that human remains are encountered during Project development, all work must cease near the find immediately.

In accordance with California Health and Safety Code Section 7050.5, the County Coroner must be notified if potentially human bone is discovered. The Coroner will then determine within two working days of being notified if the remains are subject to his or her authority. If the Coroner recognizes the remains to be Native American, he or she shall contact the Native American Heritage Commission (NAHC) by phone within 24 hours, in accordance with Public Resources Code Section 5097.98. The NAHC will then designate a Most Likely Descendant (MLD) with respect to the human remains. The MLD then has the opportunity to recommend to the property owner or the person responsible for the excavation work means for treating or disposing, with appropriate dignity, the human remains and associated grave goods. Work may not resume in the vicinity of the find until all requirements of the health and safety code have been met.

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APPENDIX A. QUALIFICATIONS

cogstone
PALEONTOLOGY - ARCHAEOLOGY - HISTORY

JOHN GUST
Principal Investigator for Archaeology

EDUCATION

2016 Ph.D., Department of Anthropology, University of California, Riverside (UCR)
2011 M.A., Department of Anthropology, UCR
2007 M.A., Applied Geography, University of Colorado, Colorado Springs (UCCS)
2002 B.A., Department of Anthropology, minor in Geography/Environmental Studies, UCCS

SUMMARY QUALIFICATIONS

Dr. Gust is a Registered Professional Archaeologist (RPA) with over 8 years of experience in field archaeology. He meets the qualifications required by the Secretary of the Interior's *Standards and Guidelines for Archaeology and Historic Preservation* and his field expertise includes pedestrian surveys, excavation monitoring, resource recording, and historic artifact analysis. Dr. Gust has managed multiple cultural assessments for construction of commercial and residential structures. He has also manages cultural resources monitoring projects for both public and private sector clients. Dr. Gust is a member of the Society for California Archaeology, Society for American Archaeology, and the American Anthropological Association.

SELECTED EXPERIENCE

Gaviota Telecommunications Monitoring Project, Gaviota State Park, Santa Barbara County, CA. Cogstone conducted cultural resources monitoring and contracted Native American monitoring through the Santa Ynez Band of Mission Indians. All work and documentation was in compliance with NHPA, NEPA, and CEQA. The work monitored included the removal and replacement of a telecommunications pole and associated infrastructure. The APE was located within a known archaeological site thus SHPO recommended cultural resources monitoring and the presence of Native American monitors on site. Artifacts collected consisted of three cores, two core tools, twenty six piece of debitage, three utilized flakes, one handstone with grinding wear, one handstone that shows damage consistent with use for sharpening tools, one large probable pestle, one piece of shatter, and two items that are unmodified but did not appear to have originated at the site. Sub to Trileaf Corporation. Principal Investigator for Archaeology and Report Author. 2019-2020

Faith Home/Garner Road Connection Project, Caltrans District 10, Stanislaus County, CA. Cogstone identified and evaluated cultural, paleontological, and historic resources present in or adjacent to the construction of a four-lane one-mile expressway. Cogstone produced an Archaeological Survey Report, Historic Properties Survey Report, Historic Resources Evaluation Report, and Paleontological Identification and Evaluation Report. Services included intensive level pedestrian surveys, mapping, records searches, DPR forms, and Native American consultation. Sub to Environmental Intelligence. Principal Investigator for Archaeology. 2019

Felicita Park Project, 742 Clarence Lane, City of Escondido, San Diego County, CA. This report documented compliance with the NHPA, NEPA, CEQA, County of San Diego guidelines and regulations, and other applicable laws and regulations during the demolition of an existing transmission facility. The monitoring program followed the Cultural Resources Monitoring and Inadvertent Discoveries Plan developed by Cogstone for the Project. The County of San Diego Department of Parks and Recreation acted as the lead agency. Project construction activities involved demolition of an existing transmission tower facility, including removal of a faux-broadleaf monopole tower by truck-mounted crane, the security fence area, and the upper portion of the reinforced concrete footing. Cogstone conducted monitoring during all ground-breaking activities due to the sensitivity of the project area. Sub to Partner Science & Engineering. Supervisor and Report Author. 2019

Los Serranos Park Project, Chino Hills, San Bernardino County, CA. Cogstone conducted cultural, paleontological, and Native American monitoring during ground-disturbing activities of undeveloped lands during the construction of a new 6.6 acre neighborhood park. Record searches, background research, and lab analysis of recovered materials from the project area were completed. As a result, mitigation measures were recommended via a monitoring compliance report. Principal Investigator for Archaeology and Report Author. 2018-2019

cogstone
PALEONTOLOGY - ARCHAEOLOGY - HISTORY

KIMBERLY SCOTT
Principal Investigator for Paleontology

EDUCATION

2013 M.S., Biology with paleontology emphasis, California State University San Bernardino
2000 B.S., Geology with paleontology emphasis, University of California, Los Angeles

SUMMARY QUALIFICATIONS

Ms. Scott has 22 years of experience in California as a paleontologist and sedimentary geologist. She is a Member of the Society of Vertebrate Paleontology and the Geological Society of America. Ms. Scott has worked extensively in the field surveying, monitoring, and salvaging fossils on hundreds of projects. In addition, she has specialized skills in jacketing large fossils, fossil preparation (cleaning and stabilization) and in the preparation of stratigraphic sections and other documentation for fossil localities. She frequently authors paleontological assessments, paleontological mitigation plans, and monitoring compliance reports to all agency requirements. She authors and conducts crew sensitivity training, serves as company safety officer, and has authored both the company safety and paleontology manuals.

SELECTED EXPERIENCE

Brea 265 Specific Plan, City of Brea, Orange County, CA. The objective of this study was to review and summarize available information regarding known paleontological, archaeological, and historical resources within the boundaries of the proposed Specific Plan. This study provided environmental documentation as required by CEQA. A Paleontological Resource Impact Mitigation Program and full-time monitoring was recommended for deposits with a PFYC ranking of 3 or greater. Sub to PlaceWorks. Principal Investigator for Paleontology. 2018-2019

1874 Alisos Avenue Project, City of Laguna Beach, Orange County, CA. The purpose of this study was to determine whether the construction of a building site for a single family residence had the potential to impact cultural or paleontological resources. Cogstone conducted record searches, a Sacred Lands File Search, background research, a pedestrian survey, and produced both a cultural resources and a paleontological assessment. Principal Investigator for Paleontology. 2019

Hope Street Bridge Housing Project, City of Los Angeles, Los Angeles County, CA. The purpose of the study was to determine the potential effects to paleontological resources for a proposed temporary emergency homeless shelter. Cogstone conducted a record search, consulted additional records from databases and print sources, and prepared a paleontological technical assessment. *This project was a task order from an on-call contract with Los Angeles Bureau of Engineering (LABOE).* Sub to ICF. Principal Investigator for Paleontology. 2018

Fire Station 172 Project, Rancho Cucamonga Fire Protection District, San Bernardino County, CA. The project involved relocation of the Fire Station from 9612 San Bernardino Road to 8870 San Bernardino Road. Cogstone conducted a pedestrian survey, record searches, and prepared both cultural and paleontological assessments in compliance with CEQA. Sub to PlaceWorks. Principal Investigator for Paleontology. 2018

Bloomington Affordable Housing Phase III Project, Bloomington, San Bernardino County, CA. The project involves construction of an affordable housing apartment complex and community amenities located north of Valley Boulevard and south of Marygold Avenue. Ms. Scott co-authored the Cultural and Paleontological Assessment. Sub to Michael Baker International. Principal Investigator for Paleontology. 2018

City of La Verne General Plan Update Project, Los Angeles County, CA. The project involved review and summary of available information regarding known paleontological, archaeological, and historical resources within the boundaries of the City of La Verne to support an update of the City's General Plan. Ms. Scott co-authored the Cultural and Paleontological Assessment. Sub to DeNovo Planning Group. Principal Investigator for Paleontology. 2018

cogstone

PALEONTOLOGY - ARCHAEOLOGY - HISTORY

MOLLY VALASIK

Task Manager/QAQC

EDUCATION

2009 M.A., Anthropology, Kent State University, Kent, Ohio
2006 B.A., Anthropology, Ohio State University, Columbus, Ohio

SUMMARY QUALIFICATIONS

Ms. Valasik is a Registered Professional Archaeologist (RPA) with more than 10 years of experience. She is a skilled professional who is well-versed in the compliance procedures of CEQA and Section 106 of the NHPA and regularly prepares cultural resources assessment reports for a variety of federal, state, and local agencies throughout California. Ms. Valasik has managed a variety of projects at Cogstone in the water, transportation, energy, development, and federal sectors. She meets the qualifications required by the Secretary of the Interior's *Standards and Guidelines for Archaeology and Historic Preservation*. She is accepted as a principal investigator for prehistoric archaeology by the State Office of Historic Preservation's Information Centers.

SELECTED EXPERIENCE

Brea 265 Specific Plan, City of Brea, Orange County, CA. The objective of this study was to review and summarize available information regarding known paleontological, archaeological, and historical resources within the boundaries of the proposed Specific Plan. This study provided environmental documentation as required by CEQA. A Paleontological Resource Impact Mitigation Program and full-time monitoring was recommended. Due to the high sensitivity for subsurface archaeological resources, a cultural resources mitigation plan and monitoring was also recommended. Sub to PlaceWorks. Project Manager and Principal Investigator for Archaeology. 2018-2019

La Verne General Plan Update, City of La Verne, Los Angeles County, CA. Cogstone reviewed and summarized available information regarding known paleontological, archaeological, and historical resources within the boundaries of the City of La Verne to support an update of the City's General Plan. Cogstone conducted archaeological and paleontological record searches, extensive historical research at City Hall, requested a Sacred Lands File search from the Native American Heritage Commission, and a general analysis of impacts of future projects within the city that may adversely affect paleontological, archaeological, or historic resources was provided along with mitigation recommendations. Sub to De Novo. Principal Investigator for Archaeology. 2018

River Street Marketplace, City of San Juan Capistrano, Orange County, CA. Cogstone conducted record searches, literature studies, and intensive archaeological and paleontological surveys to determine the potential effects to cultural and paleontological resources resulting from the construction of 64,900 square feet of proposed commercial and office space, along with associated improvements. The proposed project consisted of five buildings and was located on a 5.6-acre property occupied by the Ito Nursery which has been in operation since 1970. Sub to PlaceWorks. Principal Investigator for Archaeology. 2018

Agora Town Center Mixed-Use EIR, City of Laguna Niguel, Orange County, CA. Conducted due diligence review of the previous environmental document. Prepared updated cultural and paleontological sections, including updated records search. The project also involved preparation of a new Tribal cultural resources section; and assisting the City of Laguna Niguel with combined SB 18/AB52 consultation and outreach. Sub to PlaceWorks. Principal Investigator for Archaeology. 2016

Lyon Subdivision EIR, Community of Coto de Caza, Orange County, CA. Conducted a cultural resources technical study to support preparation of an EIR on behalf of the developer for the proposed subdivision of an existing large estate for development of 28 new residential lots on approximately 50-57 acres of land. The existing land is predominantly a citrus orchard. Services included records search, Sacred Lands search, Native American consultation, GIS mapping, and intensive-level pedestrian survey with negative results. The lead agency for the Project was the City of Coto de Caza. Sub to CAA Planning. Principal Investigator for Archaeology. 2015

ERIC SCOTT
Paleontologist/QAQC

EDUCATION

1990 M.A., Anthropology (Biological), University of California, Los Angeles
1985 B.A., Anthropology (Physical), California State University, Northridge

SUMMARY QUALIFICATIONS

Mr. Scott is a professional vertebrate paleontologist with over four decades of experience in paleontological mitigation, fieldwork, curation, and research. He is emeritus paleontology curator at the San Bernardino County Museum, an adjunct instructor at California State University, San Bernardino, and a research associate of the Natural History Museum of Los Angeles County and the La Brea Tar Pits and Museum. He is a 30+ year member of the Society of Vertebrate Paleontology, an international society of professional scientists where he currently serves on the Government Affairs Committee, and also holds membership in the Geological Society of America and other professional societies. Mr. Scott currently serves as an editor for the Journal of Vertebrate Paleontology. He has published over 40 research articles in professional scientific journals.

SELECTED PROJECTS

Purple Line Extension (Westside Subway), Section 1, Metropolitan Transit Authority (METRO), Los Angeles, CA. The project involves construction of seven stations along 8.6 miles, from the existing Purple Line at Wilshire/Western Avenue along Wilshire Boulevard to the Veterans Administration Hospital in Westwood. Supervises paleontological monitoring, fossil recovery, and fossil preparation in the lab. Contributes to monthly reporting. Sub to JV West. Paleontologist. 2017-ongoing

Highway 111 Street Improvement Project, City of Indio, Riverside County, CA. In compliance with mitigation measures, Cogstone provided paleontological resources monitoring during the excavation and grading of a ~1.7 mile stretch of highway on a full-time basis for sediments five feet or more below the original ground surface. This project received Federal funding and the report has been produced in compliance with the National Environmental Policy Act (NEPA). Sub to ECORP Consulting. Project Manager and Report Author. 2018

Camino de la Cumbre Project, City of Sherman Oaks, Los Angeles County, CA. The purpose of this Paleontological Resources Assessment was to determine the potential for impacting fossil resources during excavations of the Camino de la Cumbre residential development project. Managed survey and prepared Paleontological Resources Assessment Report. Sub to Ridge, Inc. Qualified Principal Paleontologist and Author. 2018

Charcot Avenue Extension Over I-880 Project, Caltrans District 4, City of San Jose, Santa Clara County, CA. Cogstone produced a Paleontological Identification Report to assess the potential for impacting fossil resources during the proposed construction of a two-lane extension. Cogstone consulted published literature and records for fossil localities within a one mile radius of the project. Non-augering excavations into native sediments were expected to be fairly minimal for embankments, utilities, and signal and lighting pole foundations. Due to the limited amount of excavations more than 10 feet deep, it was considered unlikely that fossils meeting significance criteria would be encountered on this project; therefore, no mitigation was recommended. Sub to David J. Powers. Qualified Principal Paleontologist and Author. 2018

Ava Hollywood Mixed Use High-Rise Project, City of Los Angeles, Los Angeles County, CA. This project was conducted in compliance with the Mitigation Measure as defined by the Los Angeles Department of City Planning. Cogstone provided paleontological monitoring during the excavation and grading for a seven story building with two levels of underground parking on a full-time basis for sediments five feet or more below the original ground surface. Project Manager and Author. 2018

LOGAN FREEBERG
GIS Supervisor

EDUCATION

2018 Geographic Information Systems (GIS) Certificate, California State University, Fullerton
2003 B.A., Anthropology, University of California, Santa Barbara

SUMMARY QUALIFICATIONS

Mr. Freeberg has over 15 years of experience in cultural resource management and has extensive experience in field surveying, data recovery, monitoring, and excavation of archaeological and paleontological resources associated with land development projects in the private and public sectors. He has conducted all phases of archaeological work, including fieldwork, laboratory analysis, research, and reporting. Mr. Freeberg also has a strong grounding in conventional field and laboratory methods and is skilled in the use of ArcGIS.

SELECTED PROJECTS

State Route 108/Highway 49 and Mackey Ranch Road Intersection Improvements Project, Caltrans District 10, Tuolumne County, CA. The Chicken Ranch Rancheria of Me-Wuk Indians of California, in partnership with the Caltrans, proposed to replace an intersection and convert to a roundabout designed to accommodate forecasted future traffic volumes and provide an alternative access route to the Chicken Ranch Rancheria. Cogstone completed an intensive-level pedestrian survey, CHRIS records search, sacred lands file search from the Native American Heritage Commission, Native American consultation, consulted with local history societies and preservation groups, and produced a Historical Resources Compliance Report and Archaeological Survey Report. Sub to Foothill Associates. GIS Supervisor. 2019-2020

Dogwood Road Project, City of El Centro, Imperial County, CA. Cogstone conducted a cultural resources assessment to determine the potential effects to cultural resources resulting from the construction of United States Department of Agriculture Part 70-B RD Funding assisted housing on a 2.2-acre parcel. Cogstone conducted a record search, pedestrian survey, and determined that no further cultural resources work was necessary. The assessment provided environmental documentation as required by Section 106 of the National Historic Preservation Act and the California Environmental Quality Act. The City of El Centro acted as the lead agency. Sub to Partner Science & Engineering, Inc. GIS Supervisor. 2019-2020

Faith Home/Garner Road Connection Project, Caltrans District 10, Stanislaus County, CA. Cogstone identified and evaluated cultural, paleontological, and historic resources present in or adjacent to the construction of a four-lane one-mile expressway. Cogstone produced an Archaeological Survey Report, Historic Properties Survey Report, Historic Resources Evaluation Report, and Paleontological Identification and Evaluation Report. Services included intensive level pedestrian surveys, mapping, records searches, DPR forms, and Native American consultation. Sub to Environmental Intelligence. GIS Supervisor. 2019

Euclid Fueling Station Project, City of Santa Ana, Orange County, CA. This study was conducted to determine the potential impacts to archaeological and paleontological resources during construction activities for a proposed 7-Eleven gas station and convenience store. The proposed project entailed the construction of the convenience store, associated parking, gas station, and underground fuel storage tank. Planned vertical impacts included approximately three to four feet of fill removal over at least some of the site, a trench approximately eight feet deep for utilities, and approximately 12 feet for the new fuel storage tanks. Sub to Sagecrest Environmental. GIS Technician. 2019

Fresno West Area Specific Plan, City of Fresno, Fresno County, CA. The objective of this study was to review and summarize available information regarding known paleontological, archaeological, and historical resources within the boundaries of the City of Fresno's West Area Specific Plan. The purpose of the West Area Specific Plan is to implement and refine the City's vision for the West Area in order to guide future growth and development in the most northwest area of the City. Cogstone's services included record searches, mapping, and extensive background research. Sub to De Novo Planning. GIS Technician. 2019

APPENDIX B. PALEOTOLOGOCAL RECORDS SEARCH

Natural History Museum
of Los Angeles County
900 Exposition Boulevard
Los Angeles, CA 90007

tel 213.763.DINO
www.nhm.org

Vertebrate Paleontology Section
Telephone: (213) 763-3325

e-mail: smcleod@nhm.org

1 May 2020

Cogstone Resource Management, Inc.
1518 West Taft Avenue
Orange, CA 92865-4157

Attn: Logan Freeberg, GIS Technician

re: Vertebrate Paleontology Records Check for paleontological resources for the proposed Rancho Calera Specific Plan Project, Cogstone Project # 4890, in the City of Chowchilla, Madera County, project area

Dear Logan:

I have conducted a thorough search of our paleontology collection records for the locality and specimen data for the proposed Rancho Calera Specific Plan Project, Cogstone Project # 4890, in the City of Chowchilla, Madera County, project area as outlined on the portions of the Plainsburg and Le Grand USGS topographic quadrangle maps that you sent to me via e-mail on 17 April 2020. We have one vertebrate fossil locality that may occur directly within the proposed project area boundaries from the same sedimentary deposits that occur in the proposed project area.

Directly within the channel of Ash Slough, forming the northern border of the proposed project area, there are active sands and muds that are unlikely to contain significant vertebrate fossils in the uppermost layers. Otherwise, surficial deposits in the proposed project area consist of soil on top of late Pleistocene deposits of the Riverbank Formation and the younger and sometimes overlying Modesto Formation, derived primarily from Ash Slough. Our vertebrate fossil locality from these deposits, is LACM 7254, on the south side of Ash Slough just northwest of the Ronald Reagan Elementary School, project area, that produced a fossil specimen of elephantoid, Proboscidea.

Very shallow excavations in the soil and Quaternary alluvial deposits exposed throughout the proposed project area are unlikely to uncover significant fossil vertebrate remains. Deeper excavations that extend down into older sedimentary deposits, however, may well encounter significant vertebrate fossil remains. Any substantial excavations in the proposed project area, therefore, should be monitored closely to quickly and professionally recover any fossil remains discovered while not impeding development. Also, sediment samples should be collected and processed to determine the small fossil potential in the proposed project area. Any fossil materials uncovered during mitigation activities should be deposited in an accredited and permanent scientific institution for the benefit of current and future generations.

This records search covers only the vertebrate paleontology records of the Natural History Museum of Los Angeles County. It is not intended to be a thorough paleontological survey of the proposed project area covering other institutional records, a literature survey, or any potential on-site survey.

Sincerely,

Samuel A. McLeod, Ph.D.
Vertebrate Paleontology

enclosure: invoice

APPENDIX C. PALEONTOLOGICAL SENSITIVITY RANKING CRITERIA

PFYC Description Summary (BLM 2016)	PFYC Rank
Very Low. The occurrence of significant fossils is non-existent or extremely rare. Includes igneous (excluding air-fall and reworked volcanic ash units), metamorphic, or Precambrian rocks. Assessment or mitigation of paleontological resources is usually unnecessary except in very rare or isolated circumstances that result in the unanticipated presence of fossils.	1
Low. Sedimentary geologic units that are unlikely to contain vertebrate or scientifically significant nonvertebrate fossils. Includes rock units less than 10,000 years old and sediments with significant physical and chemical changes (e.g., diagenetic alteration) which decrease the potential for fossil preservation. Assessment or mitigation of paleontological resources is not likely to be necessary.	2
Moderate. Units are known to contain vertebrate or scientifically significant nonvertebrate fossils, but these occurrences are widely scattered and/or of low abundance. Common invertebrate or plant fossils may be found and opportunities may exist for casual collecting. Paleontological mitigation strategies will be based on the nature of the proposed activity. Management considerations cover a broad range of options that may include record searches, pre-disturbance surveys, monitoring, mitigation, or avoidance. Surface-disturbing activities may require assessment by a qualified paleontologist to determine whether significant paleontological resources occur in the area of a proposed action, and whether the action could affect the paleontological resources.	3
High. Geologic units containing a high occurrence of significant fossils. Fossils must be abundant per locality. Vertebrates or scientifically significant invertebrate or plant fossils are known to occur and have been documented but may vary in occurrence and predictability. Mitigation plans must consider the nature of the proposed disturbance, such as removal or penetration of protective surface alluvium or soils, potential for future accelerated erosion, or increased ease of access that could result in looting. Detailed field assessment is normally required and on-site monitoring or spot-checking may be necessary during land disturbing activities. In some cases avoidance of known paleontological resources may be necessary.	4
Very High. Highly fossiliferous geologic units that consistently and predictably produce vertebrate or scientifically significant invertebrate or plant fossils. Vertebrate fossils or scientifically significant invertebrate fossils are known or can reasonably be expected to occur in the impacted area. Paleontological resources are highly susceptible to adverse impacts from surface disturbing activities. Paleontological mitigation may be necessary before or during surface disturbing activities. The area should be assessed prior to land tenure adjustments. Pre-work surveys are usually needed and on-site monitoring may be necessary during land use activities. Avoidance or resource preservation through controlled access, designation of areas of avoidance, or special management designations should be considered.	5
Unknown. An assignment of "Unknown" may indicate the unit or area is poorly studied and field studies are needed to verify the presence or absence of paleontological resources. The unit may exhibit features or preservational conditions that suggest significant fossils could be present, but little information about the actual unit or area is known. Literature searches or consultation with professional colleagues may allow an unknown unit to be provisionally assigned to another Class, but the geological unit should be formally assigned to a Class after adequate survey and research is performed to make an informed determination.	U
Water or Ice. Typically used only for areas which have been covered thus preventing an examination of the underlying geology.	W, I

Local Government Tribal Consultation List Request

Native American Heritage Commission
1550 Harbor Blvd, Suite 100
West Sacramento, CA 95691
916-373-3710
916-373-5471 – Fax
nahc@nahc.ca.gov

Type of List Requested

■ **CEQA Tribal Consultation List (AB 52)** – ***Per Public Resources Code § 21080.3.1, subs. (b), (d), (e) and 21080.3.2***

■ **General Plan (SB 18)** - ***Per Government Code § 65352.3.***

Local Action Type:

☐ **General Plan** ☐ **General Plan Element** ☑ **General Plan Amendment**

☐ **Specific Plan** ☑ **Specific Plan Amendment** ☐ **Pre-planning Outreach Activity**

Required Information

Project Title: Rancho Calera Specific Plan Project

Local Government/Lead Agency: City of Chowchilla

Contact Person: Annalisa Perea

Street Address: 130 S. Second Street

City: Chowchilla **Zip:** 93610

Phone: 559-665-8615 **Fax:** ______

Email: annalisa.perea@qkinc.com

Specific Area Subject to Proposed Action

County: Madera **City/Community:** Chowchilla

Project Description:

The approved Rancho Calera project is a planned residential community, consisting of a mixture of residential, commercial, and civic land uses with a projected build-out population of approximately 6,000 residents. The approved project contained 576 acres with 2,042 residential units and approximately 495,000 square feet of commercial space. The Specific Plan includes a community park, school facilities, the Rancho Calera Riverwalk, and promenades.

Additional Request

☐ **Sacred Lands File Search - *Required Information:***

USGS Quadrangle Name(s): ______

______

Township: ______ **Range:** ______ **Section(s):** ______


N
0
Feet
2,000
Project Site

Native American Heritage Commission
Tribal Consultation List
Madera County
3/25/2020

Dumna Wo-Wah Tribal Government Robert Ledger, Chairperson 2191 West Pico Ave. Fresno, CA, 93705 Phone: (559) 540 - 6346 ledgerrobert@ymail.com	Foothill Yokut Mono
North Fork Mono Tribe Ron Goode, Chairperson 13396 Tollhouse Road Clovis, CA, 93619 Phone: (559) 299 - 3729 rwgoode911@hotmail.com	Mono
North Fork Rancheria of Mono Indians Elaine Fink, Chairperson P.O .Box 929 North Fork, CA, 93643 Phone: (559) 877 - 2461 Fax: (559) 877-2467 efink@nfr-nsn.gov	Mono
North Valley Yokuts Tribe Katherine Perez, Chairperson P.O. Box 717 Linden, CA, 95236 Phone: (209) 887 - 3415 canutes@verizon.net	Costanoan Northern Valley Yokut
Southern Sierra Miwuk Nation William Leonard, Chairperson P.O. Box 186 Mariposa, CA, 95338 Phone: (209) 628 - 8603	Miwok Northern Valley Yokut Paiute
Wuksache Indian Tribe/Eshom Valley Band Kenneth Woodrow, Chairperson 1179 Rock Haven Ct. Salinas, CA, 93906 Phone: (831) 443 - 9702 kwood8934@aol.com	Foothill Yokut Mono

This list is current only as of the date of this document and is based on the information available to the Commission on the date it was produced. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is applicable only for consultation with Native American tribes under Government Code Sections 65352.3, 65352.4 et seq. and Public Resources Code Sections 21080.3.1 for the proposed Rancho Calera Specific Plan Project, Madera County.

NATIVE AMERICAN HERITAGE COMMISSION

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

March 25, 2020

Annalisa Perea

QKINC

Via Email to: annalisa.perea@qkinc.com

Re: Native American Consultation, Pursuant to Senate Bill 18 (SB18), Government Codes §65352.3 and §65352.4, as well as Assembly Bill 52 (AB52), Public Resources Codes §21080.1, §21080.3.1 and §21080.3.2, Rancho Calera Specific Plan Project, Madera County

Dear Ms. Perea:

Attached is a consultation list of tribes with traditional lands or cultural places located within the boundaries of the above referenced counties or projects.

Government Codes §65352.3 and §65352.4 require local governments to consult with California Native American tribes identified by the Native American Heritage Commission (NAHC) for the purpose of avoiding, protecting, and/or mitigating impacts to cultural places when creating or amending General Plans, Specific Plans and Community Plans.

Public Resources Codes §21080.3.1 and §21080.3.2 requires public agencies to consult with California Native American tribes identified by the Native American Heritage Commission (NAHC) for the purpose of avoiding, protecting, and/or mitigating impacts to tribal cultural resources as defined, for California Environmental Quality Act (CEQA) projects.

The law does not preclude local governments and agencies from initiating consultation with the tribes that are culturally and traditionally affiliated within your jurisdiction. The NAHC believes that this is the best practice to ensure that tribes are consulted commensurate with the intent of the law.

Best practice for the AB52 process and in accordance with Public Resources Code §21080.3.1(d), is to do the following:

Within 14 days of determining that an application for a project is complete or a decision by a public agency to undertake a project, the lead agency shall provide formal notification to the designated contact of, or a tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, which shall be accomplished by means of at least one written notification that includes a brief description of the proposed project and its location, the lead agency contact information, and a notification that the California Native American tribe has 30 days to request consultation pursuant to this section.

The NAHC also recommends, but does not require that lead agencies include in their notification letters, information regarding any cultural resources assessment that has been completed on the area of potential affect (APE), such as:

1. The results of any record search that may have been conducted at an Information Center of the California Historical Resources Information System (CHRIS), including, but not limited to:

    - A listing of any and all known cultural resources have already been recorded on or adjacent to the APE, such as known archaeological sites;
    - Copies of any and all cultural resource records and study reports that may have been provided by the Information Center as part of the records search response;
    - Whether the records search indicates a low, moderate or high probability that unrecorded cultural resources are located in the APE; and
    - If a survey is recommended by the Information Center to determine whether previously unrecorded cultural resources are present.

2. The results of any archaeological inventory survey that was conducted, including:

    - Any report that may contain site forms, site significance, and suggested mitigation measures.

    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 in accordance with Government Code Section 6254.10.

3. The result of the Sacred Lands File (SFL) check conducted through the Native American Heritage Commission. The request form can be found at http://nahc.ca.gov/wp-content/uploads/2015/08/Local-Government-Tribal-Consultation-List-Request-Form-Update.pdf.

4. Any ethnographic studies conducted for any area including all or part of the potential APE; and

5. Any geotechnical reports regarding all or part of the potential APE.

Lead agencies should be aware that records maintained by the NAHC and CHRIS is not exhaustive, and a negative response to these searches does not preclude the existence of a tribal cultural resource. A tribe may be the only source of information regarding the existence of a tribal cultural resource.

This information will aid tribes in determining whether to request formal consultation. In the event, that they do, having the information beforehand well help to facilitate the consultation process.

If you receive notification of change of addresses and phone numbers from tribes, please notify the NAHC. With your assistance we can assure that our consultation list remains current.

If you have any questions, please contact me at my email address: Nancy.Gonzalez-Lopez@nahc.ca.gov.

Sincerely,

Nancy Gonzalez-Lopez

Nancy Gonzalez-Lopez

Cultural Resources Analyst

Attachment

TRANSPORTATION IMPACT ANALYSIS

FOR THE

RANCHO CALERA SPECIFIC PLAN AMENDMENT

Chowchilla, California

Prepared For:

QUAD KNOPF, INC.
2816 Park Avenue
Merced, CA 95348

Prepared By:

KD Anderson & Associates, Inc.
3853 Taylor Road, Suite G
Loomis, CA 95650
(916) 660-1555

March 30, 2021

Job No. 5600-53

Rancho Calera SP Amendment.rpt

TRANSPORTATION IMPACT ANALYSIS FOR THE
RANCHO CALERA SP AMENDMENT
Chowchilla, CA

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TRANSPORTATION IMPACT ANALYSIS FOR THE RANCHO CALERA SPECIFIC PLAN AMENDMENT
Chowchilla, CA

INTRODUCTION

This report documents KD Anderson & Associates, Inc. assessment of transportation impacts and effects associated with development of the proposed Amended Rancho Calera Specific Plan (RCSP) in Chowchilla, California. This analysis is intended to address those topics require under the California Environmental Quality Act (CEQA) during the transition from Level of Service (LOS) based metrics to ***Vehicle Mile Traveled (VMT)*** based investigation under the requirements of SB 743. The analysis quantifies the project's impact to regional VMT using the best available technical resources from the Madera County Transportation Commission (MCTC) based on significance criteria suggested by the California Office of Planning and Research (OPR).

The ***Traffic Operations Analysis*** quantifies the immediate and long-term cumulative traffic effects of the project in comparison to this associated with the adopted RCSP and identifies improvements to key intersections that are needed to maintain City of Chowchilla's minimum standards. The analysis also addresses impacts to alternative transportation modes.

The ***Triggers Analysis*** identifies the extent to which phased development of the RCSP and other approved development east of State Route 99 causes the need to implement improvements to E. Robertson Blvd in order to maintain the City's General Plan minimum LOS standards.

Project Description

The RCSP area occupies 561 acres located east of State Route 99 on the north side of E. Robertson Blvd, as noted in Figure 1. The approved Specific Plan envisioned ultimate development of 2,042 residential units and 38.9 acres of retail/commercial development. The Chowchilla Unified School District's existing Ronald Reagan Elementary School is also located within the approved RCSP. Figure 2 is the proposed amended RCSP. The number of residential units is unchanged with the proposed amendment, but the area devoted to retail commercial uses has been reduced to 23 acres. With the proposed amendment the total building floor area for commercial uses is expected to be reduced from 495,000 sf to 308,405 sf.

The regional access to the site remains unchanged with the amendment. The RCSP will continue to have access to E. Robertson Blvd but access will occur at one less location than was originally approved. The RCSP continues to accommodate the possible future northerly extension of arterial roadways thru the site across Ash Slough to future development areas identified in the Chowchilla General Plan.

Scope of Analysis

Vehicle Miles Traveled Approach. The CEQA Guidelines and the California Governor's Office of Planning and Research (OPR) document *Technical Advisory on Evaluating Transportation Impacts in CEQA* (California Governor's Office of Planning and Research 2018) encourage all public agencies to develop and publish thresholds of significance to assist with determining when a project would have significant transportation impacts based on the new metric of VMT, rather than operating Level of Service (LOS). The CEQA Guidelines generally state that projects that decrease VMT can be assumed to have a less than significant transportation impact. The CEQA Guidelines do not provide any specific criteria on how to determine what level of project VMT would be considered a significant impact.

Madera County and the City of Chowchilla have not yet adopted methods for estimating regional VMT or significance criteria for evaluating impacts based on VMT. MCTC has published an initial *Madera County SB 742 Sub-Regional Baseline VMT Memo – Draft* (8/14/2020) which is attached in the appendix.

The Madera County Transportation Commission Regional travel demand forecasting model is the best available tool for estimating regional VMT in Madera County. MCTC is currently updating the regional travel model for the purpose of supporting adoption of policies regarding VMT impact analysis by member agencies. However, that updated MCTC model was not available as the RCSP study was prepared, and the modified model identified herein is the best available tool.

As suggested by SB 743, the MCTC travel demand forecasting model has the capability of estimating VMT under the following parameter that have been employed for this analysis:

- Total regional VMT Countywide, generated in Chowchilla or by Rancho Calera
- Total regional Home Based VMT Countywide, generated in Chowchilla or by Rancho Calera
- Average per capita VMT generated County-wide, by the City of Chowchilla or by TAZ

Traffic Operations Analysis Approach. Consistent with the approach described in the OPR *Technical Advisory on Evaluating Transportation Impacts in CEQA*, LOS will not be used in this traffic impact study as a basis for identifying significant impacts under CEQA. Rather, the methods, assumptions and significance thresholds presented will be used to determine whether the project is consistent or inconsistent with General Plan policies on LOS, and whether the magnitude of inconsistency should be considered significant or less than significant.

This traffic operational analysis addresses conditions on City streets and Caltrans facilities at locations identified in response to early consultation with affected agencies, and considers a range of analysis scenarios including existing, near term and long term background conditions. Current conditions reflect traffic volume data collected in 2019 before the effects of COVID-19 influenced travel patterns. Short term future conditions reflect the combined effects of other approved and pending projects along with programmed circulation system improvements that are reasonably foreseeable (i.e., Existing Plus Approved Projects conditions or EPAP). Long-term cumulative analysis is based on the Madera County Transportation Commission (MCTC) regional travel demand forecasting model.

Operational Analysis Study Area. The traffic operational analysis addresses these existing intersections and new intersections to be constructed with the project:

1. E. Robertson Blvd / Chowchilla Blvd
2. E. Robertson Blvd / SB SR 99 ramps
3. E. Robertson Blvd / NB SR 99 ramps
4. E. Robertson Blvd / Montgomery Lake Way
5. E. Robertson Blvd / Genoa Lake Way
6. E. Robertson Blvd / Fig Tree Road
7. E. Robertson Blvd / Clubhouse Drive / Lake McClure Drive
8. E. Robertson Blvd / Golf Drive / Millerton Way
9. County Road 19 / Avenue 26
10. South Lake Tahoe Drive / Fallen Leaf Way
11. South Lake Tahoe Drive / Fig Tree Road
12. South Lake Tahoe Drive / Genoa Lake Way
13. South Lake Tahoe Drive / Kinney Lake Drive
14. South Lake Tahoe Drive / Lake McClure Drive
15. South Lake Tahoe Drive / Millerton Way

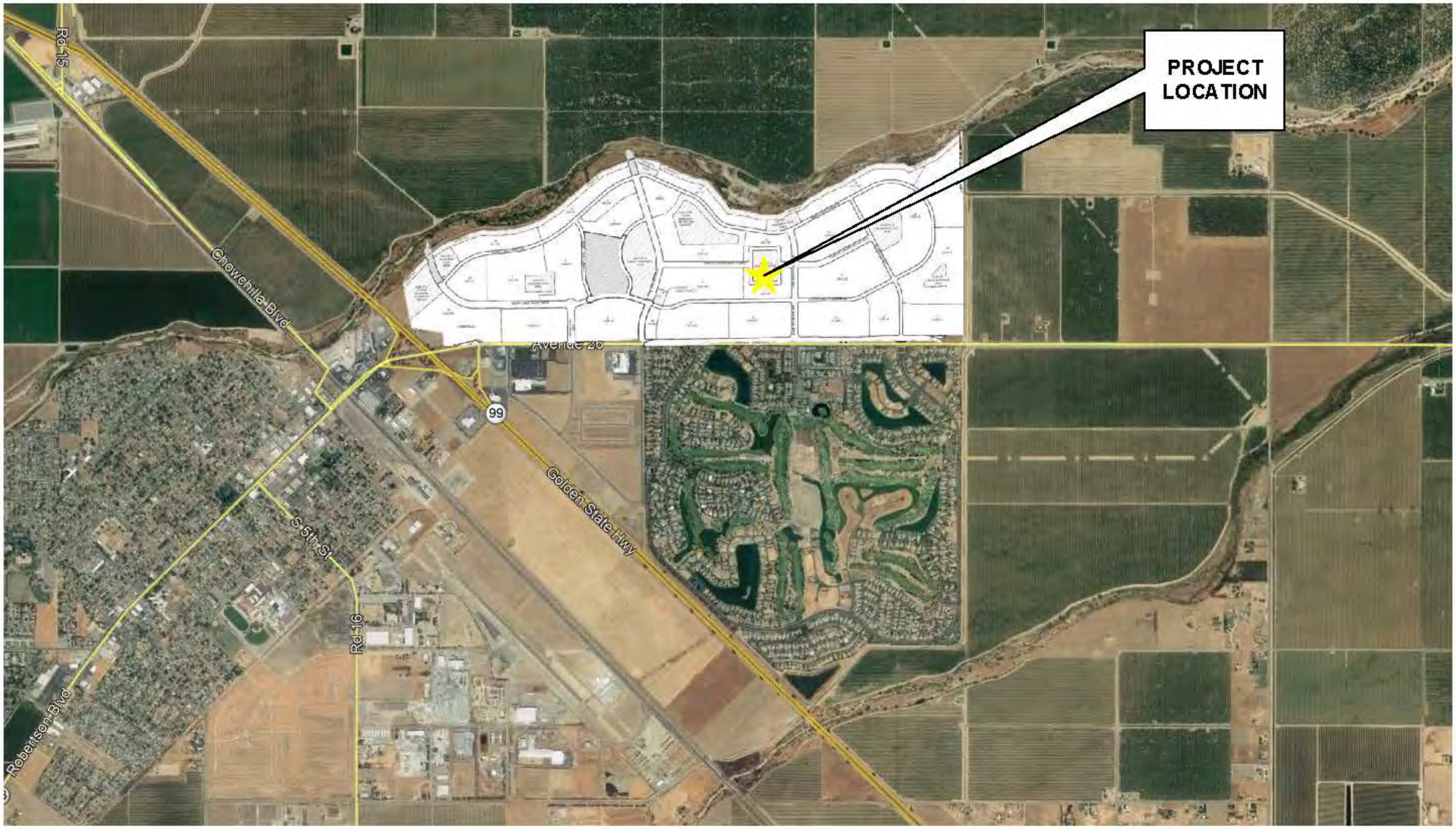
The analysis addresses these roadway segments

1. E. Robertson Blvd west of NB SR 99 ramps
2. E. Robertson Blvd from NB SR 99 ramps to Montgomery Lake Way
3. E. Robertson Blvd from Montgomery Lake Way to Fig Tree Road
4. E. Robertson Blvd from Fig Tree Road to Club House Drive
5. E. Robertson Blvd east of Club House Drive
6. Fig Tree Road north of E. Robertson Blvd

Analysis Scenarios. The traffic operations analysis considers these development scenarios

- Existing conditions (2019)
- Existing conditions plus RCSP Phase 1 (140 du's)
- Existing conditions with Build Out of Amended RCSP
- Short term future conditions with other Approved Projects (EPAP)
- Short term future (EPAP) with Build Out of Amended RCSP
- Long term Year 2042 conditions with Build Out of Approved RCSP
- Long term Year 2042 conditions with Build Out of Amended RCSP

E. Robertson Blvd improvements proposed with the amended RCSP are assumed to be in place under each project Build Out scenario. Additional mitigation measures needed to reduce identified effects based on General Plan consistency impacts to a less than significant level have been identified for each scenario.



VICINITY MAP

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Transportation Engineers

5738-001 RA 3/30/2021

figure 1

TENTATIVE SUBDIVISION MAP NO.19-0011

RANCHO CALERA

1 INCH = 400 FEET

VICINITY MAP

NOT TO SCALE

PROJECT INFORMATION

1.	PROJECT NAME	RANCHO CALERA
2.	OWNER	RANCHO CALERA, LLC 175 EAST MAIN AVE, SUITE 110 MORGAN HILL, CA 95037
3.	SUBDIVIDER	SAME AS THE OWNER
4.	ENGINEER	HMH ENGINEERS 1570 OAKLAND ROAD SAN JOSE, CA 95131 DAVID R. STANTON, RCE #59150
5.	EXISTING USE	AGRICULTURAL
6.	PROPOSED USE	RESIDENTIAL AND COMMERCIAL USES
7.	WATER SUPPLY	CITY OF CHOWCHILLA
8.	SEWAGE DISPOSAL	CITY OF CHOWCHILLA
9.	ASSESSOR'S PARCEL #(S)	014-010-006, 014-010-007, 014-010-010, 014-010-011, 014-010-012, 014-030-29, 014-030-30, 014-030-31, 014-030-32, 014-030-34, 014-030-35, 014-030-36, 014-030-37, 014-030-38, 014-030-39, 014-030-56, 014-270-002, 014-270-003, 014-270-004
10.	STREET TREES	SHALL CONFORM TO SPECIFIC PLAN STANDARD
11.	TOTAL SITE AREA	± 551.2 ACRES
12.	PUBLIC STREET DEDICATION	± 62 ACRES
13.	NET SITE AREA	± 489.2 ACRES
14.	PROPOSED LOTS	28 BUILDABLE LOTS 13 OUTLOTS
15.	TOTAL UNITS	TO BE DETERMINED WITH FUTURE SUBDIVISIONS
16.	FLOOD ZONE	ZONE X, FEMA PANEL NO. 06039C0625E, 9-26-08
17.	TITLE REPORT	THE TITLE REPORT THAT WAS USED FOR THE PREPARATION OF THIS MAP WAS PREPARED BY CHICAGO TITLE COMPANY, ORDER NUMBER FWFM-TO17001454-DN/FWPS-2982170080, DATED JULY 12, 2018

GENERAL NOTES

1. MULTIPLE FINAL MAPS MAY BE FILED BASED ON THIS TENTATIVE MAP. ADDITIONAL TENTATIVE MAPS WILL BE REQUIRED FOR FURTHER SUBDIVISION OF LOTS 1-28.
2. ALL NUMBERED LOTS DEPICTED HEREON ARE PROPOSED FOR RESIDENTIAL USE PURPOSES, EXCEPT FOR LOTS 27 AND 28 WHICH ARE PROPOSED FOR COMMERCIAL USE.
3. ALL DIMENSIONS DEPICTED HEREON ARE APPROXIMATE AND ARE SUBJECT TO REVISION AT FINAL MAP(S) STAGE.
4. THERE ARE WELLS EXISTING ON THIS SITE AS SHOWN ON SHEET TM-2.
5. NO NEW STREET NAMES HAVE BEEN APPROVED AT THIS TIME.
6. OUTLOTS A-1, A-2 AND A-3 ARE DESIGNATED TO BE RANCHO CALERA RIVERWALK AND TO BE DEDICATED TO THE CITY IN FEE SIMPLE TITLE DEDICATION.
7. OUTLOTS C, G, H, I, J, K AND L ARE DESIGNATED TO BE NEIGHBORHOOD PARKS AND TO BE DEDICATED TO THE CITY IN FEE SIMPLE TITLE DEDICATION.
8. OUTLOT D IS DESIGNATED TO BE A MINOR COMMUNITY PARK AND TO BE DEDICATED TO THE CITY IN FEE SIMPLE TITLE DEDICATION.
9. OUTLOTS B AND E ARE DESIGNATED TO BE STORM DRAIN BASINS TO BE DEDICATED TO THE CITY IN FEE SIMPLE DEDICATIONS.
10. OUTLOT M IS DESIGNATED TO BE A SEWER PUMP STATION FACILITY TO BE DEDICATED TO THE CITY IN FEE SIMPLE DEDICATIONS.
11. OUTLOT F IS DESIGNATED TO BE A PUBLIC FACILITY TO BE DEDICATED TO THE CITY IN FEE SIMPLE DEDICATIONS.
12. PROPOSED STREETS ARE HEREON TO BE DEDICATED IN FEE TITLE TO THE CITY OF CHOWCHILLA. WIDTHS AS SHOWN.
13. ALL PUBLIC EASEMENTS WITHIN THE TENTATIVE SUBDIVISION MAP BOUNDARY, EXCEPT THE PUBLIC HIGHWAY EASEMENTS AS DESCRIBED IN BOOK 33 OF OFFICIAL RECORDS, PAGE 4, AND EXCEPT PARCELS G AND H AS SHOWN ON PARCEL MAP 00-29, ARE TO BE VACATED AND NEW PUBLIC EASEMENTS CREATED AS SHOWN ON THIS TENTATIVE SUBDIVISION MAP.
14. FUTURE EAST ROBERTSON BOULEVARD TO BE DEDICATED IN FEE TITLE TO THE CITY. WIDTH VARIES.
15. NO TREE REMOVAL IS PROPOSED FOR OUTLOT A. ALL EXISTING TREES TO REMAIN.
16. NO STRUCTURES EXIST ON SUBJECT PROPERTY (REAGAN ELEMENTARY IS NOT A PART.)

LEGEND

TENTATIVE MAP BOUNDARY
PROPOSED LOT LINE
RIGHT OF WAY
PROPOSED EASEMENT
EXISTING
NOT A PART
OUTLOT
SECTION CALLOUT — A / TM-5 — SECTION, SHEET NUMBER

SHEET INDEX

TM-1	COVER SHEET
TM-2	RECORD BOUNDARY SHEET
TM-3	TENTATIVE SUBDIVISION MAP
TM-4	TENTATIVE SUBDIVISION MAP
TM-5	SECTIONS
TM-6	SECTIONS
TM-7	MASTER CONCEPTUAL GRADING PLAN
TM-8	MASTER CONCEPTUAL PHASING PLAN

ABBREVIATION

APN	ASSESSOR PARCEL NUMBER
CL	CENTER LINE
DOC	DOCUMENT
(E)	EXISTING
ESMT	EASEMENT
EVA	EMERGENCY VEHICLE ACCESS
NO.	NUMBER
O.R.	OFFICIAL RECORD
PUE	PUBLIC UTILITY EASEMENT
PTN	PORTION
R/W	RIGHT OF WAY
SF	SQUARE FOOT
TM	TENTATIVE MAP

HMH
Land Use Entitlement
Land Planning
Landscape Architecture
Civil Engineering
Utility Design
Land Surveying
Stormwater Compliance
1570 Oakland Road, San Jose, CA 95131

CALERA

MASTER TENTATIVE SUBDIVISION MAP
TRACT NO. 19-0011
RANCHO CALERA
CHOWCHILLA CALIFORNIA

NO	DATE	DESCRIPTION
	[illegible]	PER CITY COMMENTS
	[illegible]	REVISED LOT CONFIGURATION
	[illegible]	REVISED LOT CONFIGURATION
	[illegible]	REVISED LOT CONFIGURATION
	[illegible]	REVISED LOT CONFIGURATION

PROJECT NO.
CAD DWG FILE
DESIGNED BY
DRAWN BY
CHECKED BY
DATE
SCALE
© HMH

COVER SHEET

TM-1
OF 8

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PROPOSED AMENDED RCSP

5738-001 RA 3/30/2021

figure 2

EXISTING TRANSPORTATION SETTING

Regionally, the project site is served by Robertson Blvd (SR 233) which links eastern Chowchilla with the balance of the community, with State Route 152 to the west and State Route 99 to the north and south. Locally, the project takes access to E. Robertson Blvd at five intersections that are or will be controlled by traffic signals, stop signs or roundabout.

Vehicular Transportation Facilities

Study Area Roadways. The study area for this analysis identified in consultation with City of Chowchilla, Madera County, Caltrans District 6 and Chowchilla Unified School District (CUSD) staff and includes key intersections on the project's access routes where the need for planned long term improvements might be triggered by project development. The text which follows describes those facilities with the context of the overall circulation system and presents available daily traffic volume information.

State Route 99 (SR 99) is a major north-south transportation corridor through the Central Valley. In the area of the proposed project through Chowchilla SR 99 is a four-lane controlled access freeway.

Caltrans maintains records of the volume of traffic on state highways. The most recent traffic volume counts published by Caltrans reveal that SR 99 carries an *Average Annual Daily Traffic (AADT)* volume of 50,000 vehicles per day (vpd) in 2019 on the segment south of the SR 233 (E. Robertson Blvd) interchange and 47,500 AADT north of SR 233. Trucks comprise 20% of the daily traffic on SR 99 in this area.

State Route 233 (SR 233) - Robertson Blvd is an Arterial street serving the Chowchilla area. SR 233 extends for four miles from a connection to SR 152 to an interchange on SR 99 near the project site. E. Robertson Blvd then extends from SR 99 easterly to the Chowchilla city limits and continues into rural Madera County as Avenue 26. West of SR 99 Robertson Blvd is a conventional four-lane highway with center Two-Way Left-Turn (TWLT) lane through Chowchilla. Across SR 99 and continuing easterly E. Robertson Blvd is two-lane facility with auxiliary left turn lanes at major intersections and additional widening where adjoining development has occurred. The posted speed limit on SR 33 is 30 mph and, the limit is 45 mph on E. Robertson Blvd east of the interchange in the area of the project.

Caltrans records indicate that SR 233 carries about 11,300 to 14,500 AADT thru Chowchilla, and trucks comprise 8% of the daily traffic (2019). New daily traffic volume counts conducted for this analysis on November 11, 2019 indicated that E. Robertson Blvd carried 12,619 vpd between the SR 99 ramp intersections, with the volume ranging from 10,089 to 2,957 at locations easterly along the RCSP frontage.

Avenue 26 is the extension of Robertson Blvd beyond the Chowchilla city limits. Avenue 26 is a rural Madera County road that connects Chowchilla with Hensley Lake area of rural Madera County. Today Avenue 26 is a two-lane rural highway. Avenue 26 carried 2,957 east of

Clubhouse Drive in 2019. Traffic volumes provided by the Madera County Transportation Commission (MCTC) indicated that in 2017 Avenue 26 carried 1,223 vpd east of Road 19.

Chowchilla Blvd is a north-south Arterial street that runs parallel to and west of SR 99 in the area between the state highway and the UPRR. Chowchilla Blvd extends southerly from an intersection on Robertson Blvd that is roughly 550 feet from the SR 99 SB ramps. Chowchilla Blvd continues along the UPRR to its southern terminus at Road 23½. In the area immediately south of SR 233 Chowchilla Blvd is a four-lane facility, but the roadway narrows to two lanes south of Prosperity Blvd.

Montgomery Lake Way is a north-south Major Collector street that intersects E. Robertson Blvd about 500 feet east of the SR 99 NB ramps intersection. Montgomery Lake Way provides access to but does not extend beyond the commercial area east of SR 99. Montgomery Lake Way is two-lane roadway with continuous center TWLT lane.

Genoa Lake Way is a north-south collector street that intersects E. Robertson Blvd about 1,100 feet east of Montgomery Lake Way and extends south into the existing commercial area east of SR 99. Genoa Lake Way is a two-lane roadway with continuous TWLT lane.

Fig Tree Road is an Arterial street that extends north and south from an intersection on E. Robertson Blvd located about ¼ mile east of Genoa Lake Way. The north segment continues to S. Lake Tahoe Drive to provide access to Ronald Reagan Elementary School. The southern segment extends along the western boundary of the Greenhills Estates community to an intersection on Montgomery Lake Way. Both segments have been constructed as four-lane facilities but are currently striped for two-lanes. Traffic counts conducted on November 19, 2019 when schools were in session indicated that Fig Tree Road carried 1,521 vpd north of E. Robertson Blvd, all of which related to travel to and from Ronald Reagan ES.

South Lake Tahoe Drive is a Minor Collector street that extends westerly from an intersection on Fig Tree Road to form the southern boundary of Ronald Reagan ES. South Lake Tahoe Drive is a two-lane facility with TWLT lane.

Clubhouse Drive is a local street that extends southerly from E. Roberson Blvd into the area near Pheasant Run Golf Club from a location ½ mile east of Fig Tree Road. Clubhouse Drive is a two-lane road with raised center median.

Golf Drive is a private road that is the main access to the Greenhills Estates Community. Golf Drive intersects E. Robertson Blvd about 1,800 feet east of Clubhouse Drive and is also a divided two-lane facility.

Road 19 is a Madera County road that intersects Avenue 26 about 1¼ miles east of Golf Drive. This segment of Road 19 originates at the Merced County line and continues southerly across Road 26 and Road 24 to a terminus at SR 99. Road 19 is a two-lane rural facility. The Madera County Transportation Commission (MCTC) reports that in 2016 Road 19 carried 523 vpd south of Avenue 15.

Intersections. The operation of urban circulation system is typically governed by the quality of traffic flow through intersections. This analysis addresses existing conditions and evaluates project impacts at ten key locations shown in Figure 3 and described below.

The ***SR 233 (E. Robertson Blvd) / Chowchilla Blvd intersection*** is controlled by a traffic signal which operates with protected left turn phases on E. Robertson Blvd and permitted phasing on Chowchilla Blvd. All intersection approaches have separate left turn lanes. There are crosswalks on each leg of the intersection. Sidewalks exist on all street and handicap accessible ramps are present.

The **Highway 99 / Robertson Blvd interchange** links the community of Chowchilla with the state highway. The existing overcrossing is a two-lane structure. The southbound ramps intersect Robertson Blvd in a diamond configuration, with westbound traffic turning left to reach the southbound on-ramp at the ***E. Robertson Blvd / SR 99 SB Ramps intersection***. No auxiliary westbound left turn lane is provided. A separated eastbound right turn lane leads to the on-ramp outside of the intersection itself. The two-lane off-ramp is striped for separate left turn and right turn lanes and is controlled by a stop sign. There are no crosswalks or sidewalks. Caltrans District 6 in concert with the City of Chowchilla and MCTC are implementing a major interchange improvement project which will widen the crossing and install a two-lane roundabout at this intersection.

The northbound SR 99 ramps are located in the southeastern quadrant of the interchange, and both on and off ramps are the south leg of the ***E. Robertson Blvd / SR 99 NB Ramps intersection*** in a partial cloverleaf configuration. This location is a "tee" intersection controlled by a stop sign on the northbound off-ramp approach. Westbound traffic on Avenue 26 must turn left onto the northbound on-ramp, but no auxiliary turn lanes exist at this intersection. The northbound off-ramp is a single lane approach controlled by a stop sign. There are no crosswalks, and sidewalk is limited the southeast corner of the intersection. This intersection will be updated to a two-lane roundabout as part of the interchange reconstruction project.

The ***E. Robertson Blvd / Montgomery Lake Way intersection*** is located about 500 feet east of the northbound ramps and provides access to the Fig Tree Plaza Shopping Center. This intersection is a "tee" controlled by a stop sign on the Montgomery Lake Way approach. A separate westbound left turn is available, and the northbound approach has separate left and right turn lanes. There is a crosswalk across the southern leg with accessible ramps, and sidewalks exist on the south side of the intersection.

The ***E. Robertson Blvd / Genoa Lake Way intersection*** is a "tee" controlled by a stop sign on the northbound Genoa Lake Way approach. A separate westbound left turn is available, and the northbound approach has separate left and right turn lanes. There is a crosswalk across the southern leg with accessible ramps, and sidewalks exist on the south side of the intersection.

The ***E. Robertson Blvd / Fig Tree Way intersection*** is controlled by an all-way stop. Each approach has a single travel lane, but separate eastbound right turn is available on E. Robertson

Blvd and on northbound Fig Tree Way. Crosswalks are striped across the norther, western and eastern legs of the intersection. Those crosswalks extend to accessible ramps, and sidewalks exist on both sides of the intersection.

The ***E. Robertson Blvd / Club House Drive intersection*** is a “tee” controlled by a stop sign on the Clubhouse Drive approach. E. Robertson Blvd does not have a left turn lane, but a right turn lane is marked on Clubhouse Drive and on E. Robertson Blvd. A crosswalk is striped on the southern leg at this intersection.

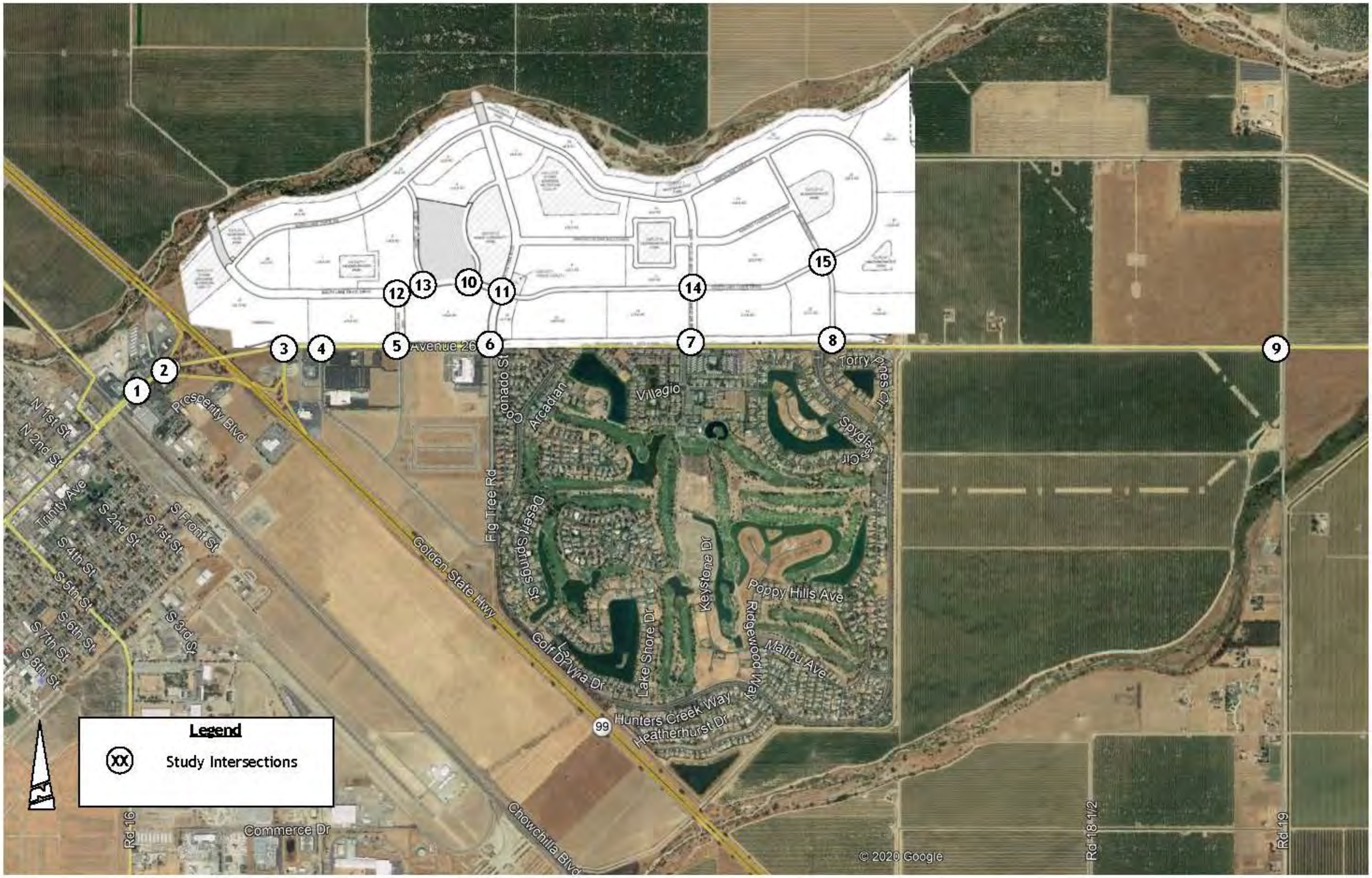
The ***E. Robertson Blvd / Golf Drive intersection*** is a “tee” controlled by a stop sign on the Golf Drive approach. E. Robertson Blvd does not have a left turn lane, but a right turn lane is marked on Clubhouse Drive and on E. Robertson Blvd. A crosswalk is striped on the southern leg at this intersection and accessible ramps are provided.

The ***Avenue 26 / Road 19 intersection*** is a rural location controlled by stop signs on the Road 19 approaches. Each approach is a single lane. There are no sidewalks or crosswalks in this area.

The ***S. Lake Tahoe Drive / Fallen Leaf Way intersection*** is a “tee” controlled by a stop sign on southbound Fallen Leaf Way approach. S. Lake Tahoe Drive has an eastbound left turn lane. School zone crosswalks are striped across the western and northern legs of the intersection, and each is accompanied by handicap accessible ramps. Applicable S-1 (school crossing) signs are provided at the S. Lake Tahoe crosswalk.

S. Lake Tahoe Drive continues west for about 700 feet beyond the intersection. Half of Ronald Reagan ES’s parking and loading facilities take access to S. Lake Tahoe Drive in the area west of this intersection. The entrance to the southern drop-off / loading area is 100 feet from the intersection. Similar, a school parking lot also takes access to Fallen Leaf Way roughly 100 feet north of the intersection, and a second loading zone exists further north. Sidewalks have been constructed on streets in this area.

The ***S. Lake Tahoe Drive / Fig Tree Road intersection*** is a “tee” controlled by an all-way stop. While the intersection was constructed to ultimate Arterial Street standards, the interim striping plan limits the northbound approach to a single left turn lane. The eastbound S. Lake Tahoe Drive approach is striped with separate left turn and through+right turn lanes. School zone crosswalks are striped across all legs of the intersection, and each is accompanied by handicap accessible ramps. There are sidewalks along streets in this area, and class 2 bike lanes are marked east of the intersection.



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STUDY AREA

5738-001 RA 3/30/2021

figure 3

Alternative Transportation Modes

The study area circulation system includes facilities for pedestrians and bicycles.

Pedestrian Facilities. Facilities dedicated to pedestrians have been provided in the study area as development has occurred. West of the SR 99 interchange there are sidewalks on both sides of SR 233 (E. Robertson Blvd) in downtown Chowchilla that end about 150 feet from the SR 99 SB ramps intersection. From that point easterly pedestrians use the paved shoulder along the state highway. A sidewalk exists on the north side of SR 233 on the SR 99 crossing itself. The paved shoulder is again available from the crossing easterly to the SR 99 NB ramps intersection where sidewalk begins on the southeast corner and continues easterly. Sidewalks exist on the streets south of E. Robertson Blvd, on Fig Tree Road and on the streets adjoining Ronald Reagan ES.

The pending SR 99 / SR 233 interchange reconstruction project will include sidewalks.

Bicycle Facilities. The City of Chowchilla General Plan and MCTC Active Transportation Plan (ATP)[1] recognize various classifications of bicycle facilities.

CLASS I BIKEWAY (SHARED-USE PATH) Shared-use paths provide a completely separate right-of-way and are designated for the exclusive use of people riding bicycles and walking with minimal cross-flow traffic. Such paths can be well-situated along creeks, canals, and rail lines. Class I Bikeways can also offer opportunities not provided by the road system by serving as both recreational areas and/or desirable commuter routes.

CLASS II BIKEWAY (BIKE LANE) Bike lanes (Class II.A) provide designated street space for bicyclists, typically adjacent to the outer vehicle travel lanes. Bike lanes include special lane markings, pavement legends, and signage. Bike lanes may be enhanced with painted buffers (Class II.B) between vehicle lanes and/or parking, and green paint at conflict zones (such as driveways or intersections). At a minimum, buffer striping should be provided between the bicycle lane and the vehicle travel lanes. To further enhance the bikeway, a buffer can be striped between the parking lane and the bicycle lane to prevent door jam.

CLASS III BIKEWAY (BIKE ROUTE) Bike routes (Class III.A) provide enhanced mixed-traffic conditions for bicyclists through signage, striping, and/or traffic calming treatments, and provide continuity to a bikeway network. Bike routes are typically designated along gaps between bike trails or bike lanes, or along low-volume, low-speed streets. The Enhanced Bike Route (Class III.A Enhanced) design is specifically relevant to rural conditions where bicyclists frequently share the road with commercial vehicles. Bicyclists use widened road shoulders in this design. Intermittent rumble strips help facilitate the separation of modes. Bicycle boulevards (Class III.B) provide further enhancements to bike routes to encourage slow speeds and discourage non-local vehicle traffic via traffic diverters, chicanes, traffic circles, and/or speed tables. Bicycle boulevards can also feature special wayfinding signage to nearby destinations or other bikeways.

[1] https://www.maderactc.org/sites/default/files/fileattachments/social_services_transportation_advisory_council_sstac/page/2171/mctc_active_transportation_plan_and_complete_streets_policy_guide_r.pdf

Existing bicycle facilities in the study area are noted in ATP figure 10 (Existing Bicycle Facilities - City of Chowchilla & Fairmead).

Class I Bike Path is available along:

- Chowchilla Blvd
- North side of Ash Slough from Chowchilla Blvd easterly

Class II Bike Lanes are present on:

- E. Robertson Blvd from SR 99 to Fig Tree Road
- Montgomery Lake Way from E. Robertson Blvd to Fig Tree Road
- Fig Tree Road from E. Robertson Blvd to Montgomery Lake Way
- S. Lake Tahoe Drive from Fallen Leaf Way to Fig Tree Road

Class III Bike Routes exist on:

- SR 33 west of Front Street

Proposed bicycle facilities in the study area are noted in ATP figure 11 (Proposed Bicycle Facilities - City of Chowchilla & Fairmead).

Future Class I Bike Paths are indicated along:

- South side of Ash Slough from Chowchilla Blvd easterly, including an SR 99 under-crossing

Class II Bike Lanes are proposed on:

- SR 233 over SR 99
- S. Lake Tahoe Drive
- Montgomery Lake Way from E. Robertson Blvd northerly
- Fig Tree Road from E. Robertson Blvd northerly

Transit Service. Fixed route public transit service is provided to the study area by ***Madera County Connection (MCC).*** MCC's Chowchilla – Fairmead route makes five runs on weekdays and links the community to the Downtown Madera Intermodal terminal with a stop at Save Mart Supermarket at 1225 E. Robertson Blvd across from the project site.

The City of Chowchilla operates a local curb-to-curb, demand-response dial-a-ride bus transit service commonly called "The City BUS" in the city limits of Chowchilla through **Chowchilla Area Transit (CATX).** Depending on scheduling, service is available for work, medical appointments, school, meetings, senior services, shopping and more. CATX buses are wheelchair-lift equipped. The service operates weekdays except on official holidays.

Analysis Methodologies

To assess the quality of existing traffic conditions and provide a basis for analyzing project impacts, Levels of Service (LOS) were calculated at study area intersections and study are roadway segments. "Level of Service" is a qualitative measure of traffic operating conditions whereby a letter grade "A" through "F", corresponding to progressively worsening operating conditions, is assigned to an intersection or roadway segment. The Chowchilla General Plan identified LOS D as the minimum threshold for impact evaluation. Table 1 presents general characteristics associated with each LOS grade, and additional information is provided below.

LOS at Signalized Intersections. The Level of Service occurring at intersections controlled by traffic signal is predicated on the delays incurred by motorists waiting at the intersection. Procedures used for calculating signalized intersection Level of Service are as presented the *Highway Capacity Manual, 6th Edition (HCM)* and account of traffic volume, traffic signal timing and intersection geometry. While the average delay can be determined for each intersection movement or approach, and overall average delay experienced by all motorists is the basis for evaluation of project effects.

The length of peak period queues is a byproduct of HCM LOS analysis. Because queues that extend beyond the limits of turn lanes can interfere with the flow of through traffic and create safety impacts under CEQA , the 95th percentile queues in left turn lanes have been identified for signalized intersections.

LOS at Roundabout Intersections. The Level of Service occurring at roundabout intersections has been calculated using SIDRA software based on HCM unsignalized LOS delay thresholds.

LOS at Unsignalized Intersections. At unsignalized intersections the number of gaps in through traffic, gap acceptance time and corresponding delays for motorists waiting to turn are used for Level of Service analysis. Procedures used for calculating unsignalized intersection Level of Service are as presented the *Highway Capacity Manual, 6th Edition.*

The Levels of Service at unsignalized intersections that are controlled by side street stop signs are indicative of the magnitude of the delay incurred by motorists that must yield the right of way at an intersection. Because these calculations exclude the characteristics of through traffic flow (which is assumed to flow freely at a good Level of Service) peak hour traffic signal warrant analysis is usually performed to confirm the significance of calculated delays. While the unsignalized Level of Service may indicate long delays (i.e., LOS "E"), traffic conditions are generally not assumed to be unacceptable unless signal warrants are satisfied. Meeting peak hour signal warrants signifies that intersection improvements may be justified but does not indicate that installation of a signal is the only way to improve conditions. It is often possible to improve operations with additional lanes or improved geometrics to reduce delays. The signal warrant criteria employed for this study is as presented in the *Manual of Uniform Traffic Control Devices* (MUTCD).

TABLE 1
LEVEL OF SERVICE DEFINITIONS

Level of Service	Signalized Intersection	Unsignalized Intersection and Roundabout	Roadway (Daily)
"A"	Uncongested operations, all queues clear in a single-signal cycle. Delay ≤ 10 sec	Little or no delay. Delay ≤ 10 sec/veh	Completely free flow.
"B"	Uncongested operations, all queues clear in a single cycle. Delay > 10 sec and ≤ 20 sec	Short traffic delays. Delay > 10 sec/veh and ≤ 15 sec/veh	Free flow, presence of other vehicles noticeable.
"C"	Light congestion, occasional backups on critical approaches. Delay > 20 sec and ≤ 35 sec	Average traffic delays. Delay > 15 sec/veh and ≤ 25 sec/veh	Ability to maneuver and select operating speed affected.
"D"	Significant congestions of critical approaches but intersection functional. Cars required to wait through more than one cycle during short peaks. No long queues formed. Delay > 35 sec and ≤ 55 sec	Long traffic delays. Delay > 25 sec/veh and ≤ 35 sec/veh	Unstable flow, speeds and ability to maneuver restricted.
"E"	Severe congestion with some long standing queues on critical approaches. Blockage of intersection may occur if traffic signal does not provide for protected turning movements. Traffic queue may block nearby intersection(s) upstream of critical approach(es). Delay > 55 sec and ≤ 80 sec	Very long traffic delays, failure, extreme congestion. Delay > 35 sec/veh and ≤ 50 sec/veh	At or near capacity, flow quite unstable.
"F"	Total breakdown, stop-and-go operation. Delay > 80.0 sec	Intersection often blocked by external causes. Delay > 50 sec/veh	Forced flow, breakdown.

Sources: Highway Capacity Manual, 6th Edition Transportation Research Board (TRB) Special Report 209.

Roadway Segment Level of Service. The City of Chowchilla General Plan EIR identified planning level thresholds for roadway segment Level of Service based on daily traffic volume. These thresholds are presented in Table 2 below.

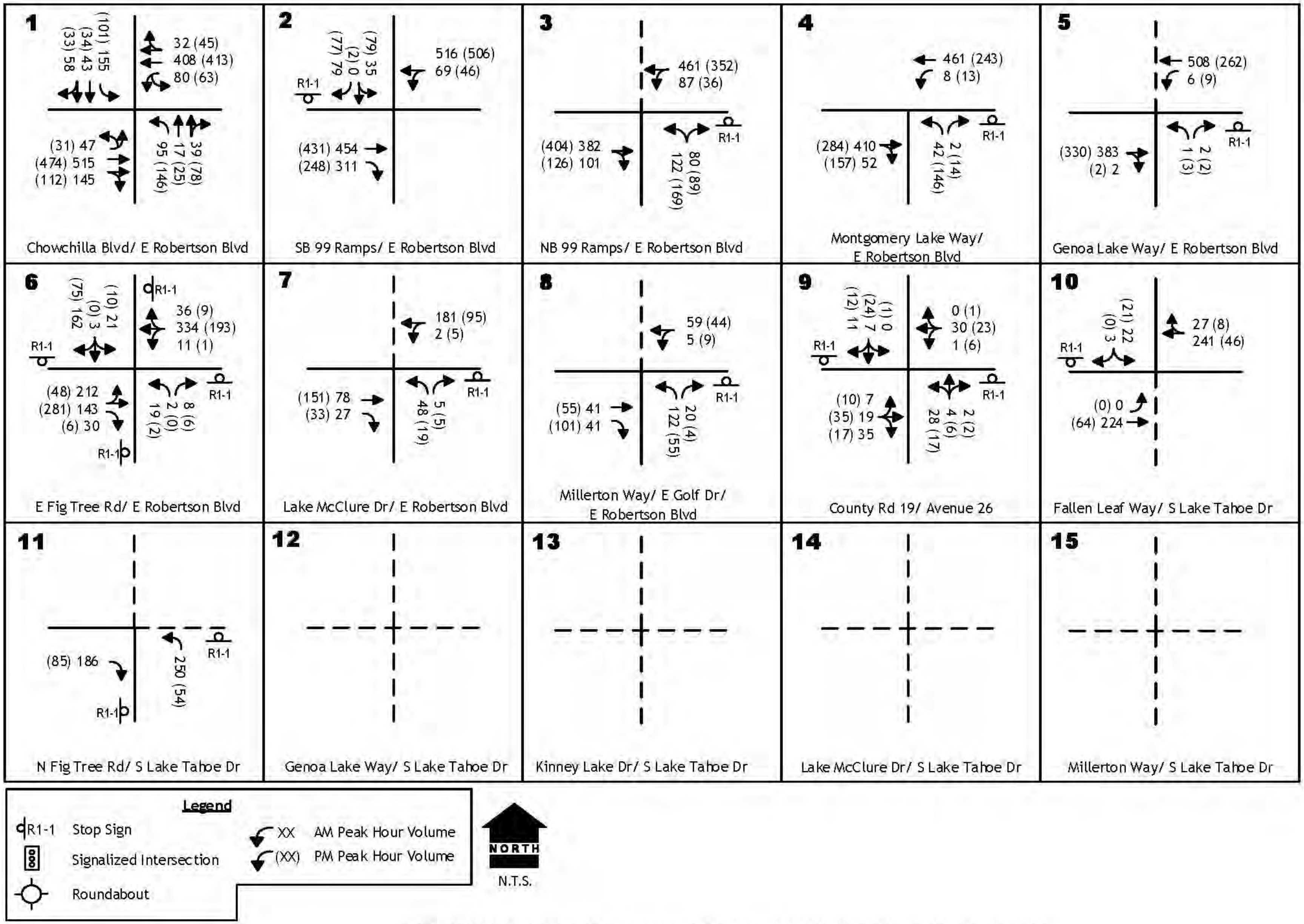
TABLE 2 ROADWAY SEGMENT LEVEL OF SERVICE THRESHOLDS						
		Maximum Two-Way Daily Volume (VPD)				
Classification	**Lanes**	**LOS A**	**LOS B**	**LOS C**	**LOS D**	**LOS E**
Collector	2	7,800	9,100	10,400	11,700	13,000
Major Collector	4	20,500	23,900	27,300	30,700	34,100
Arterial	2	10,800	12,600	14,400	16,200	18,000
	4	21,500	25,100	28,700	32,300	35,900
Source: Chowchilla General Plan Update EIR Circulation Element, KDA 9/28/2009						

Existing Traffic Operating Conditions

Traffic Volume Counts. For this analysis new weekday a.m. and p.m. peak hour turning movement counts were collected at study intersections. These traffic counts were conducted on November 19, 2020 before COVID-19 when schools were in regular session, and vehicle data, pedestrian and bicycle volumes were included. The counts were conducted from 7:00 to 9:00 a.m. and from 4:00 to 6:00 p.m., and the highest one-hour volume observed during these time periods was employed for this analysis. These traffic counts are presented in Figure 4, and count worksheets are included in the Appendix.

Current Intersection Levels of Service. Table 3 presents current a.m. and p.m. peak hour Level of Service at the study intersections. As shown, with one exception all intersections currently operate at a Level of Service that is within the City of Chowchilla's minimum LOS "D" standard. The exception is the **E. Robertson Blvd / NB SR 99 ramps intersection** that operates at LOS F in both the a.m. and p.m. peak hour. This location is being addressed by the pending interchange reconstruction project.

Traffic Operations near Ronald Reagan ES. While the Level of Service measured over the a.m. and p.m. peak hours at study area intersections will remain within the LOS D standard, because regular access to Ronald Reagan ES is limited to S. Lake Tahoe Drive and Fig Tree Road, congestion and delays occur near the school during morning drop-off and afternoon loading peak periods. These conditions are common near most elementary schools where the flow of traffic is governed by factors such as the flow rate through school drop-off areas, pedestrian activity and the amount of short term storage available for parents waiting at the end of the school day, rather than the actual traffic volume and the theoretical capacity of streets and traffic control devices. In this case Ronald Reagan ES is at the end of a cul-de-sac, which further complicates local circulation.



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Transportation Engineers

5738-001 RA 3/30/2021

EXISTING TRAFFIC VOLUMES AND LANE CONFIGURATIONS

figure 4

TABLE 3 EXISTING INTERSECTION LEVEL OF SERVICE					
		AM Peak Hour		PM Peak Hour	
Intersection	**Control**	**LOS**	**Average Delay (sec/veh)**	**LOS**	**Average Delay (sec/veh)**
SR 233 (E. Robertson Blvd)/Chowchilla Blvd	Signal	B	13.0	B	11.4
SR 233 / SB SR 99 ramps	SB Stop				
Southbound approach		C	22.0	D	26.6
SR 233 / NB SR 99 ramps	NB Stop				
Northbound approach		**F**	**156.0**	**F**	**60.9**
E. Robertson Blvd / Montgomery Lake Way	NB Stop				
Northbound approach		D	31.9	C	19.4
E. Robertson Blvd / Genoa Lake Way	NB Stop				
Northbound approach		C	15.6	B	13.0
E. Robertson Blvd / Fig Tree Road	All-Way Stop	C	22.8	B	11.8
E. Robertson Blvd / Clubhouse Dr	NB Stop				
Northbound approach		B	10.9	B	10.2
E. Robertson Blvd / Golf Drive	NB Stop				
Northbound approach		A	9.9	A	9.6
Avenue 26 / Road 19	NB/SB Stop				
Northbound approach		A	9.6	B	10.2
Southbound approach		A	9.1	B	10.0
S. Lake Tahoe Dr / Fallen Leaf Way	SB Stop				
Southbound approach		B	12.5	A	9.5
S. Lake Tahoe Dr / Fig Tree Road	AWS	A	6.5	A	3.5
BOLD values exceed LOS D					

Queueing. Table 4 presents peak period queues that were calculated for the signalized E. Robertson Blvd / Chowchilla Blvd intersection as a byproduct of HCM LOS analysis. As indicated, the available storage in the left turn lanes on E. Robertson Blvd is relatively short, and in the a.m. peak hour the 95th percentile queue in the westbound left turn lane exceeds the storage length by 20 feet. The length of left turn lanes on Chowchilla Blvd approaching the E. Robertson Blvd intersection are also limited but continue as Two-Way-Left-Turn (TWLT) lanes. Calculated 95th percentile queues can be accommodated within the total lane length, but these queues may extend beyond the location of existing commercial driveways on Chowchilla Blvd.

TABLE 4 EXISTING INTERSECTION QUEUEING						
			AM Peak Hour		PM Peak Hour	
Intersection	Lane	Storage (feet)	Volume (vph)	95th % Queue (feet)	Volume (vph)	95th % Queue (feet)
SR 233 (E. Robertson Blvd) / Chowchilla Blvd	EB left	120	47	65	31	45
	WB left	75	80	**95**	63	75
	NB left	340[1]	95	75	146	105
	SB left	200[1]	155	120	191	75

[1] lane continues as TWLT lane

Traffic Signal Warrants. Table 5 presents minor and major street approach volumes at unsignalized intersections and noted whether these volumes satisfy peak hour signal warrants based on the applicable speed through each location. As indicated, the two SR 99 ramp intersections carry volumes that satisfy peak hour warrants during both time periods. This conclusion is consistent with the need for the pending interchange reconstruction project. The E. Robertson Blvd /. Montgomery Lake Way intersection carries volumes that satisfy peak hour warrant in the p.m. peak hour. The volume at the E. Robertson Blvd / Fig Tree Road intersection carries volumes in the a.m. peak hour that satisfy peak hour warrants.

TABLE 5 EXISTING INTERSECTION PEAK HOUR TRAFFIC SIGNAL WARRANTS					
		AM Peak Hour		PM Peak Hour	
Intersection	Speed Criteria	Minor Vol Major Vol	Warrant Met?	Minor Vol Major Vol	Warrant Met?
SR 233 / SB SR 99 ramps	>40 mph	114 1,350	**Yes**	158 1,231	**Yes**
SR 233 / NB SR 99 ramps	>40 mph	202 1,032	**Yes**	260 913	**Yes**
E. Robertson Blvd / Montgomery Lake Way	>40 mph	44 932	No	160 697	**Yes**
E. Robertson Blvd / Genoa Lake Way	>40 mph	3 899	No	5 603	No
E. Robertson Blvd / Fig Tree Road	>40 mph	186 766	**Yes**	85 538	No
E. Robertson Blvd / Clubhouse Dr	>40 mph	53 288	No	24 284	No
E. Robertson Blvd / Golf Drive	>40 mph	142 147	No	59 209	No
Avenue 26 / Road 19	>40 mph	34 92	No	37 92	No
S Lake Tahoe Dr / Fallen Leaf Way	<40 mph	25 432	No	21 118	No
S. Lake Tahoe Dr / Fig Tree Road	<40 mph	186 250	No	54 85	No

Roadway Segment Level of Service. Table 6 identifies current Levels of Service on study area roadway segments based on the daily volume thresholds employed for the Chowchilla General Plan EIR. As indicated, the two-lane segment of SR 233 (E Robertson Blvd) over SR 99 operates at LOS C based on these thresholds. East of the freeway, the daily volumes are indicative of LOS A on a two-lane Arterial.

TABLE 6 CURRENT ROADWAY SEGMENT LEVEL OF SERVICE					
Street	**Location**	**Classification**	**Lanes**	**Daily Volume (2019)**	**Level of Service**
SR 233	Across SR 99	Arterial	2	12,619	C
E. Robertson Blvd	NB SR 99 to Montgomery Lake Way	Arterial	2	10,089	A
	Montgomery Lake Way to Fig Tree Road	Arterial	2	7,287	A
	Fig Tree Road to Clubhouse Drive	Arterial	2	3,753	A
Avenue 26	East of Clubhouse Drive	Arterial	2	2,957	A
Fig Tree Road	E. Robertson Blvd to S. Lake Tahoe Drive	Arterial	2	1,521	A
So. Lake Tahoe Dr	Fallen Leaf Way to Fig Tree Road	Major Collector	2	1,521	A

Regulatory Setting

SB 743 governs the application of new CEQA guidelines for addressing transportation impacts based on Vehicle Miles Traveled. The operation of streets in Chowchilla is governed by the City of Chowchilla General Plan and the policies of the California Department of Transportation.

> **SB 743.** Senate Bill 743 (Steinberg, 2013), which was codified in Public Resources Code section 21099, required changes to the guidelines implementing CEQA (CEQA Guidelines) (Cal. Code Regs., Title 14, Div. 6, Ch. 3, § 15000 et seq.) regarding the analysis of transportation impacts. The Governor's Office of Planning and Research (OPR) has proposed, and the California Natural Resources Agency (Agency) has certified and adopted, changes to the CEQA Guidelines that identify vehicle miles traveled (VMT) as the most appropriate metric to evaluate a project's transportation impacts. With the California Natural Resources Agency's certification and adoption of the changes to the CEQA Guidelines, automobile delay, as measured by "level of service" and other similar metrics, generally no longer constitutes a significant environmental effect under CEQA. (Pub. Resources Code, § 21099, subd. (b)(3).)"

The California Governor's Office of Planning and Research (OPR) document *Technical Advisory on Evaluating Transportation Impacts in CEQA* (California Governor's Office of Planning and Research 2018) provides general direction regarding the methods to be employed and significance criteria to evaluate VMT impacts, absent polices adopted by local agencies. At the time this analysis commenced, neither the City of Chowchilla nor Madera County had adopted guidelines for analyzing VMT or determining the significance of a project's impact on VMT. Both the City and County were in the process of developing and adopting guidelines, but neither process was completed. The VMT analysis presented herein is not intended to pre-empt either the City or County process of developing and adopting VMT guidelines. Rather, the analysis presented in this traffic impact study is intended to be a good-faith effort at disclosing and identifying the VMT impacts of the RCSP project based on currently available data and guidance.

California Department of Transportation (Caltrans). Caltrans policies are applicable to locations on SR 233 and SR 99, and are summarized in *the Caltrans' Guide for the Preparation of Traffic Impact Studies* (State of California Department of Transportation, December 2002) and *the Caltrans Vehicle Miles Traveled-Focused Transportation Impact Study Guide* (California Departments of Transportation May 2020. These guidelines identify when a traffic impact study is required, what should be included in the study, analysis scenarios, and guidance on acceptable analysis methodologies. Caltrans endeavors to maintain a target service level of LOS C on State highway facilities. However, this may not always be feasible, and a lower service level may be acceptable.

Specific guidance for SR 233 is provided in the *Transportation Concept Report for State Route 233 (6/2012.)* The SR 233 TCR notes that the concept for this route is expected to remain unchanged with minor improvements. Concept Level of Service for this route is LOS D.

Specific guidance for SR 99 is provided in the *Transportation Concept Report for State Route 233 (6/2012.)* The SR 99 TCR notes that the concept for this route is expected to remain unchanged with minor improvements. Concept Level of Service for this route is LOS D.

Caltrans policy regarding applicable traffic controls has recently been expanded based on *Traffic Operations Policy Directive 13-02.* This directive requires that Caltrans consider the relative merits of alternative traffic controls when it becomes necessary to stop traffic on state highways, and all-way stops, traffic signals and roundabouts are to be considered. The policy directive requires preparation of an *Intersection Control Evaluation (ICE)* to determine the preferred traffic control.

City of Chowchilla General Plan Circulation Element. The General Plan Circulation Element includes Goals, Objectives, Policies and Implementation Measures that guide implementation of the community's circulation system as development occurs. The following objectives, policies and implementation measures are applicable to the proposed RCSP amendment.

Objective CI 1.1 – Establish a circulation system that is consistent with the land use patterns of the City. Establish a hierarchy of streets and improvement standards to support existing and future transportation needs.

CI 1.1.A The Classification of Existing and Future Streets shall be used in determining right-of-way acquisitions, design and land use decisions.

CI 1.1.B Future street development shall be consistent with the street classifications. The City reserves the right to reduce the ultimate right-of-way to avoid existing development, and to construct a travel-way which generally meets the street classification standards, by reducing the area provided for landscaping, utilities, parking and other non-travel use.

CI 1.1.C The City will encourage property owners in newly developing areas to prepare Specific Plans or Area Plans which identify future major street alignments. The City will participate in the design of street alignments in advance of development to ensure consistent and logical design of the circulation system.

CI 1.1.D Incorporation of moderately curved streets, cul-de-sacs, knuckles and "T" intersections in site plans is encouraged. Maximum length of straight streets should not exceed 900 feet, unless appropriate design allows for a longer street.

CI 1.1.E Circulation Element City of Chowchilla 2042 General Plan Page CI-17. All streets entering upon opposite sides of any given street should have their centerline directly opposite to each other or separated by at least 150 feet.

CI 1.1.F New residential development over 20 units shall provide at least two connections to arterials or collector streets.

Objective CI 1.2 – Coordinate planning and development of the circulation system with development approvals throughout the City.

CI 1.2.A The City shall prepare, adopt and maintain Improvement Standards and Specifications for the development of all street improvements, and to implement the Goals, Objectives, Policies and Implementation Measures of this General Plan.

CI 1.2.B When new streets are provided at the periphery of a project, minimum construction shall consist of full half-width construction on the site nearest the project plus a minimum of one lane of travel in the opposite direction.

Locations of Collector street intersections with Arterial streets shall be fixed by the Circulation Map. Street dedications and development design shall implement the Circulation Map. Location of Collector and Arterial Street alignments in newly developing areas shall be logical, efficient, and established early in the development process to aid in the consistent design of subdivisions.

Objective CI 2 - Provide timely and effective means of programming and constructing street and highway improvements to maintain an overall Level of Service of "C" as referred in Table CI - 5, with an A.M. and P.M. peak hour Level of Service of "D" as defined in the Highway Capacity Manual (published by the Transportation Research Board of the National Research Council) and/or better unless other public health, safety, or welfare Circulation Element Page CI-18 City of Chowchilla 2042 General Plan factors determine otherwise. Street improvements identified in the Capital Improvement Plan shall be prioritized with emphasis on reducing traffic congestion and improving circulation.

CI 1.5.A Improve intersections operating at less than an A.M. and P.M. peak hour Level of Service "D" conditions by adding appropriate turning lanes to congested approaches, widening intersection approaches, or modifying signal timing at intersections and coordinating with other signals, as appropriate, unless other public health, safety, or welfare factors determine otherwise.

CI 1.5.B The City may pursue the reservation of right-of-way and define specific development standards and requirements through the preparation and adoption of Precise Plan Lines.

CI 1.5.C The City may pursue the identification of right-of-way for major streets and work with developers to ensure that the general location of these road segments are integrated in development plans. Plan lines may be shown on the Circulation Map or on the Land Use Map for the purpose of identifying these general locations.

CI 1.5.D To help ensure that adequate and safe travel-ways can be created through existing developed areas of the City, right-of-way standards for each classification may be modified upon approval by the City Engineer.

CI 1.5.E Properly space and coordinate traffic signals in order to minimize the acceleration, idling and deceleration that produce higher vehicular emissions levels as part of a Transportation System Management program.

New development shall be required to mitigate traffic impacts associated with the project on the Highways, Arterial streets, Collector streets, and Local streets, including signalization, interchanges, public transit facilities, and other traffic facilities.

CI 1.6.A Traffic studies of affected Highways, Arterial, Collector, and Local streets, may be required as part of the environmental assessment of proposed projects to assure City-wide traffic service levels are maintained. The criteria for requiring traffic studies includes the potential for significant environmental effects from the project, number of vehicle trips generated by the project, location of project relative to existing circulation system, actual or assumed level-of-service of surrounding streets or intersections, and relevance of prior traffic studies which may have considered the proposed project. Traffic studies shall include level-of-service forecasts to account for individual and cumulative major land use changes in the City. Level-of-service forecasts should be used to identify deficient roadways and update street improvement plans and priorities.

The City of Chowchilla shall consider accepting relinquishment of State Highway 233 by the year 2012.

CI 1.7.A The City of Chowchilla shall establish a committee of elected officials and staff to initiate negotiations with Caltrans for the smooth and equitable transition of State Route 233 to the City of Chowchilla. The committee shall provide the City Council with its recommendations no later than June 30, 2010.

The overall Level of Service for the City of Chowchilla is LOS standard of "C" with peak hour LOS standard of "D" acceptable in some instances such as at peak hour or where right-of-way limitations exist and removal of those limitations is an economic hardship or environmentally damaging. Due to the nature of the roadway system, improvements to existing developed areas are occasionally extremely difficult. As a result, there may be instances where a lower LOS than "D" is acceptable such as in the Downtown District.

ARTERIAL STREETS

Objective CI 3 To develop and maintain an efficient and effective roadway system using major and minor Arterial streets. The City shall promote an active policy of consolidating driveways, access points and curb cuts along existing and developed Arterial streets when a zone change to a greater density or intensity, division of property, or new development, or a major remodeling occurs.

CI 2.1.A Existing points of ingress and egress shall be consolidated whenever possible. Driveway consolidation for new development shall be encouraged through access agreements along Arterial or higher classification streets.

CI 2.1.B Left-hand turn lanes or center lanes shall be provided for all left-turn access from Arterial streets in commercial and industrial areas.

CI 2.1.C If parcel size demands and alternative shared access is not available, commercial driveways may be provided not less than 50 feet from an intersection. (Measurement shall be from the curb return to the nearest edge of the driveway.) These driveways shall not be serviced by median breaks. If more than one is required to serve a property, the driveways shall be separated by not less than 50 feet. (The separation is to be measured nearest edge to nearest edge of the driveways.).

CI 2.1.D The distance between commercial driveways on Arterial streets should not be less than 50 feet. (Measurements shall be from the curb return of the intersection to the nearest edge of the driveway.) CI 2.1.E Driveway access to major activity centers, should be located no closer than 100 feet to the intersection of a Collector or Arterial street. (Measurements shall be from the curb return of the intersection to the nearest edge of the driveway.)

CI 2.1.F Where practical and desirable, commercial driveways should be located on adjacent Collector streets rather than on Arterial streets.

CI 2.1.G Single family residential driveways are prohibited on new Arterial streets and shall be discouraged on existing Arterial streets.

Design of Arterial Streets shall minimize unsignalized intersections where cross traffic is allowed. The number of signals shall be kept to a minimum and shall be spaced to encourage efficient traffic flow.

CI 2.2.A Traffic signals shall not be closer than 1/4 mile apart on Arterial and Collector streets unless conditions warrant additional signalization to improve traffic flow or public safety.

CI 2.2.B Separation of Collector Street entry points should not be less than 500 feet apart on Arterial streets, and other Collector streets.

Planning and development of Arterial and Collector streets shall include design features which can be used as public transit stops.

CI 2.2.C Arterial and Collector streets shall be designed to allow transit vehicles to pull in and out of traffic by using a parking lane with bus stops.

To avoid conflict between the circulation system and residential uses, it is recommended that truck traffic be oriented only onto the designated Arterial streets, where feasible.

CI 2.4.A The City shall periodically review the list of streets designated as truck routes, and provide public notification of any changes to the truck route system.

CI 2.4.B The City shall proceed with the connection of Avenue 24 (East Sierra View Avenue) between West Robertson Blvd. and Highway 99 / Avenue 24 interchange as a truck route to reroute trucks from downtown Chowchilla.

COLLECTOR STREETS

Objective CI 4 The circulation system shall coordinate Collector streets with Arterial streets and Local streets. The City shall promote an active policy of consolidating driveways, access points and curb cuts along existing developed Collector streets when a zone change to a greater density or intensity, division of property, or new development or a major remodeling occurs.

CI 3.1.A Driveways to multi-family residential property along Major Collector streets should be consolidated whenever possible.

CI 3.1.B The distance between driveways and intersecting Collectors or Local streets should not be less than 50 feet. (Measurements shall be from curb return to the nearest edge of the driveway.)

CI 3.1.C Whenever possible, left-hand turn lanes or center turn lanes shall be provided as access on Collector Streets in commercial and industrial areas of the City.

CI 3.1.D Single-family residential driveways should not be allowed along Major Collector or higher classification streets. If driveways are to be allowed, lots fronting the street shall be designed at such a width to allow multiple access driveways to discourage backing out into traffic.

CI 3.1.E In commercial and industrial areas, if parcel size demands and an alternative shared access is not available, driveways may be provided not less than 50 feet from the intersection. (Measurement shall be from the curb return to the nearest edge of the driveway.) These driveways shall not be serviced by median breaks. If more than one is required to serve a property, the driveways shall be separated by 50 feet. (The separation is to be measured nearest edge to nearest edge of the driveways.)

CI 3.1.F Driveway access to major activity centers should be located no closer than 50 feet to the adjacent intersection of a Collector or Arterial street. (Measurement shall be from the curb return to the nearest edge of the driveway.)

Design of Collector Streets shall encourage efficient movement of traffic and minimize uncontrolled cross-traffic.

CI 3.2.A Where possible, Arterial, and Collector streets shall form 4-leg, right-angle intersections; jogs, offset and skewed intersections of streets in near proximity shall be avoided.

CI 3.2.B To the extent possible Collector streets shall be curvilinear and incorporate “traffic calming” features such as “roundabouts” at strategic locations as approved by the City.

CI 3.2.C Residential development shall be oriented away (side-on or rear-on) from future Arterial streets, and properly buffered so that the traffic carrying capacity on the street will be preserved and the residential environment protected from the potentially adverse characteristics of the street. "Daylighted" cul-de-sacs for pedestrian access are also encouraged.

CI 3.2.D If the design of the Collector street is constrained by significant right-of-way limitations, the Collector street or an existing street which connects one part of the City with another, must function at Collector traffic levels.

CI 3.2.E To create an efficient and effective circulation system, Collector Streets Intersection should be no less than approximately 300 feet apart.

LOCAL RESIDENTIAL AND PRIVATE STREETS

Objective CI 5 To encourage the design of local and private streets so that they are safe and pleasant for residents. Discourage through-traffic on Local streets in residential areas.

CI 4.1.A To keep Local street volumes within design capacity, street length should be kept under 1,000 feet unless interrupted by an Arterial or Collector street. (The overall length of Local streets should not exceed 1,200 feet unless appropriate design allows for a longer street).

CI 4.1.B To assist in alleviating traffic delays, Local street intersections should be no less than 150' apart.

CI 4.1.C Where feasible in overall subdivision design, curvilinear streets shall be constructed.

CI 4.1.D Subdivision designs should be encouraged to use "daylighted" cul-de-sacs opening on to Arterial and Collector streets thereby providing enhanced pedestrian access to future public transit system routes.

CI 4.1.E Residential subdivisions shall be designed to encourage access from Local to Collector streets and discourage use of Local streets as an access onto, or bypass of, Collector or Arterial streets.

CI 4.1.F Integrate into the City Public Works Construction Standards design details for "daylighted" cul-de-sacs which can be jointly used for public transit pick-up locations along Arterial and Collector streets.

CI 4.1.G A cul-de-sac shall be constructed on all permanent dead-end streets. Cul-de-sacs are strongly discouraged in commercial and industrial developments. Cul-de-sac lengths shall not exceed 600 feet. Temporary cul-de-sacs may be permitted on streets planned for extension.

Development or redevelopment of alleys should ensure the fair share of improvement costs and shall be clearly identified early in the development process.

CI 4.2.A Alleys or Lanes, when allowed in new residential areas shall be paved and incorporated into an overall design theme and development program that includes ongoing maintenance and replacement costs as an integral component of the development.

CI 4.2.B New alley or lane standards within the Downtown District should be maintained to provide for pedestrian corridors, access to off-street parking, delivery services, and refuse collection. The alleys or lanes should be fully improved and may contain ornamental paving, landscaping and lighting.

CI 4.2.C Existing alleys or lanes used as access to new development shall be required to improve the alley to City standards. Such improvements shall extend in length along the full alley frontage of the property and extend to the nearest public street. Width of improvements shall encompass full existing and dedicated alley width.

CI 4.2.D Proposals for private streets and new alleys or lanes constructed in conjunction with development shall be required to demonstrate fiscal ability for long-term maintenance.

RIGHT OF WAY ACQUISITION

Objective CI 6 Acquire the ultimate right-of-way for streets during the earliest stage of development possible. Where existing right-of-way is substandard, acquire additional right-of-way to satisfy ultimate needs. Work with new development to ensure that the fair share of street improvement costs are clearly identified early in the development process and that street development is consistent with the City's Capital Improvement Plan.

CI 5.1.A Ultimate right-of-way shall be dedicated and / or developed to the appropriate width when a zone changes to a greater density or intensity, division of property, or when new development or major remodeling occurs. CI 5.1.B The City shall adopt minimum right-of-way development standards for residential and non-residential developments. Dedication or construction in excess of this minimum level shall be included for funding in the City-wide Capital Improvement Plan.

CI 5.1.C The City will include in its Capital Improvement Plan the acquisition of right-of-way and the construction or reconstruction of those streets not otherwise obtainable under Program CI 6.1-A.

CI 5.1.D The City will work with Madera County to apply City standards to all land use and development permits issued in the unincorporated territory within the City's Planning Area boundary.

CI 5.1.E Where public infrastructure is installed within easements, the City shall consider placing public streets in the alignment of infrastructure where practical. On developed streets, where the existing right-of-way does not meet the current standards, the City will adopt and fund a program to acquire the ultimate right-of-way where practical. The City reserves the ability to deviate from the standard if the ultimate right-of-way is not obtainable due to existing development or other limitations.

CI 5.2.A The City shall establish an additional fund base, and periodically update, a City-wide Capital Improvement Plan, that shall identify both funded and unfunded portions of the street improvements necessary to maintain the adopted Level of Service.

AESTHETICS AND FACILITY DESIGN

Objective CI 8 The circulation system shall be designed to create an aesthetically pleasant environment for the City. When new development occurs, aesthetics shall be an important factor in circulation design.

Protect and enhance the efficiency of Highways 99 and 152.

CI 7.6.A The City will continue to preserve the required right of way for the eventual widening of Highway 99 and the eventual connection of Highway 152 with Highway 99 southeast of the City.

CI 7.6.B The City will pursue funding and a negotiated agreement with Caltrans to achieve the necessary upgrades of Highways 233 interchange with Highway 99 under the State Transportation Improvement Plan (STIP).

PUBLIC TRANSPORTATION

Objective CI 9 Develop a public transit system capable of satisfying both local and regional travel demand. The City shall integrate the planning for a "Transit Service Center" with the "Downtown Development Guidelines" to attract major national bus carriers to reestablish a bus depot in the City of Chowchilla.

CI 8.1.A The City Community Development Department and the Redevelopment Agency shall initiate a cooperative program with local property owners and / or businesspersons to identify a location and funding for a "Transit Service Center" within the downtown of the City by the year 2014.

Developers of new commercial uses (in excess of 20,000 square feet gross leasable floor space in a single development or a combination of stores in a single development) shall be required to participate in funding public transit improvements that may include but not be limited to public transit vehicles, transit stops, or employee van pools.

Recognize in the planning of transit systems the efforts of other social service transit provided by schools, mental health services, and others who provide specialized transit services.

CI 8.3.A Continue to refer development requests to the Chowchilla Unified School District for review and comment. Development adjacent to arterials, or to minor and major collectors shall coordinate with City to identify appropriate locations for public transit improvements (i.e., bus pullouts, seating shelters) to encourage public transit use.

CI 8.4.A Public transit stops shall be provided as recommended by the City to ensure residents are within the proximity of a public transit stop.

CI 8.4.B Street design for arterials, major collectors and minor collectors shall include provisions for fixed route public transit system.

CI 8.4.C Public transit routes and stops shall be planned in the areas of high public activity in the City.

Provide local transit service to the City via the CATX demand / response system.

CI 8.5.A Annually evaluate public transportation needs of the City and modify services as demand and funding allow.

NON-MOTORIZED TRANSPORTATION

Objective CI 10 Provide an extensive and regionally linked public bicycle and pedestrian system. Incorporate bicycle and pedestrian trails in future development projects.

Promote maximum opportunities for pedestrian traffic throughout the City by continuing to develop and maintain a safe sidewalk system which facilitates pedestrian access, including disabled person accessibility, to public transit for commuting, recreation or other purposes.

Subdivision layouts should include safe and pleasant designs which promote pedestrian access to Arterial and Collector streets, and consider the location of community services, such as schools, parks, the needs of disabled persons, and neighborhood shopping activity centers in their design.

CI 9.3.A Encourage the use of "daylighted" cul-de-sacs for residential sidewalks to increase pedestrian access to Arterial or Collector streets.

CI 9.3.B Implement street standards that include sidewalks or walkways on both sides of streets, where appropriate. Where existing streets may require additional right-of-way to accommodate full improvements including sidewalks, and where it is impractical to acquire sufficient right-of-way, the vehicle travel-way will be the first priority.

A bicycle route system shall be identified and maintained which serves the existing developed City. This route system may utilize City streets, canals, or other rights-of-ways. Where on-street bicycle lanes are proposed they should be considered a shared facility with vehicular traffic on the street.

CI 9.4.A The bicycle route system should be consistent with the Madera County Regional Plan.

Sources of funding for operation and maintenance of multi-use trails accommodating pedestrian and bicycle use shall be clearly identified before planning and construction. Trail systems shall be supported by a long-term funding mechanism for maintenance.

Plan for and implement a trail system along Ash Slough and Berenda Slough which will connect the urbanized areas of the City with Berenda Reservoir. This program should be implemented in connection with land development projects or through dedications of private property or grant funded programs.

Plan for and implement a combination pedestrian and bicycle path from newly developing areas to the downtown, schools, parks, and other shopping opportunities

Chowchilla Master Fee Schedule. The City of Chowchilla has adopted a Master Fee Schedule to implement the policies and goals of the General Plan. The Master Fee Schedule was adopted in 2017 and includes fees for various infrastructure elements, including roads and signalization.

PROJECT CHARACTERISTICS

The travel characteristics of the Amended RCSP have been identified in terms of the amount of vehicular traffic created by the residents (i.e., trip generation), by travel to plan area schools and by commercial customers and employees. Subsequently the allocation of project trips to study area street (i.e., trip distribution) was identified.

Trip Generation

Trip Generation Rates. To estimate the number of trips that could be generated with full use of the site, we consulted the Institute of Transportation Engineers (ITE) publication *Trip Generation, 10th Edition*. Applicable rates for single family residences and for commercial uses are noted in Table 7.

Trip Generation Forecasts – Adopted RCSP. As shown in Table 8, at full occupancy the adopted RCSP could generate 38,171 gross trip ends (i.e., ½ inbound and ½ outbound). That total includes 1,521 trip ends already generated by Ronald Reagan ES. During the a.m. peak hour the adopted plan area generates 2,286 trips ends, again including trips associated with the school. A total of 3,831 trips are projected for the p.m. peak hour, including the existing school's traffic.

Trip Generation Forecasts – Proposed RCSP. As noted in Table 9, when fully occupied the proposed RCSP generates 32,635 gross trips ends, including the existing school traffic. The a.m. peak hour total is 2,223 trips, including trips already generated by Ronald Reagan ES, while the proposed RCSP totals 3,240 trips in the p.m. peak hour.

Possible New School. The amended RCSP acknowledges the possibility that the Chowchilla Unified School District (CUSD) may elect to construct a new school on a site immediately north of the Ronald Reagan ES campus. This school has been assumed to hold 600 students and would replace roughly 50 single family residences.

From an overall gross trip generation standpoint, a new school would generate considerably more trips, particularly during the periods of peak travel to and from the school and the beginning and end of the school day. Table 9 illustrates the difference in gross trip generation between a school and underlying residential uses assuming that the new school generates the same number of trips as was observed at Ronald Reagan ES.

To provide a "worst case" assessment of project impacts, this analysis of Build Out conditions assumes the second school is constructed.

Today 100% of the trips associated with Ronald Reagan ES are "external" to the RCSP area. The peak hour traffic counts conducted at the E. Robertson Blvd / Fig Tree Road intersection revealed minimal pedestrian / bicycle activity to and from the school. When the residences in RCSP are occupied, many of the trips will be made between the schools and RCSP residences and may never reach the external street system. Others will be made by parents who drop off students on their way to work. Additional trips will be replaced by trips made on foot or on bicycle.

Phase 1 Trip Generation. The initial phase of residential development in the RCSP is comprised of 140 single family lots to be located along E. Robertson Blvd immediately east of Fig Tree Road. At the residential trip generation rates identified herein, these units could generate 1,322 daily trips, with 104 trips in the a.m. peak hour and 139 trips in the p.m. peak hour.

Without the immediate development of non-residential uses within the RCSP, the internal / external split for Phase 1 alone will differ from that identified when the RCSP is fully Built Out. Other than the trips made to and from Ronald Reagan ES, all Phase 1 project trips will leave the RCSP. Because Phase 1 is immediately east of the school, most students will walk or ride bicycles. Others may be dropped off by a parent on their way to another destination.

TABLE 7
TRIP GENERATION RATES

Use	Description	Unit	Trips per Unit						
			Daily	AM peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
RC- LDR RC- MDR	Single Family Detached (210)	Dwelling	9.44	25%	75%	0.74	63%	37%	0.99
RC-HDR RC- MU	Low Rise Multi-Family Residential	Dwelling	7.32	23%	77%	0.46	63%	37%	0.56
RC-CS	Shopping Center (820)[1]	ksf	36.04	62%	38%	0.81	48%	52%	3.59
RC-CS MU-Retail	Shopping Center (820)[1]	ksf	43.60	62%	38%	1.05	48%	52%	4.19
MU-Office	Office (710 <50 ksf	ksf	10.84	86%	14%	1.46	17%	83%	1.18
INST	Elementary School (520)	Student	1.89	54%	46%	0.67	48%	52%	0.17
	Ronald Reagan ES[3]	Student	2.94	57%	43%	0.85	45%	55%	0.25

[1] rates based on equations for 495 ksf retail per adopted RCSP
[2] rates based on equations for 273 ksf retail per proposed RCSP
[3] equivalent rates based on observed traffic counts with no bicycle or pedestrian activity.

TABLE 8
TRIP GENERATION FORECASTS FOR ADOPTED RANCHO CALERA SPECIFIC PLAN

Use	Description	Unit	Trips per Unit						
			Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
RC-LDR RC-MDR	Single Family Detached (210)	1,822 du's	17,200	337	1,011	1,348	1,136	668	1,804
RC-HDR	Low Rise Residential (220)	200 du's	1,464	21	71	92	71	41	112
RC-MU		20 du's	146	2	7	9	7	4	11
	Residential Subtotal	**2,042 du's**	**18,810**	**360**	**1,089**	**1,449**	**1,214**	**713**	**1,927**
RC-CS	Shopping Center (820)	455.0 ksf	16,398	229	140	369	784	849	1,633
CC-RC	Shopping Center (820)	40.0 ksf	1,442	20	12	32	70	74	144
	Total Retail	495.0 ksf	17,840	249	152	401	854	923	1,777
	Total Non-Residential		**17,840**	**249**	**152**	**401**	**854**	**923**	**1,777**
INST	Elementary School (520) (K-6)	Existing count	1,521	250	186	436	57	70	127
	Gross Total All Trips (including school)		***38,171***	***859***	***1,427***	***2,286***	***2,125***	***1,706***	***3,831***
	INTERNAL TRIPS		***8,043***						
	EXTERNAL TRIPS		***30,128***						
	Retail pass-by (34% external daily and p.m.)		***5,034***						
	Net New Trips		***25,094***						

Note: refer to Table 9 regarding the trip generation characteristic of a potential second school on the RCSP

TABLE 9 TRIP GENERATION FORECASTS FOR PROPOSED RANCHO CALERA SPECIFIC PLAN (4/8/2020)									
Use	**Description**	**Unit**	**Trips per Unit**						
			Daily	**AM Peak Hour**			**PM Peak Hour**		
				In	**Out**	**Total**	**In**	**Out**	**Total**
	Phase 1 only	140 du's	1,322	26	78	104	87	52	139
Proposed Amended RCSP at Build Out									
RC-LDR RC-MDR	Single Family Detached (210)	1,822 du's	17,200	337	1,011	1,348	1,136	668	1,804
RC-HDR	Low Rise Residential (220)	200 du's	1,464	21	71	92	71	41	112
RC-MU		20 du's	146	2	7	9	7	4	11
	Residential Subtotal	**2,042 du's**	**18,810**	**360**	**1,089**	**1,449**	**1,214**	**713**	**1,927**
RC-CS	Shopping Center (820)	261.4 ksf	11,397	170	104	274	525	570	1,095
MU-Retail	Shopping Center (820) (25% of MU)	11.8 ksf	514	8	4	12	24	25	49
	Total Retail	273.2 ksf	11,911	178	108	286	549	595	1,144
MU - Office	Office (710) < 100 ksf (75% of MU)	35.3 ksf	393	44	8	52	7	35	42
	Total Non-Residential		**12,304**	**222**	**116**	**338**	**556**	**630**	**1,186**
INST	Elementary School (520)	Existing count	1,521	250	186	436	57	70	127
	Gross Total All Trips (including existing school)		***32,635***	***832***	***1,391***	***2,223***	***1,827***	***1,413***	***3,240***
	Internal Trips		***6,938***	***394***	***362***	***756***			***606***
	External Trips		***25,697***	***438***	***1,029***	***1,467***	***1,524***	***1,110***	***2,634***
	Retail pass-by (34% external daily and p.m.)		***3,233***	***0***	***0***	***0***	***155***	***155***	***310***
	Net Primary External Trips		***22,464***	***438***	***1,029***	***1,467***	***1,369***	***955***	***2,324***
Effects of Possible New School									
INST	2nd Elementary School (520)	600 students	1,521	250	186	436	57	70	127
	Underlying residential	50 du's	472	9	28	37	31	18	49
	Net parcel change		1,049	241	158	399	26	52	78
	Net Primary External Trips with New School		***21,575***			***1,714***			***2,329***

Trip Distribution

Having determined the number of trips that are expected to be generated by the project, it is necessary to identify the directional distribution of project-generated traffic. The directional distribution will be primarily influenced by the demographics of the community based on the location of schools, shopping and regional employment.

The project trip distribution was based on two factors. First the project was added to the MCTC regional traffic demand forecasting model, and the model's select link" utility was employed to trace the trips generated the project's residential and non-residential uses. In addition to the overall regional distribution of trips leaving the site, this tool identified the relative interaction between the RCSP's commercial uses and project residences (i.e., internal trips). In addition to the internal trips between residences and schools, 12% of the daily trips generated by RCSP residences would have destinations in the project commercial areas.

Current travel patterns observed at the access to existing residences south of E. Robertson Blvd were also reviewed to confirm the validity of traffic model distribution, and applicable adjustments were made.

Table 10 identifies the external distribution assumptions.

TABLE 10
EXTERNAL DIRECTIONAL TRIP DISTRIBUTION

Direction	Route	Percent	
		Residential	Non-Residential
North	SR 99 north of Robertson Blvd	10%	14%
East	Avenue 26 beyond Road 19	5%	>1%
	South of Robertson Blvd and east of SR 99	10%	15%
South	SR 99 south of Robertson Blvd	20%	17%
	Chowchilla Blvd south of E. Robertson Blvd	8%	7%
	Co Road 19 south of Avenue 26	12%	>1%
West	Robertson Blvd (SR 233) west of Chowchilla Blvd	35%	48%
Total		100%	100%

Trip Assignment

Figure 5 identifies the assignment of trips generated by Phase 1 the RCSP and Figure 6 presents project trips at buildout under the assumptions made for this study.

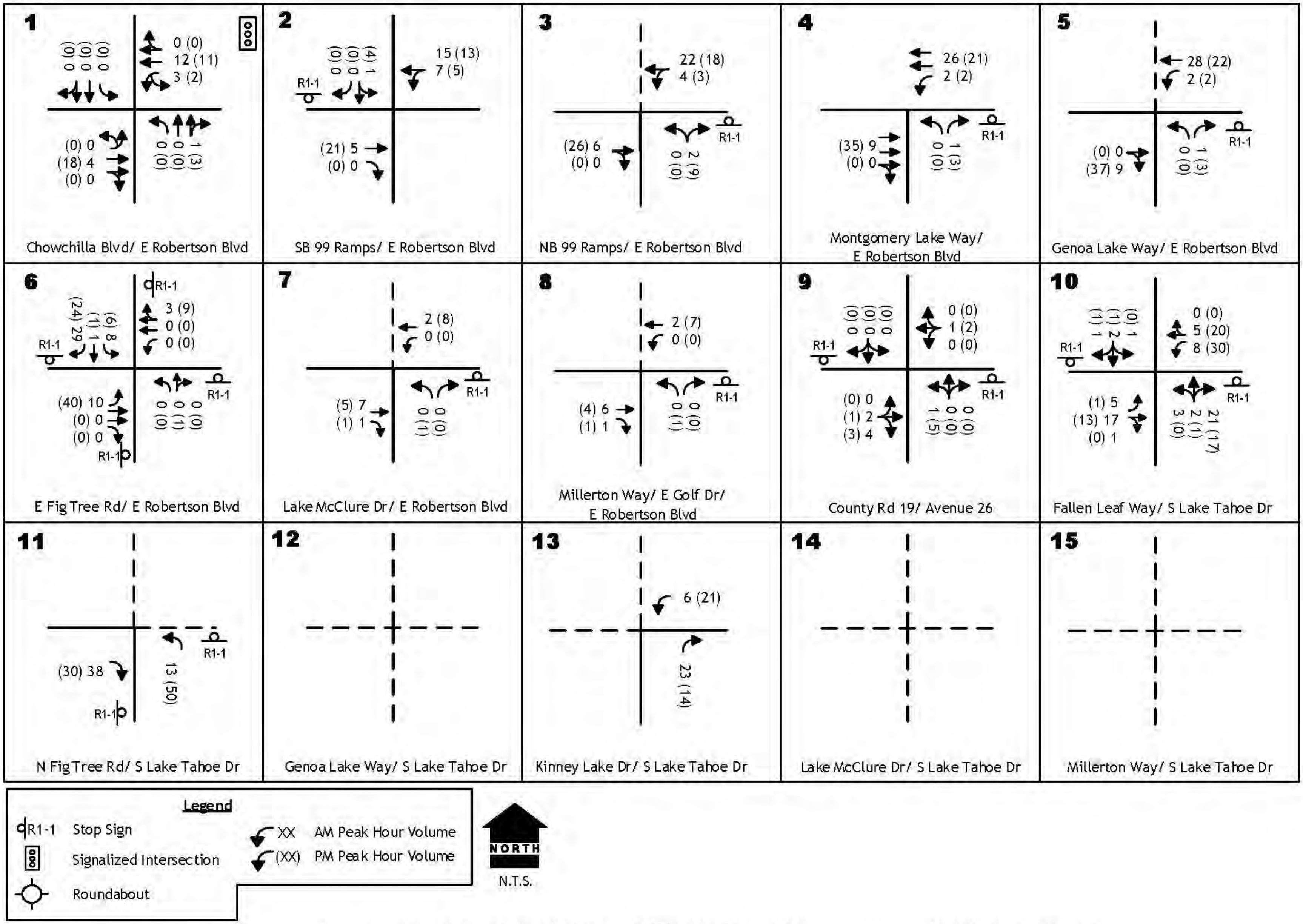
E. Robertson Blvd Improvements

The Approved RCSP is conditioned to make improvements to E. Robertson Blvd as the community develops. The proposed improvements to E. Robertson Blvd under the Amended RCSP are similar but exclude lanes associated with the north extension of Montgomery Lake Way which is no longer part of the plan. The planned improvements are illustrated in the appendix to this report and are Figures 14A, 14B and 14C in the Triggers Analysis.

E. Robertson Blvd improvements will not accompany Phase 1, but the proposed widening and traffic controls have been assumed to be in place under the "Existing Plus RCSP Buildout" scenarios. These improvements are conceptually illustrated in Figure 5 and are also shown in the subsequent figures that present "Plus Project" conditions.

SR 99 / SR 233 (E. Robertson Blvd) Interchange Improvements

As noted earlier, Caltrans and the City of Chowchilla are in the process of implementing an interchange improvements project at SR 99 / SR 233 interchange. In general, this work consists of constructing a new 4-lane crossing over SR 99 and replacing the two existing un-signalized ramp intersections with two-lane roundabouts. To provide a "worst case" evaluation, these improvements have not been assumed to be in place when Phase 1 alone is occupied, but they are assumed to be completed when the RCSP is built out, as noted in Figure 6.



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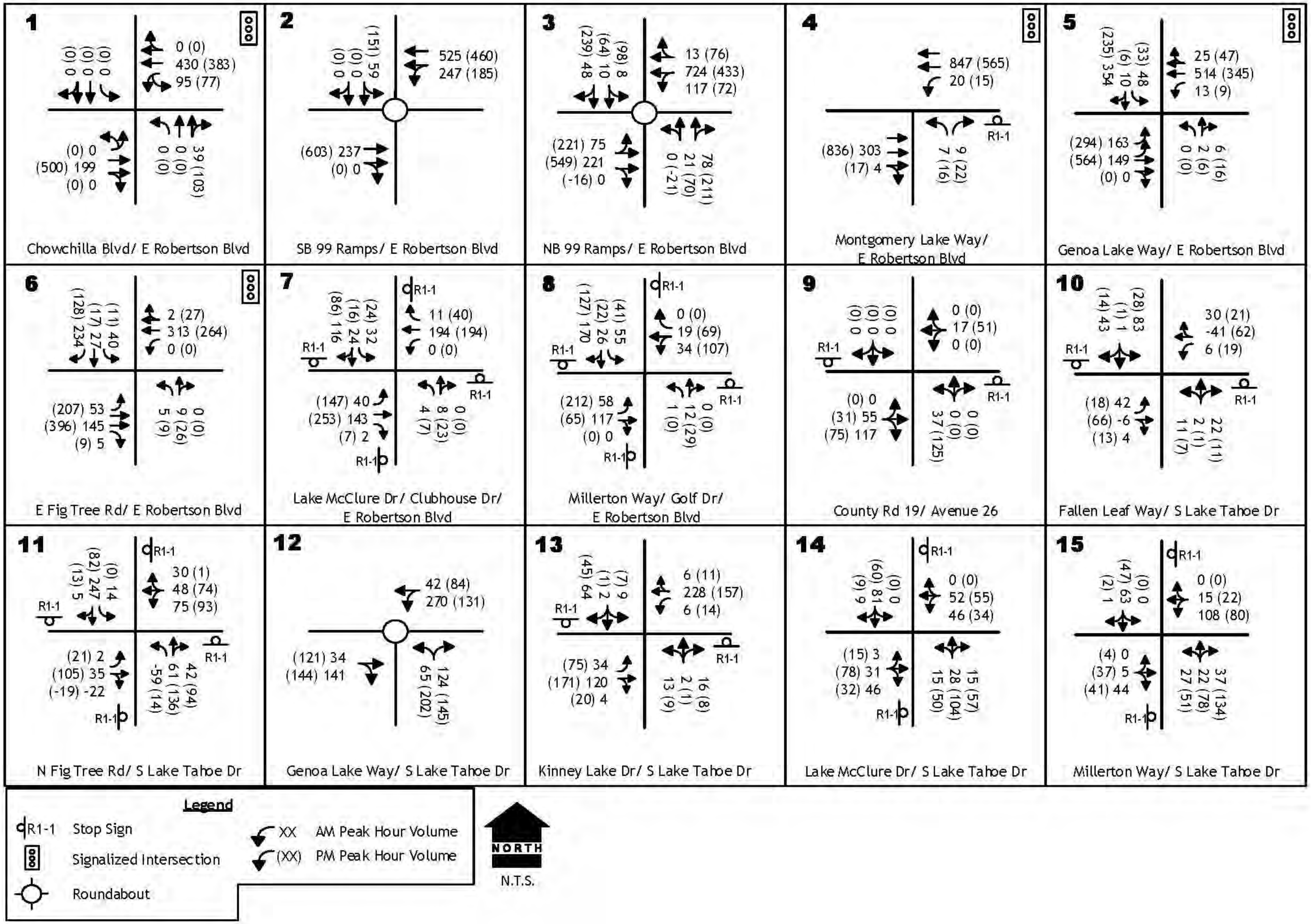
PHASE I PROJECT ONLY TRAFFIC VOLUMES AND LANE CONFIGURATIONS

figure 5



BUILDOUT PROJECT ONLY TRAFFIC VOLUMES AND LANE CONFIGURATIONS

BACKGROUND PROJECTS

This traffic operational analysis also considers the effects of the RCSP within the context of short term future traffic conditions occurring with the occupancy of other approved projects.

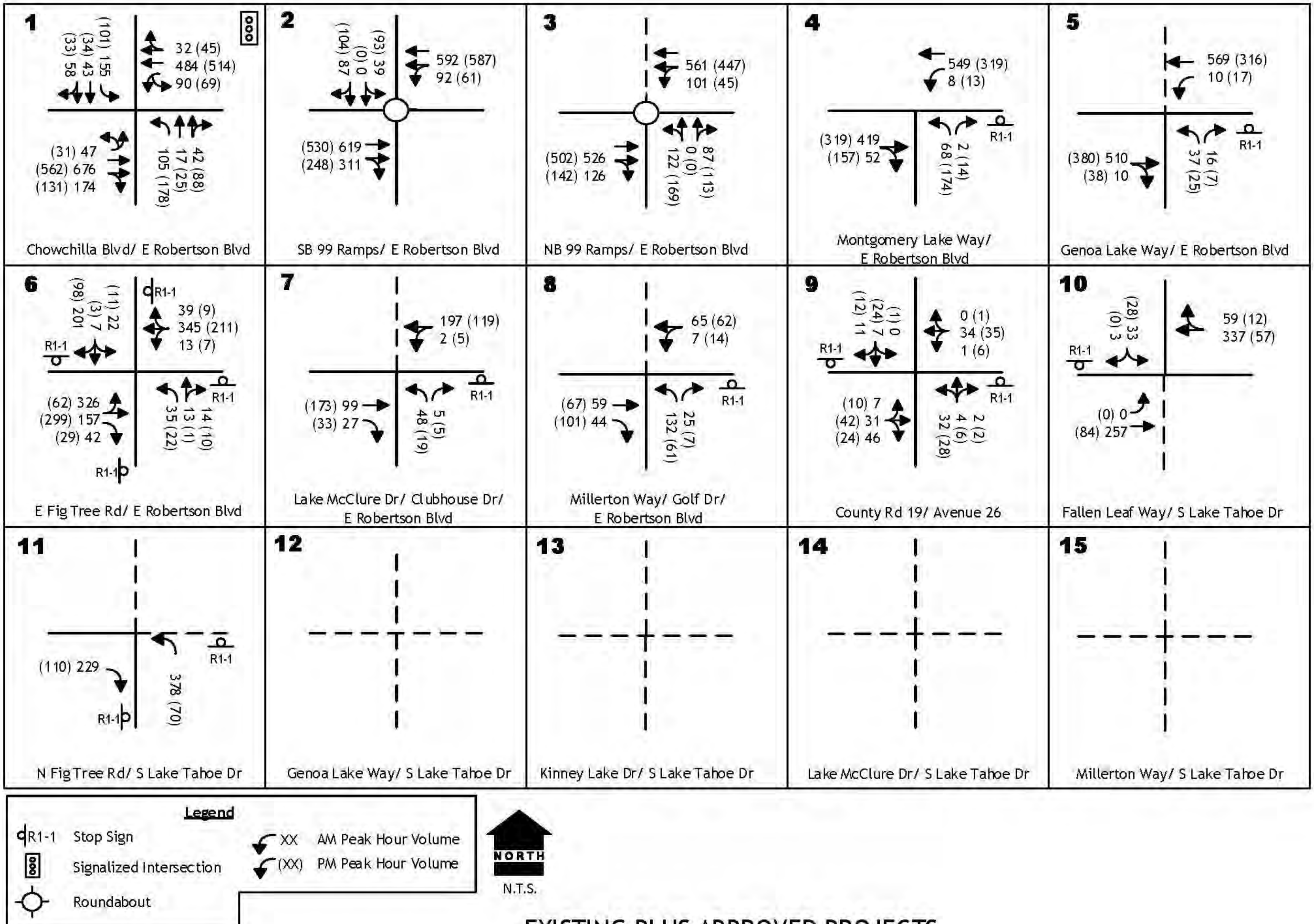
Approved Projects

City of Chowchilla staff identified seven projects throughout the city that are approved for consideration in this analysis, as noted in Table 11. This table also identifies the trip generation forecasts for each project.

TABLE 11
APPROVED PROJECTS

			Trip Generation		
Name	**Unit**	**Quantity**	**Daily**	**AM Peak**	**PM Peak**
Greenhills	SFR	65	614	48	64
Legacy Tentative Map	SFR	605	5,711	448	599
Montgomery Farms	SFR	91	859	67	90
Pham High Density	MFR	114	834	52	64
Sessions Subdivision	SFR	200	1,888	148	198
Villa Del Sol Multi-Family	MFR	112	820	52	63
Woodcrest	SFR	176	1,661	130	174
Subtotal		***1,363***	***12,387***	***945***	***1,252***

Existing Plus Approved Projects (EPAP) Traffic Volumes. The trips associated with the approved projects were distributed to the study area circulation system. Residential uses east of SR 99 were assumed to follow regional distribution patterns that were similar to those identified for the RCSP's residential areas, although those patterns would differ slightly with and without completion of RCSP. The regional distribution of residential trips generated west of SR 99 and the routes used for those trips was determined from a project specific regional travel demand model "select link analysis conducted for existing residential areas. Figure 7 illustrates the sum of existing traffic and trips caused by approved projects.



EXISTING PLUS APPROVED PROJECTS
TRAFFIC VOLUMES AND LANE CONFIGURATIONS

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figure 7

VEHICLE MILES TRAVELED (VMT) IMPACT ANALYSIS

Background

SB 743 requires the Governor's Office of Planning and Research (OPR) to identify new metrics for identifying and mitigating transportation impacts within CEQA. For land use projects, OPR identified *Vehicle Miles Traveled (VMT) per capita, VMT per employee,* and *net VMT* as new metrics for transportation analysis. For transportation projects, lead agencies for roadway capacity projects have discretion, consistent with CEQA and planning requirements, to choose which metric to use to evaluate transportation impacts. July 1, 2020 is the statewide implementation date for SB 743.

The CEQA Guidelines state that lead agencies, such as Madera County and the City of Chowchilla, may establish "thresholds of significance" to assist with the determination of significant impacts of a project. The CEQA Guidelines define a "threshold of significance" as:

"an identifiable quantitative, qualitative or performance level of a particular environmental effect, non-compliance with which means the effect will normally be determined to be significant by the agency and compliance with which means the effect normally will be determined to be less than significant."

The CEQA Guidelines and the California Governor's Office of Planning and Research (OPR) document *Technical Advisory on Evaluating Transportation Impacts in CEQA* (California Governor's Office of Planning and Research 2018) encourage all public agencies to develop and publish thresholds of significance to assist with determining when a project would have significant transportation impacts based on the new metric of VMT. Lead agencies have the discretion to develop and adopt their own thresholds. All thresholds must be developed through a public review process, supported by substantial evidence, and adopted by ordinance, resolution, rule, or regulation. Lead agencies should explain what compliance with an adopted threshold means.

The CEQA Guidelines generally state that projects that decrease VMT can be assumed to have a less than significant transportation impact. The CEQA Guidelines do not provide any specific criteria on how to determine what level of project VMT would be considered a significant impact.

Madera County and the City of Chowchilla have not adopted methods for estimating regional VMT or significance criteria for evaluating impacts based on VMT. MCTC has published an initial *Madera County SB 742 Sub-Regional Baseline VMT Memo – Draft* (8/14/2020) which is attached in the appendix.

Methods for Estimating VMT

MCTC Travel Demand Forecasting Model. The Madera County Transportation Commission Regional travel demand forecasting model is the best available tool for estimating regional VMT in Madera County. This model is a tour-based tool that addresses a variety of land use categories on a countywide basis and accounts for travel beyond the limits of Madera County as well. The MCTC Year 2020 and Year 2042 traffic models have been employed for this analysis, and as noted in the cumulative analysis, the models have been refined for this analysis to address the specific characteristics of the RCSP as well as approved projects in Chowchilla that were not previously included in the MCTC model's land use data sets. In addition, the layout of each model and circulation system components assumed in the model but not consistent with the City of Chowchilla General Plan were adjusted.

MCTC is currently updating the regional travel model for the purpose of supporting adoption of policies regarding VMT impact analysis by member agencies. However, that updated MCTC model was not available as the RCSP study was prepared, and the modified model identified herein is the best available tool.

The MCTC's *Madera County SB 742 Sub-Regional Baseline VMT Memo – Draft* suggests other changes to the MCTC model that have been made for their VMT work and which may contribute to differences between the information contained herein and the VMT estimates eventually available from VMTC. In addition to the land use and circulation changes noted above, MCTC's work includes modifications to the method for estimating the distance traveled for trips with origin or destination outside of Madera County. As a result, the information provided herein likely overstates VMT estimates and could differ for similar data eventually developed by MCTC for use in implementing policies.

Analysis Products. As suggested by SB 743, the MCTC travel demand forecasting model has the capability of estimating VMT under the following parameter that have been employed for this analysis:

- Total regional VMT Countywide, generated in Chowchilla or by Rancho Calera
- Total regional Home Based VMT Countywide, generated in Chowchilla or by Rancho Calera
- Average per capita VMT generated County-wide, by the City of Chowchilla or by TAZ

Significance Criteria

Alternative Approaches. Three potential options have been investigated for VMT thresholds through review of the methods adopted or currently proposed in other counties. One option is to follow recommended thresholds provided in the OPR Technical Advisory, while the other options would involve thresholds tailored to Madera County and the City of Chowchilla based on their existing characteristics and long-term planning documents. The City and the County may eventually select the same option, or different options. Generally, other agencies and consultants have found that a lead agency may establish their own thresholds of significance, even if they differ from OPR recommendations, as long as they are based on substantial evidence.

Option 1 – OPR Recommended Thresholds. The first possible approach for setting thresholds is to stay consistent with current, generalized State recommendations. The OPR Technical Advisory recommends that the threshold for residential projects be set at 15% below the existing VMT per capita of a city or region, and the threshold for office projects be set at 15% below the existing VMT per employee of a region. The "overall region" is the entirety of Madera County, including the City of Chowchilla. Following this recommendation, the threshold for industrial employment projects would be set at 15% below the existing VMT per employee of a region as well. The OPR derived these numbers from research that outlined what may be necessary for California to reach its climate goals. However, the 15% reduction in VMT per capita and VMT per employee was based on state-level data, may not be achievable in all locations, and may conflict with City or County general plans.

Option 2 – General Plan Future Year Growth Based Thresholds. The second possible approach for setting thresholds is to develop thresholds custom to the City of Chowchilla based on the currently planned growth for the overall region. Changes in VMT are generally dependent on changes to a region's population and transportation network. Long-term growth in Madera County and the City of Chowchilla are already guided by the County and City general plans. Similarly, the County's overall transportation network is generally guided by the Regional Transportation Plan (RTP). The County and City general plans contain a number of policies, such as encouraging clustered development and alternative modes of transportation, that are consistent with the goals of SB 743. Therefore, Madera County and the City of Chowchilla already have an "approved" long-term growth scenario, with associated VMT, that incorporates an achievable amount of VMT reduction for the region. The amount of VMT generated by land use growth planned in the City and County through Year 2042, based on the City and County long-term planning documents, could be viewed as a "VMT growth budget" for the region. This VMT growth budget could be used to establish VMT thresholds for the region.

Option 3 – Subarea Baseline Conditions Thresholds. The third possible approach for setting thresholds is to develop thresholds custom to the City of Chowchilla and unincorporated Madera County based on the currently planned vision for the various regions of the County, taking into account where and when growth is projected to occur. Generally, in CEQA, an impact is viewed as a change to existing or baseline conditions. Therefore, one approach to analyzing project impacts on VMT could be to compare it to baseline conditions. This could be done using efficiency metrics like VMT per capita and VMT per employee, which would mean that proposed projects would be expected to operate no worse than the average for existing similar land uses under baseline conditions. Under this approach, any project with VMT greater than baseline average VMT would be considered to have significant impacts, and any project with VMT less than or equal to baseline average VMT would be considered to have less than significant impacts. Baseline conditions VMT fluctuates over time as land uses and transportation infrastructure change. Therefore, the efficiency-based average VMT threshold would have to be calculated for the project baseline year, which would typically be the year during which the project's notice of preparation (NOP) was released. This would be done by interpolating between the base Year 2015 and future Year 2042 VMT data, to estimate VMT for the project baseline year.

Assessment of VMT Impacts

VMT Forecasts. Table 12 presents the results of VMT forecasts completed for this analysis employing the available version of the MCTC travel demand forecasting model as modified for Rancho Calera. As shown, because the RCSP's approved land uses are primarily retail and residential, per capita VMT has been calculated. Because per employee VMT is only applicable to employment centers (i.e., office / industrial uses) this metric has not been evaluated to consider the amended RCSP. This data has been employed to evaluate the potential significance of project impacts under the three approach options.

Baseline Conditions. The extent to which Madera County in general and the City of Chowchilla in particular will be able to meet SB 743 goals without the amended RCSP can be assessed by comparing per capita VMT under current and Baseline Year 2042 No Project conditions, as noted in Table 13. As shown, on a countywide basis, development under the County and City of Madera and Chowchilla general plans as incorporated into the MCTC model results in an overall decrease of 9.4% in regional per capita VMT. This reduction is less than the OPR goal of 15%. Alternatively, a comparison of data limited to only the City of Chowchilla reveals that anticipated development will cause a reduction in regional VMT of 21.6% , which would meet the OPR 15% target.

Because the City is projected to meet the OPR 15% reduction goal, the City could reasonably elect to eventually employ any of the three evaluation options noted earlier and to base significance on a project's relative effect to VMT within the City. This decision will eventually need to be made in consideration of any new information to be developed by MCTC using their refined VMT forecasting model.

Significance Criteria. For the analysis a conservative approach has been taken to assume significance criteria based on the recommended OPR threshold (Option 1). Because this evaluation does not address per employee VMT, it is reasonable to expect that the City of Chowchilla will eventually consider updated MCTC data and input to formally adopt significance criteria. Absent adopted City policy, this analysis assumes that the project will have a significant impact on VMT if:

- A retail project results in an appreciable increase in total City-wide VMT, or
- A residential project results in average per capita VMT that does not satisfy the OPR 15% reduction goal as compared to current conditions, or results in the City of Chowchilla filing to satisfy the overall 15% reduction goal.

Projects Impacts – Residential Development. While the amended RCSP maintains the same number of residences as the approved RCSP, the amount of non-residential uses is reduced. Development of new residences in Chowchilla will increase regional VMT. However, as noted in Table 14 the residences within amended RCSP will exhibit average per capita VMT rates that are 19.0% lower than the current rate in Chowchilla, primarily due to its location near to non-residential uses. In addition, because the amended RCSP provides non-residential uses in close proximity to existing residences in Chowchilla, the project will result in an overall average per capita VMT for all residences in Chowchilla that is 15.1% of the current rate. **Because the project's average per capita VMT rate is more than 15% below the current rate for residences in Chowchilla, the project's residential units satisfy OPR's 15% reduction goal, and the impact on VMT is not significant.**

Project's Impacts – Non Residential Development. While the project's non-residential retail uses will contribute to an overall increase in total VMT compared to existing conditions, by providing destinations that are relatively close, these uses will reduce the length of trips made by other existing residences in Chowchilla. As a result, the project's non-residential uses are the cause of a reduction in overall per capita VMT in Chowchilla.

The project will reduce the total amount of non-residential uses in the RCSP in comparison to the adopted plan. This change is evaluated for CEQA significance in comparison to its net effect on overall regional VMT in Chowchilla when both the approved and amended plan are fully occupied in 2042. As noted in Table 14, the project will reduce the total regional VMT attributable to Chowchilla by 1.4% compared to conditions with the adopted RCSP. **Because the proposed project does not have a net increase in the City's regional VMT in comparison to implementation of the adopted plan, the impact of the projects change in non-residential uses is not significant.**

TABLE 12 VEHICLE MILES TRAVELED (VMT) FORECASTS				
Description	**Year 2020**		**Year 2042**	
	No Project (existing use on RCSP)	**Plus Project (Amended RCSP)**	**No Project (Approved RCSP)**	**With Project (Amended RCSP)**
Total Regional VMT				
Countywide	4,884,648	4,960,102	6,212,101	6,223,304
City of Chowchilla	263,233	330,293	397,041	284,978
Rancho Calera SP	3,814	99,565	87,122	88,268
Home Based VMT				
Countywide	3,770,657	3,846,016	4,738,206	4,750,519
Chowchilla	195,750	245,270	287,488	284,978
Rancho Calera SP	1,523	75,041	69,215	66,170
Population				
Countywide	146,794	153,139	203,270	203,270
Chowchilla	13,342	19,687	24,681	24,681
Rancho Calera SP	0	6,345	6,351	6,351
Per Capita VMT				
Countywide	25.69	25.12	23.31	23.37
City of Chowchilla	14.67	12.46	11.65	11.55
Rancho Calera SP	-	11.83		10.42

TABLE 13 COMPARISON OF EXISTING AND BASELINE FUTURE VMT				
Description	**Year 2020**	**Year 2042**		
	No Project (existing use on RCSP)	**No Project (Approved RCSP)**	**Change from 2020 No Project**	**Percent Change**
Total Regional VMT				
Countywide	4,884,648	6,212,101	1,327,453	27.2%
City of Chowchilla	263,233	397,041	133,808	50.8%
Rancho Calera SP	3,814	87,122	83,308	-
Home Based VMT				
Countywide	3,770,657	4,738,206	967,549	25.7%
Chowchilla	195,750	287,488	91,738	46.9%
Rancho Calera SP	1,523	69,215	67,692	-
Population				
Countywide	146,794	203,270	56,476	38.5%
Chowchilla	13,342	24,681	11,339	85.0%
Rancho Calera SP	0	6,351	6,351	-
Per Capita VMT				
Countywide	25.69	23.31	-2.38	-9.4%
City of Chowchilla	14.67	11.65	-3.02	-21.6%
Rancho Calera SP	-	10.90	-3.77	-25.7%

TABLE 14 PLUS/WITH PROJECT VEHICLE MILES TRAVELED (VMT)											
Description	Year 2020				Year 2042						
	No Project (existing use on RCSP)	Plus Project (Amended RCSP)	Change	Percent change	No Project (Approved RCSP)	Percent Change from 2020	With Project (Amended RCSP)	Change from 2020	Percent Change from 2020	Change from 2042 No Project	Percent Change from 2042
Total Regional VMT											
Countywide	4,884,648	4,960,102	75,454	1.5%	6,212,101	27.2%	6,223,304	1,338,656	27.4%	11,203	0.2%
City of Chowchilla	263,233	330,293	67,060	25.5%	397,041	50.8%	391,482	128,249	48.7%	-5,559	-1.4%
Rancho Calera SP	3,814	99,565	95,751	-	97,122	-	88,268	84,455	-	-8,854	-9.1%
Home Based VMT											
Countywide	3,770,657	3,846,016	75,359	2.0%	4,738,206	25.7%	4,750,519	979,862	26.0%	12.313	0.3%
Chowchilla	195,750	245,270	49,550	25.3%	287,488	46.9%	284,978	89,228	45.6%	-2,510	-0.9%
Rancho Calera SP	1,523	75,041	73,518	-	69,215	-	66,170	66,170	-	-3,045	-4.4%
Population											
Countywide	146,794	153,139	6,345	4.3%	203,270	38.5%	203,270	56,476	38.5%	0	0.0%
Chowchilla	13,342	19,687	6,345	47.6%	24,681	85.0%	24,681	11,339	85.0%	0	0.0%
Rancho Calera SP	0	6,345	6,345	-	6,351	6,351	6,351	6,351	-	0	0.0%
Per Capita VMT											
Countywide	25.69	25.12	-0.57	-2.2%	23.31	9.4%	23.37	2.32	-9.0%	0.06	0.3%
City of Chowchilla	14.67	12.46	-2.21	-15.1%	11.65	21.6%	11.55	-3.12	-21.3%	-0.10	0.9%
Rancho Calera SP	-	11.82	-2.85	-19.0%	10.90	25.7%	10.42	-4.25	-29.0%	-0.48	-4.4%

TRAFFIC OPERATIONAL ANALYSIS

Existing Plus Project Phase 1 Traffic Conditions and Levels of Service

Figure 8 presents the sum of existing traffic and RCSP Phase 1 project trips. Table 15 identifies the Level of Service at the study locations and compares the existing and "plus project Phase 1" conditions.

Intersections. As shown, the Phase 1 project alone will result in longer delays at one intersection that already operates with Levels of Service that exceed the minimum LOS D standard, and will cause the Level of Service at one other intersection to exceed LOS D.

The **Robertson Blvd (SR 233) / SR 99 NB ramps intersection** will continue to operate with Levels of Service that exceed LOS D. While the project will incrementally exacerbate these conditions, because Caltrans and MCTC are addressing conditions at this location no project mitigation is required. If occupancy of Phase 1 occurs before completion of the SR 99 / SR 233 interchange project, there could be an interim period when traffic conditions at this location are made slightly worse due to the project.

The project will cause the Level of Service on the northbound approach at the **E. Robertson Blvd / Montgomery Lake Way intersection** to drop to LOS E in the a.m. peak hour as a result of the project, while LOS C will remain in the p.m. peak hour. A traffic signal would deliver Levels of Service meeting the minimum City LOS standard.

The extent to which exacerbating current conditions at the SR 99 / SR 233 interchange or changing from LOS D to LOS E at the Montgomery Lake Way intersection are inconsistent with General Plan Policies was considered. Two policies and objectives are pertinent.

Policy CI 1.7.A notes:

The overall Level of Service for the City of Chowchilla is LOS standard of "C" with peak hour LOS standard of "D" acceptable in some instances such as at peak hour or where right-of-way limitations exist and removal of those limitations is an economic hardship or environmentally damaging. Due to the nature of the roadway system, improvements to existing developed areas are occasionally extremely difficult. As a result, there may be instances where a lower LOS than "D" is acceptable such as in the Downtown District.

Objective CI 2 notes:

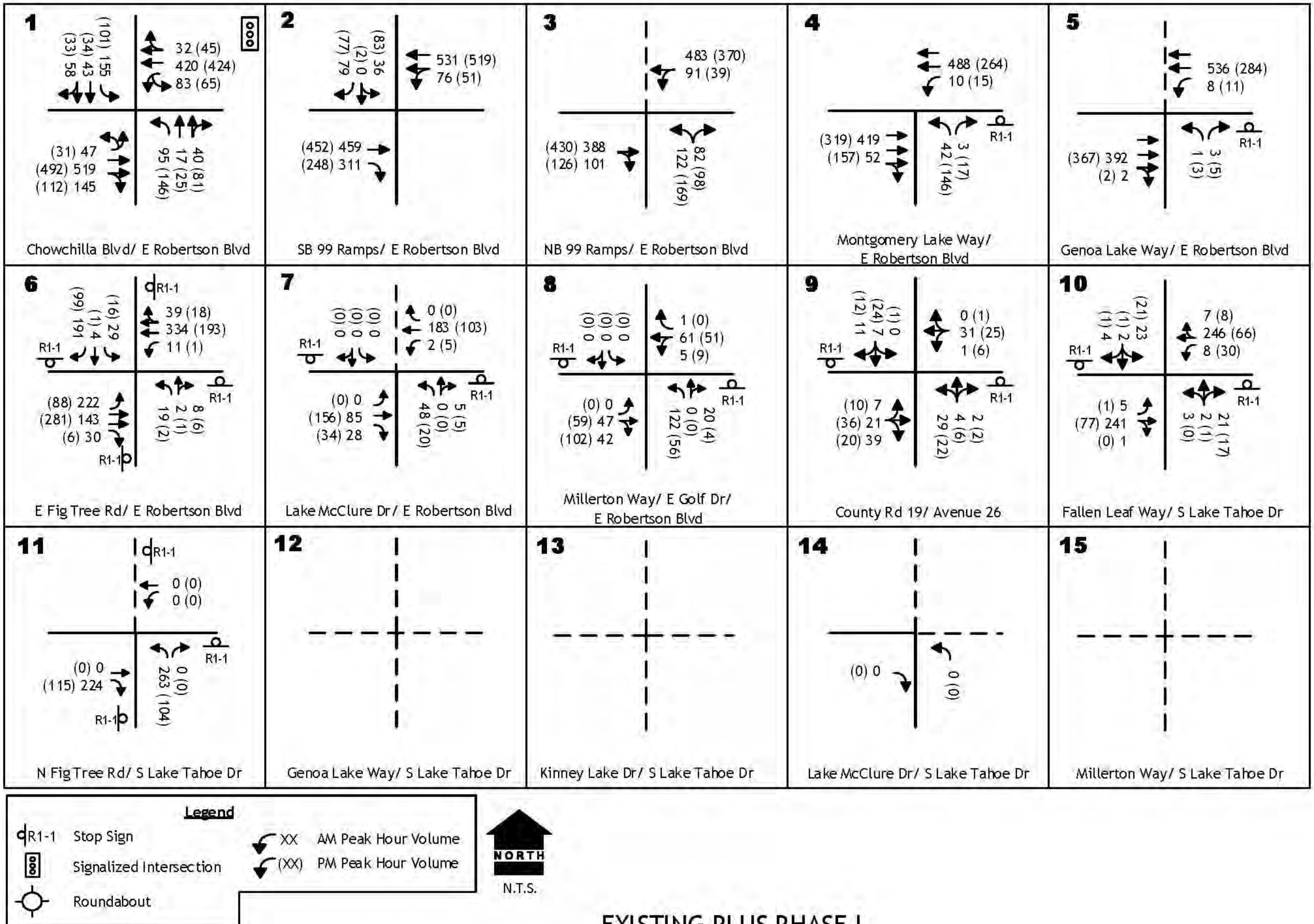
Provide timely and effective means of programming and constructing street and highway improvements to maintain an overall Level of Service of "C" as referred in Table CI - 5, with an A.M. and P.M. peak hour Level of Service "D.

Because the General Plan allows the City to accept peak hour Levels of Service in excess of LOS, because the City and Caltrans are implanting a project to construct SR 99 improvements and a program exists to improve intersections on E. Robertson Blvd, conditions with Phase 1 of the project are not inconsistent with the General Plan, and improvements are not required to provide consistency with the General Plan.

Queueing. Table 16 presents peak period queues that were calculated for the signalized E. Robertson Blvd / Chowchilla Blvd intersection assuming the addition of Phase 1 traffics. As indicated, the project would have minimal effect on the length of queues in the left turn lanes at the E. Robertson Blvd / Chowchilla Blvd intersection, and Phase 1 does not have a safety impact at this location.

Traffic Signal Warrants. Table 17 presents minor and major street approach volumes at unsignalized intersections and noted whether these volumes satisfy peak hour signal warrants based on the applicable speed through each location. As indicated, the two SR 99 ramp intersections will continue to carry volumes that satisfy peak hour warrants. This conclusion is consistent with the need for the pending interchange reconstruction project. The E. Robertson Blvd / Montgomery Lake Way intersection will continue to carry volumes that satisfy peak hour warrant in the p.m. peak hour, but not in the a.m. peak hour. The volume at the E. Robertson Blvd / Fig Tree Road intersection will continue to carry volumes in the a.m. peak hour that satisfy peak hour warrants. No additional locations will carry peak hour volumes that satisfy traffic signal warrants as a result of the project.

Roadway Segment Level of Service. Table 18 identifies Levels of Service on study area roadway segments assuming completion of Phase 1 based on the daily volume thresholds employed for the Chowchilla General Plan EIR. As indicated, the two-lane segment of SR 233 (E. Robertson Blvd) over SR 99 operates at LOS C based on these thresholds. East of the freeway, the daily volumes are indicative of LOS A. All locations will satisfy the LOS D minimum standard.



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Transportation Engineers

EXISTING PLUS PHASE I
TRAFFIC VOLUMES AND LANE CONFIGURATIONS

5738-001 RA 3/30/2021

figure 8

TABLE 15
EXISTING PLUS AMENDED RCSP PHASE 1 INTERSECTION LEVEL OF SERVICE

Intersection	Control	AM Peak Hour				PM Peak Hour			
		Existing		Existing Plus Phase 1		Existing		Existing Plus Phase 1	
		LOS	Average Delay (sec / veh)	LOS	Average Delay (sec/veh)	LOS	Average Delay (sec/veh)	LOS	Average Delay (sec/veh)
SR 233 (E. Robertson Blvd) /Chowchilla Blvd	Signal	B	13.0	B	13.2	B	11.4	B	11.5
SR 233 / SB SR 99 ramps Southbound approach	SB Stop	C	22.0	D	25.0	D	26.6	D	34.2
SR 233 / NB SR 99 ramps Northbound approach	NB Stop	**F**	**156.0**	**F**	**211.1**	**F**	**60.9**	**F**	**112.0**
E. Robertson Blvd / Montgomery Lake Way Northbound approach	NB Stop	D	31.9	**E**	**36.7**	C	19.4	C	23.3
E. Robertson Blvd / Genoa Lake Way Northbound approach	NB Stop	C	15.6	C	15.3	B	13.0	B	12.8
E. Robertson Blvd / Fig Tree Road	All-Way Stop	C	22.8	D	29.3	B	11.8	B	14.4
E. Robertson Blvd / Clubhouse Drive Northbound approach Southbound approach	NB/SB Stop	B -	10.9 -	B B	11.2 10.1	B -	10.2 -	B A	10.7 9.9
E. Robertson Blvd / Golf Drive Northbound approach	NB Stop	A	9.9	B	10.0	A	9.6	A	9.8
Avenue 26 / Road 19 Northbound approach Southbound approach	NB/SB Stop	A A	9.6 9.1	A A	9.6 9.1	B B	10.2 10.0	B B	10.5 10.1
S. Lake Tahoe Drive/ Fallen Leaf Way Southbound approach	SB Stop	B	12.5	B	13.7	A	9.5	A	9.7
S. Lake Tahoe Drive / Fig Tree Road	AWS	A	6.5	B	11.4	A	3.5	A	7.8

BOLD values exceed LOS D. **Highlighted** values are a significant inconsistency with the Chowchilla General Plan minimum LOS standard.

TABLE 16
EXISTING PLUS PHASE 1 INTERSECTION QUEUEING

Intersection	Lane	Storage (feet)	AM Peak Hour					PM Peak Hour				
			Existing		Existing Plus Phase 1			Existing		Existing Plus Phase 1		
			Volume (vph)	95th % Queue (feet)	Volume (vph) Project Only	Volume (vph) Total	95th % Queue (feet)	Volume (vph)	95th % Queue (feet)	Volume (vph) Project Only	Volume (vph) Total	95th Queue (feet)
SR 233 (E. Robertson Blvd) / Chowchilla Blvd	EB left	120	47	65	0	47	65	31	45	0	31	50
	WB left	75	80	**95**	5	85	**105**	63	75	3	66	80
	NB left	340[1]	95	75	0	95	80	146	105	0	146	105
	SB left	200[1]	155	120	0	155	120	191	75	0	191	75

[1] lane continues as TWLT lane. **BOLD** values exceed available storage by 25 feet

TABLE 17
EXISTING PLUS PHASE 1 INTERSECTION PEAK HOUR TRAFFIC SIGNAL WARRANTS

		AM Peak Hour				PM Peak Hour			
		Existing		Existing Plus Phase 1		Existing		Existing Plus Phase 1	
Intersection	Speed Criteria	Minor Vol / Major Vol	Warrant Met?	Minor Vol / Major Vol	Warrant Met?	Minor Vol / Major Vol	Warrant Met?	Minor Vol / Major Vol	Warrant Met?
SR 233 /	>40 mph	114	**Yes**	116	**Yes**	158	**Yes**	165	**Yes**
SB SR 99 ramps		1,350		1,395		1,231		1,294	
SR 233 /	>40 mph	202	**Yes**	206	**Yes**	260	**Yes**	264	**Yes**
NB SR 99 ramps		1,032		1,085		913		965	
E. Robertson Blvd /	>40 mph	44	No	45	No	160	**Yes**	164	**Yes**
Montgomery Lake Way		932		992		697		790	
E. Robertson Blvd /	>40 mph	3	No	4	No	5	No	9	No
Genoa Lake Way		899		963		603		703	
E. Robertson Blvd /	>40 mph	186	**Yes**	227	**Yes**	85	No	117	No
Fig Tree Road		766		795		538		616	
E. Robertson Blvd /	>40 mph	53	No	53	No	24	No	25	No
Clubhouse Drive		288		298		284		315	
E. Robertson Blvd /	>40 mph	142	No	142	No	59	No	60	No
Golf Drive		147		160		209		229	
Avenue 26 /	>40 mph	34	No	36	No	37	No	37	No
Road 19		92		103		92		103	
S Lake Tahoe Drive /	<40 mph	25	No	26	No	21	No	22	No
Fallen Leaf Way		432		512		118		122	
S. Lake Tahoe Drive /	<40 mph	186	No	248	No	54	No	108	No
Fig Tree Road		250		264		85		122	

TABLE 18 EXISTING PLUS RCSP PHASE 1 CURRENT ROADWAY SEGMENT LEVEL OF SERVICE								
				Existing		Existing Plus Phase 1		
						Daily Volume		
Street	**Location**	**Classification**	**Lanes**	**Daily Volume**	**Level of Service**	**Project Only**	**Total**	**Level of Service**
SR 233	Across SR 99	Arterial	2	12,619	C	686	13,305	C
E. Robertson Blvd	NB SR 99 to Montgomery Lake Way	Arterial	2	10,089	A	856	10,945	B
	Montgomery Lake Way to Fig Tree Road	Arterial	2	7,287	A	922	8,209	A
	Fig Tree Road to Clubhouse Drive	Arterial	2	3,753	A	298	4,071	A
Avenue 26	East of Clubhouse Drive	Arterial	2	2,957	A	192	3,149	A
Fig Tree Road	E. Robertson Blvd to So Lake Tahoe Drive	Arterial	2	1,521	A	812	2,333	A
S. Lake Tahoe Dr	Fallen Leaf Way to Fig Tree Road	Major Collector	2	1,521	A	26	1,547	A

Traffic Operations near Ronald Reagan ES. The RCSP Phase 1 will add traffic to the streets in the area of Ronald Reagan ES during the periods before and after the school day. While the Level of Service measured over the a.m. and p.m. peak hour at study area intersections will remain within the LOS D standard, because regular school access is limited to S. Lake Tahoe Drive, project traffic could exacerbate existing congestion and delays that occur near the school as a result of school drop-off and loading activity during peak periods.

While not an impact that requires mitigation based on Level of Service, peak period conditions near the school could be improved by creating additional access to the school. At Build Out, the RCSP circulation system provides additional access through the northerly extension of Fallen Leaf Way to Fig Tree Road, the construction of Kinney Lake Drive north to N. Lake Tahoe Drive and the extension of S. Lake Tahoe Drive to Genoa Lake Way and E. Robertson Blvd. In the near term, S. Lake Tahoe Drive and Genoa Lake Way could be completed, either as partial or full streets, to provide a second route to and from the school.

Phase 1 Impacts to Alternative Transportation Modes. Impacts to Alternative Transportation Modes remain a significance criteria under CEQA. Phase 1 would affect alternative transportation modes in these ways.

Pedestrians. Phase 1 can be expected to result in pedestrians who would walk across E. Robertson Blvd to existing commercial areas east of SR 99, as well as school age pedestrian who would walk to and from Ronald Reagan ES. Because sidewalks already connect the site with the E. Robertson Blvd / Fig Tree Road intersection, the project's impact during non-school is not significant. However, during the periods before and after school uncontrolled pedestrian activity at the intersections near Ronald Reagan ES could create conflicts between vehicles and pedestrians. To resolve this issue, a designated Safe Route to School will need to be identified and implemented in consultation with CUSD site representatives and City staff. The designated route would direct students to a preferred crossing at the S. Lake Tahoe Drive / Fig Tree Road intersection but could be accompanied by traffic control devices or adult crossing guards as needed.

Bicycles. Phase 1 could result in bicycle activity of study area streets. Project cyclists would make use of the same facilities now available to existing cyclists as well as the new facilities accompanying the SR 99 / SR 233 interchange project. Because bicycle facilities are available to link the site with the E. Robertson Blvd / Fig Tree Road intersection and the project does not interfere with the implementation of any planned bicycle facilities, the impacts of Phase 1 are not significant.

Transit. Phase 1 may result in persons who elect to use MCC's Chowchilla – Fairmead route from its stop at the Save Mart Supermarket. In communities with robust transit service 2% to 4% of daily trips may be made by public transit. Applying these rates to Phase 1, a very conservative "worst case" estimate of project transit ridership may be 16 to 32 daily boarding's. This level of demand would be too small to require changes to MCC routes or service, and Phase 1's impact to transit service is not significant.

Existing Plus Proposed Amended RCSP Buildout Traffic Conditions and Levels of Service

Figure 9 presents the sum of existing traffic and trips associated with build out of the amended RCSP. This figure also illustrates roadway improvements that will accompany buildout of the project, including widening of E. Robertson Blvd and construction of internal streets. Traffic signals are anticipated at three locations, and the Caltrans interchange improvement project at SR 99 / SR 233 is assumed to have been completed.

Intersections. As shown in Table 19, with identified improvements build out of the amended RCSP project will not result in any intersection operating with Level of Service that exceeds the minimum LOS D standard.

Queueing. Table 20 presents peak period queues that were calculated for the signalized E. Robertson Blvd / Chowchilla Blvd intersection and at the three new traffic signals with the addition of trips from RCSP build out. As indicated, the available storage in the Chowchilla Blvd left turn lanes on E. Robertson Blvd is relatively short, and in the a.m. peak hour the 95th percentile queue in the westbound left turn lane exceeds the storage length by almost 200 feet. In the a.m. peak hour the queue could extend to the next commercial driveway on E. Robertson Blvd.

Measures to address this issue were investigated. The presence of the new roundabout at the SR 99 SB ramps intersection creates the opportunity to address this issue by closing the eastbound left turn lane at the commercial driveway and requiring those left turns to instead continue to the roundabout and make a u-turn back to the driveway. With this change the westbound left turn lane at Chowchilla Blvd can be lengthened.

All other turn lanes have sufficient storage to accommodate identified queues.

Traffic Signal Warrants. Table 21 presents minor and major street approach volumes at unsignalized intersections and notes whether these volumes satisfy peak hour signal warrants based on the applicable speed through each location. As indicated, based on the thresholds employed when speeds are greater than 40 mph, the volumes at the E. Robertson Blvd / Clubhouse Drive / McClure Lake Drive intersection would satisfy peak hour signal warrants during the a.m. and p.m. peak hour. The p.m. peak hour volumes at the E. Robertson Blvd / Golf Drive / Millerton Way intersection would satisfy peak hour warrants during the p.m. peak hour.

The extent to which a traffic signal is appropriate at either location was considered. The choice of high speed (>40 mph) or low speed (<40 mph) is based on the current speed limit. It is possible that the speeds on E. Robertson Blvd may decrease in the future as the project area is built and traffic signals are installed at various locations. This is the case west of the interchange where the speed limit is 30 mph. Peak hour traffic signals would not be satisfied under the lower speed thresholds. In addition, the Level of Service at the E. Robertson Blvd / Clubhouse Drive / McClure Lake Drive intersection would satisfy the City's minimum LOS D standard without a traffic signal, primarily because the majority of the entering traffic from McClure Lake Drive is turning right. Based on these considerations traffic signals are not recommended under Existing Plus Amended RCSP Buildout conditions.

Roadway Segment Level of Service. Table 22 identifies Levels of Service on study area roadway segments assuming completion of Phase 1 based on the daily volume thresholds employed for the Chowchilla General Plan EIR. As indicated, the four-lane segments of SR 233 and Robertson Blvd will operate at LOS A or B. Elsewhere LOS A conditions will remain on all roadway segments. The City's minimum LOS D standard will be satisfied in each location.

Alternative Transportation Modes. Buildout of Phase 1 would affect alternative transportation modes in these ways.

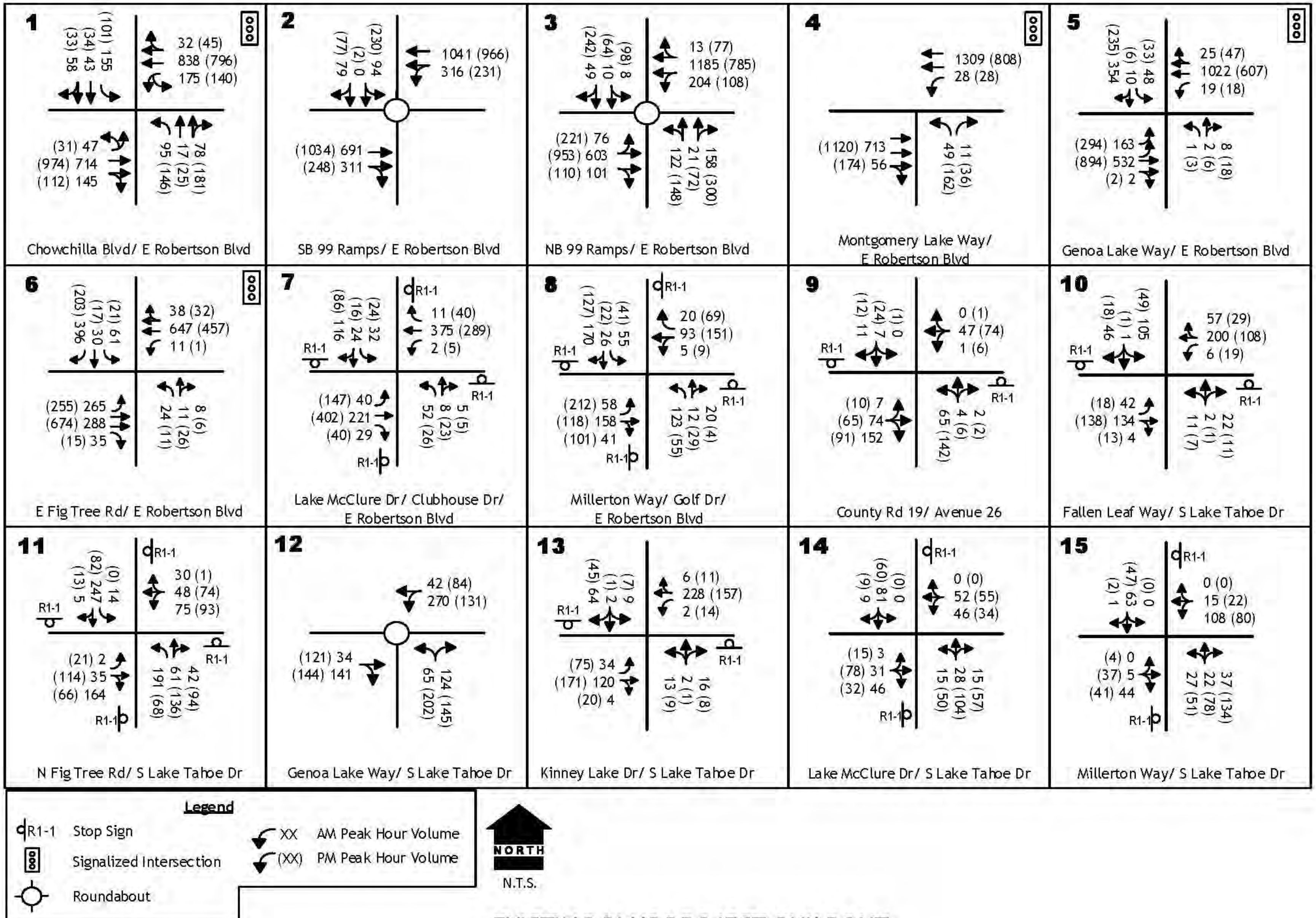
Pedestrians. Buildout of RCSP can be expected to result in pedestrians who would walk across E. Robertson Blvd to existing commercial areas east of SR 99, as well as school age pedestrian who would walk to and from Ronald Reagan ES. Sidewalk will be a created on all streets within the community and sidewalks and crosswalks will be part of planned improvements to E. Robertson Road. Planned traffic signals on E. Robertson Blvd will include applicable pedestrian indications / controls. Because facilities will be available to connect RCSP residents, employees and customers with and across E. Robertson Blvd, the project's impact during non-school is not significant. During the periods before and after school uncontrolled pedestrian activity at the intersections near Ronald Reagan ES and near the new CUSD school could create conflicts between vehicles and pedestrians. To resolve this issue, a designated safe route to school plan for the RCSP area will need to be identified and implemented in consultation with CUSD site representatives and City staff. The plan will designate routes to direct students to preferred crossings, and could be accompanied by traffic control devices or adult crossing guards as needed.

Bicycles. The RCSP includes a Bicycle Circulation Plan that notes the location of pedestrian / bicycle trails along Ash Slough, as well as Class 2 Bike lanes. Bike lanes would be provided on Arterial streets and on E. Robertson Blvd. while no specific physical improvements are planned, all collector streets are designed bicycle routes.

The RCSP could result in bicycle activity of study area streets. Project cyclists would make use of the same facilities now available to existing cyclists as well as the new facilities accompanying the SR 99 / SR 233 interchange project and included in the project. Because bicycle facilities will be available to link the site with the balance of the community, and the project will improve bicycle on E. Robertson Blvd that can be used by the general public, the impacts of RCSP are not significant.

Transit. The RCSP includes a plan for conceptual transit routes and stops within the community and along E. Robertson Blvd. Transit stops are proposed at intersections on E. Robertson Blvd. Implementation of the RCSP may result in persons who elect to use MCC's existing Chowchilla – Fairmead route from its stop at the Save Mart Supermarket, but the site is large enough to suggest that RCSP stops may become applicable as well. The RCSP commercial area may be large enough to justify specific MCC treatment as well. In communities with robust transit service 2% to 4% of daily trips may be made by public transit. Applying these rates to the project, a very conservative "worst case" estimate of project transit ridership may be in the range of 400 to 600 daily boarding's. This level of demand could justify MCC changes to accommodate the project.

While any decisions regarding MCC routes and stops would be made in consultation with MCC and City of Chowchilla staff, transit stops should be constructed at key locations as the community is built out, and transit routes / facilities should be contemplated as RCSP's commercial areas are developed.



EXISTING PLUS PROJECT BUILDOUT TRAFFIC VOLUMES AND LANE CONFIGURATIONS

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Transportation Engineers

TABLE 19 EXISTING PLUS AMENDED RCSP BUILDOUT INTERSECTION LEVEL OF SERVICE									
		AM Peak Hour				PM Peak Hour			
		Existing		Existing Plus RCSP		Existing		Existing Plus RCSP	
Intersection	**Control**	**LOS**	**Average Delay (sec/veh)**	**LOS**	**Average Delay (sec/veh)**	**LOS**	**Average Delay (sec/veh)**	**LOS**	**Average Delay (sec/veh)**
SR 233 (E. Robertson Blvd)/ Chowchilla Blvd	Signal	B	13.0	B	17.9	B	11.4	B	17.0
SR 233 / SB SR 99 ramps Southbound approach	SB Stop	C	22.0			D	26.6		
	Roundabout			B	10.3			B	15.7
SR 233 / NB SR 99 ramps Northbound approach	NB Stop	**F**	**156.0**			**F**	**60.9**		
	Roundabout			B	11.2			B	17.3
E. Robertson Blvd / Montgomery Lake Way Northbound approach	NB Stop	D	31.9			C	19.4		
	Signal			A	5.3			A	7.4
E. Robertson Blvd / Genoa Lake Way Northbound approach	NB Stop	C	15.6			B	13.0		
	Signal			C	31.1			B	18.3
E. Robertson Blvd / Fig Tree Road	All-Way Stop	C	22.8			B	11.8		
	Signal			C	32.4			B	19.2
E. Robertson Blvd / Clubhouse Dr / Lake McClure Dr Northbound approach Southbound approach	NB/SB Stop	B -	10.9 -			B -	10.2 -		
	All-Way Stop			C	22.7			C	20.2

BOLD values exceed LOS D. **Highlighted** values are a significant inconsistency with the Chowchilla General Plan minimum LOS standard.

TABLE 19 (continued) EXISTING PLUS AMENDED RCSP BUILDOUT INTERSECTION LEVEL OF SERVICE									
		AM Peak Hour				PM Peak Hour			
		Existing		Existing Plus RCSP		Existing		Existing Plus RCSP	
Intersection	Control	LOS	Average Delay (sec/veh)	LOS	Average Delay (sec/veh)	LOS	Average Delay (sec/veh)	LOS	Average Delay (sec/veh)
E. Robertson Blvd / Golf Drive / Millerton Way	NB/SB Stop								
Northbound approach		A	9.9			A	9.6		
Southbound approach		-	-			-	-		
	All-Way stop			B	11.5			B	14.1
Avenue 16/ Road 19	NB/SB Stop								
Northbound approach		A	9.6	B	11.5	B	10.2	C	17.8
Southbound approach		A	9.1	B	9.9	B	10.0	B	11.7
S. Lake Tahoe Dr / Fallen Leaf Way	NB/SB Stop								
Southbound approach		B	12.5	C	24.2	A	9.5	B	12.9
Northbound approach		-	-	B	12.7	-	-	B	10.9
S. Lake Tahoe Dr / Fig Tree Road	AWS	A	6.5	C	19.9	A	3.5	B	13.8
S. Lake Tahoe Dr / Genoa Lake Way	Roundabout			A	5.0			A	5.7
S. Lake Tahoe Dr / Kinney Lake Dr	NB/SB Stop								
Northbound approach				B	12.6			B	12.5
Southbound approach				B	11.7			B	10.3
S. Lake Tahoe Dr / Lake McClure Dr	NB/SB Stop								
Northbound approach				B	10.7			B	13.2
Southbound approach				B	11.4			B	11.5
S. Lake Tahoe Dr / Millerton Way	NB/SB Stop								
Northbound approach				B	10.8			B	12.8
Southbound approach				B	12.2			B	11.7
BOLD values exceed LOS D. **Highlighted** values are a significant inconsistency with the Chowchilla General Plan minimum LOS standard.									

TABLE 20
EXISTING PLUS AMENDED RCSP BUILD OUT INTERSECTION QUEUEING

Intersection	Lane	Storage (feet)	AM Peak Hour					PM Peak Hour				
			Existing		Existing Plus RCSP			Existing		Existing Plus RCSP		
			Volume (vph)	95^{th} % Queue (feet)	Volume (vph) Project Only	Volume (vph) Total	95^{th} % Queue (feet)	Volume (vph)	95^{th} % Queue (feet)	Volume (vph) Project Only	Volume (vph) Total	95^{th} Queue (feet)
SR 233 (E. Robertson Blvd) / Chowchilla Blvd	EB left	120	47	65	0	47	65	31	45	0	31	50
	WB left	75	80	**95**	95	175	**265**	63	75	77	140	**195**
	NB left	340[1]	95	75	0	95	75	146	105	0	146	110
	SB left	200[1]	155	120	0	155	120	191	75	0	191	80
E. Robertson Blvd / Montgomery Lake Way	WB left	300	8	<25	20	28	30	13	<25	15	28	40
	NB left	300	42	30	7	49	40	146	45	16	162	120
E. Robertson Blvd / Genoa Lake Way	EB left	400	0	<25	163	163	105	330	<25	294	294	215
	WB Left	300	6	<25	13	19	35	9	<25	9	18	35
	NB left	180	1	<25	0	1	<25	3	<25	0	3	10
	SB left	Unknown	0	<25	48	48	65	0	<25	33	33	55
E. Robertson Blvd / Fig Tree Road	EB left	460	212	160	53	265	250	48	75	207	255	295
	WB Left	300	11	175	0	11	25	1	35	0	1	5
	NB left	50	19	30	5	24	40	2	<25	9	11	20
	SB left	unknown	21	50	40	61	80	10	<25	9	19	30

[1] lane continues as TWLT lane. **BOLD** values exceed available storage by 25 feet. **HIGHLIGHTED** values are a significant safety impact.

TABLE 21
EXISTING PLUS AMENDED RCSP BUILD OUT INTERSECTION PEAK HOUR TRAFFIC SIGNAL WARRANTS

Intersection	Speed Criteria	AM Peak Hour: Existing Minor Vol / Major Vol	AM Peak Hour: Existing Warrant Met?	AM Peak Hour: Existing Plus RCSP Minor Vol / Major Vol	AM Peak Hour: Existing Plus RCSP Warrant Met?	PM Peak Hour: Existing Minor Vol / Major Vol	PM Peak Hour: Existing Warrant Met?	PM Peak Hour: Existing Plus RCSP Minor Vol / Major Vol	PM Peak Hour: Existing Plus RCSP Warrant Met?
E. Robertson Blvd / Clubhouse Dr / Lake McClure Dr	>40 mph	53 / 288	No	172 / 678	**Yes**	24 / 284	No	126 / 923	**Yes**
E. Robertson Blvd / Golf Drive / Millerton Way	>40 mph	142 / 147	No	251 / 375	No	59 / 209	No	190 / 660	**Yes**
Avenue 26 / Road 19	>40 mph	34 / 92	No	71 / 281	No	37 / 92	No	250 / 247	No
S Lake Tahoe Dr / Fallen Leaf Way	<40 mph	25 / 432	No	152 / 438	No	21 / 118	No	68 / 312	No
S. Lake Tahoe Dr / Fig Tree Road	<40 mph	246 / 268	No	195 / 560	No	54 / 95	No	192 / 394	No
S. Lake Tahoe Dr / Kinney Lake Dr	<40 mph			75 / 400	No			53 / 437	No
S. Lake Tahoe Dr / Lake McClure Dr	<40 mph			90 / 182	No			128 / 286	No
S. Lake Tahoe Dr / Millerton Way	<40 mph			86 / 169	No			102 / 312	No

TABLE 22 EXISTING PLUS AMENDED RCSP ROADWAY SEGMENT LEVEL OF SERVICE								
Street	Location	Classification	Lanes	Existing Daily Volume	Existing LOS	Existing Plus RCSP Daily Volume RCSP only	Existing Plus RCSP Daily Volume Total	Existing Plus RCSP LOS
SR 233	Across SR 99	Arterial	2	12,619	C	-		
			4	-		12,940	25,560	C
E. Robertson Blvd	NB SR 99 to Montgomery Lake Way	Arterial	2	10,089	A	-		
			4	-		12,510	22,600	B
	Montgomery Lake Way to Fig Tree Road	Arterial	2	7,287	A	-		
			4	-		12,540	19,830	A
	Fig Tree Road to Clubhouse Drive	Arterial	2	3,753	A			
			2	-		6,370	10,130	A
Avenue 26	East of Clubhouse Drive	Arterial	2	2,957	A	4,670	7,630	A
Fig Tree Road	E. Robertson Blvd to So Lake Tahoe Drive	Arterial	2	1,521	A	3,240	4,770	A
S. Lake Tahoe Dr	Fallen Leaf Way to Fig Tree Road	Major Collector	2	1,521	A	1,540	3,060	A

INTERNAL CIRCULATION ASSESSMENT

Approach

The adequacy of the RCSP internal circulation system has been assessed within the context of General Plan policies based on daily traffic volume forecasts for on-site streets and subsequent evaluation of the adequacy of the RCSP's proposed street sections. In addition to considering roadway capacity based on Level of Service, the assessment is intended to consider factors such as effects of traffic at different volume levels in response to Objectives CI 4 and CI5. Our assessment is also intended to determine whether right of way widening to accommodate auxiliary turn lanes may be needed.

Circulation System. The amended RCSP proposes to eliminate the northly extension of Montgomery Lake Way included in the General Plan and replace its function with a combination of S. Lake Tahoe Drive and Genoa Lake Way. The General Plan Circulation Element concept of an Arterial street linking E. Roberson Blvd with future development across Ash Slough would be retained.

The RCSP proposes various street cross sections. In general, the streets range from multilane arterial streets that are consistent with the City Circulation Element's long term requirements under build out of the General Plan to two-lane local streets. Arterial street sections propose phased implementation which initially provides single lanes and a temporary median area where additional lanes can be constructed in the future. Local, collector and promenade streets propose on-street parking. The proposed RCSP circulation layout notes the presence of future extensions of Fig Tree Road and South Lake Tahoe Drive northerly beyond the RCSP plan area, although these roads are only assumed to be continued across Ash Slough under the GP EIR based scenarios considered in this internal circulation assessment and are not a part of the project's CEQA impact evaluation.

Evaluation Criteria

The assessment employs these evaluation criteria.

Daily Traffic Volume – Level of Service. The Chowchilla General Plan identifies daily traffic volume Level of Service (LOS) thresholds for various street classifications based on information in the Madera County Regional Transportation Plan (RTP) available at the time the General Plan was prepared. These thresholds were previously presented in Table 2.

Daily Traffic Volume – Local Streets. While LOS thresholds for 2-lane collector streets could reasonably be applied to 2-lane local streets, LOS may not be a realistic planning tool for local neighborhood streets. LOS thresholds deal with the relative delay experienced by drivers, but these thresholds do not reflect the effects of automobile traffic on the quality of life of residents along these streets. Many communities report that their citizens begin to complain about the effects of neighborhood traffic at volumes far below the theoretical capacity of the street itself.

Circulation Element policies CI 3.1D and CI 3.2C speak to this issue.

CI 3.1.D Single-family residential driveways should not be allowed along Major Collector or higher classification streets. If driveways are to be allowed, lots fronting the street shall be designed at such a width to allow multiple access driveways to discourage backing out into traffic.

CI 3.2.C Residential development shall be oriented away (side-on or rear-on) from future Arterial streets, and properly buffered so that the traffic carrying capacity on the street will be preserved and the residential environment protected from the potentially adverse characteristics of the street. "Daylighted" cul-de-sacs for pedestrian access are also encouraged.

The City of Chowchilla has not adopted traffic volume thresholds for acceptable daily volumes on collector and residential streets. Typically, daily traffic volume in the range of 2,500 to 4,000 ADT represent the range of maximum acceptable daily volume used by those communities that have an adopted standard. This internal assessment makes use of those thresholds.

School Considerations. The peak period operation of schools is another consideration in selecting applicable street sections. The design of most elementary schools reflects the State of California's limitations on funding with regards to parcel size and off-site improvements. As a result, nearly all schools lack the on-site parking and loading facilities needed to accommodate 100% of the parent vehicles that will accumulate at the school at the end of the school day. This deficiency results in on-site school traffic that can queue back onto adjoining streets, as well as shorter term parent parking on streets near the school. This issue needs to be addressed by ensuring that the streets near the school have the width needed to accommodate on-street parking / loading and concurrent vehicles circulation.

Intersection Geometry at Local Street Connections to Arterial Streets. The criteria is intended to confirm that the Local streets intersecting the RCSP's Arterial street system, will have the width available to accommodate approach lanes that are commensurate with the ultimate volume of traffic on these roads. While full analysis of peak period traffic operations at these locations is not a part of this assessment, it is important to consider probable intersection design requirements in view of the long-term circulation system anticipated at build out of the Chowchilla General Plan.

Traffic Volume Forecasts

Background. For this analysis daily traffic volume forecasts have been made for these scenarios:

1. Buildout of RCSP in the Year 2042
2. General Plan EIR Year 2030 (Buildout without Urban Reserves)
3. General Plan EIR Year 2042 (Buildout with Urban Reserves)

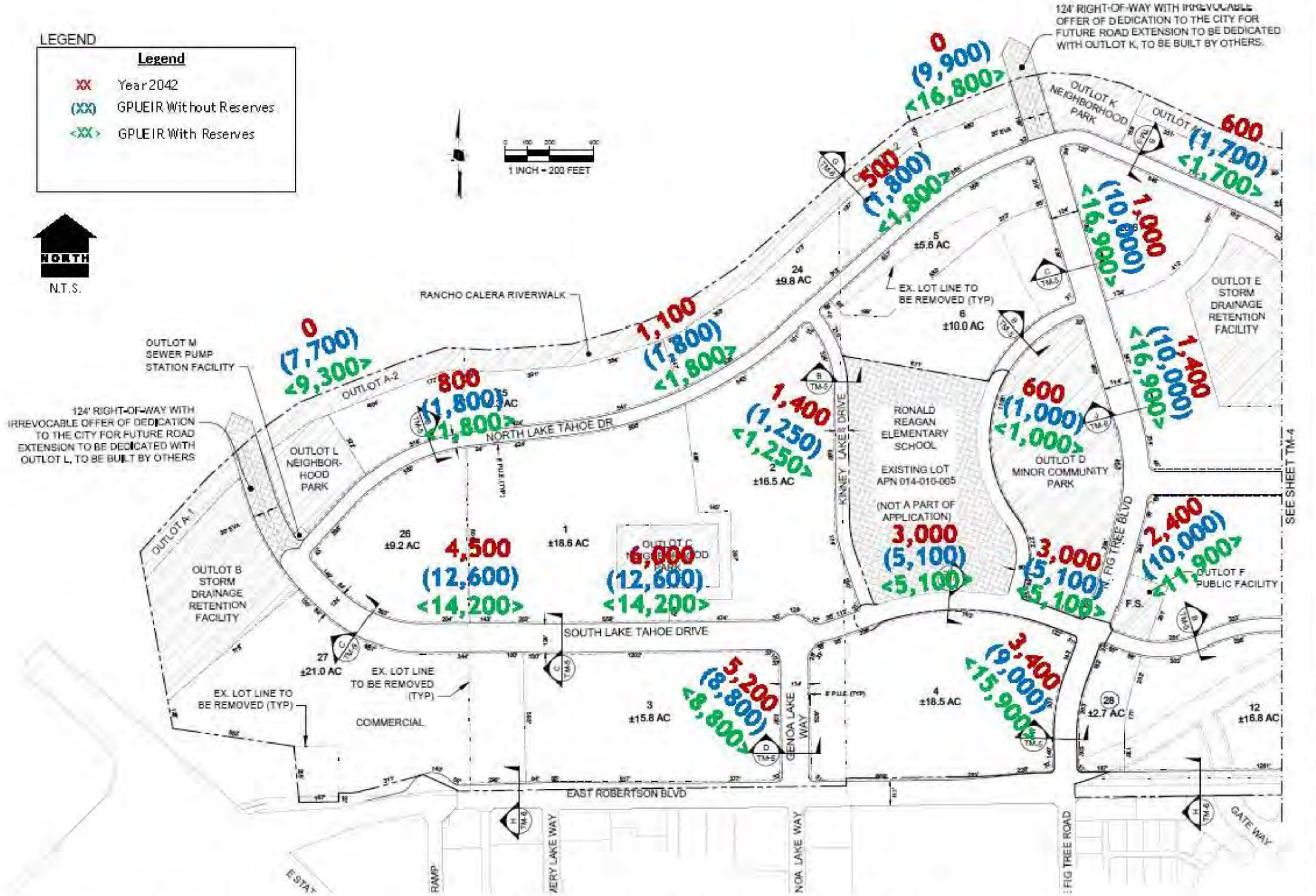
While the horizon years suggested by each scenario may appear similar, the scenarios differ greatly in the level of development assumed in Chowchilla. The MCTC Year 2042 scenario is the Long Term Cumulative Plus RCSP scenario in the impact analysis and is based on regional population-growth trends that are consistent with the most recent Madera County Regional Transportation Plan (RTP). This scenario also includes occupancy of approved projects identified by the City of Chowchilla. However, the overall level of development is far from Build Out of the General Plan. For example, no development north of RCSP is anticipated under this scenario but is included in the GP EIR under conditions with and without development of urbans reserves.

Approach to Creating Forecasts. The traffic model created for the traffic impact analysis was refined to include a level of detail needed for this internal assessment, and daily traffic volumes on internal streets are noted in Figures 10a / 10b and summarized in Table 23.

An alternative approach was taken to account for the volume of traffic anticipated to cross Ash Slough under the two General Plan EIR scenarios. For this analysis the daily traffic volumes identified in the Tables 4 and 5 of the General Plan EIR traffic study[2] on or north of the RCSP were reviewed and the amount of through traffic unrelated to the RCSP was estimated. RCSP trips were reassigned assuming the northerly extensions were in place and identified through traffic was added. The results are shown in Figure 10a and 10b and are also presented in Table 23.

[2] Chowchilla General Plan Update EIR Circulation Element, KDA, 9/28/2009

TABLE 23 INTERNAL DAILY TRAFFIC VOLUMES AND LEVELS OF SERVICE									
Street	**Location**	**Class - lanes**	**Max Threshold (ADT)**	**Year 2042 RCSP Build Out**		**GP EIR 2030 Without Reserves**		**GP EIR With Reserves**	
				ADT	**LOS**	**ADT**	**LOS**	**ADT**	**LOS**
So Lake Tahoe Dr	North of No Lake Tahoe Dr	Arterial - 4	32,300	-	-	7,700	A	9,300	A
	No Lake Tahoe Dr to Genoa Lake Way	Int Art – 2	16,200	6,000	A	12,600	B-C	14,200	C
	Genoa Lake Way to Fig Tree Road	Art – 2	16,200	3,000	A	5,100	A	5,100	A
	Fig Tree Road to Lake McClure Dr	Col – 2	11,700	3,900	A	4,150	A	4,150	A
	Lake McClure Dr to Millerton Way	Col – 2	11,700	2,300	A	2,700	A	2,700	A
	East of Millerton Way	Col – 2	11,700	2,600	A	2.350	A	2,350	A
No Lake Tahoe Dr	So Lake Tahoe Dr to Kinney Lake Dr	Col – 2	11,700	1,100	A	1,800	A	1,800	A
	Kinney Lake Dr to N. Fig Tree Blvd	Col – 2	11,700	500	A	1,800	A	1,800	A
	N. Fig Tree Blvd to Lake McClure Dr	Col – 2	11,700	600	A	1,700	A	1,700	A
	Lake McClure Dr to Millerton Way	Col -2	11,700	500	A	1,050	A	1,050	A
	East of Millerton Way	Col – 2	11,700	1,000	A	1,300	A	1,300	A
Rancho Calera Blvd	Fig Tree Blvd to Lake McClure Dr	Prom – 2	11.700	1,200	A	900	A	900	A
	Lake McClure Dr to Millerton Way	Prom – 2	11,700	800	A	900	A	900	A
Park fronting streets	Around Outlot G	Local – 2	n.a.	300	A	200	A	200	A
Genoa Lake Way	So Lake Tahoe Dr to E. Robertson Blvd	Art 4	32,300	5,200	A	8,800	A	10,400	A
Kinney Lake Dr	No Lake Tahoe Dr to So Lake Tahoe Dr	Col – 2	11,700	1,400	A	1,250	A	1,250	A
Reagan School Dr	So Lake Tahoe Dr to N. Fig Tree Blvd	Col – 2	11,700	600	A	1,000	A	1,000	A
Fig Tree Blvd	North of No Lake Tahoe Dr	Art – 4	32,300	-	-	9,900	A	16,800	A
	No Lake Tahoe Dr to So Lake Tahoe Dr	Int Art – 2	16,200	2,400	A	10,000	A	**16,900**	**E**
	So Lake Tahoe Drive to E. Roberson Blvd	Art – 4	32,300	3,400	A	9.000	A	15,900	A
Lake McClure Dr	No Lake Tahoe Dr to So Lake Tahoe Dr	Prom - 2	11,700	1,800	A	1,600	A	1,600	A
	So Lake Tahoe Dr to E. Robertson Blvd	Prom – 2	11,700	3,200	A	2,200	A	2,200	A
Millerton Way	No Lake Tahoe Dr to So Lake Tahoe Dr	Col – 2	11.700	1,200	A	900	A	900	A
	So Lake Tahoe Dr to E. Robertson Blvd	Col - 2	11,700	4,500	A	3,100	A	3,100	A
XXX ADT daily volume greater than 2,500 ADT XXX ADT daily volume greater than 4,000 ADT									



RCSP INTERNAL DAILY TRAFFIC VOLUMES

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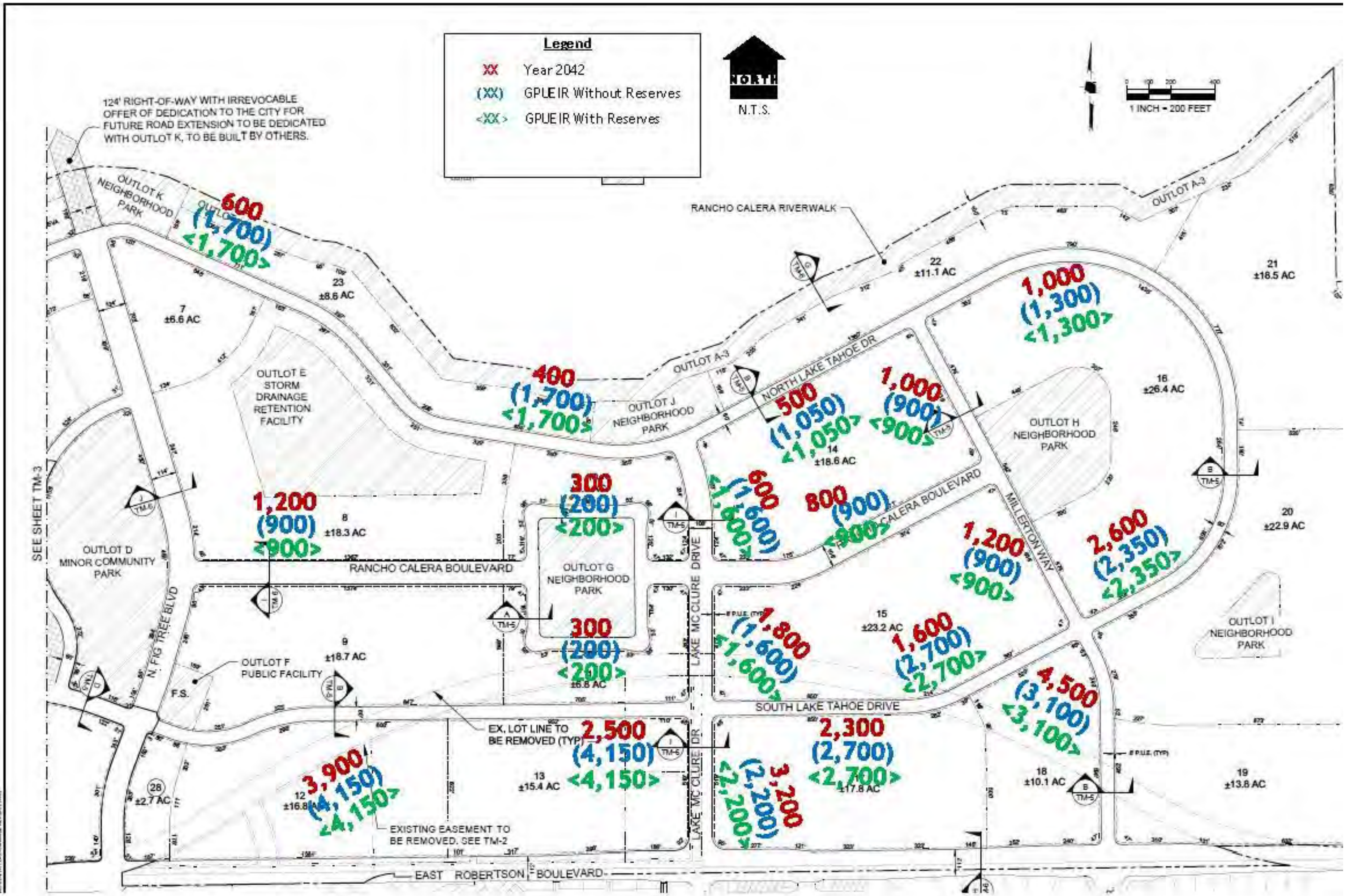
figure 10a



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RCSP INTERNAL DAILY TRAFFIC VOLUMES

figure 10b

Evaluation

Daily Traffic Volumes Assessment – Level of Service. The daily traffic volume forecasts created for each alternative were compared to the City's LOS thresholds to determine whether an adequate LOS will be provided by the proposed layout. As indicated, with one exception the volumes forecast under each scenario will be accommodated by the roads to be constructed in the RCSP. The exception is the segment of Fig Tree Road between North Lake Tahoe Drive and South Lake Tahoe Drive. The Interim two-lane arterial will need to be completed to the 4-lane Arterials standard under the 2042 GP EIR scenario.

Daily Traffic Volumes Assessment – Resident Issues. The projected traffic volumes on collector streets were compared to the 2,500 – 4,000 ADT threshold for maximum volume on streets with direct residential frontage access. While not a formal City policy, this information is offered to suggest those locations where it may be appropriate to avoid direct residential access when individual subdivision maps are prepared.

Without the Ash Slough crossings (i.e., Year 2042 conditions per MCTC) three collector street segments carry volumes in excess of 2,500 ADT and one segment is forecast to carry more than 4,000 ADT.

Under the GP EIR scenarios, two segments exceed 2,500 ADT and one segment exceeds 4,000 ADT.

School Considerations. The RCSP includes a potential new school site located along Fallen Leaf Way in the area north of Ronald Reagan ES and west of Fig Tree Road. The identified site could have access to Kinney Lake Drive and/or to Fallen Leaf Way. While no plan exists for school site access, because the site's frontages are very short, the planned collector street is the minimum section needed to accommodate school functions.

Intersection Design Assessment. The main issue to be considered is whether any of the planed streets need to be widened to accommodate auxiliary lanes at intersections based on the anticipated traffic volumes. Without changes the 60' collector streets will provide a 40-foot section at intersection. It is anticipated that in most cases the approaches would continue to be striped with single inbound and outbound lanes and that on street parking will be allowed except there sight distance may need to be preserved. If necessary, this pavement section can be restriped to accommodate a separate left turn lane at intersection by eliminating on-street parking.

After review of the projected daily traffic volumes and consideration of adjoining land uses it does not appear than any collector street intersection with an arterial will require more lanes than can be provided by limiting on-street parking and striping a left turn lane. No right of way changes are required.

CUMULATIVE EFFECTS

The effects of developing the Amended RCSP have also been considered within the context of short term traffic conditions based on background growth associated with other approved projects, and long term conditions based on the Madera County Transportation Commission (MCTC) Year 2042 regional travel demand forecasting model.

Existing Plus Approved Projects (EPAP) Traffic Conditions Without RCSP

Intersections. Table 24 identifies intersection Levels of Service if the approved projects are developed and improvement are not made to E. Robertson Blvd. As shown, the traffic associated with approved projects will result in three intersections operating with Levels of Service that exceed the minimum LOS D standard.

The **E. Robertson Blvd / Montgomery Lake Way intersection** will operate at LOS F during the a.m. peak hour.

The **E. Robertson Blvd / Genoa Lake Way intersection** will operate at LOS E in the a.m. peak hour.

The **E. Robertson Blvd / Fig Tree Road intersection** is projected to operate at LOS F in the a.m. peak hour.

Queueing. Table 25 identifies the status of 95th percentile queues at signalized E. Robertson Blvd (SR 233) / Chowchilla Blvd intersection. As noted, the addition of traffic from approved projects is projected to lengthen the westbound queue in the a.m. peak hour by 20 feet in an area where current conditions already exceed available storage.

Traffic Signal Warrants Table 26 reviews approach traffic volumes and peak hour traffic signal warrants results at study intersections assuming approved projects are built out. As indicated, the **E. Robertson Blvd / Montgomery Lake Way** intersection would satisfy warrants in the p.m. peak hour. The **E. Robertson Blvd / Fig Tree Road intersection** satisfies warrants in the a.m. peak hour.

Roadway Segment Level of Service. Table 27 identifies daily traffic volumes and segment Levels of Service assuming that approved projects are completed. As shown all roadway segments would operate at a Level of Service that satisfies the minimum LOS D standard.

EPAP Plus Project Build Out Traffic Conditions

Figure 11 presents the sum of current traffic volumes, trips created by the approved projects plus the trips associated with build out of the amended RCSP. These volumes are the basis for the analysis which follows.

Intersections. As shown, Build Out of the amended RCSP along with other approved projects is projected to result in three un-signaled intersections that would operate with a Level of Service in excess of the minimum LOS D standard.

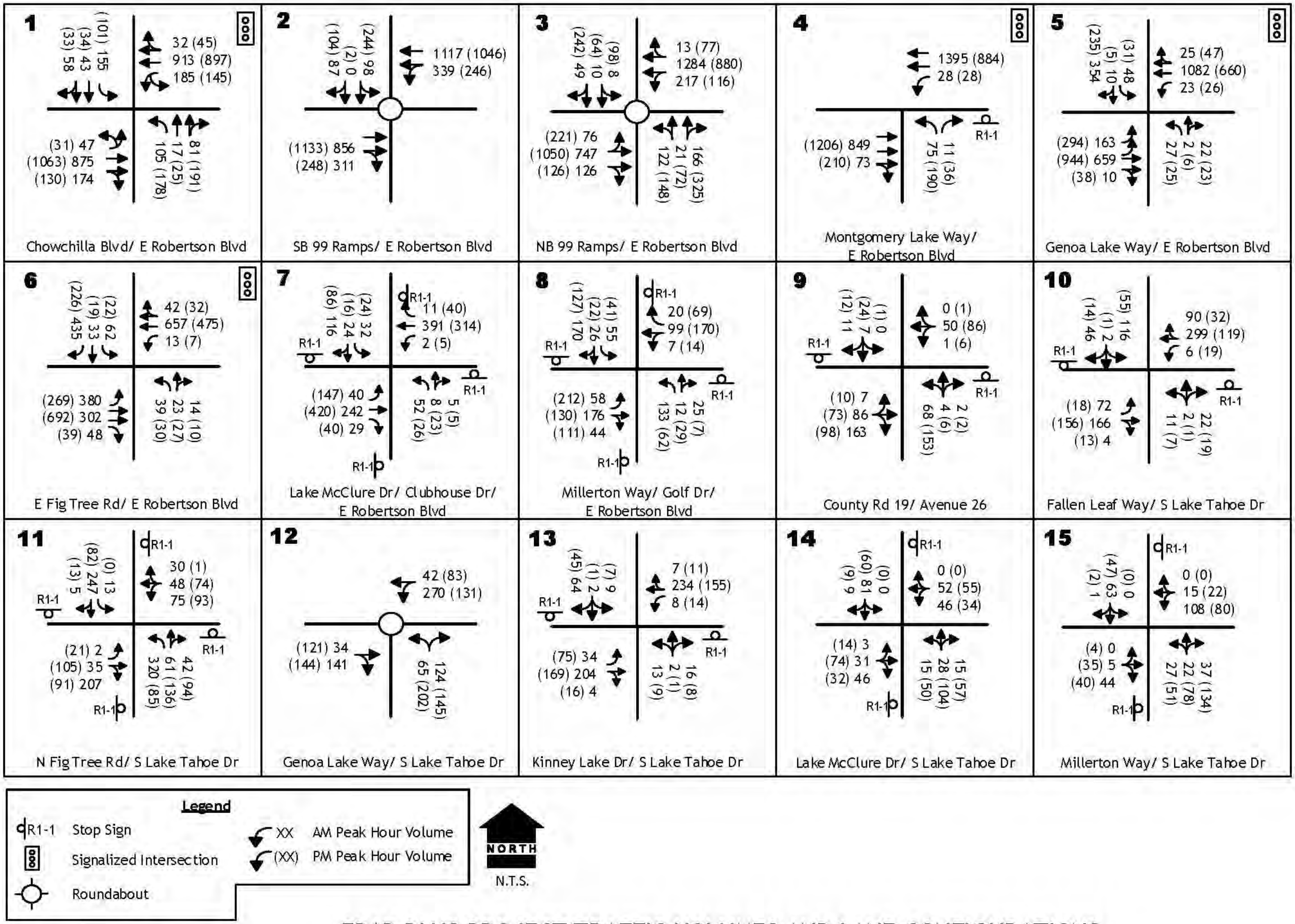
The **S. Lake Tahoe Drive / Fallen Leaf Way intersection** is projected to operate at LOS F in the a.m. peak hour. This location would operate at LOS C with the installation of all-way stop control.

The **Fig Tree Road / South Lake Tahoe Drive intersection** is projected to operate at LOS F in the a.m. peak hour. A traffic signal results in LOS C.

Queueing. Table 25 presents peak period queues that were calculated for the signalized study intersections assuming the combination of trips from Build Out of the amended RCSP and trips from the approved projects. As indicated, the addition of RCSP trip to a condition that also assumes traffic from approved projects appreciably lengthens the 95th percentile queue in the westbound left turn lane at the E. Robertson Blvd / Chowchilla Blvd intersection during both the a.m. and p.m. peak hour. In the a.m. peak hour the queue could extend to the next commercial driveway. The presence of the new roundabout at the SR 99 SB ramps intersection creates the opportunity to address this issue by closing the eastbound left turn lane at the commercial driveway and requiring those left turns to instead continue to the roundabout and make a u-turn back to the driveway. With this change the westbound left turn lane at Chowchilla Blvd can be lengthened.

Traffic Signal Warrants. Table 26 presents minor and major street approach volumes at unsignalized intersections and noted whether these volumes satisfy peak hour signal warrants based on the applicable speed through each location. As indicated, two unsignalized intersection carry volumes that satisfy peak hour warrants during at least one time period. The E. Robertson Blvd / **Clubhouse Drive / Lake McClure Drive intersection** satisfies peak hour warrants during both peak hours. The **E. Robertson Blvd / Golf Drive / Millerton Way intersection** satisfies peak hour warrants in the a.m. peak hour.

Roadway Segment Level of Service. Table 27 identifies Levels of Service on study area roadway segments assuming RCSP is build out and approved projects are completed. As indicated, with improvements planned by the project, all roadways operate with Levels of Service that satisfy the City's minimum LOS D standard.



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EPAP PLUS PROJECT TRAFFIC VOLUMES AND LANE CONFIGURATIONS

5738-001 RA 3/30/2021

figure 11

TABLE 24
EPAP PLUS RCSP BUILDOUT INTERSECTION LEVEL OF SERVICE

		AM Peak Hour				PM Peak Hour			
		Existing Plus Approved Projects		EPAP Plus RCSP		Existing Plus Approved Projects		EPAP Plus RCSP	
Intersection	**Control**	**LOS**	**Average Delay (sec/veh)**	**LOS**	**Average Delay (sec/veh)**	**LOS**	**Average Delay (sec/veh)**	**LOS**	**Average Delay (sec/veh)**
SR 233 (E. Robertson Blvd)/ Chowchilla Blvd	Signal	B	14.2	C	22.1	B	12.3	B	19.3
SR 233 / SB SR 99 ramps	Roundabout	A	6.1	B	12.8	A	5.7	C	20.8
SR 233 / NB SR 99 ramps	Roundabout	B	13.8	B	13.0	A	9.4	C	22.5
E. Robertson Blvd / Montgomery Lake Way Northbound approach	NB Stop	**F**	**93.2**			D	34.1		
	Signal			A	6.0			A	8.1
E. Robertson Blvd / Genoa Lake Way Northbound approach	NB Stop	**E**	**38.9**			C	16.8		
	Signal			D	39.7			C	20.4
E. Robertson Blvd / Fig Tree Road	All-Way Stop	**F**	**62.9**			B	13.4	C	28.6
	Signal			D	53.1			C	23.4
E. Robertson Blvd / Clubhouse Dr / Lake McClure Dr Northbound approach Southbound approach	NB/SB Stop	B -	11.3 -			B -	10.5 -		
	All-way Stop			D	25.9			23.6	C
E. Robertson Blvd / Golf Drive / Millerton Way Northbound approach Southbound approach	NB/SB Stop	B -	10.2 -			B -	10.0 -		
	All-way Stop			B	12.5			B	15.0

BOLD values exceed LOS D. **Highlighted** values are a significant inconsistency with the Chowchilla General Plan minimum LOS standard.

TABLE 24 (continued) EPAP PLUS RCSP BUILDOUT INTERSECTION LEVEL OF SERVICE									
		AM Peak Hour				**PM Peak Hour**			
		Existing Plus Approved Projects		**EPAP Plus RCSP**		**Existing Plus Approved Projects**		**EPAP Plus RCSP**	
Intersection	**Control**	**LOS**	**Average Delay (sec/veh)**	**LOS**	**Average Delay (sec/veh)**	**LOS**	**Average Delay (sec/veh)**	**LOS**	**Average Delay (sec/veh)**
Avenue 16/ Road 19									
Northbound approach	NB/SB Stop	A	9.8	B	11.9	B	10.8	C	20.5
Southbound approach		A	9.2	B	10.0	B	10.2	B	12.1
S. Lake Tahoe Dr / Fallen Leaf Way									
Southbound approach	NB/SB Stop	C	15.0	**F**	**87.7**	A	9.8	B	14.1
Northbound approach		-	-	C	16.7	-	-	B	10.8
	All-way Stop			D	25.9				
S. Lake Tahoe Dr / Fig Tree Road	AWS	C	16.6	**E**	**45.8**	A	7.9	B	14.1
	Signal			C	33.4				
S. Lake Tahoe Dr / Genoa Lake Way	Roundabout			A	5.5			A	5.6
S. Lake Tahoe Dr / Kinney Lake Dr									
Northbound approach	NB.SB Stop			B	13.9			B	12.5
Southbound approach				B	12.1			B	10.3
S. Lake Tahoe Dr / Lake McClure Dr									
Northbound approach	NB/SB Stop			B	10.7			B	13.1
Southbound approach				B	11.4			B	11.4
S. Lake Tahoe Dr / Millerton Way									
Northbound approach	NB/SB Stop			B	10.9			B	12.7
Southbound approach				B	12.2			B	11.6
BOLD values exceed LOS D. **Highlighted** values are a significant inconsistency with the Chowchilla General Plan minimum LOS standard.									

TABLE 25
EPAP PLUS RCSP INTERSECTION QUEUEING

			AM Peak Hour					PM Peak Hour				
			Existing Plus Approved Projects		EPAP Plus RCSP			Existing Plus Approved Projects		EPAP Plus RCSP		
					Volume (vph)					Volume (vph)		
Intersection	**Lane**	**Storage (feet)**	**Volume (vph)**	**95th % Queue (feet)**	**Project Only**	**Total**	**95th % Queue (feet)**	**Volume (vph)**	**95th % Queue (feet)**	**Project Only**	**Total**	**95th Queue (feet)**
SR 233 (E. Robertson Blvd) / Chowchilla Blvd	EB left	120	47	65	0	47	65	31	50	0	31	50
	WB left	75	90	**115**	95	175	**265**	69	85	77	147	**205**
	NB left	340[1]	105	85	0	105	75	178	135	0	178	135
	SB left	200[1]	155	120	0	155	120	101	80	0	101	80
E. Robertson Blvd / Montgomery Lake Way	WB left	300	8	<25	20	28	30	13	<25	15	28	40
	NB left	300	68	100	7	75	40	174	95	16	190	140
E. Robertson Blvd / Genoa Lake Way	EB left	400	0	<25	163	161	105	0	<25	294	294	215
	WB Left	300	20	<25	13	23	35	17	<25	9	26	45
	NB left	280	37	40	0	27	<25	25	<25	0	25	45
	SB left	Unknown	0	<25	48	48	65	0	<25	33	33	55
E. Robertson Blvd / Fig Tree Road	EB left	460	326	490	53	380	250	62	100	207	269	340
	WB Left	300	13	255	0	13	25	7	50	0	7	20
	NB left	50	35	<25	5	40	40	22	<25	9	30	40
	WB left	unknown	22	85	39	61	80	11	<25	9	20	30

[1] lane continues as TWLT lane. **BOLD** values exceed available storage by 25 feet. **HIGHLIGHTED** values are a significant safety impact

TABLE 26
EPAP PLUS RCSP INTERSECTION PEAK HOUR TRAFFIC SIGNAL WARRANTS

		AM Peak Hour				PM Peak Hour			
		Existing Plus Approved Project		EPAP Plus RCSP		Existing Plus Approved Projects		EPAP Plus RCSP	
Intersection	**Speed Criteria**	**Minor Vol Major Vol**	**Warrant Met?**	**Minor Vol Major Vol**	**Warrant Met?**	**Minor Vol Major Vol**	**Warrant Met?**	**Minor Vol Major Vol**	**Warrant Met?**
E. Robertson Blvd / Montgomery Lake Way	>40 mph	70 1,027	No			188 808	**Yes**		
E. Robertson Blvd / Genoa Lake Way	>40 mph	43 1,099	No			32 751	No		
E, Robertson Blvd / Fig Tree Road	>40 mph	230 922	**Yes**			112 617	No		
E. Robertson Blvd / Clubhouse Drive / Lake McClure Drive	>40 mph	53 325	No	177 715	**Yes**	24 330	No	126 966	**Yes**
E. Robertson Blvd / Golf Drive / Millerton Way	>40 mph	157 175	No	251 404	No	68 254	No	190 706	**Yes**
Avenue 26 / Road 19	>40 mph	38 119	No	74 307	No	36 118	No	163 276	No
S Lake Tahoe Drive / Fallen Leaf Way	<40 mph	36 653	No	162 599	No	28 153	No	69 354	No
S. Lake Tahoe Drive / Fig Tree Road	<40 mph	229 378	No	238 689	No	70 110	No	216 409	No
S. Lake Tahoe / Kinney Lake Drive	<40 mph			75 400	No				No
S. Lake Tahoe Drive / Lake McClure Drive	<40 mph			90 182	No			128 286	No
S. Lake Tahoe Drive / Millerton Way	169			86 169	No				No

TABLE 27
EPAP PLUS AMENDED RCSP ROADWAY SEGMENT LEVEL OF SERVICE

Street	Location	Classification	Lanes	Existing Plus Approved Projects			Existing Plus RCSP		
				Daily Volume			Daily Volume		
				Approved	Total	LOS	RCSP only	Total	LOS
SR 233	Across SR 99	Arterial	4	1,947	14,566	C	12,940	27,630	C
E. Robertson Blvd	NB SR 99 to Montgomery Lake Way	Arterial	2	2,064	12,153	A			
			4				12,510	24,910	B
	Montgomery Lake Way to Fig Tree Road	Arterial	2	1,364	8,651	A			
			4				12,540	21,470	A
	Fig Tree Road to Clubhouse Drive	Arterial	2	476	4,229	A			
			2				6,370	10,470	A
Avenue 26	East of Clubhouse Drive	Arterial	2	474	3,431	A	4,670	8,000	A
Fig Tree Road	E. Robertson Blvd to So Lake Tahoe Drive	Arterial	2	300	1,821	A	3,240	5,380	A
So. Lake Tahoe Dr	Fallen Leaf Way to Fig Tree Road	Major Collector	2	300	1,821	A	1,540	3,680	A

Year 2042 Cumulative Analysis

Approach. The long term cumulative analysis is intended to identify conditions in the Year 2042 with and without proposed amendment to the RCSP. For this analysis the Cumulative No Project condition assumes that the approved RCSP is fully occupied, along with previously identified approved projects and other growth assumed from Year 2020 to Year 2042 in the MCTC traffic model. The effects of regional circulation system improvements anticipated by the Year 2042 are also reflected.

Technical Approach. Review of the MCTC traffic model land use base indicated that little growth was anticipated by the Year 2042 east of SR 99 with the exception of the identified approved projects. Initial review of traffic model results indicated that in most locations MCTC based projections were lower than EPAP plus project volumes. As a result, the EPAP plus project traffic volumes represent the starting point for creation of long term forecasts, and MCTC based forecast were used to identify additional volume changes to partial turning movements that were not attributable to east side development.

The following steps were taken to identify long term cumulative traffic volumes:

1. The approved and proposed RCSP land uses were added to the Year 2042 MCTC traffic model.
2. The resulting a.m., p.m. and daily traffic volumes forecasts were reviewed, and the daily forests were selected as the best representation of future growth.
3. Year 2042 traffic volumes were compared to the Base Year 2020 model projects and growth rate on individual intersection approaches.
4. The turning movements on intersection approach were multiplied by the growth rate and the results were adjusted to balance using the "Furness" techniques from the Transportation Research Board's (TRB) NCHRP Report 255, *Highway Traffic Data for Urbanized Area Project Planning and Design.*
5. MCTC based results were compared to EPAP plus Approved RCSP and to EPAP plus Proposed Project peak hour turning movement volumes, and locations where MCTC forecasts were large were identified. To provide a conservative "worst case" assessment, EPAP forecasts were not reduced to reflect lower MCTC based projections. Key locations where larger volumes were identified included:
    * turns onto and off of Chowchilla Blvd south of E. Robertson Blvd
    * eastbound traffic turning to northbound SR 99.
6. EPAP plus Approved NCTC and plus Proposed Project volumes were adjusted manually to reflect these differences and the results were rounded.

Traffic Volumes. Figures 12 and 13 present Year 2042 a.m. / p.m. peak hour volumes with the Approved RCSP and with the Proposed Amendment.

Conditions with Approved RCSP. The text which follows describes conditions if the approved RCSP is built out in the Year 2042.

Intersection Levels of Services. Table 28 identifies intersection Levels of Service in Year 2042 with the Approved RCSP and with the Proposed Amendment. As shown, if the Approved RCSP is built out, then all two intersections are projected to operate with Levels of Service that exceed the minimum LOS D standard. These include:

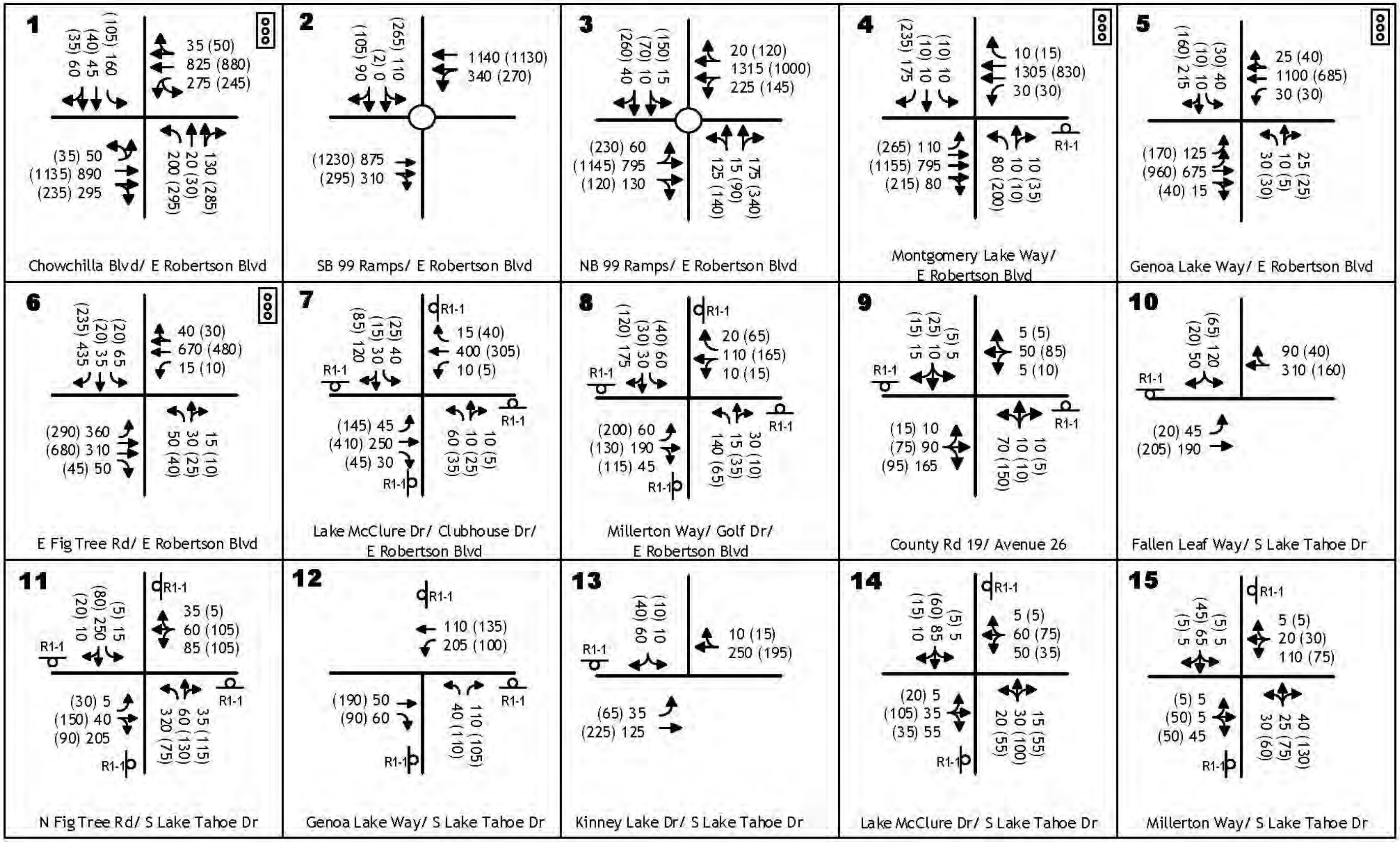
- **S. Lake Tahoe Dr / Fallen Leaf Way**: LOS F in the a.m. peak hour
- **S. Lake Tahoe Dr / Fig Tree Road** LOS F in the a.m. peak hour

Queueing. Table 29 identifies the status of 95th percentile queues at signaled intersections in the Year 2042 with the Approved RCSP and with the proposed Amendment. If the Approved RCSP is built out in 2042 then the combination of RCSP and other growth will result in appreciably longer 95th percentile queues in the westbound left turn lane at the **E. Robertson Blvd / Chowchilla Blvd intersection** during both the a.m. and p.m. peak hour. Projected queue lengths do not exceed available storage at other intersections.

Traffic Signal Warrants Table 30 reviews approach traffic volumes and peak hour traffic signal warrants results at study intersections in Year 2042 with the approved RCSP and with the proposed amendment. As shown, if the Approved RCSP is built out, then two unsignalized intersections will carry peak hour volumes that reach the level satisfying traffic signal warrants under high speed criteria:

- **E. Robertson Blvd / Clubhouse Dr / Lake McClure Dr**
- **E. Robertson Blvd / Golf Drive / Millerton Way (PM Only)**

Roadway Segment Level of Service. Table 31 identifies Year 2042 delay traffic volumes and segment Levels of Service with the Approved RCSP and with the proposed amendment. As shown, if the Approved RCSP is built out, all study roadways will operate with a Level of Service that satisfies the City's minimum LOS D standard.



Legend

R1-1 Stop Sign

Signalized Intersection

Roundabout

XX AM Peak Hour Volume

(XX) PM Peak Hour Volume

NORTH

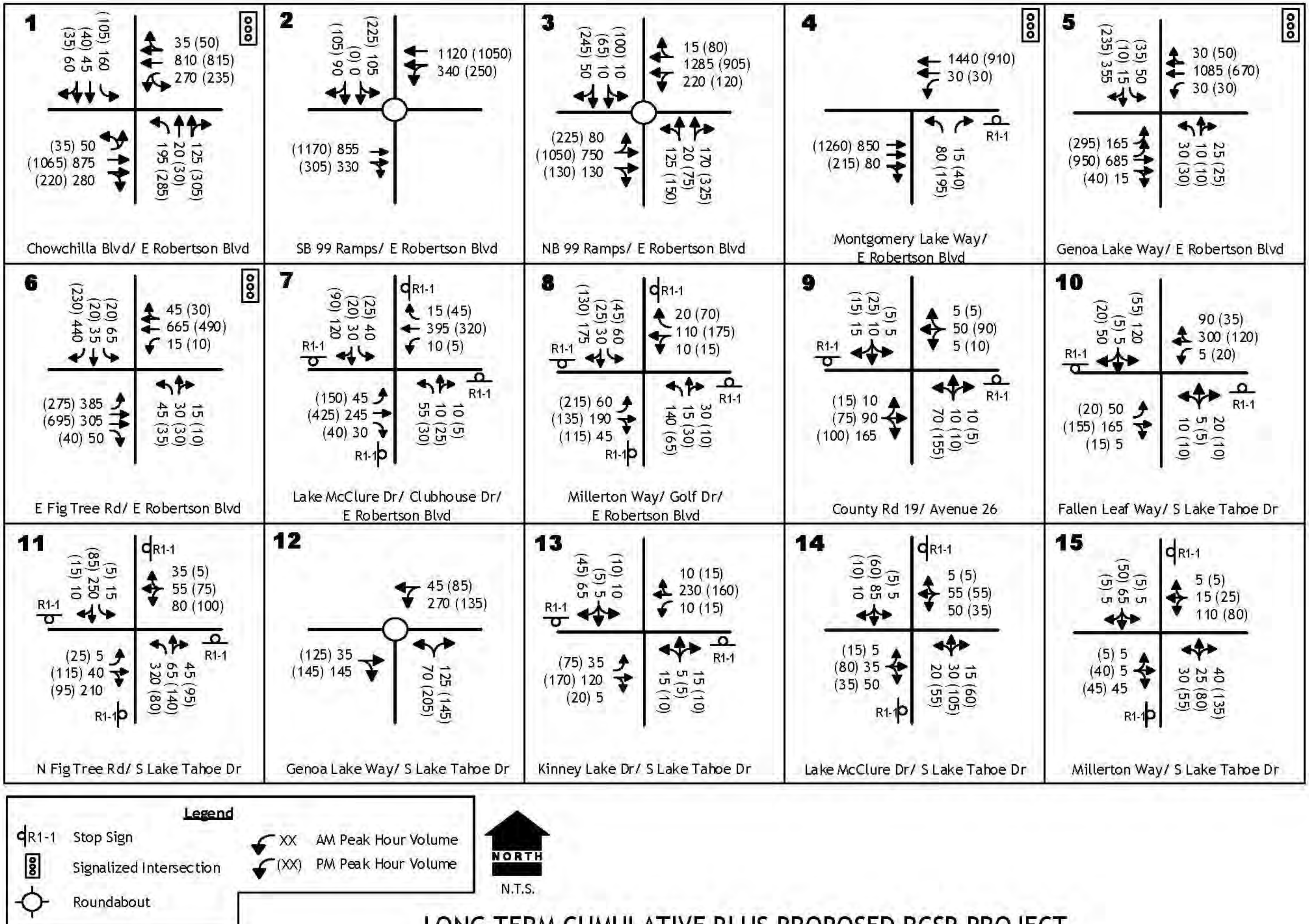
N.T.S.

LONG TERM CUMULATIVE PLUS APPROVED RCSP PROJECT TRAFFIC VOLUMES AND LANE CONFIGURATIONS

KD Anderson & Associates, Inc.
Transportation Engineers

5738-001 RA 3/30/2021

figure 12



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5738-001 RA 3/30/2021

LONG TERM CUMULATIVE PLUS PROPOSED RCSP PROJECT
TRAFFIC VOLUMES AND LANE CONFIGURATIONS

figure 13

TABLE 28
YEAR 2042 WITH AMENDED RCSP INTERSECTION LEVEL OF SERVICE

Intersection	Control	AM Peak Hour				PM Peak Hour			
		With Approved RCSP		With Proposed RCSP		With Approved RCSP		With Proposed	
		LOS	Average Delay (sec/veh)	LOS	Average Delay (sec/veh)	LOS	Average Delay (sec/veh)	LOS	Average Delay (sec/veh)
SR 233 (E. Robertson Blvd)/ Chowchilla Blvd	Signal	D	45.7	D	43.3	D	36.6	D	33.6
SR 233 / SB SR 99 ramps	Roundabout	B	13.5	B	13.3	A	5.7	C	24.6
SR 233 / NB SR 99 ramps	Roundabout	B	13.3	B	13.3	B	9.4	C	23.7
E. Robertson Blvd / Montgomery Lake Way	Signal	B	10.4	A	6.3	B	12.0	B	8.3
E. Robertson Blvd / Genoa Lake Way	Signal	C	23.1	D	41.4	C	16.7	C	21.1
E. Robertson Blvd / Fig Tree Road	Signal	D	52.2	**E**	**56.0**	C	28.3	C	25.3
	mitigated			D	37.4			C	21.3
E. Robertson Blvd / Clubhouse Dr / Lake McClure Dr	All-Way Stop	D	31.7	D	29.6	22.6	C	D	25.7
E. Robertson Blvd / Golf Drive / Millerton Way	All-Way Stop	B	12.9	B	12.9	14.7	B	C	15.7
Avenue 26/ Road 19									
Northbound approach	NB/SB Stop	B	12.5	B	12.5	C	23.3	D	25.0
Southbound approach		B	10.5	B	10.5	B	12.5	B	12.7

BOLD values exceed LOS D. **Highlighted** values are a significant inconsistency with the Chowchilla General Plan minimum LOS standard.

TABLE 28 (continued) YEAR 2042 WITH AMENDED RCSP INTERSECTION LEVEL OF SERVICE									
		AM Peak Hour				PM Peak Hour			
		With Approved RCSP		With Proposed RCSP		With Approved RCSP		With Proposed	
Intersection	Control	LOS	Average Delay (sec/veh)	LOS	Average Delay (sec/veh)	LOS	Average Delay (sec/veh)	LOS	Average Delay (sec/veh)
S. Lake Tahoe Dr / Fallen Leaf Way									
Southbound approach	NB/SB Stop	**F**	**56.7**	**F**	**72.0**	C	15.4	B	14.1
Northbound approach		-	-	C	16.4	-	-	B	12.2
	All-way Stop			D	26.5			A	9.7
S. Lake Tahoe Dr / Fig Tree Road	All-way Stop	**F**	**53.3**	**F**	**51.8**	C	17.8	C	15.2
	signal			D	35.6				
S. Lake Tahoe Dr / Genoa Lake Way	AWS	B	10.9			A	10.0		
	Roundabout			A	5.1			A	5.8
S. Lake Tahoe Dr / Kinney Lake Dr									
Northbound approach	NB/SB Stop	-	-	B	13.7	-	-	B	12.9
Southbound approach		B	11.9	B	12.2	B	10.6	B	11.0
S. Lake Tahoe Dr / Lake McClure Dr									
Northbound approach	NB/SB Stop	B	11.2	B	11.1	B	14.6	B	13.6
Southbound approach		B	12.0	B	11.8	B	12.3	B	11.8
S. Lake Tahoe Dr / Millerton Way									
Northbound approach	NB/SB Stop	B	11.3	B	11.3	B	13.3	B	13.2
Southbound approach		B	12.5	B	12.5	B	12.1	B	12.1
BOLD values exceed LOS D. **Highlighted** values are a significant inconsistency with the Chowchilla General Plan minimum LOS standard.									

TABLE 29
YEAR 2042 WITH RCSP INTERSECTION QUEUEING

Intersection	Lane	Storage (feet)	AM Peak Hour: With Approved RCSP: Volume (vph)	AM Peak Hour: With Approved RCSP: 95th % Queue (feet)	AM Peak Hour: With Proposed RCSP: Volume (vph): Project Only	AM Peak Hour: With Proposed RCSP: Volume (vph): Total	AM Peak Hour: With Proposed RCSP: 95th % Queue (feet)	PM Peak Hour: With Approved RCSP: Volume (vph)	PM Peak Hour: With Approved RCSP: 95th % Queue (feet)	PM Peak Hour: With Proposed RCSP: Volume (vph): Project Only	PM Peak Hour: With Proposed RCSP: Volume (vph): Total	PM Peak Hour: With Proposed RCSP: 95th Queue (feet)
SR 233 (E. Robertson Blvd) / Chowchilla Blvd	EB left	120	50	70	0	50	70	35	55	0	35	55
	WB left	75	275	**425**	210	270	**415**	245	**360**	170	235	**345**
	NB left	340[1]	200	160	0	195	155	200	235	0	285	225
	SB left	200[1]	160	130	0	160	130	105	90	0	105	90
E. Robertson Blvd / Montgomery Lake Way	EB left	300	110	160	0	0		265	310	0	0	0
	WB left	300	30	40	20	30	40	30	40	15	30	40
	NB left	50	80	70	7	80	70	200	145	16	195	140
	SB left	unknown	10	<25	0	0		10	<25	0	0	0
E. Robertson Blvd / Genoa Lake Way	EB left	400	125	75	161	165	110	170	110	287	290	220
	WB Left	300	30	50	19	30	50	30	50	9	30	50
	NB left	180	30	50	0	30	50	30	50	0	30	50
	SB left	unknown	40	60	48	50	70	30	50	33	35	55
E. Robertson Blvd / Fig Tree Road	EB left	460	360	420	54	385	460	290	375	210	275	350
	WB Left	300	15	35	0	15	35	10	<25	0	10	<25
	NB left	unknown	50	90	5	45	80	40	50	9	35	45
	WB left	unknown	65	95	39	65	95	20	30	9	20	30

[1] lane continues as TWLT lane. **BOLD** values exceed available storage by 25 feet. **HIGHLIGHTED** values are a significant safety impact

TABLE 30
YEAR 2042 INTERSECTION PEAK HOUR TRAFFIC SIGNAL WARRANTS

Intersection	Speed Criteria	AM Peak Hour				PM Peak Hour			
		With Approved RCSP		With Proposed RCSP		With Approved RCSP		With Proposed RCSP	
		Minor Vol / Major Vol	Warrant Met?	Minor Vol / Major Vol	Warrant Met?	Minor Vol / Major Vol	Warrant Met?	Minor Vol / Major Vol	Warrant Met?
E. Robertson Blvd / Clubhouse Drive / Lake McClure Drive	>40 mph	190 / 750	**Yes**	190 / 740	**Yes**	125 / 950	**Yes**	135 / 985	**Yes**
E. Robertson Blvd / Golf Drive / Millerton Way	>40 mph	265 / 435	No	265 / 435	No	190 / 690	**Yes**	200 / 725	**Yes**
Avenue 26 / Road 19	>40 mph	90 / 325	No	90 / 325	No	165 / 285	No	170 / 295	No
S Lake Tahoe Drive / Fallen Leaf Way	<40 mph	170 / 635	no	175 / 615	No	85 / 425	No	80 / 350	No
S. Lake Tahoe Drive / Fig Tree Road	<40 mph	250 / 690	no	255 / 705	No	320 / 485	No	320 / 405	No
S. Lake Tahoe / Kinney Lake Drive	<40 mph	70 / 420	No	80 / 410	No	50 / 500	No	60 / 450	No
S. Lake Tahoe Drive / Lake McClure Drive	<40 mph	100 / 210	No	100 / 200	No	160 / 290	No	130 / 300	No
S. Lake Tahoe Drive / Millerton Way	<40 mph	95 / 190	no	95 / 185	No	105 / 320	No	110 / 330	No

TABLE 31 YEAR 2042 ROADWAY SEGMENT LEVEL OF SERVICE									
				With Approved RCSP			With Amended RCSP		
				Daily Volume			Daily Volume		
Street	Location	Classification	Lanes	Approved	Total	LOS	RCSP only	Total	LOS
SR 233	Across SR 99	Arterial	4	14,030	29,000	D	12,670	28,000	C
E. Robertson Blvd	NB SR 99 to Montgomery Lake Way	Arterial	4	15,090	27,750	C	12,510	25,000	B
	Montgomery Lake Way to Fig Tree Road	Arterial	4	10,160	19,250	A	12,540	21,500	B
	Fig Tree Road to Clubhouse Drive	Arterial	2	6,300	10,500	A	6,370	10,500	A
Avenue 26	East of Clubhouse Drive	Arterial	2	4,560	8,000	A	4,670	8.000	A
Fig Tree Road	E. Robertson Blvd to So Lake Tahoe Drive	Arterial	2	2,560	4,500	A	3,240	5,500	A
So. Lake Tahoe Dr	Fallen Leaf Way to Fig Tree Road	Major Collector	2	1,620	3,750	A	1,540	3,750	A

Conditions with Proposed Amended RCSP. The text which follows describes conditions if the amended RCSP is built out in the Year 2042.

Intersection Levels of Services. As shown in Table 28, if the Approved RCSP is built out, then the four intersections that are projected to operate with Levels of Service that exceed the minimum LOS D standard with the Approved RCSP would continue to do so. One additional intersection will operate with a Level of Service in excess of LOS D.

The **E. Robertson Blvd /Fig Tree Road intersection** is projected to operate at LOS E in the a.m. peak hour. Adding a southbound right turn overlap phase to the signal would allow concurrent southbound right and eastbound left turns, and LOS D would result.

The two locations with similar effects based on LOS include:

The **S. Lake Tahoe Dr / Fallen Leaf Way intersection** is projected to operate at LOS F in the a.m. peak hour. An all-way stop would operate at LOS C.

The **S. Lake Tahoe Dr / Fig Tree Road intersection** will operate at LOS F in the a.m. peak hour. A traffic signal would ultimately be required at this location to accommodate the combination of overall automobile traffic and the pedestrian activity associated with operating two schools. A traffic signal would deliver LOS D.

Queueing. As shown in Table 29 if the Amended RCSP is built out in 2042 then the combination of RCSP and other growth will result in slightly shorter 95th percentile queues in the westbound left turn lane at the **E. Robertson Blvd / Chowchilla Blvd intersection** during both the a.m. and p.m. peak hour, as compared to the approved RCSP. However, projected queue lengths would still exceed available storage, and the improvements describe earlier for this location would remain necessary. Storage at all other locations can accommodate projected 95th percentile queues.

Traffic Signal Warrants. As shown in Table 30, if the Amended RCSP is built out, then the same two unsignalized intersections identified with the approved RCSP will carry peak hour volumes that reach the level satisfying traffic signal warrants under high speed criteria:

- **E. Robertson Blvd / Clubhouse Dr / Lake McClure Dr**
- **E. Robertson Blvd / Golf Drive / Millerton Way**

Roadway Segment Level of Service. As shown in Table 31 if the Amended RCSP is built out, the daily traffic volumes on study area roadways will generally be lower than Year 2042 projections with the approved RCSP, but all study roadways will operate with a Level of Service that satisfies the City's minimum LOS D standard.

IMPACTS / EFFECTS SUMMARY / MITIGATION

The text which follows summarizes the project's effects on traffic operations and improvement requirements under each development scenario.

Existing Conditions

Traffic Operating Conditions. Current background traffic conditions based on recent traffic volume counts indicate that with one exception all intersections in the study area operating with peak hour Levels of Service that satisfy the City of Chowchilla's minimum LOS D standard. The exception is the ***SR 233 (E. Robertson Blvd / SR 99 SB ramps intersection***, which operates at LOS F during the a.m. and p.m. peak hour. The peak hour 95th percentile queue in the westbound left turn lane at the E. Robertson Blvd / Chowchilla Blvd intersection exceeds available turn lane storage. Peak hour traffic signal warrants are satisfied at both E. Robertson Blvd / SR 99 ramps intersections, at the E. Robertson Blvd / Montgomery Lake Way intersection (p.m. peak hour only) and at the E. Robertson Blvd / Fig Tree Road intersection (a.m. peak hour only). The pending reconstruction of the SR 99 / SR 233 interchange will address these issues at that location, but other improvements are not immediately planned.

Alternative Transportation Modes. Facilities for alternative transportation modes have been identified. Sidewalks exist on the south side of E. Robertson Blvd and north of E. Robertson Blvd on the existing segments of S. Lake Tahoe Drive and Fig Tree Road. Crosswalks are striped at the E. Robertson Blvd / Fig Tree Road intersection. While sidewalks are limited at the SR 99 / SR 233 interchange, the pending reconstruction project will include sidewalks. Class 2 bike lanes exist on the south side of E. Robertson Blvd east of Montgomery Lake Way. The *Madera County Connection (MCC)'s* Chowchilla – Fairmead route makes five runs on weekdays and links the community to the Downtown Madera Intermodal terminal with a stop at Save Mart Supermarket at 1225 E. Robertson Blvd across from the project site. The City of Chowchilla operates a local curb-to-curb, demand-response dial-a-ride bus transit service commonly called "The City BUS" in the city limits of Chowchilla through Chowchilla Area Transit (CATX) weekdays except on official holidays.

Traffic Operations near Ronald Reagan ES. While the Level of Service measured over the a.m. and p.m. peak hours at intersection near the school is within the minimum LOS D standard, because regular access to Ronald Reagan ES is limited to S. Lake Tahoe Drive and Fig Tree Road, congestion and delays occur near the school during morning drop-off and afternoon loading peak periods. These conditions are common near most elementary schools where the flow of traffic is governed by factors such as the flow rate through school drop-off areas, pedestrian activity and the amount of short term storage available for parents waiting at the end of the school day, rather than the actual traffic volume and the theoretical capacity of streets and traffic control devices. In this case Ronald Reagan ES is at the end of a cul-de-sac, which further complicates local circulation.

Existing Plus Phase 1 Impacts

Project Overview. The initial Phase 1 would develop 140 residences at a site on the northeast corner of the E. Robertson Blvd / Fig Tree Road intersection and extend easterly. Phase 1 is projected to generate 1,322 daily vehicle trips (½ inbound and ½ outbound), with 104 trips in the a.m. peak hour and 139 trips in the p.m. peak hour. Access would occur at Fig Tree Road and Lake McClure Drive via S. Lake Tahoe Drive.

Impacts / Effects Overview. The Phase 1 project would have the following impacts / traffic operational effects.

Less than Significant Impacts. The Phase 1 project does not result in significant impacts under CEQA and does not cause a significant effect under City of Chowchilla General Plan Policies in terms of operating Level of Service at intersections or on roadway segments. The impacts of residential development in the amended RCSP based on VMT are not significant. Phase 1 may exacerbate current deficiencies at the SR 99 / SR 233 interchange on an interim basis if Phase 1 is occupied before completion of the pending interchange reconstruction project. Phase 1 is projected to cause the a.m. peak hour Level of Service to deteriorate to LOS E at the E. Robertson Blvd / Montgomery Lake Way, but this short-term condition can be accepted under the General Plan. Phase 1 does not result in any appreciable change to queueing at signalized intersections, nor does Phase 1 result in additional locations where peak hour traffic signal warrants may be satisfied. As a result, mitigation/improvements are not required to address a significant effects identified under these metrics. Impacts to project area bicyclists and transit users are not significant.

While not an impact that requires improvements based on Level of Service, peak period traffic conditions near Ronald Reagan ES could become more congested with Phase 1. These conditions could be improved by creating additional vehicular access to the school. At build out the RCSP circulation system provides additional access through the northerly extension of Fallen Leaf Way to Fig Tree Road, the construction of Kinney Lake Drive north to N. Lake Tahoe Drive and the extension of S. Lake Tahoe Drive to Genoa Lake Way. In the near term, S. Lake Tahoe Drive and Genoa Lake Way could be completed, either as partial or full streets, to provide a second route to and from the school and reduce congestion and increase safety.

Impact to Pedestrians. Phase 1 can be expected to result in school age pedestrians who would walk to and from Ronald Reagan ES. Because sidewalks already connect the site with the E. Robertson Blvd / Fig Tree Road intersection and will be constructed within Phase 1, the project's impact during non-school hours is not significant. However, during the periods before and after school uncontrolled pedestrian activity at the intersections near Ronald Reagan ES could increase conflicts between vehicles and pedestrians. This is a significant safety impact.

Mitigation 1. To resolve this issue, a designated Safe Route to School will need to be identified for the project and implemented in consultation with CUSD site representatives and City staff. The designated route would direct students to preferred crossings but could also be accompanied by traffic control devices or adult crossing guards as needed. The project proponent shall be responsible for creating and implementing the Safe Routes to School plan for Phase 1.

<u>Existing Plus Amended RCSP Conditions</u>

Project Overview. Build out of the Amended RCSP involves occupancy of 2,042 residences and development of 308.4 ksf of commercial uses. A site for a second CUSD school that would otherwise be occupied by 50 residences has been identified. Without the school, the amended RCSP generates a gross total of 31,114 daily trips beyond those currently generated by Ronald Reagan ES. Of that total 1,787 trips occur in the a.m. peak hour and 3,113 are generated in the p.m. peak hour. Not all of that traffic would be external to the plan area due to interaction between commercial, residential and educational uses. With the addition of the second CUSD school, the gross total increases to 32,163 daily, 2,186 a.m. peak hour and 3,191 p.m. peak hour trips.

Proposed Improvements. The analysis of RCSP build out conditions assumes implementation of the pending SR 99 / SR 233 interchange reconstruction project as well as completion of planned improvements to E. Robertson Blvd. Those improvements would be installed incrementally in response to the results of the "triggers analysis" which matches residential and commercial development levels to incremental improvements and is presented later in his report.

Impact Overview. The Build Out of RCSP would have the following impacts / effects.

Less than Significant Impacts / Effects. The RCSP project does not result in significant impacts under CEQA based on VMT and has no significant traffic operational effects under City of Chowchilla guidelines in terms of operating Level of Service on roadway segments. Impacts to project bicyclists and transit users are not significant.

Effects on Intersection LOS / Signal Warrants. Under Existing Plus Amended RCSP conditions, Build Out is not projected to result in any intersection operating with Level of Service that exceed the City's minimum LOS D standard, and the project is consistent with General Plan policies.

Projected traffic volumes at the **E. Robertson Blvd / Clubhouse Drive / McClure Lake Drive intersection** would satisfy peak hour signal warrants during the a.m. and p.m. peak hour. The volumes at the **E. Robertson Blvd / Golf Drive / Millerton Way intersection** would satisfy peak hour warrants during the p.m. peak hour. However, because the majority of minor approach traffic simply turns right onto E. Robertson Blvd, traffic signals are not needed to meet minimum City LOS standards, and traffic signals are not recommended.

Queueing Impacts. RCSP traffic can be accommodated by the turn lane storage available at all locations with one exception. The available storage in the **Chowchilla Blvd left turn lanes on E. Robertson Blvd** is relatively short, and in the a.m. and p.m. peak hour the 95th percentile queues in the westbound left turn lane exceeds the storage length by 190 and 120 feet, respectively. This is a significant safety issue.

Measures to address this issue were investigated. The presence of the new roundabout at the SR 99 SB ramps intersection as being pursued by Caltrans and the City creates the opportunity to address this issue by closing the eastbound left turn lane at the commercial driveway and requiring those left turns to instead continue to the roundabout and make a u-turn back to the driveway. With this change the westbound left turn lane at Chowchilla Blvd can be lengthened.

Mitigation 2. Because the project exacerbates an existing safety deficiency the project proponents should contribute their fair share to the cost of traffic control changes and median medication to lengthen the westbound left turn lane at the SR 233 (E. Robertson Blvd) / Chowchilla Blvd intersection.

Impacts to Pedestrians. Build Out of RCSP can be expected to result in regular pedestrian activity than will be accommodated by proposed on-site facilities, by sidewalks included in project improvements to E. Robertson Blvd and by facilities incorporated into the SR 99 / SR 233 interchange reconstruction project. School age pedestrian will want to and from Ronald Reagan ES and the possible future CUSD school. During the periods before and after school uncontrolled pedestrian activity at the intersections near area schools could create conflicts between vehicles and pedestrians. To resolve this issue, a Safe Routes to School Plan for the overall RCSP area will need to be identified and implemented in consultation with CUSD site representatives and City staff. The plan will designate routes to direct students to preferred crossings and could be accompanied by traffic control devices or adult crossing guards as needed.

Mitigation 3. A Safe Route to School Plan shall be created for the overall RCSP and implemented in consultation with CUSD site representatives and City staff. The plan will designate applicable routes and could also be accompanied by traffic control devices or adult crossing guards as needed. The project proponent shall be responsible for creating and implementing the Safe Routes to School Plan.

Impacts to Transit. Implementation of the RCSP may result in residents who elect to use MCC's services, and transit routes and stops specific to the RCSP may eventually be needed.

Mitigation 4: While any decisions regarding MCC routes and stops would be made in consultation with MCC and City of Chowchilla staff, transit stops should be constructed by the project proponents at key locations in and adjoining RCSP as the community is built out, and transit routes / facilities should be contemplated as RCSP's commercial areas are developed.

Existing Plus Other Approved Projects (EPAP) without RCSP Conditions

Overview. City of Chowchilla staff identified seven residential projects that are approved where development could occur in the near term. A total of 1,363 residential units were identified at various locations throughout the city. These projects would generate 12,387 daily trips, with 945 trips occurring in the a.m. peak hour and 1,252 trips generated in the p.m. peak hour.

Effects of Approved Projects. The traffic associated with other approved projects causes these effects whether the RCSP proceeds or not.

Intersections. The traffic associated with approved projects will result in three intersections operating with Level of Service that exceeds the minimum LOS D standard.

The **E. Robertson Blvd / Montgomery Lake Way intersection** will operate at LOS F during the a.m. peak hour. The **E. Robertson Blvd / Genoa Lake Way intersection** will operate at LOS E in the a.m. peak hour. The **E. Robertson Blvd / Fig Tree Road intersection** is projected to operate at LOS F in the a.m. peak hour.

Queueing. The addition of traffic from approved projects is projected to lengthen the westbound left turn lane queue at the E. Robertson Blvd / Chowchilla Blvd intersection in the a.m. peak hour by 20 feet in an area where current conditions already exceed available storage.

Traffic Signal Warrants. The E. Robertson Blvd / Montgomery Lake Way intersection would continue to satisfy warrants in the p.m. peak hour, and the E. Robertson Blvd / Fig Tree Road intersection continues to satisfy warrants in the a.m. peak hour. No new locations would reach warrant levels.

Roadway Segment Level of Service. All roadway segments would operate at a Level of Service that satisfies the minimum LOS D standard.

Improvements. While approved projects will pay city mitigation fees, no improvements in the study area are conditions of approval for these approved projects.

EPAP Plus Amended RCSP Conditions

Impact Overview. If other approved projects are completed, the Amended RCSP project would have the following short term traffic effects / impacts.

Less than Significant Impacts / Effects. The RCSP project does not result in significant impacts under CEQA based on VMT nor significant effects under City of Chowchilla policies in terms of operating Level of Service on roadway segments. Impacts to project pedestrians, bicyclists and transit users are the same as those identified for RCSP under Existing plus Project conditions, and no additional mitigation / improvement is required.

Effects on Intersection LOS / Signal Warrants. As shown, Build Out of the Amended RCSP along with other approved projects is projected to result in one un-signaled intersections that would operate with a Level of Service in excess of the minimum LOS D standard.

The **S. Lake Tahoe Drive / Fallen Leaf Way intersection** is projected to operate at LOS F in the a.m. peak hour. This location would operate at LOS D with the installation of all-way stop control.

Operational Improvement 1. Project proponents shall install an all-way stop at the S. Lake Tahoe Drive / Fallen Leaf Way intersection when determined to be warranted by the City of Chowchilla.

Queueing Impacts. RCSP traffic along with that of other approved projects will cause 95th percentile queues in the westbound left turn lanes at the E. Robertson Blvd / Chowchilla Blvd intersection to exceed the storage length by 190 and 130 feet, respectively. This is a significant safety issue. **Mitigation 2** addresses this impact, and no additional mitigation is required.

Year 2042 with Approved RCSP Conditions

Overview. The Approved RCSP differs from the proposed Amended RCSP with regards to land use, trip generation and circulation layout. While the number of residential dwelling units remains the same, the amendment reduces commercial space from 495,000 sf to 308,450 sf. As a result, on a daily basis the total gross trip generation associated with the approved RCSP (i.e., 38,171 daily trips) is reduced by 15% to 32,635 daily trips by the amendment. The approved RCSP includes the Chowchilla General Plan's current alignment for the extension of Montgomery Lake Way north of E. Robertson Blvd to Ash Slough, while the amendment reroutes this arterial via S. Lake Tahoe Drive and Genoa Lake Way.

Cumulative Effects with Approved RCSP. The traffic associated with the Approved RCSP and other area development causes these effects.

Intersections. The Approved RCSP and other development will result in two intersections operating with Level of Service that exceeds the minimum LOS D standard.

- **S. Lake Tahoe Dr / Fallen Leaf Way:** LOS F in the a.m. peak hour
- **S. Lake Tahoe Dr / Fig Tree Road:** LOS F in the a.m. peak hour

Queueing. The addition of traffic from approved projects is projected to lengthen the westbound left turn lane queue at the **E. Robertson Blvd / Chowchilla Blvd intersection** in the a.m. peak hour by 350 feet and in the p.m. peak hour by 285 feet in an area where current conditions already exceed available storage.

Traffic Signal Warrants. If the Approved RCSP is built out under Year 2042 conditions, then two unsignalized intersections will carry peak hour volumes that reach the level satisfying traffic signal warrants under high speed criteria:

- **E. Robertson Blvd / Clubhouse Dr / Lake McClure Dr**
- **E. Robertson Blvd / Golf Drive / Millerton Way**

Roadway Segment Level of Service. If the Approved RCSP is built out, all study roadways will operate with a Level of Service that satisfies the City's minimum LOS D standard.

Improvements. The approved RCSP is also conditioned to install improvements to E. Robertson Blvd, as has been assumed in the operational analysis.

Year 2042 with Amended RCSP Conditions

Impact / Effects Overview. The Amended RCSP project under long term conditions would have the following impacts.

Less than Significant Impacts / Effects. The RCSP project does not result in significant impacts under CEQA based on VMT nor significant effects under City of Chowchilla policies in terms of operating Level of Service on roadway segments. Impacts to project pedestrians, bicyclists and transit users are the same as those identified for RCSP under Existing plus Project conditions, and no additional mitigation / improvement is required.

Effects on Intersection LOS / Signal Warrants. Build Out of the Amended RCSP along with other long-term growth would cause one signalized and two un-signaled intersections to operate with a Level of Service in excess of the minimum LOS D standard.

The **E. Robertson Blvd / Fig Tree Road intersection** is projected to operate at LOS E in the a.m. peak hour. Adding a southbound right turn overlap phase to the traffic signal operation would allow concurrent southbound right and eastbound left turns, and LOS D would result.

Operational Improvement 2. Project proponents shall incorporate a southbound right turn overlap phase into the design of the traffic signal proposed to be installed at the E. Robertson Blvd / Fig Tree Road intersection.

The **S. Lake Tahoe Drive / Fallen Leaf Way intersection** is projected to operate at LOS F in the a.m. peak hour. This location would operate at LOS D with the installation of all-way stop control. This improvement is Operational Improvement 1, and no additional improvements are required.

The **S. Lake Tahoe Dr / Fig Tree Road intersection** will operate at LOS F in the a.m. peak hour. A traffic signal would ultimately be required at this location to accommodate the combination of overall automobile traffic and the pedestrian activity associated with operating two schools. A traffic signal would deliver LOS D.

Operational Improvement 3. The project proponents shall modify the eastbound approach at the S. Lake Tahoe Drive / Fig Tree Road intersection to provide a left+thru lane and a separate right turn lane, shall install a left turn lane and combined thru +right turn lane on the westbound approach and shall install a traffic signal when determined to be necessary by the City of Chowchilla based on the "triggers analysis" or review of traffic conditions when the second CUSD school is in operation.

Queueing Impacts. While the queue created as a result of the amended RCSP is shorter than that caused with the Approved RCSP, the 95th percentile queues in the westbound left turn lane at the E. Robertson Blvd / Chowchilla Blvd intersection is projected to exceed the storage length by 340 and 270 feet in the a.m. and p.m. peak hour, respectively. This is a significant safety issue. Mitigation 3 addresses this impact, and no additional mitigation is required.

IMPROVEMENTS TRIGGERS ANALYSIS

Background / Approach

Prior Work. Because development of the approved RCSP has always been assumed to proceed incrementally over time as market conditions warrant, various schedules for implementing required circulation system improvements have been prepared. These schedules have linked specific development levels to identified improvements along E. Robertson Blvd. Most recently Kimley Horn Associates (KHA) completed an Improvements Triggers Analysis for the approved RCSP in 2019 which addressed five phases for E. Robertson Blvd corridor improvements and suggested the number of residential units within Rancho Calera that would be supported by those improvements under an Existing plus Approved / Pending Projects (EPAP) background condition. The information which follows updates the KHA analysis to address the Amended RCSP layout and land uses.

Triggers Analysis Approach. The objective of the Triggers Analysis is to identify specific circulation improvements that can be matched to Amended RCSP residential development levels while providing reasonable assurance that resulting traffic operations will satisfy City of Chowchilla General Plan minimum LOS D standards. Because future traffic conditions in Chowchilla will be affected by development outside of the RCSP area itself, the analysis also considers the effects of other possible development in the area of the City east of SR 99. The technical approach taken has been to incrementally identify the traffic contribution of RCSP and other east side projects, evaluate resulting peak hour traffic conditions and identify the combination of Amended RCSP development and other eastside project levels that can be served adequately by identified improvements.

Improvement Stages

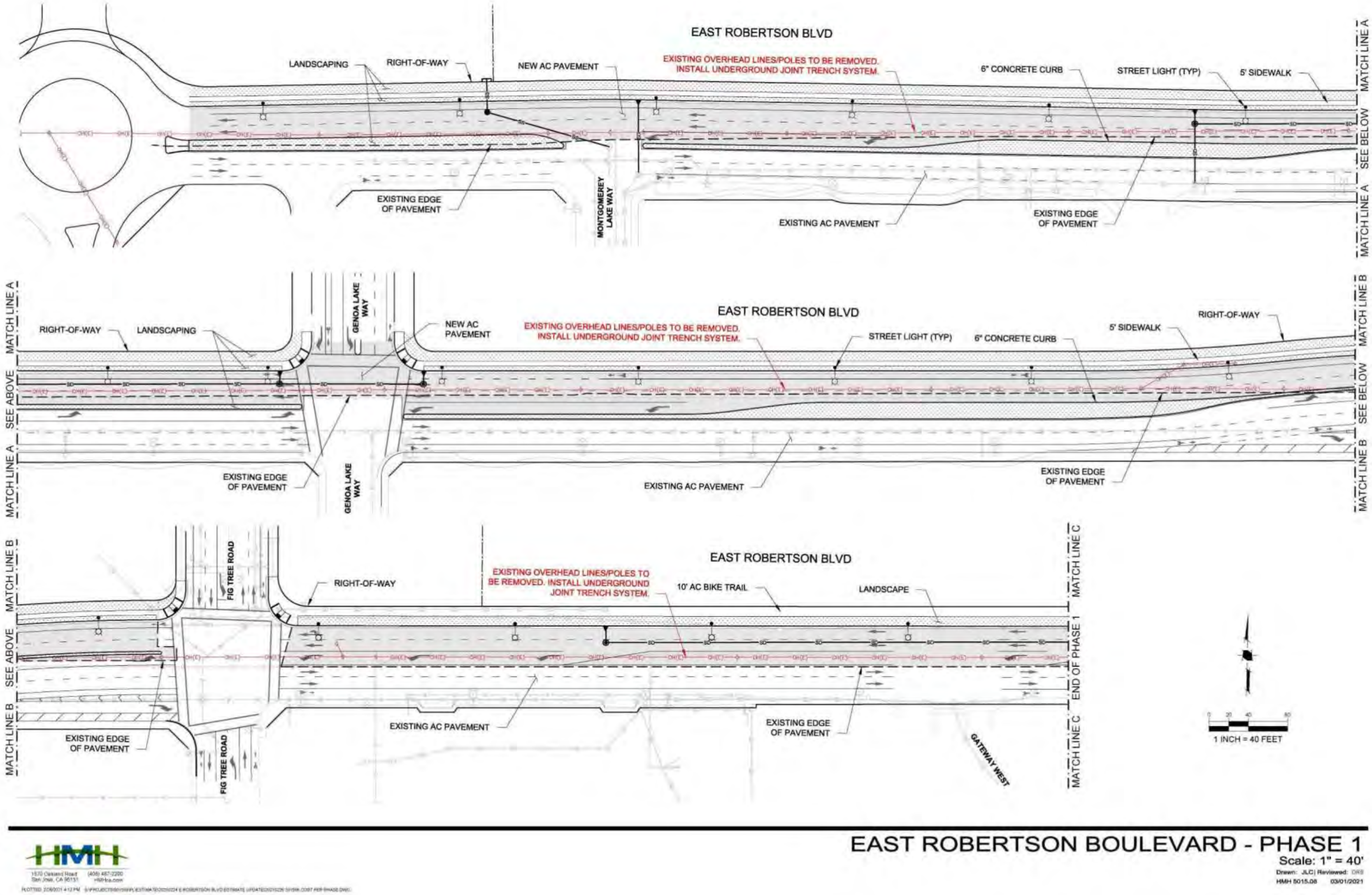
Figures 14A, B and C identify the three stages of improvements planned for E. Robertson Blvd. They are:

Stage 1: From SR 99 right of way through the Fig Tree Road intersection, including traffic signals at the Fig Tree Road intersection. Two through travel lanes would be provided in each direction on E. Robertson Blvd.

Stage 2: from east of Fig Tree Road through the Lake McClure Drive intersection, including an all-way stop at Lake McClure Blvd.

Stage 3: from east of Lake McClure Drive through the Millerton Drive intersection, including an all-way stop at Lake Millerton Drive.

In addition, the TIA suggests that a traffic signal will be needed at the Fig Tree Road / So Lake Tahoe Drive intersection, and the development level expected to cause the need for that traffic signal has also been identified.

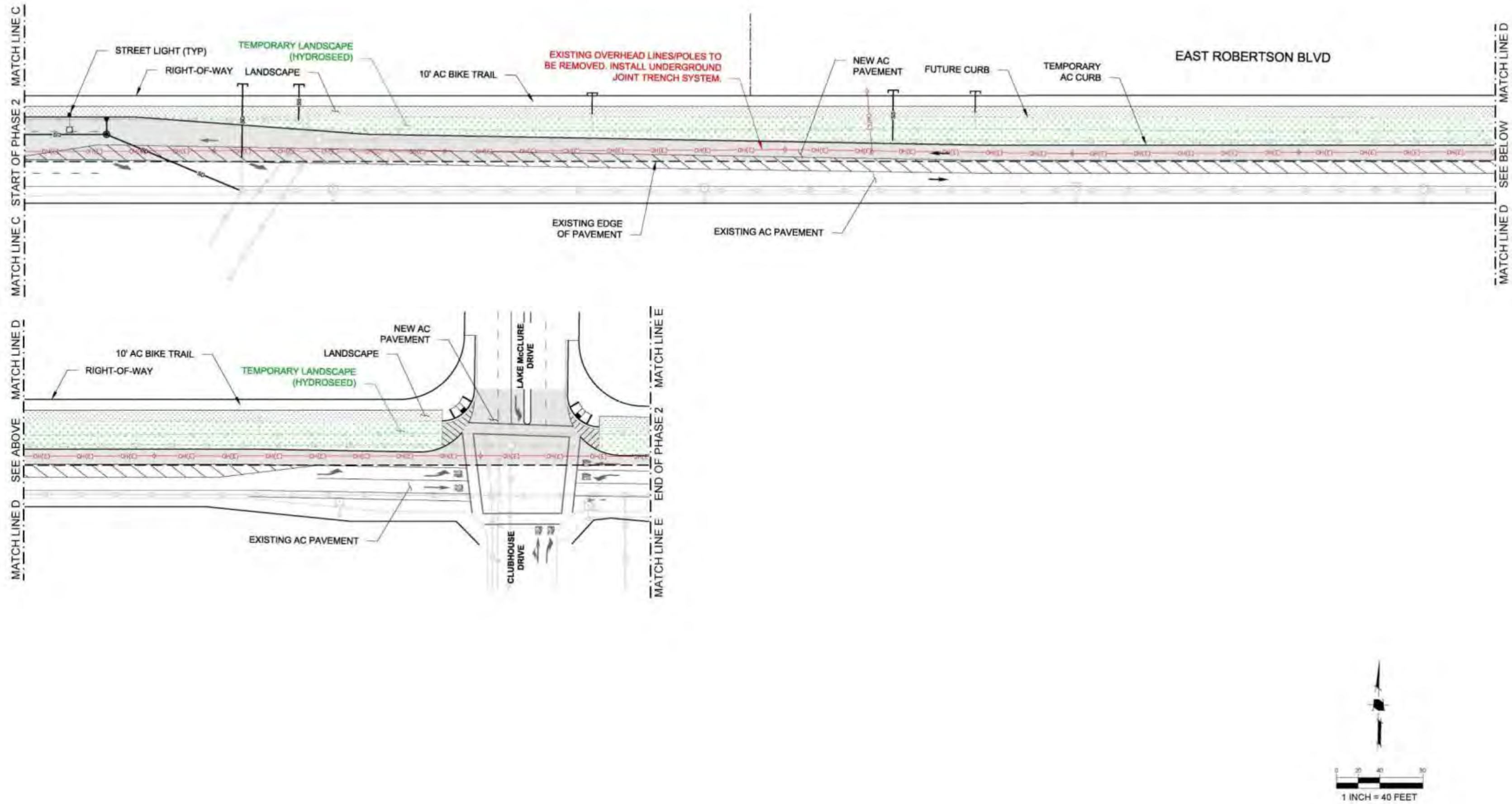


KD Anderson & Associates, Inc.
Transportation Engineers

EAST ROBERTSON BLVD IMPROVEMENTS

5738-001 RA 3/30/2021

figure 14a



HMH

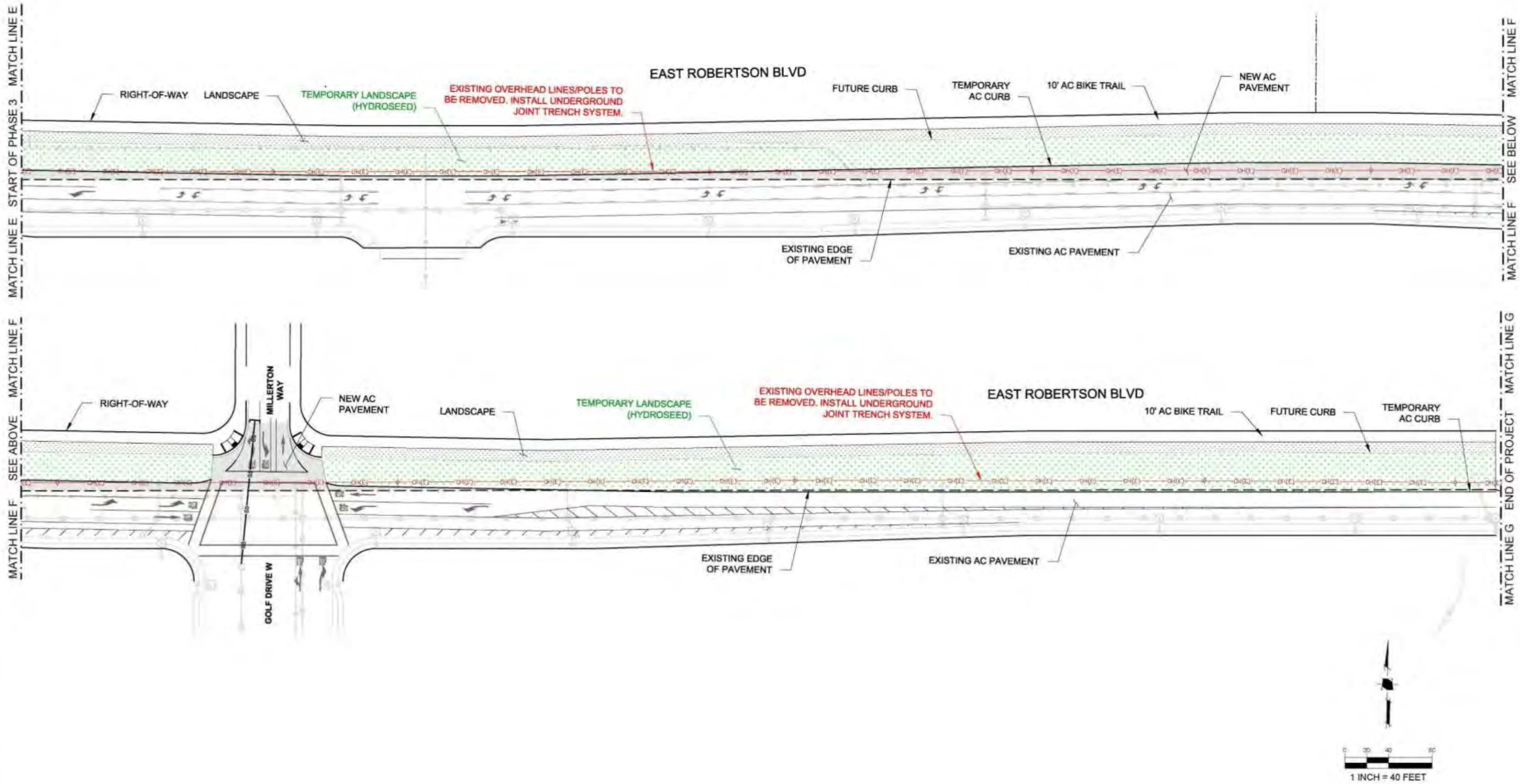
EAST ROBERTSON BOULEVARD - PHASE 2
Scale: 1" = 40'
Drawn: JLC | Reviewed: DRS
HMH 5015.08 03/01/2021

KD Anderson & Associates, Inc.
Transportation Engineers

EAST ROBERTSON BLVD IMPROVEMENTS

5738-001 RA 3/30/2021

figure 14b



EAST ROBERTSON BOULEVARD - PHASE 3

Scale: 1" = 40'

Drawn: JLC| Reviewed: DRS

HMH 5015.08 03/01/2021

KD Anderson & Associates, Inc.
Transportation Engineers

EAST ROBERTSON BLVD IMPROVEMENTS

5738-001 RA 3/5/2021

figure 14c

Summary Conclusions

Table 32 summarizes the results of the triggers analysis and identifies the number of RCSP dwellings that can be accommodated by identified improvements. The timing of other improvements is also noted.

TABLE 32
RANCHO CALERA AREA IMPROVEMENTS SCHEDULE

Improvements	Rancho Calera SP		Other Approved east side Development		CUSD	Notes
	Dwellings	MU	Dwellings	Retail	School #2	
No Improvements	215 DU	0	0	0	No	Assumes CUSD #2 does not proceed before 215 du's
E. Robertson Blvd Stage 1 completed SR 99 ROW to 800 feet east of Fig Tree Blvd, including Fig Tree Blvd Signal	1,110 du	201 ksf	268 du	187 ksf	Yes	
	1.050 du	356 ksf	268 du	310 ksf	Yes	
E. Robertson Blvd Stage 2 completed 800 feet east of Fig Tree Blvd to 80 feet east of Lake McClure Dr	1,225	201 ksf	268 du	187 ksf	Yes	
	1,210	356 ksf	268 du	310 ksf	Yes	
E. Robertson Blvd Stage 3 completed 80 feet east of Lake McClure Dr to end of improvements	1,274	356 ksf	268 du	310 ksf	Yes	
Fig Tree Blvd / So Lake Tahoe Blvd Traffic Signal	900	n.a	n.a	n.a	Yes	Or when determined to be needed by the City of Chowchilla based on the actual schedule for construction of the CUSD 2nd school and based on the results of an updated local traffic operations analysis to be funded by the RCSP proponents addressing development levels and background traffic conditions at that time.
E. Roberson Blvd / Montgomery Lake Way Traffic signal	n.a.	n.a.	Yes	Yes	n.a	Traffic Signal to be installed by others when approved south area development proceeds
E. Robertson Blvd / Genoa Lake Way Traffic Signal	Yes	Yes	Yes	Yes	n.a	Traffic signal to be installed by others when approved south area development proceeds, OR by RCSP when Genoa Lake Way is extended

Development Assumptions

The preceding Traffic Impact Analysis (TIA) identified traffic operating condition at full buildout of the proposed RCSP assuming implementation of planned improvements and occupancy of other projects identified by the City of Chowchilla. Within that context this Triggers Analysis makes the following assumptions:

Schedule and Location for Amended RCSP Occupancy. The Amended RCSP offers locations for a variety of residential housing products, with the intention of allowing builders to select a village with attributes best addressing their view of the housing market at that time. As a result, no "phasing map" is available that might prescribe the order of occupancy of individual RCSP villages. However, because development of traffic volume forecasts remains sensitive to land use and circulation system locations, the following assumptions have been made regarding RCSP occupancy.

Location of Initial Amended RCSP Residences. A "worst case" approach has been taken to maximize the potential new RCSP traffic at those locations where improvements are not planned initially. The TIA identifies a development Phase 1 of 140 units just east of Fig Tree Road. The "worst case" approach assumes that subsequent development would continue with residences east of Fig Tree Road and north of E. Robertson Blvd as development in this area would create higher traffic volumes in that area of Stage 2 and Stage 3 improvements than would development west of Fig Tree Road. It is important to note that there are roughly 1,200 residential units planned in the Amended RCSP in the area east of Fig Tree Road, and the development trigger levels noted herein are in reference to those 1,200 units.

Second CUSD School. The RCSP plan includes a site for a second school north of Ronald Reagan ES. Under an agreement between the RCSP proponents and the CUSD a decision regarding site acquisition is to be made before occupancy of 400 RCSP residences. This Triggers Analysis makes a "worst case" assumption that CUSD will acquire the site and construct a new school when 400 residences are occupied. New school enrollment would be divided between children residing in RCSP and in other areas of the community, with that split between the two areas changing as RCSP is occupied.

RCSP Non-Residential Uses. Development of any new non-residential development will be linked to market conditions, and community serving mixed retail would follow occupancy of new supporting residences. In this case the Amended RCSP includes a neighborhood supporting mixed use area at the E. Robertson Blvd / Fig Tree Road intersection as well as an additional mixed use retail near SR 99. Because this neighborhood supporting uses is located in the area of Stage 2 improvements the triggers analysis makes the assumption that this use will be occupied once Stage 1 improvements are made. The RCSP's other non-residential uses adjoining the SR 99 interchange are expected to be developed later, and this analysis tests the effects of developing 50% and 100% of that area after Stage 1 improvements have been made.

Other East Side Development. Traffic conditions on East Robertson Blvd will be affected by occupancy of other residential and non-residential uses that are not controlled by RCSP.

Other Residential Development. As noted in the TIA other residential development could proceed in the area east of SR 99 and south of E. Robertson Blvd as vacant residential lots are occupied or approved projects proceed. This residential development noted in Table 33 has been assumed to be occupied when the residences in the RCSP begin to be constructed, and is assumed after Stage 1 improvements are made.

TABLE 33
APPROVED EAST SIDE PROJECTS

Name	Unit	Quantity	Trip Generation		
			Daily	AM Peak	PM Peak
Residential					
Greenhills vacant lots	SFR	65	614	48	64
Montgomery Farms	SFR	91	859	67	90
Villa Del Sol Multi-Family	MFR	112	820	52	63
Residential Subtotal		***268***	***2,293***	***167***	***217***
Non Residential (Retail)					
SE E. Roberson / Genoa Lake	ksf	64.3	2,427	60	244
South along SR 99 on Montgomery Lake Way	ksf	246.1	9,290	231	938
Non Residential Subtotal		310.4	11,717	291	1,182

Other East Side Non-Residential Development. Non-Residential Development East of SR 99 on the south side of E. Robertson Blvd is subject to the same market forces noted earlier for RCSP's retail areas and so far has been slow to develop. Table 33 also notes these areas which under standard retail floor are ratio (FAR) would yield 310 ksf of building floor area. While development has been approved for many years, no action has occurred, and as noted in the TIA MCTC's long term land use forecasts did not assume development in this area. However, to provide a "worst case" assessment, the analysis tests the effects of 50% and 100% development of these uses.

RCSP Internal Circulation Improvements. The following assumptions have been made regarding improvements that would be made as development proceeds:

- RCSP development would proceed with access to E. Robertson Blvd via the closest planned intersection.
- The balance of the internal RCSP circulation system would be constructed as fronting development proceeds unless specific roadways are found to be needed based on the results of the Triggers Analysis.
- The second CUSD school is assumed to be accompanied by construction of Fig Tree Road north to an extension of Fallen Leaf Way north from Ronald Reagan ES.

Other Circulation System Improvements. The following assumptions have been made regarding installation of other E. Robertson Blvd improvements.

- **E. Robertson Blvd / Montgomery Lake Way Intersection.** While the amended RCSP will widen E. Robertson Blvd as has been described herein, the traffic signal would be installed when additional development south of E. Robertson Blvd proceeds. This location is not addressed by the Triggers Analysis.

- **E. Robertson Blvd / Genoa Lake Way intersection.** The need for a traffic signal at this location is linked to the northly extension of Genoa Lake Way and would be installed at that time.

<u>**Analysis / Evaluation**</u>

Summary. Table 34 introduces the combinations of Amended RCSP development, other Chowchilla Growth and E. Robertson Blvd circulation system staged improvement that would yield Levels of Service satisfying the City's minimum LOS D policy. Level of Service worksheets for each development level are included in the appendix to this report.

Amended RCSP Residential Development without Improvements. As noted in the traffic operational analysis, the project's initial Phase 1 of 140 dwellings can be developed without exceeding the City's minimum LOS D standard. Within the area of the E. Robertson Blvd improvements the worst Level of Service is projected to occur at the all-way stop controlled E. Robertson Blvd / Fig Tree Road intersection. The occupancy of the 140 dwellings units in Phase 1 yields LOS D in the a.m. peak hour. A total of **215** dwellings could be occupied before reaching the LOS D-E threshold. Stage 1 improvements would be needed to occupy any additional residences or non-residential development.

Amended RCSP Development Permitted with Stage 1 Improvements. Once Stage 1 improvements are made the trigger location based on Level of Service on E. Robertson Blvd move easterly from Fig Tree Road, and the p.m. peak hour becomes the critical time period. The presence of the second CUSD no longer has an effect on the outcome of the Triggers Analysis during the p.m. peak hour. As noted in Table 34, the number of developable units varies based on the extent of approved development occurring elsewhere. If all approved residential units and half of the identified retail uses were developed, then the total number of dwellings to be occupied in RCSP would increase to **1,110**, or 895 units above the level permitted without improvements. At that point the Level of Service at the E. Robertson Blvd / Lake McClure Drive intersection would exceed LOS D in the p.m. peak hour, and Stage 2 improvements would be required. If all of the identified non-residential development occurred, then the permissible development level would be **1,050** dwellings or 835 residences beyond the level that is permitted without improvements.

Amended RCSP Development Permitted with Stage 2 Improvements. Once Stage 2 improvement are made and E. Robertson Blvd is improved through the McClure Lake Drive intersection, then the LOS at the E. Robertson Blvd / Millerton Way intersection becomes the final critical location. The number of permissible east area dwelling units is again dependent on assumptions for development of the balance of the area east of SR 99. If half of the retail areas are developed, then a total of **1,225** dwellings can be occupied or 115 units beyond the level permitted before stage 2 improvements. If all the east side retail is occupied, then a total of **1,210** residences could be occupied, or 160 units beyond the Stage 1 improvements with that level of retail development.

Amended RCSP Development Permitted with Stage 3 improvements. Once Stage 3 improvements are made all of the Amended RCSP residences east of Fig Tree Road could be installed, regardless of the amount of east side area retail. This analysis assumes that 1,274 residences could be develop in the area east of Fig Tree Road.

Trigger for Fig Tree Road / So Lake Tahoe Drive traffic signal. As noted in Table 34, the Level of Service at the Fig Tree Road / So Lake Tahoe Drive intersection did not exceed the minimum LOS D standard with development of the RCSP's east side residential areas, even if the CUSD 2nd ES is assumed to be built. This Level of Service within the minimum LOS D standard generally results from the absence of So Lake Tahoe Drive west of Fig Tree Road. Extend So Lake Tahoe Drive westerly could increase traffic volumes at the intersection by providing an alternative route for RCSP residents to the commercial areas near SR 99. Similarly, extending So Lake Tahoe Drive to Genoa Lake Way and to E. Robertson Blvd could reduce traffic by diverting school traffic that could otherwise only use Fig Tree Road.

Based on these results but based on an abundance of caution as it relates to school area safety, the following trigger is recommended.

Install the Fig Tree Road / So Lake Tahoe Drive traffic signal when:

- the CUSD 's second school is in operation, and 900 RCSP dwellings are constructed east of Fig Tree Lane, OR

- When determined to be needed by the City of Chowchilla based on the actual schedule for construction of the CUSD 2nd school and based on the results of an updated local traffic operations analysis to be funded by the RCSP proponents addressing development levels and background traffic conditions at that time.

TABLE 34
SUMMARY OF MAXIMUM RCSP RESIDENTIAL DEVELOPMENT PER E. ROBERTSON BLVD IMPROVEMENT STAGE

E. Robertson Blvd Improvements		None	Stage 1 installed				Stage 2 installed				Stage 3 installed	
Approved Background Assumed												
Land Use	**Build Out**	**Land Use Assumed**										
Approved SFR	156 du	-	156	156	156	156	156	156	156	156	156	156
Approved MFR	112 du	-	112	112	112	112	112	112	112	112	112	112
Approved Retail	64 ksf	-	64	64	64	64	64	64	64	64	64	64
Approved Retail	246 ksf	-	123	123	246	246	123	123	246	246	246	246
CUSD #2	school	No	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Total Occupied Dwellings in Rancho Calera Specific Plan												
RCSP Land Use	**Total**	**Land Use Assumed**										
SFR	**1,822 du**	**215**	**1,110**	**1,110**	**1,050**	**1,050**	**1,225**	**1,225**	**1,210**	**1,210**	**1,274**	**1,274**
MFR	200 du	-	0	0	0	0	0	0	0	0	0	0
Mixed Use - East	48 ksf	-	48	48	48	48	48	48	48	48	48	48
Mixed Use - West	308 ksf	-	153	153	308	308	153	153	308	308	308	308
Mixed Use Residential	20 du	-	20	20	20	20	20	20	20	20	20	20
Intersection Levels of Service												
Intersection	**Control**	**Am/Pm**	**Am/Pm**	**Am/Pm**	**Am/Pm**	**Am/Pm**	**Am/Pm**	**Am/Pm**	**Am/PM**	**Am/Pm**	**Am/Pm**	**Am/Pm**
Montgomery Lake Way	NS Stop	E/D										
	Signal		A/B	A/B	A/B	A/C	A/B	A/B	A/C	A/C	A/C	A/C
Genoa Lake Way	NB Stop	C/B										
	Signal		A/B	A/B	A/B	A/C	A/B	A/B	A/C	A/C	A/D	A/D
Fig Tree Road	AWS	**E/C**										
	Signal		C/B	D/B	C/B	D/B	C/B	D/B	C/B	D/B	C/B	D/B
McClure Lake Drive	NB/SB Stop	B/B	**C/E**	**D/E**	**C/E**	**D/E**						
	AWS						C/C	C/C	C/C	C/C	C/C	C/C
Millerton Way	NB/SB Stop	B/B	C/C	C/C	C/C	C/C	**C/E**	**C/E**	**C/E**	**C/E**		
	AWS										A/B	B/B

APPENDIX

Traffic Volumes Counts

Proposed E. Robertson Blvd Improvements

Level of Service / Queue Worksheets

Traffic Signal Warrant Worksheets

Madera County SB 743 Sub-Regional Baseline VMT Memo – Draft (8/14/2020)

TECHNICAL APPENDIX

FOR

RANCHO CALERA SPECIFIC PLAN AMENDMENT
TRANSPORTATION IMPACT ANALYSIS

Chowchilla, California

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March 30, 2021

Job No. 5600-53

5738-001

Prepared by National Data & Surveying Services

Chowchilla Blvd & E Robertson Blvd

Peak Hour Turning Movement Count

ID: 19-07441-001
City: Chowchilla

Day: Tuesday
Date: 11/19/2019

	PEAK HOURS	COUNT PERIODS
AM	07:30 AM - 08:30 AM	07:00 AM - 09:00 AM
NOON	NONE	NONE
PM	04:30 PM - 05:30 PM	04:00 PM - 06:00 PM

Chowchilla Blvd — SOUTHBOUND

AM	58	43	155	0	96
NOON	0	0	0	0	0
PM	33	34	101	0	100
	0	0	0	0	

E Robertson Blvd — EASTBOUND

AM	NOON	PM	
561	0	593	
0	0	1	0
47	0	30	0
515	0	474	0
145	0	112	0

E Robertson Blvd — WESTBOUND

	PM	NOON	AM
0	45	0	32
0	413	0	408
0	63	0	77
0	0	0	3
	653	0	712

CONTROL

Signalized

	AM	NOON	PM
TEV	1634	0	1555
PHF	0.85		0.95

Chowchilla Blvd — NORTHBOUND

		0	0	0	0
PM	209	0	146	25	78
NOON	0	0	0	0	0
AM	265	0	95	17	39

Total Vehicles (AM)

SB: 58, 43, 155 · EB: 47, 515, 145 · WB: 32, 408, 77 · NB: 95, 17, 39

Total Vehicles (Noon)

SB: N/A, N/A, N/A · EB: N/A, N/A, N/A · WB: N/A, N/A, N/A · NB: N/A, N/A, N/A

Total Vehicles (PM)

SB: 33, 34, 101 · EB: 30, 474, 112 · WB: 45, 413, 63 · NB: 146, 25, 78

Bikes (AM)

SB: 0, 0, 1 · EB: 0, 0, 0 · WB: 1, 1, 0 · NB: 0, 0, 0

Bikes (NOON)

SB: N/A, N/A, N/A · EB: N/A, N/A, N/A · WB: N/A, N/A, N/A · NB: N/A, N/A, N/A

Bikes (PM)

SB: 0, 0, 0 · EB: 0, 3, 1 · WB: 1, 0, 0 · NB: 0, 0, 0

Pedestrians (Crosswalks)

Crosswalk	AM	NOON	PM
North (west side)	2	0	1
North (east side)	1	0	2
West (north side)	3	0	0
West (south side)	1	0	1
East (north side)	1	0	1
East (south side)	1	0	0
South (west side)	0	0	0
South (east side)	0	0	1
NW corner diagonal	0	0	0
NE corner diagonal	0	0	0
SW corner diagonal	0	0	0
SE corner diagonal	0	0	0

National Data & Surveying Services

Intersection Turning Movement Count

Location: Chowchilla Blvd & E Robertson Blvd
City: Chowchilla
Control: Signalized

Project ID: 19-07441-001
Date: 11/19/2019

Total

NS/EW Streets:	Chowchilla Blvd				Chowchilla Blvd				E Robertson Blvd				E Robertson Blvd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	9	4	7	0	24	5	9	0	6	73	16	0	26	37	7	0	223
7:15 AM	7	6	8	0	29	9	12	0	14	78	21	0	18	58	9	2	271
7:30 AM	16	4	7	0	36	10	15	0	11	116	30	0	23	95	10	2	375
7:45 AM	27	3	8	0	55	13	17	0	15	142	49	0	15	125	8	1	478
8:00 AM	30	6	13	0	35	18	13	0	15	137	37	0	22	87	6	0	419
8:15 AM	22	4	11	0	29	2	13	0	6	120	29	0	17	101	8	0	362
8:30 AM	20	6	11	0	24	6	13	0	12	105	18	0	16	105	10	0	346
8:45 AM	21	1	5	0	37	5	9	0	7	89	20	0	20	55	5	1	275
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	152	34	70	0	269	68	101	0	86	860	220	0	157	663	63	6	2749
APPROACH %'s :	59.38%	13.28%	27.34%	0.00%	61.42%	15.53%	23.06%	0.00%	7.38%	73.76%	18.87%	0.00%	17.66%	74.58%	7.09%	0.67%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	95	17	39	0	155	43	58	0	47	515	145	0	77	408	32	3	1634
PEAK HR FACTOR :	0.792	0.708	0.750	0.000	0.705	0.597	0.853	0.000	0.783	0.907	0.740	0.000	0.837	0.816	0.800	0.375	0.855
	0.770				0.753				0.858				0.872				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	38	5	16	0	29	11	6	0	6	92	33	0	14	119	8	0	377
4:15 PM	40	6	11	0	20	11	6	0	8	109	26	0	13	106	7	3	366
4:30 PM	41	3	30	0	30	10	7	0	13	111	26	0	17	103	9	0	400
4:45 PM	40	4	13	0	26	6	7	0	7	111	29	1	11	99	11	0	365
5:00 PM	38	7	19	0	24	11	9	0	2	141	34	0	17	100	9	0	411
5:15 PM	27	11	16	0	21	7	10	0	8	111	23	0	18	111	16	0	379
5:30 PM	33	4	14	0	32	7	10	0	3	104	31	0	16	132	3	0	389
5:45 PM	27	2	19	0	13	7	8	0	5	93	29	0	22	85	7	0	317
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	284	42	138	0	195	70	63	0	52	872	231	1	128	855	70	3	3004
APPROACH %'s :	61.21%	9.05%	29.74%	0.00%	59.45%	21.34%	19.21%	0.00%	4.50%	75.43%	19.98%	0.09%	12.12%	80.97%	6.63%	0.28%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	146	25	78	0	101	34	33	0	30	474	112	1	63	413	45	0	1555
PEAK HR FACTOR :	0.890	0.568	0.650	0.000	0.842	0.773	0.825	0.000	0.577	0.840	0.824	0.250	0.875	0.930	0.703	0.000	0.946
	0.841				0.894				0.871				0.898				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Chowchilla Blvd & E Robertson Blvd
City: Chowchilla
Control: Signalized

Project ID: 19-07441-001
Date: 11/19/2019

Bikes

NS/EW Streets:	Chowchilla Blvd				Chowchilla Blvd				E Robertson Blvd				E Robertson Blvd				
	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	2
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
8:15 AM	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
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	0	3
APPROACH %'s :					100.00%	0.00%	0.00%	0.00%					0.00%	50.00%	50.00%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	0	3
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.250	0.000	0.375
					0.250								0.500				

	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	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	0	0	0	0	0	1	0	0	1
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	2
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
5:15 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	3	1	0	0	1	1	0	6
APPROACH %'s :									0.00%	75.00%	25.00%	0.00%	0.00%	50.00%	50.00%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	3	1	0	0	0	1	0	5
PEAK HR FACTOR :	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.375	0.250	0.000	0.000	0.000	0.250	0.000	0.625
									0.500				0.250				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Chowchilla Blvd & E Robertson Blvd
City: Chowchilla

Project ID: 19-07441-001
Date: 11/19/2019

Pedestrians (Crosswalks)

NS/EW Streets:	Chowchilla Blvd		Chowchilla Blvd		E Robertson Blvd		E Robertson Blvd		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	2	0	0	0	0	2
7:30 AM	0	0	0	0	0	0	0	0	0
7:45 AM	1	1	0	0	1	0	1	0	4
8:00 AM	0	0	0	0	0	1	0	2	3
8:15 AM	1	0	0	0	0	0	0	1	2
8:30 AM	1	1	2	0	0	0	0	2	6
8:45 AM	0	0	0	0	0	1	0	0	1
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	3	2	2	2	1	2	1	5	18
APPROACH %'s :	60.00%	40.00%	50.00%	50.00%	33.33%	66.67%	16.67%	83.33%	
PEAK HR :	07:30 AM - 08:30 AM								TOTAL
PEAK HR VOL :	2	1	0	0	1	1	1	3	9
PEAK HR FACTOR :	0.500	0.250			0.250	0.250	0.250	0.375	0.563
	0.375				0.500		0.500		

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
4:00 PM	1	0	0	1	0	1	0	0	3
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0
4:45 PM	0	2	0	0	0	0	0	0	2
5:00 PM	1	0	0	1	0	1	1	0	4
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	1	0	0	0	0	1	2
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	2	2	1	2	0	2	1	1	11
APPROACH %'s :	50.00%	50.00%	33.33%	66.67%	0.00%	100.00%	50.00%	50.00%	
PEAK HR :	04:30 PM - 05:30 PM								TOTAL
PEAK HR VOL :	1	2	0	1	0	1	1	0	6
PEAK HR FACTOR :	0.250	0.250		0.250		0.250	0.250		0.375
	0.375		0.250		0.250		0.250		

Prepared by National Data & Surveying Services

SB SR 99 Ramps & E Robertson Blvd

Peak Hour Turning Movement Count

ID: 19-07441-002
City: Chowchilla

Day: Tuesday
Date: 11/19/2019

	PEAK HOURS	COUNT PERIODS
AM	07:30 AM - 08:30 AM	07:00 AM - 09:00 AM
NOON	NONE	NONE
PM	04:45 PM - 05:45 PM	04:00 PM - 06:00 PM

SB SR 99 Ramps — SOUTHBOUND

AM	79	0	35	0	0
NOON	0	0	0	0	0
PM	77	2	79	0	0
	0	0	0	0	

E Robertson Blvd — EASTBOUND

	AM	NOON	PM	
	595	0	583	
	0	0	0	0
	0	0	0	0
	454	0	431	0
	311	0	248	0

E Robertson Blvd — WESTBOUND

	PM	NOON	AM
0	0	0	0
0	506	0	516
0	46	0	69
0	0	0	0
	510	0	489

CONTROL

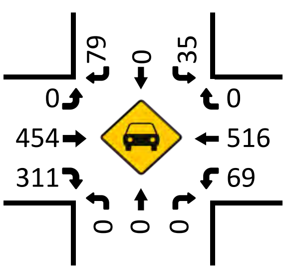
1 WAY-STOP (SB)

	AM	NOON	PM
TEV	1464	0	1389
PHF	0.89		0.95

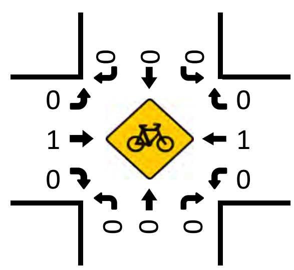
NORTHBOUND — SB SR 99 Ramps

		0	0	0	0
PM	296	0	0	0	0
NOON	0	0	0	0	0
AM	380	0	0	0	0

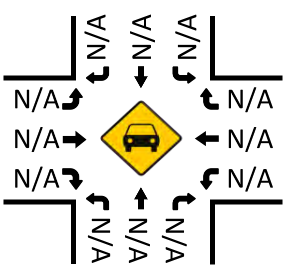
Total Vehicles (AM)



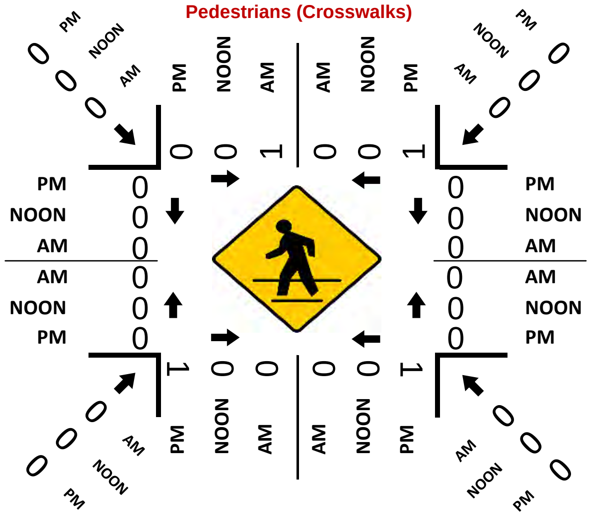
Bikes (AM)



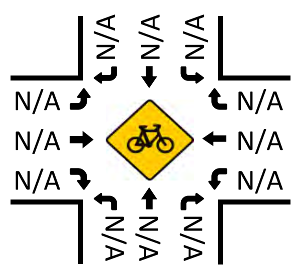
Total Vehicles (Noon)



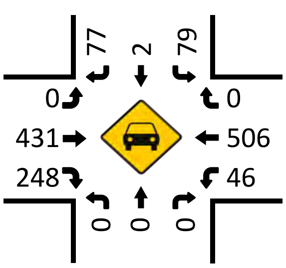
Pedestrians (Crosswalks)



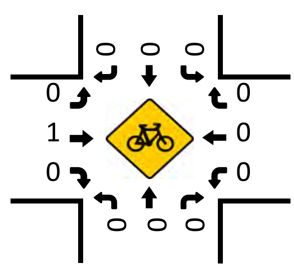
Bikes (NOON)



Total Vehicles (PM)



Bikes (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: SB SR 99 Ramps & E Robertson Blvd
City: Chowchilla
Control: 1 WAY-STOP (SB)

Project ID: 19-07441-002
Date: 11/19/2019

Total

NS/EW Streets:	SB SR 99 Ramps				SB SR 99 Ramps				E Robertson Blvd				E Robertson Blvd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	4	0	27	0	0	49	69	0	16	70	0	0	235
7:15 AM	0	0	0	0	5	2	20	0	0	64	72	0	17	82	0	0	262
7:30 AM	0	0	0	0	3	0	21	0	0	88	89	0	21	127	0	0	349
7:45 AM	0	0	0	0	10	0	32	0	0	138	78	0	10	142	0	0	410
8:00 AM	0	0	0	0	13	0	13	0	0	120	83	0	18	120	0	0	367
8:15 AM	0	0	0	0	9	0	13	0	0	108	61	0	20	127	0	0	338
8:30 AM	0	0	0	0	7	0	24	0	0	100	60	0	14	112	0	0	317
8:45 AM	0	0	0	0	13	0	22	0	0	86	66	0	6	75	0	0	268
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	64	2	172	0	0	753	578	0	122	855	0	0	2546
APPROACH %'s :					26.89%	0.84%	72.27%	0.00%	0.00%	56.57%	43.43%	0.00%	12.49%	87.51%	0.00%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	0	0	0	0	35	0	79	0	0	454	311	0	69	516	0	0	1464
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.673	0.000	0.617	0.000	0.000	0.822	0.874	0.000	0.821	0.908	0.000	0.000	0.893
					0.679				0.885				0.962				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	6	0	18	0	0	88	70	0	22	132	0	0	336
4:15 PM	0	0	0	0	18	0	22	0	0	106	50	0	9	120	0	0	325
4:30 PM	0	0	0	0	19	0	18	0	0	123	48	0	8	113	0	0	329
4:45 PM	0	0	0	0	23	0	21	0	0	103	59	0	12	122	0	0	340
5:00 PM	0	0	0	0	10	0	18	0	0	121	78	0	9	130	0	0	366
5:15 PM	0	0	0	0	27	1	23	0	0	108	59	0	9	120	0	0	347
5:30 PM	0	0	0	0	19	1	15	0	0	99	52	0	16	134	0	0	336
5:45 PM	0	0	0	0	18	0	21	0	0	92	33	0	6	96	0	0	266
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	140	2	156	0	0	840	449	0	91	967	0	0	2645
APPROACH %'s :					46.98%	0.67%	52.35%	0.00%	0.00%	65.17%	34.83%	0.00%	8.60%	91.40%	0.00%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	0	0	0	0	79	2	77	0	0	431	248	0	46	506	0	0	1389
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.731	0.500	0.837	0.000	0.000	0.890	0.795	0.000	0.719	0.944	0.000	0.000	0.949
					0.775				0.853				0.920				

National Data & Surveying Services

Intersection Turning Movement Count

Location: SB SR 99 Ramps & E Robertson Blvd
City: Chowchilla
Control: 1 WAY-STOP (SB)

Project ID: 19-07441-002
Date: 11/19/2019

Bikes

NS/EW Streets:	SB SR 99 Ramps				SB SR 99 Ramps				E Robertson Blvd				E Robertson Blvd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2
8:00 AM	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
8:30 AM	0	0	0	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	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2
APPROACH %'s :									0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.250	0.000	0.000	0.250
									0.250				0.250				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	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	0	1	0	0	0	0	0	0	1
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2
APPROACH %'s :									0.00%	100.00%	0.00%	0.00%					
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
PEAK HR FACTOR :	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.250
									0.250								

National Data & Surveying Services

Intersection Turning Movement Count

Location: SB SR 99 Ramps & E Robertson Blvd
City: Chowchilla

Project ID: 19-07441-002
Date: 11/19/2019

Pedestrians (Crosswalks)

NS/EW Streets:	SB SR 99 Ramps		SB SR 99 Ramps		E Robertson Blvd		E Robertson Blvd		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	2	0	0	0	0	2
7:30 AM	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0
8:15 AM	1	0	0	0	0	0	0	0	1
8:30 AM	0	0	0	0	0	0	0	0	0
8:45 AM	1	0	0	0	0	0	0	0	1
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	2	0	0	2	0	0	0	0	4
APPROACH %'s :	100.00%	0.00%	0.00%	100.00%					
PEAK HR :	07:30 AM - 08:30 AM								TOTAL
PEAK HR VOL :	1	0	0	0	0	0	0	0	1
PEAK HR FACTOR :	0.250								0.250
	0.250								

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
4:00 PM	1	4	0	0	0	0	0	0	5
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	4	0	0	0	0	0	0	0	4
4:45 PM	0	1	1	0	0	0	0	0	2
5:00 PM	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	1	0	0	0	0	1
5:45 PM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	5	5	1	1	0	0	0	0	12
APPROACH %'s :	50.00%	50.00%	50.00%	50.00%					
PEAK HR :	04:45 PM - 05:45 PM								TOTAL
PEAK HR VOL :	0	1	1	1	0	0	0	0	3
PEAK HR FACTOR :		0.250	0.250	0.250					0.375
	0.250		0.500						

Prepared by National Data & Surveying Services

NB SR 99 Ramps & E Robertson Blvd & Ave 26

Peak Hour Turning Movement Count

ID: 19-07441-003
City: Chowchilla

Day: Tuesday
Date: 11/19/2019

	PEAK HOURS	COUNT PERIODS
AM	07:30 AM - 08:30 AM	07:00 AM - 09:00 AM
NOON	NONE	NONE
PM	04:30 PM - 05:30 PM	04:00 PM - 06:00 PM

NB SR 99 Ramps – SOUTHBOUND

	Right	Thru	Left	U-Turn	Total
AM	1	0	0	0	1
NOON	0	0	0	0	0
PM	3	0	0	0	3
Bikes	0	0	0	0	

E Robertson Blvd & Ave 26 – EASTBOUND

	AM	NOON	PM	Bikes
Total	584	0	524	
U-Turn	0	0	0	0
Left	1	0	0	0
Thru	382	0	404	0
Right	101	0	126	0

E Robertson Blvd & Ave 26 – WESTBOUND

	PM	NOON	AM	Bikes
Right	1	0	0	0
Thru	352	0	461	0
Left	36	0	87	0
U-Turn	0	0	0	0
Total	493	0	462	

NB SR 99 Ramps – NORTHBOUND

	Total	U-Turn	Left	Thru	Right
PM	162	0	169	2	89
NOON	0	0	0	0	0
AM	188	0	122	0	80
Bikes		0	0	0	0

CONTROL

1 WAY-STOP (NB)

	AM	NOON	PM
TEV	1235	0	1182
PHF	0.88		0.98

Total Vehicles (AM)

SB: 1 (right), 0 (thru), 0 (left); EB: 1 (left), 382 (thru), 101 (right); WB: 0 (U-turn), 461 (thru), 87 (left); NB: 122 (left), 0 (thru), 80 (right)

Total Vehicles (Noon)

All movements: N/A

Total Vehicles (PM)

SB: 3 (right), 0 (thru), 0 (left); EB: 0 (left), 404 (thru), 126 (right); WB: 1 (U-turn), 352 (thru), 36 (left); NB: 169 (left), 2 (thru), 89 (right)

Bikes (AM)

SB: 0, 0, 0; EB: 0, 1, 0; WB: 0, 1, 0; NB: 0, 0, 0

Bikes (NOON)

All movements: N/A

Bikes (PM)

SB: 0, 0, 0; EB: 0, 1, 0; WB: 0, 0, 0; NB: 0, 0, 0

Pedestrians (Crosswalks)

Crosswalk	AM	NOON	PM
North leg (eastbound / westbound)	0 / 0	0 / 0	4 / 1
South leg (eastbound / westbound)	0 / 0	0 / 0	0 / 1
West leg (southbound / northbound)	0 / 0	0 / 0	0 / 0
East leg (southbound / northbound)	0 / 0	0 / 0	0 / 0
Diagonals (each corner)	0	0	0

National Data & Surveying Services

Intersection Turning Movement Count

Location: NB SR 99 Ramps & E Robertson Blvd & Ave 26
City: Chowchilla
Control: 1 WAY-STOP (NB)

Project ID: 19-07441-003
Date: 11/19/2019

Total

NS/EW Streets:	NB SR 99 Ramps				NB SR 99 Ramps				E Robertson Blvd & Ave 26				E Robertson Blvd & Ave 26				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	24	0	11	0	0	0	0	0	0	18	36	0	24	62	0	0	175
7:15 AM	39	0	7	0	0	0	0	0	0	30	42	0	27	60	0	0	205
7:30 AM	30	0	13	0	0	0	1	0	0	49	33	0	26	116	0	0	268
7:45 AM	20	0	20	0	0	0	0	0	0	125	25	0	25	136	0	0	351
8:00 AM	33	0	21	0	0	0	0	0	0	116	21	0	16	103	0	0	310
8:15 AM	39	0	26	0	0	0	0	0	1	92	22	0	20	106	0	0	306
8:30 AM	28	0	16	0	0	0	0	0	0	73	33	0	13	99	0	0	262
8:45 AM	35	0	9	0	0	0	0	0	0	75	26	0	9	46	0	0	200
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	248	0	123	0	0	0	1	0	1	578	238	0	160	728	0	0	2077
APPROACH %'s :	66.85%	0.00%	33.15%	0.00%	0.00%	0.00%	100.00%	0.00%	0.12%	70.75%	29.13%	0.00%	18.02%	81.98%	0.00%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	122	0	80	0	0	0	1	0	1	382	101	0	87	461	0	0	1235
PEAK HR FACTOR :	0.782	0.000	0.769	0.000	0.000	0.000	0.250	0.000	0.250	0.764	0.765	0.000	0.837	0.847	0.000	0.000	0.880
	0.777				0.250				0.807				0.851				

	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	34	0	22	0	0	0	0	0	0	73	18	0	8	118	0	0	273
4:15 PM	38	0	24	0	0	0	0	0	1	102	24	0	11	93	0	0	293
4:30 PM	44	0	20	0	0	0	0	0	0	108	35	0	9	85	0	0	301
4:45 PM	41	0	28	0	0	0	1	0	0	96	28	0	7	84	0	0	285
5:00 PM	42	2	18	0	0	0	2	0	0	105	27	0	9	93	1	0	299
5:15 PM	42	0	23	0	0	0	0	0	0	95	36	0	11	90	0	0	297
5:30 PM	54	0	25	0	0	0	0	0	0	105	15	0	11	91	0	0	301
5:45 PM	25	0	28	0	0	0	0	0	0	98	13	0	16	79	0	0	259
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	320	2	188	0	0	0	3	0	1	782	196	0	82	733	1	0	2308
APPROACH %'s :	62.75%	0.39%	36.86%	0.00%	0.00%	0.00%	100.00%	0.00%	0.10%	79.88%	20.02%	0.00%	10.05%	89.83%	0.12%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	169	2	89	0	0	0	3	0	0	404	126	0	36	352	1	0	1182
PEAK HR FACTOR :	0.960	0.250	0.795	0.000	0.000	0.000	0.375	0.000	0.000	0.935	0.875	0.000	0.818	0.946	0.250	0.000	0.982
	0.942				0.375				0.927				0.944				

National Data & Surveying Services

Intersection Turning Movement Count

Location: NB SR 99 Ramps & E Robertson Blvd & Ave 26
City: Chowchilla
Control: 1 WAY-STOP (NB)

Project ID: 19-07441-003
Date: 11/19/2019

Bikes

NS/EW Streets:	NB SR 99 Ramps				NB SR 99 Ramps				E Robertson Blvd & Ave 26				E Robertson Blvd & Ave 26				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2
8:00 AM	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
8:30 AM	0	0	0	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	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2
APPROACH %'s :									0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.250	0.000	0.000	0.250
									0.250				0.250				

	NB SR 99 Ramps				NB SR 99 Ramps				E Robertson Blvd & Ave 26				E Robertson Blvd & Ave 26				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	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	0	1	0	0	0	1	0	0	2
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	0	3
APPROACH %'s :									0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
PEAK HR FACTOR :	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.250
									0.250								

National Data & Surveying Services

Intersection Turning Movement Count

Location: NB SR 99 Ramps & E Robertson Blvd & Ave 26 **Project ID:** 19-07441-003
City: Chowchilla **Date:** 11/19/2019

Pedestrians (Crosswalks)

NS/EW Streets:	NB SR 99 Ramps		NB SR 99 Ramps		E Robertson Blvd & Ave 26		E Robertson Blvd & Ave 26		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
7:00 AM	0	0	0	1	0	0	0	0	1
7:15 AM	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0
8:30 AM	1	0	0	0	0	0	0	0	1
8:45 AM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	1	0	0	1	0	0	0	0	2
APPROACH %'s :	100.00%	0.00%	0.00%	100.00%					
PEAK HR :	07:30 AM - 08:30 AM								TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :									

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0
4:15 PM	1	0	0	0	0	0	0	0	1
4:30 PM	3	0	0	0	0	0	0	0	3
4:45 PM	1	1	0	0	0	0	0	0	2
5:00 PM	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	1	0	0	0	0	1
5:30 PM	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	5	1	0	1	0	0	0	0	7
APPROACH %'s :	83.33%	16.67%	0.00%	100.00%					
PEAK HR :	04:30 PM - 05:30 PM								TOTAL
PEAK HR VOL :	4	1	0	1	0	0	0	0	6
PEAK HR FACTOR :	0.333	0.250		0.250					0.500
	0.417		0.250						

5738-001

Prepared by National Data & Surveying Services

Montgomery Lake Way & E Robertson Blvd & Ave 26

Peak Hour Turning Movement Count

ID: 19-07441-004
City: Chowchilla

Day: Tuesday
Date: 11/19/2019

PEAK HOURS		COUNT PERIODS
AM	07:45 AM - 08:45 AM	07:00 AM - 09:00 AM
NOON	NONE	NONE
PM	04:00 PM - 05:00 PM	04:00 PM - 06:00 PM

Montgomery Lake Way — SOUTHBOUND

	Right	Through	Left	U-Turn	Exit
AM	0	0	0	0	0
NOON	0	0	0	0	0
PM	0	0	0	0	0
Bikes	0	0	0	0	

E Robertson Blvd & Ave 26 — EASTBOUND

	AM	NOON	PM	Bikes
Exit	504	0	389	
U-Turn	0	0	0	0
Left	0	0	0	0
Through	410	0	284	0
Right	52	0	157	0

E Robertson Blvd & Ave 26 — WESTBOUND

	Bikes	PM	NOON	AM
Left	0	0	0	0
Through	0	243	0	462
Right	0	13	0	8
U-Turn	0	0	0	0
Exit		298	0	412

CONTROL

1 WAY-STOP (NB)

	AM	NOON	PM
TEV	976	0	857
PHF	0.81		0.98

Montgomery Lake Way — NORTHBOUND

	Exit	U-Turn	Left	Through	Right
Bikes		0	0	0	0
PM	170	0	146	0	14
NOON	0	0	0	0	0
AM	60	0	42	0	2

Total Vehicles (AM)

Approach	U-Turn	Left	Through	Right
Southbound	0	0	0	0
Eastbound		0	410	52
Westbound	0		462	8
Northbound		42	0	2

Total Vehicles (Noon)

All movements: N/A

Total Vehicles (PM)

Approach	U-Turn	Left	Through	Right
Southbound	0	0	0	0
Eastbound		0	284	157
Westbound	0		243	13
Northbound		146	0	14

Bikes (AM)

Approach	U-Turn	Left	Through	Right
Southbound	0	0	0	0
Eastbound		0	1	0
Westbound	0		1	0
Northbound		0	0	0

Bikes (NOON)

All movements: N/A

Bikes (PM)

Approach	U-Turn	Left	Through	Right
Southbound	0	0	0	0
Eastbound		0	1	0
Westbound	0		1	0
Northbound		0	0	0

Pedestrians (Crosswalks)

All crosswalks, all periods (AM, NOON, PM): 0

National Data & Surveying Services

Intersection Turning Movement Count

Location: Montgomery Lake Way & E Robertson Blvd & Ave 26
City: Chowchilla
Control: 1 WAY-STOP (NB)

Project ID: 19-07441-004
Date: 11/19/2019

Total

NS/EW Streets:	Montgomery Lake Way				Montgomery Lake Way				E Robertson Blvd & Ave 26				E Robertson Blvd & Ave 26				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	5	0	0	0	0	0	0	0	0	13	10	0	1	75	0	0	104
7:15 AM	6	0	0	0	0	0	0	0	0	26	6	0	1	79	0	0	118
7:30 AM	7	0	0	0	0	0	0	0	0	46	6	0	1	129	0	0	189
7:45 AM	11	0	1	0	0	0	0	0	0	125	13	0	2	149	0	0	301
8:00 AM	8	0	0	0	0	0	0	0	0	118	11	0	2	107	0	0	246
8:15 AM	12	0	0	0	0	0	0	0	0	95	16	0	3	113	0	0	239
8:30 AM	11	0	1	0	0	0	0	0	0	72	12	0	1	93	0	0	190
8:45 AM	9	0	0	0	0	0	0	0	0	59	11	0	1	43	0	0	123
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	69	0	2	0	0	0	0	0	0	554	85	0	12	788	0	0	1510
APPROACH %'s :	97.18%	0.00%	2.82%	0.00%					0.00%	86.70%	13.30%	0.00%	1.50%	98.50%	0.00%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	42	0	2	0	0	0	0	0	0	410	52	0	8	462	0	0	976
PEAK HR FACTOR :	0.875	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.820	0.813	0.000	0.667	0.775	0.000	0.000	0.811
	0.917								0.837				0.778				

	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	34	0	2	0	0	0	0	0	0	57	31	0	2	91	0	0	217
4:15 PM	36	0	2	0	0	0	0	0	0	76	41	0	4	59	0	0	218
4:30 PM	36	0	4	0	0	0	0	0	0	77	42	0	2	46	0	0	207
4:45 PM	40	0	6	0	0	0	0	0	0	74	43	0	5	47	0	0	215
5:00 PM	49	0	2	0	0	0	0	0	0	72	40	0	1	51	0	0	215
5:15 PM	35	0	3	0	0	0	0	0	0	74	35	0	2	57	0	0	206
5:30 PM	37	0	3	0	0	0	0	0	0	79	43	0	3	55	0	0	220
5:45 PM	38	0	1	0	0	0	0	0	0	79	41	0	4	46	0	0	209
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	305	0	23	0	0	0	0	0	0	588	316	0	23	452	0	0	1707
APPROACH %'s :	92.99%	0.00%	7.01%	0.00%					0.00%	65.04%	34.96%	0.00%	4.84%	95.16%	0.00%	0.00%	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	146	0	14	0	0	0	0	0	0	284	157	0	13	243	0	0	857
PEAK HR FACTOR :	0.913	0.000	0.583	0.000	0.000	0.000	0.000	0.000	0.000	0.922	0.913	0.000	0.650	0.668	0.000	0.000	0.983
	0.870								0.926				0.688				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Montgomery Lake Way & E Robertson Blvd & Ave 26
City: Chowchilla
Control: 1 WAY-STOP (NB)

Project ID: 19-07441-004
Date: 11/19/2019

Bikes

NS/EW Streets:	Montgomery Lake Way				Montgomery Lake Way				E Robertson Blvd & Ave 26				E Robertson Blvd & Ave 26				
	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2
8:00 AM	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
8:30 AM	0	0	0	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	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2
APPROACH %'s :									0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.250	0.000	0.000	0.250
									0.250				0.250				

	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
4:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2
APPROACH %'s :									0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2
PEAK HR FACTOR :	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.250	0.000	0.000	0.500
									0.250				0.250				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Montgomery Lake Way & E Robertson Blvd & Ave 26 **Project ID:** 19-07441-004
City: Chowchilla **Date:** 11/19/2019

Pedestrians (Crosswalks)

NS/EW Streets:	Montgomery Lake Way		Montgomery Lake Way		E Robertson Blvd & Ave 26		E Robertson Blvd & Ave 26		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
7:00 AM	0	0	0	2	0	0	0	0	2
7:15 AM	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	0	0	2	0	0	0	0	2
APPROACH %'s :			0.00%	100.00%					
PEAK HR :	07:45 AM - 08:45 AM								TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :									

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0
APPROACH %'s :									
PEAK HR :	04:00 PM - 05:00 PM								TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :									

Prepared by National Data & Surveying Services

Genoa Lake Way & E Robertson Blvd & Ave 26

Peak Hour Turning Movement Count

ID: 19-07441-005
City: Chowchilla

Day: Tuesday
Date: 11/19/2019

PEAK HOURS	COUNT PERIODS
07:30 AM - 08:30 AM	07:00 AM - 09:00 AM
NONE	NONE
04:00 PM - 05:00 PM	04:00 PM - 06:00 PM

Genoa Lake Way — SOUTHBOUND

AM	0	0	0	0	0
NOON	0	0	0	0	0
PM	0	0	0	0	0
	0	0	0	0	

E Robertson Blvd & Ave 26 — EASTBOUND

AM	NOON	PM	
509	0	265	
0	0	0	0
0	0	0	0
383	0	330	0
2	0	2	0
AM	NOON	PM	

E Robertson Blvd & Ave 26 — WESTBOUND

	PM	NOON	AM
0	0	0	0
0	262	0	508
0	9	0	6
0	0	0	0
	332	0	385
	PM	NOON	AM

CONTROL

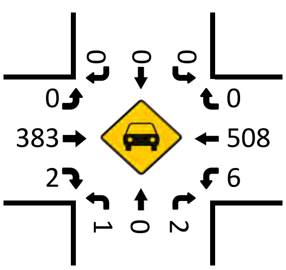
1 WAY-STOP (NB)

	AM	NOON	PM
TEV	902	0	608
PHF	0.81		0.92

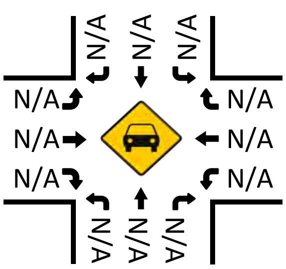
Genoa Lake Way — NORTHBOUND

		0	0	0	0	
PM	11	0	3	0	2	PM
NOON	0	0	0	0	0	NOON
AM	8	0	1	0	2	AM

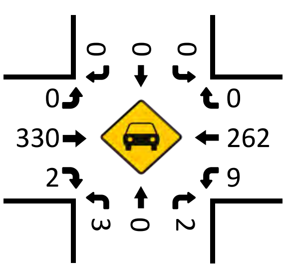
Total Vehicles (AM)



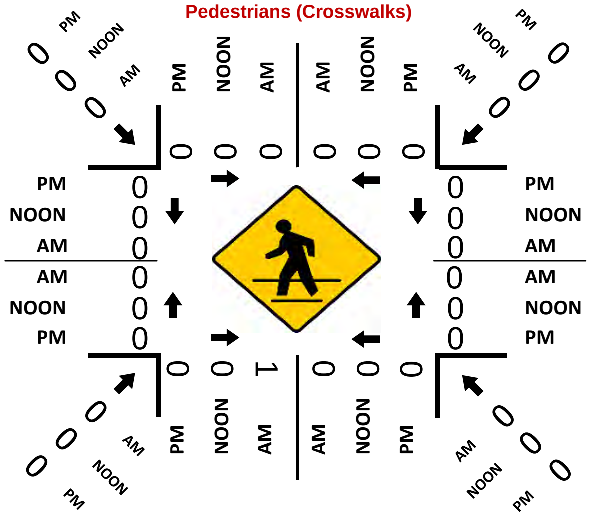
Total Vehicles (Noon)



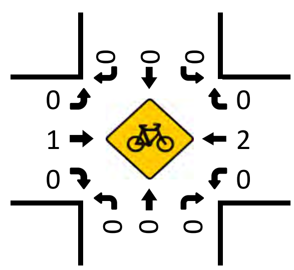
Total Vehicles (PM)



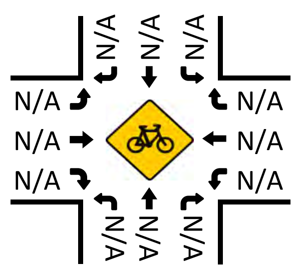
Pedestrians (Crosswalks)



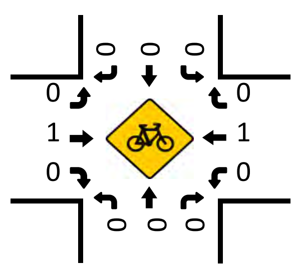
Bikes (AM)



Bikes (NOON)



Bikes (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: Genoa Lake Way & E Robertson Blvd & Ave 26
City: Chowchilla
Control: 1 WAY-STOP (NB)

Project ID: 19-07441-005
Date: 11/19/2019

Total

NS/EW Streets:	Genoa Lake Way				Genoa Lake Way				E Robertson Blvd & Ave 26				E Robertson Blvd & Ave 26				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	1	0	0	0	0	0	0	0	0	16	0	0	1	75	0	0	93
7:15 AM	1	0	0	0	0	0	0	0	0	26	0	0	3	83	0	0	113
7:30 AM	0	0	1	0	0	0	0	0	0	47	0	0	1	131	0	0	180
7:45 AM	0	0	0	0	0	0	0	0	0	127	0	0	1	152	0	0	280
8:00 AM	0	0	1	0	0	0	0	0	0	111	0	0	0	108	0	0	220
8:15 AM	1	0	0	0	0	0	0	0	0	98	2	0	4	117	0	0	222
8:30 AM	1	0	0	0	0	0	0	0	0	72	0	0	0	92	0	0	165
8:45 AM	0	0	0	0	0	0	0	0	0	58	0	0	1	44	0	0	103
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	4	0	2	0	0	0	0	0	0	555	2	0	11	802	0	0	1376
APPROACH %'s :	66.67%	0.00%	33.33%	0.00%					0.00%	99.64%	0.36%	0.00%	1.35%	98.65%	0.00%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	1	0	2	0	0	0	0	0	0	383	2	0	6	508	0	0	902
PEAK HR FACTOR :	0.250	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.754	0.250	0.000	0.375	0.836	0.000	0.000	0.805
	0.750								0.758				0.840				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	1	0	0	0	0	0	0	0	0	65	1	0	5	94	0	0	166
4:15 PM	0	0	1	0	0	0	0	0	0	88	1	0	1	66	0	0	157
4:30 PM	1	0	1	0	0	0	0	0	0	88	0	0	2	52	0	0	144
4:45 PM	1	0	0	0	0	0	0	0	0	89	0	0	1	50	0	0	141
5:00 PM	1	0	0	0	0	0	0	0	0	81	0	0	1	53	0	0	136
5:15 PM	2	0	2	0	0	0	0	0	0	80	0	0	2	62	0	0	148
5:30 PM	2	0	1	0	0	0	0	0	0	82	0	0	1	55	0	0	141
5:45 PM	3	0	3	0	0	0	0	0	0	90	2	0	4	46	0	0	148
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	11	0	8	0	0	0	0	0	0	663	4	0	17	478	0	0	1181
APPROACH %'s :	57.89%	0.00%	42.11%	0.00%					0.00%	99.40%	0.60%	0.00%	3.43%	96.57%	0.00%	0.00%	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	3	0	2	0	0	0	0	0	0	330	2	0	9	262	0	0	608
PEAK HR FACTOR :	0.750	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.927	0.500	0.000	0.450	0.697	0.000	0.000	0.916
	0.625								0.933				0.684				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Genoa Lake Way & E Robertson Blvd & Ave 26
City: Chowchilla
Control: 1 WAY-STOP (NB)

Project ID: 19-07441-005
Date: 11/19/2019

Bikes

NS/EW Streets:	Genoa Lake Way				Genoa Lake Way				E Robertson Blvd & Ave 26				E Robertson Blvd & Ave 26				
	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
7:45 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2
8:00 AM	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
8:30 AM	0	0	0	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	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	0	3
APPROACH %'s :									0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	0	3
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.500	0.000	0.000	0.375
									0.250				0.500				

	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
4:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2
APPROACH %'s :									0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2
PEAK HR FACTOR :	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.250	0.000	0.000	0.500
									0.250				0.250				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Genoa Lake Way & E Robertson Blvd & Ave 26 **Project ID:** 19-07441-005
City: Chowchilla **Date:** 11/19/2019

Pedestrians (Crosswalks)

NS/EW Streets:	Genoa Lake Way		Genoa Lake Way		E Robertson Blvd & Ave 26		E Robertson Blvd & Ave 26		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
7:00 AM	0	0	1	1	0	0	0	0	2
7:15 AM	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	1	0	0	0	0	0	1
8:15 AM	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	1	0	0	0	0	1
8:45 AM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	0	2	2	0	0	0	0	4
APPROACH %'s :			50.00%	50.00%					
PEAK HR :	**07:30 AM - 08:30 AM**								TOTAL
PEAK HR VOL :	0	0	1	0	0	0	0	0	1
PEAK HR FACTOR :			0.250						0.250
			0.250						

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0
APPROACH %'s :									
PEAK HR :	**04:00 PM - 05:00 PM**								TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :									

5738-001

Prepared by National Data & Surveying Services

Fig Tree Rd & E Robertson Blvd & Ave 26

Peak Hour Turning Movement Count

ID: 19-07441-006
City: Chowchilla

Day: Tuesday
Date: 11/19/2019

	PEAK HOURS	COUNT PERIODS
AM	07:30 AM - 08:30 AM	07:00 AM - 09:00 AM
NOON	NONE	NONE
PM	04:00 PM - 05:00 PM	04:00 PM - 06:00 PM

Fig Tree Rd — SOUTHBOUND

	Right	Through	Left	U-Turn	Departing
AM	162	3	21	0	250
NOON	0	0	0	0	0
PM	75	0	10	0	57
	0	0	0	0	

E Robertson Blvd & Ave 26 — EASTBOUND

	AM	NOON	PM	
Departing	515	0	270	
U-Turn	0	0	0	0
Left	212	0	48	0
Through	143	0	281	0
Right	30	0	6	0

E Robertson Blvd & Ave 26 — WESTBOUND

		PM	NOON	AM
Right	0	9	0	36
Through	0	193	0	334
Left	0	1	0	11
U-Turn	0	0	0	0
Departing		297	0	172

Fig Tree Rd — NORTHBOUND

	Departing	U-Turn	Left	Through	Right
		0	0	0	0
PM	7	0	2	0	6
NOON	0	0	0	0	0
AM	44	0	19	2	8

CONTROL

4 WAY-STOP

	AM	NOON	PM
TEV	981	0	631
PHF	0.85		0.90

Total Vehicles (AM)

Approach	Right	Through	Left
Southbound	162	3	21
Eastbound	30	143	212
Westbound	36	334	11
Northbound	8	2	19

Bikes (AM)

Approach	Right	Through	Left
Southbound	0	0	0
Eastbound	0	0	1
Westbound	0	2	0
Northbound	0	0	0

Total Vehicles (Noon)

Approach	Right	Through	Left
Southbound	N/A	N/A	N/A
Eastbound	N/A	N/A	N/A
Westbound	N/A	N/A	N/A
Northbound	N/A	N/A	N/A

Bikes (NOON)

Approach	Right	Through	Left
Southbound	N/A	N/A	N/A
Eastbound	N/A	N/A	N/A
Westbound	N/A	N/A	N/A
Northbound	N/A	N/A	N/A

Total Vehicles (PM)

Approach	Right	Through	Left
Southbound	75	0	10
Eastbound	6	281	48
Westbound	9	193	1
Northbound	6	0	2

Bikes (PM)

Approach	Right	Through	Left
Southbound	0	0	0
Eastbound	0	1	0
Westbound	0	1	0
Northbound	0	0	0

Pedestrians (Crosswalks)

Crosswalk	AM	NOON	PM
North leg (westward)	0	0	0
North leg (eastward)	0	0	0
West leg (southward)	0	0	0
West leg (northward)	1	0	0
East leg (southward)	0	0	0
East leg (northward)	1	0	0
South leg (eastward)	0	0	0
South leg (westward)	0	0	0
NW diagonal	0	0	0
NE diagonal	0	0	0
SW diagonal	0	0	0
SE diagonal	0	0	0

National Data & Surveying Services

Intersection Turning Movement Count

Location: Fig Tree Rd & E Robertson Blvd & Ave 26
City: Chowchilla
Control: 4 WAY-STOP

Project ID: 19-07441-006
Date: 11/19/2019

Total

NS/EW Streets:	Fig Tree Rd				Fig Tree Rd				E Robertson Blvd & Ave 26				E Robertson Blvd & Ave 26				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0	20	0	0	0	81	1	0	102
7:15 AM	0	0	0	0	0	0	1	0	4	19	2	0	0	84	1	0	111
7:30 AM	1	0	1	0	0	0	3	0	19	27	3	0	3	130	3	0	190
7:45 AM	5	0	1	0	6	2	52	0	66	45	7	0	1	97	7	0	289
8:00 AM	4	0	0	0	8	1	44	0	67	42	14	0	5	59	11	0	255
8:15 AM	9	2	6	0	7	0	63	0	60	29	6	0	2	48	15	0	247
8:30 AM	2	0	1	0	10	0	51	0	34	32	6	0	3	37	7	0	183
8:45 AM	3	0	2	0	0	0	7	0	9	41	7	0	2	35	1	0	107
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	24	2	11	0	31	3	221	0	259	255	45	0	16	571	46	0	1484
APPROACH %'s :	64.86%	5.41%	29.73%	0.00%	12.16%	1.18%	86.67%	0.00%	46.33%	45.62%	8.05%	0.00%	2.53%	90.21%	7.27%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	19	2	8	0	21	3	162	0	212	143	30	0	11	334	36	0	981
PEAK HR FACTOR :	0.528	0.250	0.333	0.000	0.656	0.375	0.643	0.000	0.791	0.794	0.536	0.000	0.550	0.642	0.600	0.000	0.849
	0.426				0.664				0.783				0.700				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	1	0	1	0	4	0	28	0	12	51	1	0	0	72	5	0	175
4:15 PM	0	0	2	0	1	0	16	0	11	79	1	0	1	46	0	0	157
4:30 PM	1	0	3	0	2	0	18	0	9	76	2	0	0	37	3	0	151
4:45 PM	0	0	0	0	3	0	13	0	16	75	2	0	0	38	1	0	148
5:00 PM	3	0	1	0	3	1	15	0	13	67	2	0	0	37	0	0	142
5:15 PM	3	0	3	0	2	0	11	0	12	70	0	0	0	49	0	0	150
5:30 PM	1	0	0	0	1	0	15	0	6	78	0	0	0	43	2	0	146
5:45 PM	0	0	0	0	1	0	10	0	3	87	1	0	0	39	1	0	142
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	9	0	10	0	17	1	126	0	82	583	9	0	1	361	12	0	1211
APPROACH %'s :	47.37%	0.00%	52.63%	0.00%	11.81%	0.69%	87.50%	0.00%	12.17%	86.50%	1.34%	0.00%	0.27%	96.52%	3.21%	0.00%	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	2	0	6	0	10	0	75	0	48	281	6	0	1	193	9	0	631
PEAK HR FACTOR :	0.500	0.000	0.500	0.000	0.625	0.000	0.670	0.000	0.750	0.889	0.750	0.000	0.250	0.670	0.450	0.000	0.901
	0.500				0.664				0.901				0.659				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Fig Tree Rd & E Robertson Blvd & Ave 26
City: Chowchilla
Control: 4 WAY-STOP

Project ID: 19-07441-006
Date: 11/19/2019

Bikes

NS/EW Streets:	Fig Tree Rd				Fig Tree Rd				E Robertson Blvd & Ave 26				E Robertson Blvd & Ave 26				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
7:45 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	2
8:00 AM	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
8:30 AM	0	0	0	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	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	1	0	0	0	0	2	0	0	3
APPROACH %'s :									100.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	1	0	0	0	0	2	0	0	3
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.500	0.000	0.000	0.375
									0.250				0.500				

	Fig Tree Rd				Fig Tree Rd				E Robertson Blvd & Ave 26				E Robertson Blvd & Ave 26				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
4:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	0	3
APPROACH %'s :									0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2
PEAK HR FACTOR :	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.250	0.000	0.000	0.500
									0.250				0.250				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Fig Tree Rd & E Robertson Blvd & Ave 26
City: Chowchilla
Project ID: 19-07441-006
Date: 11/19/2019

Pedestrians (Crosswalks)

NS/EW Streets:	Fig Tree Rd		Fig Tree Rd		E Robertson Blvd & Ave 26		E Robertson Blvd & Ave 26		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	1	0	0	0	1
8:00 AM	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	1	0	1
8:30 AM	0	0	0	1	0	0	0	0	1
8:45 AM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	0	0	1	1	0	1	0	3
APPROACH %'s :			0.00%	100.00%	100.00%	0.00%	100.00%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM								TOTAL
PEAK HR VOL :	0	0	0	0	1	0	1	0	2
PEAK HR FACTOR :					0.250		0.250		0.500
					0.250		0.250		

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0
APPROACH %'s :									
PEAK HR :	04:00 PM - 05:00 PM								TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :									

Prepared by National Data & Surveying Services

Clubhouse Dr & E Robertson Blvd & Ave 26

Peak Hour Turning Movement Count

ID: 19-07441-007
City: Chowchilla

Day: Tuesday
Date: 11/19/2019

PEAK HOURS		COUNT PERIODS
AM	07:15 AM - 08:15 AM	07:00 AM - 09:00 AM
NOON	NONE	NONE
PM	04:00 PM - 05:00 PM	04:00 PM - 06:00 PM

Clubhouse Dr – SOUTHBOUND

	Right	Through	Left	U-turn	Departing
AM	0	0	0	0	0
NOON	0	0	0	0	0
PM	0	0	0	0	0
Peds/Bikes	0	0	0	0	

E Robertson Blvd & Ave 26 – EASTBOUND

	AM	NOON	PM	
Departing	229	0	114	
U-turn	0	0	0	0
Left	0	0	0	0
Through	78	0	151	0
Right	27	0	33	0

E Robertson Blvd & Ave 26 – WESTBOUND

		PM	NOON	AM
Right	0	0	0	0
Through	0	95	0	181
Left	0	5	0	2
U-turn	0	0	0	0
Departing		156	0	83

CONTROL

1 WAY-STOP (NB)

	AM	NOON	PM
TEV	341	0	308
PHF	0.85		0.93

Clubhouse Dr – NORTHBOUND

	Departing	U-turn	Left	Through	Right
Peds/Bikes		0	0	0	0
PM	38	0	19	0	5
NOON	0	0	0	0	0
AM	29	0	48	0	5

Total Vehicles (AM)

SB: 0, 0, 0 — EB: 0, 78, 27 — WB: 0, 181, 2 — NB: 48, 0, 5

Total Vehicles (Noon)

All movements: N/A

Total Vehicles (PM)

SB: 0, 0, 0 — EB: 0, 151, 33 — WB: 0, 95, 5 — NB: 19, 0, 5

Bikes (AM)

SB: 0, 0, 0 — EB: 0, 0, 0 — WB: 0, 1, 0 — NB: 0, 0, 0

Bikes (NOON)

All movements: N/A

Bikes (PM)

SB: 0, 0, 0 — EB: 0, 0, 0 — WB: 0, 0, 0 — NB: 0, 0, 0

Pedestrians (Crosswalks)

Crosswalk	AM	NOON	PM
North leg (west side)	0	0	0
North leg (east side)	0	0	0
West leg (upper)	0	0	0
West leg (lower)	0	0	0
East leg (upper)	0	0	0
East leg (lower)	0	0	0
South leg (west side)	0	0	1
South leg (east side)	1	0	0
Diagonals (each corner)	0	0	0

National Data & Surveying Services

Intersection Turning Movement Count

Location: Clubhouse Dr & E Robertson Blvd & Ave 26
City: Chowchilla
Control: 1 WAY-STOP (NB)

Project ID: 19-07441-007
Date: 11/19/2019

Total

NS/EW Streets:	Clubhouse Dr				Clubhouse Dr				E Robertson Blvd & Ave 26				E Robertson Blvd & Ave 26				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	12	0	2	0	0	0	0	0	0	11	5	0	1	30	0	0	61
7:15 AM	7	0	1	0	0	0	0	0	0	13	2	0	0	45	0	0	68
7:30 AM	20	0	1	0	0	0	0	0	0	14	8	0	1	47	0	0	91
7:45 AM	12	0	3	0	0	0	0	0	0	25	8	0	0	52	0	0	100
8:00 AM	9	0	0	0	0	0	0	0	0	26	9	0	1	37	0	0	82
8:15 AM	3	0	1	0	0	0	0	0	0	23	4	0	1	27	0	0	59
8:30 AM	4	0	0	0	0	0	0	0	0	18	5	0	2	28	0	0	57
8:45 AM	4	0	2	0	0	0	0	0	0	14	7	0	0	21	0	0	48
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	71	0	10	0	0	0	0	0	0	144	48	0	6	287	0	0	566
APPROACH %'s :	87.65%	0.00%	12.35%	0.00%					0.00%	75.00%	25.00%	0.00%	2.05%	97.95%	0.00%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	48	0	5	0	0	0	0	0	0	78	27	0	2	181	0	0	341
PEAK HR FACTOR :	0.600	0.000	0.417	0.000	0.000	0.000	0.000	0.000	0.000	0.750	0.750	0.000	0.500	0.870	0.000	0.000	0.853
	0.631								0.750				0.880				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	4	0	2	0	0	0	0	0	0	30	4	0	4	39	0	0	83
4:15 PM	4	0	0	0	0	0	0	0	0	44	11	0	0	18	0	0	77
4:30 PM	5	0	1	0	0	0	0	0	0	40	9	0	0	19	0	0	74
4:45 PM	6	0	2	0	0	0	0	0	0	37	9	0	1	19	0	0	74
5:00 PM	7	0	2	0	0	0	0	0	0	32	10	0	1	18	0	0	70
5:15 PM	8	0	1	0	0	0	0	0	0	36	9	0	1	29	0	0	84
5:30 PM	12	0	0	0	0	0	0	0	0	28	11	0	0	18	0	0	69
5:45 PM	4	0	2	0	0	0	0	0	0	42	11	0	1	14	0	0	74
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	50	0	10	0	0	0	0	0	0	289	74	0	8	174	0	0	605
APPROACH %'s :	83.33%	0.00%	16.67%	0.00%					0.00%	79.61%	20.39%	0.00%	4.40%	95.60%	0.00%	0.00%	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	19	0	5	0	0	0	0	0	0	151	33	0	5	95	0	0	308
PEAK HR FACTOR :	0.792	0.000	0.625	0.000	0.000	0.000	0.000	0.000	0.000	0.858	0.750	0.000	0.313	0.609	0.000	0.000	0.928
	0.750								0.836				0.581				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Clubhouse Dr & E Robertson Blvd & Ave 26
City: Chowchilla
Control: 1 WAY-STOP (NB)

Project ID: 19-07441-007
Date: 11/19/2019

Bikes

NS/EW Streets:	Clubhouse Dr				Clubhouse Dr				E Robertson Blvd & Ave 26				E Robertson Blvd & Ave 26				
	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
8:00 AM	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
8:30 AM	0	0	0	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	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
APPROACH %'s :													0.00%	100.00%	0.00%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.250
													0.250				

	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	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	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
APPROACH %'s :																	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

National Data & Surveying Services

Intersection Turning Movement Count

Location: Clubhouse Dr & E Robertson Blvd & Ave 26 **Project ID:** 19-07441-007
City: Chowchilla **Date:** 11/19/2019

Pedestrians (Crosswalks)

NS/EW Streets:	Clubhouse Dr		Clubhouse Dr		E Robertson Blvd & Ave 26		E Robertson Blvd & Ave 26		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	1	0	0	0	0	1
7:30 AM	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	0	0	1	0	0	0	0	1
APPROACH %'s :			0.00%	100.00%					
PEAK HR :	07:15 AM - 08:15 AM								TOTAL
PEAK HR VOL :	0	0	0	1	0	0	0	0	1
PEAK HR FACTOR :				0.250					0.250
			0.250						

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
4:00 PM	0	0	1	0	0	0	0	0	1
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	0	1	0	0	0	0	0	1
APPROACH %'s :			100.00%	0.00%					
PEAK HR :	04:00 PM - 05:00 PM								TOTAL
PEAK HR VOL :	0	0	1	0	0	0	0	0	1
PEAK HR FACTOR :			0.250						0.250
			0.250						

Prepared by National Data & Surveying Services

Golf Dr & Ave 26

Peak Hour Turning Movement Count

ID: 19-07441-008
City: Chowchilla

Day: Tuesday
Date: 11/19/2019

	PEAK HOURS	COUNT PERIODS
AM	07:15 AM - 08:15 AM	07:00 AM - 09:00 AM
NOON	NONE	NONE
PM	04:00 PM - 05:00 PM	04:00 PM - 06:00 PM

Golf Dr – SOUTHBOUND

	↲	↓	↳	U	⇧
AM	0	0	0	0	1
NOON	0	0	0	0	0
PM	0	0	0	0	0
	0	0	0	0	

Ave 26 – EASTBOUND

	AM	NOON	PM	
⇦	181	0	99	
U	0	0	0	0
↱	0	0	0	0
→	41	0	55	0
↴	41	0	101	0

Ave 26 – WESTBOUND

		PM	NOON	AM
↰	0	0	0	1
←	0	44	0	59
↲	0	9	0	5
U	0	0	0	0
⇨		59	0	61

Golf Dr – NORTHBOUND

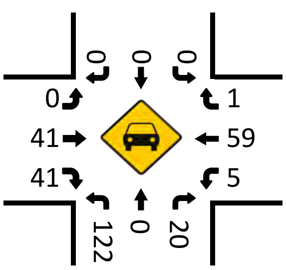
	⇩	U	↰	↑	↱
		0	0	0	0
PM	110	0	55	0	4
NOON	0	0	0	0	0
AM	46	0	122	0	20

CONTROL

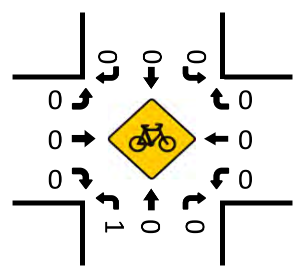
1 WAY-STOP (NB)

	AM	NOON	PM
TEV	289	0	268
PHF	0.89		0.84

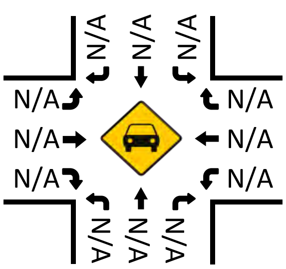
Total Vehicles (AM)



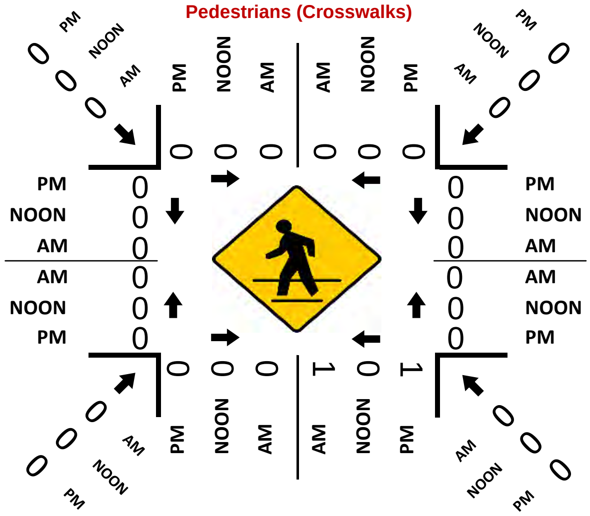
Bikes (AM)



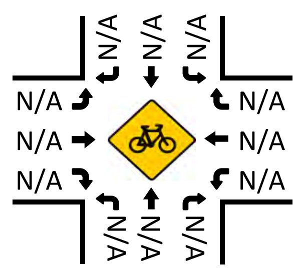
Total Vehicles (Noon)



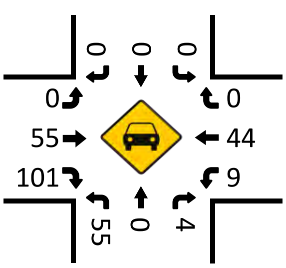
Pedestrians (Crosswalks)



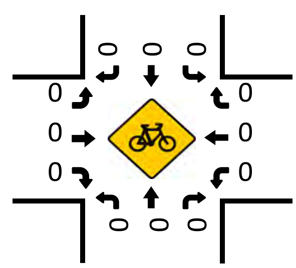
Bikes (NOON)



Total Vehicles (PM)



Bikes (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: Golf Dr & Ave 26
City: Chowchilla
Control: 1 WAY-STOP (NB)

Project ID: 19-07441-008
Date: 11/19/2019

Total

NS/EW Streets:	Golf Dr				Golf Dr				Ave 26				Ave 26				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	23	0	3	0	0	0	0	0	0	8	7	0	0	6	0	0	47
7:15 AM	31	0	2	0	0	0	0	0	0	7	6	0	2	14	0	0	62
7:30 AM	40	0	4	0	0	0	0	0	0	10	7	0	0	9	0	0	70
7:45 AM	32	0	7	0	0	0	0	0	0	12	13	0	1	16	0	0	81
8:00 AM	19	0	7	0	0	0	0	0	0	12	15	0	2	20	1	0	76
8:15 AM	7	1	4	0	0	0	0	0	0	13	12	0	5	18	0	0	60
8:30 AM	17	0	2	0	0	0	0	0	0	8	8	0	1	12	0	0	48
8:45 AM	14	0	3	0	0	0	0	0	0	7	11	0	3	6	0	0	44
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	183	1	32	0	0	0	0	0	0	77	79	0	14	101	1	0	488
APPROACH %'s :	84.72%	0.46%	14.81%	0.00%					0.00%	49.36%	50.64%	0.00%	12.07%	87.07%	0.86%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	122	0	20	0	0	0	0	0	0	41	41	0	5	59	1	0	289
PEAK HR FACTOR :	0.763	0.000	0.714	0.000	0.000	0.000	0.000	0.000	0.000	0.854	0.683	0.000	0.625	0.738	0.250	0.000	0.892
	0.807								0.759				0.707				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	21	0	1	0	0	0	0	0	0	14	20	0	3	21	0	0	80
4:15 PM	12	0	2	0	0	0	0	0	0	15	25	0	0	7	0	0	61
4:30 PM	12	0	1	0	0	0	0	0	0	13	29	0	3	7	0	0	65
4:45 PM	10	0	0	0	0	0	0	0	0	13	27	0	3	9	0	0	62
5:00 PM	11	0	2	0	0	0	0	0	0	12	21	0	1	9	0	0	56
5:15 PM	20	0	2	0	0	0	0	0	0	11	24	0	1	6	0	0	64
5:30 PM	10	0	1	0	0	0	0	0	0	7	21	0	3	7	0	0	49
5:45 PM	7	0	3	0	0	0	0	0	0	15	25	0	2	8	0	0	60
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	103	0	12	0	0	0	0	0	0	100	192	0	16	74	0	0	497
APPROACH %'s :	89.57%	0.00%	10.43%	0.00%					0.00%	34.25%	65.75%	0.00%	17.78%	82.22%	0.00%	0.00%	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	55	0	4	0	0	0	0	0	0	55	101	0	9	44	0	0	268
PEAK HR FACTOR :	0.655	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.917	0.871	0.000	0.750	0.524	0.000	0.000	0.838
	0.670								0.929				0.552				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Golf Dr & Ave 26
City: Chowchilla
Control: 1 WAY-STOP (NB)

Project ID: 19-07441-008
Date: 11/19/2019

Bikes

NS/EW Streets: Golf Dr | Golf Dr | Ave 26 | Ave 26

AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:00 AM	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
8:30 AM	0	0	0	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	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
APPROACH %'s :	100.00%	0.00%	0.00%	0.00%													
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
PEAK HR FACTOR :	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250
	0.250																

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	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	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
APPROACH %'s :																	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

National Data & Surveying Services

Intersection Turning Movement Count

Location: Golf Dr & Ave 26 **Project ID:** 19-07441-008
City: Chowchilla **Date:** 11/19/2019

Pedestrians (Crosswalks)

NS/EW Streets:	Golf Dr		Golf Dr		Ave 26		Ave 26		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	1	0	0	0	0	1
8:15 AM	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	1	1
8:45 AM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	0	0	1	0	0	0	1	2
APPROACH %'s :			0.00%	100.00%			0.00%	100.00%	
PEAK HR :	07:15 AM - 08:15 AM								TOTAL
PEAK HR VOL :	0	0	0	1	0	0	0	0	1
PEAK HR FACTOR :			0.250	0.250					0.250

	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
PM	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
4:00 PM	0	0	0	1	0	0	0	0	1
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	0	0	1	0	0	0	0	1
APPROACH %'s :			0.00%	100.00%					
PEAK HR :	04:00 PM - 05:00 PM								TOTAL
PEAK HR VOL :	0	0	0	1	0	0	0	0	1
PEAK HR FACTOR :			0.250	0.250					0.250

5738-001

Prepared by National Data & Surveying Services

Rd 19 & Ave 26

Peak Hour Turning Movement Count

ID: 19-07441-009
City: Chowchilla

Day: Tuesday
Date: 11/19/2019

	PEAK HOURS	COUNT PERIODS
AM	07:30 AM - 08:30 AM	07:00 AM - 09:00 AM
NOON	NONE	NONE
PM	04:00 PM - 05:00 PM	04:00 PM - 06:00 PM

Rd 19 — SOUTHBOUND

	Right	Thru	Left	U-Turn	Exiting (northbound lanes)
AM	11	7	0	0	11
NOON	0	0	0	0	0
PM	12	24	1	0	17
Bikes	0	0	0	0	

Ave 26 — EASTBOUND

	AM	NOON	PM	Bikes
Exiting (westbound lanes)	69	0	52	
U-Turn	0	0	0	0
Left	7	0	10	0
Thru	19	0	35	0
Right	35	0	17	0

Ave 26 — WESTBOUND

	PM	NOON	AM	Bikes
Right	1	0	0	0
Thru	23	0	30	0
Left	6	0	1	0
U-Turn	0	0	0	0
Exiting (eastbound lanes)	38	0	21	

Rd 19 — NORTHBOUND

	Exiting (southbound lanes)	U-Turn	Left	Thru	Right
Bikes		0	0	0	0
PM	47	0	17	6	2
NOON	0	0	0	0	0
AM	43	0	28	4	2

CONTROL

2 WAY-STOP (NB/SB)

	AM	NOON	PM
TEV	144	0	154
PHF	0.77		0.61

Total Vehicles (AM)

Approach	Left	Thru	Right	U-Turn
Southbound	0	7	11	0
Eastbound	7	19	35	
Westbound	1	30	0	
Northbound	28	4	2	

Total Vehicles (Noon)

All movements: N/A

Total Vehicles (PM)

Approach	Left	Thru	Right
Southbound	1	24	12
Eastbound	10	35	17
Westbound	6	23	1
Northbound	17	6	2

Bikes (AM)

All movements: 0

Bikes (NOON)

All movements: N/A

Bikes (PM)

All movements: 0

Pedestrians (Crosswalks)

Crosswalk	AM	NOON	PM
North leg	0	0	0
South leg	0	0	0
East leg	0	0	0
West leg	0	0	0
Diagonals	0	0	0

National Data & Surveying Services

Intersection Turning Movement Count

Location: Rd 19 & Ave 26
City: Chowchilla
Control: 2 WAY-STOP (NB/SB)

Project ID: 19-07441-009
Date: 11/19/2019

Total

NS/EW Streets:	Rd 19				Rd 19				Ave 26				Ave 26				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	3	0	1	0	0	7	1	0	2	2	9	0	3	4	0	0	32
7:15 AM	2	2	0	0	0	1	2	0	2	4	5	0	1	11	0	0	30
7:30 AM	2	3	1	0	0	1	0	0	2	6	4	0	1	7	0	0	27
7:45 AM	1	1	1	0	0	0	6	0	4	2	13	0	0	10	0	0	38
8:00 AM	16	0	0	0	0	6	2	0	1	7	10	0	0	5	0	0	47
8:15 AM	9	0	0	0	0	0	3	0	0	4	8	0	0	8	0	0	32
8:30 AM	4	1	0	0	0	2	2	0	1	6	5	1	0	3	0	0	25
8:45 AM	4	1	0	0	0	0	1	0	0	5	4	0	1	5	0	0	21
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	41	8	3	0	0	17	17	0	12	36	58	1	6	53	0	0	252
APPROACH %'s :	78.85%	15.38%	5.77%	0.00%	0.00%	50.00%	50.00%	0.00%	11.21%	33.64%	54.21%	0.93%	10.17%	89.83%	0.00%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	28	4	2	0	0	7	11	0	7	19	35	0	1	30	0	0	144
PEAK HR FACTOR :	0.438	0.333	0.500	0.000	0.000	0.292	0.458	0.000	0.438	0.679	0.673	0.000	0.250	0.750	0.000	0.000	0.766
	0.531				0.563				0.803				0.775				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	9	2	1	0	0	16	5	0	3	9	6	0	5	7	0	0	63
4:15 PM	0	0	0	0	0	2	1	0	1	10	3	0	0	7	0	0	24
4:30 PM	3	3	1	0	1	6	2	0	3	6	6	0	0	4	0	0	35
4:45 PM	5	1	0	0	0	0	4	0	3	10	2	0	1	5	1	0	32
5:00 PM	4	0	0	0	1	0	0	0	2	5	3	0	1	4	1	0	21
5:15 PM	2	0	0	0	0	3	1	0	1	9	4	0	0	6	0	0	26
5:30 PM	3	0	0	0	0	0	0	0	1	6	2	0	1	5	0	0	18
5:45 PM	3	0	0	0	0	1	2	0	1	8	8	0	0	7	0	0	30
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	29	6	2	0	2	28	15	0	15	63	34	0	8	45	2	0	249
APPROACH %'s :	78.38%	16.22%	5.41%	0.00%	4.44%	62.22%	33.33%	0.00%	13.39%	56.25%	30.36%	0.00%	14.55%	81.82%	3.64%	0.00%	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	17	6	2	0	1	24	12	0	10	35	17	0	6	23	1	0	154
PEAK HR FACTOR :	0.472	0.500	0.500	0.000	0.250	0.375	0.600	0.000	0.833	0.875	0.708	0.000	0.300	0.821	0.250	0.000	0.611
	0.521				0.440				0.861				0.625				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Rd 19 & Ave 26
City: Chowchilla
Control: 2 WAY-STOP (NB/SB)

Project ID: 19-07441-009
Date: 11/19/2019

Bikes

NS/EW Streets:	Rd 19				Rd 19				Ave 26				Ave 26				
	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	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
8:30 AM	0	0	0	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	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
APPROACH %'s :																	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	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	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
APPROACH %'s :																	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

National Data & Surveying Services

Intersection Turning Movement Count

Location: Rd 19 & Ave 26
City: Chowchilla

Project ID: 19-07441-009
Date: 11/19/2019

Pedestrians (Crosswalks)

NS/EW Streets:	Rd 19		Rd 19		Ave 26		Ave 26		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0
APPROACH %'s :									
PEAK HR :	07:30 AM - 08:30 AM								TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :									

	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
PM	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0
APPROACH %'s :									
PEAK HR :	04:00 PM - 05:00 PM								TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :									

5738-001

Prepared by National Data & Surveying Services

Fallen Leaf Way & S Lake Tahoe Dr

Peak Hour Turning Movement Count

ID: 19-07441-010
City: Chowchilla

Day: Tuesday
Date: 11/19/2019

	PEAK HOURS	COUNT PERIODS
AM	07:45 AM - 08:45 AM	07:00 AM - 09:00 AM
NOON	NONE	NONE
PM	04:00 PM - 05:00 PM	04:00 PM - 06:00 PM

Fallen Leaf Way – SOUTHBOUND

	Right	Through	Left	U-Turn	Outbound
AM	3	0	22	0	27
NOON	0	0	0	0	0
PM	0	0	21	0	8
	0	0	0	0	

S Lake Tahoe Dr – EASTBOUND

	AM	NOON	PM	
Outbound	244	0	46	
U-Turn	0	0	0	0
Left	0	0	0	0
Through	224	0	64	0
Right	0	0	0	0

S Lake Tahoe Dr – WESTBOUND

		PM	NOON	AM
Left	0	8	0	27
Through	0	46	0	241
Right	0	0	0	0
U-Turn	0	0	0	0
Outbound		85	0	246

CONTROL

1 WAY-STOP (SB)

	AM	NOON	PM
TEV	517	0	139
PHF	0.85		0.72

Fallen Leaf Way – NORTHBOUND

	Outbound	U-Turn	Left	Through	Right
		0	0	0	0
PM	0	0	0	0	0
NOON	0	0	0	0	0
AM	0	0	0	0	0

Total Vehicles (AM)

Approach	Left	Through	Right
Southbound	22	0	3
Westbound	27	241	0
Eastbound	0	224	0
Northbound	0	0	0

Total Vehicles (Noon)

Approach	Left	Through	Right
Southbound	N/A	N/A	N/A
Westbound	N/A	N/A	N/A
Eastbound	N/A	N/A	N/A
Northbound	N/A	N/A	N/A

Total Vehicles (PM)

Approach	Left	Through	Right
Southbound	21	0	0
Westbound	8	46	0
Eastbound	0	64	0
Northbound	0	0	0

Bikes (AM)

Approach	Left	Through	Right
Southbound	0	0	0
Westbound	1	0	0
Eastbound	0	0	0
Northbound	0	0	0

Bikes (NOON)

Approach	Left	Through	Right
Southbound	N/A	N/A	N/A
Westbound	N/A	N/A	N/A
Eastbound	N/A	N/A	N/A
Northbound	N/A	N/A	N/A

Bikes (PM)

Approach	Left	Through	Right
Southbound	0	0	0
Westbound	0	0	0
Eastbound	0	0	0
Northbound	0	0	0

Pedestrians (Crosswalks)

Crosswalk	Direction	AM	NOON	PM
North	Eastbound	0	0	0
North	Westbound	1	0	0
West	Southbound	0	0	0
West	Northbound	0	0	0
East	Southbound	0	0	0
East	Northbound	0	0	0
South	Eastbound	0	0	0
South	Westbound	0	0	0
NW corner		0	0	0
NE corner		0	0	0
SW corner		0	0	0
SE corner		0	0	0

National Data & Surveying Services

Intersection Turning Movement Count

Location: Fallen Leaf Way & S Lake Tahoe Dr
City: Chowchilla
Control: 1 WAY-STOP (SB)

Project ID: 19-07441-010
Date: 11/19/2019

Total

NS/EW Streets:	Fallen Leaf Way				Fallen Leaf Way				S Lake Tahoe Dr				S Lake Tahoe Dr				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
7:15 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	3	1	0	5
7:30 AM	0	0	0	0	0	0	0	0	0	3	0	0	0	19	3	0	25
7:45 AM	0	0	0	0	2	0	0	0	0	58	0	0	0	67	3	0	130
8:00 AM	0	0	0	0	3	0	1	0	0	50	0	0	0	65	11	0	130
8:15 AM	0	0	0	0	9	0	1	0	0	65	0	0	0	69	8	0	152
8:30 AM	0	0	0	0	8	0	1	0	0	51	0	0	0	40	5	0	105
8:45 AM	0	0	0	0	2	0	0	0	0	4	0	0	0	6	3	0	15
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	24	0	3	0	0	232	0	0	0	270	34	0	563
APPROACH %'s :					88.89%	0.00%	11.11%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	88.82%	11.18%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	0	0	0	0	22	0	3	0	0	224	0	0	0	241	27	0	517
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.611	0.000	0.750	0.000	0.000	0.862	0.000	0.000	0.000	0.873	0.614	0.000	0.850
					0.625				0.862				0.870				

	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	6	0	0	0	0	26	0	0	0	12	4	0	48
4:15 PM	0	0	0	0	5	0	0	0	0	12	0	0	0	11	1	0	29
4:30 PM	0	0	0	0	4	0	0	0	0	16	0	0	0	9	1	0	30
4:45 PM	0	0	0	0	6	0	0	0	0	10	0	0	0	14	2	0	32
5:00 PM	0	0	0	0	3	0	0	0	0	16	0	0	0	12	2	0	33
5:15 PM	0	0	0	0	4	0	0	0	0	9	0	0	0	10	2	0	25
5:30 PM	0	0	0	0	5	0	0	0	0	11	0	0	0	7	1	0	24
5:45 PM	0	0	0	0	3	0	0	0	0	8	0	0	0	5	0	0	16
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	36	0	0	0	0	108	0	0	0	80	13	0	237
APPROACH %'s :					100.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	86.02%	13.98%	0.00%	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	0	0	0	0	21	0	0	0	0	64	0	0	0	46	8	0	139
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.875	0.000	0.000	0.000	0.000	0.615	0.000	0.000	0.000	0.821	0.500	0.000	0.724
					0.875				0.615				0.844				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Fallen Leaf Way & S Lake Tahoe Dr
City: Chowchilla
Control: 1 WAY-STOP (SB)

Project ID: 19-07441-010
Date: 11/19/2019

Bikes

NS/EW Streets:	Fallen Leaf Way				Fallen Leaf Way				S Lake Tahoe Dr				S Lake Tahoe Dr				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
8:00 AM	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
8:30 AM	0	0	0	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	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
APPROACH %'s :													0.00%	0.00%	100.00%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.250
													0.250				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	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	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
APPROACH %'s :																	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

National Data & Surveying Services

Intersection Turning Movement Count

Location: Fallen Leaf Way & S Lake Tahoe Dr **Project ID:** 19-07441-010
City: Chowchilla **Date:** 11/19/2019

Pedestrians (Crosswalks)

NS/EW Streets:	Fallen Leaf Way		Fallen Leaf Way		S Lake Tahoe Dr		S Lake Tahoe Dr		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0
7:45 AM	0	1	0	0	0	0	0	0	1
8:00 AM	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	1	0	0	0	0	0	0	1
APPROACH %'s :	0.00%	100.00%							
PEAK HR :	07:45 AM - 08:45 AM								TOTAL
PEAK HR VOL :	0	1	0	0	0	0	0	0	1
PEAK HR FACTOR :		0.250							0.250
	0.250								

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0
APPROACH %'s :									
PEAK HR :	04:00 PM - 05:00 PM								TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :									

Prepared by National Data & Surveying Services

VOLUME

E Robertson Blvd/Ave 26 W/O NB SR 99 Ramps

Day: Tuesday
Date: 11/19/2019

City: Chowchilla
Project #: CA19_7442_001

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	5,962	6,657	12,619

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
0:00			9		11		20		12:00			91		144		235	
0:15			10		7		17		12:15			104		135		239	
0:30			5		4		9		12:30			109		121		230	
0:45			1	25	8	30	9	55	12:45			95	399	118	518	213	917
1:00			6		3		9		13:00			95		116		211	
1:15			5		2		7		13:15			98		118		216	
1:30			2		6		8		13:30			121		115		236	
1:45			0	13	4	15	4	28	13:45			105	419	165	514	270	933
2:00			9		2		11		14:00			113		102		215	
2:15			2		5		7		14:15			116		104		220	
2:30			8		3		11		14:30			90		121		211	
2:45			2	21	6	16	8	37	14:45			98	417	118	445	216	862
3:00			2		14		16		15:00			103		124		227	
3:15			1		7		8		15:15			122		114		236	
3:30			8		4		12		15:30			151		106		257	
3:45			5	16	7	32	12	48	15:45			144	520	128	472	272	992
4:00			13		17		30		16:00			101		156		257	
4:15			15		13		28		16:15			123		123		246	
4:30			12		13		25		16:30			142		130		272	
4:45			19	59	20	63	39	122	16:45			124	490	126	535	250	1025
5:00			19		36		55		17:00			133		144		277	
5:15			24		23		47		17:15			133		133		266	
5:30			39		44		83		17:30			119		147		266	
5:45			43	125	32	135	75	260	17:45			111	496	103	527	214	1023
6:00			53		39		92		18:00			94		114		208	
6:15			48		57		105		18:15			87		97		184	
6:30			41		64		105		18:30			76		86		162	
6:45			60	202	77	237	137	439	18:45			71	328	88	385	159	713
7:00			59		90		149		19:00			62		65		127	
7:15			67		96		163		19:15			63		58		121	
7:30			89		149		238		19:30			53		61		114	
7:45			144	359	151	486	295	845	19:45			69	247	67	251	136	498
8:00			142		138		280		20:00			56		57		113	
8:15			112		140		252		20:15			40		50		90	
8:30			110		130		240		20:30			37		48		85	
8:45			99	463	84	492	183	955	20:45			33	166	31	186	64	352
9:00			50		86		136		21:00			29		40		69	
9:15			90		72		162		21:15			34		31		65	
9:30			82		76		158		21:30			29		24		53	
9:45			79	301	88	322	167	623	21:45			20	112	33	128	53	240
10:00			86		74		160		22:00			23		32		55	
10:15			80		80		160		22:15			15		20		35	
10:30			76		83		159		22:30			17		22		39	
10:45			80	322	89	326	169	648	22:45			11	66	20	94	31	160
11:00			98		102		200		23:00			16		15		31	
11:15			81		96		177		23:15			15		9		24	
11:30			72		89		161		23:30			10		11		21	
11:45			96	347	117	404	213	751	23:45			8	49	9	44	17	93
TOTALS				2253		2558		**4811**	**TOTALS**				3709		4099		**7808**
SPLIT %				46.8%		53.2%		**38.1%**	**SPLIT %**				47.5%		52.5%		**61.9%**

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	5,962	6,657	12,619

	NB	SB	EB	WB	TOTAL		NB	SB	EB	WB	TOTAL
AM Peak Hour			7:45	7:30	**7:45**	**PM Peak Hour**			16:30	16:45	**16:30**
AM Pk Volume			508	578	**1067**	**PM Pk Volume**			532	550	**1065**
Pk Hr Factor			0.882	0.957	**0.904**	**Pk Hr Factor**			0.937	0.935	**0.961**
7 - 9 Volume	0	0	822	978	**1800**	**4 - 6 Volume**	0	0	986	1062	**2048**
7 - 9 Peak Hour			7:45	7:30	**7:45**	**4 - 6 Peak Hour**			16:30	16:45	**16:30**
7 - 9 Pk Volume	0	0	508	578	**1067**	**4 - 6 Pk Volume**	0	0	532	550	**1065**
Pk Hr Factor	0.000	0.000	0.882	0.957	**0.904**	**Pk Hr Factor**	0.000	0.000	0.937	0.935	**0.961**

Prepared by National Data & Surveying Services

VOLUME

Ave 26 Bet. NB SR 99 Ramps & Montgomery Lake Way

Day: Tuesday
Date: 11/19/2019

City: Chowchilla
Project #: CA19_7442_002

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	5,095	4,994	10,089

AM Period	NB		SB		EB		WB		TOTAL		PM Period	NB		SB		EB		WB		TOTAL	
0:00					2		5		7		12:00					72		124		196	
0:15					3		2		5		12:15					90		88		178	
0:30					3		1		4		12:30					94		85		179	
0:45					2	10	3	11	5	21	12:45					98	354	83	380	181	734
1:00					4		1		5		13:00					87		91		178	
1:15					3		0		3		13:15					102		92		194	
1:30					0		2		2		13:30					110		79		189	
1:45					0	7	1	4	1	11	13:45					83	382	139	401	222	783
2:00					6		1		7		14:00					94		71		165	
2:15					1		1		2		14:15					106		77		183	
2:30					6		3		9		14:30					76		86		162	
2:45					3	16	4	9	7	25	14:45					87	363	82	316	169	679
3:00					4		3		7		15:00					95		85		180	
3:15					1		3		4		15:15					100		89		189	
3:30					3		2		5		15:30					143		79		222	
3:45					5	13	6	14	11	27	15:45					150	488	90	343	240	831
4:00					1		10		11		16:00					92		121		213	
4:15					2		14		16		16:15					112		99		211	
4:30					3		10		13		16:30					123		82		205	
4:45					8	14	13	47	21	61	16:45					115	442	85	387	200	829
5:00					10		22		32		17:00					119		102		221	
5:15					8		17		25		17:15					106		93		199	
5:30					12		33		45		17:30					119		91		210	
5:45					18	48	21	93	39	141	17:45					123	467	87	373	210	840
6:00					25		38		63		18:00					93		73		166	
6:15					30		48		78		18:15					92		69		161	
6:30					20		56		76		18:30					87		55		142	
6:45					40	115	54	196	94	311	18:45					75	347	61	258	136	605
7:00					28		83		111		19:00					51		44		95	
7:15					30		84		114		19:15					60		37		97	
7:30					54		137		191		19:30					61		43		104	
7:45					135	247	158	462	293	709	19:45					51	223	45	169	96	392
8:00					131		118		249		20:00					52		39		91	
8:15					114		120		234		20:15					40		30		70	
8:30					83		107		190		20:30					38		24		62	
8:45					67	395	54	399	121	794	20:45					35	165	15	108	50	273
9:00					55		77		132		21:00					35		29		64	
9:15					69		52		121		21:15					26		18		44	
9:30					62		68		130		21:30					26		18		44	
9:45					72	258	71	268	143	526	21:45					17	104	23	88	40	192
10:00					57		49		106		22:00					21		15		36	
10:15					57		56		113		22:15					15		11		26	
10:30					58		52		110		22:30					11		9		20	
10:45					58	230	69	226	127	456	22:45					9	56	18	53	27	109
11:00					80		73		153		23:00					16		3		19	
11:15					75		98		173		23:15					8		5		13	
11:30					60		88		148		23:30					8		10		18	
11:45					93	308	111	370	204	678	23:45					11	43	1	19	12	62
TOTALS						1661		2099		**3760**	**TOTALS**						3434		2895		**6329**
SPLIT %						44.2%		55.8%		**37.3%**	**SPLIT %**						54.3%		45.7%		**62.7%**

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	5,095	4,994	10,089

	NB	SB	EB	WB	TOTAL		NB	SB	EB	WB	TOTAL
AM Peak Hour			7:45	7:30	**7:30**	**PM Peak Hour**			15:30	13:00	**15:30**
AM Pk Volume			463	533	**967**	**PM Pk Volume**			497	401	**886**
Pk Hr Factor			0.857	0.843	**0.825**	**Pk Hr Factor**			0.828	0.721	**0.923**
7 - 9 Volume	0	0	642	861	**1503**	**4 - 6 Volume**	0	0	909	760	**1669**
7 - 9 Peak Hour			7:45	7:30	**7:30**	**4 - 6 Peak Hour**			16:15	16:00	**17:00**
7 - 9 Pk Volume	0	0	463	533	**967**	**4 - 6 Pk Volume**	0	0	469	387	**840**
Pk Hr Factor	0.000	0.000	0.857	0.843	**0.825**	**Pk Hr Factor**	0.000	0.000	0.953	0.800	**0.950**

Prepared by National Data & Surveying Services

VOLUME

Ave 26 Bet. Montgomery Lake Way & Fig Tree Rd

Day: Tuesday
Date: 11/19/2019

City: Chowchilla
Project #: CA19_7442_003

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	3,589	3,698	7,287

AM Period	NB		SB		EB		WB		TOTAL		PM Period	NB		SB		EB		WB		TOTAL	
0:00					3		5		8		12:00					37		103		140	
0:15					3		2		5		12:15					48		64		112	
0:30					4		0		4		12:30					67		42		109	
0:45					2	12	3	10	5	22	12:45					62	214	49	258	111	472
1:00					4		1		5		13:00					56		63		119	
1:15					3		0		3		13:15					70		62		132	
1:30					0		2		2		13:30					92		52		144	
1:45					0	7	1	4	1	11	13:45					57	275	119	296	176	571
2:00					2		1		3		14:00					67		55		122	
2:15					0		1		1		14:15					79		54		133	
2:30					4		3		7		14:30					50		54		104	
2:45					2	8	3	8	5	16	14:45					62	258	63	226	125	484
3:00					4		3		7		15:00					67		59		126	
3:15					0		2		2		15:15					57		64		121	
3:30					3		2		5		15:30					96		52		148	
3:45					1	8	4	11	5	19	15:45					97	317	53	228	150	545
4:00					1		11		12		16:00					68		96		164	
4:15					3		11		14		16:15					86		64		150	
4:30					2		8		10		16:30					91		55		146	
4:45					5	11	14	44	19	55	16:45					80	325	48	263	128	588
5:00					9		23		32		17:00					83		56		139	
5:15					4		20		24		17:15					75		62		137	
5:30					11		31		42		17:30					91		59		150	
5:45					13	37	23	97	36	134	17:45					89	338	49	226	138	564
6:00					23		34		57		18:00					60		41		101	
6:15					22		46		68		18:15					58		38		96	
6:30					15		52		67		18:30					53		18		71	
6:45					33	93	48	180	81	273	18:45					46	217	29	126	75	343
7:00					18		81		99		19:00					36		24		60	
7:15					23		80		103		19:15					36		25		61	
7:30					48		132		180		19:30					40		18		58	
7:45					124	213	148	441	272	654	19:45					36	148	25	92	61	240
8:00					115		110		225		20:00					37		20		57	
8:15					95		115		210		20:15					29		22		51	
8:30					75		94		169		20:30					30		15		45	
8:45					57	342	47	366	104	708	20:45					24	120	9	66	33	186
9:00					36		67		103		21:00					20		10		30	
9:15					45		41		86		21:15					17		7		24	
9:30					45		42		87		21:30					15		10		25	
9:45					54	180	59	209	113	389	21:45					13	65	10	37	23	102
10:00					38		38		76		22:00					10		11		21	
10:15					31		35		66		22:15					11		7		18	
10:30					32		34		66		22:30					9		6		15	
10:45					34	135	51	158	85	293	22:45					4	34	6	30	10	64
11:00					46		59		105		23:00					11		1		12	
11:15					46		65		111		23:15					9		2		11	
11:30					44		75		119		23:30					4		6		10	
11:45					62	198	113	312	175	510	23:45					10	34	1	10	11	44
TOTALS						1244		1840		**3084**	**TOTALS**						2345		1858		**4203**
SPLIT %						40.3%		59.7%		**42.3%**	**SPLIT %**						55.8%		44.2%		**57.7%**

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	3,589	3,698	7,287

	NB	SB	EB	WB	Total		NB	SB	EB	WB	Total
AM Peak Hour			7:45	7:30	**7:30**	**PM Peak Hour**			15:30	13:00	**15:30**
AM Pk Volume			409	505	**887**	**PM Pk Volume**			347	296	**612**
Pk Hr Factor			0.825	0.853	**0.815**	**Pk Hr Factor**			0.894	0.622	**0.933**
7 - 9 Volume	0	0	555	807	**1362**	**4 - 6 Volume**	0	0	663	489	**1152**
7 - 9 Peak Hour			7:45	7:30	**7:30**	**4 - 6 Peak Hour**			16:15	16:00	**16:00**
7 - 9 Pk Volume	0	0	409	505	**887**	**4 - 6 Pk Volume**	0	0	340	263	**588**
Pk Hr Factor	0.000	0.000	0.825	0.853	**0.815**	**Pk Hr Factor**	0.000	0.000	0.934	0.685	**0.896**

Prepared by National Data & Surveying Services

VOLUME

Ave 26 Bet. Fig Tree Rd & Clubhouse Dr

Day: Tuesday
Date: 11/19/2019

City: Chowchilla
Project #: CA19_7442_004

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	1,912	1,841	3,753

AM Period	NB		SB		EB		WB		TOTAL	
0:00					2		3		5	
0:15					3		1		4	
0:30					0		0		0	
0:45					3	8	3	7	6	15
1:00					3		1		4	
1:15					1		1		2	
1:30					0		2		2	
1:45					0	4	0	4	0	8
2:00					1		1		2	
2:15					0		1		1	
2:30					2		2		4	
2:45					4	7	1	5	5	12
3:00					3		2		5	
3:15					0		0		0	
3:30					1		1		2	
3:45					1	5	3	6	4	11
4:00					1		4		5	
4:15					1		6		7	
4:30					0		4		4	
4:45					2	4	10	24	12	28
5:00					9		10		19	
5:15					4		15		19	
5:30					10		18		28	
5:45					9	32	10	53	19	85
6:00					14		19		33	
6:15					21		27		48	
6:30					10		31		41	
6:45					17	62	26	103	43	165
7:00					21		40		61	
7:15					20		53		73	
7:30					15		67		82	
7:45					36	92	63	223	99	315
8:00					31		47		78	
8:15					29		33		62	
8:30					21		34		55	
8:45					22	103	26	140	48	243
9:00					15		32		47	
9:15					21		25		46	
9:30					16		27		43	
9:45					19	71	31	115	50	186
10:00					19		20		39	
10:15					26		21		47	
10:30					25		26		51	
10:45					25	95	25	92	50	187
11:00					24		34		58	
11:15					23		38		61	
11:30					29		36		65	
11:45					27	103	39	147	66	250
TOTALS						586		919		1505
SPLIT %						38.9%		61.1%		40.1%

PM Period	NB		SB		EB		WB		TOTAL	
12:00					28		34		62	
12:15					22		38		60	
12:30					45		25		70	
12:45					23	118	25	122	48	240
13:00					29		25		54	
13:15					29		32		61	
13:30					40		34		74	
13:45					28	126	37	128	65	254
14:00					38		32		70	
14:15					43		26		69	
14:30					29		27		56	
14:45					34	144	30	115	64	259
15:00					31		21		52	
15:15					24		31		55	
15:30					51		31		82	
15:45					56	162	28	111	84	273
16:00					33		43		76	
16:15					56		22		78	
16:30					50		24		74	
16:45					45	184	25	114	70	298
17:00					42		26		68	
17:15					44		35		79	
17:30					39		27		66	
17:45					55	180	24	112	79	292
18:00					36		14		50	
18:15					38		18		56	
18:30					38		10		48	
18:45					38	150	17	59	55	209
19:00					27		13		40	
19:15					20		16		36	
19:30					24		10		34	
19:45					19	90	16	55	35	145
20:00					30		18		48	
20:15					23		14		37	
20:30					21		10		31	
20:45					14	88	5	47	19	135
21:00					14		7		21	
21:15					9		5		14	
21:30					8		11		19	
21:45					9	40	8	31	17	71
22:00					10		11		21	
22:15					7		5		12	
22:30					8		3		11	
22:45					2	27	4	23	6	50
23:00					6		0		6	
23:15					3		1		4	
23:30					2		3		5	
23:45					6	17	1	5	7	22
TOTALS						1326		922		2248
SPLIT %						59.0%		41.0%		59.9%

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	1,912	1,841	3,753

	NB	SB	EB	WB	TOTAL
AM Peak Hour			11:45	7:15	7:15
AM Pk Volume			122	230	332
Pk Hr Factor			0.678	0.858	0.838
7 - 9 Volume	0	0	195	363	558
7 - 9 Peak Hour			7:45	7:15	7:15
7 - 9 Pk Volume	0	0	117	230	332
Pk Hr Factor	0.000	0.000	0.813	0.858	0.838

	NB	SB	EB	WB	TOTAL
PM Peak Hour			15:30	13:15	15:30
PM Pk Volume			196	135	320
Pk Hr Factor			0.875	0.912	0.952
4 - 6 Volume	0	0	364	226	590
4 - 6 Peak Hour			16:15	16:00	16:00
4 - 6 Pk Volume	0	0	193	114	298
Pk Hr Factor	0.000	0.000	0.862	0.663	0.955

Prepared by National Data & Surveying Services

VOLUME

Ave 26 E/O Clubhouse Dr

Day: Tuesday | **City:** Chowchilla
Date: 11/19/2019 | **Project #:** CA19_7442_005

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	1,512	1,445	2,957

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
0:00			1		3		4		12:00			18		26		44	
0:15			2		1		3		12:15			17		27		44	
0:30			0		0		0		12:30			31		21		52	
0:45			1	4	4	8	5	12	12:45			19	85	21	95	40	180
1:00			4		0		4		13:00			26		15		41	
1:15			1		0		1		13:15			25		27		52	
1:30			0		3		3		13:30			34		28		62	
1:45			0	5	0	3	0	8	13:45			25	110	33	103	58	213
2:00			1		0		1		14:00			31		22		53	
2:15			0		1		1		14:15			32		17		49	
2:30			1		2		3		14:30			26		22		48	
2:45			4	6	1	4	5	10	14:45			28	117	21	82	49	199
3:00			2		1		3		15:00			20		15		35	
3:15			1		0		1		15:15			24		20		44	
3:30			1		1		2		15:30			45		26		71	
3:45			1	5	2	4	3	9	15:45			42	131	24	85	66	216
4:00			1		3		4		16:00			32		43		75	
4:15			1		5		6		16:15			43		18		61	
4:30			0		5		5		16:30			42		19		61	
4:45			1	3	9	22	10	25	16:45			39	156	21	101	60	257
5:00			6		5		11		17:00			34		19		53	
5:15			4		12		16		17:15			36		30		66	
5:30			9		13		22		17:30			29		18		47	
5:45			8	27	10	40	18	67	17:45			44	143	17	84	61	227
6:00			12		16		28		18:00			29		13		42	
6:15			15		20		35		18:15			24		12		36	
6:30			10		27		37		18:30			30		9		39	
6:45			12	49	21	84	33	133	18:45			31	114	12	46	43	160
7:00			17		32		49		19:00			16		8		24	
7:15			11		43		54		19:15			15		14		29	
7:30			16		48		64		19:30			18		8		26	
7:45			30	74	52	175	82	249	19:45			16	65	11	41	27	106
8:00			24		38		62		20:00			20		17		37	
8:15			25		29		54		20:15			18		10		28	
8:30			19		32		51		20:30			12		8		20	
8:45			16	84	16	115	32	199	20:45			14	64	2	37	16	101
9:00			14		30		44		21:00			7		5		12	
9:15			17		19		36		21:15			7		2		9	
9:30			13		23		36		21:30			7		7		14	
9:45			10	54	20	92	30	146	21:45			8	29	5	19	13	48
10:00			14		15		29		22:00			6		2		8	
10:15			20		17		37		22:15			5		4		9	
10:30			19		18		37		22:30			6		0		6	
10:45			20	73	23	73	43	146	22:45			2	19	3	9	5	28
11:00			22		26		48		23:00			5		0		5	
11:15			16		29		45		23:15			3		1		4	
11:30			28		35		63		23:30			1		3		4	
11:45			15	81	28	118	43	199	23:45			5	14	1	5	6	19
TOTALS				465		738		**1203**	**TOTALS**				1047		707		**1754**
SPLIT %				38.7%		61.3%		**40.7%**	**SPLIT %**				59.7%		40.3%		**59.3%**

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	1,512	1,445	2,957

	NB	SB	EB	WB	Total		NB	SB	EB	WB	Total
AM Peak Hour			7:45	7:15	**7:15**	**PM Peak Hour**			15:30	15:15	**15:30**
AM Pk Volume			98	181	**262**	**PM Pk Volume**			162	113	**273**
Pk Hr Factor			0.817	0.870	**0.799**	**Pk Hr Factor**			0.900	0.657	**0.910**
7 - 9 Volume	0	0	158	290	**448**	**4 - 6 Volume**	0	0	299	185	**484**
7 - 9 Peak Hour			7:45	7:15	**7:15**	**4 - 6 Peak Hour**			16:15	16:00	**16:00**
7 - 9 Pk Volume	0	0	98	181	**262**	**4 - 6 Pk Volume**	0	0	158	101	**257**
Pk Hr Factor	0.000	0.000	0.817	0.870	**0.799**	**Pk Hr Factor**	0.000	0.000	0.919	0.587	**0.857**

Prepared by National Data & Surveying Services

VOLUME

Fig Tree Rd N/O E Robertson Blvd/Ave 26

Day: Tuesday
Date: 11/19/2019

City: Chowchilla
Project #: CA19_7442_006

DAILY TOTALS	NB	SB	EB	WB	Total
	760	761	0	0	1,521

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	1		0				1		12:00	7		27				34	
00:15	0		0				0		12:15	3		4				7	
00:30	1		0				1		12:30	8		3				11	
00:45	0	2	0				0	2	12:45	20	38	7	41			27	79
01:00	0		0				0		13:00	13		21				34	
01:15	0		0				0		13:15	17		7				24	
01:30	0		0				0		13:30	56		10				66	
01:45	0		0				0		13:45	35	121	83	121			118	242
02:00	0		0				0		14:00	19		16				35	
02:15	0		0				0		14:15	17		18				35	
02:30	0		0				0		14:30	8		9				17	
02:45	0		0				0		14:45	11	55	10	53			21	108
03:00	0		0				0		15:00	11		13				24	
03:15	0		0				0		15:15	15		14				29	
03:30	0		0				0		15:30	17		18				35	
03:45	0		0				0		15:45	27	70	13	58			40	128
04:00	0		0				0		16:00	16		33				49	
04:15	0		0				0		16:15	11		17				28	
04:30	1		0				1		16:30	11		19				30	
04:45	0	1	0				0	1	16:45	15	53	16	85			31	138
05:00	2		2				4		17:00	14		20				34	
05:15	0		0				0		17:15	12		13				25	
05:30	1		0				1		17:30	9		16				25	
05:45	0	3	0	2			0	5	17:45	4	39	11	60			15	99
06:00	2		0				2		18:00	4		13				17	
06:15	1		1				2		18:15	0		9				9	
06:30	1		1				2		18:30	0		4				4	
06:45	3	7	0	2			3	9	18:45	2	6	3	29			5	35
07:00	1		0				1		19:00	0		2				2	
07:15	4		1				5		19:15	0		3				3	
07:30	22		3				25		19:30	0		0				0	
07:45	72	99	60	64			132	163	19:45	0		0	5			0	5
08:00	78		55				133		20:00	0		0				0	
08:15	76		73				149		20:15	1		0				1	
08:30	42		58				100		20:30	0		1				1	
08:45	9	205	11	197			20	402	20:45	0	1	0	1			0	2
09:00	10		16				26		21:00	0		0				0	
09:15	4		2				6		21:15	0		0				0	
09:30	0		2				2		21:30	0		0				0	
09:45	5	19	1	21			6	40	21:45	0		0				0	
10:00	4		6				10		22:00	0		0				0	
10:15	2		1				3		22:15	0		0				0	
10:30	3		1				4		22:30	1		0				1	
10:45	1	10	2	10			3	20	22:45	0	1	1	1			1	2
11:00	4		3				7		23:00	0		0				0	
11:15	3		1				4		23:15	0		0				0	
11:30	7		2				9		23:30	0		0				0	
11:45	16	30	5	11			21	41	23:45	0		0				0	
TOTALS		376		307				**683**	**TOTALS**		384		454				**838**
SPLIT %		55.1%		44.9%				**44.9%**	**SPLIT %**		45.8%		54.2%				**55.1%**

DAILY TOTALS	NB	SB	EB	WB	Total
	760	761	0	0	1,521

	NB	SB	EB	WB	Total		NB	SB	EB	WB	Total
AM Peak Hour	07:45	07:45			**07:45**	**PM Peak Hour**	13:15	13:30			**13:30**
AM Pk Volume	268	246			**514**	**PM Pk Volume**	127	127			**254**
Pk Hr Factor	0.859	0.842			**0.862**	**Pk Hr Factor**	0.567	0.383			**0.538**
7 - 9 Volume	304	261	0	0	**565**	**4 - 6 Volume**	92	145	0	0	**237**
7 - 9 Peak Hour	07:45	07:45			**07:45**	**4 - 6 Peak Hour**	16:00	16:00			**16:00**
7 - 9 Pk Volume	268	246	0	0	**514**	**4 - 6 Pk Volume**	53	85	0	0	**138**
Pk Hr Factor	0.859	0.842	0.000	0.000	**0.862**	**Pk Hr Factor**	0.828	0.644	0.000	0.000	**0.704**

HMH
1570 Oakland Road (408) 487-2200
San Jose, CA 95131 HMHca.com

PLOTTED: 2/28/2021 4:12 PM S:\PROJECTS\501508\PL\ESTIMATE\20210224 E ROBERTSON BLVD ESTIMATE UPDATE\20210226 501508 COST PER PHASE.DWG

EAST ROBERTSON BOULEVARD - PHASE 1

Scale: 1" = 40'

Drawn: JLC| Reviewed: DRS

HMH 5015.08 03/01/2021

1570 Oakland Road
San Jose, CA 95131
(408) 487-2200
HMHca.com

PLOTTED: 2/28/2021 4:14 PM S:\PROJECTS\501508\PL\ESTIMATE\20210224 E ROBERTSON BLVD ESTIMATE UPDATE\20210226 501508 COST PER PHASE.DWG

EAST ROBERTSON BOULEVARD - PHASE 2

Scale: 1" = 40'

Drawn: JLC| Reviewed: DRS

HMH 5015.08 03/01/2021

EAST ROBERTSON BOULEVARD - PHASE 3

Scale: 1" = 40'

Drawn: JLC| Reviewed: DRS

HMH 5015.08 03/01/2021

1570 Oakland Road (408) 487-2200
San Jose, CA 95131 HMHca.com

PLOTTED: 2/28/2021 4:15 PM S:\PROJECTS\501508\PL\ESTIMATE\20210224 E ROBERTSON BLVD ESTIMATE UPDATE\20210226 501508 COST PER PHASE.DWG

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	55	785	100	543	112	68	182	119
v/c Ratio	0.19	0.47	0.30	0.28	0.30	0.07	0.44	0.11
Control Delay	32.4	16.0	32.0	13.1	20.9	8.4	23.0	9.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.4	16.0	32.0	13.1	20.9	8.4	23.0	9.1
Queue Length 50th (ft)	17	100	30	64	31	2	54	6
Queue Length 95th (ft)	65	223	#103	150	77	15	120	24
Internal Link Dist (ft)		4010		607		1657		634
Turn Bay Length (ft)								
Base Capacity (vph)	334	2191	429	2318	574	1467	602	1510
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.36	0.23	0.23	0.20	0.05	0.30	0.08

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	522	145	85	429	32	95	17	41	155	43	58
Future Volume (veh/h)	47	522	145	85	429	32	95	17	41	155	43	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	55	614	171	100	505	38	112	20	48	182	51	68
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	100	985	274	146	1287	97	403	386	344	428	386	344
Arrive On Green	0.06	0.36	0.36	0.08	0.38	0.38	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	1781	2746	763	1781	3350	251	1273	1777	1585	1333	1777	1585
Grp Volume(v), veh/h	55	397	388	100	267	276	112	20	48	182	51	68
Grp Sat Flow(s),veh/h/ln	1781	1777	1733	1781	1777	1825	1273	1777	1585	1333	1777	1585
Q Serve(g_s), s	1.3	7.8	7.8	2.3	4.6	4.6	3.3	0.4	1.0	5.4	1.0	1.5
Cycle Q Clear(g_c), s	1.3	7.8	7.8	2.3	4.6	4.6	4.8	0.4	1.0	6.4	1.0	1.5
Prop In Lane	1.00		0.44	1.00		0.14	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	100	637	622	146	683	701	403	386	344	428	386	344
V/C Ratio(X)	0.55	0.62	0.62	0.69	0.39	0.39	0.28	0.05	0.14	0.43	0.13	0.20
Avail Cap(c_a), veh/h	296	1381	1347	381	1381	1419	611	676	603	646	676	603
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.3	11.1	11.1	18.8	9.4	9.4	15.4	13.0	13.3	15.9	13.3	13.5
Incr Delay (d2), s/veh	4.6	1.0	1.0	5.6	0.4	0.4	0.4	0.1	0.2	0.7	0.2	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	2.5	2.5	1.1	1.4	1.5	0.9	0.1	0.3	1.5	0.4	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.9	12.1	12.2	24.4	9.8	9.8	15.8	13.1	13.5	16.5	13.4	13.7
LnGrp LOS	C	B	B	C	A	A	B	B	B	B	B	B
Approach Vol, veh/h		840			643			180			301	
Approach Delay, s/veh		12.9			12.0			14.9			15.4	
Approach LOS		B			B			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.3	20.0		13.7	7.3	21.1		13.7				
Change Period (Y+Rc), s	4.9	4.9		4.6	4.9	4.9		4.6				
Max Green Setting (Gmax), s	9.0	32.7		16.0	7.0	32.7		16.0				
Max Q Clear Time (g_c+I1), s	4.3	9.8		8.4	3.3	6.6		6.8				
Green Ext Time (p_c), s	0.1	5.3		0.8	0.0	3.4		0.5				
Intersection Summary												
HCM 6th Ctrl Delay			13.2									
HCM 6th LOS			B									
Notes												

User approved pedestrian interval to be less than phase max green.

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	0	462	311	81	541	0	0	0	0	37	0	79
Future Vol, veh/h	0	462	311	81	541	0	0	0	0	37	0	79
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	-	-	Free	-	-	None	-	-	None	-	-	None
Storage Length	-	-	335	-	-	-	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	98	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	519	349	91	608	0	0	0	0	42	0	89

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	-	519	0	0	1354	1309	519	1309	1309	608
Stage 1	-	-	-	-	-	-	519	519	-	790	790	-
Stage 2	-	-	-	-	-	-	835	790	-	519	519	-
Critical Hdwy	-	-	-	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	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	0	1047	-	0	127	159	557	136	159	496
Stage 1	0	-	0	-	-	0	540	533	-	383	402	-
Stage 2	0	-	0	-	-	0	362	402	-	540	533	-
Platoon blocked, %		-			-							
Mov Cap-1 Maneuver	-	-	-	1047	-	-	94	138	557	122	138	496
Mov Cap-2 Maneuver	-	-	-	-	-	-	94	138	-	122	138	-
Stage 1	-	-	-	-	-	-	540	533	-	383	349	-
Stage 2	-	-	-	-	-	-	258	349	-	540	533	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	1.1	0	25
HCM LOS			A	D

Minor Lane/Major Mvmt	NBLn1	EBT	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	1047	-	122	496
HCM Lane V/C Ratio	-	-	0.087	-	0.341	0.179
HCM Control Delay (s)	0	-	8.8	0	49	13.8
HCM Lane LOS	A	-	A	A	E	B
HCM 95th %tile Q(veh)	-	-	0.3	-	1.4	0.6

Intersection	
Int Delay, s/veh	34.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	392	101	93	498	0	122	0	84	0	0	1
Future Vol, veh/h	1	392	101	93	498	0	122	0	84	0	0	1
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	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	445	115	106	566	0	139	0	95	0	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	566	0	0	560	0	0	1284	1283	503	-	-	566
Stage 1	-	-	-	-	-	-	505	505	-	-	-	-
Stage 2	-	-	-	-	-	-	779	778	-	-	-	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	-	-	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	-	-	3.318
Pot Cap-1 Maneuver	1006	-	-	1011	-	-	142	165	569	0	0	524
Stage 1	-	-	-	-	-	-	549	540	-	0	0	-
Stage 2	-	-	-	-	-	-	389	407	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1006	-	-	1011	-	-	~ 125	140	569	-	-	524
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 125	140	-	-	-	-
Stage 1	-	-	-	-	-	-	548	539	-	-	-	-
Stage 2	-	-	-	-	-	-	329	345	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	1.4	211.1	11.9
HCM LOS			F	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	183	1006	-	-	1011	-	-	524
HCM Lane V/C Ratio	1.279	0.001	-	-	0.105	-	-	0.002
HCM Control Delay (s)	211.1	8.6	0	-	9	0	-	11.9
HCM Lane LOS	F	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	13.1	0	-	-	0.3	-	-	0

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	424	52	11	505	0	42	0	3	0	0	0
Future Vol, veh/h	0	424	52	11	505	0	42	0	3	0	0	0
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	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	81	81	81	81	81	81	81	81	81	81	81	81
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	523	64	14	623	0	52	0	4	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	587	0	0	1206	1206	555	1208	1238	623
Stage 1	-	-	-	-	-	-	555	555	-	651	651	-
Stage 2	-	-	-	-	-	-	651	651	-	557	587	-
Critical Hdwy	-	-	-	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	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	-	988	-	0	160	184	531	160	176	486
Stage 1	0	-	-	-	-	0	516	513	-	457	465	-
Stage 2	0	-	-	-	-	0	457	465	-	515	497	-
Platoon blocked, %		-	-		-							
Mov Cap-1 Maneuver	-	-	-	988	-	-	158	181	531	157	174	486
Mov Cap-2 Maneuver	-	-	-	-	-	-	158	181	-	157	174	-
Stage 1	-	-	-	-	-	-	516	513	-	457	458	-
Stage 2	-	-	-	-	-	-	451	458	-	511	497	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.2	36.7	0
HCM LOS			E	A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	158	531	-	-	988	-	-
HCM Lane V/C Ratio	0.328	0.007	-	-	0.014	-	-
HCM Control Delay (s)	38.5	11.8	-	-	8.7	-	0
HCM Lane LOS	E	B	-	-	A	-	A
HCM 95th %tile Q(veh)	1.3	0	-	-	0	-	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	398	2	9	554	0	1	0	3	0	0	0
Future Vol, veh/h	0	398	2	9	554	0	1	0	3	0	0	0
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	-	-	0	-	-	0	-	0	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	81	81	81	81	81	81	81	81	81	81	81	81
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	491	2	11	684	0	1	0	4	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	684	0	0	493	0	0	1198	-	492	1200	-	-
Stage 1	-	-	-	-	-	-	492	-	-	706	-	-
Stage 2	-	-	-	-	-	-	706	-	-	494	-	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	-	6.22	7.12	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	-	-	6.12	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	-	-	6.12	-	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	-	3.318	3.518	-	-
Pot Cap-1 Maneuver	909	-	-	1071	-	0	162	0	577	162	0	0
Stage 1	-	-	-	-	-	0	558	0	-	427	0	0
Stage 2	-	-	-	-	-	0	427	0	-	557	0	0
Platoon blocked, %		-	-		-							
Mov Cap-1 Maneuver	909	-	-	1071	-	-	161	-	577	160	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	161	-	-	160	-	-
Stage 1	-	-	-	-	-	-	558	-	-	427	-	-
Stage 2	-	-	-	-	-	-	423	-	-	553	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.1	15.3	0
HCM LOS			C	A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	161	577	909	-	-	1071	-	-
HCM Lane V/C Ratio	0.008	0.006	-	-	-	0.01	-	-
HCM Control Delay (s)	27.5	11.3	0	-	-	8.4	-	0
HCM Lane LOS	D	B	A	-	-	A	-	A
HCM 95th %tile Q(veh)	0	0	0	-	-	0	-	-

Intersection	
Intersection Delay, s/veh	29.3
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	224	147	30	11	346	37	19	2	8	24	4	199
Future Vol, veh/h	224	147	30	11	346	37	19	2	8	24	4	199
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	264	173	35	13	407	44	22	2	9	28	5	234
Number of Lanes	0	1	1	0	1	0	1	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	2
HCM Control Delay	31.7	35.2	11.6	17.2
HCM LOS	D	E	B	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1
Vol Left, %	100%	0%	60%	0%	3%	11%
Vol Thru, %	0%	20%	40%	0%	88%	2%
Vol Right, %	0%	80%	0%	100%	9%	88%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	19	10	371	30	394	227
LT Vol	19	0	224	0	11	24
Through Vol	0	2	147	0	346	4
RT Vol	0	8	0	30	37	199
Lane Flow Rate	22	12	436	35	464	267
Geometry Grp	7	7	7	7	6	6
Degree of Util (X)	0.055	0.025	0.821	0.056	0.841	0.516
Departure Headway (Hd)	8.782	7.685	6.773	5.752	6.532	6.962
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	407	465	537	622	556	518
Service Time	6.543	5.445	4.511	3.489	4.569	5.003
HCM Lane V/C Ratio	0.054	0.026	0.812	0.056	0.835	0.515
HCM Control Delay	12.1	10.6	33.6	8.8	35.2	17.2
HCM Lane LOS	B	B	D	A	E	C
HCM 95th-tile Q	0.2	0.1	8.1	0.2	8.8	2.9

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	4	80	27	2	182	3	48	0	5	8	1	12
Future Vol, veh/h	4	80	27	2	182	3	48	0	5	8	1	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	0	-	0	0	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	94	32	2	214	4	56	0	6	9	1	14

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	218	0	0	126	0	0	332	326	94	343	356	216
Stage 1	-	-	-	-	-	-	104	104	-	220	220	-
Stage 2	-	-	-	-	-	-	228	222	-	123	136	-
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	1352	-	-	1460	-	-	621	592	963	611	570	824
Stage 1	-	-	-	-	-	-	902	809	-	782	721	-
Stage 2	-	-	-	-	-	-	775	720	-	881	784	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1352	-	-	1460	-	-	607	589	963	605	567	824
Mov Cap-2 Maneuver	-	-	-	-	-	-	607	589	-	605	567	-
Stage 1	-	-	-	-	-	-	898	806	-	779	720	-
Stage 2	-	-	-	-	-	-	759	719	-	872	781	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.1	11.2	10.1
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	607	963	1352	-	-	1460	-	-	605	796
HCM Lane V/C Ratio	0.093	0.006	0.003	-	-	0.002	-	-	0.016	0.019
HCM Control Delay (s)	11.5	8.8	7.7	-	-	7.5	-	-	11	9.6
HCM Lane LOS	B	A	A	-	-	A	-	-	B	A
HCM 95th %tile Q(veh)	0.3	0	0	-	-	0	-	-	0	0.1

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	0	51	41	5	62	1	122	0	20	0	1	0
Future Vol, veh/h	0	51	41	5	62	1	122	0	20	0	1	0
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	-	-	-	0	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	57	46	6	70	1	137	0	22	0	1	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	103	0	0	140	-	57	174	186	71
Stage 1	-	-	-	-	-	-	57	-	-	83	83	-
Stage 2	-	-	-	-	-	-	83	-	-	91	103	-
Critical Hdwy	-	-	-	4.12	-	-	7.12	-	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	-	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	-	-	6.12	5.52	-
Follow-up Hdwy	-	-	-	2.218	-	-	3.518	-	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	-	1489	-	-	830	0	1009	789	708	991
Stage 1	0	-	-	-	-	-	955	0	-	925	826	-
Stage 2	0	-	-	-	-	-	925	0	-	916	810	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	-	-	-	1489	-	-	827	-	1009	769	705	991
Mov Cap-2 Maneuver	-	-	-	-	-	-	827	-	-	769	705	-
Stage 1	-	-	-	-	-	-	955	-	-	925	823	-
Stage 2	-	-	-	-	-	-	920	-	-	896	810	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.5	10	10.1
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	827	1009	-	-	1489	-	-	705
HCM Lane V/C Ratio	0.166	0.022	-	-	0.004	-	-	0.002
HCM Control Delay (s)	10.2	8.6	-	-	7.4	0	-	10.1
HCM Lane LOS	B	A	-	-	A	A	-	B
HCM 95th %tile Q(veh)	0.6	0.1	-	-	0	-	-	0

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	7	22	42	1	31	0	30	4	2	0	7	11
Future Vol, veh/h	7	22	42	1	31	0	30	4	2	0	7	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	77	77	77	77	77	77	77	77	77	77	77	77
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	29	55	1	40	0	39	5	3	0	9	14

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	40	0	0	84	0	0	129	117	57	121	144	40
Stage 1	-	-	-	-	-	-	75	75	-	42	42	-
Stage 2	-	-	-	-	-	-	54	42	-	79	102	-
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	1570	-	-	1513	-	-	844	773	1009	854	747	1031
Stage 1	-	-	-	-	-	-	934	833	-	972	860	-
Stage 2	-	-	-	-	-	-	958	860	-	930	811	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1570	-	-	1513	-	-	820	768	1009	843	742	1031
Mov Cap-2 Maneuver	-	-	-	-	-	-	820	768	-	843	742	-
Stage 1	-	-	-	-	-	-	928	828	-	966	859	-
Stage 2	-	-	-	-	-	-	934	859	-	916	806	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	0.2	9.6	9.1
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	822	1570	-	-	1513	-	-	895
HCM Lane V/C Ratio	0.057	0.006	-	-	0.001	-	-	0.026
HCM Control Delay (s)	9.6	7.3	0	-	7.4	0	-	9.1
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	228	0	0	253	31	0	0	0	23	0	3
Future Vol, veh/h	0	228	0	0	253	31	0	0	0	23	0	3
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	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	92	92	85	85	92	92	92	85	92	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	268	0	0	298	36	0	0	0	27	0	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	334	0	0	268	0	0	586	602	268	584	584	316
Stage 1	-	-	-	-	-	-	268	268	-	316	316	-
Stage 2	-	-	-	-	-	-	318	334	-	268	268	-
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	1225	-	-	1296	-	-	422	414	771	423	423	724
Stage 1	-	-	-	-	-	-	738	687	-	695	655	-
Stage 2	-	-	-	-	-	-	693	643	-	738	687	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1225	-	-	1296	-	-	420	414	771	423	423	724
Mov Cap-2 Maneuver	-	-	-	-	-	-	420	414	-	423	423	-
Stage 1	-	-	-	-	-	-	738	687	-	695	655	-
Stage 2	-	-	-	-	-	-	690	643	-	738	687	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	0	13.7
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1225	-	-	1296	-	-	444
HCM Lane V/C Ratio	-	-	-	-	-	-	-	0.069
HCM Control Delay (s)	0	0	-	-	0	-	-	13.7
HCM Lane LOS	A	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	0.2

Intersection	
Intersection Delay, s/veh	11.4
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	5	186	41	16	0	250	0	14	0	0	0
Future Vol, veh/h	0	5	186	41	16	0	250	0	14	0	0	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	6	219	48	19	0	294	0	16	0	0	0
Number of Lanes	0	1	1	1	1	0	1	0	1	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	9.6	9.2	13.2	0
HCM LOS	A	A	B	-

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	0%	100%	0%	0%	0%
Vol Thru, %	0%	0%	100%	0%	0%	100%	100%	100%
Vol Right, %	0%	100%	0%	100%	0%	0%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	250	14	5	186	41	16	0	0
LT Vol	250	0	0	0	41	0	0	0
Through Vol	0	0	5	0	0	16	0	0
RT Vol	0	14	0	186	0	0	0	0
Lane Flow Rate	294	16	6	219	48	19	0	0
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.469	0.021	0.009	0.294	0.083	0.03	0	0
Departure Headway (Hd)	5.738	4.534	5.542	4.836	6.199	5.693	5.628	5.628
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	624	783	644	742	575	626	0	0
Service Time	3.503	2.299	3.288	2.581	3.963	3.457	3.421	3.421
HCM Lane V/C Ratio	0.471	0.02	0.009	0.295	0.083	0.03	0	0
HCM Control Delay	13.5	7.4	8.3	9.6	9.5	8.6	8.4	8.4
HCM Lane LOS	B	A	A	A	A	A	N	N
HCM 95th-tile Q	2.5	0.1	0	1.2	0.3	0.1	0	0

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	0	0	0	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0	0	0	0	0	0	0
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	0	-	-	0	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0	0	0	0	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	1	0	0	2	-	1	2	2	1
Stage 1	-	-	-	-	-	-	1	-	-	1	1	-
Stage 2	-	-	-	-	-	-	1	-	-	1	1	-
Critical Hdwy	-	-	-	4.12	-	-	7.12	-	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	-	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	-	-	6.12	5.52	-
Follow-up Hdwy	-	-	-	2.218	-	-	3.518	-	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	-	1622	-	0	1020	0	1084	1020	894	1084
Stage 1	0	-	-	-	-	0	1022	0	-	1022	895	-
Stage 2	0	-	-	-	-	0	1022	0	-	1022	895	-
Platoon blocked, %		-	-		-							
Mov Cap-1 Maneuver	-	-	-	1622	-	-	1020	-	1084	1020	894	1084
Mov Cap-2 Maneuver	-	-	-	-	-	-	1020	-	-	1020	894	-
Stage 1	-	-	-	-	-	-	1022	-	-	1022	895	-
Stage 2	-	-	-	-	-	-	1022	-	-	1022	895	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	0	0
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	-	-	-	-	1622	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-	-
HCM Control Delay (s)	0	0	-	-	0	-	0
HCM Lane LOS	A	A	-	-	A	-	A
HCM 95th %tile Q(veh)	-	-	-	-	0	-	-

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	6	0	0	0	0	23	0	0	0
Future Vol, veh/h	0	0	0	6	0	0	0	0	23	0	0	0
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	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	7	0	0	0	0	25	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	0	0	0	1	0	0	15	15	1	28	15	0
Stage 1	-	-	-	-	-	-	1	1	-	14	14	-
Stage 2	-	-	-	-	-	-	14	14	-	14	1	-
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	-	-	-	1622	-	-	1001	879	1084	981	879	-
Stage 1	-	-	-	-	-	-	1022	895	-	1006	884	-
Stage 2	-	-	-	-	-	-	1006	884	-	1006	895	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	-	-	-	1622	-	-	-	875	1084	955	875	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	875	-	955	875	-
Stage 1	-	-	-	-	-	-	1022	895	-	1006	880	-
Stage 2	-	-	-	-	-	-	1002	880	-	983	895	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	7.2		0
HCM LOS			-	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	-	1622	-	-	-
HCM Lane V/C Ratio	-	-	-	-	0.004	-	-	-
HCM Control Delay (s)	-	0	-	-	7.2	-	-	0
HCM Lane LOS	-	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	-	-	-	-	0	-	-	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	0	0	0	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0	0	0	0	0	0	0
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	0	0	0	0	0	0	0	0	0	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1	0	0	1	0	0	2	2	1	2	2	1
Stage 1	-	-	-	-	-	-	1	1	-	1	1	-
Stage 2	-	-	-	-	-	-	1	1	-	1	1	-
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	1622	-	-	1622	-	-	1020	894	1084	1020	894	1084
Stage 1	-	-	-	-	-	-	1022	895	-	1022	895	-
Stage 2	-	-	-	-	-	-	1022	895	-	1022	895	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1622	-	-	1622	-	-	1020	894	1084	1020	894	1084
Mov Cap-2 Maneuver	-	-	-	-	-	-	1020	894	-	1020	894	-
Stage 1	-	-	-	-	-	-	1022	895	-	1022	895	-
Stage 2	-	-	-	-	-	-	1022	895	-	1022	895	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	0	0
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1622	-	-	1622	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-	-	-
HCM Control Delay (s)	0	0	-	-	0	-	-	0
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	0	0	0	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0	0	0	0	0	0	0
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	0	0	0	0	0	0	0	0	0	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1	0	0	1	0	0	2	2	1	2	2	1
Stage 1	-	-	-	-	-	-	1	1	-	1	1	-
Stage 2	-	-	-	-	-	-	1	1	-	1	1	-
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	1622	-	-	1622	-	-	1020	894	1084	1020	894	1084
Stage 1	-	-	-	-	-	-	1022	895	-	1022	895	-
Stage 2	-	-	-	-	-	-	1022	895	-	1022	895	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1622	-	-	1622	-	-	1020	894	1084	1020	894	1084
Mov Cap-2 Maneuver	-	-	-	-	-	-	1020	894	-	1020	894	-
Stage 1	-	-	-	-	-	-	1022	895	-	1022	895	-
Stage 2	-	-	-	-	-	-	1022	895	-	1022	895	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	0	0
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1622	-	-	1622	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-	-	-
HCM Control Delay (s)	0	0	-	-	0	-	-	0
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	-

Lane Group
Lane Group Flow (vph)
v/c Ratio
Control Delay
Queue Delay
Total Delay
Queue Length 50th (ft)
Queue Length 95th (ft)
Internal Link Dist (ft)
Turn Bay Length (ft)
Base Capacity (vph)
Starvation Cap Reductn
Spillback Cap Reductn
Storage Cap Reductn
Reduced v/c Ratio

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0
Future Volume (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0
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	
Adj Sat Flow, veh/h/ln							0	1870	0	0	1870	0
Adj Flow Rate, veh/h							0	0	0	0	0	0
Peak Hour Factor							0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %							0	2	0	0	2	0
Cap, veh/h							0	1496	0	0	1496	0
Arrive On Green							0.00	0.00	0.00	0.00	0.00	0.00
Sat Flow, veh/h							0	1870	0	0	1870	0
Grp Volume(v), veh/h							0	0	0	0	0	0
Grp Sat Flow(s),veh/h/ln							0	1870	0	0	1870	0
Q Serve(g_s), s							0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s							0.0	0.0	0.0	0.0	0.0	0.0
Prop In Lane							0.00		0.00	0.00		0.00
Lane Grp Cap(c), veh/h							0	1496	0	0	1496	0
V/C Ratio(X)							0.00	0.00	0.00	0.00	0.00	0.00
Avail Cap(c_a), veh/h							0	1496	0	0	1496	0
HCM Platoon Ratio							1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)							0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d), s/veh							0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh							0.0	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
%ile BackOfQ(50%),veh/ln							0.0	0.0	0.0	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh							0.0	0.0	0.0	0.0	0.0	0.0
LnGrp LOS							A	A	A	A	A	A
Approach Vol, veh/h								0			0	
Approach Delay, s/veh								0.0			0.0	
Approach LOS												
Timer - Assigned Phs		2				6						
Phs Duration (G+Y+Rc), s		22.5				22.5						
Change Period (Y+Rc), s		4.5				4.5						
Max Green Setting (Gmax), s		18.0				18.0						
Max Q Clear Time (g_c+I1), s		0.0				0.0						
Green Ext Time (p_c), s		0.0				0.0						
Intersection Summary												
HCM 6th Ctrl Delay			0.0									
HCM 6th LOS			A									

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	33	646	69	500	154	114	106	71
v/c Ratio	0.10	0.39	0.18	0.27	0.36	0.11	0.26	0.07
Control Delay	29.6	14.2	27.8	11.6	19.4	6.6	18.3	10.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.6	14.2	27.8	11.6	19.4	6.6	18.3	10.0
Queue Length 50th (ft)	8	70	17	29	38	3	25	4
Queue Length 95th (ft)	47	195	80	147	106	21	76	19
Internal Link Dist (ft)		4010		607		1657		634
Turn Bay Length (ft)								
Base Capacity (vph)	409	2522	526	2617	687	1672	660	1724
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.26	0.13	0.19	0.22	0.07	0.16	0.04

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	502	112	66	430	45	146	25	84	101	34	33
Future Volume (veh/h)	31	502	112	66	430	45	146	25	84	101	34	33
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	33	528	118	69	453	47	154	26	88	106	36	35
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	70	944	210	124	1161	120	444	357	319	398	366	311
Arrive On Green	0.04	0.33	0.33	0.07	0.36	0.36	0.20	0.20	0.20	0.20	0.20	0.20
Sat Flow, veh/h	1781	2889	643	1781	3251	336	1329	1777	1585	1279	1820	1548
Grp Volume(v), veh/h	33	324	322	69	247	253	154	26	88	106	35	36
Grp Sat Flow(s),veh/h/ln	1781	1777	1755	1781	1777	1810	1329	1777	1585	1279	1777	1592
Q Serve(g_s), s	0.6	5.4	5.4	1.3	3.7	3.7	3.8	0.4	1.7	2.7	0.6	0.7
Cycle Q Clear(g_c), s	0.6	5.4	5.4	1.3	3.7	3.7	4.5	0.4	1.7	4.4	0.6	0.7
Prop In Lane	1.00		0.37	1.00		0.19	1.00		1.00	1.00		0.97
Lane Grp Cap(c), veh/h	70	581	574	124	635	646	444	357	319	398	357	320
V/C Ratio(X)	0.47	0.56	0.56	0.56	0.39	0.39	0.35	0.07	0.28	0.27	0.10	0.11
Avail Cap(c_a), veh/h	349	1625	1605	448	1625	1655	772	795	709	714	795	712
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.8	9.9	9.9	16.1	8.6	8.6	13.5	11.6	12.1	13.9	11.6	11.7
Incr Delay (d2), s/veh	4.9	0.8	0.9	3.9	0.4	0.4	0.5	0.1	0.5	0.4	0.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	1.6	1.6	0.6	1.1	1.1	1.0	0.1	0.5	0.7	0.2	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.8	10.7	10.8	20.0	9.0	9.0	14.0	11.7	12.5	14.3	11.8	11.8
LnGrp LOS	C	B	B	C	A	A	B	B	B	B	B	B
Approach Vol, veh/h		679			569			268			177	
Approach Delay, s/veh		11.3			10.3			13.3			13.3	
Approach LOS		B			B			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.4	16.6		11.8	6.3	17.7		11.8				
Change Period (Y+Rc), s	4.9	4.9		4.6	4.9	4.9		4.6				
Max Green Setting (Gmax), s	9.0	32.7		16.0	7.0	32.7		16.0				
Max Q Clear Time (g_c+I1), s	3.3	7.4		6.4	2.6	5.7		6.5				
Green Ext Time (p_c), s	0.1	4.3		0.5	0.0	3.2		0.8				

Intersection Summary			
HCM 6th Ctrl Delay			11.5
HCM 6th LOS			B

Notes

User approved pedestrian interval to be less than phase max green.

Intersection	
Int Delay, s/veh	5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	465	248	55	526	0	0	0	0	86	2	77
Future Vol, veh/h	0	465	248	55	526	0	0	0	0	86	2	77
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	-	-	Free	-	-	None	-	-	None	-	-	None
Storage Length	-	-	335	-	-	-	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	489	261	58	554	0	0	0	0	91	2	81

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	-	489	0	0	1201	1159	489	1159	1159	554
Stage 1	-	-	-	-	-	-	489	489	-	670	670	-
Stage 2	-	-	-	-	-	-	712	670	-	489	489	-
Critical Hdwy	-	-	-	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	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	0	1074	-	0	162	196	579	173	196	532
Stage 1	0	-	0	-	-	0	561	549	-	446	455	-
Stage 2	0	-	0	-	-	0	423	455	-	561	549	-
Platoon blocked, %		-			-							
Mov Cap-1 Maneuver	-	-	-	1074	-	-	128	181	579	163	181	532
Mov Cap-2 Maneuver	-	-	-	-	-	-	128	181	-	163	181	-
Stage 1	-	-	-	-	-	-	561	549	-	446	420	-
Stage 2	-	-	-	-	-	-	329	420	-	561	549	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.8	0	34.2
HCM LOS			A	D

Minor Lane/Major Mvmt	NBLn1	EBT	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	1074	-	163	532
HCM Lane V/C Ratio	-	-	0.054	-	0.568	0.152
HCM Control Delay (s)	0	-	8.5	0	52.8	13
HCM Lane LOS	A	-	A	A	F	B
HCM 95th %tile Q(veh)	-	-	0.2	-	3	0.5

Intersection	
Int Delay, s/veh	7.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	414	126	42	1	1	169	2	93	0	0	3
Future Vol, veh/h	0	414	126	42	1	1	169	2	93	0	0	3
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	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	422	129	43	1	1	172	2	95	0	0	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	2	0	0	551	0	0	576	575	487	-	-	2
Stage 1	-	-	-	-	-	-	487	487	-	-	-	-
Stage 2	-	-	-	-	-	-	89	88	-	-	-	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	-	-	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	-	-	3.318
Pot Cap-1 Maneuver	1620	-	-	1019	-	-	428	429	581	0	0	1082
Stage 1	-	-	-	-	-	-	562	550	-	0	0	-
Stage 2	-	-	-	-	-	-	918	822	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1620	-	-	1019	-	-	413	411	581	-	-	1082
Mov Cap-2 Maneuver	-	-	-	-	-	-	413	411	-	-	-	-
Stage 1	-	-	-	-	-	-	562	550	-	-	-	-
Stage 2	-	-	-	-	-	-	877	787	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	8.3	23.3	8.3
HCM LOS			C	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	460	1620	-	-	1019	-	-	1082
HCM Lane V/C Ratio	0.586	-	-	-	0.042	-	-	0.003
HCM Control Delay (s)	23.3	0	-	-	8.7	0	-	8.3
HCM Lane LOS	C	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	3.7	0	-	-	0.1	-	-	0

Intersection	
Int Delay, s/veh	4.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	340	157	16	277	0	146	0	18	0	0	0
Future Vol, veh/h	0	340	157	16	277	0	146	0	18	0	0	0
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	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	347	160	16	283	0	149	0	18	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	507	0	0	742	742	427	751	822	283
Stage 1	-	-	-	-	-	-	427	427	-	315	315	-
Stage 2	-	-	-	-	-	-	315	315	-	436	507	-
Critical Hdwy	-	-	-	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	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	-	1058	-	0	332	344	628	327	309	756
Stage 1	0	-	-	-	-	0	606	585	-	696	656	-
Stage 2	0	-	-	-	-	0	696	656	-	599	539	-
Platoon blocked, %		-	-		-							
Mov Cap-1 Maneuver	-	-	-	1058	-	-	328	339	628	314	304	756
Mov Cap-2 Maneuver	-	-	-	-	-	-	328	339	-	314	304	-
Stage 1	-	-	-	-	-	-	606	585	-	696	646	-
Stage 2	-	-	-	-	-	-	685	646	-	581	539	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.5	23.3	0
HCM LOS			C	A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	328	628	-	-	1058	-	-
HCM Lane V/C Ratio	0.454	0.029	-	-	0.015	-	-
HCM Control Delay (s)	24.8	10.9	-	-	8.5	-	0
HCM Lane LOS	C	B	-	-	A	-	A
HCM 95th %tile Q(veh)	2.3	0.1	-	-	0	-	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	391	2	12	298	0	3	0	6	0	0	0
Future Vol, veh/h	0	391	2	12	298	0	3	0	6	0	0	0
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	-	-	0	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	425	2	13	324	0	3	0	7	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	324	0	0	427	0	0	776	776	426	780	777	324
Stage 1	-	-	-	-	-	-	426	426	-	350	350	-
Stage 2	-	-	-	-	-	-	350	350	-	430	427	-
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	1236	-	-	1132	-	0	315	328	628	313	328	717
Stage 1	-	-	-	-	-	0	606	586	-	666	633	-
Stage 2	-	-	-	-	-	0	666	633	-	603	585	-
Platoon blocked, %		-	-		-							
Mov Cap-1 Maneuver	1236	-	-	1132	-	-	312	324	628	307	324	717
Mov Cap-2 Maneuver	-	-	-	-	-	-	312	324	-	307	324	-
Stage 1	-	-	-	-	-	-	606	586	-	666	626	-
Stage 2	-	-	-	-	-	-	658	626	-	597	585	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.3	12.8	0
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	312	628	1236	-	-	1132	-	-
HCM Lane V/C Ratio	0.01	0.01	-	-	-	0.012	-	-
HCM Control Delay (s)	16.7	10.8	0	-	-	8.2	-	0
HCM Lane LOS	C	B	A	-	-	A	-	A
HCM 95th %tile Q(veh)	0	0	0	-	-	0	-	-

Intersection	
Intersection Delay, s/veh	14.4
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	97	297	6	1	203	12	2	2	6	12	1	104
Future Vol, veh/h	97	297	6	1	203	12	2	2	6	12	1	104
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	108	330	7	1	226	13	2	2	7	13	1	116
Number of Lanes	0	1	1	0	1	0	1	0	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	2
HCM Control Delay	17.1	11.7	9.1	10.4
HCM LOS	C	B	A	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1
Vol Left, %	100%	0%	25%	0%	0%	10%
Vol Thru, %	0%	25%	75%	0%	94%	1%
Vol Right, %	0%	75%	0%	100%	6%	89%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	2	8	394	6	216	117
LT Vol	2	0	97	0	1	12
Through Vol	0	2	297	0	203	1
RT Vol	0	6	0	6	12	104
Lane Flow Rate	2	9	438	7	240	130
Geometry Grp	7	7	7	7	6	6
Degree of Util (X)	0.004	0.015	0.643	0.008	0.364	0.208
Departure Headway (Hd)	7.135	6.092	5.286	4.458	5.464	5.771
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	505	591	679	795	653	616
Service Time	4.835	3.792	3.055	2.227	3.546	3.863
HCM Lane V/C Ratio	0.004	0.015	0.645	0.009	0.368	0.211
HCM Control Delay	9.9	8.9	17.2	7.3	11.7	10.4
HCM Lane LOS	A	A	C	A	B	B
HCM 95th-tile Q	0	0	4.7	0	1.7	0.8

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	16	153	33	5	98	10	19	1	5	6	1	10
Future Vol, veh/h	16	153	33	5	98	10	19	1	5	6	1	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	0	0	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	17	165	35	5	105	11	20	1	5	6	1	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	116	0	0	200	0	0	326	325	165	341	355	111
Stage 1	-	-	-	-	-	-	199	199	-	121	121	-
Stage 2	-	-	-	-	-	-	127	126	-	220	234	-
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	1473	-	-	1372	-	-	627	593	879	613	571	942
Stage 1	-	-	-	-	-	-	803	736	-	883	796	-
Stage 2	-	-	-	-	-	-	877	792	-	782	711	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1473	-	-	1372	-	-	612	584	879	601	562	942
Mov Cap-2 Maneuver	-	-	-	-	-	-	612	584	-	601	562	-
Stage 1	-	-	-	-	-	-	793	727	-	872	793	-
Stage 2	-	-	-	-	-	-	863	789	-	767	702	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0.3	10.7	9.9
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	612	811	1473	-	-	1372	-	-	760
HCM Lane V/C Ratio	0.033	0.008	0.012	-	-	0.004	-	-	0.024
HCM Control Delay (s)	11.1	9.5	7.5	-	-	7.6	-	-	9.9
HCM Lane LOS	B	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0.1	0	0	-	-	0	-	-	0.1

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	0	62	101	9	57	0	56	0	4	0	1	0
Future Vol, veh/h	0	62	101	9	57	0	56	0	4	0	1	0
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	-	-	-	0	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	84	84	84	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	74	120	11	68	0	67	0	5	0	1	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	194	0	0	165	-	74	227	284	68
Stage 1	-	-	-	-	-	-	74	-	-	90	90	-
Stage 2	-	-	-	-	-	-	91	-	-	137	194	-
Critical Hdwy	-	-	-	4.12	-	-	7.12	-	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	-	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	-	-	6.12	5.52	-
Follow-up Hdwy	-	-	-	2.218	-	-	3.518	-	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	-	1379	-	0	800	0	988	728	625	995
Stage 1	0	-	-	-	-	0	935	0	-	917	820	-
Stage 2	0	-	-	-	-	0	916	0	-	866	740	-
Platoon blocked, %		-	-		-							
Mov Cap-1 Maneuver	-	-	-	1379	-	-	794	-	988	720	620	995
Mov Cap-2 Maneuver	-	-	-	-	-	-	794	-	-	720	620	-
Stage 1	-	-	-	-	-	-	935	-	-	917	813	-
Stage 2	-	-	-	-	-	-	907	-	-	862	740	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	1	9.8	10.8
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	794	988	-	-	1379	-	620
HCM Lane V/C Ratio	0.084	0.005	-	-	0.008	-	0.002
HCM Control Delay (s)	9.9	8.7	-	-	7.6	0	10.8
HCM Lane LOS	A	A	-	-	A	A	B
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	0

Intersection	
Int Delay, s/veh	4.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	37	22	6	27	1	26	6	2	1	24	12
Future Vol, veh/h	10	37	22	6	27	1	26	6	2	1	24	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	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	61	61	61	61	61	61	61	61	61	61	61	61
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	61	36	10	44	2	43	10	3	2	39	20

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	46	0	0	97	0	0	206	177	79	183	194	45
Stage 1	-	-	-	-	-	-	111	111	-	65	65	-
Stage 2	-	-	-	-	-	-	95	66	-	118	129	-
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	1562	-	-	1496	-	-	752	717	981	778	701	1025
Stage 1	-	-	-	-	-	-	894	804	-	946	841	-
Stage 2	-	-	-	-	-	-	912	840	-	887	789	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1562	-	-	1496	-	-	696	704	981	757	688	1025
Mov Cap-2 Maneuver	-	-	-	-	-	-	696	704	-	757	688	-
Stage 1	-	-	-	-	-	-	884	795	-	936	835	-
Stage 2	-	-	-	-	-	-	846	834	-	863	780	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.1	1.3	10.5	10.1
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	710	1562	-	-	1496	-	-	772
HCM Lane V/C Ratio	0.079	0.01	-	-	0.007	-	-	0.079
HCM Control Delay (s)	10.5	7.3	0	-	7.4	0	-	10.1
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	0.3

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	66	0	0	47	8	0	0	0	22	0	0
Future Vol, veh/h	1	66	0	0	47	8	0	0	0	22	0	0
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	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	72	72	92	92	72	72	92	92	92	72	92	72
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	92	0	0	65	11	0	0	0	31	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	76	0	0	92	0	0	165	170	92	165	165	71
Stage 1	-	-	-	-	-	-	94	94	-	71	71	-
Stage 2	-	-	-	-	-	-	71	76	-	94	94	-
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	1523	-	-	1503	-	-	800	723	965	800	728	991
Stage 1	-	-	-	-	-	-	913	817	-	939	836	-
Stage 2	-	-	-	-	-	-	939	832	-	913	817	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1523	-	-	1503	-	-	799	722	965	799	727	991
Mov Cap-2 Maneuver	-	-	-	-	-	-	799	722	-	799	727	-
Stage 1	-	-	-	-	-	-	912	816	-	938	836	-
Stage 2	-	-	-	-	-	-	939	832	-	912	816	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0	0	9.7
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1523	-	-	1503	-	-	799
HCM Lane V/C Ratio	-	0.001	-	-	-	-	-	0.038
HCM Control Delay (s)	0	7.4	-	-	0	-	-	9.7
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	0.1

Intersection	
Intersection Delay, s/veh	7.8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	3	85	32	2	0	54	0	54	0	0	0
Future Vol, veh/h	0	3	85	32	2	0	54	0	54	0	0	0
Peak Hour Factor	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	4	118	44	3	0	75	0	75	0	0	0
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	7.3	7.9	8.1	0
HCM LOS	A	A	A	-

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	94%	0%	0%
Vol Thru, %	0%	0%	3%	6%	100%	100%
Vol Right, %	0%	100%	97%	0%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	54	54	88	34	0	0
LT Vol	54	0	0	32	0	0
Through Vol	0	0	3	2	0	0
RT Vol	0	54	85	0	0	0
Lane Flow Rate	75	75	122	47	0	0
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.111	0.086	0.128	0.06	0	0
Departure Headway (Hd)	5.328	4.126	3.772	4.602	5.026	5.026
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	668	859	956	782	0	0
Service Time	3.099	1.896	1.773	2.606	2.737	2.737
HCM Lane V/C Ratio	0.112	0.087	0.128	0.06	0	0
HCM Control Delay	8.8	7.3	7.3	7.9	7.7	7.7
HCM Lane LOS	A	A	A	A	N	N
HCM 95th-tile Q	0.4	0.3	0.4	0.2	0	0

Intersection												
Int Delay, s/veh	0											
Movement	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**
Lane Configurations												
Traffic Vol, veh/h	0	0	0	0	0	0	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0	0	0	0	0	0	0
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	0	-	-	0	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0	0	0	0	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	1	0	0	2	-	1	2	2	1
Stage 1	-	-	-	-	-	-	1	-	-	1	1	-
Stage 2	-	-	-	-	-	-	1	-	-	1	1	-
Critical Hdwy	-	-	-	4.12	-	-	7.12	-	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	-	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	-	-	6.12	5.52	-
Follow-up Hdwy	-	-	-	2.218	-	-	3.518	-	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	-	1622	-	0	1020	0	1084	1020	894	1084
Stage 1	0	-	-	-	-	0	1022	0	-	1022	895	-
Stage 2	0	-	-	-	-	0	1022	0	-	1022	895	-
Platoon blocked, %		-	-		-							
Mov Cap-1 Maneuver	-	-	-	1622	-	-	1020	-	1084	1020	894	1084
Mov Cap-2 Maneuver	-	-	-	-	-	-	1020	-	-	1020	894	-
Stage 1	-	-	-	-	-	-	1022	-	-	1022	895	-
Stage 2	-	-	-	-	-	-	1022	-	-	1022	895	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	0	0
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	-	-	-	-	1622	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-	-
HCM Control Delay (s)	0	0	-	-	0	-	0
HCM Lane LOS	A	A	-	-	A	-	A
HCM 95th %tile Q(veh)	-	-	-	-	0	-	-

Intersection	
Int Delay, s/veh	4.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	21	0	0	0	0	14	0	0	0
Future Vol, veh/h	0	0	0	21	0	0	0	0	14	0	0	0
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	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	23	0	0	0	0	15	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	0	0	0	1	0	0	47	47	1	55	47	0
Stage 1	-	-	-	-	-	-	1	1	-	46	46	-
Stage 2	-	-	-	-	-	-	46	46	-	9	1	-
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	-	-	-	1622	-	-	954	845	1084	943	845	-
Stage 1	-	-	-	-	-	-	1022	895	-	968	857	-
Stage 2	-	-	-	-	-	-	968	857	-	1012	895	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	-	-	-	1622	-	-	-	833	1084	919	833	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	833	-	919	833	-
Stage 1	-	-	-	-	-	-	1022	895	-	968	845	-
Stage 2	-	-	-	-	-	-	954	845	-	998	895	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	7.3		0
HCM LOS			-	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	-	1622	-	-	-
HCM Lane V/C Ratio	-	-	-	-	0.014	-	-	-
HCM Control Delay (s)	-	0	-	-	7.3	-	-	0
HCM Lane LOS	-	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	-	-	-	-	0	-	-	-

Intersection												
Int Delay, s/veh	3.4											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	85	0	0	0	54	0	0	0	0	0
Future Vol, veh/h	0	0	85	0	0	0	54	0	0	0	0	0
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	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	92	0	0	0	59	0	0	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1	0	0	92	0	0	1	1	0	47	93	1
Stage 1	-	-	-	-	-	-	0	0	-	1	1	-
Stage 2	-	-	-	-	-	-	1	1	-	46	92	-
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	1622	-	-	1503	-	-	1022	895	-	954	797	1084
Stage 1	-	-	-	-	-	-	-	-	-	1022	895	-
Stage 2	-	-	-	-	-	-	1022	895	-	968	819	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1622	-	-	1503	-	-	1022	895	-	-	797	1084
Mov Cap-2 Maneuver	-	-	-	-	-	-	1022	895	-	-	797	-
Stage 1	-	-	-	-	-	-	-	-	-	1022	895	-
Stage 2	-	-	-	-	-	-	1022	895	-	968	819	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	8.7	0
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1022	-	1622	-	-	1503	-	-	-	-
HCM Lane V/C Ratio	0.057	-	-	-	-	-	-	-	-	-
HCM Control Delay (s)	8.7	0	0	-	-	0	-	-	0	0
HCM Lane LOS	A	A	A	-	-	A	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	0	-	-	0	-	-	-	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Vol, veh/h	0	0	0	0	0	0	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0	0	0	0	0	0	0
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	0	0	0	0	0	0	0	0	0	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1	0	0	1	0	0	2	2	1	2	2	1
Stage 1	-	-	-	-	-	-	1	1	-	1	1	-
Stage 2	-	-	-	-	-	-	1	1	-	1	1	-
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	1622	-	-	1622	-	-	1020	894	1084	1020	894	1084
Stage 1	-	-	-	-	-	-	1022	895	-	1022	895	-
Stage 2	-	-	-	-	-	-	1022	895	-	1022	895	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1622	-	-	1622	-	-	1020	894	1084	1020	894	1084
Mov Cap-2 Maneuver	-	-	-	-	-	-	1020	894	-	1020	894	-
Stage 1	-	-	-	-	-	-	1022	895	-	1022	895	-
Stage 2	-	-	-	-	-	-	1022	895	-	1022	895	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	0	0
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1622	-	-	1622	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-	-	-
HCM Control Delay (s)	0	0	-	-	0	-	-	0
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	-

Lane Group
Lane Group Flow (vph)
v/c Ratio
Control Delay
Queue Delay
Total Delay
Queue Length 50th (ft)
Queue Length 95th (ft)
Internal Link Dist (ft)
Turn Bay Length (ft)
Base Capacity (vph)
Starvation Cap Reductn
Spillback Cap Reductn
Storage Cap Reductn
Reduced v/c Ratio

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								↑			↑	
Traffic Volume (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0
Future Volume (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0
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	
Adj Sat Flow, veh/h/ln							0	1870	0	0	1870	0
Adj Flow Rate, veh/h							0	0	0	0	0	0
Peak Hour Factor							0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %							0	2	0	0	2	0
Cap, veh/h							0	1496	0	0	1496	0
Arrive On Green							0.00	0.00	0.00	0.00	0.00	0.00
Sat Flow, veh/h							0	1870	0	0	1870	0
Grp Volume(v), veh/h							0	0	0	0	0	0
Grp Sat Flow(s),veh/h/ln							0	1870	0	0	1870	0
Q Serve(g_s), s							0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s							0.0	0.0	0.0	0.0	0.0	0.0
Prop In Lane							0.00		0.00	0.00		0.00
Lane Grp Cap(c), veh/h							0	1496	0	0	1496	0
V/C Ratio(X)							0.00	0.00	0.00	0.00	0.00	0.00
Avail Cap(c_a), veh/h							0	1496	0	0	1496	0
HCM Platoon Ratio							1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)							0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d), s/veh							0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh							0.0	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
%ile BackOfQ(50%),veh/ln							0.0	0.0	0.0	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh							0.0	0.0	0.0	0.0	0.0	0.0
LnGrp LOS							A	A	A	A	A	A
Approach Vol, veh/h								0			0	
Approach Delay, s/veh								0.0			0.0	
Approach LOS												
Timer - Assigned Phs		2				6						
Phs Duration (G+Y+Rc), s		22.5				22.5						
Change Period (Y+Rc), s		4.5				4.5						
Max Green Setting (Gmax), s		18.0				18.0						
Max Q Clear Time (g_c+I1), s		0.0				0.0						
Green Ext Time (p_c), s		0.0				0.0						
Intersection Summary												
HCM 6th Ctrl Delay			0.0									
HCM 6th LOS			A									

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	59	1394	324	1012	235	177	188	124
v/c Ratio	0.37	0.92	1.49	0.54	0.75	0.20	0.63	0.14
Control Delay	41.8	31.7	274.0	15.8	41.2	5.7	34.6	10.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.8	31.7	274.0	15.8	41.2	5.7	34.6	10.5
Queue Length 50th (ft)	25	268	~202	161	101	4	78	10
Queue Length 95th (ft)	69	#552	#424	313	159	21	127	25
Internal Link Dist (ft)		4010		607		1657		634
Turn Bay Length (ft)								
Base Capacity (vph)	169	1567	217	1861	328	919	312	900
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.89	1.49	0.54	0.72	0.19	0.60	0.14

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	890	295	275	825	35	200	20	130	160	45	60
Future Volume (veh/h)	50	890	295	275	825	35	200	20	130	160	45	60
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	59	1047	347	324	971	41	235	24	153	188	53	71
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	86	1171	384	226	1819	77	341	400	357	273	400	357
Arrive On Green	0.05	0.45	0.45	0.13	0.52	0.52	0.23	0.23	0.23	0.23	0.23	0.23
Sat Flow, veh/h	1781	2630	862	1781	3474	147	1267	1777	1585	1207	1777	1585
Grp Volume(v), veh/h	59	704	690	324	497	515	235	24	153	188	53	71
Grp Sat Flow(s),veh/h/ln	1781	1777	1715	1781	1777	1844	1267	1777	1585	1207	1777	1585
Q Serve(g_s), s	2.3	25.8	26.5	9.0	13.1	13.1	13.1	0.8	5.9	10.1	1.7	2.6
Cycle Q Clear(g_c), s	2.3	25.8	26.5	9.0	13.1	13.1	15.7	0.8	5.9	16.0	1.7	2.6
Prop In Lane	1.00		0.50	1.00		0.08	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	86	791	764	226	930	965	341	400	357	273	400	357
V/C Ratio(X)	0.68	0.89	0.90	1.44	0.53	0.53	0.69	0.06	0.43	0.69	0.13	0.20
Avail Cap(c_a), veh/h	176	818	790	226	930	965	341	400	357	273	400	357
HCM Platoon Ratio	1.00	1.00	1.00	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	33.3	18.1	18.3	31.0	11.2	11.2	28.7	21.6	23.6	30.9	22.0	22.3
Incr Delay (d2), s/veh	9.2	11.6	13.5	219.4	0.6	0.6	5.8	0.1	0.8	7.0	0.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	11.9	12.2	17.5	4.7	4.8	4.4	0.3	2.2	3.7	0.7	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.4	29.7	31.8	250.4	11.8	11.8	34.5	21.7	24.4	37.9	22.1	22.6
LnGrp LOS	D	C	C	F	B	B	C	C	C	D	C	C
Approach Vol, veh/h		1453			1336			412			312	
Approach Delay, s/veh		31.2			69.6			30.0			31.7	
Approach LOS		C			E			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.9	36.5		20.6	8.3	42.1		20.6				
Change Period (Y+Rc), s	4.9	4.9		4.6	4.9	4.9		4.6				
Max Green Setting (Gmax), s	9.0	32.7		16.0	7.0	32.7		16.0				
Max Q Clear Time (g_c+I1), s	11.0	28.5		18.0	4.3	15.1		17.7				
Green Ext Time (p_c), s	0.0	3.1		0.0	0.0	6.4		0.0				
Intersection Summary												
HCM 6th Ctrl Delay			45.7									
HCM 6th LOS			D									

Notes

User approved pedestrian interval to be less than phase max green.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	136	1080	37	1611	12	99	24	12	12	216
v/c Ratio	1.01	0.38	0.18	0.71	0.01	0.38	0.07	0.05	0.03	0.60
Control Delay	106.2	9.1	28.9	9.4	1.9	26.5	15.9	21.6	21.4	22.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	106.2	9.1	28.9	9.4	1.9	26.5	15.9	21.6	21.4	22.7
Queue Length 50th (ft)	33	50	11	160	0	27	3	3	3	39
Queue Length 95th (ft)	#160	134	37	244	4	69	19	15	15	99
Internal Link Dist (ft)		443		392			645		757	
Turn Bay Length (ft)	300		300			50		50		50
Base Capacity (vph)	135	2870	745	3357	1502	673	836	665	898	801
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.01	0.38	0.05	0.48	0.01	0.15	0.03	0.02	0.01	0.27

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	795	80	30	1305	10	80	10	10	10	10	175
Future Volume (veh/h)	110	795	80	30	1305	10	80	10	10	10	10	175
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			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	981	99	37	1611	12	99	12	12	12	12	216
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	241	2574	259	68	2367	1056	316	150	150	347	328	278
Arrive On Green	0.55	0.55	0.55	0.04	0.67	0.67	0.18	0.18	0.18	0.18	0.18	0.18
Sat Flow, veh/h	311	4714	475	1781	3554	1585	1153	858	858	1387	1870	1585
Grp Volume(v), veh/h	136	708	372	37	1611	12	99	0	24	12	12	216
Grp Sat Flow(s),veh/h/ln	311	1702	1785	1781	1777	1585	1153	0	1716	1387	1870	1585
Q Serve(g_s), s	23.3	7.1	7.2	1.2	16.6	0.2	4.7	0.0	0.7	0.4	0.3	7.8
Cycle Q Clear(g_c), s	32.7	7.1	7.2	1.2	16.6	0.2	5.0	0.0	0.7	1.1	0.3	7.8
Prop In Lane	1.00		0.27	1.00		1.00	1.00		0.50	1.00		1.00
Lane Grp Cap(c), veh/h	241	1858	974	68	2367	1056	316	0	301	347	328	278
V/C Ratio(X)	0.56	0.38	0.38	0.54	0.68	0.01	0.31	0.00	0.08	0.03	0.04	0.78
Avail Cap(c_a), veh/h	241	1858	974	717	2367	1056	645	0	791	743	862	730
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.6	7.8	7.8	28.3	6.1	3.4	22.6	0.0	20.7	21.1	20.5	23.6
Incr Delay (d2), s/veh	3.0	0.1	0.2	6.5	0.8	0.0	0.6	0.0	0.1	0.0	0.0	4.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	2.1	2.3	0.6	4.2	0.0	1.2	0.0	0.3	0.1	0.1	3.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.6	7.9	8.0	34.8	6.9	3.4	23.1	0.0	20.8	21.2	20.5	28.3
LnGrp LOS	C	A	A	C	A	A	C	A	C	C	C	C
Approach Vol, veh/h		1216			1660			123			240	
Approach Delay, s/veh		9.6			7.5			22.7			27.5	
Approach LOS		A			A			C			C	

Timer - Assigned Phs		2	3	4		6		8				
Phs Duration (G+Y+Rc), s		15.1	7.2	37.6		15.1		44.8				
Change Period (Y+Rc), s		4.6	4.9	4.9		4.6		4.9				
Max Green Setting (Gmax), s		27.6	24.1	32.7		27.6		32.7				
Max Q Clear Time (g_c+I1), s		7.0	3.2	34.7		9.8		18.6				
Green Ext Time (p_c), s		0.4	0.1	0.0		0.7		9.8				

Intersection Summary			
HCM 6th Ctrl Delay			10.4
HCM 6th LOS			B

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	154	852	37	1389	37	43	49	12	265
v/c Ratio	0.46	0.42	0.22	0.84	0.21	0.18	0.26	0.04	0.55
Control Delay	39.9	14.9	38.7	26.2	38.1	15.9	38.1	26.4	8.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.9	14.9	38.7	26.2	38.1	15.9	38.1	26.4	8.5
Queue Length 50th (ft)	34	87	16	278	16	5	21	4	0
Queue Length 95th (ft)	74	278	49	#567	48	26	58	17	38
Internal Link Dist (ft)		493		1195		1198		751	
Turn Bay Length (ft)	200		200		120		120		
Base Capacity (vph)	341	2032	225	1738	401	679	401	743	791
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.45	0.42	0.16	0.80	0.09	0.06	0.12	0.02	0.34

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	125	675	15	30	1100	25	30	10	25	40	10	215
Future Volume (veh/h)	125	675	15	30	1100	25	30	10	25	40	10	215
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			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	833	19	37	1358	31	37	12	31	49	12	216
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	242	1697	39	66	1580	36	66	75	194	79	318	269
Arrive On Green	0.07	0.48	0.48	0.04	0.44	0.44	0.04	0.16	0.16	0.04	0.17	0.17
Sat Flow, veh/h	3456	3552	81	1781	3552	81	1781	462	1194	1781	1870	1585
Grp Volume(v), veh/h	154	417	435	37	679	710	37	0	43	49	12	216
Grp Sat Flow(s),veh/h/ln	1728	1777	1856	1781	1777	1856	1781	0	1656	1781	1870	1585
Q Serve(g_s), s	3.0	10.9	10.9	1.4	23.4	23.5	1.4	0.0	1.5	1.8	0.4	8.9
Cycle Q Clear(g_c), s	3.0	10.9	10.9	1.4	23.4	23.5	1.4	0.0	1.5	1.8	0.4	8.9
Prop In Lane	1.00		0.04	1.00		0.04	1.00		0.72	1.00		1.00
Lane Grp Cap(c), veh/h	242	849	887	66	791	826	66	0	269	79	318	269
V/C Ratio(X)	0.64	0.49	0.49	0.56	0.86	0.86	0.56	0.00	0.16	0.62	0.04	0.80
Avail Cap(c_a), veh/h	354	851	889	235	851	889	418	0	679	418	767	650
HCM Platoon Ratio	1.00	1.00	1.00	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	1.00	1.00
Uniform Delay (d), s/veh	30.9	12.2	12.2	32.3	17.0	17.0	32.3	0.0	24.6	32.1	23.7	27.2
Incr Delay (d2), s/veh	2.8	0.4	0.4	7.3	8.4	8.1	7.3	0.0	0.3	7.7	0.0	5.5
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	1.3	3.9	4.1	0.7	10.2	10.6	0.7	0.0	0.6	0.9	0.2	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.7	12.6	12.6	39.7	25.4	25.2	39.7	0.0	24.9	39.8	23.7	32.7
LnGrp LOS	C	B	B	D	C	C	D	A	C	D	C	C
Approach Vol, veh/h		1006			1426			80			277	
Approach Delay, s/veh		15.8			25.6			31.7			33.6	
Approach LOS		B			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.6	15.7	7.4	37.5	7.1	16.2	9.7	35.3
Change Period (Y+Rc), s	4.6	4.6	4.9	4.9	4.6	4.6	4.9	4.9
Max Green Setting (Gmax), s	16.0	28.0	9.0	32.7	16.0	28.0	7.0	32.7
Max Q Clear Time (g_c+I1), s	3.8	3.5	3.4	12.9	3.4	10.9	5.0	25.5
Green Ext Time (p_c), s	0.1	0.2	0.0	5.4	0.0	0.7	0.1	4.9

Intersection Summary	
HCM 6th Ctrl Delay	23.1
HCM 6th LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	424	365	59	18	835	59	53	76	41	512
v/c Ratio	0.83	0.17	0.06	0.16	0.82	0.53	0.21	0.39	0.15	0.84
Control Delay	46.6	10.7	0.1	45.3	36.1	61.0	25.3	45.9	31.4	19.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.6	10.7	0.1	45.3	36.1	61.0	25.3	45.9	31.4	19.5
Queue Length 50th (ft)	216	36	0	9	210	31	17	39	20	36
Queue Length 95th (ft)	#420	93	0	32	#312	#91	45	#92	44	117
Internal Link Dist (ft)		1195			2587		1879		775	
Turn Bay Length (ft)	350		300	200		120		120		
Base Capacity (vph)	512	2117	997	113	1153	111	485	203	553	778
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.83	0.17	0.06	0.16	0.72	0.53	0.11	0.37	0.07	0.66

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	360	310	50	15	670	40	50	30	15	65	35	435
Future Volume (veh/h)	360	310	50	15	670	40	50	30	15	65	35	435
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	424	365	59	18	788	47	59	35	18	76	41	394
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	436	1724	769	36	886	53	76	278	143	98	470	398
Arrive On Green	0.24	0.48	0.48	0.02	0.26	0.26	0.04	0.24	0.24	0.05	0.25	0.25
Sat Flow, veh/h	1781	3554	1585	1781	3407	203	1781	1164	599	1781	1870	1585
Grp Volume(v), veh/h	424	365	59	18	411	424	59	0	53	76	41	394
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1834	1781	0	1763	1781	1870	1585
Q Serve(g_s), s	22.3	5.6	1.9	0.9	21.0	21.0	3.1	0.0	2.2	4.0	1.6	23.4
Cycle Q Clear(g_c), s	22.3	5.6	1.9	0.9	21.0	21.0	3.1	0.0	2.2	4.0	1.6	23.4
Prop In Lane	1.00		1.00	1.00		0.11	1.00		0.34	1.00		1.00
Lane Grp Cap(c), veh/h	436	1724	769	36	462	477	76	0	421	98	470	398
V/C Ratio(X)	0.97	0.21	0.08	0.51	0.89	0.89	0.78	0.00	0.13	0.78	0.09	0.99
Avail Cap(c_a), veh/h	436	1724	769	96	492	507	94	0	421	140	470	398
HCM Platoon Ratio	1.00	1.00	1.00	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	1.00	1.00
Uniform Delay (d), s/veh	35.3	13.9	13.0	45.8	33.6	33.6	44.7	0.0	28.2	44.0	27.0	35.2
Incr Delay (d2), s/veh	35.8	0.1	0.0	10.7	17.2	16.8	27.2	0.0	0.1	15.9	0.1	42.2
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	13.7	2.2	0.7	0.5	11.0	11.4	1.9	0.0	0.9	2.2	0.7	13.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	71.1	14.0	13.0	56.5	50.8	50.4	71.9	0.0	28.3	59.9	27.1	77.4
LnGrp LOS	E	B	B	E	D	D	E	A	C	E	C	E
Approach Vol, veh/h		848			853			112			511	
Approach Delay, s/veh		42.5			50.7			51.3			70.8	
Approach LOS		D			D			D			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.8	27.1	6.8	50.7	8.6	28.3	28.0	29.4				
Change Period (Y+Rc), s	4.6	4.6	4.9	4.9	4.6	4.6	4.9	4.9				
Max Green Setting (Gmax), s	7.4	21.3	5.1	44.1	5.0	23.7	23.1	26.1				
Max Q Clear Time (g_c+I1), s	6.0	4.2	2.9	7.6	5.1	25.4	24.3	23.0				
Green Ext Time (p_c), s	0.0	0.2	0.0	2.8	0.0	0.0	0.0	1.5				
Intersection Summary												
HCM 6th Ctrl Delay			52.2									
HCM 6th LOS			D									

Intersection	
Intersection Delay, s/veh	31.7
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	45	250	30	10	400	15	60	10	10	40	30	120
Future Vol, veh/h	45	250	30	10	400	15	60	10	10	40	30	120
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	53	294	35	12	471	18	71	12	12	47	35	141
Number of Lanes	1	1	1	1	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	3	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	3	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	3
HCM Control Delay	18.6	53.1	13.1	14.1
HCM LOS	C	F	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	0%	100%	0%	100%	0%
Vol Thru, %	0%	50%	0%	100%	0%	0%	96%	0%	20%
Vol Right, %	0%	50%	0%	0%	100%	0%	4%	0%	80%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	60	20	45	250	30	10	415	40	150
LT Vol	60	0	45	0	0	10	0	40	0
Through Vol	0	10	0	250	0	0	400	0	30
RT Vol	0	10	0	0	30	0	15	0	120
Lane Flow Rate	71	24	53	294	35	12	488	47	176
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.176	0.053	0.116	0.604	0.065	0.025	0.948	0.112	0.366
Departure Headway (Hd)	8.972	8.099	7.903	7.393	6.678	7.523	6.989	8.54	7.457
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	399	440	453	488	535	475	518	419	482
Service Time	6.755	5.881	5.668	5.157	4.441	5.278	4.743	6.308	5.224
HCM Lane V/C Ratio	0.178	0.055	0.117	0.602	0.065	0.025	0.942	0.112	0.365
HCM Control Delay	13.7	11.3	11.7	20.9	9.9	10.5	54.1	12.4	14.5
HCM Lane LOS	B	B	B	C	A	B	F	B	B
HCM 95th-tile Q	0.6	0.2	0.4	3.9	0.2	0.1	11.9	0.4	1.7

Intersection	
Intersection Delay, s/veh	12.9
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	60	190	45	10	110	20	140	15	30	60	30	175
Future Vol, veh/h	60	190	45	10	110	20	140	15	30	60	30	175
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	67	213	51	11	124	22	157	17	34	67	34	197
Number of Lanes	1	1	1	1	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	3	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	3	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	3
HCM Control Delay	12.9	12.7	13	12.8
HCM LOS	B	B	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	0%	100%	0%	100%	0%
Vol Thru, %	0%	33%	0%	100%	0%	0%	85%	0%	15%
Vol Right, %	0%	67%	0%	0%	100%	0%	15%	0%	85%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	140	45	60	190	45	10	130	60	205
LT Vol	140	0	60	0	0	10	0	60	0
Through Vol	0	15	0	190	0	0	110	0	30
RT Vol	0	30	0	0	45	0	20	0	175
Lane Flow Rate	157	51	67	213	51	11	146	67	230
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.331	0.093	0.138	0.407	0.086	0.024	0.291	0.139	0.404
Departure Headway (Hd)	7.577	6.597	7.374	6.866	6.154	7.794	7.173	7.425	6.313
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	475	544	488	527	584	460	501	485	571
Service Time	5.315	4.335	5.09	4.582	3.87	5.535	4.914	5.141	4.03
HCM Lane V/C Ratio	0.331	0.094	0.137	0.404	0.087	0.024	0.291	0.138	0.403
HCM Control Delay	14	10	11.3	14.2	9.4	10.7	12.8	11.3	13.3
HCM Lane LOS	B	A	B	B	A	B	B	B	B
HCM 95th-tile Q	1.4	0.3	0.5	2	0.3	0.1	1.2	0.5	1.9

Intersection	
Int Delay, s/veh	3.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	90	165	5	50	5	70	10	10	5	10	15
Future Vol, veh/h	10	90	165	5	50	5	70	10	10	5	10	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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	77	77	77	77	77	77	77	77	77	77	77	77
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	117	214	6	65	6	91	13	13	6	13	19

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	71	0	0	331	0	0	346	333	224	343	437	68
Stage 1	-	-	-	-	-	-	250	250	-	80	80	-
Stage 2	-	-	-	-	-	-	96	83	-	263	357	-
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	1529	-	-	1228	-	-	608	587	815	611	513	995
Stage 1	-	-	-	-	-	-	754	700	-	929	828	-
Stage 2	-	-	-	-	-	-	911	826	-	742	628	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1529	-	-	1228	-	-	578	578	815	584	505	995
Mov Cap-2 Maneuver	-	-	-	-	-	-	578	578	-	584	505	-
Stage 1	-	-	-	-	-	-	746	692	-	919	824	-
Stage 2	-	-	-	-	-	-	875	822	-	709	621	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.7	12.5	10.5
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	597	1529	-	-	1228	-	-	691
HCM Lane V/C Ratio	0.196	0.008	-	-	0.005	-	-	0.056
HCM Control Delay (s)	12.5	7.4	0	-	7.9	0	-	10.5
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.7	0	-	-	0	-	-	0.2

Intersection	
Int Delay, s/veh	12.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	45	190	0	0	310	90	0	0	0	120	0	50
Future Vol, veh/h	45	190	0	0	310	90	0	0	0	120	0	50
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	70	70	70	70	70	70	70	70	70	70	70	70
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	64	271	0	0	443	129	0	0	0	171	0	71

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	572	0	0	271	0	0	942	971	271	907	907	508
Stage 1	-	-	-	-	-	-	399	399	-	508	508	-
Stage 2	-	-	-	-	-	-	543	572	-	399	399	-
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	1001	-	-	1292	-	-	243	253	768	257	276	565
Stage 1	-	-	-	-	-	-	627	602	-	547	539	-
Stage 2	-	-	-	-	-	-	524	504	-	627	602	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1001	-	-	1292	-	-	202	237	768	244	258	565
Mov Cap-2 Maneuver	-	-	-	-	-	-	202	237	-	244	258	-
Stage 1	-	-	-	-	-	-	587	563	-	512	539	-
Stage 2	-	-	-	-	-	-	458	504	-	587	563	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.7	0	0	56.7
HCM LOS			A	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1001	-	-	1292	-	-	293
HCM Lane V/C Ratio	-	0.064	-	-	-	-	-	0.829
HCM Control Delay (s)	0	8.8	-	-	0	-	-	56.7
HCM Lane LOS	A	A	-	-	A	-	-	F
HCM 95th %tile Q(veh)	-	0.2	-	-	0	-	-	6.9

Intersection	
Intersection Delay, s/veh	53.3
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	40	205	85	60	35	320	60	35	15	250	10
Future Vol, veh/h	5	40	205	85	60	35	320	60	35	15	250	10
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	57	293	121	86	50	457	86	50	21	357	14
Number of Lanes	0	1	1	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	2
HCM Control Delay	23.6	28.6	87.8	44.6
HCM LOS	C	D	F	E

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	11%	0%	47%	100%	0%
Vol Thru, %	0%	63%	89%	0%	33%	0%	96%
Vol Right, %	0%	37%	0%	100%	19%	0%	4%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	320	95	45	205	180	15	260
LT Vol	320	0	5	0	85	15	0
Through Vol	0	60	40	0	60	0	250
RT Vol	0	35	0	205	35	0	10
Lane Flow Rate	457	136	64	293	257	21	371
Geometry Grp	7	7	7	7	6	7	7
Degree of Util (X)	1.117	0.302	0.157	0.656	0.649	0.053	0.863
Departure Headway (Hd)	8.793	8.006	9.222	8.434	9.551	9.282	8.732
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	411	448	392	431	381	388	416
Service Time	6.562	5.774	6.922	6.134	7.551	6.982	6.432
HCM Lane V/C Ratio	1.112	0.304	0.163	0.68	0.675	0.054	0.892
HCM Control Delay	109.6	14.2	13.6	25.8	28.6	12.5	46.5
HCM Lane LOS	F	B	B	D	D	B	E
HCM 95th-tile Q	16.3	1.3	0.6	4.6	4.4	0.2	8.5

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	50	60	205	110	0	40	0	110	0	0	0
Future Vol, veh/h	0	50	60	205	110	0	40	0	110	0	0	0
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.92	0.70	0.70
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	71	86	293	157	0	57	0	157	0	0	0
Number of Lanes	0	1	1	1	1	0	1	0	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	2	2
HCM Control Delay	8.7	12.2	9.8	0
HCM LOS	A	B	A	-

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	100%	0%	0%	0%	100%	0%	0%
Vol Thru, %	0%	0%	100%	0%	0%	100%	100%
Vol Right, %	0%	100%	0%	100%	0%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	40	110	50	60	205	110	0
LT Vol	40	0	0	0	205	0	0
Through Vol	0	0	50	0	0	110	0
RT Vol	0	110	0	60	0	0	0
Lane Flow Rate	57	157	71	86	293	157	0
Geometry Grp	7	7	7	7	7	7	6
Degree of Util (X)	0.103	0.231	0.111	0.117	0.469	0.23	0
Departure Headway (Hd)	6.505	5.296	5.616	4.908	5.769	5.266	6.42
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	548	673	632	722	621	677	0
Service Time	4.28	3.071	3.405	2.697	3.541	3.037	4.42
HCM Lane V/C Ratio	0.104	0.233	0.112	0.119	0.472	0.232	0
HCM Control Delay	10	9.7	9.1	8.4	13.6	9.6	9.4
HCM Lane LOS	A	A	A	A	B	A	N
HCM 95th-tile Q	0.3	0.9	0.4	0.4	2.5	0.9	0

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	35	125	0	0	250	10	0	0	0	10	0	60
Future Vol, veh/h	35	125	0	0	250	10	0	0	0	10	0	60
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	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	70	100	70	70	70	70	70	70	70	70	70	70
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	50	125	0	0	357	14	0	0	0	14	0	86

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	371	0	0	125	0	0	632	596	125	589	589	364
Stage 1	-	-	-	-	-	-	225	225	-	364	364	-
Stage 2	-	-	-	-	-	-	407	371	-	225	225	-
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	1188	-	-	1462	-	-	393	417	926	420	421	681
Stage 1	-	-	-	-	-	-	778	718	-	655	624	-
Stage 2	-	-	-	-	-	-	621	620	-	778	718	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1188	-	-	1462	-	-	332	399	926	407	403	681
Mov Cap-2 Maneuver	-	-	-	-	-	-	332	399	-	407	403	-
Stage 1	-	-	-	-	-	-	745	688	-	627	624	-
Stage 2	-	-	-	-	-	-	543	620	-	745	688	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.3	0	0	11.9
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1188	-	-	1462	-	-	621
HCM Lane V/C Ratio	-	0.042	-	-	-	-	-	0.161
HCM Control Delay (s)	0	8.2	-	-	0	-	-	11.9
HCM Lane LOS	A	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	-	0.1	-	-	0	-	-	0.6

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	5	35	55	50	60	5	20	30	15	5	85	10
Future Vol, veh/h	5	35	55	50	60	5	20	30	15	5	85	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
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	5	38	60	54	65	5	22	33	16	5	92	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	70	0	0	98	0	0	305	256	68	279	284	68
Stage 1	-	-	-	-	-	-	78	78	-	176	176	-
Stage 2	-	-	-	-	-	-	227	178	-	103	108	-
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	1531	-	-	1495	-	-	647	648	995	673	625	995
Stage 1	-	-	-	-	-	-	931	830	-	826	753	-
Stage 2	-	-	-	-	-	-	776	752	-	903	806	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1531	-	-	1495	-	-	547	621	995	616	599	995
Mov Cap-2 Maneuver	-	-	-	-	-	-	547	621	-	616	599	-
Stage 1	-	-	-	-	-	-	928	828	-	824	724	-
Stage 2	-	-	-	-	-	-	644	723	-	851	804	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	3.3	11.2	12
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	650	1531	-	-	1495	-	-	625
HCM Lane V/C Ratio	0.109	0.004	-	-	0.036	-	-	0.174
HCM Control Delay (s)	11.2	7.4	0	-	7.5	0	-	12
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.4	0	-	-	0.1	-	-	0.6

Intersection	
Int Delay, s/veh	8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	5	45	110	20	5	30	25	40	5	65	5
Future Vol, veh/h	5	5	45	110	20	5	30	25	40	5	65	5
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	5	5	49	120	22	5	33	27	43	5	71	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	27	0	0	54	0	0	343	307	30	340	329	25
Stage 1	-	-	-	-	-	-	40	40	-	265	265	-
Stage 2	-	-	-	-	-	-	303	267	-	75	64	-
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	1587	-	-	1551	-	-	611	607	1044	614	590	1051
Stage 1	-	-	-	-	-	-	975	862	-	740	689	-
Stage 2	-	-	-	-	-	-	706	688	-	934	842	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1587	-	-	1551	-	-	514	557	1044	531	542	1051
Mov Cap-2 Maneuver	-	-	-	-	-	-	514	557	-	531	542	-
Stage 1	-	-	-	-	-	-	972	859	-	738	635	-
Stage 2	-	-	-	-	-	-	575	634	-	864	839	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	6.1	11.3	12.5
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	671	1587	-	-	1551	-	-	559
HCM Lane V/C Ratio	0.154	0.003	-	-	0.077	-	-	0.146
HCM Control Delay (s)	11.3	7.3	0	-	7.5	0	-	12.5
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.5	0	-	-	0.2	-	-	0.5

Lane Group
Lane Group Flow (vph)
v/c Ratio
Control Delay
Queue Delay
Total Delay
Queue Length 50th (ft)
Queue Length 95th (ft)
Internal Link Dist (ft)
Turn Bay Length (ft)
Base Capacity (vph)
Starvation Cap Reductn
Spillback Cap Reductn
Storage Cap Reductn
Reduced v/c Ratio

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								↑			↑	
Traffic Volume (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0
Future Volume (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0
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	
Adj Sat Flow, veh/h/ln							0	1870	0	0	1870	0
Adj Flow Rate, veh/h							0	0	0	0	0	0
Peak Hour Factor							0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %							0	2	0	0	2	0
Cap, veh/h							0	1496	0	0	1496	0
Arrive On Green							0.00	0.00	0.00	0.00	0.00	0.00
Sat Flow, veh/h							0	1870	0	0	1870	0
Grp Volume(v), veh/h							0	0	0	0	0	0
Grp Sat Flow(s),veh/h/ln							0	1870	0	0	1870	0
Q Serve(g_s), s							0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s							0.0	0.0	0.0	0.0	0.0	0.0
Prop In Lane							0.00		0.00	0.00		0.00
Lane Grp Cap(c), veh/h							0	1496	0	0	1496	0
V/C Ratio(X)							0.00	0.00	0.00	0.00	0.00	0.00
Avail Cap(c_a), veh/h							0	1496	0	0	1496	0
HCM Platoon Ratio							1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)							0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d), s/veh							0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh							0.0	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
%ile BackOfQ(50%),veh/ln							0.0	0.0	0.0	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh							0.0	0.0	0.0	0.0	0.0	0.0
LnGrp LOS							A	A	A	A	A	A
Approach Vol, veh/h								0			0	
Approach Delay, s/veh								0.0			0.0	
Approach LOS												

Timer - Assigned Phs		2				6						
Phs Duration (G+Y+Rc), s		22.5				22.5						
Change Period (Y+Rc), s		4.5				4.5						
Max Green Setting (Gmax), s		18.0				18.0						
Max Q Clear Time (g_c+I1), s		0.0				0.0						
Green Ext Time (p_c), s		0.0				0.0						

Intersection Summary			
HCM 6th Ctrl Delay			0.0
HCM 6th LOS			A

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	37	1442	258	979	311	332	111	79
v/c Ratio	0.25	0.95	1.22	0.50	0.93	0.35	0.46	0.09
Control Delay	38.9	36.2	168.5	14.0	63.2	8.8	30.1	12.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.9	36.2	168.5	14.0	63.2	8.8	30.1	12.6
Queue Length 50th (ft)	16	292	~140	95	~157	21	44	7
Queue Length 95th (ft)	52	#655	#361	326	233	49	87	22
Internal Link Dist (ft)		4010		607		1657		634
Turn Bay Length (ft)								
Base Capacity (vph)	164	1522	211	1967	335	945	239	870
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.95	1.22	0.50	0.93	0.35	0.46	0.09

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	1135	235	245	880	50	295	30	285	105	40	35
Future Volume (veh/h)	35	1135	235	245	880	50	295	30	285	105	40	35
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	37	1195	247	258	926	53	311	32	300	111	42	37
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	65	1315	270	225	1836	105	371	398	355	146	425	333
Arrive On Green	0.04	0.45	0.45	0.13	0.54	0.54	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	1781	2937	602	1781	3416	196	1320	1777	1585	1048	1897	1483
Grp Volume(v), veh/h	37	719	723	258	482	497	311	32	300	111	39	40
Grp Sat Flow(s),veh/h/ln	1781	1777	1762	1781	1777	1835	1320	1777	1585	1048	1777	1603
Q Serve(g_s), s	1.5	26.8	27.4	9.0	12.3	12.3	14.6	1.0	12.9	3.1	1.2	1.4
Cycle Q Clear(g_c), s	1.5	26.8	27.4	9.0	12.3	12.3	16.0	1.0	12.9	16.0	1.2	1.4
Prop In Lane	1.00		0.34	1.00		0.11	1.00		1.00	1.00		0.92
Lane Grp Cap(c), veh/h	65	796	789	225	955	986	371	398	355	146	398	360
V/C Ratio(X)	0.57	0.90	0.92	1.15	0.50	0.50	0.84	0.08	0.84	0.76	0.10	0.11
Avail Cap(c_a), veh/h	175	814	808	225	955	986	371	398	355	146	398	360
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.8	18.3	18.4	31.2	10.5	10.5	29.3	21.9	26.5	35.0	21.9	22.0
Incr Delay (d2), s/veh	7.7	13.3	14.9	105.8	0.4	0.4	15.6	0.1	16.7	20.4	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	12.7	13.1	10.3	4.3	4.4	6.9	0.4	6.4	2.7	0.5	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.5	31.6	33.4	137.0	10.9	10.9	44.9	21.9	43.2	55.4	22.1	22.2
LnGrp LOS	D	C	C	F	B	B	D	C	D	E	C	C
Approach Vol, veh/h		1479			1237			643			190	
Approach Delay, s/veh		32.7			37.2			43.0			41.6	
Approach LOS		C			D			D			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	13.9	36.8		20.6	7.5	43.2		20.6
Change Period (Y+Rc), s	4.9	4.9		4.6	4.9	4.9		4.6
Max Green Setting (Gmax), s	9.0	32.7		16.0	7.0	32.7		16.0
Max Q Clear Time (g_c+I1), s	11.0	29.4		18.0	3.5	14.3		18.0
Green Ext Time (p_c), s	0.0	2.5		0.0	0.0	6.3		0.0

Intersection Summary	
HCM 6th Ctrl Delay	36.6
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	270	1398	31	847	15	204	46	10	10	240
v/c Ratio	0.81	0.52	0.16	0.40	0.02	0.61	0.11	0.03	0.02	0.46
Control Delay	40.5	12.5	32.2	7.9	3.4	30.4	9.8	19.5	19.3	9.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.5	12.5	32.2	7.9	3.4	30.4	9.8	19.5	19.3	9.5
Queue Length 50th (ft)	55	78	9	67	0	60	3	3	3	15
Queue Length 95th (ft)	#310	266	41	168	7	145	26	14	14	72
Internal Link Dist (ft)		443		462			645		757	
Turn Bay Length (ft)			200							
Base Capacity (vph)	334	2692	701	3249	1455	635	766	614	846	819
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.81	0.52	0.04	0.26	0.01	0.32	0.06	0.02	0.01	0.29

Intersection Summary

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	265	1155	215	30	830	15	200	10	35	10	10	235
Future Volume (veh/h)	265	1155	215	30	830	15	200	10	35	10	10	235
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	270	1179	219	31	847	15	204	10	36	10	10	240
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	440	2187	406	60	2202	982	367	80	287	393	419	355
Arrive On Green	0.51	0.51	0.51	0.03	0.62	0.62	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	641	4326	804	1781	3554	1585	1130	356	1283	1360	1870	1585
Grp Volume(v), veh/h	270	928	470	31	847	15	204	0	46	10	10	240
Grp Sat Flow(s),veh/h/ln	641	1702	1726	1781	1777	1585	1130	0	1639	1360	1870	1585
Q Serve(g_s), s	22.0	11.2	11.2	1.0	7.2	0.2	10.4	0.0	1.4	0.4	0.3	8.4
Cycle Q Clear(g_c), s	22.3	11.2	11.2	1.0	7.2	0.2	10.7	0.0	1.4	1.7	0.3	8.4
Prop In Lane	1.00		0.47	1.00		1.00	1.00		0.78	1.00		1.00
Lane Grp Cap(c), veh/h	440	1720	872	60	2202	982	367	0	367	393	419	355
V/C Ratio(X)	0.61	0.54	0.54	0.52	0.38	0.02	0.56	0.00	0.13	0.03	0.02	0.68
Avail Cap(c_a), veh/h	461	1834	930	707	2202	982	628	0	745	706	850	721
HCM Platoon Ratio	1.00	1.00	1.00	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	1.00	1.00
Uniform Delay (d), s/veh	13.1	10.2	10.2	28.9	5.8	4.4	22.6	0.0	18.8	19.5	18.4	21.5
Incr Delay (d2), s/veh	2.3	0.3	0.5	6.8	0.1	0.0	1.3	0.0	0.2	0.0	0.0	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	3.5	3.7	0.5	2.0	0.1	2.7	0.0	0.5	0.1	0.1	3.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.3	10.5	10.7	35.7	5.9	4.4	23.9	0.0	19.0	19.5	18.4	23.8
LnGrp LOS	B	B	B	D	A	A	C	A	B	B	B	C
Approach Vol, veh/h		1668			893			250			260	
Approach Delay, s/veh		11.3			6.9			23.0			23.4	
Approach LOS		B			A			C			C	
Timer - Assigned Phs		2	3	4		6		8				
Phs Duration (G+Y+Rc), s		18.2	6.9	35.6		18.2		42.5				
Change Period (Y+Rc), s		4.6	4.9	4.9		4.6		4.9				
Max Green Setting (Gmax), s		27.6	24.1	32.7		27.6		32.7				
Max Q Clear Time (g_c+I1), s		12.7	3.0	24.3		10.4		9.2				
Green Ext Time (p_c), s		0.9	0.0	6.4		0.8		6.4				
Intersection Summary												
HCM 6th Ctrl Delay			12.0									
HCM 6th LOS			B									

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	185	1086	33	788	33	32	33	11	174
v/c Ratio	0.41	0.57	0.15	0.59	0.15	0.12	0.15	0.04	0.44
Control Delay	34.6	16.4	34.7	18.2	34.5	13.9	34.5	26.3	8.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.6	16.4	34.7	18.2	34.5	13.9	34.5	26.3	8.9
Queue Length 50th (ft)	24	54	8	78	8	1	8	3	0
Queue Length 95th (ft)	#111	#473	49	276	49	24	49	18	48
Internal Link Dist (ft)		423		1195		1198		751	
Turn Bay Length (ft)	200		200		120		120		
Base Capacity (vph)	451	2165	299	2293	532	869	532	981	916
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.41	0.50	0.11	0.34	0.06	0.04	0.06	0.01	0.19

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	170	960	40	30	685	40	30	5	25	30	10	160
Future Volume (veh/h)	170	960	40	30	685	40	30	5	25	30	10	160
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	185	1043	43	33	745	43	33	5	27	33	11	174
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	305	1455	60	65	1251	72	65	38	205	65	280	237
Arrive On Green	0.09	0.42	0.42	0.04	0.37	0.37	0.04	0.15	0.15	0.04	0.15	0.15
Sat Flow, veh/h	3456	3478	143	1781	3415	197	1781	254	1370	1781	1870	1585
Grp Volume(v), veh/h	185	533	553	33	388	400	33	0	32	33	11	174
Grp Sat Flow(s),veh/h/ln	1728	1777	1845	1781	1777	1835	1781	0	1624	1781	1870	1585
Q Serve(g_s), s	2.7	13.2	13.2	1.0	9.3	9.4	1.0	0.0	0.9	1.0	0.3	5.5
Cycle Q Clear(g_c), s	2.7	13.2	13.2	1.0	9.3	9.4	1.0	0.0	0.9	1.0	0.3	5.5
Prop In Lane	1.00		0.08	1.00		0.11	1.00		0.84	1.00		1.00
Lane Grp Cap(c), veh/h	305	743	772	65	651	672	65	0	243	65	280	237
V/C Ratio(X)	0.61	0.72	0.72	0.51	0.60	0.60	0.51	0.00	0.13	0.51	0.04	0.73
Avail Cap(c_a), veh/h	458	1099	1141	303	1099	1135	539	0	860	539	991	840
HCM Platoon Ratio	1.00	1.00	1.00	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	1.00	1.00
Uniform Delay (d), s/veh	23.2	12.8	12.8	25.0	13.6	13.6	25.0	0.0	19.5	25.0	19.2	21.5
Incr Delay (d2), s/veh	1.9	1.3	1.3	6.1	0.9	0.8	6.1	0.0	0.2	6.1	0.1	4.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	4.6	4.7	0.5	3.3	3.4	0.5	0.0	0.3	0.5	0.1	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.1	14.1	14.0	31.1	14.4	14.4	31.1	0.0	19.7	31.1	19.3	25.8
LnGrp LOS	C	B	B	C	B	B	C	A	B	C	B	C
Approach Vol, veh/h		1271			821			65			218	
Approach Delay, s/veh		15.7			15.1			25.5			26.3	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.5	12.5	6.8	27.0	6.5	12.5	9.6	24.3
Change Period (Y+Rc), s	4.6	4.6	4.9	4.9	4.6	4.6	4.9	4.9
Max Green Setting (Gmax), s	16.0	28.0	9.0	32.7	16.0	28.0	7.0	32.7
Max Q Clear Time (g_c+I1), s	3.0	2.9	3.0	15.2	3.0	7.5	4.7	11.4
Green Ext Time (p_c), s	0.0	0.1	0.0	6.9	0.0	0.6	0.1	5.1

Intersection Summary	
HCM 6th Ctrl Delay	16.7
HCM 6th LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	322	756	50	11	566	44	39	22	22	261
v/c Ratio	0.96	0.40	0.06	0.06	0.57	0.19	0.10	0.10	0.09	0.60
Control Delay	71.4	11.1	0.1	30.0	20.1	29.1	17.3	29.9	27.1	10.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	71.4	11.1	0.1	30.0	20.1	29.1	17.3	29.9	27.1	10.7
Queue Length 50th (ft)	~124	74	0	4	87	14	7	7	7	0
Queue Length 95th (ft)	#372	203	0	20	156	49	37	31	29	62
Internal Link Dist (ft)		1195			2587		1879		775	
Turn Bay Length (ft)	350		300	200		120		120		
Base Capacity (vph)	337	2275	1058	304	2189	540	958	540	995	967
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.96	0.33	0.05	0.04	0.26	0.08	0.04	0.04	0.02	0.27

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	290	680	45	10	480	30	40	25	10	20	20	235
Future Volume (veh/h)	290	680	45	10	480	30	40	25	10	20	20	235
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	322	756	50	11	533	33	44	28	11	22	22	261
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	314	1424	635	25	811	50	78	287	113	46	386	327
Arrive On Green	0.18	0.40	0.40	0.01	0.24	0.24	0.04	0.22	0.22	0.03	0.21	0.21
Sat Flow, veh/h	1781	3554	1585	1781	3399	210	1781	1278	502	1781	1870	1585
Grp Volume(v), veh/h	322	756	50	11	278	288	44	0	39	22	22	261
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1833	1781	0	1780	1781	1870	1585
Q Serve(g_s), s	10.0	9.2	1.1	0.3	8.0	8.1	1.4	0.0	1.0	0.7	0.5	8.9
Cycle Q Clear(g_c), s	10.0	9.2	1.1	0.3	8.0	8.1	1.4	0.0	1.0	0.7	0.5	8.9
Prop In Lane	1.00		1.00	1.00		0.11	1.00		0.28	1.00		1.00
Lane Grp Cap(c), veh/h	314	1424	635	25	424	437	78	0	400	46	386	327
V/C Ratio(X)	1.03	0.53	0.08	0.44	0.66	0.66	0.56	0.00	0.10	0.48	0.06	0.80
Avail Cap(c_a), veh/h	314	2046	913	282	1023	1055	502	0	878	502	922	782
HCM Platoon Ratio	1.00	1.00	1.00	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	1.00	1.00
Uniform Delay (d), s/veh	23.4	13.0	10.5	27.8	19.5	19.5	26.6	0.0	17.4	27.3	18.1	21.4
Incr Delay (d2), s/veh	57.8	0.3	0.1	11.7	1.7	1.7	6.1	0.0	0.1	7.5	0.1	4.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.9	3.2	0.3	0.2	3.2	3.3	0.7	0.0	0.4	0.4	0.2	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	81.2	13.3	10.6	39.5	21.2	21.2	32.7	0.0	17.5	34.8	18.1	25.8
LnGrp LOS	F	B	B	D	C	C	C	A	B	C	B	C
Approach Vol, veh/h		1128			577			83			305	
Approach Delay, s/veh		32.5			21.6			25.6			25.9	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.1	17.4	5.7	27.7	7.1	16.3	14.9	18.5
Change Period (Y+Rc), s	4.6	4.6	4.9	4.9	4.6	4.6	4.9	4.9
Max Green Setting (Gmax), s	16.0	28.0	9.0	32.7	16.0	28.0	10.0	32.7
Max Q Clear Time (g_c+I1), s	2.7	3.0	2.3	11.2	3.4	10.9	12.0	10.1
Green Ext Time (p_c), s	0.0	0.1	0.0	5.6	0.1	0.9	0.0	3.5

Intersection Summary			
HCM 6th Ctrl Delay			28.3
HCM 6th LOS			C

Intersection	
Intersection Delay, s/veh	22.6
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	145	410	45	5	305	40	35	25	5	25	15	85
Future Vol, veh/h	145	410	45	5	305	40	35	25	5	25	15	85
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	156	441	48	5	328	43	38	27	5	27	16	91
Number of Lanes	1	1	1	1	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	3	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	3	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	3
HCM Control Delay	24.7	24.7	11.9	12.1
HCM LOS	C	C	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	0%	100%	0%	100%	0%
Vol Thru, %	0%	83%	0%	100%	0%	0%	88%	0%	15%
Vol Right, %	0%	17%	0%	0%	100%	0%	12%	0%	85%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	35	30	145	410	45	5	345	25	100
LT Vol	35	0	145	0	0	5	0	25	0
Through Vol	0	25	0	410	0	0	305	0	15
RT Vol	0	5	0	0	45	0	40	0	85
Lane Flow Rate	38	32	156	441	48	5	371	27	108
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.091	0.072	0.305	0.801	0.078	0.011	0.712	0.063	0.22
Departure Headway (Hd)	8.718	8.087	7.046	6.539	5.83	7.494	6.905	8.496	7.379
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	411	443	511	555	616	479	527	422	486
Service Time	6.47	5.839	4.764	4.258	3.548	5.214	4.625	6.243	5.125
HCM Lane V/C Ratio	0.092	0.072	0.305	0.795	0.078	0.01	0.704	0.064	0.222
HCM Control Delay	12.3	11.5	12.8	30.6	9	10.3	24.9	11.8	12.2
HCM Lane LOS	B	B	B	D	A	B	C	B	B
HCM 95th-tile Q	0.3	0.2	1.3	7.7	0.3	0	5.7	0.2	0.8

Intersection	
Intersection Delay, s/veh	14.7
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	200	130	115	15	165	65	65	35	10	40	30	120
Future Vol, veh/h	200	130	115	15	165	65	65	35	10	40	30	120
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	238	155	137	18	196	77	77	42	12	48	36	143
Number of Lanes	1	1	1	1	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	3	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	3	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	3
HCM Control Delay	14.1	17.7	12.5	13.3
HCM LOS	B	C	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	0%	100%	0%	100%	0%
Vol Thru, %	0%	78%	0%	100%	0%	0%	72%	0%	20%
Vol Right, %	0%	22%	0%	0%	100%	0%	28%	0%	80%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	65	45	200	130	115	15	230	40	150
LT Vol	65	0	200	0	0	15	0	40	0
Through Vol	0	35	0	130	0	0	165	0	30
RT Vol	0	10	0	0	115	0	65	0	120
Lane Flow Rate	77	54	238	155	137	18	274	48	179
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.182	0.116	0.489	0.296	0.234	0.039	0.543	0.108	0.352
Departure Headway (Hd)	8.455	7.787	7.387	6.878	6.166	7.845	7.134	8.181	7.103
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	424	460	488	523	582	456	507	438	505
Service Time	6.212	5.543	5.131	4.623	3.911	5.591	4.88	5.934	4.855
HCM Lane V/C Ratio	0.182	0.117	0.488	0.296	0.235	0.039	0.54	0.11	0.354
HCM Control Delay	13.1	11.6	17	12.5	10.8	10.9	18.1	11.9	13.7
HCM Lane LOS	B	B	C	B	B	B	C	B	B
HCM 95th-tile Q	0.7	0.4	2.6	1.2	0.9	0.1	3.2	0.4	1.6

Intersection	
Int Delay, s/veh	9.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	75	95	10	85	5	150	10	5	5	25	15
Future Vol, veh/h	15	75	95	10	85	5	150	10	5	5	25	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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	61	61	61	61	61	61	61	61	61	61	61	61
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	25	123	156	16	139	8	246	16	8	8	41	25

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	147	0	0	279	0	0	459	430	201	438	504	143
Stage 1	-	-	-	-	-	-	251	251	-	175	175	-
Stage 2	-	-	-	-	-	-	208	179	-	263	329	-
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	1435	-	-	1284	-	-	512	518	840	529	470	905
Stage 1	-	-	-	-	-	-	753	699	-	827	754	-
Stage 2	-	-	-	-	-	-	794	751	-	742	646	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1435	-	-	1284	-	-	452	500	840	497	454	905
Mov Cap-2 Maneuver	-	-	-	-	-	-	452	500	-	497	454	-
Stage 1	-	-	-	-	-	-	737	684	-	810	743	-
Stage 2	-	-	-	-	-	-	720	740	-	702	632	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0.8	23.3	12.5
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	461	1435	-	-	1284	-	-	551
HCM Lane V/C Ratio	0.587	0.017	-	-	0.013	-	-	0.134
HCM Control Delay (s)	23.3	7.6	0	-	7.8	0	-	12.5
HCM Lane LOS	C	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	3.7	0.1	-	-	0	-	-	0.5

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	20	205	0	0	160	40	0	0	0	65	0	20
Future Vol, veh/h	20	205	0	0	160	40	0	0	0	65	0	20
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	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	72	72	92	92	72	72	92	92	92	72	92	72
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	28	285	0	0	222	56	0	0	0	90	0	28

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	278	0	0	285	0	0	605	619	285	591	591	250
Stage 1	-	-	-	-	-	-	341	341	-	250	250	-
Stage 2	-	-	-	-	-	-	264	278	-	341	341	-
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	1285	-	-	1277	-	-	410	404	754	419	420	789
Stage 1	-	-	-	-	-	-	674	639	-	754	700	-
Stage 2	-	-	-	-	-	-	741	680	-	674	639	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1285	-	-	1277	-	-	389	395	754	412	411	789
Mov Cap-2 Maneuver	-	-	-	-	-	-	389	395	-	412	411	-
Stage 1	-	-	-	-	-	-	659	625	-	737	700	-
Stage 2	-	-	-	-	-	-	715	680	-	659	625	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	0	0	15.4
HCM LOS			A	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1285	-	-	1277	-	-	464
HCM Lane V/C Ratio	-	0.022	-	-	-	-	-	0.254
HCM Control Delay (s)	0	7.9	-	-	0	-	-	15.4
HCM Lane LOS	A	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	-	0.1	-	-	0	-	-	1

Intersection	
Intersection Delay, s/veh	17.8
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	30	150	90	105	105	5	75	130	115	5	80	20
Future Vol, veh/h	30	150	90	105	105	5	75	130	115	5	80	20
Peak Hour Factor	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	42	208	125	146	146	7	104	181	160	7	111	28
Number of Lanes	0	1	1	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	2
HCM Control Delay	15.2	21.3	19.1	13.5
HCM LOS	C	C	C	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	17%	0%	49%	100%	0%
Vol Thru, %	0%	53%	83%	0%	49%	0%	80%
Vol Right, %	0%	47%	0%	100%	2%	0%	20%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	75	245	180	90	215	5	100
LT Vol	75	0	30	0	105	5	0
Through Vol	0	130	150	0	105	0	80
RT Vol	0	115	0	90	5	0	20
Lane Flow Rate	104	340	250	125	299	7	139
Geometry Grp	7	7	7	7	6	7	7
Degree of Util (X)	0.221	0.643	0.505	0.225	0.609	0.016	0.295
Departure Headway (Hd)	7.652	6.802	7.278	6.476	7.344	8.305	7.644
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	469	531	495	553	490	430	469
Service Time	5.403	4.553	5.033	4.232	5.399	6.071	5.41
HCM Lane V/C Ratio	0.222	0.64	0.505	0.226	0.61	0.016	0.296
HCM Control Delay	12.6	21.1	17.3	11.1	21.3	11.2	13.6
HCM Lane LOS	B	C	C	B	C	B	B
HCM 95th-tile Q	0.8	4.5	2.8	0.9	4	0	1.2

Intersection	
Intersection Delay, s/veh	10
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	190	90	100	135	0	110	0	105	0	0	0
Future Vol, veh/h	0	190	90	100	135	0	110	0	105	0	0	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	0	207	98	109	147	0	120	0	114	0	0	0
Number of Lanes	0	1	1	1	1	0	1	0	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	2	2
HCM Control Delay	10	10	10	0
HCM LOS	A	A	A	-

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	100%	0%	0%	0%	100%	0%	0%
Vol Thru, %	0%	0%	100%	0%	0%	100%	100%
Vol Right, %	0%	100%	0%	100%	0%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	110	105	190	90	100	135	0
LT Vol	110	0	0	0	100	0	0
Through Vol	0	0	190	0	0	135	0
RT Vol	0	105	0	90	0	0	0
Lane Flow Rate	120	114	207	98	109	147	0
Geometry Grp	7	7	7	7	7	7	6
Degree of Util (X)	0.212	0.164	0.314	0.129	0.181	0.224	0
Departure Headway (Hd)	6.377	5.168	5.472	4.765	6	5.495	6.373
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	558	687	653	744	593	647	0
Service Time	4.162	2.953	3.25	2.543	3.784	3.279	4.373
HCM Lane V/C Ratio	0.215	0.166	0.317	0.132	0.184	0.227	0
HCM Control Delay	10.9	9	10.8	8.3	10.1	9.9	9.4
HCM Lane LOS	B	A	B	A	B	A	N
HCM 95th-tile Q	0.8	0.6	1.3	0.4	0.7	0.9	0

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	65	225	0	0	195	15	0	0	0	10	0	40
Future Vol, veh/h	65	225	0	0	195	15	0	0	0	10	0	40
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	-	-	-	-	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	71	245	0	0	212	16	0	0	0	11	0	43

Major/Minor	Major1			Major2						Minor2		
Conflicting Flow All	228	0	-	-	-	0				607	-	220
Stage 1	-	-	-	-	-	-				220	-	-
Stage 2	-	-	-	-	-	-				387	-	-
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	1340	-	0	0	-	-				460	0	820
Stage 1	-	-	0	0	-	-				817	0	-
Stage 2	-	-	0	0	-	-				686	0	-
Platoon blocked, %		-			-	-						
Mov Cap-1 Maneuver	1340	-	-	-	-	-				436	0	820
Mov Cap-2 Maneuver	-	-	-	-	-	-				436	0	-
Stage 1	-	-	-	-	-	-				774	0	-
Stage 2	-	-	-	-	-	-				686	0	-

Approach	EB	WB	SB
HCM Control Delay, s	1.8	0	10.6
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1340	-	-	-	697
HCM Lane V/C Ratio	0.053	-	-	-	0.078
HCM Control Delay (s)	7.8	-	-	-	10.6
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.2	-	-	-	0.3

Intersection	
Int Delay, s/veh	7.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	105	35	35	75	5	55	100	55	5	60	15
Future Vol, veh/h	20	105	35	35	75	5	55	100	55	5	60	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	-	-	-	-	-	-	-	-	-	-	-	-
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	22	114	38	38	82	5	60	109	60	5	65	16

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	87	0	0	152	0	0	378	340	133	423	357	85
Stage 1	-	-	-	-	-	-	177	177	-	161	161	-
Stage 2	-	-	-	-	-	-	201	163	-	262	196	-
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	1509	-	-	1429	-	-	580	582	916	541	569	974
Stage 1	-	-	-	-	-	-	825	753	-	841	765	-
Stage 2	-	-	-	-	-	-	801	763	-	743	739	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1509	-	-	1429	-	-	501	556	916	416	544	974
Mov Cap-2 Maneuver	-	-	-	-	-	-	501	556	-	416	544	-
Stage 1	-	-	-	-	-	-	812	741	-	828	744	-
Stage 2	-	-	-	-	-	-	698	742	-	583	727	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.9	2.3	14.6	12.3
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	601	1509	-	-	1429	-	-	581
HCM Lane V/C Ratio	0.38	0.014	-	-	0.027	-	-	0.15
HCM Control Delay (s)	14.6	7.4	0	-	7.6	0	-	12.3
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	1.8	0	-	-	0.1	-	-	0.5

Intersection	
Int Delay, s/veh	9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	50	50	75	30	5	60	75	135	5	45	5
Future Vol, veh/h	5	50	50	75	30	5	60	75	135	5	45	5
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	5	54	54	82	33	5	65	82	147	5	49	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	38	0	0	108	0	0	318	293	81	406	318	36
Stage 1	-	-	-	-	-	-	91	91	-	200	200	-
Stage 2	-	-	-	-	-	-	227	202	-	206	118	-
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	1572	-	-	1483	-	-	635	618	979	555	598	1037
Stage 1	-	-	-	-	-	-	916	820	-	802	736	-
Stage 2	-	-	-	-	-	-	776	734	-	796	798	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1572	-	-	1483	-	-	563	581	979	402	562	1037
Mov Cap-2 Maneuver	-	-	-	-	-	-	563	581	-	402	562	-
Stage 1	-	-	-	-	-	-	913	818	-	800	694	-
Stage 2	-	-	-	-	-	-	677	692	-	607	796	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	5.2	13.3	12.1
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	723	1572	-	-	1483	-	-	565
HCM Lane V/C Ratio	0.406	0.003	-	-	0.055	-	-	0.106
HCM Control Delay (s)	13.3	7.3	0	-	7.6	0	-	12.1
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	2	0	-	-	0.2	-	-	0.4

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	59	1358	318	994	229	171	188	124
v/c Ratio	0.37	0.90	1.46	0.53	0.73	0.19	0.63	0.14
Control Delay	41.8	29.7	258.6	15.6	39.9	5.9	34.4	10.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.8	29.7	258.6	15.6	39.9	5.9	34.4	10.5
Queue Length 50th (ft)	25	256	~196	157	98	4	78	10
Queue Length 95th (ft)	69	#530	#416	306	154	21	127	25
Internal Link Dist (ft)		4010		607		1657		634
Turn Bay Length (ft)								
Base Capacity (vph)	170	1577	218	1861	330	920	316	904
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.86	1.46	0.53	0.69	0.19	0.59	0.14

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	875	280	270	810	35	195	20	125	160	45	60
Future Volume (veh/h)	50	875	280	270	810	35	195	20	125	160	45	60
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	59	1029	329	318	953	41	229	24	147	188	53	71
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	87	1171	371	227	1806	78	344	403	360	282	403	360
Arrive On Green	0.05	0.44	0.44	0.13	0.52	0.52	0.23	0.23	0.23	0.23	0.23	0.23
Sat Flow, veh/h	1781	2654	841	1781	3471	149	1267	1777	1585	1214	1777	1585
Grp Volume(v), veh/h	59	686	672	318	488	506	229	24	147	188	53	71
Grp Sat Flow(s),veh/h/ln	1781	1777	1719	1781	1777	1843	1267	1777	1585	1214	1777	1585
Q Serve(g_s), s	2.3	24.8	25.3	9.0	12.8	12.8	12.6	0.7	5.6	10.4	1.7	2.6
Cycle Q Clear(g_c), s	2.3	24.8	25.3	9.0	12.8	12.8	15.1	0.7	5.6	16.0	1.7	2.6
Prop In Lane	1.00		0.49	1.00		0.08	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	87	784	758	227	924	959	344	403	360	282	403	360
V/C Ratio(X)	0.68	0.88	0.89	1.40	0.53	0.53	0.67	0.06	0.41	0.67	0.13	0.20
Avail Cap(c_a), veh/h	177	824	797	227	924	959	344	403	360	282	403	360
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.0	17.9	18.1	30.8	11.2	11.2	28.2	21.4	23.2	30.3	21.7	22.1
Incr Delay (d2), s/veh	9.1	10.1	11.4	203.8	0.6	0.5	4.8	0.1	0.7	5.9	0.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	11.2	11.3	16.6	4.5	4.7	4.1	0.3	2.1	3.6	0.7	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.1	28.0	29.5	234.5	11.7	11.7	33.0	21.4	24.0	36.2	21.9	22.3
LnGrp LOS	D	C	C	F	B	B	C	C	C	D	C	C
Approach Vol, veh/h		1417			1312			400			312	
Approach Delay, s/veh		29.3			65.7			29.0			30.6	
Approach LOS		C			E			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.9	36.0		20.6	8.3	41.6		20.6				
Change Period (Y+Rc), s	4.9	4.9		4.6	4.9	4.9		4.6				
Max Green Setting (Gmax), s	9.0	32.7		16.0	7.0	32.7		16.0				
Max Q Clear Time (g_c+I1), s	11.0	27.3		18.0	4.3	14.8		17.1				
Green Ext Time (p_c), s	0.0	3.8		0.0	0.0	6.3		0.0				
Intersection Summary												
HCM 6th Ctrl Delay			43.3									
HCM 6th LOS			D									

Notes

User approved pedestrian interval to be less than phase max green.

Lane Group	EBT	WBL	WBT	NBL	NBT
Lane Group Flow (vph)	1148	37	1778	99	19
v/c Ratio	0.36	0.15	0.70	0.37	0.03
Control Delay	8.3	25.8	8.4	25.9	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	8.3	25.8	8.4	25.9	0.1
Queue Length 50th (ft)	48	10	171	27	0
Queue Length 95th (ft)	130	35	246	68	0
Internal Link Dist (ft)	443		392		645
Turn Bay Length (ft)		300		50	
Base Capacity (vph)	3334	917	3467	833	1128
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.34	0.04	0.51	0.12	0.02

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	850	80	30	1440	0	80	0	15	0	0	0
Future Volume (veh/h)	0	850	80	30	1440	0	80	0	15	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	1049	99	37	1778	0	99	0	19	0	0	0
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	0	2	2	2	2	0	2	2	2	2	2	2
Cap, veh/h	0	2452	231	75	2410	0	336	0	143	0	169	0
Arrive On Green	0.00	0.52	0.52	0.04	0.68	0.00	0.09	0.00	0.09	0.00	0.00	0.00
Sat Flow, veh/h	0	4915	447	1781	3647	0	1781	0	1585	0	1870	0
Grp Volume(v), veh/h	0	752	396	37	1778	0	99	0	19	0	0	0
Grp Sat Flow(s),veh/h/ln	0	1702	1790	1781	1777	0	1781	0	1585	0	1870	0
Q Serve(g_s), s	0.0	5.6	5.6	0.8	13.2	0.0	2.2	0.0	0.5	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	5.6	5.6	0.8	13.2	0.0	2.2	0.0	0.5	0.0	0.0	0.0
Prop In Lane	0.00		0.25	1.00		0.00	1.00		1.00	0.00		0.00
Lane Grp Cap(c), veh/h	0	1759	925	75	2410	0	336	0	143	0	169	0
V/C Ratio(X)	0.00	0.43	0.43	0.50	0.74	0.00	0.29	0.00	0.13	0.00	0.00	0.00
Avail Cap(c_a), veh/h	0	2715	1428	1047	2835	0	1375	0	1067	0	1259	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)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	6.1	6.1	19.2	4.3	0.0	18.0	0.0	17.2	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.2	0.3	5.0	0.9	0.0	0.5	0.0	0.4	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	0.0	1.3	1.4	0.4	1.7	0.0	0.8	0.0	0.2	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	6.3	6.5	24.2	5.1	0.0	18.4	0.0	17.6	0.0	0.0	0.0
LnGrp LOS	A	A	A	C	A	A	B	A	B	A	A	A
Approach Vol, veh/h		1148			1815			118			0	
Approach Delay, s/veh		6.4			5.5			18.3			0.0	
Approach LOS		A			A			B				
Timer - Assigned Phs		2	3	4		6		8				
Phs Duration (G+Y+Rc), s		8.3	6.6	26.1		8.3		32.7				
Change Period (Y+Rc), s		4.6	4.9	4.9		4.6		4.9				
Max Green Setting (Gmax), s		27.6	24.1	32.7		27.6		32.7				
Max Q Clear Time (g_c+I1), s		4.2	2.8	7.6		0.0		15.2				
Green Ext Time (p_c), s		0.3	0.1	8.8		0.0		12.6				
Intersection Summary												
HCM 6th Ctrl Delay			6.3									
HCM 6th LOS			A									

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	204	865	37	1377	37	43	62	19	438
v/c Ratio	0.62	0.46	0.22	0.86	0.22	0.16	0.32	0.06	0.78
Control Delay	45.9	18.2	40.5	29.0	39.9	15.3	39.9	27.2	16.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.9	18.2	40.5	29.0	39.9	15.3	39.9	27.2	16.5
Queue Length 50th (ft)	48	153	16	301	16	5	27	8	30
Queue Length 95th (ft)	#110	287	49	#571	49	27	69	23	80
Internal Link Dist (ft)		493		1195		1198		751	
Turn Bay Length (ft)	200		200		120		120		
Base Capacity (vph)	331	1872	219	1687	390	660	390	726	842
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.62	0.46	0.17	0.82	0.09	0.07	0.16	0.03	0.52

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	165	685	15	30	1085	30	30	10	25	50	15	355
Future Volume (veh/h)	165	685	15	30	1085	30	30	10	25	50	15	355
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	204	846	19	37	1340	37	37	12	31	62	19	389
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	279	1545	35	61	1372	38	61	120	310	81	506	429
Arrive On Green	0.08	0.43	0.43	0.03	0.39	0.39	0.03	0.26	0.26	0.05	0.27	0.27
Sat Flow, veh/h	3456	3553	80	1781	3532	97	1781	462	1194	1781	1870	1585
Grp Volume(v), veh/h	204	423	442	37	674	703	37	0	43	62	19	389
Grp Sat Flow(s),veh/h/ln	1728	1777	1856	1781	1777	1853	1781	0	1656	1781	1870	1585
Q Serve(g_s), s	4.9	14.9	14.9	1.7	31.4	31.5	1.7	0.0	1.7	2.9	0.6	20.0
Cycle Q Clear(g_c), s	4.9	14.9	14.9	1.7	31.4	31.5	1.7	0.0	1.7	2.9	0.6	20.0
Prop In Lane	1.00		0.04	1.00		0.05	1.00		0.72	1.00		1.00
Lane Grp Cap(c), veh/h	279	773	807	61	690	720	61	0	430	81	506	429
V/C Ratio(X)	0.73	0.55	0.55	0.60	0.98	0.98	0.60	0.00	0.10	0.77	0.04	0.91
Avail Cap(c_a), veh/h	287	773	807	190	690	720	339	0	551	339	622	527
HCM Platoon Ratio	1.00	1.00	1.00	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	1.00	1.00
Uniform Delay (d), s/veh	37.8	17.6	17.6	40.1	25.4	25.4	40.1	0.0	23.7	39.7	22.6	29.7
Incr Delay (d2), s/veh	8.9	0.8	0.8	9.2	28.2	27.9	9.2	0.0	0.1	13.9	0.0	17.1
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	2.4	5.9	6.2	0.9	17.8	18.5	0.9	0.0	0.6	1.6	0.3	9.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.7	18.5	18.4	49.3	53.6	53.3	49.3	0.0	23.8	53.6	22.7	46.7
LnGrp LOS	D	B	B	D	D	D	D	A	C	D	C	D
Approach Vol, veh/h		1069			1414			80			470	
Approach Delay, s/veh		23.8			53.3			35.6			46.7	
Approach LOS		C			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.4	26.5	7.8	41.5	7.5	27.4	11.7	37.6
Change Period (Y+Rc), s	4.6	4.6	4.9	4.9	4.6	4.6	4.9	4.9
Max Green Setting (Gmax), s	16.0	28.0	9.0	32.7	16.0	28.0	7.0	32.7
Max Q Clear Time (g_c+I1), s	4.9	3.7	3.7	16.9	3.7	22.0	6.9	33.5
Green Ext Time (p_c), s	0.1	0.2	0.0	5.0	0.0	0.8	0.0	0.0

Intersection Summary			
HCM 6th Ctrl Delay			41.4
HCM 6th LOS			D

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	453	359	59	18	835	53	53	76	41	518
v/c Ratio	0.88	0.17	0.06	0.16	0.82	0.48	0.21	0.39	0.14	0.84
Control Delay	52.7	10.7	0.1	45.3	36.2	57.6	25.3	45.9	31.4	19.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.7	10.7	0.1	45.3	36.2	57.6	25.3	45.9	31.4	19.6
Queue Length 50th (ft)	236	36	0	9	210	28	17	39	20	37
Queue Length 95th (ft)	#458	92	0	32	#312	#79	45	#92	44	118
Internal Link Dist (ft)		1195			2587		1879		775	
Turn Bay Length (ft)	350		300	200		120		120		
Base Capacity (vph)	512	2116	996	113	1151	111	485	203	553	781
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.88	0.17	0.06	0.16	0.73	0.48	0.11	0.37	0.07	0.66

Intersection Summary

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	385	305	50	15	665	45	45	30	15	65	35	440
Future Volume (veh/h)	385	305	50	15	665	45	45	30	15	65	35	440
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	453	359	59	18	782	53	53	35	18	76	41	400
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	437	1728	771	36	880	60	71	276	142	98	471	399
Arrive On Green	0.25	0.49	0.49	0.02	0.26	0.26	0.04	0.24	0.24	0.05	0.25	0.25
Sat Flow, veh/h	1781	3554	1585	1781	3377	229	1781	1164	599	1781	1870	1585
Grp Volume(v), veh/h	453	359	59	18	411	424	53	0	53	76	41	400
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1829	1781	0	1763	1781	1870	1585
Q Serve(g_s), s	23.1	5.4	1.9	0.9	21.0	21.0	2.8	0.0	2.2	4.0	1.6	23.7
Cycle Q Clear(g_c), s	23.1	5.4	1.9	0.9	21.0	21.0	2.8	0.0	2.2	4.0	1.6	23.7
Prop In Lane	1.00		1.00	1.00		0.13	1.00		0.34	1.00		1.00
Lane Grp Cap(c), veh/h	437	1728	771	36	463	477	71	0	418	98	471	399
V/C Ratio(X)	1.04	0.21	0.08	0.51	0.89	0.89	0.75	0.00	0.13	0.78	0.09	1.00
Avail Cap(c_a), veh/h	437	1728	771	97	493	508	95	0	418	140	471	399
HCM Platoon Ratio	1.00	1.00	1.00	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	1.00	1.00
Uniform Delay (d), s/veh	35.5	13.8	12.9	45.6	33.5	33.5	44.7	0.0	28.2	43.9	26.9	35.2
Incr Delay (d2), s/veh	52.5	0.1	0.0	10.7	17.1	16.7	19.7	0.0	0.1	15.7	0.1	45.4
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	16.1	2.1	0.7	0.5	11.0	11.3	1.6	0.0	0.9	2.2	0.7	13.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	88.0	13.9	12.9	56.4	50.5	50.2	64.4	0.0	28.4	59.6	27.0	80.6
LnGrp LOS	F	B	B	E	D	D	E	A	C	E	C	F
Approach Vol, veh/h		871			853			106			517	
Approach Delay, s/veh		52.4			50.5			46.4			73.3	
Approach LOS		D			D			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.8	26.9	6.8	50.6	8.3	28.3	28.0	29.4
Change Period (Y+Rc), s	4.6	4.6	4.9	4.9	4.6	4.6	4.9	4.9
Max Green Setting (Gmax), s	7.4	21.3	5.1	44.1	5.0	23.7	23.1	26.1
Max Q Clear Time (g_c+I1), s	6.0	4.2	2.9	7.4	4.8	25.7	25.1	23.0
Green Ext Time (p_c), s	0.0	0.2	0.0	2.8	0.0	0.0	0.0	1.6

Intersection Summary	
HCM 6th Ctrl Delay	56.0
HCM 6th LOS	E

Intersection	
Intersection Delay, s/veh	29.6
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	45	245	30	10	395	15	55	10	10	40	30	120
Future Vol, veh/h	45	245	30	10	395	15	55	10	10	40	30	120
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	53	288	35	12	465	18	65	12	12	47	35	141
Number of Lanes	1	1	1	1	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	3	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	3	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	3
HCM Control Delay	17.9	48.7	12.8	13.9
HCM LOS	C	E	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	0%	100%	0%	100%	0%
Vol Thru, %	0%	50%	0%	100%	0%	0%	96%	0%	20%
Vol Right, %	0%	50%	0%	0%	100%	0%	4%	0%	80%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	55	20	45	245	30	10	410	40	150
LT Vol	55	0	45	0	0	10	0	40	0
Through Vol	0	10	0	245	0	0	395	0	30
RT Vol	0	10	0	0	30	0	15	0	120
Lane Flow Rate	65	24	53	288	35	12	482	47	176
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.16	0.052	0.115	0.586	0.065	0.024	0.927	0.11	0.361
Departure Headway (Hd)	8.897	8.025	7.828	7.318	6.604	7.453	6.919	8.446	7.364
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	402	445	457	493	541	480	526	424	487
Service Time	6.671	5.798	5.585	5.074	4.36	5.204	4.669	6.208	5.126
HCM Lane V/C Ratio	0.162	0.054	0.116	0.584	0.065	0.025	0.916	0.111	0.361
HCM Control Delay	13.4	11.2	11.6	20	9.8	10.4	49.6	12.3	14.3
HCM Lane LOS	B	B	B	C	A	B	E	B	B
HCM 95th-tile Q	0.6	0.2	0.4	3.7	0.2	0.1	11.2	0.4	1.6

Intersection	
Intersection Delay, s/veh	12.9
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	60	190	45	10	110	20	140	15	30	60	30	175
Future Vol, veh/h	60	190	45	10	110	20	140	15	30	60	30	175
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	67	213	51	11	124	22	157	17	34	67	34	197
Number of Lanes	1	1	1	1	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	3	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	3	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	3
HCM Control Delay	12.9	12.7	13	12.8
HCM LOS	B	B	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	0%	100%	0%	100%	0%
Vol Thru, %	0%	33%	0%	100%	0%	0%	85%	0%	15%
Vol Right, %	0%	67%	0%	0%	100%	0%	15%	0%	85%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	140	45	60	190	45	10	130	60	205
LT Vol	140	0	60	0	0	10	0	60	0
Through Vol	0	15	0	190	0	0	110	0	30
RT Vol	0	30	0	0	45	0	20	0	175
Lane Flow Rate	157	51	67	213	51	11	146	67	230
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.331	0.093	0.138	0.407	0.086	0.024	0.291	0.139	0.404
Departure Headway (Hd)	7.577	6.597	7.374	6.866	6.154	7.794	7.173	7.425	6.313
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	475	544	488	527	584	460	501	485	571
Service Time	5.315	4.335	5.09	4.582	3.87	5.535	4.914	5.141	4.03
HCM Lane V/C Ratio	0.331	0.094	0.137	0.404	0.087	0.024	0.291	0.138	0.403
HCM Control Delay	14	10	11.3	14.2	9.4	10.7	12.8	11.3	13.3
HCM Lane LOS	B	A	B	B	A	B	B	B	B
HCM 95th-tile Q	1.4	0.3	0.5	2	0.3	0.1	1.2	0.5	1.9

Intersection	
Int Delay, s/veh	3.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	90	165	5	50	5	70	10	10	5	10	15
Future Vol, veh/h	10	90	165	5	50	5	70	10	10	5	10	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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	77	77	77	77	77	77	77	77	77	77	77	77
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	117	214	6	65	6	91	13	13	6	13	19

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	71	0	0	331	0	0	346	333	224	343	437	68
Stage 1	-	-	-	-	-	-	250	250	-	80	80	-
Stage 2	-	-	-	-	-	-	96	83	-	263	357	-
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	1529	-	-	1228	-	-	608	587	815	611	513	995
Stage 1	-	-	-	-	-	-	754	700	-	929	828	-
Stage 2	-	-	-	-	-	-	911	826	-	742	628	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1529	-	-	1228	-	-	578	578	815	584	505	995
Mov Cap-2 Maneuver	-	-	-	-	-	-	578	578	-	584	505	-
Stage 1	-	-	-	-	-	-	746	692	-	919	824	-
Stage 2	-	-	-	-	-	-	875	822	-	709	621	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.7	12.5	10.5
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	597	1529	-	-	1228	-	-	691
HCM Lane V/C Ratio	0.196	0.008	-	-	0.005	-	-	0.056
HCM Control Delay (s)	12.5	7.4	0	-	7.9	0	-	10.5
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.7	0	-	-	0	-	-	0.2

Intersection	
Int Delay, s/veh	16.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	50	165	5	5	300	90	10	5	20	120	5	50
Future Vol, veh/h	50	165	5	5	300	90	10	5	20	120	5	50
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	70	70	70	70	70	70	70	70	70	70	70	70
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	71	236	7	7	429	129	14	7	29	171	7	71

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	558	0	0	243	0	0	929	954	240	908	893	494
Stage 1	-	-	-	-	-	-	382	382	-	508	508	-
Stage 2	-	-	-	-	-	-	547	572	-	400	385	-
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	1013	-	-	1323	-	-	248	259	799	256	281	575
Stage 1	-	-	-	-	-	-	640	613	-	547	539	-
Stage 2	-	-	-	-	-	-	521	504	-	626	611	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1013	-	-	1323	-	-	200	240	799	228	260	575
Mov Cap-2 Maneuver	-	-	-	-	-	-	200	240	-	228	260	-
Stage 1	-	-	-	-	-	-	595	570	-	509	536	-
Stage 2	-	-	-	-	-	-	448	501	-	554	568	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2	0.1	16.4	72
HCM LOS			C	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	365	1013	-	-	1323	-	-	277
HCM Lane V/C Ratio	0.137	0.071	-	-	0.005	-	-	0.903
HCM Control Delay (s)	16.4	8.8	-	-	7.7	-	-	72
HCM Lane LOS	C	A	-	-	A	-	-	F
HCM 95th %tile Q(veh)	0.5	0.2	-	-	0	-	-	8.1

Intersection	
Intersection Delay, s/veh	51.8
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	40	210	80	55	35	320	65	45	15	250	10
Future Vol, veh/h	5	40	210	80	55	35	320	65	45	15	250	10
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	57	300	114	79	50	457	93	64	21	357	14
Number of Lanes	0	1	1	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	2
HCM Control Delay	24	26.6	83.2	43.9
HCM LOS	C	D	F	E

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	11%	0%	47%	100%	0%
Vol Thru, %	0%	59%	89%	0%	32%	0%	96%
Vol Right, %	0%	41%	0%	100%	21%	0%	4%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	320	110	45	210	170	15	260
LT Vol	320	0	5	0	80	15	0
Through Vol	0	65	40	0	55	0	250
RT Vol	0	45	0	210	35	0	10
Lane Flow Rate	457	157	64	300	243	21	371
Geometry Grp	7	7	7	7	6	7	7
Degree of Util (X)	1.109	0.346	0.156	0.667	0.614	0.053	0.859
Departure Headway (Hd)	8.737	7.92	9.13	8.343	9.535	9.22	8.67
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	416	454	395	435	381	391	420
Service Time	6.499	5.682	6.83	6.043	7.535	6.92	6.37
HCM Lane V/C Ratio	1.099	0.346	0.162	0.69	0.638	0.054	0.883
HCM Control Delay	106.7	14.8	13.5	26.2	26.6	12.4	45.7
HCM Lane LOS	F	B	B	D	D	B	E
HCM 95th-tile Q	16.1	1.5	0.5	4.8	3.9	0.2	8.5

Intersection	
Intersection Delay, s/veh	14.3
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	35	145	270	45	0	70	0	125	0	0	0
Future Vol, veh/h	0	35	145	270	45	0	70	0	125	0	0	0
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.92	0.70	0.70
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	50	207	386	64	0	100	0	179	0	0	0
Number of Lanes	0	1	1	1	1	0	1	0	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	2	2
HCM Control Delay	10.1	18.8	10.9	0
HCM LOS	B	C	B	-

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	100%	0%	0%	0%	100%	0%	0%
Vol Thru, %	0%	0%	100%	0%	0%	100%	100%
Vol Right, %	0%	100%	0%	100%	0%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	70	125	35	145	270	45	0
LT Vol	70	0	0	0	270	0	0
Through Vol	0	0	35	0	0	45	0
RT Vol	0	125	0	145	0	0	0
Lane Flow Rate	100	179	50	207	386	64	0
Geometry Grp	7	7	7	7	7	7	6
Degree of Util (X)	0.192	0.283	0.083	0.305	0.665	0.102	0
Departure Headway (Hd)	6.929	5.715	6.002	5.292	6.203	5.698	7.024
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	518	629	598	679	582	630	0
Service Time	4.668	3.454	3.733	3.022	3.929	3.423	5.081
HCM Lane V/C Ratio	0.193	0.285	0.084	0.305	0.663	0.102	0
HCM Control Delay	11.3	10.7	9.3	10.3	20.4	9.1	10.1
HCM Lane LOS	B	B	A	B	C	A	N
HCM 95th-tile Q	0.7	1.2	0.3	1.3	4.9	0.3	0

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	35	120	5	10	230	10	15	5	15	10	5	65
Future Vol, veh/h	35	120	5	10	230	10	15	5	15	10	5	65
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	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	70	100	70	70	70	70	70	70	70	70	70	70
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	50	120	7	14	329	14	21	7	21	14	7	93

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	343	0	0	127	0	0	638	595	124	602	591	336
Stage 1	-	-	-	-	-	-	224	224	-	364	364	-
Stage 2	-	-	-	-	-	-	414	371	-	238	227	-
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	1216	-	-	1459	-	-	389	417	927	412	420	706
Stage 1	-	-	-	-	-	-	779	718	-	655	624	-
Stage 2	-	-	-	-	-	-	616	620	-	765	716	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1216	-	-	1459	-	-	321	396	927	382	399	706
Mov Cap-2 Maneuver	-	-	-	-	-	-	321	396	-	382	399	-
Stage 1	-	-	-	-	-	-	747	689	-	628	618	-
Stage 2	-	-	-	-	-	-	524	614	-	709	687	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.3	0.3	13.7	12.2
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	463	1216	-	-	1459	-	-	612
HCM Lane V/C Ratio	0.108	0.041	-	-	0.01	-	-	0.187
HCM Control Delay (s)	13.7	8.1	-	-	7.5	-	-	12.2
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.4	0.1	-	-	0	-	-	0.7

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	5	35	50	50	55	5	20	30	15	5	85	10
Future Vol, veh/h	5	35	50	50	55	5	20	30	15	5	85	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
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	5	38	54	54	60	5	22	33	16	5	92	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	65	0	0	92	0	0	297	248	65	271	273	63
Stage 1	-	-	-	-	-	-	75	75	-	171	171	-
Stage 2	-	-	-	-	-	-	222	173	-	100	102	-
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	1537	-	-	1503	-	-	655	655	999	682	634	1002
Stage 1	-	-	-	-	-	-	934	833	-	831	757	-
Stage 2	-	-	-	-	-	-	780	756	-	906	811	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1537	-	-	1503	-	-	555	629	999	625	609	1002
Mov Cap-2 Maneuver	-	-	-	-	-	-	555	629	-	625	609	-
Stage 1	-	-	-	-	-	-	931	831	-	829	729	-
Stage 2	-	-	-	-	-	-	649	728	-	854	809	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	3.4	11.1	11.8
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	658	1537	-	-	1503	-	-	635
HCM Lane V/C Ratio	0.107	0.004	-	-	0.036	-	-	0.171
HCM Control Delay (s)	11.1	7.4	0	-	7.5	0	-	11.8
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.4	0	-	-	0.1	-	-	0.6

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	5	5	45	110	15	5	30	25	40	5	65	5
Future Vol, veh/h	5	5	45	110	15	5	30	25	40	5	65	5
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	5	5	49	120	16	5	33	27	43	5	71	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	21	0	0	54	0	0	337	301	30	334	323	19
Stage 1	-	-	-	-	-	-	40	40	-	259	259	-
Stage 2	-	-	-	-	-	-	297	261	-	75	64	-
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	1595	-	-	1551	-	-	617	612	1044	620	595	1059
Stage 1	-	-	-	-	-	-	975	862	-	746	694	-
Stage 2	-	-	-	-	-	-	712	692	-	934	842	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1595	-	-	1551	-	-	520	562	1044	537	547	1059
Mov Cap-2 Maneuver	-	-	-	-	-	-	520	562	-	537	547	-
Stage 1	-	-	-	-	-	-	972	859	-	744	640	-
Stage 2	-	-	-	-	-	-	581	638	-	864	839	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	6.4	11.3	12.5
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	676	1595	-	-	1551	-	-	564
HCM Lane V/C Ratio	0.153	0.003	-	-	0.077	-	-	0.145
HCM Control Delay (s)	11.3	7.3	0	-	7.5	0	-	12.5
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.5	0	-	-	0.2	-	-	0.5

Lane Group
Lane Group Flow (vph)
v/c Ratio
Control Delay
Queue Delay
Total Delay
Queue Length 50th (ft)
Queue Length 95th (ft)
Internal Link Dist (ft)
Turn Bay Length (ft)
Base Capacity (vph)
Starvation Cap Reductn
Spillback Cap Reductn
Storage Cap Reductn
Reduced v/c Ratio

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0
Future Volume (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0
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	
Adj Sat Flow, veh/h/ln							0	1870	0	0	1870	0
Adj Flow Rate, veh/h							0	0	0	0	0	0
Peak Hour Factor							0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %							0	2	0	0	2	0
Cap, veh/h							0	1496	0	0	1496	0
Arrive On Green							0.00	0.00	0.00	0.00	0.00	0.00
Sat Flow, veh/h							0	1870	0	0	1870	0
Grp Volume(v), veh/h							0	0	0	0	0	0
Grp Sat Flow(s),veh/h/ln							0	1870	0	0	1870	0
Q Serve(g_s), s							0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s							0.0	0.0	0.0	0.0	0.0	0.0
Prop In Lane							0.00		0.00	0.00		0.00
Lane Grp Cap(c), veh/h							0	1496	0	0	1496	0
V/C Ratio(X)							0.00	0.00	0.00	0.00	0.00	0.00
Avail Cap(c_a), veh/h							0	1496	0	0	1496	0
HCM Platoon Ratio							1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)							0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d), s/veh							0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh							0.0	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
%ile BackOfQ(50%),veh/ln							0.0	0.0	0.0	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh							0.0	0.0	0.0	0.0	0.0	0.0
LnGrp LOS							A	A	A	A	A	A
Approach Vol, veh/h								0			0	
Approach Delay, s/veh								0.0			0.0	
Approach LOS												

Timer - Assigned Phs		2				6						
Phs Duration (G+Y+Rc), s		22.5				22.5						
Change Period (Y+Rc), s		4.5				4.5						
Max Green Setting (Gmax), s		18.0				18.0						
Max Q Clear Time (g_c+I1), s		0.0				0.0						
Green Ext Time (p_c), s		0.0				0.0						

Intersection Summary			
HCM 6th Ctrl Delay			0.0
HCM 6th LOS			A

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	453	359	59	18	835	53	53	76	41	518
v/c Ratio	0.77	0.15	0.05	0.14	0.76	0.42	0.27	0.43	0.18	0.65
Control Delay	37.8	7.7	0.1	40.1	28.9	48.8	29.2	43.9	34.3	18.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.8	7.7	0.1	40.1	28.9	48.8	29.2	43.9	34.3	18.4
Queue Length 50th (ft)	226	32	0	9	200	27	17	38	20	177
Queue Length 95th (ft)	#383	71	0	29	260	#67	47	79	46	262
Internal Link Dist (ft)		1195			2587		1879		775	
Turn Bay Length (ft)	350		300	200		120		120		
Base Capacity (vph)	587	2383	1106	129	1318	127	553	188	634	794
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.77	0.15	0.05	0.14	0.63	0.42	0.10	0.40	0.06	0.65

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	385	305	50	15	665	45	45	30	15	65	35	440
Future Volume (veh/h)	385	305	50	15	665	45	45	30	15	65	35	440
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	453	359	59	18	782	53	53	35	18	76	41	400
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	469	1816	810	36	906	61	74	230	118	98	394	751
Arrive On Green	0.26	0.51	0.51	0.02	0.27	0.27	0.04	0.20	0.20	0.05	0.21	0.21
Sat Flow, veh/h	1781	3554	1585	1781	3377	229	1781	1164	599	1781	1870	1585
Grp Volume(v), veh/h	453	359	59	18	411	424	53	0	53	76	41	400
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1829	1781	0	1763	1781	1870	1585
Q Serve(g_s), s	22.1	4.8	1.7	0.9	19.4	19.4	2.6	0.0	2.2	3.7	1.6	15.6
Cycle Q Clear(g_c), s	22.1	4.8	1.7	0.9	19.4	19.4	2.6	0.0	2.2	3.7	1.6	15.6
Prop In Lane	1.00		1.00	1.00		0.13	1.00		0.34	1.00		1.00
Lane Grp Cap(c), veh/h	469	1817	810	36	477	491	74	0	348	98	394	751
V/C Ratio(X)	0.97	0.20	0.07	0.50	0.86	0.86	0.72	0.00	0.15	0.78	0.10	0.53
Avail Cap(c_a), veh/h	469	1817	810	103	528	544	101	0	428	150	505	845
HCM Platoon Ratio	1.00	1.00	1.00	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	1.00	1.00
Uniform Delay (d), s/veh	32.0	11.7	10.9	42.6	30.6	30.6	41.6	0.0	29.2	41.0	27.9	16.2
Incr Delay (d2), s/veh	33.0	0.1	0.0	10.3	12.8	12.6	14.2	0.0	0.2	12.8	0.1	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.5	1.8	0.6	0.5	9.7	10.0	1.4	0.0	0.9	1.9	0.7	5.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	65.0	11.7	10.9	52.9	43.4	43.2	55.8	0.0	29.4	53.8	28.1	16.8
LnGrp LOS	E	B	B	D	D	D	E	A	C	D	C	B
Approach Vol, veh/h		871			853			106			517	
Approach Delay, s/veh		39.4			43.5			42.6			23.2	
Approach LOS		D			D			D			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.4	21.9	6.7	49.8	8.2	23.1	28.0	28.5				
Change Period (Y+Rc), s	4.6	4.6	4.9	4.9	4.6	4.6	4.9	4.9				
Max Green Setting (Gmax), s	7.4	21.3	5.1	44.1	5.0	23.7	23.1	26.1				
Max Q Clear Time (g_c+I1), s	5.7	4.2	2.9	6.8	4.6	17.6	24.1	21.4				
Green Ext Time (p_c), s	0.0	0.2	0.0	2.8	0.0	0.9	0.0	2.2				
Intersection Summary												
HCM 6th Ctrl Delay			37.4									
HCM 6th LOS			D									

Intersection	
Intersection Delay, s/veh	26.5
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	50	165	5	5	300	90	10	5	20	120	5	50
Future Vol, veh/h	50	165	5	5	300	90	10	5	20	120	5	50
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	71	236	7	7	429	129	14	7	29	171	7	71
Number of Lanes	1	1	0	1	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	13.1	40.6	10.6	14.6
HCM LOS	B	E	B	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	29%	100%	0%	100%	0%	69%
Vol Thru, %	14%	0%	97%	0%	77%	3%
Vol Right, %	57%	0%	3%	0%	23%	29%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	35	50	170	5	390	175
LT Vol	10	50	0	5	0	120
Through Vol	5	0	165	0	300	5
RT Vol	20	0	5	0	90	50
Lane Flow Rate	50	71	243	7	557	250
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.096	0.136	0.427	0.013	0.906	0.445
Departure Headway (Hd)	6.914	6.859	6.328	6.528	5.857	6.409
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	522	519	563	545	613	558
Service Time	4.914	4.65	4.119	4.302	3.629	4.503
HCM Lane V/C Ratio	0.096	0.137	0.432	0.013	0.909	0.448
HCM Control Delay	10.6	10.7	13.8	9.4	41	14.6
HCM Lane LOS	B	B	B	A	E	B
HCM 95th-tile Q	0.3	0.5	2.1	0	11.2	2.3

Lane Group	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	64	300	114	129	457	157	21	371
v/c Ratio	0.25	0.43	0.51	0.51	0.91	0.16	0.15	0.82
Control Delay	33.4	6.5	40.5	31.8	54.0	10.1	43.0	44.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.4	6.5	40.5	31.8	54.0	10.1	43.0	44.6
Queue Length 50th (ft)	26	21	49	39	189	15	9	149
Queue Length 95th (ft)	57	33	92	78	#453	64	32	271
Internal Link Dist (ft)	154			2580		775		1180
Turn Bay Length (ft)								
Base Capacity (vph)	286	716	225	255	527	997	136	509
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.22	0.42	0.51	0.51	0.87	0.16	0.15	0.73

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	40	210	80	55	35	320	65	45	15	250	10
Future Volume (veh/h)	5	40	210	80	55	35	320	65	45	15	250	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	7	57	300	114	79	50	457	93	64	21	357	14
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	24	199	633	162	97	62	497	499	343	43	408	16
Arrive On Green	0.12	0.12	0.12	0.09	0.09	0.09	0.28	0.48	0.48	0.02	0.23	0.23
Sat Flow, veh/h	203	1657	1585	1781	1071	678	1781	1032	710	1781	1788	70
Grp Volume(v), veh/h	64	0	300	114	0	129	457	0	157	21	0	371
Grp Sat Flow(s),veh/h/ln	1860	0	1585	1781	0	1748	1781	0	1743	1781	0	1858
Q Serve(g_s), s	2.1	0.0	8.2	4.2	0.0	4.9	17.0	0.0	3.5	0.8	0.0	13.1
Cycle Q Clear(g_c), s	2.1	0.0	8.2	4.2	0.0	4.9	17.0	0.0	3.5	0.8	0.0	13.1
Prop In Lane	0.11		1.00	1.00		0.39	1.00		0.41	1.00		0.04
Lane Grp Cap(c), veh/h	224	0	633	162	0	159	497	0	842	43	0	424
V/C Ratio(X)	0.29	0.00	0.47	0.70	0.00	0.81	0.92	0.00	0.19	0.49	0.00	0.88
Avail Cap(c_a), veh/h	224	0	633	162	0	159	507	0	842	131	0	463
HCM Platoon Ratio	1.00	1.00	1.00	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	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	27.3	0.0	15.2	30.1	0.0	30.4	23.8	0.0	10.0	32.9	0.0	25.4
Incr Delay (d2), s/veh	0.7	0.0	0.6	12.9	0.0	26.2	21.7	0.0	0.1	8.4	0.0	16.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	3.2	2.3	0.0	3.2	9.6	0.0	1.2	0.4	0.0	7.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.0	0.0	15.7	43.0	0.0	56.7	45.5	0.0	10.1	41.3	0.0	41.4
LnGrp LOS	C	A	B	D	A	E	D	A	B	D	A	D
Approach Vol, veh/h		364			243			614			392	
Approach Delay, s/veh		17.9			50.3			36.5			41.4	
Approach LOS		B			D			D			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.4	37.8		13.0	23.8	20.4		11.0
Change Period (Y+Rc), s	* 4.8	* 4.8		* 4.8	* 4.8	* 4.8		4.8
Max Green Setting (Gmax), s	* 5	* 31		* 8.2	* 19	* 17		6.2
Max Q Clear Time (g_c+I1), s	2.8	5.5		10.2	19.0	15.1		6.9
Green Ext Time (p_c), s	0.0	0.9		0.0	0.1	0.4		0.0

Intersection Summary	
HCM 6th Ctrl Delay	35.6
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	37	1353	247	911	300	353	111	79
v/c Ratio	0.24	0.91	1.15	0.47	0.89	0.37	0.48	0.09
Control Delay	38.8	30.9	144.6	13.6	55.5	9.2	30.9	12.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.8	30.9	144.6	13.6	55.5	9.2	30.9	12.6
Queue Length 50th (ft)	16	262	~129	86	~141	24	44	7
Queue Length 95th (ft)	52	#595	#345	297	223	53	88	22
Internal Link Dist (ft)		4010		607		1657		634
Turn Bay Length (ft)								
Base Capacity (vph)	166	1542	214	1949	338	958	231	879
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.22	0.88	1.15	0.47	0.89	0.37	0.48	0.09

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	1065	220	235	815	50	285	30	305	105	40	35
Future Volume (veh/h)	35	1065	220	235	815	50	285	30	305	105	40	35
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	37	1121	232	247	858	53	300	32	321	111	42	37
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	65	1287	265	228	1802	111	377	405	361	135	433	338
Arrive On Green	0.04	0.44	0.44	0.13	0.53	0.53	0.23	0.23	0.23	0.23	0.23	0.23
Sat Flow, veh/h	1781	2934	604	1781	3399	210	1320	1777	1585	1028	1897	1483
Grp Volume(v), veh/h	37	676	677	247	448	463	300	32	321	111	39	40
Grp Sat Flow(s),veh/h/ln	1781	1777	1762	1781	1777	1833	1320	1777	1585	1028	1777	1603
Q Serve(g_s), s	1.4	24.2	24.6	9.0	11.1	11.1	14.6	1.0	13.8	2.2	1.2	1.4
Cycle Q Clear(g_c), s	1.4	24.2	24.6	9.0	11.1	11.1	16.0	1.0	13.8	16.0	1.2	1.4
Prop In Lane	1.00		0.34	1.00		0.11	1.00		1.00	1.00		0.92
Lane Grp Cap(c), veh/h	65	779	773	228	942	972	377	405	361	135	405	366
V/C Ratio(X)	0.57	0.87	0.88	1.08	0.48	0.48	0.79	0.08	0.89	0.82	0.10	0.11
Avail Cap(c_a), veh/h	178	828	821	228	942	972	377	405	361	135	405	366
HCM Platoon Ratio	1.00	1.00	1.00	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	33.3	17.9	18.0	30.6	10.4	10.4	28.4	21.3	26.2	34.8	21.4	21.5
Incr Delay (d2), s/veh	7.5	9.4	10.1	82.9	0.4	0.4	11.2	0.1	22.6	31.3	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	10.8	11.0	9.0	3.9	4.0	6.1	0.4	7.2	3.0	0.5	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.8	27.2	28.0	113.5	10.7	10.7	39.6	21.4	48.8	66.1	21.5	21.6
LnGrp LOS	D	C	C	F	B	B	D	C	D	E	C	C
Approach Vol, veh/h		1390			1158			653			190	
Approach Delay, s/veh		28.0			32.6			43.2			47.5	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.9	35.7		20.6	7.5	42.1		20.6				
Change Period (Y+Rc), s	4.9	4.9		4.6	4.9	4.9		4.6				
Max Green Setting (Gmax), s	9.0	32.7		16.0	7.0	32.7		16.0				
Max Q Clear Time (g_c+I1), s	11.0	26.6		18.0	3.4	13.1		18.0				
Green Ext Time (p_c), s	0.0	4.2		0.0	0.0	5.9		0.0				

Intersection Summary			
HCM 6th Ctrl Delay			33.6
HCM 6th LOS			C

Notes

User approved pedestrian interval to be less than phase max green.

Lane Group	EBT	WBL	WBT	NBL	NBT
Lane Group Flow (vph)	1505	31	929	199	41
v/c Ratio	0.60	0.15	0.46	0.56	0.05
Control Delay	13.6	31.7	8.6	27.6	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	13.6	31.7	8.6	27.6	0.1
Queue Length 50th (ft)	86	9	75	55	0
Queue Length 95th (ft)	295	41	189	141	0
Internal Link Dist (ft)	443		462		645
Turn Bay Length (ft)		200			
Base Capacity (vph)	3012	786	3253	717	1034
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.50	0.04	0.29	0.28	0.04

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1260	215	30	910	0	195	0	40	0	0	0
Future Volume (veh/h)	0	1260	215	30	910	0	195	0	40	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	1286	219	31	929	0	199	0	41	0	0	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	2	2	2	2	0	2	2	2	2	2	2
Cap, veh/h	0	2175	370	63	2263	0	436	0	250	0	295	0
Arrive On Green	0.00	0.50	0.50	0.04	0.64	0.00	0.16	0.00	0.16	0.00	0.00	0.00
Sat Flow, veh/h	0	4560	748	1781	3647	0	1781	0	1585	0	1870	0
Grp Volume(v), veh/h	0	997	508	31	929	0	199	0	41	0	0	0
Grp Sat Flow(s),veh/h/ln	0	1702	1736	1781	1777	0	1781	0	1585	0	1870	0
Q Serve(g_s), s	0.0	9.7	9.7	0.8	5.9	0.0	4.9	0.0	1.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	9.7	9.7	0.8	5.9	0.0	4.9	0.0	1.0	0.0	0.0	0.0
Prop In Lane	0.00		0.43	1.00		0.00	1.00		1.00	0.00		0.00
Lane Grp Cap(c), veh/h	0	1686	859	63	2263	0	436	0	250	0	295	0
V/C Ratio(X)	0.00	0.59	0.59	0.49	0.41	0.00	0.46	0.00	0.16	0.00	0.00	0.00
Avail Cap(c_a), veh/h	0	2411	1229	930	2516	0	1221	0	947	0	1118	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)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	8.3	8.3	21.9	4.1	0.0	18.5	0.0	16.8	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.3	0.7	5.8	0.1	0.0	0.7	0.0	0.3	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	0.0	2.6	2.7	0.4	1.1	0.0	1.9	0.0	0.4	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	8.7	9.0	27.6	4.2	0.0	19.2	0.0	17.1	0.0	0.0	0.0
LnGrp LOS	A	A	A	C	A	A	B	A	B	A	A	A
Approach Vol, veh/h		1505			960			240			0	
Approach Delay, s/veh		8.8			5.0			18.8			0.0	
Approach LOS		A			A			B				
Timer - Assigned Phs		2	3	4		6		8				
Phs Duration (G+Y+Rc), s		11.9	6.5	27.8		11.9		34.3				
Change Period (Y+Rc), s		4.6	4.9	4.9		4.6		4.9				
Max Green Setting (Gmax), s		27.6	24.1	32.7		27.6		32.7				
Max Q Clear Time (g_c+I1), s		6.9	2.8	11.7		0.0		7.9				
Green Ext Time (p_c), s		0.7	0.0	11.2		0.0		7.3				
Intersection Summary												
HCM 6th Ctrl Delay			8.3									
HCM 6th LOS			A									

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	321	1076	33	782	33	38	38	11	255
v/c Ratio	0.74	0.59	0.16	0.61	0.16	0.14	0.18	0.03	0.50
Control Delay	45.8	17.8	36.2	19.9	35.9	15.7	35.7	25.6	7.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.8	17.8	36.2	19.9	35.9	15.7	35.7	25.6	7.9
Queue Length 50th (ft)	59	118	11	119	11	4	13	3	0
Queue Length 95th (ft)	#222	#470	49	275	49	29	54	18	57
Internal Link Dist (ft)		423		1195		1198		751	
Turn Bay Length (ft)	200		200		120		120		
Base Capacity (vph)	432	2070	286	2189	509	850	509	939	924
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.74	0.52	0.12	0.36	0.06	0.04	0.07	0.01	0.28

Intersection Summary

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	295	950	40	30	670	50	30	10	25	35	10	235
Future Volume (veh/h)	295	950	40	30	670	50	30	10	25	35	10	235
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	321	1033	43	33	728	54	33	11	27	38	11	255
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	417	1393	58	63	1059	78	63	95	232	70	376	319
Arrive On Green	0.12	0.40	0.40	0.04	0.32	0.32	0.04	0.20	0.20	0.04	0.20	0.20
Sat Flow, veh/h	3456	3476	145	1781	3354	249	1781	480	1178	1781	1870	1585
Grp Volume(v), veh/h	321	528	548	33	386	396	33	0	38	38	11	255
Grp Sat Flow(s),veh/h/ln	1728	1777	1844	1781	1777	1826	1781	0	1658	1781	1870	1585
Q Serve(g_s), s	5.2	14.7	14.7	1.1	11.0	11.0	1.1	0.0	1.1	1.2	0.3	8.9
Cycle Q Clear(g_c), s	5.2	14.7	14.7	1.1	11.0	11.0	1.1	0.0	1.1	1.2	0.3	8.9
Prop In Lane	1.00		0.08	1.00		0.14	1.00		0.71	1.00		1.00
Lane Grp Cap(c), veh/h	417	712	739	63	561	576	63	0	327	70	376	319
V/C Ratio(X)	0.77	0.74	0.74	0.52	0.69	0.69	0.52	0.00	0.12	0.54	0.03	0.80
Avail Cap(c_a), veh/h	417	1001	1039	276	1001	1028	491	0	800	491	902	764
HCM Platoon Ratio	1.00	1.00	1.00	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	1.00	1.00
Uniform Delay (d), s/veh	24.7	14.8	14.8	27.5	17.4	17.4	27.5	0.0	19.2	27.4	18.6	22.1
Incr Delay (d2), s/veh	8.6	1.9	1.8	6.5	1.5	1.5	6.5	0.0	0.2	6.3	0.0	4.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	5.5	5.6	0.5	4.3	4.4	0.5	0.0	0.4	0.6	0.1	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.3	16.7	16.6	34.0	18.9	18.8	34.0	0.0	19.3	33.7	18.7	26.7
LnGrp LOS	C	B	B	C	B	B	C	A	B	C	B	C
Approach Vol, veh/h		1397			815			71			304	
Approach Delay, s/veh		20.5			19.5			26.1			27.3	
Approach LOS		C			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.9	16.0	7.0	28.2	6.7	16.3	11.9	23.2
Change Period (Y+Rc), s	4.6	4.6	4.9	4.9	4.6	4.6	4.9	4.9
Max Green Setting (Gmax), s	16.0	28.0	9.0	32.7	16.0	28.0	7.0	32.7
Max Q Clear Time (g_c+I1), s	3.2	3.1	3.1	16.7	3.1	10.9	7.2	13.0
Green Ext Time (p_c), s	0.0	0.1	0.0	6.5	0.0	0.8	0.0	4.9

Intersection Summary			
HCM 6th Ctrl Delay			21.1
HCM 6th LOS			C

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	306	772	44	11	577	39	44	22	22	256
v/c Ratio	0.87	0.39	0.05	0.05	0.55	0.17	0.13	0.10	0.08	0.58
Control Delay	54.6	10.0	0.1	29.1	18.4	27.9	18.5	28.8	26.0	10.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.6	10.0	0.1	29.1	18.4	27.9	18.5	28.8	26.0	10.3
Queue Length 50th (ft)	78	35	0	3	62	9	8	5	5	0
Queue Length 95th (ft)	#351	206	0	20	157	46	41	31	29	62
Internal Link Dist (ft)		1195			2587		1879		775	
Turn Bay Length (ft)	350		300	200		120		120		
Base Capacity (vph)	352	2372	1099	316	2283	563	1002	563	1037	994
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.87	0.33	0.04	0.03	0.25	0.07	0.04	0.04	0.02	0.26

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑	↱	↰	↑↱		↰	↱		↰	↑	↱
Traffic Volume (veh/h)	275	695	40	10	490	30	35	30	10	20	20	230
Future Volume (veh/h)	275	695	40	10	490	30	35	30	10	20	20	230
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	306	772	44	11	544	33	39	33	11	22	22	256
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	315	1442	643	25	827	50	72	293	98	46	381	323
Arrive On Green	0.18	0.41	0.41	0.01	0.24	0.24	0.04	0.22	0.22	0.03	0.20	0.20
Sat Flow, veh/h	1781	3554	1585	1781	3404	206	1781	1342	447	1781	1870	1585
Grp Volume(v), veh/h	306	772	44	11	284	293	39	0	44	22	22	256
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1833	1781	0	1790	1781	1870	1585
Q Serve(g_s), s	9.6	9.3	1.0	0.3	8.1	8.2	1.2	0.0	1.1	0.7	0.5	8.7
Cycle Q Clear(g_c), s	9.6	9.3	1.0	0.3	8.1	8.2	1.2	0.0	1.1	0.7	0.5	8.7
Prop In Lane	1.00		1.00	1.00		0.11	1.00		0.25	1.00		1.00
Lane Grp Cap(c), veh/h	315	1442	643	25	432	445	72	0	391	46	381	323
V/C Ratio(X)	0.97	0.54	0.07	0.44	0.66	0.66	0.54	0.00	0.11	0.48	0.06	0.79
Avail Cap(c_a), veh/h	315	2056	917	284	1028	1061	504	0	887	504	927	785
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.1	12.7	10.3	27.6	19.3	19.3	26.6	0.0	17.7	27.2	18.1	21.4
Incr Delay (d2), s/veh	42.7	0.3	0.0	11.7	1.7	1.7	6.2	0.0	0.1	7.5	0.1	4.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.5	3.2	0.3	0.2	3.2	3.3	0.6	0.0	0.4	0.4	0.2	3.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	65.8	13.1	10.3	39.3	21.0	21.0	32.8	0.0	17.8	34.7	18.2	25.8
LnGrp LOS	E	B	B	D	C	C	C	A	B	C	B	C
Approach Vol, veh/h		1122			588			83			300	
Approach Delay, s/veh		27.3			21.3			24.8			25.9	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.1	16.9	5.7	27.8	6.9	16.1	14.9	18.6
Change Period (Y+Rc), s	4.6	4.6	4.9	4.9	4.6	4.6	4.9	4.9
Max Green Setting (Gmax), s	16.0	28.0	9.0	32.7	16.0	28.0	10.0	32.7
Max Q Clear Time (g_c+I1), s	2.7	3.1	2.3	11.3	3.2	10.7	11.6	10.2
Green Ext Time (p_c), s	0.0	0.2	0.0	5.7	0.0	0.9	0.0	3.6

Intersection Summary			
HCM 6th Ctrl Delay			25.3
HCM 6th LOS			C

Intersection	
Intersection Delay, s/veh	25.7
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑	↱	↰	↱		↰	↱		↰	↱	
Traffic Vol, veh/h	150	425	40	5	320	45	30	25	5	25	20	90
Future Vol, veh/h	150	425	40	5	320	45	30	25	5	25	20	90
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	161	457	43	5	344	48	32	27	5	27	22	97
Number of Lanes	1	1	1	1	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	3	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	3	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	3
HCM Control Delay	28.3	28.5	12.1	12.6
HCM LOS	D	D	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	0%	100%	0%	100%	0%
Vol Thru, %	0%	83%	0%	100%	0%	0%	88%	0%	18%
Vol Right, %	0%	17%	0%	0%	100%	0%	12%	0%	82%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	30	30	150	425	40	5	365	25	110
LT Vol	30	0	150	0	0	5	0	25	0
Through Vol	0	25	0	425	0	0	320	0	20
RT Vol	0	5	0	0	40	0	45	0	90
Lane Flow Rate	32	32	161	457	43	5	392	27	118
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.08	0.074	0.32	0.843	0.071	0.011	0.761	0.064	0.247
Departure Headway (Hd)	8.924	8.292	7.147	6.64	5.931	7.579	6.984	8.628	7.532
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	402	432	503	548	604	473	518	415	477
Service Time	6.678	6.045	4.88	4.373	3.663	5.313	4.719	6.374	5.278
HCM Lane V/C Ratio	0.08	0.074	0.32	0.834	0.071	0.011	0.757	0.065	0.247
HCM Control Delay	12.5	11.7	13.2	35.5	9.1	10.4	28.7	12	12.7
HCM Lane LOS	B	B	B	E	A	B	D	B	B
HCM 95th-tile Q	0.3	0.2	1.4	8.8	0.2	0	6.7	0.2	1

Intersection	
Intersection Delay, s/veh	15.7
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	215	135	115	15	175	70	65	30	10	45	25	130
Future Vol, veh/h	215	135	115	15	175	70	65	30	10	45	25	130
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	256	161	137	18	208	83	77	36	12	54	30	155
Number of Lanes	1	1	1	1	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	3	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	3	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	3
HCM Control Delay	15.1	19.4	12.8	13.8
HCM LOS	C	C	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	0%	100%	0%	100%	0%
Vol Thru, %	0%	75%	0%	100%	0%	0%	71%	0%	16%
Vol Right, %	0%	25%	0%	0%	100%	0%	29%	0%	84%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	65	40	215	135	115	15	245	45	155
LT Vol	65	0	215	0	0	15	0	45	0
Through Vol	0	30	0	135	0	0	175	0	25
RT Vol	0	10	0	0	115	0	70	0	130
Lane Flow Rate	77	48	256	161	137	18	292	54	185
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.186	0.106	0.534	0.312	0.239	0.04	0.588	0.124	0.37
Departure Headway (Hd)	8.675	7.985	7.506	6.997	6.285	7.968	7.253	8.333	7.226
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	413	448	481	513	571	449	496	430	496
Service Time	6.439	5.748	5.254	4.745	4.032	5.719	5.004	6.09	4.982
HCM Lane V/C Ratio	0.186	0.107	0.532	0.314	0.24	0.04	0.589	0.126	0.373
HCM Control Delay	13.4	11.7	18.6	12.9	11	11.1	19.9	12.3	14.2
HCM Lane LOS	B	B	C	B	B	B	C	B	B
HCM 95th-tile Q	0.7	0.4	3.1	1.3	0.9	0.1	3.7	0.4	1.7

Intersection	
Int Delay, s/veh	9.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	75	100	10	90	5	155	10	5	5	25	15
Future Vol, veh/h	15	75	100	10	90	5	155	10	5	5	25	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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	61	61	61	61	61	61	61	61	61	61	61	61
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	25	123	164	16	148	8	254	16	8	8	41	25

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	156	0	0	287	0	0	472	443	205	451	521	152
Stage 1	-	-	-	-	-	-	255	255	-	184	184	-
Stage 2	-	-	-	-	-	-	217	188	-	267	337	-
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	1424	-	-	1275	-	-	502	509	836	519	460	894
Stage 1	-	-	-	-	-	-	749	696	-	818	747	-
Stage 2	-	-	-	-	-	-	785	745	-	738	641	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1424	-	-	1275	-	-	442	491	836	488	444	894
Mov Cap-2 Maneuver	-	-	-	-	-	-	442	491	-	488	444	-
Stage 1	-	-	-	-	-	-	733	681	-	801	737	-
Stage 2	-	-	-	-	-	-	711	735	-	698	628	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0.7	25	12.7
HCM LOS			D	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	451	1424	-	-	1275	-	-	540
HCM Lane V/C Ratio	0.618	0.017	-	-	0.013	-	-	0.137
HCM Control Delay (s)	25	7.6	0	-	7.9	0	-	12.7
HCM Lane LOS	D	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	4.1	0.1	-	-	0	-	-	0.5

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	20	155	15	20	120	35	10	5	10	55	5	20
Future Vol, veh/h	20	155	15	20	120	35	10	5	10	55	5	20
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	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	72	72	92	92	72	72	92	92	92	72	92	72
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	28	215	16	22	167	49	11	5	11	76	5	28

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	216	0	0	231	0	0	531	539	223	523	523	192
Stage 1	-	-	-	-	-	-	279	279	-	236	236	-
Stage 2	-	-	-	-	-	-	252	260	-	287	287	-
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	1354	-	-	1337	-	-	459	449	817	465	459	850
Stage 1	-	-	-	-	-	-	728	680	-	767	710	-
Stage 2	-	-	-	-	-	-	752	693	-	720	674	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1354	-	-	1337	-	-	427	432	817	442	442	850
Mov Cap-2 Maneuver	-	-	-	-	-	-	427	432	-	442	442	-
Stage 1	-	-	-	-	-	-	713	666	-	751	699	-
Stage 2	-	-	-	-	-	-	710	682	-	690	660	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.8	0.7	12.2	14.1
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	529	1354	-	-	1337	-	-	503
HCM Lane V/C Ratio	0.051	0.021	-	-	0.016	-	-	0.218
HCM Control Delay (s)	12.2	7.7	-	-	7.7	-	-	14.1
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.2	0.1	-	-	0.1	-	-	0.8

Intersection	
Intersection Delay, s/veh	15
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	25	115	95	100	75	5	80	140	95	5	85	15
Future Vol, veh/h	25	115	95	100	75	5	80	140	95	5	85	15
Peak Hour Factor	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	35	160	132	139	104	7	111	194	132	7	118	21
Number of Lanes	0	1	1	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	2
HCM Control Delay	12.7	16.9	16.5	12.6
HCM LOS	B	C	C	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	18%	0%	56%	100%	0%
Vol Thru, %	0%	60%	82%	0%	42%	0%	85%
Vol Right, %	0%	40%	0%	100%	3%	0%	15%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	80	235	140	95	180	5	100
LT Vol	80	0	25	0	100	5	0
Through Vol	0	140	115	0	75	0	85
RT Vol	0	95	0	95	5	0	15
Lane Flow Rate	111	326	194	132	250	7	139
Geometry Grp	7	7	7	7	6	7	7
Degree of Util (X)	0.225	0.588	0.379	0.228	0.493	0.015	0.277
Departure Headway (Hd)	7.282	6.482	7.018	6.213	7.094	7.807	7.186
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	496	561	513	578	508	458	500
Service Time	4.982	4.182	4.762	3.957	5.139	5.557	4.935
HCM Lane V/C Ratio	0.224	0.581	0.378	0.228	0.492	0.015	0.278
HCM Control Delay	12.1	18	14	10.8	16.9	10.7	12.7
HCM Lane LOS	B	C	B	B	C	B	B
HCM 95th-tile Q	0.9	3.8	1.8	0.9	2.7	0	1.1

Intersection	
Intersection Delay, s/veh	11.1
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	125	145	135	85	0	205	0	145	0	0	0
Future Vol, veh/h	0	125	145	135	85	0	205	0	145	0	0	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	0	136	158	147	92	0	223	0	158	0	0	0
Number of Lanes	0	1	1	1	1	0	1	0	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	2	2
HCM Control Delay	10	11	11.9	0
HCM LOS	A	B	B	-

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	100%	0%	0%	0%	100%	0%	0%
Vol Thru, %	0%	0%	100%	0%	0%	100%	100%
Vol Right, %	0%	100%	0%	100%	0%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	205	145	125	145	135	85	0
LT Vol	205	0	0	0	135	0	0
Through Vol	0	0	125	0	0	85	0
RT Vol	0	145	0	145	0	0	0
Lane Flow Rate	223	158	136	158	147	92	0
Geometry Grp	7	7	7	7	7	7	6
Degree of Util (X)	0.401	0.231	0.227	0.232	0.267	0.155	0
Departure Headway (Hd)	6.478	5.268	6.008	5.298	6.545	6.037	6.635
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	557	682	598	678	549	594	0
Service Time	4.203	2.994	3.739	3.029	4.278	3.77	4.678
HCM Lane V/C Ratio	0.4	0.232	0.227	0.233	0.268	0.155	0
HCM Control Delay	13.5	9.6	10.5	9.6	11.7	9.9	9.7
HCM Lane LOS	B	A	B	A	B	A	N
HCM 95th-tile Q	1.9	0.9	0.9	0.9	1.1	0.5	0

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	75	170	20	15	160	15	10	5	10	10	5	45
Future Vol, veh/h	75	170	20	15	160	15	10	5	10	10	5	45
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	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	82	185	22	16	174	16	11	5	11	11	5	49

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	190	0	0	207	0	0	601	582	196	582	585	182
Stage 1	-	-	-	-	-	-	360	360	-	214	214	-
Stage 2	-	-	-	-	-	-	241	222	-	368	371	-
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	1384	-	-	1364	-	-	412	425	845	424	423	861
Stage 1	-	-	-	-	-	-	658	626	-	788	725	-
Stage 2	-	-	-	-	-	-	762	720	-	652	620	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1384	-	-	1364	-	-	364	395	845	392	393	861
Mov Cap-2 Maneuver	-	-	-	-	-	-	364	395	-	392	393	-
Stage 1	-	-	-	-	-	-	619	589	-	742	716	-
Stage 2	-	-	-	-	-	-	705	711	-	600	583	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.2	0.6	12.9	11
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	481	1384	-	-	1364	-	-	663
HCM Lane V/C Ratio	0.056	0.059	-	-	0.012	-	-	0.098
HCM Control Delay (s)	12.9	7.8	-	-	7.7	-	-	11
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.2	0.2	-	-	0	-	-	0.3

Intersection	
Int Delay, s/veh	8.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	80	35	35	55	5	55	105	60	5	60	10
Future Vol, veh/h	15	80	35	35	55	5	55	105	60	5	60	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
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	16	87	38	38	60	5	60	114	65	5	65	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	65	0	0	125	0	0	315	279	106	367	296	63
Stage 1	-	-	-	-	-	-	138	138	-	139	139	-
Stage 2	-	-	-	-	-	-	177	141	-	228	157	-
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	1537	-	-	1462	-	-	638	629	948	589	616	1002
Stage 1	-	-	-	-	-	-	865	782	-	864	782	-
Stage 2	-	-	-	-	-	-	825	780	-	775	768	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1537	-	-	1462	-	-	561	605	948	456	593	1002
Mov Cap-2 Maneuver	-	-	-	-	-	-	561	605	-	456	593	-
Stage 1	-	-	-	-	-	-	855	773	-	854	761	-
Stage 2	-	-	-	-	-	-	726	759	-	608	760	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.9	2.8	13.6	11.8
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	657	1537	-	-	1462	-	-	614
HCM Lane V/C Ratio	0.364	0.011	-	-	0.026	-	-	0.133
HCM Control Delay (s)	13.6	7.4	0	-	7.5	0	-	11.8
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	1.7	0	-	-	0.1	-	-	0.5

Intersection	
Int Delay, s/veh	9.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	40	45	80	25	5	55	80	135	5	50	5
Future Vol, veh/h	5	40	45	80	25	5	55	80	135	5	50	5
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	5	43	49	87	27	5	60	87	147	5	54	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	32	0	0	92	0	0	311	284	68	399	306	30
Stage 1	-	-	-	-	-	-	78	78	-	204	204	-
Stage 2	-	-	-	-	-	-	233	206	-	195	102	-
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	1580	-	-	1503	-	-	642	625	995	561	608	1044
Stage 1	-	-	-	-	-	-	931	830	-	798	733	-
Stage 2	-	-	-	-	-	-	770	731	-	807	811	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1580	-	-	1503	-	-	564	586	995	404	570	1044
Mov Cap-2 Maneuver	-	-	-	-	-	-	564	586	-	404	570	-
Stage 1	-	-	-	-	-	-	928	828	-	796	690	-
Stage 2	-	-	-	-	-	-	664	688	-	614	809	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	5.5	13.2	12.1
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	730	1580	-	-	1503	-	-	572
HCM Lane V/C Ratio	0.402	0.003	-	-	0.058	-	-	0.114
HCM Control Delay (s)	13.2	7.3	0	-	7.5	0	-	12.1
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	1.9	0	-	-	0.2	-	-	0.4

Lane Group
Lane Group Flow (vph)
v/c Ratio
Control Delay
Queue Delay
Total Delay
Queue Length 50th (ft)
Queue Length 95th (ft)
Internal Link Dist (ft)
Turn Bay Length (ft)
Base Capacity (vph)
Starvation Cap Reductn
Spillback Cap Reductn
Storage Cap Reductn
Reduced v/c Ratio

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0
Future Volume (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0
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	
Adj Sat Flow, veh/h/ln							0	1870	0	0	1870	0
Adj Flow Rate, veh/h							0	0	0	0	0	0
Peak Hour Factor							0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %							0	2	0	0	2	0
Cap, veh/h							0	1496	0	0	1496	0
Arrive On Green							0.00	0.00	0.00	0.00	0.00	0.00
Sat Flow, veh/h							0	1870	0	0	1870	0
Grp Volume(v), veh/h							0	0	0	0	0	0
Grp Sat Flow(s),veh/h/ln							0	1870	0	0	1870	0
Q Serve(g_s), s							0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s							0.0	0.0	0.0	0.0	0.0	0.0
Prop In Lane							0.00		0.00	0.00		0.00
Lane Grp Cap(c), veh/h							0	1496	0	0	1496	0
V/C Ratio(X)							0.00	0.00	0.00	0.00	0.00	0.00
Avail Cap(c_a), veh/h							0	1496	0	0	1496	0
HCM Platoon Ratio							1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)							0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d), s/veh							0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh							0.0	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
%ile BackOfQ(50%),veh/ln							0.0	0.0	0.0	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh							0.0	0.0	0.0	0.0	0.0	0.0
LnGrp LOS							A	A	A	A	A	A
Approach Vol, veh/h								0			0	
Approach Delay, s/veh								0.0			0.0	
Approach LOS												

Timer - Assigned Phs		2				6						
Phs Duration (G+Y+Rc), s		22.5				22.5						
Change Period (Y+Rc), s		4.5				4.5						
Max Green Setting (Gmax), s		18.0				18.0						
Max Q Clear Time (g_c+I1), s		0.0				0.0						
Green Ext Time (p_c), s		0.0				0.0						

Intersection Summary		
HCM 6th Ctrl Delay		0.0
HCM 6th LOS		A

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	306	772	44	11	577	39	44	22	22	256
v/c Ratio	0.65	0.27	0.03	0.04	0.47	0.13	0.14	0.08	0.07	0.39
Control Delay	30.4	6.1	0.1	23.9	13.1	22.3	19.0	23.4	23.4	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.4	6.1	0.1	23.9	13.1	22.3	19.0	23.4	23.4	5.0
Queue Length 50th (ft)	44	0	0	2	34	6	5	3	3	0
Queue Length 95th (ft)	#314	183	0	19	142	42	41	29	29	47
Internal Link Dist (ft)		1195			2587		1879		775	
Turn Bay Length (ft)	350		300	200		120		120		
Base Capacity (vph)	471	2934	1332	424	2879	755	1340	755	1391	655
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.65	0.26	0.03	0.03	0.20	0.05	0.03	0.03	0.02	0.39

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	275	695	40	10	490	30	35	30	10	20	20	230
Future Volume (veh/h)	275	695	40	10	490	30	35	30	10	20	20	230
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	306	772	44	11	544	33	39	33	11	22	22	256
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	329	1484	662	25	840	51	73	256	85	46	329	572
Arrive On Green	0.18	0.42	0.42	0.01	0.25	0.25	0.04	0.19	0.19	0.03	0.18	0.18
Sat Flow, veh/h	1781	3554	1585	1781	3404	206	1781	1342	447	1781	1870	1585
Grp Volume(v), veh/h	306	772	44	11	284	293	39	0	44	22	22	256
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1833	1781	0	1790	1781	1870	1585
Q Serve(g_s), s	9.1	8.7	0.9	0.3	7.7	7.8	1.2	0.0	1.1	0.7	0.5	6.7
Cycle Q Clear(g_c), s	9.1	8.7	0.9	0.3	7.7	7.8	1.2	0.0	1.1	0.7	0.5	6.7
Prop In Lane	1.00		1.00	1.00		0.11	1.00		0.25	1.00		1.00
Lane Grp Cap(c), veh/h	329	1484	662	25	439	453	73	0	342	46	329	572
V/C Ratio(X)	0.93	0.52	0.07	0.44	0.65	0.65	0.53	0.00	0.13	0.47	0.07	0.45
Avail Cap(c_a), veh/h	329	2148	958	296	1074	1108	527	0	927	527	968	1114
HCM Platoon Ratio	1.00	1.00	1.00	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	1.00	1.00
Uniform Delay (d), s/veh	21.7	11.7	9.4	26.5	18.3	18.3	25.4	0.0	18.1	26.0	18.6	13.2
Incr Delay (d2), s/veh	31.9	0.3	0.0	11.6	1.6	1.6	5.9	0.0	0.2	7.4	0.1	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.4	2.9	0.3	0.2	3.0	3.1	0.6	0.0	0.4	0.4	0.2	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.6	12.0	9.5	38.0	19.9	19.8	31.4	0.0	18.3	33.3	18.7	13.7
LnGrp LOS	D	B	A	D	B	B	C	A	B	C	B	B
Approach Vol, veh/h		1122			588			83			300	
Approach Delay, s/veh		23.2			20.2			24.4			15.5	
Approach LOS		C			C			C			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.0	14.9	5.7	27.5	6.8	14.1	14.9	18.3				
Change Period (Y+Rc), s	4.6	4.6	4.9	4.9	4.6	4.6	4.9	4.9				
Max Green Setting (Gmax), s	16.0	28.0	9.0	32.7	16.0	28.0	10.0	32.7				
Max Q Clear Time (g_c+I1), s	2.7	3.1	2.3	10.7	3.2	8.7	11.1	9.8				
Green Ext Time (p_c), s	0.0	0.2	0.0	5.7	0.0	0.9	0.0	3.6				
Intersection Summary												
HCM 6th Ctrl Delay			21.3									
HCM 6th LOS			C									

Intersection	
Intersection Delay, s/veh	9.7
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	155	15	20	120	35	10	5	10	55	5	20
Future Vol, veh/h	20	155	15	20	120	35	10	5	10	55	5	20
Peak Hour Factor	0.72	0.72	0.92	0.92	0.72	0.72	0.92	0.92	0.92	0.72	0.92	0.72
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	28	215	16	22	167	49	11	5	11	76	5	28
Number of Lanes	1	1	0	1	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	10	9.7	8.4	9.1
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	40%	100%	0%	100%	0%	69%
Vol Thru, %	20%	0%	91%	0%	77%	6%
Vol Right, %	40%	0%	9%	0%	23%	25%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	25	20	170	20	155	80
LT Vol	10	20	0	20	0	55
Through Vol	5	0	155	0	120	5
RT Vol	10	0	15	0	35	20
Lane Flow Rate	27	28	232	22	215	110
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.039	0.043	0.324	0.034	0.297	0.156
Departure Headway (Hd)	5.126	5.602	5.037	5.627	4.964	5.14
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	695	638	711	635	721	695
Service Time	3.187	3.346	2.781	3.372	2.709	3.189
HCM Lane V/C Ratio	0.039	0.044	0.326	0.035	0.298	0.158
HCM Control Delay	8.4	8.6	10.2	8.6	9.8	9.1
HCM Lane LOS	A	A	B	A	A	A
HCM 95th-tile Q	0.1	0.1	1.4	0.1	1.2	0.6

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	55	1011	206	1024	112	112	182	119
v/c Ratio	0.31	0.75	0.82	0.57	0.37	0.14	0.59	0.14
Control Delay	37.9	21.8	59.7	16.1	24.7	7.0	30.8	10.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.9	21.8	59.7	16.1	24.7	7.0	30.8	10.3
Queue Length 50th (ft)	21	160	81	157	38	3	65	8
Queue Length 95th (ft)	65	316	#263	318	77	18	121	24
Internal Link Dist (ft)		4010		607		1657		634
Turn Bay Length (ft)								
Base Capacity (vph)	196	1811	252	1945	374	987	377	1009
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.56	0.82	0.53	0.30	0.11	0.48	0.12

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	714	145	175	838	32	95	17	78	155	43	58
Future Volume (veh/h)	47	714	145	175	838	32	95	17	78	155	43	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	55	840	171	206	986	38	112	20	92	182	51	68
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	90	1137	231	252	1667	64	366	400	357	351	400	357
Arrive On Green	0.05	0.39	0.39	0.14	0.48	0.48	0.23	0.23	0.23	0.23	0.23	0.23
Sat Flow, veh/h	1781	2941	599	1781	3489	134	1273	1777	1585	1281	1777	1585
Grp Volume(v), veh/h	55	508	503	206	502	522	112	20	92	182	51	68
Grp Sat Flow(s),veh/h/ln	1781	1777	1763	1781	1777	1846	1273	1777	1585	1281	1777	1585
Q Serve(g_s), s	1.8	14.3	14.3	6.6	12.0	12.0	4.6	0.5	2.8	8.0	1.3	2.0
Cycle Q Clear(g_c), s	1.8	14.3	14.3	6.6	12.0	12.0	6.6	0.5	2.8	10.7	1.3	2.0
Prop In Lane	1.00		0.34	1.00		0.07	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	90	687	681	252	849	882	366	400	357	351	400	357
V/C Ratio(X)	0.61	0.74	0.74	0.82	0.59	0.59	0.31	0.05	0.26	0.52	0.13	0.19
Avail Cap(c_a), veh/h	213	995	987	274	995	1033	428	487	434	413	487	434
HCM Platoon Ratio	1.00	1.00	1.00	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	27.2	15.4	15.4	24.3	11.1	11.1	21.0	17.7	18.6	23.0	18.1	18.3
Incr Delay (d2), s/veh	6.5	1.7	1.7	16.1	0.7	0.7	0.5	0.1	0.4	1.2	0.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	5.3	5.3	3.7	4.1	4.2	1.3	0.2	1.0	2.4	0.5	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.7	17.1	17.1	40.4	11.8	11.8	21.5	17.8	19.0	24.2	18.2	18.6
LnGrp LOS	C	B	B	D	B	B	C	B	B	C	B	B
Approach Vol, veh/h		1066			1230			224			301	
Approach Delay, s/veh		17.9			16.6			20.1			21.9	
Approach LOS		B			B			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.2	27.5		17.8	7.9	32.8		17.8				
Change Period (Y+Rc), s	4.9	4.9		4.6	4.9	4.9		4.6				
Max Green Setting (Gmax), s	9.0	32.7		16.0	7.0	32.7		16.0				
Max Q Clear Time (g_c+I1), s	8.6	16.3		12.7	3.8	14.0		8.6				
Green Ext Time (p_c), s	0.0	6.2		0.4	0.0	6.7		0.6				
Intersection Summary												
HCM 6th Ctrl Delay			17.9									
HCM 6th LOS			B									

Notes

User approved pedestrian interval to be less than phase max green.

Lane Group	EBT	WBL	WBT	NBL	NBT
Lane Group Flow (vph)	949	35	1616	60	14
v/c Ratio	0.27	0.12	0.58	0.19	0.02
Control Delay	7.1	21.5	5.6	20.5	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	7.1	21.5	5.6	20.5	0.1
Queue Length 50th (ft)	32	9	121	16	0
Queue Length 95th (ft)	97	29	179	40	0
Internal Link Dist (ft)	443		392		645
Turn Bay Length (ft)		200			
Base Capacity (vph)	3784	1073	3539	1102	1214
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.25	0.03	0.46	0.05	0.01

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	713	56	28	1309	0	49	0	11	0	0	0
Future Volume (veh/h)	0	713	56	28	1309	0	49	0	11	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	880	69	35	1616	0	60	0	14	0	0	0
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	0	2	2	2	2	0	2	2	2	2	2	2
Cap, veh/h	0	2416	189	73	2391	0	321	0	114	0	134	0
Arrive On Green	0.00	0.50	0.50	0.04	0.67	0.00	0.07	0.00	0.07	0.00	0.00	0.00
Sat Flow, veh/h	0	4997	377	1781	3647	0	1781	0	1585	0	1870	0
Grp Volume(v), veh/h	0	620	329	35	1616	0	60	0	14	0	0	0
Grp Sat Flow(s),veh/h/ln	0	1702	1802	1781	1777	0	1781	0	1585	0	1870	0
Q Serve(g_s), s	0.0	4.1	4.2	0.7	10.2	0.0	1.2	0.0	0.3	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	4.1	4.2	0.7	10.2	0.0	1.2	0.0	0.3	0.0	0.0	0.0
Prop In Lane	0.00		0.21	1.00		0.00	1.00		1.00	0.00		0.00
Lane Grp Cap(c), veh/h	0	1703	902	73	2391	0	321	0	114	0	134	0
V/C Ratio(X)	0.00	0.36	0.37	0.48	0.68	0.00	0.19	0.00	0.12	0.00	0.00	0.00
Avail Cap(c_a), veh/h	0	2992	1584	1154	3123	0	1515	0	1176	0	1387	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)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	5.7	5.7	17.5	3.7	0.0	16.6	0.0	16.2	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.1	0.2	4.9	0.4	0.0	0.3	0.0	0.5	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	0.0	0.9	1.0	0.3	0.9	0.0	0.4	0.0	0.1	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	5.8	5.9	22.3	4.0	0.0	16.9	0.0	16.6	0.0	0.0	0.0
LnGrp LOS	A	A	A	C	A	A	B	A	B	A	A	A
Approach Vol, veh/h		949			1651			74			0	
Approach Delay, s/veh		5.9			4.4			16.8			0.0	
Approach LOS		A			A			B				
Timer - Assigned Phs		2	3	4		6		8				
Phs Duration (G+Y+Rc), s		7.3	6.4	23.5		7.3		29.9				
Change Period (Y+Rc), s		4.6	4.9	4.9		4.6		4.9				
Max Green Setting (Gmax), s		27.6	24.1	32.7		27.6		32.7				
Max Q Clear Time (g_c+I1), s		3.2	2.7	6.2		0.0		12.2				
Green Ext Time (p_c), s		0.2	0.1	7.1		0.0		12.9				

Intersection Summary		
HCM 6th Ctrl Delay		5.3
HCM 6th LOS		A

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	201	661	23	1293	1	12	59	12	437
v/c Ratio	0.55	0.29	0.13	0.74	0.01	0.05	0.28	0.04	0.70
Control Delay	39.1	10.5	35.2	20.5	37.0	16.3	34.2	22.8	9.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.1	10.5	35.2	20.5	37.0	16.3	34.2	22.8	9.4
Queue Length 50th (ft)	37	32	8	169	0	1	20	4	0
Queue Length 95th (ft)	#105	211	35	#521	5	12	65	15	37
Internal Link Dist (ft)		493		1195		1198		751	
Turn Bay Length (ft)	200		200		120		120		
Base Capacity (vph)	363	2301	241	1851	428	696	428	811	936
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.55	0.29	0.10	0.70	0.00	0.02	0.14	0.01	0.47

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	163	534	2	19	1022	25	1	2	8	48	10	354
Future Volume (veh/h)	163	534	2	19	1022	25	1	2	8	48	10	354
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	201	659	2	23	1262	31	1	2	10	59	12	388
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	283	1659	5	45	1417	35	2	62	309	82	511	433
Arrive On Green	0.08	0.46	0.46	0.03	0.40	0.40	0.00	0.23	0.23	0.05	0.27	0.27
Sat Flow, veh/h	3456	3634	11	1781	3545	87	1781	271	1355	1781	1870	1585
Grp Volume(v), veh/h	201	322	339	23	632	661	1	0	12	59	12	388
Grp Sat Flow(s),veh/h/ln	1728	1777	1868	1781	1777	1855	1781	0	1626	1781	1870	1585
Q Serve(g_s), s	4.4	9.4	9.4	1.0	25.8	25.9	0.0	0.0	0.4	2.5	0.4	18.4
Cycle Q Clear(g_c), s	4.4	9.4	9.4	1.0	25.8	25.9	0.0	0.0	0.4	2.5	0.4	18.4
Prop In Lane	1.00		0.01	1.00		0.05	1.00		0.83	1.00		1.00
Lane Grp Cap(c), veh/h	283	811	853	45	710	742	2	0	371	82	511	433
V/C Ratio(X)	0.71	0.40	0.40	0.51	0.89	0.89	0.41	0.00	0.03	0.72	0.02	0.90
Avail Cap(c_a), veh/h	310	811	853	206	746	778	366	0	584	366	672	570
HCM Platoon Ratio	1.00	1.00	1.00	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	1.00	1.00
Uniform Delay (d), s/veh	34.9	14.1	14.1	37.5	21.8	21.8	38.9	0.0	23.4	36.7	20.7	27.3
Incr Delay (d2), s/veh	6.7	0.3	0.3	8.8	12.5	12.1	83.5	0.0	0.0	10.9	0.0	13.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	3.6	3.7	0.5	12.4	12.9	0.1	0.0	0.2	1.3	0.2	8.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.5	14.4	14.4	46.3	34.3	33.9	122.4	0.0	23.4	47.6	20.7	41.1
LnGrp LOS	D	B	B	D	C	C	F	A	C	D	C	D
Approach Vol, veh/h		862			1316			13			459	
Approach Delay, s/veh		20.7			34.3			31.0			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	8.2	22.4	6.9	40.5	4.7	25.9	11.3	36.1
Change Period (Y+Rc), s	4.6	4.6	4.9	4.9	4.6	4.6	4.9	4.9
Max Green Setting (Gmax), s	16.0	28.0	9.0	32.7	16.0	28.0	7.0	32.7
Max Q Clear Time (g_c+I1), s	4.5	2.4	3.0	11.4	2.0	20.4	6.4	27.9
Green Ext Time (p_c), s	0.1	0.0	0.0	4.1	0.0	0.9	0.0	3.3

Intersection Summary			
HCM 6th Ctrl Delay			31.1
HCM 6th LOS			C

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	312	339	41	13	806	28	22	72	35	466
v/c Ratio	0.68	0.15	0.04	0.09	0.70	0.20	0.10	0.38	0.13	0.74
Control Delay	34.4	7.5	0.1	40.4	26.3	41.9	25.0	41.5	30.5	11.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.4	7.5	0.1	40.4	26.3	41.9	25.0	41.5	30.5	11.4
Queue Length 50th (ft)	111	15	0	5	133	11	5	28	13	0
Queue Length 95th (ft)	247	82	0	25	285	42	25	81	40	59
Internal Link Dist (ft)		1195			2587		1879		775	
Turn Bay Length (ft)	350		300	200		120		120		
Base Capacity (vph)	636	2570	1184	140	1430	137	585	206	687	878
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.49	0.13	0.03	0.09	0.56	0.20	0.04	0.35	0.05	0.53

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	265	288	35	11	647	38	24	11	8	61	30	396
Future Volume (veh/h)	265	288	35	11	647	38	24	11	8	61	30	396
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	312	339	41	13	761	45	28	13	9	72	35	348
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	361	1642	732	28	938	55	52	231	160	93	462	391
Arrive On Green	0.20	0.46	0.46	0.02	0.27	0.27	0.03	0.22	0.22	0.05	0.25	0.25
Sat Flow, veh/h	1781	3554	1585	1781	3409	202	1781	1029	713	1781	1870	1585
Grp Volume(v), veh/h	312	339	41	13	396	410	28	0	22	72	35	348
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1834	1781	0	1742	1781	1870	1585
Q Serve(g_s), s	13.1	4.4	1.1	0.6	16.1	16.1	1.2	0.0	0.8	3.1	1.1	16.4
Cycle Q Clear(g_c), s	13.1	4.4	1.1	0.6	16.1	16.1	1.2	0.0	0.8	3.1	1.1	16.4
Prop In Lane	1.00		1.00	1.00		0.11	1.00		0.41	1.00		1.00
Lane Grp Cap(c), veh/h	361	1642	732	28	489	504	52	0	390	93	462	391
V/C Ratio(X)	0.86	0.21	0.06	0.46	0.81	0.81	0.54	0.00	0.06	0.78	0.08	0.89
Avail Cap(c_a), veh/h	533	2030	905	118	601	620	115	0	481	171	574	487
HCM Platoon Ratio	1.00	1.00	1.00	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	1.00	1.00
Uniform Delay (d), s/veh	29.7	12.4	11.5	37.7	26.1	26.1	37.0	0.0	23.5	36.2	22.3	28.1
Incr Delay (d2), s/veh	9.6	0.1	0.0	11.4	6.9	6.7	8.3	0.0	0.1	12.9	0.1	15.6
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	6.3	1.6	0.4	0.3	7.4	7.6	0.6	0.0	0.3	1.6	0.5	7.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.3	12.4	11.5	49.1	33.0	32.8	45.3	0.0	23.6	49.1	22.4	43.6
LnGrp LOS	D	B	B	D	C	C	D	A	C	D	C	D
Approach Vol, veh/h		692			819			50			455	
Approach Delay, s/veh		24.5			33.1			35.8			42.9	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.6	21.9	6.1	40.6	6.9	23.7	20.6	26.1
Change Period (Y+Rc), s	4.6	4.6	4.9	4.9	4.6	4.6	4.9	4.9
Max Green Setting (Gmax), s	7.4	21.3	5.1	44.1	5.0	23.7	23.1	26.1
Max Q Clear Time (g_c+I1), s	5.1	2.8	2.6	6.4	3.2	18.4	15.1	18.1
Green Ext Time (p_c), s	0.0	0.0	0.0	2.6	0.0	0.7	0.6	3.1

Intersection Summary	
HCM 6th Ctrl Delay	32.4
HCM 6th LOS	C

Intersection	
Intersection Delay, s/veh	22.7
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	40	221	29	2	375	11	52	8	5	32	24	116
Future Vol, veh/h	40	221	29	2	375	11	52	8	5	32	24	116
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	47	260	34	2	441	13	61	9	6	38	28	136
Number of Lanes	1	1	1	1	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	3	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	3	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	3
HCM Control Delay	15.1	34.6	12.2	12.7
HCM LOS	C	D	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	0%	100%	0%	100%	0%
Vol Thru, %	0%	62%	0%	100%	0%	0%	97%	0%	17%
Vol Right, %	0%	38%	0%	0%	100%	0%	3%	0%	83%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	52	13	40	221	29	2	386	32	140
LT Vol	52	0	40	0	0	2	0	32	0
Through Vol	0	8	0	221	0	0	375	0	24
RT Vol	0	5	0	0	29	0	11	0	116
Lane Flow Rate	61	15	47	260	34	2	454	38	165
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.143	0.033	0.098	0.503	0.059	0.005	0.837	0.084	0.318
Departure Headway (Hd)	8.442	7.656	7.479	6.97	6.258	7.16	6.633	8.056	6.958
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	425	467	479	517	572	503	549	445	516
Service Time	6.202	5.416	5.224	4.715	4.003	4.86	4.333	5.809	4.71
HCM Lane V/C Ratio	0.144	0.032	0.098	0.503	0.059	0.004	0.827	0.085	0.32
HCM Control Delay	12.6	10.7	11	16.6	9.4	9.9	34.7	11.6	12.9
HCM Lane LOS	B	B	B	C	A	A	D	B	B
HCM 95th-tile Q	0.5	0.1	0.3	2.8	0.2	0	8.6	0.3	1.4

Intersection	
Intersection Delay, s/veh	11.5
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	58	158	41	5	93	20	123	12	20	55	26	170
Future Vol, veh/h	58	158	41	5	93	20	123	12	20	55	26	170
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	65	178	46	6	104	22	138	13	22	62	29	191
Number of Lanes	1	1	1	1	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	3	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	3	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	3
HCM Control Delay	11.3	11.4	11.9	11.5
HCM LOS	B	B	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	0%	100%	0%	100%	0%
Vol Thru, %	0%	38%	0%	100%	0%	0%	82%	0%	13%
Vol Right, %	0%	62%	0%	0%	100%	0%	18%	0%	87%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	123	32	58	158	41	5	113	55	196
LT Vol	123	0	58	0	0	5	0	55	0
Through Vol	0	12	0	158	0	0	93	0	26
RT Vol	0	20	0	0	41	0	20	0	170
Lane Flow Rate	138	36	65	178	46	6	127	62	220
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.273	0.062	0.126	0.317	0.073	0.011	0.235	0.119	0.355
Departure Headway (Hd)	7.123	6.176	6.939	6.433	5.723	7.312	6.677	6.926	5.809
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	503	577	515	557	623	487	535	516	617
Service Time	4.889	3.941	4.702	4.196	3.486	5.086	4.451	4.686	3.569
HCM Lane V/C Ratio	0.274	0.062	0.126	0.32	0.074	0.012	0.237	0.12	0.357
HCM Control Delay	12.6	9.4	10.7	12.2	8.9	10.2	11.5	10.6	11.8
HCM Lane LOS	B	A	B	B	A	B	B	B	B
HCM 95th-tile Q	1.1	0.2	0.4	1.4	0.2	0	0.9	0.4	1.6

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	7	74	152	1	47	0	65	4	2	0	7	11
Future Vol, veh/h	7	74	152	1	47	0	65	4	2	0	7	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	77	77	77	77	77	77	77	77	77	77	77	77
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	96	197	1	61	0	84	5	3	0	9	14

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	61	0	0	293	0	0	288	276	195	280	374	61
Stage 1	-	-	-	-	-	-	213	213	-	63	63	-
Stage 2	-	-	-	-	-	-	75	63	-	217	311	-
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	1542	-	-	1269	-	-	664	632	846	672	557	1004
Stage 1	-	-	-	-	-	-	789	726	-	948	842	-
Stage 2	-	-	-	-	-	-	934	842	-	785	658	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1542	-	-	1269	-	-	642	627	846	662	553	1004
Mov Cap-2 Maneuver	-	-	-	-	-	-	642	627	-	662	553	-
Stage 1	-	-	-	-	-	-	783	721	-	941	841	-
Stage 2	-	-	-	-	-	-	910	841	-	772	653	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.2	11.5	9.9
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	646	1542	-	-	1269	-	-	762
HCM Lane V/C Ratio	0.143	0.006	-	-	0.001	-	-	0.031
HCM Control Delay (s)	11.5	7.3	0	-	7.8	0	-	9.9
HCM Lane LOS	B	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.5	0	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	7.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	42	134	4	6	200	57	11	2	22	105	1	46
Future Vol, veh/h	42	134	4	6	200	57	11	2	22	105	1	46
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	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	70	70	70	70	70	70	70	70	70	70	70	70
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	60	191	6	9	286	81	16	3	31	150	1	66

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	367	0	0	197	0	0	692	699	194	676	662	327
Stage 1	-	-	-	-	-	-	314	314	-	345	345	-
Stage 2	-	-	-	-	-	-	378	385	-	331	317	-
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	1192	-	-	1376	-	-	358	364	847	367	382	714
Stage 1	-	-	-	-	-	-	697	656	-	671	636	-
Stage 2	-	-	-	-	-	-	644	611	-	682	654	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1192	-	-	1376	-	-	310	343	847	336	360	714
Mov Cap-2 Maneuver	-	-	-	-	-	-	310	343	-	336	360	-
Stage 1	-	-	-	-	-	-	662	623	-	637	632	-
Stage 2	-	-	-	-	-	-	580	607	-	621	621	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.9	0.2	12.7	24.2
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	520	1192	-	-	1376	-	-	400
HCM Lane V/C Ratio	0.096	0.05	-	-	0.006	-	-	0.543
HCM Control Delay (s)	12.7	8.2	-	-	7.6	-	-	24.2
HCM Lane LOS	B	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.3	0.2	-	-	0	-	-	3.1

Intersection	
Intersection Delay, s/veh	19.9
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	35	164	75	48	30	191	61	42	14	247	5
Future Vol, veh/h	2	35	164	75	48	30	191	61	42	14	247	5
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	50	234	107	69	43	273	87	60	20	353	7
Number of Lanes	0	1	1	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	2
HCM Control Delay	15	18.2	18.2	26.3
HCM LOS	B	C	C	D

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	5%	0%	49%	100%	0%
Vol Thru, %	0%	59%	95%	0%	31%	0%	98%
Vol Right, %	0%	41%	0%	100%	20%	0%	2%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	191	103	37	164	153	14	252
LT Vol	191	0	2	0	75	14	0
Through Vol	0	61	35	0	48	0	247
RT Vol	0	42	0	164	30	0	5
Lane Flow Rate	273	147	53	234	219	20	360
Geometry Grp	7	7	7	7	6	7	7
Degree of Util (X)	0.589	0.285	0.115	0.46	0.481	0.043	0.727
Departure Headway (Hd)	7.775	6.967	7.809	7.061	7.925	7.795	7.267
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	461	514	457	508	452	458	497
Service Time	5.557	4.749	5.591	4.842	6.015	5.573	5.045
HCM Lane V/C Ratio	0.592	0.286	0.116	0.461	0.485	0.044	0.724
HCM Control Delay	21.2	12.5	11.6	15.8	18.2	10.9	27.2
HCM Lane LOS	C	B	B	C	C	B	D
HCM 95th-tile Q	3.7	1.2	0.4	2.4	2.6	0.1	5.9

Intersection	
Intersection Delay, s/veh	14.2
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	34	141	270	42	0	65	0	124	0	0	0
Future Vol, veh/h	0	34	141	270	42	0	65	0	124	0	0	0
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.92	0.70	0.70
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	49	201	386	60	0	93	0	177	0	0	0
Number of Lanes	0	1	1	1	1	0	1	0	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	2	2
HCM Control Delay	10	18.6	10.8	0
HCM LOS	A	C	B	-

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	100%	0%	0%	0%	100%	0%	0%
Vol Thru, %	0%	0%	100%	0%	0%	100%	100%
Vol Right, %	0%	100%	0%	100%	0%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	65	124	34	141	270	42	0
LT Vol	65	0	0	0	270	0	0
Through Vol	0	0	34	0	0	42	0
RT Vol	0	124	0	141	0	0	0
Lane Flow Rate	93	177	49	201	386	60	0
Geometry Grp	7	7	7	7	7	7	6
Degree of Util (X)	0.178	0.28	0.08	0.294	0.66	0.094	0
Departure Headway (Hd)	6.898	5.685	5.957	5.247	6.161	5.655	6.969
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	521	632	602	685	586	635	0
Service Time	4.633	3.419	3.69	2.979	3.887	3.381	5.023
HCM Lane V/C Ratio	0.179	0.28	0.081	0.293	0.659	0.094	0
HCM Control Delay	11.1	10.6	9.2	10.2	20.1	9	10
HCM Lane LOS	B	B	A	B	C	A	N
HCM 95th-tile Q	0.6	1.1	0.3	1.2	4.9	0.3	0

Intersection	
Int Delay, s/veh	3.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	34	120	4	2	228	6	13	2	16	9	2	64
Future Vol, veh/h	34	120	4	2	228	6	13	2	16	9	2	64
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	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	70	100	70	70	70	70	70	70	70	70	70	70
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	49	120	6	3	326	9	19	3	23	13	3	91

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	335	0	0	126	0	0	605	562	123	571	561	331
Stage 1	-	-	-	-	-	-	221	221	-	337	337	-
Stage 2	-	-	-	-	-	-	384	341	-	234	224	-
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	1224	-	-	1460	-	-	410	436	928	432	436	711
Stage 1	-	-	-	-	-	-	781	720	-	677	641	-
Stage 2	-	-	-	-	-	-	639	639	-	769	718	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1224	-	-	1460	-	-	344	418	928	406	418	711
Mov Cap-2 Maneuver	-	-	-	-	-	-	344	418	-	406	418	-
Stage 1	-	-	-	-	-	-	750	691	-	650	640	-
Stage 2	-	-	-	-	-	-	553	638	-	717	689	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.2	0.1	12.6	11.7
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	518	1224	-	-	1460	-	-	641
HCM Lane V/C Ratio	0.085	0.04	-	-	0.002	-	-	0.167
HCM Control Delay (s)	12.6	8.1	-	-	7.5	-	-	11.7
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.3	0.1	-	-	0	-	-	0.6

Intersection	
Int Delay, s/veh	6.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	31	46	46	52	0	15	28	15	0	81	9
Future Vol, veh/h	3	31	46	46	52	0	15	28	15	0	81	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	-	-	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	3	34	50	50	57	0	16	30	16	0	88	10

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	57	0	0	84	0	0	271	222	59	245	247	57
Stage 1	-	-	-	-	-	-	65	65	-	157	157	-
Stage 2	-	-	-	-	-	-	206	157	-	88	90	-
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	1547	-	-	1513	-	-	682	677	1007	709	655	1009
Stage 1	-	-	-	-	-	-	946	841	-	845	768	-
Stage 2	-	-	-	-	-	-	796	768	-	920	820	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1547	-	-	1513	-	-	587	653	1007	654	631	1009
Mov Cap-2 Maneuver	-	-	-	-	-	-	587	653	-	654	631	-
Stage 1	-	-	-	-	-	-	944	839	-	843	742	-
Stage 2	-	-	-	-	-	-	671	742	-	871	818	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	3.5	10.7	11.4
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	696	1547	-	-	1513	-	-	656
HCM Lane V/C Ratio	0.091	0.002	-	-	0.033	-	-	0.149
HCM Control Delay (s)	10.7	7.3	0	-	7.5	0	-	11.4
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.3	0	-	-	0.1	-	-	0.5

Intersection	
Int Delay, s/veh	7.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	5	44	108	15	0	27	22	37	0	63	1
Future Vol, veh/h	0	5	44	108	15	0	27	22	37	0	63	1
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	0	5	48	117	16	0	29	24	40	0	68	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	16	0	0	53	0	0	314	279	29	311	303	16
Stage 1	-	-	-	-	-	-	29	29	-	250	250	-
Stage 2	-	-	-	-	-	-	285	250	-	61	53	-
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	1602	-	-	1553	-	-	639	629	1046	642	610	1063
Stage 1	-	-	-	-	-	-	988	871	-	754	700	-
Stage 2	-	-	-	-	-	-	722	700	-	950	851	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1602	-	-	1553	-	-	546	581	1046	564	564	1063
Mov Cap-2 Maneuver	-	-	-	-	-	-	546	581	-	564	564	-
Stage 1	-	-	-	-	-	-	988	871	-	754	647	-
Stage 2	-	-	-	-	-	-	596	647	-	888	851	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	6.6	10.9	12.2
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	701	1602	-	-	1553	-	-	568
HCM Lane V/C Ratio	0.133	-	-	-	0.076	-	-	0.122
HCM Control Delay (s)	10.9	0	-	-	7.5	0	-	12.2
HCM Lane LOS	B	A	-	-	A	A	-	B
HCM 95th %tile Q(veh)	0.5	0	-	-	0.2	-	-	0.4

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	33	1143	147	885	154	217	106	71
v/c Ratio	0.18	0.73	0.59	0.46	0.50	0.25	0.39	0.09
Control Delay	36.4	21.1	44.4	13.0	28.7	5.6	26.8	12.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.4	21.1	44.4	13.0	28.7	5.6	26.8	12.1
Queue Length 50th (ft)	13	184	58	70	58	4	39	6
Queue Length 95th (ft)	48	#457	#194	286	109	26	80	20
Internal Link Dist (ft)		4010		607		1657		634
Turn Bay Length (ft)								
Base Capacity (vph)	212	1964	272	2240	418	1106	364	1065
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.58	0.54	0.40	0.37	0.20	0.29	0.07

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	974	112	140	796	45	146	25	181	101	34	33
Future Volume (veh/h)	31	974	112	140	796	45	146	25	181	101	34	33
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	33	1025	118	147	838	47	154	26	191	106	36	35
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	63	1350	155	188	1677	94	404	409	365	267	419	356
Arrive On Green	0.04	0.42	0.42	0.11	0.49	0.49	0.23	0.23	0.23	0.23	0.23	0.23
Sat Flow, veh/h	1781	3211	369	1781	3421	192	1329	1777	1585	1164	1820	1548
Grp Volume(v), veh/h	33	567	576	147	435	450	154	26	191	106	35	36
Grp Sat Flow(s),veh/h/ln	1781	1777	1804	1781	1777	1836	1329	1777	1585	1164	1777	1592
Q Serve(g_s), s	1.1	16.0	16.0	4.7	9.7	9.7	6.1	0.7	6.2	5.2	0.9	1.0
Cycle Q Clear(g_c), s	1.1	16.0	16.0	4.7	9.7	9.7	7.1	0.7	6.2	11.4	0.9	1.0
Prop In Lane	1.00		0.20	1.00		0.10	1.00		1.00	1.00		0.97
Lane Grp Cap(c), veh/h	63	747	758	188	871	900	404	409	365	267	409	366
V/C Ratio(X)	0.52	0.76	0.76	0.78	0.50	0.50	0.38	0.06	0.52	0.40	0.09	0.10
Avail Cap(c_a), veh/h	212	986	1001	272	986	1019	459	482	430	315	482	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	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.9	14.5	14.5	25.7	10.1	10.1	20.7	17.7	19.9	24.8	17.8	17.9
Incr Delay (d2), s/veh	6.6	2.5	2.5	8.9	0.4	0.4	0.6	0.1	1.2	1.0	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	6.0	6.1	2.4	3.3	3.4	1.9	0.3	2.3	1.4	0.4	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.5	17.0	17.0	34.6	10.6	10.6	21.3	17.8	21.0	25.8	17.9	18.0
LnGrp LOS	C	B	B	C	B	B	C	B	C	C	B	B
Approach Vol, veh/h		1176			1032			371			177	
Approach Delay, s/veh		17.5			14.0			20.9			22.6	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.1	29.7		18.2	7.0	33.8		18.2
Change Period (Y+Rc), s	4.9	4.9		4.6	4.9	4.9		4.6
Max Green Setting (Gmax), s	9.0	32.7		16.0	7.0	32.7		16.0
Max Q Clear Time (g_c+I1), s	6.7	18.0		13.4	3.1	11.7		9.1
Green Ext Time (p_c), s	0.1	6.7		0.2	0.0	5.8		1.1

Intersection Summary			
HCM 6th Ctrl Delay			17.0
HCM 6th LOS			B

Notes

User approved pedestrian interval to be less than phase max green.

Lane Group	EBT	WBL	WBT	NBL	NBT
Lane Group Flow (vph)	1321	29	824	165	37
v/c Ratio	0.55	0.12	0.43	0.46	0.05
Control Delay	12.7	30.3	8.2	24.2	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	12.7	30.3	8.2	24.2	0.1
Queue Length 50th (ft)	65	7	58	36	0
Queue Length 95th (ft)	248	39	163	118	0
Internal Link Dist (ft)	443		462		645
Turn Bay Length (ft)		200			
Base Capacity (vph)	3419	892	3274	814	1111
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.39	0.03	0.25	0.20	0.03

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1120	174	28	808	0	162	0	36	0	0	0
Future Volume (veh/h)	0	1120	174	28	808	0	162	0	36	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	1143	178	29	824	0	165	0	37	0	0	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	2	2	2	2	0	2	2	2	2	2	2
Cap, veh/h	0	2127	331	61	2244	0	419	0	217	0	256	0
Arrive On Green	0.00	0.48	0.48	0.03	0.63	0.00	0.14	0.00	0.14	0.00	0.00	0.00
Sat Flow, veh/h	0	4624	694	1781	3647	0	1781	0	1585	0	1870	0
Grp Volume(v), veh/h	0	873	448	29	824	0	165	0	37	0	0	0
Grp Sat Flow(s),veh/h/ln	0	1702	1746	1781	1777	0	1781	0	1585	0	1870	0
Q Serve(g_s), s	0.0	7.4	7.4	0.7	4.6	0.0	3.6	0.0	0.8	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	7.4	7.4	0.7	4.6	0.0	3.6	0.0	0.8	0.0	0.0	0.0
Prop In Lane	0.00		0.40	1.00		0.00	1.00		1.00	0.00		0.00
Lane Grp Cap(c), veh/h	0	1625	833	61	2244	0	419	0	217	0	256	0
V/C Ratio(X)	0.00	0.54	0.54	0.47	0.37	0.00	0.39	0.00	0.17	0.00	0.00	0.00
Avail Cap(c_a), veh/h	0	2718	1394	1048	2837	0	1376	0	1068	0	1260	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)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	7.5	7.5	19.4	3.6	0.0	16.8	0.0	15.6	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.3	0.5	5.6	0.1	0.0	0.6	0.0	0.4	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	0.0	1.9	2.0	0.3	0.7	0.0	1.3	0.0	0.3	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	7.8	8.1	25.0	3.7	0.0	17.4	0.0	16.0	0.0	0.0	0.0
LnGrp LOS	A	A	A	C	A	A	B	A	B	A	A	A
Approach Vol, veh/h		1321			853			202			0	
Approach Delay, s/veh		7.9			4.4			17.2			0.0	
Approach LOS		A			A			B				

Timer - Assigned Phs		2	3	4		6		8				
Phs Duration (G+Y+Rc), s		10.2	6.3	24.5		10.2		30.8				
Change Period (Y+Rc), s		4.6	4.9	4.9		4.6		4.9				
Max Green Setting (Gmax), s		27.6	24.1	32.7		27.6		32.7				
Max Q Clear Time (g_c+I1), s		5.6	2.7	9.4		0.0		6.6				
Green Ext Time (p_c), s		0.6	0.0	10.2		0.0		6.4				

Intersection Summary			
HCM 6th Ctrl Delay			7.4
HCM 6th LOS			A

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	320	974	20	711	3	27	36	7	255
v/c Ratio	0.66	0.50	0.09	0.60	0.01	0.10	0.15	0.02	0.48
Control Delay	36.3	13.6	32.4	19.1	34.3	14.7	31.3	19.3	6.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.3	13.6	32.4	19.1	34.3	14.7	31.3	19.3	6.5
Queue Length 50th (ft)	37	45	4	67	1	2	8	2	0
Queue Length 95th (ft)	#219	371	35	245	11	23	52	13	53
Internal Link Dist (ft)		423		1195		1198		751	
Turn Bay Length (ft)	200		200		120		120		
Base Capacity (vph)	487	2351	323	2467	574	949	574	1072	1019
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.66	0.41	0.06	0.29	0.01	0.03	0.06	0.01	0.25

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	294	894	2	18	607	47	3	6	18	33	6	235
Future Volume (veh/h)	294	894	2	18	607	47	3	6	18	33	6	235
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	320	972	2	20	660	51	3	7	20	36	7	255
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	440	1461	3	43	998	77	7	73	208	69	383	325
Arrive On Green	0.13	0.40	0.40	0.02	0.30	0.30	0.00	0.17	0.17	0.04	0.20	0.20
Sat Flow, veh/h	3456	3638	7	1781	3343	258	1781	428	1222	1781	1870	1585
Grp Volume(v), veh/h	320	475	499	20	351	360	3	0	27	36	7	255
Grp Sat Flow(s),veh/h/ln	1728	1777	1869	1781	1777	1824	1781	0	1650	1781	1870	1585
Q Serve(g_s), s	4.6	11.3	11.3	0.6	9.0	9.0	0.1	0.0	0.7	1.0	0.2	7.9
Cycle Q Clear(g_c), s	4.6	11.3	11.3	0.6	9.0	9.0	0.1	0.0	0.7	1.0	0.2	7.9
Prop In Lane	1.00		0.00	1.00		0.14	1.00		0.74	1.00		1.00
Lane Grp Cap(c), veh/h	440	714	751	43	530	544	7	0	280	69	383	325
V/C Ratio(X)	0.73	0.67	0.67	0.47	0.66	0.66	0.41	0.00	0.10	0.52	0.02	0.79
Avail Cap(c_a), veh/h	465	1118	1176	308	1118	1147	548	0	889	548	1007	854
HCM Platoon Ratio	1.00	1.00	1.00	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	1.00	1.00
Uniform Delay (d), s/veh	21.8	12.7	12.7	25.0	15.9	15.9	25.8	0.0	18.2	24.5	16.5	19.6
Incr Delay (d2), s/veh	5.4	1.1	1.0	7.6	1.4	1.4	33.4	0.0	0.1	5.9	0.0	4.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	3.9	4.1	0.3	3.4	3.5	0.1	0.0	0.3	0.5	0.1	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.2	13.8	13.7	32.7	17.4	17.3	59.3	0.0	18.4	30.4	16.5	23.8
LnGrp LOS	C	B	B	C	B	B	E	A	B	C	B	C
Approach Vol, veh/h		1294			731			30			298	
Approach Delay, s/veh		17.1			17.8			22.5			24.4	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.6	13.4	6.2	25.8	4.8	15.2	11.5	20.4
Change Period (Y+Rc), s	4.6	4.6	4.9	4.9	4.6	4.6	4.9	4.9
Max Green Setting (Gmax), s	16.0	28.0	9.0	32.7	16.0	28.0	7.0	32.7
Max Q Clear Time (g_c+I1), s	3.0	2.7	2.6	13.3	2.1	9.9	6.6	11.0
Green Ext Time (p_c), s	0.0	0.1	0.0	6.3	0.0	0.8	0.0	4.5

Intersection Summary		
HCM 6th Ctrl Delay		18.3
HCM 6th LOS		B

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	283	749	17	1	544	12	36	23	19	226
v/c Ratio	0.74	0.36	0.02	0.00	0.52	0.05	0.14	0.10	0.07	0.53
Control Delay	37.1	8.1	0.0	25.0	16.5	24.5	20.0	24.1	22.0	9.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.1	8.1	0.0	25.0	16.5	24.5	20.0	24.1	22.0	9.4
Queue Length 50th (ft)	64	33	0	0	56	3	6	5	4	0
Queue Length 95th (ft)	#288	180	0	5	139	20	35	30	24	56
Internal Link Dist (ft)		1195			2587		1879		775	
Turn Bay Length (ft)	350		300	200		120		120		
Base Capacity (vph)	381	2567	1180	342	2469	609	1093	609	1123	1044
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.74	0.29	0.01	0.00	0.22	0.02	0.03	0.04	0.02	0.22

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	255	674	15	1	457	32	11	26	6	21	17	203
Future Volume (veh/h)	255	674	15	1	457	32	11	26	6	21	17	203
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	283	749	17	1	508	36	12	29	7	23	19	226
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	336	1519	678	3	808	57	27	255	61	48	349	296
Arrive On Green	0.19	0.43	0.43	0.00	0.24	0.24	0.02	0.17	0.17	0.03	0.19	0.19
Sat Flow, veh/h	1781	3554	1585	1781	3366	238	1781	1456	351	1781	1870	1585
Grp Volume(v), veh/h	283	749	17	1	268	276	12	0	36	23	19	226
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1828	1781	0	1807	1781	1870	1585
Q Serve(g_s), s	7.9	7.9	0.3	0.0	6.9	7.0	0.3	0.0	0.9	0.7	0.4	7.0
Cycle Q Clear(g_c), s	7.9	7.9	0.3	0.0	6.9	7.0	0.3	0.0	0.9	0.7	0.4	7.0
Prop In Lane	1.00		1.00	1.00		0.13	1.00		0.19	1.00		1.00
Lane Grp Cap(c), veh/h	336	1519	678	3	426	439	27	0	316	48	349	296
V/C Ratio(X)	0.84	0.49	0.03	0.29	0.63	0.63	0.44	0.00	0.11	0.47	0.05	0.76
Avail Cap(c_a), veh/h	346	2257	1007	311	1128	1161	554	0	983	554	1017	862
HCM Platoon Ratio	1.00	1.00	1.00	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	1.00	1.00
Uniform Delay (d), s/veh	20.1	10.7	8.5	25.7	17.5	17.5	25.1	0.0	17.9	24.7	17.2	19.9
Incr Delay (d2), s/veh	16.4	0.2	0.0	40.6	1.5	1.5	10.7	0.0	0.2	7.0	0.1	4.1
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	4.5	2.6	0.1	0.1	2.7	2.8	0.2	0.0	0.3	0.4	0.2	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.6	10.9	8.5	66.2	19.0	19.0	35.9	0.0	18.0	31.7	17.3	23.9
LnGrp LOS	D	B	A	E	B	B	D	A	B	C	B	C
Approach Vol, veh/h		1049			545			48			268	
Approach Delay, s/veh		17.8			19.1			22.5			24.1	
Approach LOS		B			B			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.0	13.6	5.0	26.9	5.4	14.2	14.6	17.3				
Change Period (Y+Rc), s	4.6	4.6	4.9	4.9	4.6	4.6	4.9	4.9				
Max Green Setting (Gmax), s	16.0	28.0	9.0	32.7	16.0	28.0	10.0	32.7				
Max Q Clear Time (g_c+I1), s	2.7	2.9	2.0	9.9	2.3	9.0	9.9	9.0				
Green Ext Time (p_c), s	0.0	0.1	0.0	5.5	0.0	0.8	0.0	3.4				
Intersection Summary												
HCM 6th Ctrl Delay			19.2									
HCM 6th LOS			B									

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	147	402	40	5	289	40	26	23	5	24	16	86
Future Vol, veh/h	147	402	40	5	289	40	26	23	5	24	16	86
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	158	432	43	5	311	43	28	25	5	26	17	92
Number of Lanes	1	1	1	1	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	3	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	3	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	3
HCM Control Delay	21.8	21.8	11.5	11.8
HCM LOS	C	C	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	0%	100%	0%	100%	0%
Vol Thru, %	0%	82%	0%	100%	0%	0%	88%	0%	16%
Vol Right, %	0%	18%	0%	0%	100%	0%	12%	0%	84%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	26	28	147	402	40	5	329	24	102
LT Vol	26	0	147	0	0	5	0	24	0
Through Vol	0	23	0	402	0	0	289	0	16
RT Vol	0	5	0	0	40	0	40	0	86
Lane Flow Rate	28	30	158	432	43	5	354	26	110
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.067	0.066	0.299	0.758	0.067	0.011	0.667	0.06	0.219
Departure Headway (Hd)	8.58	7.942	6.926	6.42	5.711	7.376	6.784	8.314	7.204
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	419	452	522	566	631	488	538	432	500
Service Time	6.306	5.667	4.626	4.12	3.411	5.076	4.484	6.034	4.924
HCM Lane V/C Ratio	0.067	0.066	0.303	0.763	0.068	0.01	0.658	0.06	0.22
HCM Control Delay	11.9	11.2	12.6	26.5	8.8	10.2	22	11.6	11.9
HCM Lane LOS	B	B	B	D	A	B	C	B	B
HCM 95th-tile Q	0.2	0.2	1.2	6.7	0.2	0	4.9	0.2	0.8

Intersection	
Intersection Delay, s/veh	14.1
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	212	118	101	9	151	69	55	29	4	41	22	127
Future Vol, veh/h	212	118	101	9	151	69	55	29	4	41	22	127
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	252	140	120	11	180	82	65	35	5	49	26	151
Number of Lanes	1	1	1	1	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	3	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	3	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	3
HCM Control Delay	14	16.2	12	12.7
HCM LOS	B	C	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	0%	100%	0%	100%	0%
Vol Thru, %	0%	88%	0%	100%	0%	0%	69%	0%	15%
Vol Right, %	0%	12%	0%	0%	100%	0%	31%	0%	85%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	55	33	212	118	101	9	220	41	149
LT Vol	55	0	212	0	0	9	0	41	0
Through Vol	0	29	0	118	0	0	151	0	22
RT Vol	0	4	0	0	101	0	69	0	127
Lane Flow Rate	65	39	252	140	120	11	262	49	177
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.15	0.084	0.504	0.261	0.2	0.023	0.502	0.107	0.336
Departure Headway (Hd)	8.274	7.678	7.195	6.688	5.977	7.635	6.903	7.928	6.815
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	433	466	505	541	604	469	521	452	527
Service Time	6.025	5.429	4.895	4.388	3.677	5.378	4.646	5.673	4.56
HCM Lane V/C Ratio	0.15	0.084	0.499	0.259	0.199	0.023	0.503	0.108	0.336
HCM Control Delay	12.5	11.1	17	11.7	10.2	10.6	16.4	11.6	13
HCM Lane LOS	B	B	C	B	B	B	C	B	B
HCM 95th-tile Q	0.5	0.3	2.8	1	0.7	0.1	2.8	0.4	1.5

Intersection	
Int Delay, s/veh	7.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	65	91	6	74	1	142	6	2	1	24	12
Future Vol, veh/h	10	65	91	6	74	1	142	6	2	1	24	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	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	61	61	61	61	61	61	61	61	61	61	61	61
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	107	149	10	121	2	233	10	3	2	39	20

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	123	0	0	256	0	0	386	357	182	362	430	122
Stage 1	-	-	-	-	-	-	214	214	-	142	142	-
Stage 2	-	-	-	-	-	-	172	143	-	220	288	-
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	1464	-	-	1309	-	-	573	569	861	594	518	929
Stage 1	-	-	-	-	-	-	788	725	-	861	779	-
Stage 2	-	-	-	-	-	-	830	779	-	782	674	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1464	-	-	1309	-	-	519	557	861	574	507	929
Mov Cap-2 Maneuver	-	-	-	-	-	-	519	557	-	574	507	-
Stage 1	-	-	-	-	-	-	778	716	-	850	773	-
Stage 2	-	-	-	-	-	-	765	773	-	758	665	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.6	17.8	11.7
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	523	1464	-	-	1309	-	-	597
HCM Lane V/C Ratio	0.47	0.011	-	-	0.008	-	-	0.102
HCM Control Delay (s)	17.8	7.5	0	-	7.8	0	-	11.7
HCM Lane LOS	C	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	2.5	0	-	-	0	-	-	0.3

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	18	138	13	19	108	29	7	1	11	49	1	18
Future Vol, veh/h	18	138	13	19	108	29	7	1	11	49	1	18
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	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	72	72	92	92	72	72	92	92	92	72	92	72
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	25	192	14	21	150	40	8	1	12	68	1	25

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	190	0	0	206	0	0	474	481	199	468	468	170
Stage 1	-	-	-	-	-	-	249	249	-	212	212	-
Stage 2	-	-	-	-	-	-	225	232	-	256	256	-
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	1384	-	-	1365	-	-	501	485	842	505	493	874
Stage 1	-	-	-	-	-	-	755	701	-	790	727	-
Stage 2	-	-	-	-	-	-	778	713	-	749	696	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1384	-	-	1365	-	-	473	469	842	484	477	874
Mov Cap-2 Maneuver	-	-	-	-	-	-	473	469	-	484	477	-
Stage 1	-	-	-	-	-	-	741	688	-	776	716	-
Stage 2	-	-	-	-	-	-	743	702	-	724	683	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.8	0.8	10.9	12.9
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	633	1384	-	-	1365	-	-	549
HCM Lane V/C Ratio	0.033	0.018	-	-	0.015	-	-	0.171
HCM Control Delay (s)	10.9	7.6	-	-	7.7	-	-	12.9
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	0.6

Intersection	
Intersection Delay, s/veh	13.8
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	21	114	66	93	74	1	60	136	94	0	82	13
Future Vol, veh/h	21	114	66	93	74	1	60	136	94	0	82	13
Peak Hour Factor	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	29	158	92	129	103	1	83	189	131	0	114	18
Number of Lanes	0	1	1	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	2
HCM Control Delay	11.9	15.1	14.9	11.8
HCM LOS	B	C	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	16%	0%	55%	0%	0%
Vol Thru, %	0%	59%	84%	0%	44%	100%	86%
Vol Right, %	0%	41%	0%	100%	1%	0%	14%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	60	230	135	66	168	0	95
LT Vol	60	0	21	0	93	0	0
Through Vol	0	136	114	0	74	0	82
RT Vol	0	94	0	66	1	0	13
Lane Flow Rate	83	319	188	92	233	0	132
Geometry Grp	7	7	7	7	6	7	7
Degree of Util (X)	0.16	0.541	0.348	0.15	0.438	0	0.248
Departure Headway (Hd)	6.891	6.092	6.677	5.885	6.76	6.858	6.76
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	518	588	534	604	530	0	528
Service Time	4.664	3.865	4.461	3.669	4.844	4.652	4.554
HCM Lane V/C Ratio	0.16	0.543	0.352	0.152	0.44	0	0.25
HCM Control Delay	11	15.9	13	9.7	15.1	9.7	11.8
HCM Lane LOS	B	C	B	A	C	N	B
HCM 95th-tile Q	0.6	3.2	1.5	0.5	2.2	0	1

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	121	144	131	84	0	202	0	145	0	0	0
Future Vol, veh/h	0	121	144	131	84	0	202	0	145	0	0	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	0	132	157	142	91	0	220	0	158	0	0	0
Number of Lanes	0	1	1	1	1	0	1	0	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	2	2
HCM Control Delay	10	10.8	11.7	0
HCM LOS	A	B	B	-

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	100%	0%	0%	0%	100%	0%	0%
Vol Thru, %	0%	0%	100%	0%	0%	100%	100%
Vol Right, %	0%	100%	0%	100%	0%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	202	145	121	144	131	84	0
LT Vol	202	0	0	0	131	0	0
Through Vol	0	0	121	0	0	84	0
RT Vol	0	145	0	144	0	0	0
Lane Flow Rate	220	158	132	157	142	91	0
Geometry Grp	7	7	7	7	7	7	6
Degree of Util (X)	0.393	0.229	0.219	0.229	0.258	0.153	0
Departure Headway (Hd)	6.444	5.235	5.983	5.273	6.52	6.013	6.588
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	560	687	601	681	551	597	0
Service Time	4.172	2.962	3.712	3.002	4.25	3.743	4.631
HCM Lane V/C Ratio	0.393	0.23	0.22	0.231	0.258	0.152	0
HCM Control Delay	13.3	9.5	10.4	9.6	11.5	9.8	9.6
HCM Lane LOS	B	A	B	A	B	A	N
HCM 95th-tile Q	1.9	0.9	0.8	0.9	1	0.5	0

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	75	171	20	14	157	11	9	1	8	7	1	45
Future Vol, veh/h	75	171	20	14	157	11	9	1	8	7	1	45
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	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	82	186	22	15	171	12	10	1	9	8	1	49

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	183	0	0	208	0	0	593	574	197	573	579	177
Stage 1	-	-	-	-	-	-	361	361	-	207	207	-
Stage 2	-	-	-	-	-	-	232	213	-	366	372	-
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	1392	-	-	1363	-	-	417	429	844	430	426	866
Stage 1	-	-	-	-	-	-	657	626	-	795	731	-
Stage 2	-	-	-	-	-	-	771	726	-	653	619	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1392	-	-	1363	-	-	372	399	844	402	397	866
Mov Cap-2 Maneuver	-	-	-	-	-	-	372	399	-	402	397	-
Stage 1	-	-	-	-	-	-	618	589	-	748	723	-
Stage 2	-	-	-	-	-	-	718	718	-	607	582	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.2	0.6	12.5	10.3
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	498	1392	-	-	1363	-	-	737
HCM Lane V/C Ratio	0.039	0.059	-	-	0.011	-	-	0.078
HCM Control Delay (s)	12.5	7.7	-	-	7.7	-	-	10.3
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.1	0.2	-	-	0	-	-	0.3

Intersection	
Int Delay, s/veh	8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	78	32	34	55	0	50	104	57	0	60	9
Future Vol, veh/h	15	78	32	34	55	0	50	104	57	0	60	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	-	-	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	16	85	35	37	60	0	54	113	62	0	65	10

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	60	0	0	120	0	0	307	269	103	356	286	60
Stage 1	-	-	-	-	-	-	135	135	-	134	134	-
Stage 2	-	-	-	-	-	-	172	134	-	222	152	-
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	1544	-	-	1468	-	-	645	637	952	599	623	1005
Stage 1	-	-	-	-	-	-	868	785	-	869	785	-
Stage 2	-	-	-	-	-	-	830	785	-	780	772	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1544	-	-	1468	-	-	570	613	952	468	600	1005
Mov Cap-2 Maneuver	-	-	-	-	-	-	570	613	-	468	600	-
Stage 1	-	-	-	-	-	-	858	776	-	859	765	-
Stage 2	-	-	-	-	-	-	732	765	-	616	764	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.9	2.9	13.2	11.5
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	665	1544	-	-	1468	-	-	633
HCM Lane V/C Ratio	0.345	0.011	-	-	0.025	-	-	0.118
HCM Control Delay (s)	13.2	7.4	0	-	7.5	0	-	11.5
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	1.5	0	-	-	0.1	-	-	0.4

Intersection	
Int Delay, s/veh	9.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	37	41	80	22	0	51	78	134	0	47	2
Future Vol, veh/h	4	37	41	80	22	0	51	78	134	0	47	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	-	-	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	4	40	45	87	24	0	55	85	146	0	51	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	24	0	0	85	0	0	296	269	63	384	291	24
Stage 1	-	-	-	-	-	-	71	71	-	198	198	-
Stage 2	-	-	-	-	-	-	225	198	-	186	93	-
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	1591	-	-	1512	-	-	656	637	1002	574	619	1052
Stage 1	-	-	-	-	-	-	939	836	-	804	737	-
Stage 2	-	-	-	-	-	-	778	737	-	816	818	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1591	-	-	1512	-	-	583	598	1002	417	581	1052
Mov Cap-2 Maneuver	-	-	-	-	-	-	583	598	-	417	581	-
Stage 1	-	-	-	-	-	-	936	833	-	802	694	-
Stage 2	-	-	-	-	-	-	678	694	-	625	816	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	5.9	12.8	11.7
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	748	1591	-	-	1512	-	-	592
HCM Lane V/C Ratio	0.382	0.003	-	-	0.058	-	-	0.09
HCM Control Delay (s)	12.8	7.3	0	-	7.5	0	-	11.7
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	1.8	0	-	-	0.2	-	-	0.3

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	55	1234	218	1112	124	115	182	119
v/c Ratio	0.33	0.83	0.94	0.59	0.42	0.14	0.61	0.15
Control Delay	40.1	25.3	82.9	16.4	27.2	7.1	33.2	10.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.1	25.3	82.9	16.4	27.2	7.1	33.2	10.7
Queue Length 50th (ft)	23	223	98	183	48	3	74	9
Queue Length 95th (ft)	65	#462	#280	355	84	17	121	24
Internal Link Dist (ft)		4010		607		1657		634
Turn Bay Length (ft)								
Base Capacity (vph)	180	1668	232	1882	348	926	350	944
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.74	0.94	0.59	0.36	0.12	0.52	0.13

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	875	174	185	913	32	105	17	81	155	43	58
Future Volume (veh/h)	47	875	174	185	913	32	105	17	81	155	43	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	55	1029	205	218	1074	38	124	20	95	182	51	68
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	86	1259	250	242	1799	64	345	392	350	327	392	350
Arrive On Green	0.05	0.43	0.43	0.14	0.51	0.51	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	1781	2954	587	1781	3501	124	1273	1777	1585	1277	1777	1585
Grp Volume(v), veh/h	55	618	616	218	545	567	124	20	95	182	51	68
Grp Sat Flow(s),veh/h/ln	1781	1777	1765	1781	1777	1848	1273	1777	1585	1277	1777	1585
Q Serve(g_s), s	2.0	20.3	20.4	8.0	14.3	14.3	5.8	0.6	3.3	9.1	1.5	2.3
Cycle Q Clear(g_c), s	2.0	20.3	20.4	8.0	14.3	14.3	8.1	0.6	3.3	12.4	1.5	2.3
Prop In Lane	1.00		0.33	1.00		0.07	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	86	757	752	242	913	950	345	392	350	327	392	350
V/C Ratio(X)	0.64	0.82	0.82	0.90	0.60	0.60	0.36	0.05	0.27	0.56	0.13	0.19
Avail Cap(c_a), veh/h	188	877	871	242	913	950	371	429	383	354	429	383
HCM Platoon Ratio	1.00	1.00	1.00	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	31.0	16.7	16.8	28.2	11.3	11.3	24.3	20.3	21.4	26.5	20.7	21.0
Incr Delay (d2), s/veh	7.8	5.3	5.5	32.9	1.1	1.0	0.6	0.1	0.4	1.6	0.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	8.4	8.4	5.4	5.0	5.2	1.8	0.2	1.2	2.8	0.6	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.8	22.1	22.3	61.1	12.4	12.3	25.0	20.4	21.8	28.2	20.9	21.3
LnGrp LOS	D	C	C	E	B	B	C	C	C	C	C	C
Approach Vol, veh/h		1289			1330			239			301	
Approach Delay, s/veh		22.9			20.3			23.3			25.4	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.9	33.1		19.2	8.1	39.0		19.2				
Change Period (Y+Rc), s	4.9	4.9		4.6	4.9	4.9		4.6				
Max Green Setting (Gmax), s	9.0	32.7		16.0	7.0	32.7		16.0				
Max Q Clear Time (g_c+I1), s	10.0	22.4		14.4	4.0	16.3		10.1				
Green Ext Time (p_c), s	0.0	5.8		0.2	0.0	6.9		0.5				
Intersection Summary												
HCM 6th Ctrl Delay			22.1									
HCM 6th LOS			C									

Notes

User approved pedestrian interval to be less than phase max green.

Lane Group	EBT	WBL	WBT	NBL	NBT
Lane Group Flow (vph)	1138	35	1722	93	14
v/c Ratio	0.35	0.14	0.68	0.35	0.02
Control Delay	8.1	25.4	7.9	25.5	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	8.1	25.4	7.9	25.5	0.1
Queue Length 50th (ft)	47	10	157	25	0
Queue Length 95th (ft)	127	33	225	64	0
Internal Link Dist (ft)	443		392		645
Turn Bay Length (ft)		200			
Base Capacity (vph)	3356	938	3476	838	1131
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.34	0.04	0.50	0.11	0.01

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	849	73	28	1395	0	75	0	11	0	0	0
Future Volume (veh/h)	0	849	73	28	1395	0	75	0	11	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	1048	90	35	1722	0	93	0	14	0	0	0
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	0	2	2	2	2	0	2	2	2	2	2	2
Cap, veh/h	0	2452	210	72	2399	0	335	0	138	0	163	0
Arrive On Green	0.00	0.51	0.51	0.04	0.68	0.00	0.09	0.00	0.09	0.00	0.00	0.00
Sat Flow, veh/h	0	4958	411	1781	3647	0	1781	0	1585	0	1870	0
Grp Volume(v), veh/h	0	744	394	35	1722	0	93	0	14	0	0	0
Grp Sat Flow(s),veh/h/ln	0	1702	1796	1781	1777	0	1781	0	1585	0	1870	0
Q Serve(g_s), s	0.0	5.5	5.5	0.8	12.2	0.0	2.0	0.0	0.3	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	5.5	5.5	0.8	12.2	0.0	2.0	0.0	0.3	0.0	0.0	0.0
Prop In Lane	0.00		0.23	1.00		0.00	1.00		1.00	0.00		0.00
Lane Grp Cap(c), veh/h	0	1743	920	72	2399	0	335	0	138	0	163	0
V/C Ratio(X)	0.00	0.43	0.43	0.49	0.72	0.00	0.28	0.00	0.10	0.00	0.00	0.00
Avail Cap(c_a), veh/h	0	2788	1471	1075	2911	0	1412	0	1096	0	1293	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)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	6.1	6.1	18.8	4.1	0.0	17.6	0.0	16.8	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.2	0.3	5.0	0.7	0.0	0.4	0.0	0.3	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	0.0	1.2	1.3	0.4	1.4	0.0	0.8	0.0	0.1	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	6.3	6.4	23.8	4.8	0.0	18.0	0.0	17.1	0.0	0.0	0.0
LnGrp LOS	A	A	A	C	A	A	B	A	B	A	A	A
Approach Vol, veh/h		1138			1757			107			0	
Approach Delay, s/veh		6.3			5.2			17.9			0.0	
Approach LOS		A			A			B				
Timer - Assigned Phs		2	3	4		6		8				
Phs Duration (G+Y+Rc), s		8.1	6.5	25.3		8.1		31.8				
Change Period (Y+Rc), s		4.6	4.9	4.9		4.6		4.9				
Max Green Setting (Gmax), s		27.6	24.1	32.7		27.6		32.7				
Max Q Clear Time (g_c+I1), s		4.0	2.8	7.5		0.0		14.2				
Green Ext Time (p_c), s		0.3	0.1	8.7		0.0		12.8				
Intersection Summary												
HCM 6th Ctrl Delay			6.0									
HCM 6th LOS			A									

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	201	826	28	1367	33	29	59	12	437
v/c Ratio	0.58	0.40	0.17	0.82	0.19	0.12	0.29	0.04	0.76
Control Delay	43.1	14.9	38.6	25.5	38.3	12.7	37.6	25.9	15.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.1	14.9	38.6	25.5	38.3	12.7	37.6	25.9	15.0
Queue Length 50th (ft)	38	49	10	198	12	1	20	4	20
Queue Length 95th (ft)	#108	272	40	#562	45	19	67	17	72
Internal Link Dist (ft)		493		1195		1198		751	
Turn Bay Length (ft)	200		200		120		120		
Base Capacity (vph)	344	2071	228	1756	406	659	406	756	867
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.58	0.40	0.12	0.78	0.08	0.04	0.15	0.02	0.50

Intersection Summary

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	163	659	10	23	1082	25	27	2	22	48	10	354
Future Volume (veh/h)	163	659	10	23	1082	25	27	2	22	48	10	354
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	201	814	12	28	1336	31	33	2	27	59	12	388
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	277	1585	23	51	1387	32	57	28	384	79	505	428
Arrive On Green	0.08	0.44	0.44	0.03	0.39	0.39	0.03	0.26	0.26	0.04	0.27	0.27
Sat Flow, veh/h	3456	3585	53	1781	3550	82	1781	110	1491	1781	1870	1585
Grp Volume(v), veh/h	201	403	423	28	668	699	33	0	29	59	12	388
Grp Sat Flow(s),veh/h/ln	1728	1777	1861	1781	1777	1856	1781	0	1602	1781	1870	1585
Q Serve(g_s), s	4.8	13.7	13.7	1.3	30.7	30.8	1.5	0.0	1.1	2.7	0.4	19.8
Cycle Q Clear(g_c), s	4.8	13.7	13.7	1.3	30.7	30.8	1.5	0.0	1.1	2.7	0.4	19.8
Prop In Lane	1.00		0.03	1.00		0.04	1.00		0.93	1.00		1.00
Lane Grp Cap(c), veh/h	277	786	823	51	694	725	57	0	413	79	505	428
V/C Ratio(X)	0.73	0.51	0.51	0.55	0.96	0.96	0.58	0.00	0.07	0.74	0.02	0.91
Avail Cap(c_a), veh/h	289	786	823	192	694	725	341	0	536	341	626	530
HCM Platoon Ratio	1.00	1.00	1.00	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	1.00	1.00
Uniform Delay (d), s/veh	37.6	16.8	16.8	40.1	24.9	24.9	40.0	0.0	23.5	39.5	22.4	29.5
Incr Delay (d2), s/veh	8.4	0.6	0.5	8.9	25.2	24.8	9.0	0.0	0.1	12.7	0.0	16.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	5.4	5.6	0.7	16.9	17.6	0.8	0.0	0.4	1.5	0.2	9.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.0	17.4	17.4	49.1	50.1	49.7	48.9	0.0	23.6	52.3	22.5	46.3
LnGrp LOS	D	B	B	D	D	D	D	A	C	D	C	D
Approach Vol, veh/h		1027			1395			62			459	
Approach Delay, s/veh		23.0			49.9			37.1			46.5	
Approach LOS		C			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.3	26.2	7.3	41.9	7.3	27.2	11.6	37.6
Change Period (Y+Rc), s	4.6	4.6	4.9	4.9	4.6	4.6	4.9	4.9
Max Green Setting (Gmax), s	16.0	28.0	9.0	32.7	16.0	28.0	7.0	32.7
Max Q Clear Time (g_c+I1), s	4.7	3.1	3.3	15.7	3.5	21.8	6.8	32.8
Green Ext Time (p_c), s	0.1	0.1	0.0	4.9	0.0	0.8	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	39.7
HCM 6th LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	447	355	56	15	822	46	43	73	39	512
v/c Ratio	0.84	0.16	0.05	0.13	0.80	0.40	0.17	0.46	0.14	0.82
Control Delay	46.2	8.9	0.1	44.5	34.3	52.3	24.1	49.1	30.9	17.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.2	8.9	0.1	44.5	34.3	52.3	24.1	49.1	30.9	17.6
Queue Length 50th (ft)	229	34	0	8	202	24	13	37	19	31
Queue Length 95th (ft)	#451	91	0	28	303	#66	39	85	43	108
Internal Link Dist (ft)		1195			2587		1879		775	
Turn Bay Length (ft)	350		300	200		120		120		
Base Capacity (vph)	533	2254	1053	117	1199	115	500	171	576	799
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.84	0.16	0.05	0.13	0.69	0.40	0.09	0.43	0.07	0.64

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	380	302	48	13	657	42	39	23	14	62	33	435
Future Volume (veh/h)	380	302	48	13	657	42	39	23	14	62	33	435
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	447	355	56	15	773	49	46	27	16	73	39	394
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	440	1736	775	31	878	56	66	262	155	94	474	402
Arrive On Green	0.25	0.49	0.49	0.02	0.26	0.26	0.04	0.24	0.24	0.05	0.25	0.25
Sat Flow, veh/h	1781	3554	1585	1781	3393	215	1781	1101	652	1781	1870	1585
Grp Volume(v), veh/h	447	355	56	15	405	417	46	0	43	73	39	394
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1832	1781	0	1753	1781	1870	1585
Q Serve(g_s), s	23.1	5.3	1.8	0.8	20.4	20.4	2.4	0.0	1.8	3.8	1.5	23.1
Cycle Q Clear(g_c), s	23.1	5.3	1.8	0.8	20.4	20.4	2.4	0.0	1.8	3.8	1.5	23.1
Prop In Lane	1.00		1.00	1.00		0.12	1.00		0.37	1.00		1.00
Lane Grp Cap(c), veh/h	440	1736	775	31	460	474	66	0	417	94	474	402
V/C Ratio(X)	1.02	0.20	0.07	0.49	0.88	0.88	0.69	0.00	0.10	0.78	0.08	0.98
Avail Cap(c_a), veh/h	440	1736	775	97	496	511	95	0	417	141	474	402
HCM Platoon Ratio	1.00	1.00	1.00	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	1.00	1.00
Uniform Delay (d), s/veh	35.2	13.6	12.7	45.5	33.3	33.3	44.5	0.0	27.8	43.7	26.6	34.7
Incr Delay (d2), s/veh	46.8	0.1	0.0	11.5	15.8	15.5	12.1	0.0	0.1	14.2	0.1	39.6
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	15.5	2.1	0.6	0.4	10.6	10.9	1.3	0.0	0.8	2.0	0.7	13.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	82.0	13.6	12.7	57.0	49.0	48.7	56.6	0.0	27.9	58.0	26.7	74.2
LnGrp LOS	F	B	B	E	D	D	E	A	C	E	C	E
Approach Vol, veh/h		858			837			89			506	
Approach Delay, s/veh		49.2			49.0			42.7			68.2	
Approach LOS		D			D			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.5	26.9	6.5	50.6	8.1	28.3	28.0	29.1
Change Period (Y+Rc), s	4.6	4.6	4.9	4.9	4.6	4.6	4.9	4.9
Max Green Setting (Gmax), s	7.4	21.3	5.1	44.1	5.0	23.7	23.1	26.1
Max Q Clear Time (g_c+I1), s	5.8	3.8	2.8	7.3	4.4	25.1	25.1	22.4
Green Ext Time (p_c), s	0.0	0.1	0.0	2.7	0.0	0.0	0.0	1.7

Intersection Summary		
HCM 6th Ctrl Delay		53.1
HCM 6th LOS		D

Intersection	
Intersection Delay, s/veh	25.9
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	40	242	29	2	391	11	52	8	5	32	24	116
Future Vol, veh/h	40	242	29	2	391	11	52	8	5	32	24	116
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	47	285	34	2	460	13	61	9	6	38	28	136
Number of Lanes	1	1	1	1	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	3	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	3	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	3
HCM Control Delay	16.7	40.7	12.5	13
HCM LOS	C	E	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	0%	100%	0%	100%	0%
Vol Thru, %	0%	62%	0%	100%	0%	0%	97%	0%	17%
Vol Right, %	0%	38%	0%	0%	100%	0%	3%	0%	83%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	52	13	40	242	29	2	402	32	140
LT Vol	52	0	40	0	0	2	0	32	0
Through Vol	0	8	0	242	0	0	391	0	24
RT Vol	0	5	0	0	29	0	11	0	116
Lane Flow Rate	61	15	47	285	34	2	473	38	165
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.147	0.033	0.099	0.559	0.06	0.005	0.881	0.086	0.327
Departure Headway (Hd)	8.64	7.852	7.579	7.07	6.357	7.233	6.706	8.237	7.137
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	415	455	473	510	563	495	539	435	504
Service Time	6.401	5.613	5.324	4.814	4.101	4.972	4.445	5.987	4.886
HCM Lane V/C Ratio	0.147	0.033	0.099	0.559	0.06	0.004	0.878	0.087	0.327
HCM Control Delay	12.9	10.9	11.2	18.5	9.5	10	40.9	11.8	13.3
HCM Lane LOS	B	B	B	C	A	A	E	B	B
HCM 95th-tile Q	0.5	0.1	0.3	3.4	0.2	0	9.9	0.3	1.4

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	7	86	163	1	50	0	68	4	2	0	7	11
Future Vol, veh/h	7	86	163	1	50	0	68	4	2	0	7	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	77	77	77	77	77	77	77	77	77	77	77	77
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	112	212	1	65	0	88	5	3	0	9	14

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	65	0	0	324	0	0	315	303	218	307	409	65
Stage 1	-	-	-	-	-	-	236	236	-	67	67	-
Stage 2	-	-	-	-	-	-	79	67	-	240	342	-
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	1537	-	-	1236	-	-	638	610	822	645	532	999
Stage 1	-	-	-	-	-	-	767	710	-	943	839	-
Stage 2	-	-	-	-	-	-	930	839	-	763	638	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1537	-	-	1236	-	-	617	605	822	635	528	999
Mov Cap-2 Maneuver	-	-	-	-	-	-	617	605	-	635	528	-
Stage 1	-	-	-	-	-	-	762	705	-	936	838	-
Stage 2	-	-	-	-	-	-	906	838	-	750	634	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.2	11.9	10
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	621	1537	-	-	1236	-	-	742
HCM Lane V/C Ratio	0.155	0.006	-	-	0.001	-	-	0.032
HCM Control Delay (s)	11.9	7.4	0	-	7.9	0	-	10
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.5	0	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	18.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	72	166	4	6	299	90	11	2	22	116	2	46
Future Vol, veh/h	72	166	4	6	299	90	11	2	22	116	2	46
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	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	70	70	70	70	70	70	70	70	70	70	70	70
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	103	237	6	9	427	129	16	3	31	166	3	66

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	556	0	0	243	0	0	990	1020	240	973	959	492
Stage 1	-	-	-	-	-	-	446	446	-	510	510	-
Stage 2	-	-	-	-	-	-	544	574	-	463	449	-
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	1015	-	-	1323	-	-	225	237	799	231	257	577
Stage 1	-	-	-	-	-	-	591	574	-	546	538	-
Stage 2	-	-	-	-	-	-	523	503	-	579	572	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1015	-	-	1323	-	-	181	212	799	202	230	577
Mov Cap-2 Maneuver	-	-	-	-	-	-	181	212	-	202	230	-
Stage 1	-	-	-	-	-	-	531	516	-	491	534	-
Stage 2	-	-	-	-	-	-	458	499	-	497	514	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.7	0.1	16.7	87.7
HCM LOS			C	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	358	1015	-	-	1323	-	-	247
HCM Lane V/C Ratio	0.14	0.101	-	-	0.006	-	-	0.949
HCM Control Delay (s)	16.7	8.9	-	-	7.7	-	-	87.7
HCM Lane LOS	C	A	-	-	A	-	-	F
HCM 95th %tile Q(veh)	0.5	0.3	-	-	0	-	-	8.6

Intersection	
Intersection Delay, s/veh	45.8
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	35	207	75	48	30	320	61	42	13	247	5
Future Vol, veh/h	2	35	207	75	48	30	320	61	42	13	247	5
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	50	296	107	69	43	457	87	60	19	353	7
Number of Lanes	0	1	1	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	2
HCM Control Delay	22.3	22.8	73.3	36.9
HCM LOS	C	C	F	E

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	5%	0%	49%	100%	0%
Vol Thru, %	0%	59%	95%	0%	31%	0%	98%
Vol Right, %	0%	41%	0%	100%	20%	0%	2%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	320	103	37	207	153	13	252
LT Vol	320	0	2	0	75	13	0
Through Vol	0	61	35	0	48	0	247
RT Vol	0	42	0	207	30	0	5
Lane Flow Rate	457	147	53	296	219	19	360
Geometry Grp	7	7	7	7	6	7	7
Degree of Util (X)	1.069	0.311	0.125	0.639	0.542	0.044	0.81
Departure Headway (Hd)	8.416	7.603	8.818	8.063	9.291	8.92	8.385
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	430	472	409	449	391	404	436
Service Time	6.18	5.366	6.518	5.763	7.291	6.62	6.085
HCM Lane V/C Ratio	1.063	0.311	0.13	0.659	0.56	0.047	0.826
HCM Control Delay	92.4	13.8	12.8	24	22.8	12	38.2
HCM Lane LOS	F	B	B	C	C	B	E
HCM 95th-tile Q	15	1.3	0.4	4.4	3.1	0.1	7.4

Intersection	
Intersection Delay, s/veh	14.2
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	34	141	270	42	0	65	0	124	0	0	0
Future Vol, veh/h	0	34	141	270	42	0	65	0	124	0	0	0
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.92	0.70	0.70
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	49	201	386	60	0	93	0	177	0	0	0
Number of Lanes	0	1	1	1	1	0	1	0	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	2	2
HCM Control Delay	10	18.6	10.8	0
HCM LOS	A	C	B	-

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	100%	0%	0%	0%	100%	0%	0%
Vol Thru, %	0%	0%	100%	0%	0%	100%	100%
Vol Right, %	0%	100%	0%	100%	0%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	65	124	34	141	270	42	0
LT Vol	65	0	0	0	270	0	0
Through Vol	0	0	34	0	0	42	0
RT Vol	0	124	0	141	0	0	0
Lane Flow Rate	93	177	49	201	386	60	0
Geometry Grp	7	7	7	7	7	7	6
Degree of Util (X)	0.178	0.28	0.08	0.294	0.66	0.094	0
Departure Headway (Hd)	6.898	5.685	5.957	5.247	6.161	5.655	6.969
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	521	632	602	685	586	635	0
Service Time	4.633	3.419	3.69	2.979	3.887	3.381	5.023
HCM Lane V/C Ratio	0.179	0.28	0.081	0.293	0.659	0.094	0
HCM Control Delay	11.1	10.6	9.2	10.2	20.1	9	10
HCM Lane LOS	B	B	A	B	C	A	N
HCM 95th-tile Q	0.6	1.1	0.3	1.2	4.9	0.3	0

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	34	204	4	6	234	7	13	2	16	9	2	64
Future Vol, veh/h	34	204	4	6	234	7	13	2	16	9	2	64
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	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	70	100	70	70	70	70	70	70	70	70	70	70
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	49	204	6	9	334	10	19	3	23	13	3	91

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	344	0	0	210	0	0	709	667	207	675	665	339
Stage 1	-	-	-	-	-	-	305	305	-	357	357	-
Stage 2	-	-	-	-	-	-	404	362	-	318	308	-
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	1215	-	-	1361	-	-	349	380	833	368	381	703
Stage 1	-	-	-	-	-	-	705	662	-	661	628	-
Stage 2	-	-	-	-	-	-	623	625	-	693	660	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1215	-	-	1361	-	-	291	362	833	343	363	703
Mov Cap-2 Maneuver	-	-	-	-	-	-	291	362	-	343	363	-
Stage 1	-	-	-	-	-	-	677	636	-	635	624	-
Stage 2	-	-	-	-	-	-	536	621	-	644	634	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.5	0.2	13.9	12.1
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	447	1215	-	-	1361	-	-	611
HCM Lane V/C Ratio	0.099	0.04	-	-	0.006	-	-	0.175
HCM Control Delay (s)	13.9	8.1	-	-	7.7	-	-	12.1
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.3	0.1	-	-	0	-	-	0.6

Intersection	
Int Delay, s/veh	6.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	31	46	46	52	0	15	28	15	0	81	9
Future Vol, veh/h	3	31	46	46	52	0	15	28	15	0	81	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	-	-	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	3	34	50	50	57	0	16	30	16	0	88	10

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	57	0	0	84	0	0	271	222	59	245	247	57
Stage 1	-	-	-	-	-	-	65	65	-	157	157	-
Stage 2	-	-	-	-	-	-	206	157	-	88	90	-
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	1547	-	-	1513	-	-	682	677	1007	709	655	1009
Stage 1	-	-	-	-	-	-	946	841	-	845	768	-
Stage 2	-	-	-	-	-	-	796	768	-	920	820	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1547	-	-	1513	-	-	587	653	1007	654	631	1009
Mov Cap-2 Maneuver	-	-	-	-	-	-	587	653	-	654	631	-
Stage 1	-	-	-	-	-	-	944	839	-	843	742	-
Stage 2	-	-	-	-	-	-	671	742	-	871	818	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	3.5	10.7	11.4
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	696	1547	-	-	1513	-	-	656
HCM Lane V/C Ratio	0.091	0.002	-	-	0.033	-	-	0.149
HCM Control Delay (s)	10.7	7.3	0	-	7.5	0	-	11.4
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.3	0	-	-	0.1	-	-	0.5

Intersection	
Int Delay, s/veh	7.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	5	44	108	15	0	27	22	37	0	63	1
Future Vol, veh/h	0	5	44	108	15	0	27	22	37	0	63	1
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	0	5	48	117	16	0	29	24	40	0	68	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	16	0	0	53	0	0	314	279	29	311	303	16
Stage 1	-	-	-	-	-	-	29	29	-	250	250	-
Stage 2	-	-	-	-	-	-	285	250	-	61	53	-
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	1602	-	-	1553	-	-	639	629	1046	642	610	1063
Stage 1	-	-	-	-	-	-	988	871	-	754	700	-
Stage 2	-	-	-	-	-	-	722	700	-	950	851	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1602	-	-	1553	-	-	546	581	1046	564	564	1063
Mov Cap-2 Maneuver	-	-	-	-	-	-	546	581	-	564	564	-
Stage 1	-	-	-	-	-	-	988	871	-	754	647	-
Stage 2	-	-	-	-	-	-	596	647	-	888	851	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	6.6	10.9	12.2
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	701	1602	-	-	1553	-	-	568
HCM Lane V/C Ratio	0.133	-	-	-	0.076	-	-	0.122
HCM Control Delay (s)	10.9	0	-	-	7.5	0	-	12.2
HCM Lane LOS	B	A	-	-	A	A	-	B
HCM 95th %tile Q(veh)	0.5	0	-	-	0.2	-	-	0.4

Intersection	
Intersection Delay, s/veh	25.9
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	72	166	4	6	299	90	11	2	22	116	2	46
Future Vol, veh/h	72	166	4	6	299	90	11	2	22	116	2	46
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	103	237	6	9	427	129	16	3	31	166	3	66
Number of Lanes	1	1	0	1	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	12.9	40	10.6	14.2
HCM LOS	B	E	B	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	31%	100%	0%	100%	0%	71%
Vol Thru, %	6%	0%	98%	0%	77%	1%
Vol Right, %	63%	0%	2%	0%	23%	28%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	35	72	170	6	389	164
LT Vol	11	72	0	6	0	116
Through Vol	2	0	166	0	299	2
RT Vol	22	0	4	0	90	46
Lane Flow Rate	50	103	243	9	556	234
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.096	0.194	0.423	0.016	0.903	0.42
Departure Headway (Hd)	6.889	6.798	6.272	6.521	5.848	6.457
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	524	525	571	546	617	553
Service Time	4.889	4.584	4.057	4.29	3.617	4.551
HCM Lane V/C Ratio	0.095	0.196	0.426	0.016	0.901	0.423
HCM Control Delay	10.6	11.2	13.6	9.4	40.5	14.2
HCM Lane LOS	B	B	B	A	E	B
HCM 95th-tile Q	0.3	0.7	2.1	0	11.1	2.1

Lane Group	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	53	296	107	112	457	147	19	360
v/c Ratio	0.21	0.42	0.47	0.44	0.91	0.14	0.14	0.81
Control Delay	32.9	6.0	39.3	29.2	53.0	9.2	43.0	43.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.9	6.0	39.3	29.2	53.0	9.2	43.0	43.7
Queue Length 50th (ft)	21	18	45	32	187	14	8	143
Queue Length 95th (ft)	50	30	87	68	#453	61	30	264
Internal Link Dist (ft)	154			2580		775		1180
Turn Bay Length (ft)								
Base Capacity (vph)	288	723	226	255	531	1041	137	512
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.41	0.47	0.44	0.86	0.14	0.14	0.70

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	35	207	75	48	30	320	61	42	13	247	5
Future Volume (veh/h)	2	35	207	75	48	30	320	61	42	13	247	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	3	50	296	107	69	43	457	87	60	19	353	7
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	13	214	637	161	97	61	499	496	342	40	408	8
Arrive On Green	0.12	0.12	0.12	0.09	0.09	0.09	0.28	0.48	0.48	0.02	0.22	0.22
Sat Flow, veh/h	106	1760	1585	1781	1078	672	1781	1031	711	1781	1828	36
Grp Volume(v), veh/h	53	0	296	107	0	112	457	0	147	19	0	360
Grp Sat Flow(s),veh/h/ln	1865	0	1585	1781	0	1749	1781	0	1742	1781	0	1864
Q Serve(g_s), s	1.7	0.0	8.2	3.9	0.0	4.2	16.8	0.0	3.2	0.7	0.0	12.5
Cycle Q Clear(g_c), s	1.7	0.0	8.2	3.9	0.0	4.2	16.8	0.0	3.2	0.7	0.0	12.5
Prop In Lane	0.06		1.00	1.00		0.38	1.00		0.41	1.00		0.02
Lane Grp Cap(c), veh/h	227	0	637	161	0	158	499	0	838	40	0	416
V/C Ratio(X)	0.23	0.00	0.47	0.66	0.00	0.71	0.92	0.00	0.18	0.48	0.00	0.87
Avail Cap(c_a), veh/h	227	0	637	164	0	161	513	0	838	132	0	470
HCM Platoon Ratio	1.00	1.00	1.00	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	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	26.8	0.0	14.8	29.7	0.0	29.8	23.5	0.0	9.9	32.6	0.0	25.2
Incr Delay (d2), s/veh	0.5	0.0	0.5	9.5	0.0	13.2	21.1	0.0	0.1	8.8	0.0	14.2
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	0.8	0.0	3.1	2.0	0.0	2.3	9.4	0.0	1.1	0.4	0.0	6.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.3	0.0	15.4	39.2	0.0	43.0	44.6	0.0	10.0	41.3	0.0	39.4
LnGrp LOS	C	A	B	D	A	D	D	A	B	D	A	D
Approach Vol, veh/h		349			219			604			379	
Approach Delay, s/veh		17.2			41.1			36.2			39.5	
Approach LOS		B			D			D			D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.3	37.2		13.0	23.7	19.8		10.9				
Change Period (Y+Rc), s	* 4.8	* 4.8		* 4.8	* 4.8	* 4.8		4.8				
Max Green Setting (Gmax), s	* 5	* 31		* 8.2	* 19	* 17		6.2				
Max Q Clear Time (g_c+I1), s	2.7	5.2		10.2	18.8	14.5		6.2				
Green Ext Time (p_c), s	0.0	0.8		0.0	0.1	0.5		0.0				
Intersection Summary												
HCM 6th Ctrl Delay			33.4									
HCM 6th LOS			C									

Notes

User approved pedestrian interval to be less than phase max green.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	33	1256	153	991	187	227	106	71
v/c Ratio	0.20	0.84	0.69	0.50	0.60	0.26	0.40	0.09
Control Delay	37.6	25.7	51.8	13.6	32.5	5.4	27.2	12.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.6	25.7	51.8	13.6	32.5	5.4	27.2	12.2
Queue Length 50th (ft)	14	230	66	94	76	4	41	6
Queue Length 95th (ft)	48	#533	#203	332	132	27	80	20
Internal Link Dist (ft)		4010		607		1657		634
Turn Bay Length (ft)								
Base Capacity (vph)	182	1690	234	2011	368	1001	317	940
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.74	0.65	0.49	0.51	0.23	0.33	0.08

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	1063	130	145	897	45	178	25	191	101	34	33
Future Volume (veh/h)	31	1063	130	145	897	45	178	25	191	101	34	33
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	33	1119	137	153	944	47	187	26	201	106	36	35
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	62	1385	169	193	1751	87	398	414	369	252	424	360
Arrive On Green	0.03	0.43	0.43	0.11	0.51	0.51	0.23	0.23	0.23	0.23	0.23	0.23
Sat Flow, veh/h	1781	3188	390	1781	3445	172	1329	1777	1585	1154	1820	1548
Grp Volume(v), veh/h	33	623	633	153	487	504	187	26	201	106	35	36
Grp Sat Flow(s),veh/h/ln	1781	1777	1800	1781	1777	1839	1329	1777	1585	1154	1777	1592
Q Serve(g_s), s	1.2	19.6	19.7	5.4	11.9	11.9	8.2	0.7	7.1	5.7	1.0	1.1
Cycle Q Clear(g_c), s	1.2	19.6	19.7	5.4	11.9	11.9	9.4	0.7	7.1	12.9	1.0	1.1
Prop In Lane	1.00		0.22	1.00		0.09	1.00		1.00	1.00		0.97
Lane Grp Cap(c), veh/h	62	772	782	193	903	935	398	414	369	252	414	370
V/C Ratio(X)	0.53	0.81	0.81	0.79	0.54	0.54	0.47	0.06	0.54	0.42	0.08	0.10
Avail Cap(c_a), veh/h	194	905	917	250	905	937	420	443	395	271	443	397
HCM Platoon Ratio	1.00	1.00	1.00	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	30.5	15.8	15.8	27.9	10.7	10.7	23.0	19.2	21.6	27.3	19.3	19.3
Incr Delay (d2), s/veh	7.0	4.7	4.8	12.4	0.6	0.6	0.9	0.1	1.3	1.1	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	7.9	8.1	2.8	4.1	4.2	2.6	0.3	2.7	1.6	0.4	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.5	20.5	20.6	40.3	11.3	11.3	23.9	19.2	23.0	28.4	19.4	19.4
LnGrp LOS	D	C	C	D	B	B	C	B	C	C	B	B
Approach Vol, veh/h		1289			1144			414			177	
Approach Delay, s/veh		21.0			15.2			23.1			24.8	
Approach LOS		C			B			C			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.8	32.8		19.5	7.1	37.5		19.5
Change Period (Y+Rc), s	4.9	4.9		4.6	4.9	4.9		4.6
Max Green Setting (Gmax), s	9.0	32.7		16.0	7.0	32.7		16.0
Max Q Clear Time (g_c+I1), s	7.4	21.7		14.9	3.2	13.9		11.4
Green Ext Time (p_c), s	0.1	6.2		0.1	0.0	6.4		0.9

Intersection Summary	
HCM 6th Ctrl Delay	19.3
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

Lane Group	EBT	WBL	WBT	NBL	NBT
Lane Group Flow (vph)	1445	29	902	194	37
v/c Ratio	0.58	0.13	0.46	0.53	0.05
Control Delay	13.3	31.2	8.6	26.4	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	13.3	31.2	8.6	26.4	0.1
Queue Length 50th (ft)	80	8	71	50	0
Queue Length 95th (ft)	278	39	182	138	0
Internal Link Dist (ft)	443		462		645
Turn Bay Length (ft)		200			
Base Capacity (vph)	3130	817	3259	745	1057
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.46	0.04	0.28	0.26	0.04

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1206	210	28	884	0	190	0	36	0	0	0
Future Volume (veh/h)	0	1206	210	28	884	0	190	0	36	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	1231	214	29	902	0	194	0	37	0	0	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	2	2	2	2	0	2	2	2	2	2	2
Cap, veh/h	0	2141	372	60	2249	0	436	0	245	0	289	0
Arrive On Green	0.00	0.49	0.49	0.03	0.63	0.00	0.15	0.00	0.15	0.00	0.00	0.00
Sat Flow, veh/h	0	4545	761	1781	3647	0	1781	0	1585	0	1870	0
Grp Volume(v), veh/h	0	957	488	29	902	0	194	0	37	0	0	0
Grp Sat Flow(s),veh/h/ln	0	1702	1733	1781	1777	0	1781	0	1585	0	1870	0
Q Serve(g_s), s	0.0	8.9	8.9	0.7	5.6	0.0	4.6	0.0	0.9	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	8.9	8.9	0.7	5.6	0.0	4.6	0.0	0.9	0.0	0.0	0.0
Prop In Lane	0.00		0.44	1.00		0.00	1.00		1.00	0.00		0.00
Lane Grp Cap(c), veh/h	0	1666	848	60	2249	0	436	0	245	0	289	0
V/C Ratio(X)	0.00	0.57	0.57	0.48	0.40	0.00	0.44	0.00	0.15	0.00	0.00	0.00
Avail Cap(c_a), veh/h	0	2493	1270	962	2603	0	1262	0	980	0	1156	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)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	8.1	8.1	21.2	4.0	0.0	17.9	0.0	16.3	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.3	0.6	5.8	0.1	0.0	0.7	0.0	0.3	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	0.0	2.4	2.5	0.4	1.0	0.0	1.7	0.0	0.3	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	8.4	8.7	27.0	4.1	0.0	18.6	0.0	16.6	0.0	0.0	0.0
LnGrp LOS	A	A	A	C	A	A	B	A	B	A	A	A
Approach Vol, veh/h		1445			931			231			0	
Approach Delay, s/veh		8.5			4.9			18.3			0.0	
Approach LOS		A			A			B				
Timer - Assigned Phs		2	3	4		6		8				
Phs Duration (G+Y+Rc), s		11.5	6.4	26.7		11.5		33.2				
Change Period (Y+Rc), s		4.6	4.9	4.9		4.6		4.9				
Max Green Setting (Gmax), s		27.6	24.1	32.7		27.6		32.7				
Max Q Clear Time (g_c+I1), s		6.6	2.7	10.9		0.0		7.6				
Green Ext Time (p_c), s		0.7	0.0	10.9		0.0		7.1				
Intersection Summary												
HCM 6th Ctrl Delay			8.1									
HCM 6th LOS			A									

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	320	1067	28	768	27	32	34	5	255
v/c Ratio	0.70	0.56	0.13	0.58	0.13	0.12	0.15	0.02	0.55
Control Delay	42.0	16.2	34.9	18.1	34.8	14.8	34.3	25.8	8.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.0	16.2	34.9	18.1	34.8	14.8	34.3	25.8	8.9
Queue Length 50th (ft)	43	51	7	75	7	2	8	1	0
Queue Length 95th (ft)	#220	#461	44	268	43	25	50	11	56
Internal Link Dist (ft)		423		1195		1198		751	
Turn Bay Length (ft)	200		200		120		120		
Base Capacity (vph)	454	2175	300	2300	535	882	535	988	959
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.70	0.49	0.09	0.33	0.05	0.04	0.06	0.01	0.27

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	294	944	38	26	660	47	25	6	23	31	5	235
Future Volume (veh/h)	294	944	38	26	660	47	25	6	23	31	5	235
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	320	1026	41	28	717	51	27	7	25	34	5	255
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	427	1399	56	56	1042	74	54	70	250	65	376	319
Arrive On Green	0.12	0.40	0.40	0.03	0.31	0.31	0.03	0.20	0.20	0.04	0.20	0.20
Sat Flow, veh/h	3456	3483	139	1781	3365	239	1781	359	1281	1781	1870	1585
Grp Volume(v), veh/h	320	523	544	28	378	390	27	0	32	34	5	255
Grp Sat Flow(s),veh/h/ln	1728	1777	1845	1781	1777	1827	1781	0	1640	1781	1870	1585
Q Serve(g_s), s	5.1	14.2	14.2	0.9	10.6	10.6	0.8	0.0	0.9	1.1	0.1	8.7
Cycle Q Clear(g_c), s	5.1	14.2	14.2	0.9	10.6	10.6	0.8	0.0	0.9	1.1	0.1	8.7
Prop In Lane	1.00		0.08	1.00		0.13	1.00		0.78	1.00		1.00
Lane Grp Cap(c), veh/h	427	714	741	56	550	566	54	0	320	65	376	319
V/C Ratio(X)	0.75	0.73	0.73	0.50	0.69	0.69	0.50	0.00	0.10	0.52	0.01	0.80
Avail Cap(c_a), veh/h	427	1025	1064	283	1025	1054	503	0	810	503	924	783
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.0	14.4	14.4	27.0	17.2	17.2	27.0	0.0	18.7	26.8	18.1	21.6
Incr Delay (d2), s/veh	7.2	1.6	1.5	6.7	1.5	1.5	6.8	0.0	0.1	6.3	0.0	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	2.4	5.2	5.4	0.5	4.1	4.2	0.4	0.0	0.3	0.5	0.0	3.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.2	16.0	15.9	33.7	18.7	18.7	33.9	0.0	18.9	33.2	18.1	26.2
LnGrp LOS	C	B	B	C	B	B	C	A	B	C	B	C
Approach Vol, veh/h		1387			796			59			294	
Approach Delay, s/veh		19.5			19.2			25.7			26.8	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.7	15.7	6.7	27.7	6.3	16.0	11.9	22.4
Change Period (Y+Rc), s	4.6	4.6	4.9	4.9	4.6	4.6	4.9	4.9
Max Green Setting (Gmax), s	16.0	28.0	9.0	32.7	16.0	28.0	7.0	32.7
Max Q Clear Time (g_c+I1), s	3.1	2.9	2.9	16.2	2.8	10.7	7.1	12.6
Green Ext Time (p_c), s	0.0	0.1	0.0	6.6	0.0	0.8	0.0	4.8

Intersection Summary	
HCM 6th Ctrl Delay	20.4
HCM 6th LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	299	769	43	8	564	33	41	24	21	251
v/c Ratio	0.84	0.38	0.05	0.04	0.54	0.14	0.12	0.11	0.08	0.57
Control Delay	50.9	9.8	0.1	28.7	18.3	27.7	18.2	28.1	25.5	10.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.9	9.8	0.1	28.7	18.3	27.7	18.2	28.1	25.5	10.2
Queue Length 50th (ft)	74	35	0	2	60	8	7	6	5	0
Queue Length 95th (ft)	#334	200	0	16	152	40	39	32	28	60
Internal Link Dist (ft)		1195			2587		1879		775	
Turn Bay Length (ft)	350		300	200		120		120		
Base Capacity (vph)	355	2392	1107	319	2301	568	1009	568	1046	999
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.84	0.32	0.04	0.03	0.25	0.06	0.04	0.04	0.02	0.25

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	269	692	39	7	475	32	30	27	10	22	19	226
Future Volume (veh/h)	269	692	39	7	475	32	30	27	10	22	19	226
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	299	769	43	8	528	36	33	30	11	24	21	251
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	321	1457	650	19	811	55	64	273	100	50	376	318
Arrive On Green	0.18	0.41	0.41	0.01	0.24	0.24	0.04	0.21	0.21	0.03	0.20	0.20
Sat Flow, veh/h	1781	3554	1585	1781	3376	230	1781	1306	479	1781	1870	1585
Grp Volume(v), veh/h	299	769	43	8	277	287	33	0	41	24	21	251
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1829	1781	0	1784	1781	1870	1585
Q Serve(g_s), s	9.2	9.0	0.9	0.2	7.8	7.8	1.0	0.0	1.0	0.7	0.5	8.3
Cycle Q Clear(g_c), s	9.2	9.0	0.9	0.2	7.8	7.8	1.0	0.0	1.0	0.7	0.5	8.3
Prop In Lane	1.00		1.00	1.00		0.13	1.00		0.27	1.00		1.00
Lane Grp Cap(c), veh/h	321	1457	650	19	427	439	64	0	373	50	376	318
V/C Ratio(X)	0.93	0.53	0.07	0.43	0.65	0.65	0.52	0.00	0.11	0.48	0.06	0.79
Avail Cap(c_a), veh/h	321	2095	935	289	1048	1078	514	0	901	514	944	800
HCM Platoon Ratio	1.00	1.00	1.00	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	1.00	1.00
Uniform Delay (d), s/veh	22.4	12.3	9.9	27.3	19.0	19.0	26.3	0.0	17.8	26.6	17.9	21.0
Incr Delay (d2), s/veh	32.8	0.3	0.0	14.9	1.7	1.6	6.3	0.0	0.1	7.1	0.1	4.3
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	3.1	0.3	0.2	3.1	3.2	0.5	0.0	0.4	0.4	0.2	3.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.2	12.6	10.0	42.1	20.6	20.6	32.5	0.0	17.9	33.7	18.0	25.4
LnGrp LOS	E	B	A	D	C	C	C	A	B	C	B	C
Approach Vol, veh/h		1111			572			74			296	
Approach Delay, s/veh		24.0			20.9			24.4			25.5	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.1	16.2	5.5	27.6	6.6	15.7	14.9	18.2
Change Period (Y+Rc), s	4.6	4.6	4.9	4.9	4.6	4.6	4.9	4.9
Max Green Setting (Gmax), s	16.0	28.0	9.0	32.7	16.0	28.0	10.0	32.7
Max Q Clear Time (g_c+I1), s	2.7	3.0	2.2	11.0	3.0	10.3	11.2	9.8
Green Ext Time (p_c), s	0.0	0.1	0.0	5.7	0.0	0.9	0.0	3.5

Intersection Summary		
HCM 6th Ctrl Delay		23.4
HCM 6th LOS		C

Intersection	
Intersection Delay, s/veh	23.6
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	147	420	40	5	314	40	26	23	5	24	16	86
Future Vol, veh/h	147	420	40	5	314	40	26	23	5	24	16	86
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	158	452	43	5	338	43	28	25	5	26	17	92
Number of Lanes	1	1	1	1	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	3	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	3	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	3
HCM Control Delay	25.9	25.6	11.8	12.2
HCM LOS	D	D	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	0%	100%	0%	100%	0%
Vol Thru, %	0%	82%	0%	100%	0%	0%	89%	0%	16%
Vol Right, %	0%	18%	0%	0%	100%	0%	11%	0%	84%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	26	28	147	420	40	5	354	24	102
LT Vol	26	0	147	0	0	5	0	24	0
Through Vol	0	23	0	420	0	0	314	0	16
RT Vol	0	5	0	0	40	0	40	0	86
Lane Flow Rate	28	30	158	452	43	5	381	26	110
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.068	0.068	0.308	0.817	0.069	0.011	0.727	0.061	0.225
Departure Headway (Hd)	8.767	8.127	7.021	6.515	5.806	7.459	6.873	8.488	7.376
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	408	440	514	560	619	481	529	422	487
Service Time	6.52	5.881	4.74	4.233	3.524	5.18	4.594	6.234	5.122
HCM Lane V/C Ratio	0.069	0.068	0.307	0.807	0.069	0.01	0.72	0.062	0.226
HCM Control Delay	12.2	11.5	12.8	32.1	9	10.3	25.8	11.8	12.3
HCM Lane LOS	B	B	B	D	A	B	D	B	B
HCM 95th-tile Q	0.2	0.2	1.3	8.1	0.2	0	6	0.2	0.9

Intersection	
Intersection Delay, s/veh	15
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	212	130	111	14	170	69	62	29	7	41	22	127
Future Vol, veh/h	212	130	111	14	170	69	62	29	7	41	22	127
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	252	155	132	17	202	82	74	35	8	49	26	151
Number of Lanes	1	1	1	1	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	3	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	3	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	3
HCM Control Delay	14.5	18.2	12.5	13.3
HCM LOS	B	C	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	0%	100%	0%	100%	0%
Vol Thru, %	0%	81%	0%	100%	0%	0%	71%	0%	15%
Vol Right, %	0%	19%	0%	0%	100%	0%	29%	0%	85%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	62	36	212	130	111	14	239	41	149
LT Vol	62	0	212	0	0	14	0	41	0
Through Vol	0	29	0	130	0	0	170	0	22
RT Vol	0	7	0	0	111	0	69	0	127
Lane Flow Rate	74	43	252	155	132	17	285	49	177
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.174	0.094	0.516	0.294	0.225	0.036	0.561	0.111	0.348
Departure Headway (Hd)	8.509	7.859	7.357	6.848	6.137	7.808	7.092	8.187	7.071
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	421	456	490	525	584	459	509	438	509
Service Time	6.264	5.615	5.098	4.59	3.878	5.552	4.836	5.936	4.82
HCM Lane V/C Ratio	0.176	0.094	0.514	0.295	0.226	0.037	0.56	0.112	0.348
HCM Control Delay	13.1	11.4	17.7	12.4	10.7	10.8	18.6	12	13.6
HCM Lane LOS	B	B	C	B	B	B	C	B	B
HCM 95th-tile Q	0.6	0.3	2.9	1.2	0.9	0.1	3.4	0.4	1.5

Intersection	
Int Delay, s/veh	8.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	73	98	6	86	1	153	6	2	1	24	12
Future Vol, veh/h	10	73	98	6	86	1	153	6	2	1	24	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	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	61	61	61	61	61	61	61	61	61	61	61	61
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	120	161	10	141	2	251	10	3	2	39	20

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	143	0	0	281	0	0	425	396	201	401	475	142
Stage 1	-	-	-	-	-	-	233	233	-	162	162	-
Stage 2	-	-	-	-	-	-	192	163	-	239	313	-
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	1440	-	-	1282	-	-	540	541	840	560	488	906
Stage 1	-	-	-	-	-	-	770	712	-	840	764	-
Stage 2	-	-	-	-	-	-	810	763	-	764	657	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1440	-	-	1282	-	-	487	530	840	541	478	906
Mov Cap-2 Maneuver	-	-	-	-	-	-	487	530	-	541	478	-
Stage 1	-	-	-	-	-	-	760	703	-	829	758	-
Stage 2	-	-	-	-	-	-	745	757	-	741	648	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0.5	20.5	12.1
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	491	1440	-	-	1282	-	-	567
HCM Lane V/C Ratio	0.538	0.011	-	-	0.008	-	-	0.107
HCM Control Delay (s)	20.5	7.5	0	-	7.8	0	-	12.1
HCM Lane LOS	C	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	3.1	0	-	-	0	-	-	0.4

Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	18	156	13	19	119	32	7	1	19	55	1	14
Future Vol, veh/h	18	156	13	19	119	32	7	1	19	55	1	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	0	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	72	72	92	92	72	72	92	92	92	72	92	72
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	25	217	14	21	165	44	8	1	21	76	1	19

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	209	0	0	231	0	0	513	525	224	514	510	187
Stage 1	-	-	-	-	-	-	274	274	-	229	229	-
Stage 2	-	-	-	-	-	-	239	251	-	285	281	-
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	1362	-	-	1337	-	-	472	458	815	471	467	855
Stage 1	-	-	-	-	-	-	732	683	-	774	715	-
Stage 2	-	-	-	-	-	-	764	699	-	722	678	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1362	-	-	1337	-	-	448	442	815	447	451	855
Mov Cap-2 Maneuver	-	-	-	-	-	-	448	442	-	447	451	-
Stage 1	-	-	-	-	-	-	719	671	-	760	704	-
Stage 2	-	-	-	-	-	-	734	688	-	690	666	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.8	0.7	10.8	14.1
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	655	1362	-	-	1337	-	-	494
HCM Lane V/C Ratio	0.045	0.018	-	-	0.015	-	-	0.196
HCM Control Delay (s)	10.8	7.7	-	-	7.7	-	-	14.1
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	0.7

Intersection	
Int Delay, s/veh	14.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	21	105	91	93	74	1	85	136	94	0	82	13
Future Vol, veh/h	21	105	91	93	74	1	85	136	94	0	82	13
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	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	72	72	72	72	72	72	72	72	72	72	72	72
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	29	146	126	129	103	1	118	189	131	0	114	18

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	104	0	0	272	0	0	632	566	146	789	692	104
Stage 1	-	-	-	-	-	-	204	204	-	362	362	-
Stage 2	-	-	-	-	-	-	428	362	-	427	330	-
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	1488	-	-	1291	-	-	393	434	901	308	367	951
Stage 1	-	-	-	-	-	-	798	733	-	657	625	-
Stage 2	-	-	-	-	-	-	605	625	-	606	646	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1488	-	-	1291	-	-	253	379	901	146	320	951
Mov Cap-2 Maneuver	-	-	-	-	-	-	253	379	-	146	320	-
Stage 1	-	-	-	-	-	-	780	716	-	642	559	-
Stage 2	-	-	-	-	-	-	422	559	-	373	631	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	4.5	26.2	21.2
HCM LOS			D	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	253	497	1488	-	-	1291	-	-	-	352
HCM Lane V/C Ratio	0.467	0.643	0.02	-	-	0.1	-	-	-	0.375
HCM Control Delay (s)	31.1	24.4	7.5	0	-	8.1	0	-	0	21.2
HCM Lane LOS	D	C	A	A	-	A	A	-	A	C
HCM 95th %tile Q(veh)	2.3	4.5	0.1	-	-	0.3	-	-	-	1.7

Intersection	
Int Delay, s/veh	8.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	121	144	131	83	0	202	0	145	0	0	0
Future Vol, veh/h	0	121	144	131	83	0	202	0	145	0	0	0
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	0	-	-	0	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	132	157	142	90	0	220	0	158	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	289	0	0	506	-	132	664	663	90
Stage 1	-	-	-	-	-	-	132	-	-	374	374	-
Stage 2	-	-	-	-	-	-	374	-	-	290	289	-
Critical Hdwy	-	-	-	4.12	-	-	7.12	-	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	-	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	-	-	6.12	5.52	-
Follow-up Hdwy	-	-	-	2.218	-	-	3.518	-	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	-	1273	-	0	477	0	917	374	382	968
Stage 1	0	-	-	-	-	0	871	0	-	647	618	-
Stage 2	0	-	-	-	-	0	647	0	-	718	673	-
Platoon blocked, %		-	-		-							
Mov Cap-1 Maneuver	-	-	-	1273	-	-	436	-	917	283	339	968
Mov Cap-2 Maneuver	-	-	-	-	-	-	436	-	-	283	339	-
Stage 1	-	-	-	-	-	-	871	-	-	647	549	-
Stage 2	-	-	-	-	-	-	575	-	-	595	673	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	5	16.5	0
HCM LOS			C	A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	436	917	-	-	1273	-	-
HCM Lane V/C Ratio	0.504	0.172	-	-	0.112	-	-
HCM Control Delay (s)	21.3	9.7	-	-	8.2	-	0
HCM Lane LOS	C	A	-	-	A	-	A
HCM 95th %tile Q(veh)	2.8	0.6	-	-	0.4	-	-

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	75	169	16	14	155	11	9	1	8	7	1	45
Future Vol, veh/h	75	169	16	14	155	11	9	1	8	7	1	45
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	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	82	184	17	15	168	12	10	1	9	8	1	49

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	180	0	0	201	0	0	586	567	193	566	569	174
Stage 1	-	-	-	-	-	-	357	357	-	204	204	-
Stage 2	-	-	-	-	-	-	229	210	-	362	365	-
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	1396	-	-	1371	-	-	422	433	849	435	432	869
Stage 1	-	-	-	-	-	-	661	628	-	798	733	-
Stage 2	-	-	-	-	-	-	774	728	-	657	623	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1396	-	-	1371	-	-	376	403	849	407	402	869
Mov Cap-2 Maneuver	-	-	-	-	-	-	376	403	-	407	402	-
Stage 1	-	-	-	-	-	-	622	591	-	751	725	-
Stage 2	-	-	-	-	-	-	721	720	-	611	586	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.2	0.6	12.5	10.3
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	502	1396	-	-	1371	-	-	742
HCM Lane V/C Ratio	0.039	0.058	-	-	0.011	-	-	0.078
HCM Control Delay (s)	12.5	7.7	-	-	7.7	-	-	10.3
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.1	0.2	-	-	0	-	-	0.3

Intersection	
Int Delay, s/veh	8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	14	74	32	34	55	0	50	104	57	0	60	9
Future Vol, veh/h	14	74	32	34	55	0	50	104	57	0	60	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	-	-	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	15	80	35	37	60	0	54	113	62	0	65	10

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	60	0	0	115	0	0	300	262	98	349	279	60
Stage 1	-	-	-	-	-	-	128	128	-	134	134	-
Stage 2	-	-	-	-	-	-	172	134	-	215	145	-
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	1544	-	-	1474	-	-	652	643	958	606	629	1005
Stage 1	-	-	-	-	-	-	876	790	-	869	785	-
Stage 2	-	-	-	-	-	-	830	785	-	787	777	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1544	-	-	1474	-	-	576	620	958	474	606	1005
Mov Cap-2 Maneuver	-	-	-	-	-	-	576	620	-	474	606	-
Stage 1	-	-	-	-	-	-	867	782	-	860	765	-
Stage 2	-	-	-	-	-	-	732	765	-	623	769	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.9	2.9	13.1	11.4
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	672	1544	-	-	1474	-	-	639
HCM Lane V/C Ratio	0.341	0.01	-	-	0.025	-	-	0.117
HCM Control Delay (s)	13.1	7.4	0	-	7.5	0	-	11.4
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	1.5	0	-	-	0.1	-	-	0.4

Intersection	
Int Delay, s/veh	9.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	35	40	80	22	0	51	78	134	0	47	2
Future Vol, veh/h	4	35	40	80	22	0	51	78	134	0	47	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	-	-	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	4	38	43	87	24	0	55	85	146	0	51	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	24	0	0	81	0	0	293	266	60	381	287	24
Stage 1	-	-	-	-	-	-	68	68	-	198	198	-
Stage 2	-	-	-	-	-	-	225	198	-	183	89	-
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	1591	-	-	1517	-	-	659	640	1005	577	623	1052
Stage 1	-	-	-	-	-	-	942	838	-	804	737	-
Stage 2	-	-	-	-	-	-	778	737	-	819	821	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1591	-	-	1517	-	-	586	601	1005	420	585	1052
Mov Cap-2 Maneuver	-	-	-	-	-	-	586	601	-	420	585	-
Stage 1	-	-	-	-	-	-	939	835	-	802	694	-
Stage 2	-	-	-	-	-	-	678	694	-	627	819	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	5.9	12.7	11.6
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	751	1591	-	-	1517	-	-	596
HCM Lane V/C Ratio	0.381	0.003	-	-	0.057	-	-	0.089
HCM Control Delay (s)	12.7	7.3	0	-	7.5	0	-	11.6
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	1.8	0	-	-	0.2	-	-	0.3

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	0	433	52	12	532	0	42	0	3	0	0	0
Future Vol, veh/h	0	433	52	12	532	0	42	0	3	0	0	0
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	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	81	81	81	81	81	81	81	81	81	81	81	81
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	535	64	15	657	0	52	0	4	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	599	0	0	1254	1254	567	1256	1286	657
Stage 1	-	-	-	-	-	-	567	567	-	687	687	-
Stage 2	-	-	-	-	-	-	687	687	-	569	599	-
Critical Hdwy	-	-	-	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	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	-	978	-	0	149	172	523	148	164	465
Stage 1	0	-	-	-	-	0	508	507	-	437	447	-
Stage 2	0	-	-	-	-	0	437	447	-	507	490	-
Platoon blocked, %		-	-		-							
Mov Cap-1 Maneuver	-	-	-	978	-	-	147	169	523	145	162	465
Mov Cap-2 Maneuver	-	-	-	-	-	-	147	169	-	145	162	-
Stage 1	-	-	-	-	-	-	508	507	-	437	440	-
Stage 2	-	-	-	-	-	-	430	440	-	503	490	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.2	40.3	0
HCM LOS			E	A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	147	523	-	-	978	-	-
HCM Lane V/C Ratio	0.353	0.007	-	-	0.015	-	-
HCM Control Delay (s)	42.3	11.9	-	-	8.7	-	0
HCM Lane LOS	E	B	-	-	A	-	A
HCM 95th %tile Q(veh)	1.5	0	-	-	0	-	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	408	2	10	582	0	1	0	3	0	0	0
Future Vol, veh/h	0	408	2	10	582	0	1	0	3	0	0	0
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	-	-	0	-	-	0	-	0	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	81	81	81	81	81	81	81	81	81	81	81	81
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	504	2	12	719	0	1	0	4	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	719	0	0	506	0	0	1248	-	505	1250	-	-
Stage 1	-	-	-	-	-	-	505	-	-	743	-	-
Stage 2	-	-	-	-	-	-	743	-	-	507	-	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	-	6.22	7.12	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	-	-	6.12	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	-	-	6.12	-	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	-	3.318	3.518	-	-
Pot Cap-1 Maneuver	882	-	-	1059	-	0	150	0	567	150	0	0
Stage 1	-	-	-	-	-	0	549	0	-	407	0	0
Stage 2	-	-	-	-	-	0	407	0	-	548	0	0
Platoon blocked, %		-	-		-							
Mov Cap-1 Maneuver	882	-	-	1059	-	-	149	-	567	148	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	149	-	-	148	-	-
Stage 1	-	-	-	-	-	-	549	-	-	407	-	-
Stage 2	-	-	-	-	-	-	402	-	-	544	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.1	15.9	0
HCM LOS			C	A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	149	567	882	-	-	1059	-	-
HCM Lane V/C Ratio	0.008	0.007	-	-	-	0.012	-	-
HCM Control Delay (s)	29.4	11.4	0	-	-	8.4	-	0
HCM Lane LOS	D	B	A	-	-	A	-	A
HCM 95th %tile Q(veh)	0	0	0	-	-	0	-	-

Intersection	
Intersection Delay, s/veh	35.7
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	224	157	30	11	376	37	19	3	8	24	5	199
Future Vol, veh/h	224	157	30	11	376	37	19	3	8	24	5	199
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	264	185	35	13	442	44	22	4	9	28	6	234
Number of Lanes	0	1	1	0	1	0	1	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	2
HCM Control Delay	36.2	46.5	11.8	18
HCM LOS	E	E	B	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1
Vol Left, %	100%	0%	59%	0%	3%	11%
Vol Thru, %	0%	27%	41%	0%	89%	2%
Vol Right, %	0%	73%	0%	100%	9%	87%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	19	11	381	30	424	228
LT Vol	19	0	224	0	11	24
Through Vol	0	3	157	0	376	5
RT Vol	0	8	0	30	37	199
Lane Flow Rate	22	13	448	35	499	268
Geometry Grp	7	7	7	7	6	6
Degree of Util (X)	0.056	0.029	0.857	0.058	0.916	0.531
Departure Headway (Hd)	8.998	7.951	6.882	5.867	6.614	7.129
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	397	449	524	610	549	504
Service Time	6.774	5.727	4.629	3.613	4.659	5.179
HCM Lane V/C Ratio	0.055	0.029	0.855	0.057	0.909	0.532
HCM Control Delay	12.3	11	38.3	9	46.5	18
HCM Lane LOS	B	B	E	A	E	C
HCM 95th-tile Q	0.2	0.1	9.1	0.2	11.1	3.1

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	14	80	27	2	182	3	48	1	5	9	2	42
Future Vol, veh/h	14	80	27	2	182	3	48	1	5	9	2	42
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	-	-	-	0	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	94	32	2	214	4	56	1	6	11	2	49

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	218	0	0	126	0	0	372	348	94	366	378	216
Stage 1	-	-	-	-	-	-	126	126	-	220	220	-
Stage 2	-	-	-	-	-	-	246	222	-	146	158	-
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	1352	-	-	1460	-	-	585	576	963	590	554	824
Stage 1	-	-	-	-	-	-	878	792	-	782	721	-
Stage 2	-	-	-	-	-	-	758	720	-	857	767	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1352	-	-	1460	-	-	542	567	963	579	546	824
Mov Cap-2 Maneuver	-	-	-	-	-	-	542	567	-	579	546	-
Stage 1	-	-	-	-	-	-	867	782	-	772	720	-
Stage 2	-	-	-	-	-	-	709	719	-	839	757	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.9	0.1	12	10
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	542	863	1352	-	-	1460	-	-	573	824
HCM Lane V/C Ratio	0.104	0.008	0.012	-	-	0.002	-	-	0.023	0.06
HCM Control Delay (s)	12.4	9.2	7.7	0	-	7.5	0	-	11.4	9.6
HCM Lane LOS	B	A	A	A	-	A	A	-	B	A
HCM 95th %tile Q(veh)	0.3	0	0	-	-	0	-	-	0.1	0.2

Intersection	
Int Delay, s/veh	4.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	52	41	5	63	3	122	1	20	5	2	0
Future Vol, veh/h	0	52	41	5	63	3	122	1	20	5	2	0
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	-	-	-	0	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	58	46	6	71	3	137	1	22	6	2	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	74	0	0	104	0	0	144	144	58	178	189	73
Stage 1	-	-	-	-	-	-	58	58	-	85	85	-
Stage 2	-	-	-	-	-	-	86	86	-	93	104	-
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	1526	-	-	1488	-	-	825	747	1008	784	706	989
Stage 1	-	-	-	-	-	-	954	847	-	923	824	-
Stage 2	-	-	-	-	-	-	922	824	-	914	809	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1526	-	-	1488	-	-	821	744	1008	764	703	989
Mov Cap-2 Maneuver	-	-	-	-	-	-	821	744	-	764	703	-
Stage 1	-	-	-	-	-	-	954	847	-	923	821	-
Stage 2	-	-	-	-	-	-	916	821	-	892	809	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.5	10.1	9.9
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	821	991	1526	-	-	1488	-	-	746	-
HCM Lane V/C Ratio	0.167	0.024	-	-	-	0.004	-	-	0.011	-
HCM Control Delay (s)	10.3	8.7	0	-	-	7.4	0	-	9.9	0
HCM Lane LOS	B	A	A	-	-	A	A	-	A	A
HCM 95th %tile Q(veh)	0.6	0.1	0	-	-	0	-	-	0	-

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	230	0	0	258	36	0	0	0	25	0	3
Future Vol, veh/h	0	230	0	0	258	36	0	0	0	25	0	3
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	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	92	92	85	85	92	92	92	85	92	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	271	0	0	304	42	0	0	0	29	0	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	346	0	0	271	0	0	598	617	271	596	596	325
Stage 1	-	-	-	-	-	-	271	271	-	325	325	-
Stage 2	-	-	-	-	-	-	327	346	-	271	271	-
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	1213	-	-	1292	-	-	414	405	768	415	417	716
Stage 1	-	-	-	-	-	-	735	685	-	687	649	-
Stage 2	-	-	-	-	-	-	686	635	-	735	685	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1213	-	-	1292	-	-	412	405	768	415	417	716
Mov Cap-2 Maneuver	-	-	-	-	-	-	412	405	-	415	417	-
Stage 1	-	-	-	-	-	-	735	685	-	687	649	-
Stage 2	-	-	-	-	-	-	683	635	-	735	685	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	0	14
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1213	-	-	1292	-	-	435
HCM Lane V/C Ratio	-	-	-	-	-	-	-	0.076
HCM Control Delay (s)	0	0	-	-	0	-	-	14
HCM Lane LOS	A	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	0.2

Intersection	
Intersection Delay, s/veh	11.5
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	8	186	41	25	0	250	0	14	0	0	0
Future Vol, veh/h	0	8	186	41	25	0	250	0	14	0	0	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	9	219	48	29	0	294	0	16	0	0	0
Number of Lanes	0	1	1	1	1	0	1	0	1	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	9.6	9.2	13.4	0
HCM LOS	A	A	B	-

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	0%	100%	0%	0%	0%
Vol Thru, %	0%	0%	100%	0%	0%	100%	100%	100%
Vol Right, %	0%	100%	0%	100%	0%	0%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	250	14	8	186	41	25	0	0
LT Vol	250	0	0	0	41	0	0	0
Through Vol	0	0	8	0	0	25	0	0
RT Vol	0	14	0	186	0	0	0	0
Lane Flow Rate	294	16	9	219	48	29	0	0
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.472	0.021	0.015	0.295	0.083	0.047	0	0
Departure Headway (Hd)	5.774	4.57	5.56	4.854	6.208	5.702	5.672	5.672
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	621	777	642	737	574	624	0	0
Service Time	3.542	2.337	3.309	2.602	3.976	3.469	3.47	3.47
HCM Lane V/C Ratio	0.473	0.021	0.014	0.297	0.084	0.046	0	0
HCM Control Delay	13.7	7.4	8.4	9.6	9.5	8.8	8.5	8.5
HCM Lane LOS	B	A	A	A	A	A	N	N
HCM 95th-tile Q	2.5	0.1	0	1.2	0.3	0.1	0	0

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	0	376	157	17	297	0	146	0	21	0	0	0
Future Vol, veh/h	0	376	157	17	297	0	146	0	21	0	0	0
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	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	384	160	17	303	0	149	0	21	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	544	0	0	801	801	464	812	881	303
Stage 1	-	-	-	-	-	-	464	464	-	337	337	-
Stage 2	-	-	-	-	-	-	337	337	-	475	544	-
Critical Hdwy	-	-	-	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	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	-	1025	-	0	303	318	598	298	285	737
Stage 1	0	-	-	-	-	0	578	564	-	677	641	-
Stage 2	0	-	-	-	-	0	677	641	-	570	519	-
Platoon blocked, %		-	-		-							
Mov Cap-1 Maneuver	-	-	-	1025	-	-	299	313	598	284	280	737
Mov Cap-2 Maneuver	-	-	-	-	-	-	299	313	-	284	280	-
Stage 1	-	-	-	-	-	-	578	564	-	677	630	-
Stage 2	-	-	-	-	-	-	666	630	-	550	519	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.5	26.2	0
HCM LOS			D	A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	299	598	-	-	1025	-	-
HCM Lane V/C Ratio	0.498	0.036	-	-	0.017	-	-
HCM Control Delay (s)	28.4	11.2	-	-	8.6	-	0
HCM Lane LOS	D	B	-	-	A	-	A
HCM 95th %tile Q(veh)	2.6	0.1	-	-	0.1	-	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	429	2	13	321	0	3	0	9	0	0	0
Future Vol, veh/h	0	429	2	13	321	0	3	0	9	0	0	0
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	-	-	0	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	466	2	14	349	0	3	0	10	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	349	0	0	468	0	0	844	844	467	849	845	349
Stage 1	-	-	-	-	-	-	467	467	-	377	377	-
Stage 2	-	-	-	-	-	-	377	377	-	472	468	-
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	1210	-	-	1094	-	0	283	300	596	281	300	694
Stage 1	-	-	-	-	-	0	576	562	-	644	616	-
Stage 2	-	-	-	-	-	0	644	616	-	573	561	-
Platoon blocked, %		-	-		-							
Mov Cap-1 Maneuver	1210	-	-	1094	-	-	280	296	596	274	296	694
Mov Cap-2 Maneuver	-	-	-	-	-	-	280	296	-	274	296	-
Stage 1	-	-	-	-	-	-	576	562	-	644	608	-
Stage 2	-	-	-	-	-	-	636	608	-	564	561	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.3	12.8	0
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	280	596	1210	-	-	1094	-	-
HCM Lane V/C Ratio	0.012	0.016	-	-	-	0.013	-	-
HCM Control Delay (s)	18	11.1	0	-	-	8.3	-	0
HCM Lane LOS	C	B	A	-	-	A	-	A
HCM 95th %tile Q(veh)	0	0.1	0	-	-	0	-	-

Intersection	
Intersection Delay, s/veh	16.5
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	97	338	6	1	227	12	2	3	6	12	2	104
Future Vol, veh/h	97	338	6	1	227	12	2	3	6	12	2	104
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	108	376	7	1	252	13	2	3	7	13	2	116
Number of Lanes	0	1	1	0	1	0	1	0	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	2
HCM Control Delay	20.3	12.7	9.4	10.8
HCM LOS	C	B	A	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1
Vol Left, %	100%	0%	22%	0%	0%	10%
Vol Thru, %	0%	33%	78%	0%	95%	2%
Vol Right, %	0%	67%	0%	100%	5%	88%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	2	9	435	6	240	118
LT Vol	2	0	97	0	1	12
Through Vol	0	3	338	0	227	2
RT Vol	0	6	0	6	12	104
Lane Flow Rate	2	10	483	7	267	131
Geometry Grp	7	7	7	7	6	6
Degree of Util (X)	0.005	0.018	0.714	0.008	0.419	0.221
Departure Headway (Hd)	7.36	6.374	5.421	4.503	5.654	6.062
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	488	563	672	782	640	594
Service Time	5.079	4.093	3.121	2.303	3.654	4.078
HCM Lane V/C Ratio	0.004	0.018	0.719	0.009	0.417	0.221
HCM Control Delay	10.1	9.2	20.5	7.3	12.7	10.8
HCM Lane LOS	B	A	C	A	B	B
HCM 95th-tile Q	0	0.1	6	0	2.1	0.8

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	57	153	33	5	98	11	19	2	5	6	1	34
Future Vol, veh/h	57	153	33	5	98	11	19	2	5	6	1	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	-	-	0	-	-	-	0	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	61	165	35	5	105	12	20	2	5	6	1	37

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	117	0	0	200	0	0	427	414	165	429	443	111
Stage 1	-	-	-	-	-	-	287	287	-	121	121	-
Stage 2	-	-	-	-	-	-	140	127	-	308	322	-
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	1471	-	-	1372	-	-	538	529	879	536	509	942
Stage 1	-	-	-	-	-	-	720	674	-	883	796	-
Stage 2	-	-	-	-	-	-	863	791	-	702	651	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1471	-	-	1372	-	-	496	502	879	510	483	942
Mov Cap-2 Maneuver	-	-	-	-	-	-	496	502	-	510	483	-
Stage 1	-	-	-	-	-	-	686	642	-	841	793	-
Stage 2	-	-	-	-	-	-	825	788	-	663	620	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.8	0.3	11.9	9.5
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	496	724	1471	-	-	1372	-	-	506	942
HCM Lane V/C Ratio	0.041	0.01	0.042	-	-	0.004	-	-	0.015	0.039
HCM Control Delay (s)	12.6	10	7.6	0	-	7.6	0	-	12.2	9
HCM Lane LOS	B	B	A	A	-	A	A	-	B	A
HCM 95th %tile Q(veh)	0.1	0	0.1	-	-	0	-	-	0	0.1

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	63	101	9	58	7	55	2	4	4	1	0
Future Vol, veh/h	0	63	101	9	58	7	55	2	4	4	1	0
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	-	-	-	0	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	84	84	84	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	75	120	11	69	8	65	2	5	5	1	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	77	0	0	195	0	0	171	174	75	234	290	73
Stage 1	-	-	-	-	-	-	75	75	-	95	95	-
Stage 2	-	-	-	-	-	-	96	99	-	139	195	-
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	1522	-	-	1378	-	-	792	719	986	721	620	989
Stage 1	-	-	-	-	-	-	934	833	-	912	816	-
Stage 2	-	-	-	-	-	-	911	813	-	864	739	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1522	-	-	1378	-	-	786	713	986	712	615	989
Mov Cap-2 Maneuver	-	-	-	-	-	-	786	713	-	712	615	-
Stage 1	-	-	-	-	-	-	934	833	-	912	809	-
Stage 2	-	-	-	-	-	-	902	806	-	857	739	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.9	9.9	10.3
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	786	874	1522	-	-	1378	-	-	690	-
HCM Lane V/C Ratio	0.083	0.008	-	-	-	0.008	-	-	0.009	-
HCM Control Delay (s)	10	9.2	0	-	-	7.6	0	-	10.3	0
HCM Lane LOS	B	A	A	-	-	A	A	-	B	A
HCM 95th %tile Q(veh)	0.3	0	0	-	-	0	-	-	0	-

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	67	0	0	48	9	0	0	0	23	0	0
Future Vol, veh/h	0	67	0	0	48	9	0	0	0	23	0	0
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	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	72	72	92	92	72	72	92	92	92	72	92	72
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	93	0	0	67	13	0	0	0	32	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	80	0	0	93	0	0	167	173	93	167	167	74
Stage 1	-	-	-	-	-	-	93	93	-	74	74	-
Stage 2	-	-	-	-	-	-	74	80	-	93	93	-
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	1518	-	-	1501	-	-	797	720	964	797	726	988
Stage 1	-	-	-	-	-	-	914	818	-	935	833	-
Stage 2	-	-	-	-	-	-	935	828	-	914	818	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1518	-	-	1501	-	-	797	720	964	797	726	988
Mov Cap-2 Maneuver	-	-	-	-	-	-	797	720	-	797	726	-
Stage 1	-	-	-	-	-	-	914	818	-	935	833	-
Stage 2	-	-	-	-	-	-	935	828	-	914	818	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	0	9.7
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1518	-	-	1501	-	-	797
HCM Lane V/C Ratio	-	-	-	-	-	-	-	0.04
HCM Control Delay (s)	0	0	-	-	0	-	-	9.7
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	0.1

Intersection	
Intersection Delay, s/veh	7.8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	5	85	33	3	0	54	0	55	0	0	0
Future Vol, veh/h	0	5	85	33	3	0	54	0	55	0	0	0
Peak Hour Factor	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	7	118	46	4	0	75	0	76	0	0	0
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	7.4	7.9	8	0
HCM LOS	A	A	A	-

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	92%	0%	0%
Vol Thru, %	0%	0%	6%	8%	100%	100%
Vol Right, %	0%	100%	94%	0%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	54	55	90	36	0	0
LT Vol	54	0	0	33	0	0
Through Vol	0	0	5	3	0	0
RT Vol	0	55	85	0	0	0
Lane Flow Rate	75	76	125	50	0	0
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.111	0.088	0.132	0.064	0	0
Departure Headway (Hd)	5.336	4.133	3.791	4.603	5.04	5.04
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	666	856	951	782	0	0
Service Time	3.115	1.911	1.793	2.608	2.755	2.755
HCM Lane V/C Ratio	0.113	0.089	0.131	0.064	0	0
HCM Control Delay	8.8	7.3	7.4	7.9	7.8	7.8
HCM Lane LOS	A	A	A	A	N	N
HCM 95th-tile Q	0.4	0.3	0.5	0.2	0	0

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	55	969	159	825	112	100	182	119
v/c Ratio	0.29	0.73	0.65	0.47	0.36	0.12	0.58	0.14
Control Delay	37.0	21.2	45.7	14.8	24.0	7.3	29.5	10.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.0	21.2	45.7	14.8	24.0	7.3	29.5	10.1
Queue Length 50th (ft)	20	147	58	115	36	3	62	7
Queue Length 95th (ft)	65	298	#195	243	77	17	121	24
Internal Link Dist (ft)		4010		607		1657		634
Turn Bay Length (ft)								
Base Capacity (vph)	203	1873	261	2007	386	1009	393	1037
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.27	0.52	0.61	0.41	0.29	0.10	0.46	0.11

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	678	145	135	669	32	95	17	68	155	43	58
Future Volume (veh/h)	47	678	145	135	669	32	95	17	68	155	43	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	55	798	171	159	787	38	112	20	80	182	51	68
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	93	1132	242	203	1554	75	377	397	354	373	397	354
Arrive On Green	0.05	0.39	0.39	0.11	0.45	0.45	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	1781	2911	624	1781	3451	167	1273	1777	1585	1295	1777	1585
Grp Volume(v), veh/h	55	487	482	159	405	420	112	20	80	182	51	68
Grp Sat Flow(s),veh/h/ln	1781	1777	1758	1781	1777	1840	1273	1777	1585	1295	1777	1585
Q Serve(g_s), s	1.6	12.1	12.1	4.6	8.5	8.5	4.1	0.5	2.2	7.0	1.2	1.8
Cycle Q Clear(g_c), s	1.6	12.1	12.1	4.6	8.5	8.5	6.0	0.5	2.2	9.2	1.2	1.8
Prop In Lane	1.00		0.35	1.00		0.09	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	93	691	683	203	800	829	377	397	354	373	397	354
V/C Ratio(X)	0.59	0.71	0.71	0.78	0.51	0.51	0.30	0.05	0.23	0.49	0.13	0.19
Avail Cap(c_a), veh/h	237	1104	1092	305	1104	1143	479	540	482	477	540	482
HCM Platoon Ratio	1.00	1.00	1.00	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	24.4	13.5	13.5	22.7	10.3	10.3	19.0	16.0	16.7	20.5	16.3	16.6
Incr Delay (d2), s/veh	5.8	1.3	1.3	7.4	0.5	0.5	0.4	0.1	0.3	1.0	0.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	4.3	4.3	2.2	2.8	2.9	1.2	0.2	0.8	2.1	0.5	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.1	14.9	14.9	30.1	10.8	10.8	19.4	16.1	17.0	21.5	16.5	16.8
LnGrp LOS	C	B	B	C	B	B	B	B	B	C	B	B
Approach Vol, veh/h		1024			984			212			301	
Approach Delay, s/veh		15.7			13.9			18.2			19.6	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	10.9	25.4		16.4	7.7	28.6		16.4
Change Period (Y+Rc), s	4.9	4.9		4.6	4.9	4.9		4.6
Max Green Setting (Gmax), s	9.0	32.7		16.0	7.0	32.7		16.0
Max Q Clear Time (g_c+I1), s	6.6	14.1		11.2	3.6	10.5		8.0
Green Ext Time (p_c), s	0.1	6.3		0.6	0.0	5.5		0.6

Intersection Summary	
HCM 6th Ctrl Delay	15.7
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

Lane Group	EBT	WBL	WBT	NBL	NBT
Lane Group Flow (vph)	919	37	1154	109	14
v/c Ratio	0.32	0.11	0.50	0.31	0.02
Control Delay	9.1	21.5	6.6	20.0	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	9.1	21.5	6.6	20.0	0.0
Queue Length 50th (ft)	36	8	82	21	0
Queue Length 95th (ft)	103	31	131	64	0
Internal Link Dist (ft)	443		965		645
Turn Bay Length (ft)					
Base Capacity (vph)	3427	1090	3491	1066	1322
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.27	0.03	0.33	0.10	0.01

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	651	93	30	935	0	88	0	11	0	0	0
Future Volume (veh/h)	0	651	93	30	935	0	88	0	11	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	804	115	37	1154	0	109	0	14	0	0	0
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	0	2	2	2	2	0	2	2	2	2	2	2
Cap, veh/h	0	1866	265	78	2156	0	403	0	163	0	192	0
Arrive On Green	0.00	0.41	0.41	0.04	0.61	0.00	0.10	0.00	0.10	0.00	0.00	0.00
Sat Flow, veh/h	0	4685	642	1781	3647	0	1781	0	1585	0	1870	0
Grp Volume(v), veh/h	0	605	314	37	1154	0	109	0	14	0	0	0
Grp Sat Flow(s),veh/h/ln	0	1702	1755	1781	1777	0	1781	0	1585	0	1870	0
Q Serve(g_s), s	0.0	4.1	4.2	0.7	6.2	0.0	1.9	0.0	0.3	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	4.1	4.2	0.7	6.2	0.0	1.9	0.0	0.3	0.0	0.0	0.0
Prop In Lane	0.00		0.37	1.00		0.00	1.00		1.00	0.00		0.00
Lane Grp Cap(c), veh/h	0	1406	725	78	2156	0	403	0	163	0	192	0
V/C Ratio(X)	0.00	0.43	0.43	0.48	0.54	0.00	0.27	0.00	0.09	0.00	0.00	0.00
Avail Cap(c_a), veh/h	0	2926	1508	1313	6206	0	1975	0	1561	0	1842	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)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	6.8	6.9	15.3	3.7	0.0	14.0	0.0	13.3	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.2	0.4	4.5	0.2	0.0	0.4	0.0	0.2	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	0.0	0.9	1.0	0.3	0.7	0.0	0.7	0.0	0.1	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	7.1	7.3	19.7	4.0	0.0	14.4	0.0	13.5	0.0	0.0	0.0
LnGrp LOS	A	A	A	B	A	A	B	A	B	A	A	A
Approach Vol, veh/h		919			1191			123			0	
Approach Delay, s/veh		7.1			4.4			14.3			0.0	
Approach LOS		A			A			B				
Timer - Assigned Phs		2	3	4		6		8				
Phs Duration (G+Y+Rc), s		8.0	6.3	18.4		8.0		24.7				
Change Period (Y+Rc), s		4.6	4.9	4.9		4.6		4.9				
Max Green Setting (Gmax), s		32.2	24.1	28.1		32.2		57.1				
Max Q Clear Time (g_c+I1), s		3.9	2.7	6.2		0.0		8.2				
Green Ext Time (p_c), s		0.3	0.1	6.4		0.0		11.6				
Intersection Summary												
HCM 6th Ctrl Delay			6.1									
HCM 6th LOS			A									

Lane Group	EBT	WBL	WBT	NBL	NBT
Lane Group Flow (vph)	784	47	1154	85	37
v/c Ratio	0.42	0.16	0.50	0.24	0.06
Control Delay	14.9	31.7	10.2	28.5	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	14.9	31.7	10.2	28.5	0.2
Queue Length 50th (ft)	85	12	72	21	0
Queue Length 95th (ft)	251	61	328	90	0
Internal Link Dist (ft)	965		1195		1198
Turn Bay Length (ft)					
Base Capacity (vph)	2642	351	3114	645	1411
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.30	0.13	0.37	0.13	0.03

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	560	75	38	935	0	69	0	30	0	0	0
Future Volume (veh/h)	0	560	75	38	935	0	69	0	30	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	691	93	47	1154	0	85	0	37	0	0	0
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	0	2	2	2	2	0	2	2	2	2	2	2
Cap, veh/h	0	1261	170	95	2149	0	147	0	163	0	6	0
Arrive On Green	0.00	0.40	0.40	0.05	0.60	0.00	0.08	0.00	0.10	0.00	0.00	0.00
Sat Flow, veh/h	0	3241	423	1781	3647	0	1781	0	1585	0	-73709	0
Grp Volume(v), veh/h	0	390	394	47	1154	0	85	0	37	0	0	0
Grp Sat Flow(s),veh/h/ln	0	1777	1794	1781	1777	0	1781	0	1585	0	1870	0
Q Serve(g_s), s	0.0	5.5	5.5	0.8	6.2	0.0	1.5	0.0	0.7	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	5.5	5.5	0.8	6.2	0.0	1.5	0.0	0.7	0.0	0.0	0.0
Prop In Lane	0.00		0.24	1.00		0.00	1.00		1.00	0.00		0.00
Lane Grp Cap(c), veh/h	0	712	719	95	2149	0	147	0	163	0	6	0
V/C Ratio(X)	0.00	0.55	0.55	0.50	0.54	0.00	0.58	0.00	0.23	0.00	0.00	0.00
Avail Cap(c_a), veh/h	0	1965	1984	400	5265	0	735	0	2299	0	1676	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)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	7.5	7.5	14.9	3.8	0.0	14.4	0.0	13.4	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.7	0.7	4.0	0.2	0.0	3.6	0.0	0.7	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	0.0	1.4	1.4	0.4	0.7	0.0	0.6	0.0	0.2	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	8.1	8.1	18.9	4.0	0.0	17.9	0.0	14.1	0.0	0.0	0.0
LnGrp LOS	A	A	A	B	A	A	B	A	B	A	A	A
Approach Vol, veh/h		784			1201			122			0	
Approach Delay, s/veh		8.1			4.6			16.8			0.0	
Approach LOS		A			A			B				
Timer - Assigned Phs		2	3	4	5	6		8				
Phs Duration (G+Y+Rc), s		7.9	6.6	17.9	7.3	0.7		24.5				
Change Period (Y+Rc), s		4.6	4.9	4.9	4.6	4.6		4.9				
Max Green Setting (Gmax), s		47.1	7.3	35.9	13.4	29.1		48.1				
Max Q Clear Time (g_c+I1), s		2.7	2.8	7.5	3.5	0.0		8.2				
Green Ext Time (p_c), s		0.2	0.0	5.5	0.1	0.0		11.2				
Intersection Summary												
HCM 6th Ctrl Delay			6.6									
HCM 6th LOS			A									

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	367	285	42	18	758	40	41	87	21	404
v/c Ratio	0.68	0.12	0.04	0.13	0.69	0.19	0.17	0.47	0.08	0.57
Control Delay	36.1	8.9	0.1	44.3	29.4	40.2	22.5	48.7	32.1	15.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.1	8.9	0.1	44.3	29.4	40.2	22.5	48.7	32.1	15.6
Queue Length 50th (ft)	164	24	0	9	175	16	11	42	10	129
Queue Length 95th (ft)	#382	83	0	33	300	58	35	#122	28	160
Internal Link Dist (ft)		1195			2587		1879		775	
Turn Bay Length (ft)										
Base Capacity (vph)	604	2451	1106	138	1398	229	740	193	800	756
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.61	0.12	0.04	0.13	0.54	0.17	0.06	0.45	0.03	0.53

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	312	242	36	15	598	46	34	19	16	74	18	343
Future Volume (veh/h)	312	242	36	15	598	46	34	19	16	74	18	343
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	367	285	42	18	704	54	40	22	19	87	21	404
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	412	1691	753	37	887	68	66	188	163	112	429	729
Arrive On Green	0.23	0.48	0.48	0.02	0.27	0.27	0.04	0.20	0.20	0.06	0.23	0.23
Sat Flow, veh/h	1781	3554	1582	1781	3344	256	1781	926	800	1781	1870	1581
Grp Volume(v), veh/h	367	285	42	18	374	384	40	0	41	87	21	404
Grp Sat Flow(s),veh/h/ln	1781	1777	1582	1781	1777	1824	1781	0	1726	1781	1870	1581
Q Serve(g_s), s	16.0	3.7	1.1	0.8	15.7	15.7	1.8	0.0	1.6	3.8	0.7	14.8
Cycle Q Clear(g_c), s	16.0	3.7	1.1	0.8	15.7	15.7	1.8	0.0	1.6	3.8	0.7	14.8
Prop In Lane	1.00		1.00	1.00		0.14	1.00		0.46	1.00		1.00
Lane Grp Cap(c), veh/h	412	1691	753	37	471	483	66	0	351	112	429	729
V/C Ratio(X)	0.89	0.17	0.06	0.49	0.79	0.79	0.61	0.00	0.12	0.78	0.05	0.55
Avail Cap(c_a), veh/h	514	1990	886	118	600	615	151	0	615	165	680	942
HCM Platoon Ratio	1.00	1.00	1.00	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	1.00	1.00
Uniform Delay (d), s/veh	29.8	11.9	11.3	38.8	27.4	27.4	38.0	0.0	26.0	36.9	24.0	15.6
Incr Delay (d2), s/veh	15.0	0.0	0.0	9.8	5.7	5.6	8.8	0.0	0.1	13.0	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.3	1.4	0.4	0.4	7.1	7.3	0.9	0.0	0.6	2.0	0.3	5.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.7	12.0	11.3	48.5	33.0	32.9	46.8	0.0	26.2	49.9	24.1	16.3
LnGrp LOS	D	B	B	D	C	C	D	A	C	D	C	B
Approach Vol, veh/h		694			776			81			512	
Approach Delay, s/veh		29.3			33.3			36.4			22.3	
Approach LOS		C			C			D			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.6	20.9	6.5	43.0	7.5	22.9	23.4	26.1				
Change Period (Y+Rc), s	4.6	4.6	4.9	4.9	4.6	4.6	4.9	4.9				
Max Green Setting (Gmax), s	7.4	28.5	5.3	44.8	6.8	29.1	23.1	27.0				
Max Q Clear Time (g_c+I1), s	5.8	3.6	2.8	5.7	3.8	16.8	18.0	17.7				
Green Ext Time (p_c), s	0.0	0.1	0.0	2.1	0.0	1.3	0.6	3.3				
Intersection Summary												
HCM 6th Ctrl Delay			29.4									
HCM 6th LOS			C									

Intersection												
Int Delay, s/veh	5.2											
Movement	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**
Lane Configurations												
Traffic Vol, veh/h	43	156	32	2	326	14	54	4	5	31	10	128
Future Vol, veh/h	43	156	32	2	326	14	54	4	5	31	10	128
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	-	-	-	0	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	51	184	38	2	384	16	64	5	6	36	12	151

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	400	0	0	222	0	0	764	690	184	707	720	392
Stage 1	-	-	-	-	-	-	286	286	-	396	396	-
Stage 2	-	-	-	-	-	-	478	404	-	311	324	-
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	1159	-	-	1347	-	-	321	368	858	350	354	657
Stage 1	-	-	-	-	-	-	721	675	-	629	604	-
Stage 2	-	-	-	-	-	-	568	599	-	699	650	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1159	-	-	1347	-	-	231	349	858	330	336	657
Mov Cap-2 Maneuver	-	-	-	-	-	-	231	349	-	330	336	-
Stage 1	-	-	-	-	-	-	685	641	-	598	603	-
Stage 2	-	-	-	-	-	-	428	598	-	655	618	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.5	0	24.4	13.5
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	231	521	1159	-	-	1347	-	-	331	657
HCM Lane V/C Ratio	0.275	0.02	0.044	-	-	0.002	-	-	0.146	0.229
HCM Control Delay (s)	26.4	12.1	8.2	0	-	7.7	0	-	17.7	12.1
HCM Lane LOS	D	B	A	A	-	A	A	-	C	B
HCM 95th %tile Q(veh)	1.1	0.1	0.1	-	-	0	-	-	0.5	0.9

Intersection	
Int Delay, s/veh	7.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	43	98	50	7	77	15	139	4	25	40	10	124
Future Vol, veh/h	43	98	50	7	77	15	139	4	25	40	10	124
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	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	48	110	56	8	87	17	156	4	28	45	11	139

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	104	0	0	166	0	0	393	326	110	362	374	96
Stage 1	-	-	-	-	-	-	206	206	-	112	112	-
Stage 2	-	-	-	-	-	-	187	120	-	250	262	-
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	1488	-	-	1412	-	-	566	592	943	594	557	960
Stage 1	-	-	-	-	-	-	796	731	-	893	803	-
Stage 2	-	-	-	-	-	-	815	796	-	754	691	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1488	-	-	1412	-	-	461	567	943	555	534	960
Mov Cap-2 Maneuver	-	-	-	-	-	-	461	567	-	555	534	-
Stage 1	-	-	-	-	-	-	767	705	-	861	798	-
Stage 2	-	-	-	-	-	-	683	791	-	701	666	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.7	0.5	15.5	10.3
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	461	864	1488	-	-	1412	-	-	555	906
HCM Lane V/C Ratio	0.339	0.038	0.032	-	-	0.006	-	-	0.081	0.166
HCM Control Delay (s)	16.8	9.3	7.5	0	-	7.6	0	-	12.1	9.8
HCM Lane LOS	C	A	A	A	-	A	A	-	B	A
HCM 95th %tile Q(veh)	1.5	0.1	0.1	-	-	0	-	-	0.3	0.6

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	7	48	108	1	40	0	52	4	2	0	7	11
Future Vol, veh/h	7	48	108	1	40	0	52	4	2	0	7	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	77	77	77	77	77	77	77	77	77	77	77	77
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	62	140	1	52	0	68	5	3	0	9	14

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	52	0	0	202	0	0	216	204	132	208	274	52
Stage 1	-	-	-	-	-	-	150	150	-	54	54	-
Stage 2	-	-	-	-	-	-	66	54	-	154	220	-
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	1554	-	-	1370	-	-	740	692	917	749	633	1016
Stage 1	-	-	-	-	-	-	853	773	-	958	850	-
Stage 2	-	-	-	-	-	-	945	850	-	848	721	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1554	-	-	1370	-	-	717	686	917	738	628	1016
Mov Cap-2 Maneuver	-	-	-	-	-	-	717	686	-	738	628	-
Stage 1	-	-	-	-	-	-	847	768	-	951	849	-
Stage 2	-	-	-	-	-	-	921	849	-	834	716	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.2	10.6	9.5
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	720	1554	-	-	1370	-	-	819
HCM Lane V/C Ratio	0.105	0.006	-	-	0.001	-	-	0.029
HCM Control Delay (s)	10.6	7.3	0	-	7.6	0	-	9.5
HCM Lane LOS	B	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	0.1

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	241	0	0	264	155	0	0	0	96	0	3
Future Vol, veh/h	0	241	0	0	264	155	0	0	0	96	0	3
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	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	92	92	85	85	92	92	92	85	92	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	284	0	0	311	182	0	0	0	113	0	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	493	0	0	284	0	0	688	777	284	686	686	402
Stage 1	-	-	-	-	-	-	284	284	-	402	402	-
Stage 2	-	-	-	-	-	-	404	493	-	284	284	-
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	1071	-	-	1278	-	-	360	328	755	362	370	648
Stage 1	-	-	-	-	-	-	723	676	-	625	600	-
Stage 2	-	-	-	-	-	-	623	547	-	723	676	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1071	-	-	1278	-	-	358	328	755	362	370	648
Mov Cap-2 Maneuver	-	-	-	-	-	-	358	328	-	362	370	-
Stage 1	-	-	-	-	-	-	723	676	-	625	600	-
Stage 2	-	-	-	-	-	-	620	547	-	723	676	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	0	19.3
HCM LOS			A	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1071	-	-	1278	-	-	367
HCM Lane V/C Ratio	-	-	-	-	-	-	-	0.317
HCM Control Delay (s)	0	0	-	-	0	-	-	19.3
HCM Lane LOS	A	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	1.3

Intersection	
Intersection Delay, s/veh	17
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	9	38	231	88	95	0	281	30	46	0	87	26
Future Vol, veh/h	9	38	231	88	95	0	281	30	46	0	87	26
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	45	272	104	112	0	331	35	54	0	102	31
Number of Lanes	1	1	0	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	2
HCM Control Delay	16.2	15.6	19.9	12.3
HCM LOS	C	C	C	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	48%	0%	0%
Vol Thru, %	0%	39%	0%	14%	52%	100%	77%
Vol Right, %	0%	61%	0%	86%	0%	0%	23%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	281	76	9	269	183	0	113
LT Vol	281	0	9	0	88	0	0
Through Vol	0	30	0	38	95	0	87
RT Vol	0	46	0	231	0	0	26
Lane Flow Rate	331	89	11	316	215	0	133
Geometry Grp	7	7	7	7	6	7	7
Degree of Util (X)	0.658	0.155	0.022	0.55	0.429	0	0.261
Departure Headway (Hd)	7.161	6.221	7.375	6.251	7.18	7.242	7.076
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	509	580	485	576	502	0	507
Service Time	4.861	3.921	5.118	3.993	5.229	4.996	4.831
HCM Lane V/C Ratio	0.65	0.153	0.023	0.549	0.428	0	0.262
HCM Control Delay	22.6	10.1	10.3	16.4	15.6	10	12.3
HCM Lane LOS	C	B	B	C	C	N	B
HCM 95th-tile Q	4.7	0.5	0.1	3.3	2.1	0	1

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	55	978	169	876	112	102	182	119
v/c Ratio	0.30	0.73	0.68	0.49	0.36	0.12	0.58	0.14
Control Delay	37.2	21.2	47.8	15.0	24.3	7.3	29.9	10.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.2	21.2	47.8	15.0	24.3	7.3	29.9	10.2
Queue Length 50th (ft)	20	149	62	124	36	3	63	7
Queue Length 95th (ft)	65	303	#210	261	77	17	121	24
Internal Link Dist (ft)		4010		607		1657		634
Turn Bay Length (ft)								
Base Capacity (vph)	201	1856	259	1989	383	1002	389	1030
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.27	0.53	0.65	0.44	0.29	0.10	0.47	0.12

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	686	145	144	712	32	95	17	70	155	43	58
Future Volume (veh/h)	47	686	145	144	712	32	95	17	70	155	43	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	55	807	171	169	838	38	112	20	82	182	51	68
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	93	1133	240	215	1581	72	374	397	354	368	397	354
Arrive On Green	0.05	0.39	0.39	0.12	0.46	0.46	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	1781	2918	618	1781	3462	157	1273	1777	1585	1293	1777	1585
Grp Volume(v), veh/h	55	491	487	169	430	446	112	20	82	182	51	68
Grp Sat Flow(s),veh/h/ln	1781	1777	1759	1781	1777	1842	1273	1777	1585	1293	1777	1585
Q Serve(g_s), s	1.6	12.6	12.6	5.0	9.3	9.3	4.2	0.5	2.3	7.2	1.2	1.9
Cycle Q Clear(g_c), s	1.6	12.6	12.6	5.0	9.3	9.3	6.1	0.5	2.3	9.5	1.2	1.9
Prop In Lane	1.00		0.35	1.00		0.09	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	93	690	683	215	812	841	374	397	354	368	397	354
V/C Ratio(X)	0.59	0.71	0.71	0.79	0.53	0.53	0.30	0.05	0.23	0.49	0.13	0.19
Avail Cap(c_a), veh/h	232	1080	1069	298	1080	1120	468	528	471	463	528	471
HCM Platoon Ratio	1.00	1.00	1.00	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	24.9	13.9	13.9	23.0	10.5	10.5	19.4	16.4	17.1	21.0	16.7	16.9
Incr Delay (d2), s/veh	5.9	1.4	1.4	9.1	0.5	0.5	0.4	0.1	0.3	1.0	0.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	4.5	4.5	2.5	3.1	3.2	1.2	0.2	0.8	2.1	0.5	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.9	15.3	15.3	32.1	11.0	11.0	19.9	16.5	17.4	22.0	16.8	17.2
LnGrp LOS	C	B	B	C	B	B	B	B	B	C	B	B
Approach Vol, veh/h		1033			1045			214			301	
Approach Delay, s/veh		16.1			14.4			18.6			20.1	
Approach LOS		B			B			B			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.4	25.8		16.6	7.7	29.5		16.6				
Change Period (Y+Rc), s	4.9	4.9		4.6	4.9	4.9		4.6				
Max Green Setting (Gmax), s	9.0	32.7		16.0	7.0	32.7		16.0				
Max Q Clear Time (g_c+I1), s	7.0	14.6		11.5	3.6	11.3		8.1				
Green Ext Time (p_c), s	0.1	6.3		0.5	0.0	5.8		0.6				

Intersection Summary			
HCM 6th Ctrl Delay			16.1
HCM 6th LOS			B

Notes

User approved pedestrian interval to be less than phase max green.

Lane Group	EBT	WBL	WBT	NBL	NBT
Lane Group Flow (vph)	941	44	1265	109	15
v/c Ratio	0.32	0.14	0.53	0.32	0.02
Control Delay	9.2	22.7	7.0	21.2	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	9.2	22.7	7.0	21.2	0.1
Queue Length 50th (ft)	37	10	95	25	0
Queue Length 95th (ft)	112	37	156	68	0
Internal Link Dist (ft)	443		965		645
Turn Bay Length (ft)					
Base Capacity (vph)	3285	1046	3451	1019	1287
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.29	0.04	0.37	0.11	0.01

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	669	93	36	1025	0	88	0	12	0	0	0
Future Volume (veh/h)	0	669	93	36	1025	0	88	0	12	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	826	115	44	1265	0	109	0	15	0	0	0
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	0	2	2	2	2	0	2	2	2	2	2	2
Cap, veh/h	0	2030	281	88	2255	0	378	0	157	0	185	0
Arrive On Green	0.00	0.45	0.45	0.05	0.63	0.00	0.10	0.00	0.10	0.00	0.00	0.00
Sat Flow, veh/h	0	4702	628	1781	3647	0	1781	0	1585	0	1870	0
Grp Volume(v), veh/h	0	619	322	44	1265	0	109	0	15	0	0	0
Grp Sat Flow(s),veh/h/ln	0	1702	1757	1781	1777	0	1781	0	1585	0	1870	0
Q Serve(g_s), s	0.0	4.4	4.4	0.9	7.2	0.0	2.1	0.0	0.3	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	4.4	4.4	0.9	7.2	0.0	2.1	0.0	0.3	0.0	0.0	0.0
Prop In Lane	0.00		0.36	1.00		0.00	1.00		1.00	0.00		0.00
Lane Grp Cap(c), veh/h	0	1524	787	88	2255	0	378	0	157	0	185	0
V/C Ratio(X)	0.00	0.41	0.41	0.50	0.56	0.00	0.29	0.00	0.10	0.00	0.00	0.00
Avail Cap(c_a), veh/h	0	2681	1384	1203	5688	0	1810	0	1431	0	1688	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)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	6.7	6.7	16.5	3.7	0.0	15.4	0.0	14.6	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.2	0.3	4.3	0.2	0.0	0.4	0.0	0.3	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	0.0	1.0	1.1	0.4	0.8	0.0	0.7	0.0	0.1	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	6.8	7.0	20.8	3.9	0.0	15.8	0.0	14.9	0.0	0.0	0.0
LnGrp LOS	A	A	A	C	A	A	B	A	B	A	A	A
Approach Vol, veh/h		941			1309			124			0	
Approach Delay, s/veh		6.9			4.5			15.7			0.0	
Approach LOS		A			A			B				
Timer - Assigned Phs		2	3	4		6		8				
Phs Duration (G+Y+Rc), s		8.1	6.7	20.9		8.1		27.5				
Change Period (Y+Rc), s		4.6	4.9	4.9		4.6		4.9				
Max Green Setting (Gmax), s		32.2	24.1	28.1		32.2		57.1				
Max Q Clear Time (g_c+I1), s		4.1	2.9	6.4		0.0		9.2				
Green Ext Time (p_c), s		0.3	0.1	6.6		0.0		13.4				
Intersection Summary												
HCM 6th Ctrl Delay			6.0									
HCM 6th LOS			A									

Lane Group	EBT	WBL	WBT	NBL	NBT
Lane Group Flow (vph)	808	54	1273	85	38
v/c Ratio	0.43	0.19	0.54	0.25	0.07
Control Delay	14.9	32.2	10.8	29.0	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	14.9	32.2	10.8	29.0	0.2
Queue Length 50th (ft)	90	14	86	21	0
Queue Length 95th (ft)	260	67	376	90	0
Internal Link Dist (ft)	965		1195		1198
Turn Bay Length (ft)					
Base Capacity (vph)	2578	332	3085	610	1397
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.31	0.16	0.41	0.14	0.03

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	579	75	44	1031	0	69	0	31	0	0	0
Future Volume (veh/h)	0	579	75	44	1031	0	69	0	31	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	715	93	54	1273	0	85	0	38	0	0	0
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	0	2	2	2	2	0	2	2	2	2	2	2
Cap, veh/h	0	1367	178	104	2239	0	143	0	158	0	5	0
Arrive On Green	0.00	0.43	0.43	0.06	0.63	0.00	0.08	0.00	0.10	0.00	0.00	0.00
Sat Flow, veh/h	0	3256	411	1781	3647	0	1781	0	1585	0	-73395	0
Grp Volume(v), veh/h	0	402	406	54	1273	0	85	0	38	0	0	0
Grp Sat Flow(s),veh/h/ln	0	1777	1796	1781	1777	0	1781	0	1585	0	1870	0
Q Serve(g_s), s	0.0	5.8	5.8	1.0	7.3	0.0	1.6	0.0	0.8	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	5.8	5.8	1.0	7.3	0.0	1.6	0.0	0.8	0.0	0.0	0.0
Prop In Lane	0.00		0.23	1.00		0.00	1.00		1.00	0.00		0.00
Lane Grp Cap(c), veh/h	0	768	776	104	2239	0	143	0	158	0	5	0
V/C Ratio(X)	0.00	0.52	0.52	0.52	0.57	0.00	0.59	0.00	0.24	0.00	0.00	0.00
Avail Cap(c_a), veh/h	0	1816	1836	370	4866	0	680	0	2125	0	1550	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)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	7.3	7.3	16.1	3.7	0.0	15.6	0.0	14.6	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.6	0.5	4.0	0.2	0.0	3.9	0.0	0.8	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	0.0	1.5	1.5	0.5	0.8	0.0	0.7	0.0	0.3	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	7.9	7.9	20.0	4.0	0.0	19.5	0.0	15.4	0.0	0.0	0.0
LnGrp LOS	A	A	A	C	A	A	B	A	B	A	A	A
Approach Vol, veh/h		808			1327			123			0	
Approach Delay, s/veh		7.9			4.6			18.2			0.0	
Approach LOS		A			A			B				

Timer - Assigned Phs		2	3	4	5	6		8				
Phs Duration (G+Y+Rc), s		8.1	6.9	20.1	7.4	0.7		27.0				
Change Period (Y+Rc), s		4.6	4.9	4.9	4.6	4.6		4.9				
Max Green Setting (Gmax), s		47.1	7.3	35.9	13.4	29.1		48.1				
Max Q Clear Time (g_c+I1), s		2.8	3.0	7.8	3.6	0.0		9.3				
Green Ext Time (p_c), s		0.2	0.0	5.7	0.1	0.0		12.9				

Intersection Summary		
HCM 6th Ctrl Delay		6.5
HCM 6th LOS		A

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	391	285	42	18	763	40	43	112	25	522
v/c Ratio	0.73	0.13	0.04	0.15	0.75	0.20	0.19	0.65	0.10	0.71
Control Delay	38.0	9.0	0.1	44.9	32.2	40.6	23.1	58.4	32.3	20.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.0	9.0	0.1	44.9	32.2	40.6	23.1	58.4	32.3	20.5
Queue Length 50th (ft)	179	25	0	9	176	16	11	56	12	207
Queue Length 95th (ft)	#418	83	0	33	302	58	36	#167	31	242
Internal Link Dist (ft)		1195			2587		1879		775	
Turn Bay Length (ft)										
Base Capacity (vph)	539	2270	1032	123	1248	210	665	172	714	736
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.73	0.13	0.04	0.15	0.61	0.19	0.06	0.65	0.04	0.71

Intersection Summary

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	332	242	36	15	598	50	34	20	16	95	21	444
Future Volume (veh/h)	332	242	36	15	598	50	34	20	16	95	21	444
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	391	285	42	18	704	59	40	24	19	112	25	522
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	423	1666	742	36	834	70	62	222	176	140	512	809
Arrive On Green	0.24	0.47	0.47	0.02	0.25	0.25	0.03	0.23	0.23	0.08	0.27	0.27
Sat Flow, veh/h	1781	3554	1582	1781	3318	278	1781	967	766	1781	1870	1582
Grp Volume(v), veh/h	391	285	42	18	377	386	40	0	43	112	25	522
Grp Sat Flow(s),veh/h/ln	1781	1777	1582	1781	1777	1820	1781	0	1733	1781	1870	1582
Q Serve(g_s), s	20.1	4.3	1.4	0.9	18.8	18.9	2.1	0.0	1.8	5.8	0.9	22.5
Cycle Q Clear(g_c), s	20.1	4.3	1.4	0.9	18.8	18.9	2.1	0.0	1.8	5.8	0.9	22.5
Prop In Lane	1.00		1.00	1.00		0.15	1.00		0.44	1.00		1.00
Lane Grp Cap(c), veh/h	423	1666	742	36	447	457	62	0	397	140	512	809
V/C Ratio(X)	0.92	0.17	0.06	0.51	0.84	0.84	0.65	0.00	0.11	0.80	0.05	0.65
Avail Cap(c_a), veh/h	440	1702	757	101	513	525	129	0	528	141	582	868
HCM Platoon Ratio	1.00	1.00	1.00	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	1.00	1.00
Uniform Delay (d), s/veh	34.8	14.3	13.6	45.4	33.3	33.3	44.6	0.0	28.5	42.4	25.0	16.7
Incr Delay (d2), s/veh	24.8	0.0	0.0	10.7	11.0	10.8	11.0	0.0	0.1	26.8	0.0	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.4	1.7	0.5	0.5	9.3	9.5	1.1	0.0	0.8	3.6	0.4	8.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.7	14.4	13.6	56.1	44.2	44.1	55.6	0.0	28.6	69.1	25.1	18.2
LnGrp LOS	E	B	B	E	D	D	E	A	C	E	C	B
Approach Vol, veh/h		718			781			83			659	
Approach Delay, s/veh		39.0			44.5			41.6			27.1	
Approach LOS		D			D			D			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.0	26.1	6.8	48.8	7.8	30.2	27.1	28.4				
Change Period (Y+Rc), s	4.6	4.6	4.9	4.9	4.6	4.6	4.9	4.9				
Max Green Setting (Gmax), s	7.4	28.5	5.3	44.8	6.8	29.1	23.1	27.0				
Max Q Clear Time (g_c+I1), s	7.8	3.8	2.9	6.3	4.1	24.5	22.1	20.9				
Green Ext Time (p_c), s	0.0	0.2	0.0	2.1	0.0	1.0	0.2	2.5				
Intersection Summary												
HCM 6th Ctrl Delay			37.5									
HCM 6th LOS			D									

Intersection	
Int Delay, s/veh	5.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	43	177	32	2	330	14	54	4	5	31	12	128
Future Vol, veh/h	43	177	32	2	330	14	54	4	5	31	12	128
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	-	-	-	0	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	51	208	38	2	388	16	64	5	6	36	14	151

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	404	0	0	246	0	0	793	718	208	735	748	396
Stage 1	-	-	-	-	-	-	310	310	-	400	400	-
Stage 2	-	-	-	-	-	-	483	408	-	335	348	-
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	-	-	1320	-	-	306	355	832	335	341	653
Stage 1	-	-	-	-	-	-	700	659	-	626	602	-
Stage 2	-	-	-	-	-	-	565	597	-	679	634	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1155	-	-	1320	-	-	218	336	832	316	323	653
Mov Cap-2 Maneuver	-	-	-	-	-	-	218	336	-	316	323	-
Stage 1	-	-	-	-	-	-	664	625	-	594	601	-
Stage 2	-	-	-	-	-	-	424	596	-	635	602	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.4	0	25.9	13.8
HCM LOS			D	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	218	502	1155	-	-	1320	-	-	318	653
HCM Lane V/C Ratio	0.291	0.021	0.044	-	-	0.002	-	-	0.159	0.231
HCM Control Delay (s)	28.2	12.3	8.3	0	-	7.7	0	-	18.5	12.2
HCM Lane LOS	D	B	A	A	-	A	A	-	C	B
HCM 95th %tile Q(veh)	1.2	0.1	0.1	-	-	0	-	-	0.6	0.9

Intersection	
Int Delay, s/veh	7.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	43	119	50	7	81	15	139	4	25	40	12	124
Future Vol, veh/h	43	119	50	7	81	15	139	4	25	40	12	124
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	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	48	134	56	8	91	17	156	4	28	45	13	139

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	108	0	0	190	0	0	422	354	134	390	402	100
Stage 1	-	-	-	-	-	-	230	230	-	116	116	-
Stage 2	-	-	-	-	-	-	192	124	-	274	286	-
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	1483	-	-	1384	-	-	542	571	915	569	537	956
Stage 1	-	-	-	-	-	-	773	714	-	889	800	-
Stage 2	-	-	-	-	-	-	810	793	-	732	675	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1483	-	-	1384	-	-	440	547	915	531	514	956
Mov Cap-2 Maneuver	-	-	-	-	-	-	440	547	-	531	514	-
Stage 1	-	-	-	-	-	-	745	688	-	857	795	-
Stage 2	-	-	-	-	-	-	676	788	-	680	651	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.5	0.5	16.2	10.5
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	440	837	1483	-	-	1384	-	-	531	889
HCM Lane V/C Ratio	0.355	0.039	0.033	-	-	0.006	-	-	0.085	0.172
HCM Control Delay (s)	17.6	9.5	7.5	0	-	7.6	0	-	12.4	9.9
HCM Lane LOS	C	A	A	A	-	A	A	-	B	A
HCM 95th %tile Q(veh)	1.6	0.1	0.1	-	-	0	-	-	0.3	0.6

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	7	55	122	1	41	0	55	4	2	0	7	11
Future Vol, veh/h	7	55	122	1	41	0	55	4	2	0	7	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	77	77	77	77	77	77	77	77	77	77	77	77
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	71	158	1	53	0	71	5	3	0	9	14

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	53	0	0	229	0	0	235	223	150	227	302	53
Stage 1	-	-	-	-	-	-	168	168	-	55	55	-
Stage 2	-	-	-	-	-	-	67	55	-	172	247	-
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	1553	-	-	1339	-	-	720	676	896	728	611	1014
Stage 1	-	-	-	-	-	-	834	759	-	957	849	-
Stage 2	-	-	-	-	-	-	943	849	-	830	702	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1553	-	-	1339	-	-	698	671	896	717	606	1014
Mov Cap-2 Maneuver	-	-	-	-	-	-	698	671	-	717	606	-
Stage 1	-	-	-	-	-	-	828	754	-	950	848	-
Stage 2	-	-	-	-	-	-	919	848	-	816	697	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.2	10.8	9.6
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	701	1553	-	-	1339	-	-	804
HCM Lane V/C Ratio	0.113	0.006	-	-	0.001	-	-	0.029
HCM Control Delay (s)	10.8	7.3	0	-	7.7	0	-	9.6
HCM Lane LOS	B	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.4	0	-	-	0	-	-	0.1

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	241	0	0	264	156	0	0	0	99	0	3
Future Vol, veh/h	0	241	0	0	264	156	0	0	0	99	0	3
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	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	92	92	85	85	92	92	92	85	92	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	284	0	0	311	184	0	0	0	116	0	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	495	0	0	284	0	0	689	779	284	687	687	403
Stage 1	-	-	-	-	-	-	284	284	-	403	403	-
Stage 2	-	-	-	-	-	-	405	495	-	284	284	-
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	1069	-	-	1278	-	-	360	327	755	361	370	647
Stage 1	-	-	-	-	-	-	723	676	-	624	600	-
Stage 2	-	-	-	-	-	-	622	546	-	723	676	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1069	-	-	1278	-	-	358	327	755	361	370	647
Mov Cap-2 Maneuver	-	-	-	-	-	-	358	327	-	361	370	-
Stage 1	-	-	-	-	-	-	723	676	-	624	600	-
Stage 2	-	-	-	-	-	-	619	546	-	723	676	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	0	19.6
HCM LOS			A	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1069	-	-	1278	-	-	366
HCM Lane V/C Ratio	-	-	-	-	-	-	-	0.328
HCM Control Delay (s)	0	0	-	-	0	-	-	19.6
HCM Lane LOS	A	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	1.4

Intersection	
Intersection Delay, s/veh	21.7
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	9	40	231	88	95	1	281	54	46	3	212	26
Future Vol, veh/h	9	40	231	88	95	1	281	54	46	3	212	26
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	47	272	104	112	1	331	64	54	4	249	31
Number of Lanes	1	1	0	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	2
HCM Control Delay	20.6	18.9	24.4	20.8
HCM LOS	C	C	C	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	48%	100%	0%
Vol Thru, %	0%	54%	0%	15%	52%	0%	89%
Vol Right, %	0%	46%	0%	85%	1%	0%	11%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	281	100	9	271	184	3	238
LT Vol	281	0	9	0	88	3	0
Through Vol	0	54	0	40	95	0	212
RT Vol	0	46	0	231	1	0	26
Lane Flow Rate	331	118	11	319	216	4	280
Geometry Grp	7	7	7	7	6	7	7
Degree of Util (X)	0.725	0.23	0.024	0.622	0.492	0.008	0.593
Departure Headway (Hd)	7.893	7.047	8.285	7.157	8.179	8.221	7.626
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	460	512	435	507	442	437	476
Service Time	5.604	4.758	5.985	4.857	6.216	5.935	5.34
HCM Lane V/C Ratio	0.72	0.23	0.025	0.629	0.489	0.009	0.588
HCM Control Delay	28.8	11.9	11.2	20.9	18.9	11	20.9
HCM Lane LOS	D	B	B	C	C	B	C
HCM 95th-tile Q	5.8	0.9	0.1	4.2	2.7	0	3.8

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	36	1217	149	955	172	218	119	79
v/c Ratio	0.21	0.81	0.66	0.48	0.57	0.26	0.45	0.10
Control Delay	37.5	24.4	49.4	13.2	31.5	5.7	28.7	12.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.5	24.4	49.4	13.2	31.5	5.7	28.7	12.2
Queue Length 50th (ft)	15	211	63	84	69	5	46	7
Queue Length 95th (ft)	48	#456	#181	291	113	24	82	20
Internal Link Dist (ft)		4010		607		1657		634
Turn Bay Length (ft)								
Base Capacity (vph)	186	1731	240	2033	373	1012	326	961
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.70	0.62	0.47	0.46	0.22	0.37	0.08

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	922	112	127	767	45	146	25	161	101	34	33
Future Volume (veh/h)	31	922	112	127	767	45	146	25	161	101	34	33
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	36	1085	132	149	902	53	172	29	189	119	40	39
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	66	1368	166	189	1698	100	400	419	374	269	428	366
Arrive On Green	0.04	0.43	0.43	0.11	0.50	0.50	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	1781	3190	388	1781	3411	200	1320	1777	1585	1163	1816	1552
Grp Volume(v), veh/h	36	604	613	149	470	485	172	29	189	119	39	40
Grp Sat Flow(s),veh/h/ln	1781	1777	1801	1781	1777	1834	1320	1777	1585	1163	1777	1591
Q Serve(g_s), s	1.2	18.5	18.5	5.1	11.3	11.3	7.4	0.8	6.5	6.2	1.1	1.2
Cycle Q Clear(g_c), s	1.2	18.5	18.5	5.1	11.3	11.3	8.6	0.8	6.5	12.7	1.1	1.2
Prop In Lane	1.00		0.22	1.00		0.11	1.00		1.00	1.00		0.98
Lane Grp Cap(c), veh/h	66	762	772	189	885	913	400	419	374	269	419	375
V/C Ratio(X)	0.54	0.79	0.79	0.79	0.53	0.53	0.43	0.07	0.51	0.44	0.09	0.11
Avail Cap(c_a), veh/h	198	925	937	255	925	955	425	452	404	290	452	405
HCM Platoon Ratio	1.00	1.00	1.00	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	29.7	15.5	15.5	27.4	10.8	10.8	22.2	18.6	20.8	26.3	18.8	18.8
Incr Delay (d2), s/veh	6.8	3.9	3.9	11.1	0.5	0.5	0.7	0.1	1.1	1.1	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	7.3	7.4	2.6	3.9	4.0	2.3	0.3	2.4	1.7	0.4	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.5	19.4	19.5	38.5	11.3	11.3	22.9	18.7	21.9	27.5	18.9	18.9
LnGrp LOS	D	B	B	D	B	B	C	B	C	C	B	B
Approach Vol, veh/h		1253			1104			390			198	
Approach Delay, s/veh		20.0			15.0			22.1			24.1	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.6	31.9		19.4	7.2	36.2		19.4
Change Period (Y+Rc), s	4.9	4.9		4.6	4.9	4.9		4.6
Max Green Setting (Gmax), s	9.0	32.7		16.0	7.0	32.7		16.0
Max Q Clear Time (g_c+I1), s	7.1	20.5		14.7	3.2	13.3		10.6
Green Ext Time (p_c), s	0.1	6.4		0.1	0.0	6.2		0.9

Intersection Summary	
HCM 6th Ctrl Delay	18.6
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

Lane Group	EBT	WBL	WBT	NBL	NBT
Lane Group Flow (vph)	1669	46	1026	351	63
v/c Ratio	0.75	0.25	0.53	0.77	0.08
Control Delay	21.5	37.0	12.4	36.0	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	21.5	37.0	12.4	36.0	0.2
Queue Length 50th (ft)	256	22	156	152	0
Queue Length 95th (ft)	300	48	193	225	0
Internal Link Dist (ft)	443		965		645
Turn Bay Length (ft)					
Base Capacity (vph)	2222	608	2967	587	938
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.75	0.08	0.35	0.60	0.07

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1054	298	37	831	0	284	0	51	0	0	0
Future Volume (veh/h)	0	1054	298	37	831	0	284	0	51	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	1301	368	46	1026	0	351	0	63	0	0	0
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	0	2	2	2	2	0	2	2	2	2	2	2
Cap, veh/h	0	1830	517	81	2106	0	557	0	384	0	454	0
Arrive On Green	0.00	0.46	0.46	0.05	0.59	0.00	0.24	0.00	0.24	0.00	0.00	0.00
Sat Flow, veh/h	0	4125	1117	1781	3647	0	1781	0	1585	0	1870	0
Grp Volume(v), veh/h	0	1119	550	46	1026	0	351	0	63	0	0	0
Grp Sat Flow(s),veh/h/ln	0	1702	1669	1781	1777	0	1781	0	1585	0	1870	0
Q Serve(g_s), s	0.0	15.2	15.2	1.5	9.5	0.0	10.7	0.0	1.8	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	15.2	15.2	1.5	9.5	0.0	10.7	0.0	1.8	0.0	0.0	0.0
Prop In Lane	0.00		0.67	1.00		0.00	1.00		1.00	0.00		0.00
Lane Grp Cap(c), veh/h	0	1574	772	81	2106	0	557	0	384	0	454	0
V/C Ratio(X)	0.00	0.71	0.71	0.57	0.49	0.00	0.63	0.00	0.16	0.00	0.00	0.00
Avail Cap(c_a), veh/h	0	1837	901	745	3705	0	1027	0	803	0	948	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)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	12.4	12.4	27.0	6.7	0.0	20.6	0.0	17.2	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.1	2.2	6.2	0.2	0.0	1.2	0.0	0.2	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	0.0	5.0	5.2	0.7	2.7	0.0	4.2	0.0	0.6	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	13.5	14.6	33.2	6.9	0.0	21.8	0.0	17.4	0.0	0.0	0.0
LnGrp LOS	A	B	B	C	A	A	C	A	B	A	A	A
Approach Vol, veh/h		1669			1072			414			0	
Approach Delay, s/veh		13.9			8.0			21.1			0.0	
Approach LOS		B			A			C				

Timer - Assigned Phs		2	3	4		6		8				
Phs Duration (G+Y+Rc), s		18.6	7.5	31.6		18.6		39.1				
Change Period (Y+Rc), s		4.6	4.9	4.9		4.6		4.9				
Max Green Setting (Gmax), s		29.2	24.1	31.1		29.2		60.1				
Max Q Clear Time (g_c+I1), s		12.7	3.5	17.2		0.0		11.5				
Green Ext Time (p_c), s		1.3	0.1	9.4		0.0		9.7				

Intersection Summary			
HCM 6th Ctrl Delay			12.8
HCM 6th LOS			B

Lane Group	EBT	WBL	WBT	NBL	NBT
Lane Group Flow (vph)	1405	60	768	315	65
v/c Ratio	0.86	0.49	0.38	0.78	0.11
Control Delay	26.5	52.9	11.1	45.6	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	26.5	52.9	11.1	45.6	0.4
Queue Length 50th (ft)	251	25	71	126	0
Queue Length 95th (ft)	#608	#92	211	#347	0
Internal Link Dist (ft)	965		1195		1198
Turn Bay Length (ft)					
Base Capacity (vph)	1637	122	2159	402	1167
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.86	0.49	0.36	0.78	0.06

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	887	251	49	622	0	255	0	53	0	0	0
Future Volume (veh/h)	0	887	251	49	622	0	255	0	53	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	1095	310	60	768	0	315	0	65	0	0	0
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	0	2	2	2	2	0	2	2	2	2	2	2
Cap, veh/h	0	1362	382	94	2245	0	372	0	331	0	3	0
Arrive On Green	0.00	0.50	0.50	0.05	0.63	0.00	0.21	0.00	0.21	0.00	0.00	0.00
Sat Flow, veh/h	0	2834	768	1781	3647	0	1781	0	1585	0	-86037	0
Grp Volume(v), veh/h	0	706	699	60	768	0	315	0	65	0	0	0
Grp Sat Flow(s),veh/h/ln	0	1777	1732	1781	1777	0	1781	0	1585	0	1870	0
Q Serve(g_s), s	0.0	19.8	20.3	2.0	6.1	0.0	10.1	0.0	2.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	19.8	20.3	2.0	6.1	0.0	10.1	0.0	2.0	0.0	0.0	0.0
Prop In Lane	0.00		0.44	1.00		0.00	1.00		1.00	0.00		0.00
Lane Grp Cap(c), veh/h	0	883	861	94	2245	0	372	0	331	0	3	0
V/C Ratio(X)	0.00	0.80	0.81	0.64	0.34	0.00	0.85	0.00	0.20	0.00	0.00	0.00
Avail Cap(c_a), veh/h	0	1016	990	149	2621	0	490	0	1360	0	947	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)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	12.5	12.7	27.7	5.2	0.0	22.7	0.0	19.5	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	4.1	4.6	7.0	0.1	0.0	10.2	0.0	0.3	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	0.0	7.4	7.5	1.0	1.6	0.0	5.0	0.0	0.7	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	16.6	17.3	34.7	5.2	0.0	32.9	0.0	19.8	0.0	0.0	0.0
LnGrp LOS	A	B	B	C	A	A	C	A	B	A	A	A
Approach Vol, veh/h		1405			828			380			0	
Approach Delay, s/veh		16.9			7.4			30.6			0.0	
Approach LOS		B			A			C				
Timer - Assigned Phs		2	3	4	5	6		8				
Phs Duration (G+Y+Rc), s		17.1	8.1	34.5	17.1	0.0		42.6				
Change Period (Y+Rc), s		4.6	4.9	4.9	4.6	4.6		4.9				
Max Green Setting (Gmax), s		51.2	5.0	34.1	16.4	30.2		44.0				
Max Q Clear Time (g_c+I1), s		4.0	4.0	22.3	12.1	0.0		8.1				
Green Ext Time (p_c), s		0.4	0.0	7.3	0.4	0.0		6.3				
Intersection Summary												
HCM 6th Ctrl Delay			15.9									
HCM 6th LOS			B									

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	312	765	33	13	532	19	31	25	12	268
v/c Ratio	0.51	0.27	0.03	0.07	0.54	0.10	0.10	0.12	0.03	0.33
Control Delay	26.4	8.3	0.0	33.6	20.2	33.8	16.3	33.9	20.0	4.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.4	8.3	0.0	33.6	20.2	33.8	16.3	33.9	20.0	4.3
Queue Length 50th (ft)	40	0	0	2	42	3	3	4	2	8
Queue Length 95th (ft)	#346	221	0	25	176	32	26	39	17	55
Internal Link Dist (ft)		1195			2587		1879		775	
Turn Bay Length (ft)										
Base Capacity (vph)	606	2824	1259	200	2148	200	1132	200	1221	820
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.51	0.27	0.03	0.07	0.25	0.10	0.03	0.13	0.01	0.33

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	265	650	28	11	425	27	16	13	14	21	10	228
Future Volume (veh/h)	265	650	28	11	425	27	16	13	14	21	10	228
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	312	765	33	13	500	32	19	15	16	25	12	268
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	374	1518	675	29	793	51	41	146	156	52	341	620
Arrive On Green	0.21	0.43	0.43	0.02	0.23	0.23	0.02	0.18	0.18	0.03	0.18	0.18
Sat Flow, veh/h	1781	3554	1581	1781	3391	217	1781	828	883	1781	1870	1580
Grp Volume(v), veh/h	312	765	33	13	261	271	19	0	31	25	12	268
Grp Sat Flow(s),veh/h/ln	1781	1777	1581	1781	1777	1831	1781	0	1711	1781	1870	1580
Q Serve(g_s), s	9.1	8.5	0.7	0.4	7.2	7.2	0.6	0.0	0.8	0.7	0.3	6.7
Cycle Q Clear(g_c), s	9.1	8.5	0.7	0.4	7.2	7.2	0.6	0.0	0.8	0.7	0.3	6.7
Prop In Lane	1.00		1.00	1.00		0.12	1.00		0.52	1.00		1.00
Lane Grp Cap(c), veh/h	374	1518	675	29	415	428	41	0	302	52	341	620
V/C Ratio(X)	0.84	0.50	0.05	0.44	0.63	0.63	0.46	0.00	0.10	0.48	0.04	0.43
Avail Cap(c_a), veh/h	497	2437	1084	165	887	914	165	0	914	165	999	1176
HCM Platoon Ratio	1.00	1.00	1.00	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	1.00	1.00
Uniform Delay (d), s/veh	20.5	11.3	9.1	26.4	18.6	18.6	26.1	0.0	18.7	25.9	18.2	12.0
Incr Delay (d2), s/veh	9.0	0.3	0.0	10.3	1.6	1.5	8.0	0.0	0.1	6.9	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	2.8	0.2	0.2	2.8	2.9	0.3	0.0	0.3	0.4	0.1	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.5	11.6	9.1	36.6	20.2	20.2	34.1	0.0	18.8	32.8	18.2	12.5
LnGrp LOS	C	B	A	D	C	C	C	A	B	C	B	B
Approach Vol, veh/h		1110			545			50			305	
Approach Delay, s/veh		16.5			20.6			24.6			14.4	
Approach LOS		B			C			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.2	14.1	5.8	28.0	5.8	14.5	16.2	17.5
Change Period (Y+Rc), s	4.6	4.6	4.9	4.9	4.6	4.6	4.9	4.9
Max Green Setting (Gmax), s	5.0	28.9	5.0	37.1	5.0	28.9	15.1	27.0
Max Q Clear Time (g_c+I1), s	2.7	2.8	2.4	10.5	2.6	8.7	11.1	9.2
Green Ext Time (p_c), s	0.0	0.1	0.0	6.0	0.0	0.9	0.4	3.0

Intersection Summary	
HCM 6th Ctrl Delay	17.5
HCM 6th LOS	B

Intersection	
Int Delay, s/veh	5.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	175	353	44	5	239	37	31	11	5	22	8	105
Future Vol, veh/h	175	353	44	5	239	37	31	11	5	22	8	105
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	-	-	-	0	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	188	380	47	5	257	40	33	12	5	24	9	113

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	297	0	0	427	0	0	1104	1063	380	1075	1090	277
Stage 1	-	-	-	-	-	-	756	756	-	287	287	-
Stage 2	-	-	-	-	-	-	348	307	-	788	803	-
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	1264	-	-	1132	-	-	188	223	667	197	215	762
Stage 1	-	-	-	-	-	-	400	416	-	720	674	-
Stage 2	-	-	-	-	-	-	668	661	-	384	396	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1264	-	-	1132	-	-	130	178	667	157	172	762
Mov Cap-2 Maneuver	-	-	-	-	-	-	130	178	-	157	172	-
Stage 1	-	-	-	-	-	-	322	334	-	579	671	-
Stage 2	-	-	-	-	-	-	559	658	-	295	318	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.6	0.1	35.1	15.5
HCM LOS			E	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	130	231	1264	-	-	1132	-	-	161	762
HCM Lane V/C Ratio	0.256	0.074	0.149	-	-	0.005	-	-	0.2	0.148
HCM Control Delay (s)	42	21.8	8.3	0	-	8.2	0	-	32.9	10.5
HCM Lane LOS	E	C	A	A	-	A	A	-	D	B
HCM 95th %tile Q(veh)	1	0.2	0.5	-	-	0	-	-	0.7	0.5

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	163	94	122	15	109	50	73	11	7	30	7	98
Future Vol, veh/h	163	94	122	15	109	50	73	11	7	30	7	98
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	-	-	-	0	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	183	106	137	17	122	56	82	12	8	34	8	110

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	178	0	0	243	0	0	715	684	106	735	793	150
Stage 1	-	-	-	-	-	-	472	472	-	184	184	-
Stage 2	-	-	-	-	-	-	243	212	-	551	609	-
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	1398	-	-	1323	-	-	346	371	948	335	321	896
Stage 1	-	-	-	-	-	-	573	559	-	818	747	-
Stage 2	-	-	-	-	-	-	761	727	-	519	485	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1398	-	-	1323	-	-	259	309	948	281	268	896
Mov Cap-2 Maneuver	-	-	-	-	-	-	259	309	-	281	268	-
Stage 1	-	-	-	-	-	-	485	473	-	692	737	-
Stage 2	-	-	-	-	-	-	651	717	-	424	410	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	3.4	0.7	23	12.5
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	259	419	1398	-	-	1323	-	-	278	896
HCM Lane V/C Ratio	0.317	0.048	0.131	-	-	0.013	-	-	0.15	0.123
HCM Control Delay (s)	25.2	14	8	0	-	7.8	0	-	20.2	9.6
HCM Lane LOS	D	B	A	A	-	A	A	-	C	A
HCM 95th %tile Q(veh)	1.3	0.2	0.5	-	-	0	-	-	0.5	0.4

Intersection	
Int Delay, s/veh	5.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	56	69	6	57	1	103	6	2	1	24	12
Future Vol, veh/h	10	56	69	6	57	1	103	6	2	1	24	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	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	77	77	77	77	77	77	77	77	77	77	77	77
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	73	90	8	74	1	134	8	3	1	31	16

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	75	0	0	163	0	0	258	235	118	241	280	75
Stage 1	-	-	-	-	-	-	144	144	-	91	91	-
Stage 2	-	-	-	-	-	-	114	91	-	150	189	-
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	1524	-	-	1416	-	-	695	666	934	713	628	986
Stage 1	-	-	-	-	-	-	859	778	-	916	820	-
Stage 2	-	-	-	-	-	-	891	820	-	853	744	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1524	-	-	1416	-	-	651	656	934	697	619	986
Mov Cap-2 Maneuver	-	-	-	-	-	-	651	656	-	697	619	-
Stage 1	-	-	-	-	-	-	851	771	-	908	815	-
Stage 2	-	-	-	-	-	-	838	815	-	834	737	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.7	12	10.5
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	655	1524	-	-	1416	-	-	706
HCM Lane V/C Ratio	0.22	0.009	-	-	0.006	-	-	0.068
HCM Control Delay (s)	12	7.4	0	-	7.6	0	-	10.5
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.8	0	-	-	0	-	-	0.2

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	88	0	0	80	24	0	0	0	46	0	0
Future Vol, veh/h	0	88	0	0	80	24	0	0	0	46	0	0
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	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	92	92	85	85	92	92	92	85	92	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	104	0	0	94	28	0	0	0	54	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	122	0	0	104	0	0	212	226	104	212	212	108
Stage 1	-	-	-	-	-	-	104	104	-	108	108	-
Stage 2	-	-	-	-	-	-	108	122	-	104	104	-
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	1465	-	-	1488	-	-	745	673	951	745	685	946
Stage 1	-	-	-	-	-	-	902	809	-	897	806	-
Stage 2	-	-	-	-	-	-	897	795	-	902	809	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1465	-	-	1488	-	-	745	673	951	745	685	946
Mov Cap-2 Maneuver	-	-	-	-	-	-	745	673	-	745	685	-
Stage 1	-	-	-	-	-	-	902	809	-	897	806	-
Stage 2	-	-	-	-	-	-	897	795	-	902	809	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	0	10.2
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1465	-	-	1488	-	-	745
HCM Lane V/C Ratio	-	-	-	-	-	-	-	0.073
HCM Control Delay (s)	0	0	-	-	0	-	-	10.2
HCM Lane LOS	A	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	0.2

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	6	25	103	92	39	0	62	118	113	0	70	3
Future Vol, veh/h	6	25	103	92	39	0	62	118	113	0	70	3
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	29	121	108	46	0	73	139	133	0	82	4
Number of Lanes	1	1	0	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	2
HCM Control Delay	9.7	11.2	10.9	9.6
HCM LOS	A	B	B	A

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	70%	0%	0%
Vol Thru, %	0%	51%	0%	20%	30%	100%	96%
Vol Right, %	0%	49%	0%	80%	0%	0%	4%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	62	231	6	128	131	0	73
LT Vol	62	0	6	0	92	0	0
Through Vol	0	118	0	25	39	0	70
RT Vol	0	113	0	103	0	0	3
Lane Flow Rate	73	272	7	151	154	0	86
Geometry Grp	7	7	7	7	6	7	7
Degree of Util (X)	0.123	0.396	0.013	0.225	0.26	0	0.14
Departure Headway (Hd)	6.092	5.242	6.447	5.371	6.075	5.901	5.872
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	592	690	556	669	592	0	611
Service Time	3.792	2.942	4.175	3.098	4.104	3.631	3.601
HCM Lane V/C Ratio	0.123	0.394	0.013	0.226	0.26	0	0.141
HCM Control Delay	9.6	11.3	9.3	9.7	11.2	8.6	9.6
HCM Lane LOS	A	B	A	A	B	N	A
HCM 95th-tile Q	0.4	1.9	0	0.9	1	0	0.5

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	55	1033	162	856	112	109	182	119
v/c Ratio	0.31	0.75	0.68	0.48	0.37	0.13	0.59	0.14
Control Delay	38.2	21.8	48.7	14.7	25.0	7.2	31.0	10.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.2	21.8	48.7	14.7	25.0	7.2	31.0	10.4
Queue Length 50th (ft)	21	165	63	123	38	3	66	8
Queue Length 95th (ft)	65	326	#199	253	77	17	121	24
Internal Link Dist (ft)		4010		607		1657		634
Turn Bay Length (ft)								
Base Capacity (vph)	196	1811	252	1963	374	986	378	1009
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.57	0.64	0.44	0.30	0.11	0.48	0.12

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	733	145	138	695	32	95	17	76	155	43	58
Future Volume (veh/h)	47	733	145	138	695	32	95	17	76	155	43	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	55	862	171	162	818	38	112	20	89	182	51	68
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	92	1182	235	206	1605	75	373	401	358	360	401	358
Arrive On Green	0.05	0.40	0.40	0.12	0.46	0.46	0.23	0.23	0.23	0.23	0.23	0.23
Sat Flow, veh/h	1781	2955	586	1781	3458	161	1273	1777	1585	1284	1777	1585
Grp Volume(v), veh/h	55	518	515	162	420	436	112	20	89	182	51	68
Grp Sat Flow(s),veh/h/ln	1781	1777	1765	1781	1777	1841	1273	1777	1585	1284	1777	1585
Q Serve(g_s), s	1.7	13.8	13.8	4.9	9.2	9.2	4.3	0.5	2.6	7.5	1.3	1.9
Cycle Q Clear(g_c), s	1.7	13.8	13.8	4.9	9.2	9.2	6.3	0.5	2.6	10.1	1.3	1.9
Prop In Lane	1.00		0.33	1.00		0.09	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	92	711	706	206	825	855	373	401	358	360	401	358
V/C Ratio(X)	0.60	0.73	0.73	0.79	0.51	0.51	0.30	0.05	0.25	0.51	0.13	0.19
Avail Cap(c_a), veh/h	224	1043	1036	288	1043	1081	451	510	455	439	510	455
HCM Platoon Ratio	1.00	1.00	1.00	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	25.9	14.2	14.2	24.0	10.5	10.5	20.0	16.9	17.7	21.8	17.2	17.4
Incr Delay (d2), s/veh	6.2	1.5	1.5	9.3	0.5	0.5	0.4	0.1	0.4	1.1	0.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	5.0	4.9	2.5	3.1	3.2	1.3	0.2	0.9	2.2	0.5	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.0	15.6	15.6	33.2	11.0	10.9	20.4	16.9	18.0	22.9	17.3	17.7
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		1088			1018			221			301	
Approach Delay, s/veh		16.4			14.5			19.2			20.8	
Approach LOS		B			B			B			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.3	27.2		17.2	7.8	30.8		17.2				
Change Period (Y+Rc), s	4.9	4.9		4.6	4.9	4.9		4.6				
Max Green Setting (Gmax), s	9.0	32.7		16.0	7.0	32.7		16.0				
Max Q Clear Time (g_c+I1), s	6.9	15.8		12.1	3.7	11.2		8.3				
Green Ext Time (p_c), s	0.1	6.5		0.5	0.0	5.6		0.6				

Intersection Summary			
HCM 6th Ctrl Delay			16.4
HCM 6th LOS			B

Notes

User approved pedestrian interval to be less than phase max green.

Lane Group	EBT	WBL	WBT	NBL	NBT
Lane Group Flow (vph)	997	38	1163	137	15
v/c Ratio	0.35	0.13	0.50	0.38	0.02
Control Delay	9.5	23.8	7.1	21.9	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	9.5	23.8	7.1	21.9	0.1
Queue Length 50th (ft)	43	9	92	29	0
Queue Length 95th (ft)	119	35	147	82	0
Internal Link Dist (ft)	443		965		645
Turn Bay Length (ft)					
Base Capacity (vph)	3271	1047	3432	1019	1287
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.30	0.04	0.34	0.13	0.01

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	680	127	31	942	0	111	0	12	0	0	0
Future Volume (veh/h)	0	680	127	31	942	0	111	0	12	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	840	157	38	1163	0	137	0	15	0	0	0
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	0	2	2	2	2	0	2	2	2	2	2	2
Cap, veh/h	0	1787	332	79	2145	0	416	0	179	0	211	0
Arrive On Green	0.00	0.41	0.41	0.04	0.60	0.00	0.11	0.00	0.11	0.00	0.00	0.00
Sat Flow, veh/h	0	4494	804	1781	3647	0	1781	0	1585	0	1870	0
Grp Volume(v), veh/h	0	660	337	38	1163	0	137	0	15	0	0	0
Grp Sat Flow(s),veh/h/ln	0	1702	1726	1781	1777	0	1781	0	1585	0	1870	0
Q Serve(g_s), s	0.0	4.7	4.8	0.7	6.5	0.0	2.5	0.0	0.3	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	4.7	4.8	0.7	6.5	0.0	2.5	0.0	0.3	0.0	0.0	0.0
Prop In Lane	0.00		0.47	1.00		0.00	1.00		1.00	0.00		0.00
Lane Grp Cap(c), veh/h	0	1406	713	79	2145	0	416	0	179	0	211	0
V/C Ratio(X)	0.00	0.47	0.47	0.48	0.54	0.00	0.33	0.00	0.08	0.00	0.00	0.00
Avail Cap(c_a), veh/h	0	2853	1446	1280	6052	0	1926	0	1522	0	1796	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)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	7.2	7.2	15.6	3.9	0.0	14.3	0.0	13.3	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.2	0.5	4.4	0.2	0.0	0.5	0.0	0.2	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	0.0	1.1	1.2	0.3	0.8	0.0	0.9	0.0	0.1	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	7.4	7.7	20.1	4.1	0.0	14.7	0.0	13.5	0.0	0.0	0.0
LnGrp LOS	A	A	A	C	A	A	B	A	B	A	A	A
Approach Vol, veh/h		997			1201			152			0	
Approach Delay, s/veh		7.5			4.6			14.6			0.0	
Approach LOS		A			A			B				
Timer - Assigned Phs		2	3	4		6		8				
Phs Duration (G+Y+Rc), s		8.4	6.4	18.8		8.4		25.1				
Change Period (Y+Rc), s		4.6	4.9	4.9		4.6		4.9				
Max Green Setting (Gmax), s		32.2	24.1	28.1		32.2		57.1				
Max Q Clear Time (g_c+I1), s		4.5	2.7	6.8		0.0		8.5				
Green Ext Time (p_c), s		0.4	0.1	7.0		0.0		11.8				
Intersection Summary												
HCM 6th Ctrl Delay			6.5									
HCM 6th LOS			A									

Lane Group	EBT	WBL	WBT	NBL	NBT
Lane Group Flow (vph)	821	48	1138	110	37
v/c Ratio	0.44	0.17	0.49	0.30	0.06
Control Delay	15.1	32.7	10.3	29.4	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	15.1	32.7	10.3	29.4	0.2
Queue Length 50th (ft)	93	13	76	28	0
Queue Length 95th (ft)	262	62	323	112	0
Internal Link Dist (ft)	965		1195		1198
Turn Bay Length (ft)					
Base Capacity (vph)	2562	325	3049	597	1385
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.32	0.15	0.37	0.18	0.03

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	558	107	39	922	0	89	0	30	0	0	0
Future Volume (veh/h)	0	558	107	39	922	0	89	0	30	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	689	132	48	1138	0	110	0	37	0	0	0
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	0	2	2	2	2	0	2	2	2	2	2	2
Cap, veh/h	0	1221	234	96	2163	0	170	0	175	0	6	0
Arrive On Green	0.00	0.41	0.41	0.05	0.61	0.00	0.10	0.00	0.11	0.00	0.00	0.00
Sat Flow, veh/h	0	3069	570	1781	3647	0	1781	0	1585	0	-76269	0
Grp Volume(v), veh/h	0	411	410	48	1138	0	110	0	37	0	0	0
Grp Sat Flow(s),veh/h/ln	0	1777	1768	1781	1777	0	1781	0	1585	0	1870	0
Q Serve(g_s), s	0.0	6.0	6.0	0.9	6.2	0.0	2.0	0.0	0.7	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	6.0	6.0	0.9	6.2	0.0	2.0	0.0	0.7	0.0	0.0	0.0
Prop In Lane	0.00		0.32	1.00		0.00	1.00		1.00	0.00		0.00
Lane Grp Cap(c), veh/h	0	729	725	96	2163	0	170	0	175	0	6	0
V/C Ratio(X)	0.00	0.56	0.56	0.50	0.53	0.00	0.65	0.00	0.21	0.00	0.00	0.00
Avail Cap(c_a), veh/h	0	1884	1875	384	5050	0	705	0	2205	0	1608	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)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	7.7	7.7	15.6	3.8	0.0	14.8	0.0	13.7	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.7	0.7	4.0	0.2	0.0	4.1	0.0	0.6	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	0.0	1.6	1.6	0.4	0.7	0.0	0.9	0.0	0.2	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	8.3	8.4	19.6	4.0	0.0	18.9	0.0	14.3	0.0	0.0	0.0
LnGrp LOS	A	A	A	B	A	A	B	A	B	A	A	A
Approach Vol, veh/h		821			1186			147			0	
Approach Delay, s/veh		8.3			4.6			17.7			0.0	
Approach LOS		A			A			B				

Timer - Assigned Phs		2	3	4	5	6		8				
Phs Duration (G+Y+Rc), s		8.3	6.7	18.8	7.8	0.5		25.5				
Change Period (Y+Rc), s		4.6	4.9	4.9	4.6	4.6		4.9				
Max Green Setting (Gmax), s		47.1	7.3	35.9	13.4	29.1		48.1				
Max Q Clear Time (g_c+I1), s		2.7	2.9	8.0	4.0	0.0		8.2				
Green Ext Time (p_c), s		0.2	0.0	5.9	0.2	0.0		11.0				

Intersection Summary			
HCM 6th Ctrl Delay			6.9
HCM 6th LOS			A

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	365	285	44	18	750	42	41	87	20	393
v/c Ratio	0.68	0.12	0.04	0.13	0.69	0.19	0.17	0.47	0.08	0.56
Control Delay	36.0	9.0	0.1	44.2	29.2	40.2	22.5	48.5	32.0	15.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.0	9.0	0.1	44.2	29.2	40.2	22.5	48.5	32.0	15.2
Queue Length 50th (ft)	162	24	0	9	172	17	10	42	9	123
Queue Length 95th (ft)	#379	83	0	33	296	60	35	#122	27	155
Internal Link Dist (ft)		1195			2587		1879		775	
Turn Bay Length (ft)										
Base Capacity (vph)	608	2449	1105	139	1409	231	745	195	806	759
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.60	0.12	0.04	0.13	0.53	0.18	0.06	0.45	0.02	0.52

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	310	242	37	15	592	46	36	19	16	74	17	334
Future Volume (veh/h)	310	242	37	15	592	46	36	19	16	74	17	334
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	365	285	44	18	696	54	42	22	19	87	20	393
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	411	1688	751	37	884	69	68	185	160	112	420	721
Arrive On Green	0.23	0.48	0.48	0.02	0.26	0.26	0.04	0.20	0.20	0.06	0.22	0.22
Sat Flow, veh/h	1781	3554	1582	1781	3341	259	1781	926	800	1781	1870	1581
Grp Volume(v), veh/h	365	285	44	18	370	380	42	0	41	87	20	393
Grp Sat Flow(s),veh/h/ln	1781	1777	1582	1781	1777	1823	1781	0	1726	1781	1870	1581
Q Serve(g_s), s	15.6	3.6	1.2	0.8	15.2	15.2	1.8	0.0	1.5	3.8	0.7	14.2
Cycle Q Clear(g_c), s	15.6	3.6	1.2	0.8	15.2	15.2	1.8	0.0	1.5	3.8	0.7	14.2
Prop In Lane	1.00		1.00	1.00		0.14	1.00		0.46	1.00		1.00
Lane Grp Cap(c), veh/h	411	1688	751	37	470	483	68	0	345	112	420	721
V/C Ratio(X)	0.89	0.17	0.06	0.49	0.79	0.79	0.62	0.00	0.12	0.78	0.05	0.54
Avail Cap(c_a), veh/h	523	2023	900	120	610	625	154	0	625	168	692	951
HCM Platoon Ratio	1.00	1.00	1.00	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	1.00	1.00
Uniform Delay (d), s/veh	29.3	11.8	11.2	38.1	26.9	26.9	37.3	0.0	25.8	36.3	23.9	15.5
Incr Delay (d2), s/veh	14.2	0.0	0.0	9.7	5.1	5.1	8.8	0.0	0.2	12.3	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.0	1.3	0.4	0.4	6.8	7.0	0.9	0.0	0.6	2.0	0.3	4.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.4	11.8	11.2	47.8	32.0	31.9	46.1	0.0	25.9	48.7	24.0	16.2
LnGrp LOS	D	B	B	D	C	C	D	A	C	D	C	B
Approach Vol, veh/h		694			768			83			500	
Approach Delay, s/veh		28.4			32.3			36.1			22.1	
Approach LOS		C			C			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.5	20.3	6.5	42.3	7.6	22.3	23.1	25.7
Change Period (Y+Rc), s	4.6	4.6	4.9	4.9	4.6	4.6	4.9	4.9
Max Green Setting (Gmax), s	7.4	28.5	5.3	44.8	6.8	29.1	23.1	27.0
Max Q Clear Time (g_c+I1), s	5.8	3.5	2.8	5.6	3.8	16.2	17.6	17.2
Green Ext Time (p_c), s	0.0	0.1	0.0	2.2	0.0	1.3	0.6	3.3

Intersection Summary	
HCM 6th Ctrl Delay	28.7
HCM 6th LOS	C

Intersection	
Int Delay, s/veh	5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	41	156	34	2	324	13	57	4	5	28	9	121
Future Vol, veh/h	41	156	34	2	324	13	57	4	5	28	9	121
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	-	-	-	0	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	48	184	40	2	381	15	67	5	6	33	11	142

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	396	0	0	224	0	0	749	680	184	699	713	389
Stage 1	-	-	-	-	-	-	280	280	-	393	393	-
Stage 2	-	-	-	-	-	-	469	400	-	306	320	-
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	-	-	1345	-	-	328	373	858	354	357	659
Stage 1	-	-	-	-	-	-	727	679	-	632	606	-
Stage 2	-	-	-	-	-	-	575	602	-	704	652	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1163	-	-	1345	-	-	242	355	858	335	340	659
Mov Cap-2 Maneuver	-	-	-	-	-	-	242	355	-	335	340	-
Stage 1	-	-	-	-	-	-	693	647	-	602	605	-
Stage 2	-	-	-	-	-	-	442	601	-	661	621	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.5	0	23.7	13.2
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	242	526	1163	-	-	1345	-	-	336	659
HCM Lane V/C Ratio	0.277	0.02	0.041	-	-	0.002	-	-	0.13	0.216
HCM Control Delay (s)	25.5	12	8.2	0	-	7.7	0	-	17.3	12
HCM Lane LOS	D	B	A	A	-	A	A	-	C	B
HCM 95th %tile Q(veh)	1.1	0.1	0.1	-	-	0	-	-	0.4	0.8

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	41	95	52	7	76	14	142	4	25	39	9	119
Future Vol, veh/h	41	95	52	7	76	14	142	4	25	39	9	119
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	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	46	107	58	8	85	16	160	4	28	44	10	134

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	101	0	0	165	0	0	380	316	107	353	366	93
Stage 1	-	-	-	-	-	-	199	199	-	109	109	-
Stage 2	-	-	-	-	-	-	181	117	-	244	257	-
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	1491	-	-	1413	-	-	578	600	947	602	562	964
Stage 1	-	-	-	-	-	-	803	736	-	896	805	-
Stage 2	-	-	-	-	-	-	821	799	-	760	695	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1491	-	-	1413	-	-	476	576	947	563	540	964
Mov Cap-2 Maneuver	-	-	-	-	-	-	476	576	-	563	540	-
Stage 1	-	-	-	-	-	-	776	711	-	866	800	-
Stage 2	-	-	-	-	-	-	694	794	-	708	671	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.6	0.5	15.1	10.2
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	476	870	1491	-	-	1413	-	-	563	914
HCM Lane V/C Ratio	0.335	0.037	0.031	-	-	0.006	-	-	0.078	0.157
HCM Control Delay (s)	16.3	9.3	7.5	0	-	7.6	0	-	11.9	9.7
HCM Lane LOS	C	A	A	A	-	A	A	-	B	A
HCM 95th %tile Q(veh)	1.5	0.1	0.1	-	-	0	-	-	0.3	0.6

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	7	47	104	1	39	0	51	4	2	0	7	11
Future Vol, veh/h	7	47	104	1	39	0	51	4	2	0	7	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	77	77	77	77	77	77	77	77	77	77	77	77
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	61	135	1	51	0	66	5	3	0	9	14

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	51	0	0	196	0	0	212	200	129	204	267	51
Stage 1	-	-	-	-	-	-	147	147	-	53	53	-
Stage 2	-	-	-	-	-	-	65	53	-	151	214	-
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	1555	-	-	1377	-	-	745	696	921	754	639	1017
Stage 1	-	-	-	-	-	-	856	775	-	960	851	-
Stage 2	-	-	-	-	-	-	946	851	-	851	725	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1555	-	-	1377	-	-	722	690	921	743	634	1017
Mov Cap-2 Maneuver	-	-	-	-	-	-	722	690	-	743	634	-
Stage 1	-	-	-	-	-	-	850	770	-	953	850	-
Stage 2	-	-	-	-	-	-	922	850	-	837	720	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.2	10.5	9.5
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	725	1555	-	-	1377	-	-	824
HCM Lane V/C Ratio	0.102	0.006	-	-	0.001	-	-	0.028
HCM Control Delay (s)	10.5	7.3	0	-	7.6	0	-	9.5
HCM Lane LOS	B	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	0.1

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	241	0	0	264	149	0	0	0	94	0	3
Future Vol, veh/h	0	241	0	0	264	149	0	0	0	94	0	3
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	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	92	92	85	85	92	92	92	85	92	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	284	0	0	311	175	0	0	0	111	0	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	486	0	0	284	0	0	685	770	284	683	683	399
Stage 1	-	-	-	-	-	-	284	284	-	399	399	-
Stage 2	-	-	-	-	-	-	401	486	-	284	284	-
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	1077	-	-	1278	-	-	362	331	755	363	372	651
Stage 1	-	-	-	-	-	-	723	676	-	627	602	-
Stage 2	-	-	-	-	-	-	626	551	-	723	676	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1077	-	-	1278	-	-	360	331	755	363	372	651
Mov Cap-2 Maneuver	-	-	-	-	-	-	360	331	-	363	372	-
Stage 1	-	-	-	-	-	-	723	676	-	627	602	-
Stage 2	-	-	-	-	-	-	623	551	-	723	676	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	0	19.1
HCM LOS			A	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1077	-	-	1278	-	-	368
HCM Lane V/C Ratio	-	-	-	-	-	-	-	0.31
HCM Control Delay (s)	0	0	-	-	0	-	-	19.1
HCM Lane LOS	A	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	1.3

Intersection	
Intersection Delay, s/veh	16.5
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	36	231	88	90	0	281	27	46	0	77	23
Future Vol, veh/h	8	36	231	88	90	0	281	27	46	0	77	23
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	42	272	104	106	0	331	32	54	0	91	27
Number of Lanes	1	1	0	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	2
HCM Control Delay	15.6	15	19.3	11.8
HCM LOS	C	B	C	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	49%	0%	0%
Vol Thru, %	0%	37%	0%	13%	51%	100%	77%
Vol Right, %	0%	63%	0%	87%	0%	0%	23%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	281	73	8	267	178	0	100
LT Vol	281	0	8	0	88	0	0
Through Vol	0	27	0	36	90	0	77
RT Vol	0	46	0	231	0	0	23
Lane Flow Rate	331	86	9	314	209	0	118
Geometry Grp	7	7	7	7	6	7	7
Degree of Util (X)	0.647	0.145	0.019	0.537	0.412	0	0.229
Departure Headway (Hd)	7.045	6.087	7.286	6.159	7.075	7.161	6.995
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	516	591	493	587	509	0	513
Service Time	4.761	3.804	5.007	3.88	5.116	4.908	4.743
HCM Lane V/C Ratio	0.641	0.146	0.018	0.535	0.411	0	0.23
HCM Control Delay	21.8	9.8	10.1	15.8	15	9.9	11.8
HCM Lane LOS	C	A	B	C	B	N	B
HCM 95th-tile Q	4.6	0.5	0.1	3.2	2	0	0.9

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	55	1043	173	906	112	112	182	119
v/c Ratio	0.31	0.75	0.71	0.50	0.37	0.14	0.59	0.14
Control Delay	38.3	22.1	51.0	15.0	25.0	7.1	31.2	10.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.3	22.1	51.0	15.0	25.0	7.1	31.2	10.4
Queue Length 50th (ft)	21	167	68	133	38	3	67	8
Queue Length 95th (ft)	65	332	#215	273	77	18	121	24
Internal Link Dist (ft)		4010		607		1657		634
Turn Bay Length (ft)								
Base Capacity (vph)	195	1796	250	1951	372	981	374	1003
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.58	0.69	0.46	0.30	0.11	0.49	0.12

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↱		↰	↑↱		↰	↑↱		↰	↑↱	
Traffic Volume (veh/h)	47	741	145	147	738	32	95	17	78	155	43	58
Future Volume (veh/h)	47	741	145	147	738	32	95	17	78	155	43	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	55	872	171	173	868	38	112	20	92	182	51	68
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	91	1183	232	218	1632	71	370	402	359	355	402	359
Arrive On Green	0.05	0.40	0.40	0.12	0.47	0.47	0.23	0.23	0.23	0.23	0.23	0.23
Sat Flow, veh/h	1781	2962	581	1781	3468	152	1273	1777	1585	1281	1777	1585
Grp Volume(v), veh/h	55	523	520	173	445	461	112	20	92	182	51	68
Grp Sat Flow(s),veh/h/ln	1781	1777	1766	1781	1777	1843	1273	1777	1585	1281	1777	1585
Q Serve(g_s), s	1.7	14.3	14.3	5.4	10.1	10.1	4.5	0.5	2.7	7.8	1.3	2.0
Cycle Q Clear(g_c), s	1.7	14.3	14.3	5.4	10.1	10.1	6.4	0.5	2.7	10.5	1.3	2.0
Prop In Lane	1.00		0.33	1.00		0.08	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	91	709	705	218	836	867	370	402	359	355	402	359
V/C Ratio(X)	0.61	0.74	0.74	0.79	0.53	0.53	0.30	0.05	0.26	0.51	0.13	0.19
Avail Cap(c_a), veh/h	218	1017	1011	281	1017	1055	439	498	444	424	498	444
HCM Platoon Ratio	1.00	1.00	1.00	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	26.5	14.6	14.6	24.4	10.7	10.7	20.5	17.3	18.1	22.5	17.6	17.9
Incr Delay (d2), s/veh	6.4	1.7	1.7	11.3	0.5	0.5	0.5	0.1	0.4	1.1	0.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	5.3	5.2	2.8	3.4	3.5	1.3	0.2	1.0	2.3	0.5	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.9	16.3	16.3	35.7	11.2	11.2	20.9	17.3	18.5	23.6	17.7	18.1
LnGrp LOS	C	B	B	D	B	B	C	B	B	C	B	B
Approach Vol, veh/h		1098			1079			224			301	
Approach Delay, s/veh		17.1			15.1			19.6			21.4	
Approach LOS		B			B			B			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.9	27.7		17.5	7.8	31.8		17.5				
Change Period (Y+Rc), s	4.9	4.9		4.6	4.9	4.9		4.6				
Max Green Setting (Gmax), s	9.0	32.7		16.0	7.0	32.7		16.0				
Max Q Clear Time (g_c+I1), s	7.4	16.3		12.5	3.7	12.1		8.4				
Green Ext Time (p_c), s	0.1	6.5		0.4	0.0	6.0		0.6				
Intersection Summary												
HCM 6th Ctrl Delay			17.0									
HCM 6th LOS			B									

Notes

User approved pedestrian interval to be less than phase max green.

Lane Group	EBT	WBL	WBT	NBL	NBT
Lane Group Flow (vph)	1019	46	1274	137	16
v/c Ratio	0.37	0.16	0.53	0.40	0.02
Control Delay	11.2	25.3	7.4	23.6	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	11.2	25.3	7.4	23.6	0.1
Queue Length 50th (ft)	82	13	106	37	0
Queue Length 95th (ft)	129	41	176	85	0
Internal Link Dist (ft)	443		965		645
Turn Bay Length (ft)					
Base Capacity (vph)	3099	993	3389	962	1243
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.33	0.05	0.38	0.14	0.01

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	698	127	37	1032	0	111	0	13	0	0	0
Future Volume (veh/h)	0	698	127	37	1032	0	111	0	13	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	862	157	46	1274	0	137	0	16	0	0	0
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	0	2	2	2	2	0	2	2	2	2	2	2
Cap, veh/h	0	1938	351	91	2240	0	394	0	176	0	207	0
Arrive On Green	0.00	0.45	0.45	0.05	0.63	0.00	0.11	0.00	0.11	0.00	0.00	0.00
Sat Flow, veh/h	0	4514	787	1781	3647	0	1781	0	1585	0	1870	0
Grp Volume(v), veh/h	0	674	345	46	1274	0	137	0	16	0	0	0
Grp Sat Flow(s),veh/h/ln	0	1702	1729	1781	1777	0	1781	0	1585	0	1870	0
Q Serve(g_s), s	0.0	5.0	5.1	0.9	7.6	0.0	2.7	0.0	0.3	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	5.0	5.1	0.9	7.6	0.0	2.7	0.0	0.3	0.0	0.0	0.0
Prop In Lane	0.00		0.46	1.00		0.00	1.00		1.00	0.00		0.00
Lane Grp Cap(c), veh/h	0	1518	771	91	2240	0	394	0	176	0	207	0
V/C Ratio(X)	0.00	0.44	0.45	0.51	0.57	0.00	0.35	0.00	0.09	0.00	0.00	0.00
Avail Cap(c_a), veh/h	0	2605	1323	1169	5525	0	1758	0	1390	0	1640	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)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	7.0	7.0	17.0	3.9	0.0	15.7	0.0	14.7	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.2	0.4	4.3	0.2	0.0	0.5	0.0	0.2	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	0.0	1.2	1.3	0.4	0.9	0.0	1.0	0.0	0.1	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	7.2	7.4	21.3	4.1	0.0	16.3	0.0	14.9	0.0	0.0	0.0
LnGrp LOS	A	A	A	C	A	A	B	A	B	A	A	A
Approach Vol, veh/h		1019			1320			153			0	
Approach Delay, s/veh		7.3			4.7			16.1			0.0	
Approach LOS		A			A			B				
Timer - Assigned Phs		2	3	4		6		8				
Phs Duration (G+Y+Rc), s		8.7	6.8	21.3		8.7		28.1				
Change Period (Y+Rc), s		4.6	4.9	4.9		4.6		4.9				
Max Green Setting (Gmax), s		32.2	24.1	28.1		32.2		57.1				
Max Q Clear Time (g_c+I1), s		4.7	2.9	7.1		0.0		9.6				
Green Ext Time (p_c), s		0.4	0.1	7.2		0.0		13.6				
Intersection Summary												
HCM 6th Ctrl Delay			6.5									
HCM 6th LOS			A									

Lane Group	EBT	WBL	WBT	NBL	NBT
Lane Group Flow (vph)	844	54	1257	110	38
v/c Ratio	0.45	0.20	0.54	0.31	0.07
Control Delay	15.2	33.2	10.9	29.9	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	15.2	33.2	10.9	29.9	0.2
Queue Length 50th (ft)	98	14	91	29	0
Queue Length 95th (ft)	272	67	371	112	0
Internal Link Dist (ft)	965		1195		1198
Turn Bay Length (ft)					
Base Capacity (vph)	2508	306	3030	563	1377
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.34	0.18	0.41	0.20	0.03

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	577	107	44	1018	0	89	0	31	0	0	0
Future Volume (veh/h)	0	577	107	44	1018	0	89	0	31	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	712	132	54	1257	0	110	0	38	0	0	0
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	0	2	2	2	2	0	2	2	2	2	2	2
Cap, veh/h	0	1271	236	104	2210	0	167	0	172	0	5	0
Arrive On Green	0.00	0.42	0.42	0.06	0.62	0.00	0.09	0.00	0.11	0.00	0.00	0.00
Sat Flow, veh/h	0	3086	555	1781	3647	0	1781	0	1585	0	-76140	0
Grp Volume(v), veh/h	0	423	421	54	1257	0	110	0	38	0	0	0
Grp Sat Flow(s),veh/h/ln	0	1777	1771	1781	1777	0	1781	0	1585	0	1870	0
Q Serve(g_s), s	0.0	6.3	6.3	1.0	7.3	0.0	2.1	0.0	0.8	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	6.3	6.3	1.0	7.3	0.0	2.1	0.0	0.8	0.0	0.0	0.0
Prop In Lane	0.00		0.31	1.00		0.00	1.00		1.00	0.00		0.00
Lane Grp Cap(c), veh/h	0	755	752	104	2210	0	167	0	172	0	5	0
V/C Ratio(X)	0.00	0.56	0.56	0.52	0.57	0.00	0.66	0.00	0.22	0.00	0.00	0.00
Avail Cap(c_a), veh/h	0	1810	1803	369	4849	0	677	0	2118	0	1544	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)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	7.7	7.7	16.1	3.9	0.0	15.4	0.0	14.4	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.7	0.7	4.0	0.2	0.0	4.4	0.0	0.6	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	0.0	1.7	1.6	0.5	0.9	0.0	0.9	0.0	0.3	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	8.3	8.3	20.1	4.1	0.0	19.8	0.0	15.0	0.0	0.0	0.0
LnGrp LOS	A	A	A	C	A	A	B	A	B	A	A	A
Approach Vol, veh/h		844			1311			148			0	
Approach Delay, s/veh		8.3			4.8			18.6			0.0	
Approach LOS		A			A			B				
Timer - Assigned Phs		2	3	4	5	6		8				
Phs Duration (G+Y+Rc), s		8.4	7.0	19.9	7.9	0.5		26.8				
Change Period (Y+Rc), s		4.6	4.9	4.9	4.6	4.6		4.9				
Max Green Setting (Gmax), s		47.1	7.3	35.9	13.4	29.1		48.1				
Max Q Clear Time (g_c+I1), s		2.8	3.0	8.3	4.1	0.0		9.3				
Green Ext Time (p_c), s		0.2	0.0	6.1	0.2	0.0		12.6				
Intersection Summary												
HCM 6th Ctrl Delay			7.0									
HCM 6th LOS			A									

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	387	285	44	18	755	42	41	112	24	513
v/c Ratio	0.72	0.13	0.04	0.15	0.75	0.21	0.18	0.65	0.09	0.70
Control Delay	37.7	9.0	0.1	44.8	31.9	40.7	22.6	58.0	32.2	20.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.7	9.0	0.1	44.8	31.9	40.7	22.6	58.0	32.2	20.1
Queue Length 50th (ft)	175	24	0	9	174	17	11	55	11	200
Queue Length 95th (ft)	#411	83	0	33	298	60	35	#167	30	236
Internal Link Dist (ft)		1195			2587		1879		775	
Turn Bay Length (ft)										
Base Capacity (vph)	542	2279	1036	124	1257	211	666	173	719	737
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.71	0.13	0.04	0.15	0.60	0.20	0.06	0.65	0.03	0.70

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	329	242	37	15	592	50	36	19	16	95	20	436
Future Volume (veh/h)	329	242	37	15	592	50	36	19	16	95	20	436
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	387	285	44	18	696	59	42	22	19	112	24	513
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	421	1660	739	36	832	71	64	211	182	140	507	803
Arrive On Green	0.24	0.47	0.47	0.02	0.25	0.25	0.04	0.23	0.23	0.08	0.27	0.27
Sat Flow, veh/h	1781	3554	1582	1781	3315	281	1781	926	800	1781	1870	1582
Grp Volume(v), veh/h	387	285	44	18	373	382	42	0	41	112	24	513
Grp Sat Flow(s),veh/h/ln	1781	1777	1582	1781	1777	1819	1781	0	1726	1781	1870	1582
Q Serve(g_s), s	19.5	4.3	1.4	0.9	18.3	18.4	2.1	0.0	1.7	5.7	0.9	21.8
Cycle Q Clear(g_c), s	19.5	4.3	1.4	0.9	18.3	18.4	2.1	0.0	1.7	5.7	0.9	21.8
Prop In Lane	1.00		1.00	1.00		0.15	1.00		0.46	1.00		1.00
Lane Grp Cap(c), veh/h	421	1660	739	36	446	457	64	0	393	140	507	803
V/C Ratio(X)	0.92	0.17	0.06	0.50	0.84	0.84	0.66	0.00	0.10	0.80	0.05	0.64
Avail Cap(c_a), veh/h	446	1727	769	102	521	533	131	0	534	143	591	874
HCM Platoon Ratio	1.00	1.00	1.00	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	1.00	1.00
Uniform Delay (d), s/veh	34.3	14.2	13.5	44.7	32.7	32.7	43.9	0.0	28.1	41.7	24.8	16.6
Incr Delay (d2), s/veh	23.5	0.0	0.0	10.6	10.0	9.9	11.0	0.0	0.1	26.0	0.0	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.0	1.7	0.5	0.5	8.9	9.1	1.1	0.0	0.7	3.5	0.4	7.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.9	14.3	13.5	55.3	42.7	42.6	54.9	0.0	28.3	67.8	24.9	18.0
LnGrp LOS	E	B	B	E	D	D	D	A	C	E	C	B
Approach Vol, veh/h		716			773			83			649	
Approach Delay, s/veh		37.8			43.0			41.8			26.8	
Approach LOS		D			D			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.9	25.6	6.7	48.0	7.9	29.6	26.7	28.0
Change Period (Y+Rc), s	4.6	4.6	4.9	4.9	4.6	4.6	4.9	4.9
Max Green Setting (Gmax), s	7.4	28.5	5.3	44.8	6.8	29.1	23.1	27.0
Max Q Clear Time (g_c+I1), s	7.7	3.7	2.9	6.3	4.1	23.8	21.5	20.4
Green Ext Time (p_c), s	0.0	0.1	0.0	2.1	0.0	1.1	0.2	2.6

Intersection Summary	
HCM 6th Ctrl Delay	36.5
HCM 6th LOS	D

Intersection	
Int Delay, s/veh	5.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	41	177	34	2	328	13	57	4	5	28	12	121
Future Vol, veh/h	41	177	34	2	328	13	57	4	5	28	12	121
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	-	-	-	0	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	48	208	40	2	386	15	67	5	6	33	14	142

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	401	0	0	248	0	0	780	709	208	728	742	394
Stage 1	-	-	-	-	-	-	304	304	-	398	398	-
Stage 2	-	-	-	-	-	-	476	405	-	330	344	-
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	1158	-	-	1318	-	-	313	359	832	339	344	655
Stage 1	-	-	-	-	-	-	705	663	-	628	603	-
Stage 2	-	-	-	-	-	-	570	598	-	683	637	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1158	-	-	1318	-	-	228	341	832	320	327	655
Mov Cap-2 Maneuver	-	-	-	-	-	-	228	341	-	320	327	-
Stage 1	-	-	-	-	-	-	671	631	-	598	602	-
Stage 2	-	-	-	-	-	-	435	597	-	641	606	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.3	0	25.2	13.5
HCM LOS			D	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	228	507	1158	-	-	1318	-	-	322	655
HCM Lane V/C Ratio	0.294	0.021	0.042	-	-	0.002	-	-	0.146	0.217
HCM Control Delay (s)	27.2	12.3	8.2	0	-	7.7	0	-	18.1	12
HCM Lane LOS	D	B	A	A	-	A	A	-	C	B
HCM 95th %tile Q(veh)	1.2	0.1	0.1	-	-	0	-	-	0.5	0.8

Intersection	
Int Delay, s/veh	7.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	41	116	52	7	80	14	142	4	25	39	12	119
Future Vol, veh/h	41	116	52	7	80	14	142	4	25	39	12	119
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	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	46	130	58	8	90	16	160	4	28	44	13	134

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	106	0	0	188	0	0	410	344	130	381	394	98
Stage 1	-	-	-	-	-	-	222	222	-	114	114	-
Stage 2	-	-	-	-	-	-	188	122	-	267	280	-
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	1485	-	-	1386	-	-	552	579	920	577	542	958
Stage 1	-	-	-	-	-	-	780	720	-	891	801	-
Stage 2	-	-	-	-	-	-	814	795	-	738	679	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1485	-	-	1386	-	-	451	555	920	539	520	958
Mov Cap-2 Maneuver	-	-	-	-	-	-	451	555	-	539	520	-
Stage 1	-	-	-	-	-	-	753	695	-	860	796	-
Stage 2	-	-	-	-	-	-	684	790	-	686	655	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.5	0.5	16	10.5
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	451	843	1485	-	-	1386	-	-	539	889
HCM Lane V/C Ratio	0.354	0.039	0.031	-	-	0.006	-	-	0.081	0.166
HCM Control Delay (s)	17.3	9.4	7.5	0	-	7.6	0	-	12.3	9.9
HCM Lane LOS	C	A	A	A	-	A	A	-	B	A
HCM 95th %tile Q(veh)	1.6	0.1	0.1	-	-	0	-	-	0.3	0.6

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	7	53	119	1	40	0	54	4	2	0	7	11
Future Vol, veh/h	7	53	119	1	40	0	54	4	2	0	7	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	77	77	77	77	77	77	77	77	77	77	77	77
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	69	155	1	52	0	70	5	3	0	9	14

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	52	0	0	224	0	0	231	219	147	223	296	52
Stage 1	-	-	-	-	-	-	165	165	-	54	54	-
Stage 2	-	-	-	-	-	-	66	54	-	169	242	-
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	1554	-	-	1345	-	-	724	679	900	733	616	1016
Stage 1	-	-	-	-	-	-	837	762	-	958	850	-
Stage 2	-	-	-	-	-	-	945	850	-	833	705	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1554	-	-	1345	-	-	702	674	900	722	611	1016
Mov Cap-2 Maneuver	-	-	-	-	-	-	702	674	-	722	611	-
Stage 1	-	-	-	-	-	-	831	757	-	951	849	-
Stage 2	-	-	-	-	-	-	921	849	-	819	700	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.2	10.7	9.6
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	705	1554	-	-	1345	-	-	808
HCM Lane V/C Ratio	0.111	0.006	-	-	0.001	-	-	0.029
HCM Control Delay (s)	10.7	7.3	0	-	7.7	0	-	9.6
HCM Lane LOS	B	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.4	0	-	-	0	-	-	0.1

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	241	0	0	264	149	0	0	0	97	0	3
Future Vol, veh/h	0	241	0	0	264	149	0	0	0	97	0	3
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	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	92	92	85	85	92	92	92	85	92	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	284	0	0	311	175	0	0	0	114	0	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	486	0	0	284	0	0	685	770	284	683	683	399
Stage 1	-	-	-	-	-	-	284	284	-	399	399	-
Stage 2	-	-	-	-	-	-	401	486	-	284	284	-
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	1077	-	-	1278	-	-	362	331	755	363	372	651
Stage 1	-	-	-	-	-	-	723	676	-	627	602	-
Stage 2	-	-	-	-	-	-	626	551	-	723	676	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1077	-	-	1278	-	-	360	331	755	363	372	651
Mov Cap-2 Maneuver	-	-	-	-	-	-	360	331	-	363	372	-
Stage 1	-	-	-	-	-	-	723	676	-	627	602	-
Stage 2	-	-	-	-	-	-	623	551	-	723	676	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	0	19.3
HCM LOS			A	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1077	-	-	1278	-	-	368
HCM Lane V/C Ratio	-	-	-	-	-	-	-	0.32
HCM Control Delay (s)	0	0	-	-	0	-	-	19.3
HCM Lane LOS	A	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	1.4

Intersection	
Intersection Delay, s/veh	20.5
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	39	231	88	91	1	281	51	46	3	203	23
Future Vol, veh/h	8	39	231	88	91	1	281	51	46	3	203	23
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	46	272	104	107	1	331	60	54	4	239	27
Number of Lanes	1	1	0	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	2
HCM Control Delay	19.8	18	23.1	19
HCM LOS	C	C	C	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	49%	100%	0%
Vol Thru, %	0%	53%	0%	14%	51%	0%	90%
Vol Right, %	0%	47%	0%	86%	1%	0%	10%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	281	97	8	270	180	3	226
LT Vol	281	0	8	0	88	3	0
Through Vol	0	51	0	39	91	0	203
RT Vol	0	46	0	231	1	0	23
Lane Flow Rate	331	114	9	318	212	4	266
Geometry Grp	7	7	7	7	6	7	7
Degree of Util (X)	0.706	0.217	0.021	0.611	0.469	0.008	0.55
Departure Headway (Hd)	7.691	6.837	8.052	6.925	7.969	8.041	7.452
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	469	523	443	518	449	443	481
Service Time	5.47	4.615	5.83	4.702	6.061	5.828	5.238
HCM Lane V/C Ratio	0.706	0.218	0.02	0.614	0.472	0.009	0.553
HCM Control Delay	27.1	11.5	11	20.1	18	10.9	19.1
HCM Lane LOS	D	B	B	C	C	B	C
HCM 95th-tile Q	5.5	0.8	0.1	4.1	2.4	0	3.3

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	36	1339	173	1095	172	238	119	79
v/c Ratio	0.22	0.87	0.78	0.54	0.58	0.28	0.47	0.10
Control Delay	38.0	27.2	58.4	14.1	32.4	5.5	29.7	12.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.0	27.2	58.4	14.1	32.4	5.5	29.7	12.3
Queue Length 50th (ft)	15	247	74	102	69	5	46	7
Queue Length 95th (ft)	48	#534	#215	348	113	24	83	20
Internal Link Dist (ft)		4010		607		1657		634
Turn Bay Length (ft)								
Base Capacity (vph)	178	1655	229	2037	359	994	308	926
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.20	0.81	0.76	0.54	0.48	0.24	0.39	0.09

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	1026	112	147	886	45	146	25	178	101	34	33
Future Volume (veh/h)	31	1026	112	147	886	45	146	25	178	101	34	33
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	36	1207	132	173	1042	53	172	29	209	119	40	39
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	64	1415	154	213	1794	91	386	414	369	238	423	362
Arrive On Green	0.04	0.44	0.44	0.12	0.52	0.52	0.23	0.23	0.23	0.23	0.23	0.23
Sat Flow, veh/h	1781	3231	352	1781	3441	175	1320	1777	1585	1142	1816	1552
Grp Volume(v), veh/h	36	662	677	173	538	557	172	29	209	119	39	40
Grp Sat Flow(s),veh/h/ln	1781	1777	1807	1781	1777	1839	1320	1777	1585	1142	1777	1591
Q Serve(g_s), s	1.4	22.9	23.1	6.5	14.3	14.3	8.1	0.9	8.0	7.1	1.2	1.4
Cycle Q Clear(g_c), s	1.4	22.9	23.1	6.5	14.3	14.3	9.5	0.9	8.0	15.1	1.2	1.4
Prop In Lane	1.00		0.20	1.00		0.10	1.00		1.00	1.00		0.98
Lane Grp Cap(c), veh/h	64	778	791	213	926	959	386	414	369	238	414	371
V/C Ratio(X)	0.56	0.85	0.86	0.81	0.58	0.58	0.45	0.07	0.57	0.50	0.09	0.11
Avail Cap(c_a), veh/h	182	846	860	233	926	959	386	414	369	238	414	371
HCM Platoon Ratio	1.00	1.00	1.00	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	32.6	17.3	17.4	29.5	11.3	11.3	24.4	20.5	23.3	29.9	20.7	20.7
Incr Delay (d2), s/veh	7.4	7.8	8.0	17.9	0.9	0.9	0.8	0.1	2.0	1.6	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	10.0	10.3	3.7	5.0	5.2	2.5	0.4	3.1	2.0	0.5	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.9	25.1	25.3	47.4	12.2	12.2	25.3	20.6	25.3	31.6	20.8	20.9
LnGrp LOS	D	C	C	D	B	B	C	C	C	C	C	C
Approach Vol, veh/h		1375			1268			410			198	
Approach Delay, s/veh		25.6			17.0			24.9			27.3	
Approach LOS		C			B			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.1	35.0		20.6	7.4	40.7		20.6				
Change Period (Y+Rc), s	4.9	4.9		4.6	4.9	4.9		4.6				
Max Green Setting (Gmax), s	9.0	32.7		16.0	7.0	32.7		16.0				
Max Q Clear Time (g_c+I1), s	8.5	25.1		17.1	3.4	16.3		11.5				
Green Ext Time (p_c), s	0.0	5.0		0.0	0.0	6.8		0.9				

Intersection Summary			
HCM 6th Ctrl Delay			22.3
HCM 6th LOS			C

Notes

User approved pedestrian interval to be less than phase max green.

Lane Group	EBT	WBL	WBT	NBL	NBT
Lane Group Flow (vph)	1920	48	1160	498	64
v/c Ratio	0.95	0.28	0.66	0.94	0.07
Control Delay	35.2	38.4	16.3	53.9	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	35.2	38.4	16.3	53.9	0.2
Queue Length 50th (ft)	~348	24	206	252	0
Queue Length 95th (ft)	#403	50	226	#399	0
Internal Link Dist (ft)	443		965		645
Turn Bay Length (ft)					
Base Capacity (vph)	2020	551	2747	531	894
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.95	0.09	0.42	0.94	0.07

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1146	409	39	940	0	403	0	52	0	0	0
Future Volume (veh/h)	0	1146	409	39	940	0	403	0	52	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	1415	505	48	1160	0	498	0	64	0	0	0
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	0	2	2	2	2	0	2	2	2	2	2	2
Cap, veh/h	0	1625	573	77	1953	0	663	0	498	0	588	0
Arrive On Green	0.00	0.44	0.44	0.04	0.55	0.00	0.31	0.00	0.31	0.00	0.00	0.00
Sat Flow, veh/h	0	3892	1314	1781	3647	0	1781	0	1585	0	1870	0
Grp Volume(v), veh/h	0	1292	628	48	1160	0	498	0	64	0	0	0
Grp Sat Flow(s),veh/h/ln	0	1702	1634	1781	1777	0	1781	0	1585	0	1870	0
Q Serve(g_s), s	0.0	24.1	24.6	1.9	15.3	0.0	18.6	0.0	2.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	24.1	24.6	1.9	15.3	0.0	18.6	0.0	2.0	0.0	0.0	0.0
Prop In Lane	0.00		0.80	1.00		0.00	1.00		1.00	0.00		0.00
Lane Grp Cap(c), veh/h	0	1485	713	77	1953	0	663	0	498	0	588	0
V/C Ratio(X)	0.00	0.87	0.88	0.62	0.59	0.00	0.75	0.00	0.13	0.00	0.00	0.00
Avail Cap(c_a), veh/h	0	1514	727	614	3055	0	847	0	662	0	781	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)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	17.9	18.0	32.9	10.5	0.0	22.8	0.0	17.1	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	5.7	12.0	7.9	0.3	0.0	2.8	0.0	0.1	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	0.0	9.6	10.6	0.9	5.1	0.0	7.7	0.0	0.7	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	23.6	30.1	40.8	10.8	0.0	25.6	0.0	17.2	0.0	0.0	0.0
LnGrp LOS	A	C	C	D	B	A	C	A	B	A	A	A
Approach Vol, veh/h		1920			1208			562			0	
Approach Delay, s/veh		25.7			12.0			24.7			0.0	
Approach LOS		C			B			C				

Timer - Assigned Phs		2	3	4		6		8				
Phs Duration (G+Y+Rc), s		26.6	7.9	35.4		26.6		43.3				
Change Period (Y+Rc), s		4.6	4.9	4.9		4.6		4.9				
Max Green Setting (Gmax), s		29.2	24.1	31.1		29.2		60.1				
Max Q Clear Time (g_c+I1), s		20.6	3.9	26.6		0.0		17.3				
Green Ext Time (p_c), s		1.4	0.1	3.9		0.0		11.5				

Intersection Summary		
HCM 6th Ctrl Delay		21.1
HCM 6th LOS		C

Lane Group	EBT	WBL	WBT	NBL	NBT
Lane Group Flow (vph)	1520	63	764	456	67
v/c Ratio	0.93	0.52	0.37	1.13	0.12
Control Delay	31.9	54.2	11.1	117.6	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	31.9	54.2	11.1	117.6	0.4
Queue Length 50th (ft)	286	27	71	~228	0
Queue Length 95th (ft)	#677	#96	210	#543	0
Internal Link Dist (ft)	965		1195		1198
Turn Bay Length (ft)					
Base Capacity (vph)	1634	122	2159	402	1167
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.93	0.52	0.35	1.13	0.06

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	875	356	51	619	0	369	0	54	0	0	0
Future Volume (veh/h)	0	875	356	51	619	0	369	0	54	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	1080	440	63	764	0	456	0	67	0	0	0
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	0	2	2	2	2	0	2	2	2	2	2	2
Cap, veh/h	0	1218	486	92	2187	0	434	0	386	0	3	0
Arrive On Green	0.00	0.49	0.49	0.05	0.62	0.00	0.24	0.00	0.24	0.00	0.00	0.00
Sat Flow, veh/h	0	2574	989	1781	3647	0	1781	0	1585	0	-86037	0
Grp Volume(v), veh/h	0	767	753	63	764	0	456	0	67	0	0	0
Grp Sat Flow(s),veh/h/ln	0	1777	1692	1781	1777	0	1781	0	1585	0	1870	0
Q Serve(g_s), s	0.0	26.0	27.5	2.3	7.1	0.0	16.4	0.0	2.2	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	26.0	27.5	2.3	7.1	0.0	16.4	0.0	2.2	0.0	0.0	0.0
Prop In Lane	0.00		0.58	1.00		0.00	1.00		1.00	0.00		0.00
Lane Grp Cap(c), veh/h	0	873	831	92	2187	0	434	0	386	0	3	0
V/C Ratio(X)	0.00	0.88	0.91	0.69	0.35	0.00	1.05	0.00	0.17	0.00	0.00	0.00
Avail Cap(c_a), veh/h	0	900	857	132	2322	0	434	0	1205	0	839	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)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	15.3	15.7	31.4	6.3	0.0	25.5	0.0	20.1	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	9.7	12.9	8.8	0.1	0.0	57.3	0.0	0.2	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	0.0	11.3	12.0	1.2	2.1	0.0	13.4	0.0	0.8	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	25.1	28.6	40.2	6.4	0.0	82.7	0.0	20.3	0.0	0.0	0.0
LnGrp LOS	A	C	C	D	A	A	F	A	C	A	A	A
Approach Vol, veh/h		1520			827			523			0	
Approach Delay, s/veh		26.8			9.0			74.7			0.0	
Approach LOS		C			A			E				

Timer - Assigned Phs		2	3	4	5	6		8
Phs Duration (G+Y+Rc), s		21.0	8.4	38.0	21.0	0.0		46.3
Change Period (Y+Rc), s		4.6	4.9	4.9	4.6	4.6		4.9
Max Green Setting (Gmax), s		51.2	5.0	34.1	16.4	30.2		44.0
Max Q Clear Time (g_c+I1), s		4.2	4.3	29.5	18.4	0.0		9.1
Green Ext Time (p_c), s		0.4	0.0	3.6	0.0	0.0		6.2

Intersection Summary			
HCM 6th Ctrl Delay			30.4
HCM 6th LOS			C

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	298	762	36	13	536	24	30	25	11	260
v/c Ratio	0.49	0.27	0.03	0.07	0.55	0.12	0.09	0.12	0.03	0.32
Control Delay	26.1	8.3	0.0	33.7	20.2	33.8	16.2	33.9	20.0	4.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.1	8.3	0.0	33.7	20.2	33.8	16.2	33.9	20.0	4.5
Queue Length 50th (ft)	38	0	0	2	43	4	2	4	2	9
Queue Length 95th (ft)	#327	220	0	25	177	38	25	39	16	57
Internal Link Dist (ft)		1195			2587		1879		775	
Turn Bay Length (ft)										
Base Capacity (vph)	605	2823	1259	200	2146	200	1127	200	1219	812
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.49	0.27	0.03	0.07	0.25	0.12	0.03	0.13	0.01	0.32

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	253	648	31	11	429	26	20	12	14	21	9	221
Future Volume (veh/h)	253	648	31	11	429	26	20	12	14	21	9	221
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	298	762	36	13	505	31	24	14	16	25	11	260
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	360	1499	667	29	802	49	50	142	163	52	336	604
Arrive On Green	0.20	0.42	0.42	0.02	0.24	0.24	0.03	0.18	0.18	0.03	0.18	0.18
Sat Flow, veh/h	1781	3554	1581	1781	3401	208	1781	796	910	1781	1870	1580
Grp Volume(v), veh/h	298	762	36	13	263	273	24	0	30	25	11	260
Grp Sat Flow(s),veh/h/ln	1781	1777	1581	1781	1777	1832	1781	0	1707	1781	1870	1580
Q Serve(g_s), s	8.6	8.5	0.7	0.4	7.1	7.2	0.7	0.0	0.8	0.7	0.3	6.5
Cycle Q Clear(g_c), s	8.6	8.5	0.7	0.4	7.1	7.2	0.7	0.0	0.8	0.7	0.3	6.5
Prop In Lane	1.00		1.00	1.00		0.11	1.00		0.53	1.00		1.00
Lane Grp Cap(c), veh/h	360	1499	667	29	419	432	50	0	305	52	336	604
V/C Ratio(X)	0.83	0.51	0.05	0.44	0.63	0.63	0.48	0.00	0.10	0.48	0.03	0.43
Avail Cap(c_a), veh/h	502	2458	1094	166	895	922	166	0	920	166	1008	1172
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.5	11.4	9.2	26.1	18.4	18.4	25.7	0.0	18.4	25.6	18.2	12.3
Incr Delay (d2), s/veh	7.9	0.3	0.0	10.2	1.6	1.5	7.0	0.0	0.1	6.9	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	2.8	0.2	0.2	2.8	2.9	0.4	0.0	0.3	0.4	0.1	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.4	11.7	9.2	36.4	19.9	19.9	32.7	0.0	18.6	32.5	18.2	12.8
LnGrp LOS	C	B	A	D	B	B	C	A	B	C	B	B
Approach Vol, veh/h		1096			549			54			296	
Approach Delay, s/veh		16.1			20.3			24.8			14.6	
Approach LOS		B			C			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.2	14.2	5.8	27.5	6.1	14.2	15.7	17.5
Change Period (Y+Rc), s	4.6	4.6	4.9	4.9	4.6	4.6	4.9	4.9
Max Green Setting (Gmax), s	5.0	28.9	5.0	37.1	5.0	28.9	15.1	27.0
Max Q Clear Time (g_c+I1), s	2.7	2.8	2.4	10.5	2.7	8.5	10.6	9.2
Green Ext Time (p_c), s	0.0	0.1	0.0	6.0	0.0	0.9	0.4	3.0

Intersection Summary		
HCM 6th Ctrl Delay		17.3
HCM 6th LOS		B

Intersection	
Int Delay, s/veh	5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	166	352	51	5	240	34	37	11	5	20	7	100
Future Vol, veh/h	166	352	51	5	240	34	37	11	5	20	7	100
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	-	-	-	0	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	178	378	55	5	258	37	40	12	5	22	8	108

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	295	0	0	433	0	0	1079	1039	378	1057	1076	277
Stage 1	-	-	-	-	-	-	734	734	-	287	287	-
Stage 2	-	-	-	-	-	-	345	305	-	770	789	-
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	1266	-	-	1127	-	-	196	231	669	203	219	762
Stage 1	-	-	-	-	-	-	412	426	-	720	674	-
Stage 2	-	-	-	-	-	-	671	662	-	393	402	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1266	-	-	1127	-	-	139	187	669	164	177	762
Mov Cap-2 Maneuver	-	-	-	-	-	-	139	187	-	164	177	-
Stage 1	-	-	-	-	-	-	335	346	-	585	671	-
Stage 2	-	-	-	-	-	-	567	659	-	306	327	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.4	0.1	35	14.9
HCM LOS			E	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	139	241	1266	-	-	1127	-	-	167	762
HCM Lane V/C Ratio	0.286	0.071	0.141	-	-	0.005	-	-	0.174	0.141
HCM Control Delay (s)	41	21.1	8.3	0	-	8.2	0	-	31	10.5
HCM Lane LOS	E	C	A	A	-	A	A	-	D	B
HCM 95th %tile Q(veh)	1.1	0.2	0.5	-	-	0	-	-	0.6	0.5

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	156	92	129	15	105	48	80	10	7	29	7	93
Future Vol, veh/h	156	92	129	15	105	48	80	10	7	29	7	93
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	-	-	-	0	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	175	103	145	17	118	54	90	11	8	33	8	104

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	172	0	0	248	0	0	688	659	103	714	777	145
Stage 1	-	-	-	-	-	-	453	453	-	179	179	-
Stage 2	-	-	-	-	-	-	235	206	-	535	598	-
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	1405	-	-	1318	-	-	360	384	952	346	328	902
Stage 1	-	-	-	-	-	-	586	570	-	823	751	-
Stage 2	-	-	-	-	-	-	768	731	-	529	491	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1405	-	-	1318	-	-	274	323	952	293	276	902
Mov Cap-2 Maneuver	-	-	-	-	-	-	274	323	-	293	276	-
Stage 1	-	-	-	-	-	-	500	486	-	702	740	-
Stage 2	-	-	-	-	-	-	662	721	-	437	419	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	3.3	0.7	22.5	12.3
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	274	444	1405	-	-	1318	-	-	290	902
HCM Lane V/C Ratio	0.328	0.043	0.125	-	-	0.013	-	-	0.139	0.116
HCM Control Delay (s)	24.4	13.5	7.9	0	-	7.8	0	-	19.4	9.5
HCM Lane LOS	C	B	A	A	-	A	A	-	C	A
HCM 95th %tile Q(veh)	1.4	0.1	0.4	-	-	0	-	-	0.5	0.4

Intersection	
Int Delay, s/veh	5.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	55	67	6	56	1	100	6	2	1	24	12
Future Vol, veh/h	10	55	67	6	56	1	100	6	2	1	24	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	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	77	77	77	77	77	77	77	77	77	77	77	77
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	71	87	8	73	1	130	8	3	1	31	16

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	74	0	0	158	0	0	254	231	115	236	274	74
Stage 1	-	-	-	-	-	-	141	141	-	90	90	-
Stage 2	-	-	-	-	-	-	113	90	-	146	184	-
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	1526	-	-	1422	-	-	699	669	937	718	633	988
Stage 1	-	-	-	-	-	-	862	780	-	917	820	-
Stage 2	-	-	-	-	-	-	892	820	-	857	747	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1526	-	-	1422	-	-	654	659	937	701	624	988
Mov Cap-2 Maneuver	-	-	-	-	-	-	654	659	-	701	624	-
Stage 1	-	-	-	-	-	-	854	773	-	909	815	-
Stage 2	-	-	-	-	-	-	839	815	-	838	740	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0.7	11.9	10.4
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	658	1526	-	-	1422	-	-	711
HCM Lane V/C Ratio	0.213	0.009	-	-	0.005	-	-	0.068
HCM Control Delay (s)	11.9	7.4	0	-	7.5	0	-	10.4
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.8	0	-	-	0	-	-	0.2

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	88	0	0	80	24	0	0	0	45	0	0
Future Vol, veh/h	0	88	0	0	80	24	0	0	0	45	0	0
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	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	92	92	85	85	92	92	92	85	92	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	104	0	0	94	28	0	0	0	53	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	122	0	0	104	0	0	212	226	104	212	212	108
Stage 1	-	-	-	-	-	-	104	104	-	108	108	-
Stage 2	-	-	-	-	-	-	108	122	-	104	104	-
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	1465	-	-	1488	-	-	745	673	951	745	685	946
Stage 1	-	-	-	-	-	-	902	809	-	897	806	-
Stage 2	-	-	-	-	-	-	897	795	-	902	809	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1465	-	-	1488	-	-	745	673	951	745	685	946
Mov Cap-2 Maneuver	-	-	-	-	-	-	745	673	-	745	685	-
Stage 1	-	-	-	-	-	-	902	809	-	897	806	-
Stage 2	-	-	-	-	-	-	897	795	-	902	809	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	0	10.2
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1465	-	-	1488	-	-	745
HCM Lane V/C Ratio	-	-	-	-	-	-	-	0.071
HCM Control Delay (s)	0	0	-	-	0	-	-	10.2
HCM Lane LOS	A	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	0.2

Intersection	
Intersection Delay, s/veh	10.3
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	24	103	92	38	0	62	106	113	0	63	3
Future Vol, veh/h	5	24	103	92	38	0	62	106	113	0	63	3
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	6	28	121	108	45	0	73	125	133	0	74	4
Number of Lanes	1	1	0	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	2
HCM Control Delay	9.5	11	10.5	9.4
HCM LOS	A	B	B	A

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	71%	0%	0%
Vol Thru, %	0%	48%	0%	19%	29%	100%	95%
Vol Right, %	0%	52%	0%	81%	0%	0%	5%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	62	219	5	127	130	0	66
LT Vol	62	0	5	0	92	0	0
Through Vol	0	106	0	24	38	0	63
RT Vol	0	113	0	103	0	0	3
Lane Flow Rate	73	258	6	149	153	0	78
Geometry Grp	7	7	7	7	6	7	7
Degree of Util (X)	0.121	0.364	0.01	0.216	0.251	0	0.126
Departure Headway (Hd)	5.958	5.091	6.277	5.199	5.908	5.857	5.825
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	597	701	565	681	601	0	619
Service Time	3.74	2.872	4.077	2.997	4.007	3.557	3.525
HCM Lane V/C Ratio	0.122	0.368	0.011	0.219	0.255	0	0.126
HCM Control Delay	9.6	10.8	9.1	9.5	11	8.6	9.4
HCM Lane LOS	A	B	A	A	B	N	A
HCM 95th-tile Q	0.4	1.7	0	0.8	1	0	0.4

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	55	976	162	844	112	102	182	119
v/c Ratio	0.30	0.73	0.66	0.48	0.36	0.12	0.58	0.14
Control Delay	37.2	21.2	46.5	14.8	24.3	7.3	29.9	10.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.2	21.2	46.5	14.8	24.3	7.3	29.9	10.1
Queue Length 50th (ft)	20	148	59	118	36	3	63	7
Queue Length 95th (ft)	65	301	#199	250	77	17	121	24
Internal Link Dist (ft)		4010		607		1657		634
Turn Bay Length (ft)								
Base Capacity (vph)	202	1863	260	1995	384	1005	390	1033
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.27	0.52	0.62	0.42	0.29	0.10	0.47	0.12

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	684	145	138	685	32	95	17	70	155	43	58
Future Volume (veh/h)	47	684	145	138	685	32	95	17	70	155	43	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	55	805	171	162	806	38	112	20	82	182	51	68
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	93	1135	241	207	1565	74	376	398	355	370	398	355
Arrive On Green	0.05	0.39	0.39	0.12	0.45	0.45	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	1781	2916	619	1781	3455	163	1273	1777	1585	1293	1777	1585
Grp Volume(v), veh/h	55	490	486	162	414	430	112	20	82	182	51	68
Grp Sat Flow(s),veh/h/ln	1781	1777	1759	1781	1777	1841	1273	1777	1585	1293	1777	1585
Q Serve(g_s), s	1.6	12.4	12.4	4.7	8.9	8.9	4.2	0.5	2.3	7.1	1.2	1.9
Cycle Q Clear(g_c), s	1.6	12.4	12.4	4.7	8.9	8.9	6.0	0.5	2.3	9.4	1.2	1.9
Prop In Lane	1.00		0.35	1.00		0.09	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	93	692	685	207	805	834	376	398	355	370	398	355
V/C Ratio(X)	0.59	0.71	0.71	0.78	0.51	0.51	0.30	0.05	0.23	0.49	0.13	0.19
Avail Cap(c_a), veh/h	234	1092	1081	301	1092	1131	474	534	477	469	534	477
HCM Platoon Ratio	1.00	1.00	1.00	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	24.7	13.7	13.7	22.9	10.4	10.4	19.2	16.2	16.9	20.7	16.5	16.7
Incr Delay (d2), s/veh	5.8	1.4	1.4	8.0	0.5	0.5	0.4	0.1	0.3	1.0	0.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	4.4	4.4	2.3	2.9	3.0	1.2	0.2	0.8	2.1	0.5	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.5	15.1	15.1	30.9	10.9	10.9	19.6	16.3	17.2	21.7	16.6	17.0
LnGrp LOS	C	B	B	C	B	B	B	B	B	C	B	B
Approach Vol, veh/h		1031			1006			214			301	
Approach Delay, s/veh		15.9			14.1			18.4			19.8	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.1	25.6		16.5	7.7	29.0		16.5
Change Period (Y+Rc), s	4.9	4.9		4.6	4.9	4.9		4.6
Max Green Setting (Gmax), s	9.0	32.7		16.0	7.0	32.7		16.0
Max Q Clear Time (g_c+I1), s	6.7	14.4		11.4	3.6	10.9		8.0
Green Ext Time (p_c), s	0.1	6.3		0.5	0.0	5.6		0.6

Intersection Summary	
HCM 6th Ctrl Delay	15.9
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

Lane Group	EBT	WBL	WBT	NBL	NBT
Lane Group Flow (vph)	934	41	1198	109	15
v/c Ratio	0.32	0.13	0.51	0.32	0.02
Control Delay	9.1	22.1	6.7	20.7	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	9.1	22.1	6.7	20.7	0.1
Queue Length 50th (ft)	36	9	86	23	0
Queue Length 95th (ft)	107	34	140	67	0
Internal Link Dist (ft)	443		965		645
Turn Bay Length (ft)					
Base Capacity (vph)	3376	1074	3470	1048	1309
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.28	0.04	0.35	0.10	0.01

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	663	93	33	970	0	88	0	12	0	0	0
Future Volume (veh/h)	0	663	93	33	970	0	88	0	12	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	819	115	41	1198	0	109	0	15	0	0	0
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	0	2	2	2	2	0	2	2	2	2	2	2
Cap, veh/h	0	1928	269	84	2195	0	394	0	161	0	190	0
Arrive On Green	0.00	0.43	0.43	0.05	0.62	0.00	0.10	0.00	0.10	0.00	0.00	0.00
Sat Flow, veh/h	0	4697	632	1781	3647	0	1781	0	1585	0	1870	0
Grp Volume(v), veh/h	0	614	320	41	1198	0	109	0	15	0	0	0
Grp Sat Flow(s),veh/h/ln	0	1702	1757	1781	1777	0	1781	0	1585	0	1870	0
Q Serve(g_s), s	0.0	4.3	4.3	0.8	6.6	0.0	2.0	0.0	0.3	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	4.3	4.3	0.8	6.6	0.0	2.0	0.0	0.3	0.0	0.0	0.0
Prop In Lane	0.00		0.36	1.00		0.00	1.00		1.00	0.00		0.00
Lane Grp Cap(c), veh/h	0	1450	748	84	2195	0	394	0	161	0	190	0
V/C Ratio(X)	0.00	0.42	0.43	0.49	0.55	0.00	0.28	0.00	0.09	0.00	0.00	0.00
Avail Cap(c_a), veh/h	0	2825	1458	1268	5992	0	1906	0	1507	0	1778	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)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	6.8	6.8	15.7	3.7	0.0	14.6	0.0	13.8	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.2	0.4	4.3	0.2	0.0	0.4	0.0	0.2	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	0.0	1.0	1.1	0.4	0.7	0.0	0.7	0.0	0.1	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	7.0	7.2	20.0	3.9	0.0	14.9	0.0	14.0	0.0	0.0	0.0
LnGrp LOS	A	A	A	C	A	A	B	A	B	A	A	A
Approach Vol, veh/h		934			1239			124			0	
Approach Delay, s/veh		7.1			4.5			14.8			0.0	
Approach LOS		A			A			B				
Timer - Assigned Phs		2	3	4		6		8				
Phs Duration (G+Y+Rc), s		8.0	6.5	19.3		8.0		25.8				
Change Period (Y+Rc), s		4.6	4.9	4.9		4.6		4.9				
Max Green Setting (Gmax), s		32.2	24.1	28.1		32.2		57.1				
Max Q Clear Time (g_c+I1), s		4.0	2.8	6.3		0.0		8.6				
Green Ext Time (p_c), s		0.3	0.1	6.5		0.0		12.3				
Intersection Summary												
HCM 6th Ctrl Delay			6.1									
HCM 6th LOS			A									

Lane Group	EBT	WBL	WBT	NBL	NBT
Lane Group Flow (vph)	800	49	1201	85	37
v/c Ratio	0.43	0.16	0.52	0.24	0.06
Control Delay	14.9	31.8	10.4	28.7	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	14.9	31.8	10.4	28.7	0.2
Queue Length 50th (ft)	87	12	77	21	0
Queue Length 95th (ft)	256	63	347	90	0
Internal Link Dist (ft)	965		1195		1198
Turn Bay Length (ft)					
Base Capacity (vph)	2610	346	3108	635	1406
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.31	0.14	0.39	0.13	0.03

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	573	75	40	973	0	69	0	30	0	0	0
Future Volume (veh/h)	0	573	75	40	973	0	69	0	30	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	707	93	49	1201	0	85	0	37	0	0	0
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	0	2	2	2	2	0	2	2	2	2	2	2
Cap, veh/h	0	1299	171	97	2179	0	146	0	161	0	6	0
Arrive On Green	0.00	0.41	0.41	0.05	0.61	0.00	0.08	0.00	0.10	0.00	0.00	0.00
Sat Flow, veh/h	0	3251	415	1781	3647	0	1781	0	1585	0	-73689	0
Grp Volume(v), veh/h	0	398	402	49	1201	0	85	0	37	0	0	0
Grp Sat Flow(s),veh/h/ln	0	1777	1796	1781	1777	0	1781	0	1585	0	1870	0
Q Serve(g_s), s	0.0	5.7	5.7	0.9	6.6	0.0	1.5	0.0	0.7	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	5.7	5.7	0.9	6.6	0.0	1.5	0.0	0.7	0.0	0.0	0.0
Prop In Lane	0.00		0.23	1.00		0.00	1.00		1.00	0.00		0.00
Lane Grp Cap(c), veh/h	0	731	739	97	2179	0	146	0	161	0	6	0
V/C Ratio(X)	0.00	0.54	0.54	0.50	0.55	0.00	0.58	0.00	0.23	0.00	0.00	0.00
Avail Cap(c_a), veh/h	0	1915	1935	390	5131	0	717	0	2241	0	1634	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)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	7.4	7.4	15.3	3.8	0.0	14.7	0.0	13.8	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.6	0.6	4.0	0.2	0.0	3.7	0.0	0.7	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	0.0	1.4	1.5	0.4	0.7	0.0	0.6	0.0	0.2	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	8.1	8.1	19.3	4.0	0.0	18.4	0.0	14.5	0.0	0.0	0.0
LnGrp LOS	A	A	A	B	A	A	B	A	B	A	A	A
Approach Vol, veh/h		800			1250			122			0	
Approach Delay, s/veh		8.1			4.6			17.2			0.0	
Approach LOS		A			A			B				
Timer - Assigned Phs		2	3	4	5	6		8				
Phs Duration (G+Y+Rc), s		8.0	6.7	18.6	7.3	0.7		25.3				
Change Period (Y+Rc), s		4.6	4.9	4.9	4.6	4.6		4.9				
Max Green Setting (Gmax), s		47.1	7.3	35.9	13.4	29.1		48.1				
Max Q Clear Time (g_c+I1), s		2.7	2.9	7.7	3.5	0.0		8.6				
Green Ext Time (p_c), s		0.2	0.0	5.7	0.1	0.0		11.9				
Intersection Summary												
HCM 6th Ctrl Delay			6.6									
HCM 6th LOS			A									

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	367	300	42	19	805	40	41	87	22	404
v/c Ratio	0.69	0.13	0.04	0.14	0.71	0.19	0.17	0.48	0.09	0.58
Control Delay	37.1	10.0	0.1	44.7	29.7	40.6	22.6	49.6	32.4	16.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.1	10.0	0.1	44.7	29.7	40.6	22.6	49.6	32.4	16.3
Queue Length 50th (ft)	173	26	0	10	188	17	11	44	11	139
Queue Length 95th (ft)	#382	87	0	35	#326	58	35	#122	29	163
Internal Link Dist (ft)		1195			2587		1879		775	
Turn Bay Length (ft)										
Base Capacity (vph)	589	2378	1076	135	1367	223	723	188	781	740
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.62	0.13	0.04	0.14	0.59	0.18	0.06	0.46	0.03	0.55

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	312	255	36	16	638	46	34	19	16	74	19	343
Future Volume (veh/h)	312	255	36	16	638	46	34	19	16	74	19	343
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	367	300	42	19	751	54	40	22	19	87	22	404
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	410	1715	763	38	920	66	65	187	162	112	427	726
Arrive On Green	0.23	0.48	0.48	0.02	0.27	0.27	0.04	0.20	0.20	0.06	0.23	0.23
Sat Flow, veh/h	1781	3554	1582	1781	3361	242	1781	926	800	1781	1870	1581
Grp Volume(v), veh/h	367	300	42	19	397	408	40	0	41	87	22	404
Grp Sat Flow(s),veh/h/ln	1781	1777	1582	1781	1777	1826	1781	0	1726	1781	1870	1581
Q Serve(g_s), s	16.4	3.9	1.2	0.9	17.2	17.2	1.8	0.0	1.6	4.0	0.8	15.3
Cycle Q Clear(g_c), s	16.4	3.9	1.2	0.9	17.2	17.2	1.8	0.0	1.6	4.0	0.8	15.3
Prop In Lane	1.00		1.00	1.00		0.13	1.00		0.46	1.00		1.00
Lane Grp Cap(c), veh/h	410	1715	763	38	486	500	65	0	349	112	427	726
V/C Ratio(X)	0.89	0.17	0.06	0.50	0.82	0.82	0.62	0.00	0.12	0.78	0.05	0.56
Avail Cap(c_a), veh/h	501	1937	862	115	584	600	147	0	599	160	662	925
HCM Platoon Ratio	1.00	1.00	1.00	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	1.00	1.00
Uniform Delay (d), s/veh	30.7	12.0	11.3	39.8	27.9	27.9	39.0	0.0	26.8	37.9	24.8	16.2
Incr Delay (d2), s/veh	16.1	0.0	0.0	9.7	7.5	7.4	9.1	0.0	0.1	14.0	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.6	1.5	0.4	0.5	8.0	8.2	0.9	0.0	0.7	2.1	0.3	5.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.8	12.1	11.3	49.5	35.4	35.3	48.2	0.0	26.9	52.0	24.8	16.8
LnGrp LOS	D	B	B	D	D	D	D	A	C	D	C	B
Approach Vol, veh/h		709			824			81			513	
Approach Delay, s/veh		30.0			35.7			37.4			23.1	
Approach LOS		C			D			D			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.8	21.2	6.7	44.6	7.6	23.4	23.8	27.4				
Change Period (Y+Rc), s	4.6	4.6	4.9	4.9	4.6	4.6	4.9	4.9				
Max Green Setting (Gmax), s	7.4	28.5	5.3	44.8	6.8	29.1	23.1	27.0				
Max Q Clear Time (g_c+I1), s	6.0	3.6	2.9	5.9	3.8	17.3	18.4	19.2				
Green Ext Time (p_c), s	0.0	0.1	0.0	2.3	0.0	1.3	0.5	3.1				
Intersection Summary												
HCM 6th Ctrl Delay			30.8									
HCM 6th LOS			C									

Intersection	
Intersection Delay, s/veh	16.2
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	43	170	32	2	366	14	54	4	5	31	11	128
Future Vol, veh/h	43	170	32	2	366	14	54	4	5	31	11	128
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	51	200	38	2	431	16	64	5	6	36	13	151
Number of Lanes	1	1	0	1	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	12.1	22	11.2	11.1
HCM LOS	B	C	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	100%	0%	100%	0%
Vol Thru, %	0%	44%	0%	84%	0%	96%	0%	8%
Vol Right, %	0%	56%	0%	16%	0%	4%	0%	92%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	54	9	43	202	2	380	31	139
LT Vol	54	0	43	0	2	0	31	0
Through Vol	0	4	0	170	0	366	0	11
RT Vol	0	5	0	32	0	14	0	128
Lane Flow Rate	64	11	51	238	2	447	36	164
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.133	0.019	0.092	0.391	0.004	0.72	0.074	0.277
Departure Headway (Hd)	7.523	6.614	6.542	5.922	6.33	5.799	7.263	6.097
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	475	538	547	606	565	621	492	587
Service Time	5.298	4.389	4.295	3.675	4.075	3.544	5.026	3.86
HCM Lane V/C Ratio	0.135	0.02	0.093	0.393	0.004	0.72	0.073	0.279
HCM Control Delay	11.5	9.5	10	12.5	9.1	22.1	10.6	11.2
HCM Lane LOS	B	A	A	B	A	C	B	B
HCM 95th-tile Q	0.5	0.1	0.3	1.9	0	6	0.2	1.1

Intersection	
Int Delay, s/veh	8.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	57	98	50	7	77	17	139	4	25	48	11	165
Future Vol, veh/h	57	98	50	7	77	17	139	4	25	48	11	165
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	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	64	110	56	8	87	19	156	4	28	54	12	185

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	106	0	0	166	0	0	449	360	110	395	407	97
Stage 1	-	-	-	-	-	-	238	238	-	113	113	-
Stage 2	-	-	-	-	-	-	211	122	-	282	294	-
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	1485	-	-	1412	-	-	520	567	943	565	533	959
Stage 1	-	-	-	-	-	-	765	708	-	892	802	-
Stage 2	-	-	-	-	-	-	791	795	-	725	670	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1485	-	-	1412	-	-	395	536	943	522	504	959
Mov Cap-2 Maneuver	-	-	-	-	-	-	395	536	-	522	504	-
Stage 1	-	-	-	-	-	-	728	674	-	849	797	-
Stage 2	-	-	-	-	-	-	624	790	-	665	638	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.1	0.5	18.1	10.7
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	395	854	1485	-	-	1412	-	-	522	908
HCM Lane V/C Ratio	0.395	0.038	0.043	-	-	0.006	-	-	0.103	0.218
HCM Control Delay (s)	19.9	9.4	7.5	0	-	7.6	0	-	12.7	10.1
HCM Lane LOS	C	A	A	A	-	A	A	-	B	B
HCM 95th %tile Q(veh)	1.8	0.1	0.1	-	-	0	-	-	0.3	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	7	51	113	1	41	0	54	4	2	0	7	11
Future Vol, veh/h	7	51	113	1	41	0	54	4	2	0	7	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	77	77	77	77	77	77	77	77	77	77	77	77
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	66	147	1	53	0	70	5	3	0	9	14

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	53	0	0	213	0	0	225	213	140	217	286	53
Stage 1	-	-	-	-	-	-	158	158	-	55	55	-
Stage 2	-	-	-	-	-	-	67	55	-	162	231	-
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	1553	-	-	1357	-	-	730	684	908	739	623	1014
Stage 1	-	-	-	-	-	-	844	767	-	957	849	-
Stage 2	-	-	-	-	-	-	943	849	-	840	713	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1553	-	-	1357	-	-	707	679	908	728	618	1014
Mov Cap-2 Maneuver	-	-	-	-	-	-	707	679	-	728	618	-
Stage 1	-	-	-	-	-	-	838	762	-	950	848	-
Stage 2	-	-	-	-	-	-	919	848	-	826	708	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.2	10.7	9.6
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	710	1553	-	-	1357	-	-	812
HCM Lane V/C Ratio	0.11	0.006	-	-	0.001	-	-	0.029
HCM Control Delay (s)	10.7	7.3	0	-	7.7	0	-	9.6
HCM Lane LOS	B	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.4	0	-	-	0	-	-	0.1

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	242	0	0	266	166	0	0	0	100	0	3
Future Vol, veh/h	0	242	0	0	266	166	0	0	0	100	0	3
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	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	92	92	85	85	92	92	92	85	92	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	285	0	0	313	195	0	0	0	118	0	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	508	0	0	285	0	0	698	793	285	696	696	411
Stage 1	-	-	-	-	-	-	285	285	-	411	411	-
Stage 2	-	-	-	-	-	-	413	508	-	285	285	-
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	1057	-	-	1277	-	-	355	321	754	356	365	641
Stage 1	-	-	-	-	-	-	722	676	-	618	595	-
Stage 2	-	-	-	-	-	-	616	539	-	722	676	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1057	-	-	1277	-	-	353	321	754	356	365	641
Mov Cap-2 Maneuver	-	-	-	-	-	-	353	321	-	356	365	-
Stage 1	-	-	-	-	-	-	722	676	-	618	595	-
Stage 2	-	-	-	-	-	-	613	539	-	722	676	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	0	19.9
HCM LOS			A	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1057	-	-	1277	-	-	361
HCM Lane V/C Ratio	-	-	-	-	-	-	-	0.336
HCM Control Delay (s)	0	0	-	-	0	-	-	19.9
HCM Lane LOS	A	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	1.4

Intersection	
Intersection Delay, s/veh	17.5
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	9	42	231	89	108	0	281	30	47	0	87	26
Future Vol, veh/h	9	42	231	89	108	0	281	30	47	0	87	26
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	49	272	105	127	0	331	35	55	0	102	31
Number of Lanes	1	1	0	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	2
HCM Control Delay	16.8	16.4	20.3	12.6
HCM LOS	C	C	C	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	45%	0%	0%
Vol Thru, %	0%	39%	0%	15%	55%	100%	77%
Vol Right, %	0%	61%	0%	85%	0%	0%	23%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	281	77	9	273	197	0	113
LT Vol	281	0	9	0	89	0	0
Through Vol	0	30	0	42	108	0	87
RT Vol	0	47	0	231	0	0	26
Lane Flow Rate	331	91	11	321	232	0	133
Geometry Grp	7	7	7	7	6	7	7
Degree of Util (X)	0.663	0.158	0.022	0.564	0.465	0	0.266
Departure Headway (Hd)	7.218	6.273	7.442	6.326	7.217	7.359	7.193
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	502	572	481	568	498	0	499
Service Time	4.959	4.014	5.185	4.069	5.265	5.112	4.946
HCM Lane V/C Ratio	0.659	0.159	0.023	0.565	0.466	0	0.267
HCM Control Delay	23.1	10.2	10.4	17	16.4	10.1	12.6
HCM Lane LOS	C	B	B	C	C	N	B
HCM 95th-tile Q	4.8	0.6	0.1	3.5	2.4	0	1.1

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	55	985	174	896	112	105	182	119
v/c Ratio	0.30	0.73	0.70	0.50	0.36	0.13	0.58	0.14
Control Delay	37.4	21.4	48.9	15.2	24.3	7.2	30.0	10.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.4	21.4	48.9	15.2	24.3	7.2	30.0	10.2
Queue Length 50th (ft)	20	151	64	128	36	3	63	7
Queue Length 95th (ft)	65	306	#217	268	77	17	121	24
Internal Link Dist (ft)		4010		607		1657		634
Turn Bay Length (ft)								
Base Capacity (vph)	200	1846	257	1980	381	1000	386	1026
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.53	0.68	0.45	0.29	0.10	0.47	0.12

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	692	145	148	729	32	95	17	72	155	43	58
Future Volume (veh/h)	47	692	145	148	729	32	95	17	72	155	43	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	55	814	171	174	858	38	112	20	85	182	51	68
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	92	1135	238	220	1595	71	373	399	356	365	399	356
Arrive On Green	0.05	0.39	0.39	0.12	0.46	0.46	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	1781	2923	614	1781	3466	154	1273	1777	1585	1289	1777	1585
Grp Volume(v), veh/h	55	495	490	174	440	456	112	20	85	182	51	68
Grp Sat Flow(s),veh/h/ln	1781	1777	1760	1781	1777	1843	1273	1777	1585	1289	1777	1585
Q Serve(g_s), s	1.6	12.9	12.9	5.2	9.7	9.7	4.3	0.5	2.4	7.4	1.3	1.9
Cycle Q Clear(g_c), s	1.6	12.9	12.9	5.2	9.7	9.7	6.2	0.5	2.4	9.8	1.3	1.9
Prop In Lane	1.00		0.35	1.00		0.08	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	92	690	683	220	817	848	373	399	356	365	399	356
V/C Ratio(X)	0.60	0.72	0.72	0.79	0.54	0.54	0.30	0.05	0.24	0.50	0.13	0.19
Avail Cap(c_a), veh/h	228	1064	1054	294	1064	1103	460	521	464	453	521	464
HCM Platoon Ratio	1.00	1.00	1.00	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	25.3	14.2	14.2	23.3	10.6	10.6	19.7	16.6	17.4	21.4	16.9	17.2
Incr Delay (d2), s/veh	6.0	1.4	1.4	10.1	0.6	0.5	0.4	0.1	0.3	1.1	0.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	4.7	4.6	2.6	3.2	3.3	1.2	0.2	0.9	2.2	0.5	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.4	15.6	15.6	33.4	11.1	11.1	20.1	16.7	17.7	22.4	17.1	17.4
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		1040			1070			217			301	
Approach Delay, s/veh		16.4			14.7			18.8			20.4	
Approach LOS		B			B			B			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.6	26.1		16.9	7.7	30.0		16.9				
Change Period (Y+Rc), s	4.9	4.9		4.6	4.9	4.9		4.6				
Max Green Setting (Gmax), s	9.0	32.7		16.0	7.0	32.7		16.0				
Max Q Clear Time (g_c+I1), s	7.2	14.9		11.8	3.6	11.7		8.2				
Green Ext Time (p_c), s	0.1	6.3		0.5	0.0	5.9		0.6				

Intersection Summary			
HCM 6th Ctrl Delay			16.4
HCM 6th LOS			B

Notes

User approved pedestrian interval to be less than phase max green.

Lane Group	EBT	WBL	WBT	NBL	NBT
Lane Group Flow (vph)	956	47	1309	109	16
v/c Ratio	0.35	0.15	0.54	0.33	0.02
Control Delay	10.8	23.6	7.0	22.2	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	10.8	23.6	7.0	22.2	0.1
Queue Length 50th (ft)	73	12	101	27	0
Queue Length 95th (ft)	116	40	167	70	0
Internal Link Dist (ft)	443		965		645
Turn Bay Length (ft)					
Base Capacity (vph)	3191	1017	3426	988	1263
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.30	0.05	0.38	0.11	0.01

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	681	93	38	1060	0	88	0	13	0	0	0
Future Volume (veh/h)	0	681	93	38	1060	0	88	0	13	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	841	115	47	1309	0	109	0	16	0	0	0
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	0	2	2	2	2	0	2	2	2	2	2	2
Cap, veh/h	0	2093	285	92	2292	0	369	0	155	0	183	0
Arrive On Green	0.00	0.46	0.46	0.05	0.64	0.00	0.10	0.00	0.10	0.00	0.00	0.00
Sat Flow, veh/h	0	4713	618	1781	3647	0	1781	0	1585	0	1870	0
Grp Volume(v), veh/h	0	629	327	47	1309	0	109	0	16	0	0	0
Grp Sat Flow(s),veh/h/ln	0	1702	1759	1781	1777	0	1781	0	1585	0	1870	0
Q Serve(g_s), s	0.0	4.5	4.6	0.9	7.6	0.0	2.2	0.0	0.3	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	4.5	4.6	0.9	7.6	0.0	2.2	0.0	0.3	0.0	0.0	0.0
Prop In Lane	0.00		0.35	1.00		0.00	1.00		1.00	0.00		0.00
Lane Grp Cap(c), veh/h	0	1568	810	92	2292	0	369	0	155	0	183	0
V/C Ratio(X)	0.00	0.40	0.40	0.51	0.57	0.00	0.30	0.00	0.10	0.00	0.00	0.00
Avail Cap(c_a), veh/h	0	2590	1338	1162	5494	0	1748	0	1382	0	1631	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)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	6.6	6.6	17.1	3.7	0.0	16.0	0.0	15.2	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.2	0.3	4.3	0.2	0.0	0.4	0.0	0.3	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	0.0	1.1	1.1	0.4	0.9	0.0	0.8	0.0	0.1	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	6.8	6.9	21.3	3.9	0.0	16.5	0.0	15.5	0.0	0.0	0.0
LnGrp LOS	A	A	A	C	A	A	B	A	B	A	A	A
Approach Vol, veh/h		956			1356			125			0	
Approach Delay, s/veh		6.8			4.5			16.3			0.0	
Approach LOS		A			A			B				
Timer - Assigned Phs		2	3	4		6		8				
Phs Duration (G+Y+Rc), s		8.2	6.8	21.9		8.2		28.7				
Change Period (Y+Rc), s		4.6	4.9	4.9		4.6		4.9				
Max Green Setting (Gmax), s		32.2	24.1	28.1		32.2		57.1				
Max Q Clear Time (g_c+I1), s		4.2	2.9	6.6		0.0		9.6				
Green Ext Time (p_c), s		0.4	0.1	6.7		0.0		14.2				
Intersection Summary												
HCM 6th Ctrl Delay			6.0									
HCM 6th LOS			A									

Lane Group	EBT	WBL	WBT	NBL	NBT
Lane Group Flow (vph)	824	57	1320	85	38
v/c Ratio	0.43	0.20	0.56	0.25	0.07
Control Delay	15.0	32.4	11.1	29.2	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	15.0	32.4	11.1	29.2	0.2
Queue Length 50th (ft)	93	15	92	21	0
Queue Length 95th (ft)	266	70	396	90	0
Internal Link Dist (ft)	965		1195		1198
Turn Bay Length (ft)					
Base Capacity (vph)	2545	327	3077	601	1394
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.32	0.17	0.43	0.14	0.03

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	592	75	46	1069	0	69	0	31	0	0	0
Future Volume (veh/h)	0	592	75	46	1069	0	69	0	31	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	731	93	57	1320	0	85	0	38	0	0	0
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	0	2	2	2	2	0	2	2	2	2	2	2
Cap, veh/h	0	1413	180	107	2277	0	141	0	155	0	5	0
Arrive On Green	0.00	0.45	0.45	0.06	0.64	0.00	0.08	0.00	0.10	0.00	0.00	0.00
Sat Flow, veh/h	0	3265	403	1781	3647	0	1781	0	1585	0	-73404	0
Grp Volume(v), veh/h	0	409	415	57	1320	0	85	0	38	0	0	0
Grp Sat Flow(s),veh/h/ln	0	1777	1798	1781	1777	0	1781	0	1585	0	1870	0
Q Serve(g_s), s	0.0	6.0	6.0	1.1	7.7	0.0	1.7	0.0	0.8	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	6.0	6.0	1.1	7.7	0.0	1.7	0.0	0.8	0.0	0.0	0.0
Prop In Lane	0.00		0.22	1.00		0.00	1.00		1.00	0.00		0.00
Lane Grp Cap(c), veh/h	0	792	801	107	2277	0	141	0	155	0	5	0
V/C Ratio(X)	0.00	0.52	0.52	0.53	0.58	0.00	0.60	0.00	0.24	0.00	0.00	0.00
Avail Cap(c_a), veh/h	0	1756	1777	358	4706	0	657	0	2055	0	1498	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)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	7.3	7.3	16.6	3.7	0.0	16.2	0.0	15.1	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.5	0.5	4.0	0.2	0.0	4.1	0.0	0.8	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	0.0	1.6	1.6	0.5	0.8	0.0	0.7	0.0	0.3	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	7.8	7.8	20.6	4.0	0.0	20.2	0.0	16.0	0.0	0.0	0.0
LnGrp LOS	A	A	A	C	A	A	C	A	B	A	A	A
Approach Vol, veh/h		824			1377			123			0	
Approach Delay, s/veh		7.8			4.7			18.9			0.0	
Approach LOS		A			A			B				
Timer - Assigned Phs		2	3	4	5	6		8				
Phs Duration (G+Y+Rc), s		8.2	7.1	21.1	7.5	0.7		28.2				
Change Period (Y+Rc), s		4.6	4.9	4.9	4.6	4.6		4.9				
Max Green Setting (Gmax), s		47.1	7.3	35.9	13.4	29.1		48.1				
Max Q Clear Time (g_c+I1), s		2.8	3.1	8.0	3.7	0.0		9.7				
Green Ext Time (p_c), s		0.2	0.0	5.9	0.1	0.0		13.6				
Intersection Summary												
HCM 6th Ctrl Delay			6.5									
HCM 6th LOS			A									

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	391	300	42	19	810	40	43	112	26	522
v/c Ratio	0.74	0.14	0.04	0.16	0.77	0.20	0.19	0.66	0.10	0.72
Control Delay	39.2	10.0	0.1	45.3	32.6	41.1	23.1	60.0	32.6	21.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.2	10.0	0.1	45.3	32.6	41.1	23.1	60.0	32.6	21.6
Queue Length 50th (ft)	188	26	0	10	191	17	12	58	13	221
Queue Length 95th (ft)	#418	87	0	35	#331	58	36	#167	32	245
Internal Link Dist (ft)		1195			2587		1879		775	
Turn Bay Length (ft)										
Base Capacity (vph)	529	2191	1001	121	1226	206	653	169	701	723
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.74	0.14	0.04	0.16	0.66	0.19	0.07	0.66	0.04	0.72

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	332	255	36	16	638	50	34	20	16	95	22	444
Future Volume (veh/h)	332	255	36	16	638	50	34	20	16	95	22	444
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	391	300	42	19	751	59	40	24	19	112	26	522
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	421	1685	750	37	862	68	61	222	176	138	510	806
Arrive On Green	0.24	0.47	0.47	0.02	0.26	0.26	0.03	0.23	0.23	0.08	0.27	0.27
Sat Flow, veh/h	1781	3554	1582	1781	3337	262	1781	967	766	1781	1870	1582
Grp Volume(v), veh/h	391	300	42	19	400	410	40	0	43	112	26	522
Grp Sat Flow(s),veh/h/ln	1781	1777	1582	1781	1777	1822	1781	0	1733	1781	1870	1582
Q Serve(g_s), s	20.6	4.6	1.4	1.0	20.6	20.6	2.1	0.0	1.9	5.9	1.0	23.2
Cycle Q Clear(g_c), s	20.6	4.6	1.4	1.0	20.6	20.6	2.1	0.0	1.9	5.9	1.0	23.2
Prop In Lane	1.00		1.00	1.00		0.14	1.00		0.44	1.00		1.00
Lane Grp Cap(c), veh/h	421	1685	750	37	459	471	61	0	398	138	510	806
V/C Ratio(X)	0.93	0.18	0.06	0.51	0.87	0.87	0.66	0.00	0.11	0.81	0.05	0.65
Avail Cap(c_a), veh/h	430	1685	750	99	501	514	126	0	515	138	568	855
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.8	14.5	13.6	46.4	34.0	34.0	45.7	0.0	29.2	43.5	25.7	17.2
Incr Delay (d2), s/veh	26.2	0.0	0.0	10.7	14.4	14.2	11.4	0.0	0.1	29.9	0.0	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.8	1.8	0.5	0.6	10.5	10.8	1.1	0.0	0.8	3.7	0.4	8.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	62.0	14.5	13.6	57.1	48.4	48.2	57.1	0.0	29.3	73.4	25.7	18.8
LnGrp LOS	E	B	B	E	D	D	E	A	C	E	C	B
Approach Vol, veh/h		733			829			83			660	
Approach Delay, s/veh		39.8			48.5			42.7			28.3	
Approach LOS		D			D			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	26.6	6.9	50.3	7.9	30.7	27.6	29.7
Change Period (Y+Rc), s	4.6	4.6	4.9	4.9	4.6	4.6	4.9	4.9
Max Green Setting (Gmax), s	7.4	28.5	5.3	44.8	6.8	29.1	23.1	27.0
Max Q Clear Time (g_c+I1), s	7.9	3.9	3.0	6.6	4.1	25.2	22.6	22.6
Green Ext Time (p_c), s	0.0	0.2	0.0	2.3	0.0	0.9	0.1	2.0

Intersection Summary			
HCM 6th Ctrl Delay			39.7
HCM 6th LOS			D

Intersection	
Intersection Delay, s/veh	16.9
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	43	191	32	2	370	14	54	5	5	31	13	128
Future Vol, veh/h	43	191	32	2	370	14	54	5	5	31	13	128
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	51	225	38	2	435	16	64	6	6	36	15	151
Number of Lanes	1	1	0	1	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	12.8	23.1	11.3	11.4
HCM LOS	B	C	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	100%	0%	100%	0%
Vol Thru, %	0%	50%	0%	86%	0%	96%	0%	9%
Vol Right, %	0%	50%	0%	14%	0%	4%	0%	91%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	54	10	43	223	2	384	31	141
LT Vol	54	0	43	0	2	0	31	0
Through Vol	0	5	0	191	0	370	0	13
RT Vol	0	5	0	32	0	14	0	128
Lane Flow Rate	64	12	51	262	2	452	36	166
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.135	0.022	0.092	0.435	0.004	0.735	0.075	0.286
Departure Headway (Hd)	7.63	6.76	6.581	5.972	6.392	5.861	7.357	6.199
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	468	526	543	601	559	614	485	577
Service Time	5.412	4.542	4.341	3.732	4.144	3.612	5.125	3.967
HCM Lane V/C Ratio	0.137	0.023	0.094	0.436	0.004	0.736	0.074	0.288
HCM Control Delay	11.6	9.7	10	13.3	9.2	23.2	10.7	11.5
HCM Lane LOS	B	A	A	B	A	C	B	B
HCM 95th-tile Q	0.5	0.1	0.3	2.2	0	6.3	0.2	1.2

Intersection	
Int Delay, s/veh	8.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	57	119	50	7	81	17	139	5	25	48	13	165
Future Vol, veh/h	57	119	50	7	81	17	139	5	25	48	13	165
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	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	64	134	56	8	91	19	156	6	28	54	15	185

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	110	0	0	190	0	0	479	388	134	424	435	101
Stage 1	-	-	-	-	-	-	262	262	-	117	117	-
Stage 2	-	-	-	-	-	-	217	126	-	307	318	-
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	1480	-	-	1384	-	-	497	547	915	540	514	954
Stage 1	-	-	-	-	-	-	743	691	-	888	799	-
Stage 2	-	-	-	-	-	-	785	792	-	703	654	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1480	-	-	1384	-	-	375	517	915	497	486	954
Mov Cap-2 Maneuver	-	-	-	-	-	-	375	517	-	497	486	-
Stage 1	-	-	-	-	-	-	707	657	-	844	794	-
Stage 2	-	-	-	-	-	-	617	787	-	642	622	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.9	0.5	19.2	10.8
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	375	811	1480	-	-	1384	-	-	497	891
HCM Lane V/C Ratio	0.416	0.042	0.043	-	-	0.006	-	-	0.109	0.224
HCM Control Delay (s)	21.3	9.6	7.5	0	-	7.6	0	-	13.1	10.2
HCM Lane LOS	C	A	A	A	-	A	A	-	B	B
HCM 95th %tile Q(veh)	2	0.1	0.1	-	-	0	-	-	0.4	0.9

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	7	57	128	1	42	0	57	4	2	0	7	11
Future Vol, veh/h	7	57	128	1	42	0	57	4	2	0	7	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	77	77	77	77	77	77	77	77	77	77	77	77
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	74	166	1	55	0	74	5	3	0	9	14

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	55	0	0	240	0	0	244	232	157	236	315	55
Stage 1	-	-	-	-	-	-	175	175	-	57	57	-
Stage 2	-	-	-	-	-	-	69	57	-	179	258	-
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	1550	-	-	1327	-	-	710	668	889	718	601	1012
Stage 1	-	-	-	-	-	-	827	754	-	955	847	-
Stage 2	-	-	-	-	-	-	941	847	-	823	694	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1550	-	-	1327	-	-	687	663	889	707	596	1012
Mov Cap-2 Maneuver	-	-	-	-	-	-	687	663	-	707	596	-
Stage 1	-	-	-	-	-	-	821	749	-	948	846	-
Stage 2	-	-	-	-	-	-	917	846	-	809	689	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.2	10.9	9.7
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	690	1550	-	-	1327	-	-	796
HCM Lane V/C Ratio	0.119	0.006	-	-	0.001	-	-	0.029
HCM Control Delay (s)	10.9	7.3	0	-	7.7	0	-	9.7
HCM Lane LOS	B	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.4	0	-	-	0	-	-	0.1

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	242	0	0	266	167	0	0	0	103	0	3
Future Vol, veh/h	0	242	0	0	266	167	0	0	0	103	0	3
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	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	92	92	85	85	92	92	92	85	92	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	285	0	0	313	196	0	0	0	121	0	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	509	0	0	285	0	0	698	794	285	696	696	411
Stage 1	-	-	-	-	-	-	285	285	-	411	411	-
Stage 2	-	-	-	-	-	-	413	509	-	285	285	-
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	1056	-	-	1277	-	-	355	321	754	356	365	641
Stage 1	-	-	-	-	-	-	722	676	-	618	595	-
Stage 2	-	-	-	-	-	-	616	538	-	722	676	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1056	-	-	1277	-	-	353	321	754	356	365	641
Mov Cap-2 Maneuver	-	-	-	-	-	-	353	321	-	356	365	-
Stage 1	-	-	-	-	-	-	722	676	-	618	595	-
Stage 2	-	-	-	-	-	-	613	538	-	722	676	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	0	20.1
HCM LOS			A	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1056	-	-	1277	-	-	361
HCM Lane V/C Ratio	-	-	-	-	-	-	-	0.345
HCM Control Delay (s)	0	0	-	-	0	-	-	20.1
HCM Lane LOS	A	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	1.5

Intersection	
Intersection Delay, s/veh	23
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	9	45	231	89	108	1	281	54	47	3	212	26
Future Vol, veh/h	9	45	231	89	108	1	281	54	47	3	212	26
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	53	272	105	127	1	331	64	55	4	249	31
Number of Lanes	1	1	0	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	2
HCM Control Delay	22.5	20.5	25.4	21.7
HCM LOS	C	C	D	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	45%	100%	0%
Vol Thru, %	0%	53%	0%	16%	55%	0%	89%
Vol Right, %	0%	47%	0%	84%	1%	0%	11%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	281	101	9	276	198	3	238
LT Vol	281	0	9	0	89	3	0
Through Vol	0	54	0	45	108	0	212
RT Vol	0	47	0	231	1	0	26
Lane Flow Rate	331	119	11	325	233	4	280
Geometry Grp	7	7	7	7	6	7	7
Degree of Util (X)	0.737	0.238	0.025	0.657	0.535	0.008	0.604
Departure Headway (Hd)	8.027	7.204	8.397	7.279	8.266	8.364	7.767
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	450	499	429	500	436	427	465
Service Time	5.783	4.931	6.1	4.982	6.326	6.123	5.527
HCM Lane V/C Ratio	0.736	0.238	0.026	0.65	0.534	0.009	0.602
HCM Control Delay	30.2	12.2	11.3	22.9	20.5	11.2	21.8
HCM Lane LOS	D	B	B	C	C	B	C
HCM 95th-tile Q	6	0.9	0.1	4.7	3.1	0	3.9

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	36	1246	153	973	172	223	119	79
v/c Ratio	0.22	0.83	0.68	0.49	0.58	0.26	0.46	0.10
Control Delay	37.7	25.0	50.8	13.3	31.7	5.6	29.0	12.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.7	25.0	50.8	13.3	31.7	5.6	29.0	12.2
Queue Length 50th (ft)	15	220	64	86	69	5	46	7
Queue Length 95th (ft)	48	#474	#186	297	113	24	82	20
Internal Link Dist (ft)		4010		607		1657		634
Turn Bay Length (ft)								
Base Capacity (vph)	185	1714	238	2031	370	1009	322	954
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.73	0.64	0.48	0.46	0.22	0.37	0.08

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	947	112	130	782	45	146	25	165	101	34	33
Future Volume (veh/h)	31	947	112	130	782	45	146	25	165	101	34	33
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	36	1114	132	153	920	53	172	29	194	119	40	39
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	66	1379	163	193	1716	99	399	422	377	264	432	369
Arrive On Green	0.04	0.43	0.43	0.11	0.50	0.50	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	1781	3200	379	1781	3415	197	1320	1777	1585	1158	1816	1552
Grp Volume(v), veh/h	36	618	628	153	479	494	172	29	194	119	39	40
Grp Sat Flow(s),veh/h/ln	1781	1777	1802	1781	1777	1835	1320	1777	1585	1158	1777	1591
Q Serve(g_s), s	1.3	19.6	19.7	5.4	11.8	11.8	7.6	0.8	6.9	6.4	1.1	1.3
Cycle Q Clear(g_c), s	1.3	19.6	19.7	5.4	11.8	11.8	8.8	0.8	6.9	13.3	1.1	1.3
Prop In Lane	1.00		0.21	1.00		0.11	1.00		1.00	1.00		0.98
Lane Grp Cap(c), veh/h	66	766	777	193	893	922	399	422	377	264	422	378
V/C Ratio(X)	0.55	0.81	0.81	0.79	0.54	0.54	0.43	0.07	0.51	0.45	0.09	0.11
Avail Cap(c_a), veh/h	193	900	913	248	900	930	413	440	393	275	440	394
HCM Platoon Ratio	1.00	1.00	1.00	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	30.6	16.0	16.0	28.1	10.9	10.9	22.7	19.1	21.4	27.1	19.2	19.2
Incr Delay (d2), s/veh	7.0	4.7	4.8	12.6	0.6	0.6	0.7	0.1	1.1	1.2	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	7.9	8.1	2.9	4.1	4.2	2.3	0.3	2.5	1.8	0.4	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.5	20.7	20.8	40.7	11.6	11.5	23.4	19.1	22.5	28.3	19.3	19.4
LnGrp LOS	D	C	C	D	B	B	C	B	C	C	B	B
Approach Vol, veh/h		1282			1126			395			198	
Approach Delay, s/veh		21.2			15.5			22.6			24.7	
Approach LOS		C			B			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.9	32.7		19.9	7.3	37.3		19.9				
Change Period (Y+Rc), s	4.9	4.9		4.6	4.9	4.9		4.6				
Max Green Setting (Gmax), s	9.0	32.7		16.0	7.0	32.7		16.0				
Max Q Clear Time (g_c+I1), s	7.4	21.7		15.3	3.3	13.8		10.8				
Green Ext Time (p_c), s	0.1	6.2		0.1	0.0	6.3		0.9				
Intersection Summary												
HCM 6th Ctrl Delay			19.5									
HCM 6th LOS			B									
Notes												

User approved pedestrian interval to be less than phase max green.

Lane Group	EBT	WBL	WBT	NBL	NBT
Lane Group Flow (vph)	1727	48	1062	351	67
v/c Ratio	0.78	0.26	0.55	0.77	0.08
Control Delay	22.5	37.1	12.7	36.1	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	22.5	37.1	12.7	36.1	0.2
Queue Length 50th (ft)	272	23	165	153	0
Queue Length 95th (ft)	317	50	202	226	0
Internal Link Dist (ft)	443		965		645
Turn Bay Length (ft)					
Base Capacity (vph)	2221	607	2964	586	937
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.78	0.08	0.36	0.60	0.07

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1101	298	39	860	0	284	0	54	0	0	0
Future Volume (veh/h)	0	1101	298	39	860	0	284	0	54	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	1359	368	48	1062	0	351	0	67	0	0	0
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	0	2	2	2	2	0	2	2	2	2	2	2
Cap, veh/h	0	1865	504	82	2118	0	554	0	384	0	453	0
Arrive On Green	0.00	0.47	0.47	0.05	0.60	0.00	0.24	0.00	0.24	0.00	0.00	0.00
Sat Flow, veh/h	0	4168	1080	1781	3647	0	1781	0	1585	0	1870	0
Grp Volume(v), veh/h	0	1156	571	48	1062	0	351	0	67	0	0	0
Grp Sat Flow(s),veh/h/ln	0	1702	1676	1781	1777	0	1781	0	1585	0	1870	0
Q Serve(g_s), s	0.0	16.1	16.2	1.5	10.1	0.0	10.9	0.0	2.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	16.1	16.2	1.5	10.1	0.0	10.9	0.0	2.0	0.0	0.0	0.0
Prop In Lane	0.00		0.64	1.00		0.00	1.00		1.00	0.00		0.00
Lane Grp Cap(c), veh/h	0	1587	782	82	2118	0	554	0	384	0	453	0
V/C Ratio(X)	0.00	0.73	0.73	0.58	0.50	0.00	0.63	0.00	0.17	0.00	0.00	0.00
Avail Cap(c_a), veh/h	0	1804	888	732	3640	0	1009	0	789	0	931	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)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	12.6	12.7	27.4	6.8	0.0	21.0	0.0	17.6	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.3	2.7	6.4	0.2	0.0	1.2	0.0	0.2	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	0.0	5.4	5.6	0.8	2.8	0.0	4.3	0.0	0.7	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	14.0	15.4	33.8	7.0	0.0	22.2	0.0	17.8	0.0	0.0	0.0
LnGrp LOS	A	B	B	C	A	A	C	A	B	A	A	A
Approach Vol, veh/h		1727			1110			418			0	
Approach Delay, s/veh		14.4			8.2			21.5			0.0	
Approach LOS		B			A			C				

Timer - Assigned Phs		2	3	4		6		8				
Phs Duration (G+Y+Rc), s		18.8	7.6	32.3		18.8		39.9				
Change Period (Y+Rc), s		4.6	4.9	4.9		4.6		4.9				
Max Green Setting (Gmax), s		29.2	24.1	31.1		29.2		60.1				
Max Q Clear Time (g_c+I1), s		12.9	3.5	18.2		0.0		12.1				
Green Ext Time (p_c), s		1.3	0.1	9.2		0.0		10.2				

Intersection Summary			
HCM 6th Ctrl Delay			13.2
HCM 6th LOS			B

Lane Group	EBT	WBL	WBT	NBL	NBT
Lane Group Flow (vph)	1468	63	806	315	69
v/c Ratio	0.90	0.52	0.39	0.78	0.12
Control Delay	29.0	54.2	11.3	45.6	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	29.0	54.2	11.3	45.6	0.4
Queue Length 50th (ft)	272	27	76	126	0
Queue Length 95th (ft)	#652	#96	223	#347	0
Internal Link Dist (ft)	965		1195		1198
Turn Bay Length (ft)					
Base Capacity (vph)	1637	122	2159	402	1166
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.90	0.52	0.37	0.78	0.06

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	938	251	51	653	0	255	0	56	0	0	0
Future Volume (veh/h)	0	938	251	51	653	0	255	0	56	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	1158	310	63	806	0	315	0	69	0	0	0
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	0	2	2	2	2	0	2	2	2	2	2	2
Cap, veh/h	0	1400	370	96	2264	0	370	0	330	0	3	0
Arrive On Green	0.00	0.50	0.50	0.05	0.64	0.00	0.21	0.00	0.21	0.00	0.00	0.00
Sat Flow, veh/h	0	2873	735	1781	3647	0	1781	0	1585	0	-86037	0
Grp Volume(v), veh/h	0	735	733	63	806	0	315	0	69	0	0	0
Grp Sat Flow(s),veh/h/ln	0	1777	1738	1781	1777	0	1781	0	1585	0	1870	0
Q Serve(g_s), s	0.0	21.5	22.2	2.1	6.5	0.0	10.4	0.0	2.2	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	21.5	22.2	2.1	6.5	0.0	10.4	0.0	2.2	0.0	0.0	0.0
Prop In Lane	0.00		0.42	1.00		0.00	1.00		1.00	0.00		0.00
Lane Grp Cap(c), veh/h	0	895	875	96	2264	0	370	0	330	0	3	0
V/C Ratio(X)	0.00	0.82	0.84	0.66	0.36	0.00	0.85	0.00	0.21	0.00	0.00	0.00
Avail Cap(c_a), veh/h	0	988	966	145	2550	0	476	0	1323	0	921	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)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	12.9	13.1	28.5	5.2	0.0	23.4	0.0	20.1	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	5.2	6.1	7.5	0.1	0.0	11.1	0.0	0.3	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	0.0	8.3	8.5	1.1	1.7	0.0	5.2	0.0	0.8	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	18.1	19.1	36.0	5.3	0.0	34.5	0.0	20.4	0.0	0.0	0.0
LnGrp LOS	A	B	B	D	A	A	C	A	C	A	A	A
Approach Vol, veh/h		1468			869			384			0	
Approach Delay, s/veh		18.6			7.5			32.0			0.0	
Approach LOS		B			A			C				
Timer - Assigned Phs		2	3	4	5	6		8				
Phs Duration (G+Y+Rc), s		17.4	8.2	35.8	17.4	0.0		44.0				
Change Period (Y+Rc), s		4.6	4.9	4.9	4.6	4.6		4.9				
Max Green Setting (Gmax), s		51.2	5.0	34.1	16.4	30.2		44.0				
Max Q Clear Time (g_c+I1), s		4.2	4.1	24.2	12.4	0.0		8.5				
Green Ext Time (p_c), s		0.4	0.0	6.7	0.4	0.0		6.7				
Intersection Summary												
HCM 6th Ctrl Delay			17.0									
HCM 6th LOS			B									

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	312	829	33	13	571	19	32	25	13	268
v/c Ratio	0.53	0.29	0.03	0.07	0.56	0.10	0.10	0.13	0.03	0.33
Control Delay	27.1	8.4	0.0	34.1	20.2	34.1	16.7	34.3	20.4	4.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.1	8.4	0.0	34.1	20.2	34.1	16.7	34.3	20.4	4.9
Queue Length 50th (ft)	41	0	0	2	46	3	3	5	2	10
Queue Length 95th (ft)	#346	243	0	25	190	32	26	39	18	61
Internal Link Dist (ft)		1195			2587		1879		775	
Turn Bay Length (ft)										
Base Capacity (vph)	594	2825	1259	196	2109	196	1113	196	1197	801
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.53	0.29	0.03	0.07	0.27	0.10	0.03	0.13	0.01	0.33

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	265	705	28	11	458	27	16	14	14	21	11	228
Future Volume (veh/h)	265	705	28	11	458	27	16	14	14	21	11	228
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	312	829	33	13	539	32	19	16	16	25	13	268
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	372	1552	690	29	832	49	41	151	151	51	339	618
Arrive On Green	0.21	0.44	0.44	0.02	0.24	0.24	0.02	0.18	0.18	0.03	0.18	0.18
Sat Flow, veh/h	1781	3554	1581	1781	3408	202	1781	858	858	1781	1870	1580
Grp Volume(v), veh/h	312	829	33	13	281	290	19	0	32	25	13	268
Grp Sat Flow(s),veh/h/ln	1781	1777	1581	1781	1777	1833	1781	0	1716	1781	1870	1580
Q Serve(g_s), s	9.3	9.5	0.7	0.4	7.9	7.9	0.6	0.0	0.9	0.8	0.3	6.9
Cycle Q Clear(g_c), s	9.3	9.5	0.7	0.4	7.9	7.9	0.6	0.0	0.9	0.8	0.3	6.9
Prop In Lane	1.00		1.00	1.00		0.11	1.00		0.50	1.00		1.00
Lane Grp Cap(c), veh/h	372	1552	690	29	434	448	41	0	301	51	339	618
V/C Ratio(X)	0.84	0.53	0.05	0.45	0.65	0.65	0.47	0.00	0.11	0.49	0.04	0.43
Avail Cap(c_a), veh/h	485	2378	1058	161	865	893	161	0	894	161	975	1154
HCM Platoon Ratio	1.00	1.00	1.00	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	1.00	1.00
Uniform Delay (d), s/veh	21.0	11.5	9.0	27.0	18.8	18.8	26.8	0.0	19.2	26.5	18.7	12.4
Incr Delay (d2), s/veh	9.8	0.3	0.0	10.3	1.6	1.6	8.1	0.0	0.2	7.0	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	3.2	0.2	0.2	3.1	3.2	0.3	0.0	0.3	0.4	0.1	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.8	11.8	9.0	37.3	20.4	20.4	34.8	0.0	19.4	33.5	18.8	12.9
LnGrp LOS	C	B	A	D	C	C	C	A	B	C	B	B
Approach Vol, veh/h		1174			584			51			306	
Approach Delay, s/veh		16.8			20.8			25.1			14.8	
Approach LOS		B			C			C			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.2	14.3	5.8	29.1	5.9	14.7	16.5	18.4				
Change Period (Y+Rc), s	4.6	4.6	4.9	4.9	4.6	4.6	4.9	4.9				
Max Green Setting (Gmax), s	5.0	28.9	5.0	37.1	5.0	28.9	15.1	27.0				
Max Q Clear Time (g_c+I1), s	2.8	2.9	2.4	11.5	2.6	8.9	11.3	9.9				
Green Ext Time (p_c), s	0.0	0.1	0.0	6.5	0.0	0.9	0.4	3.2				
Intersection Summary												
HCM 6th Ctrl Delay			17.8									
HCM 6th LOS			B									

Intersection	
Intersection Delay, s/veh	17.4
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	175	407	44	5	272	37	31	13	6	22	8	105
Future Vol, veh/h	175	407	44	5	272	37	31	13	6	22	8	105
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	188	438	47	5	292	40	33	14	6	24	9	113
Number of Lanes	1	1	0	1	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	20.1	15.8	10.9	11.1
HCM LOS	C	C	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	100%	0%	100%	0%
Vol Thru, %	0%	68%	0%	90%	0%	88%	0%	7%
Vol Right, %	0%	32%	0%	10%	0%	12%	0%	93%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	31	19	175	451	5	309	22	113
LT Vol	31	0	175	0	5	0	22	0
Through Vol	0	13	0	407	0	272	0	8
RT Vol	0	6	0	44	0	37	0	105
Lane Flow Rate	33	20	188	485	5	332	24	122
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.073	0.041	0.322	0.752	0.01	0.552	0.05	0.219
Departure Headway (Hd)	7.89	7.151	6.157	5.583	6.575	5.983	7.664	6.488
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	453	499	583	650	544	601	467	552
Service Time	5.656	4.917	3.895	3.321	4.323	3.732	5.421	4.245
HCM Lane V/C Ratio	0.073	0.04	0.322	0.746	0.009	0.552	0.051	0.221
HCM Control Delay	11.3	10.2	11.8	23.3	9.4	15.9	10.8	11.1
HCM Lane LOS	B	B	B	C	A	C	B	B
HCM 95th-tile Q	0.2	0.1	1.4	6.8	0	3.4	0.2	0.8

Intersection	
Int Delay, s/veh	8.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	218	94	122	15	109	60	73	12	7	36	8	131
Future Vol, veh/h	218	94	122	15	109	60	73	12	7	36	8	131
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	-	-	-	0	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	245	106	137	17	122	67	82	13	8	40	9	147

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	189	0	0	243	0	0	864	819	106	865	923	156
Stage 1	-	-	-	-	-	-	596	596	-	190	190	-
Stage 2	-	-	-	-	-	-	268	223	-	675	733	-
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	1385	-	-	1323	-	-	274	310	948	274	270	890
Stage 1	-	-	-	-	-	-	490	492	-	812	743	-
Stage 2	-	-	-	-	-	-	738	719	-	444	426	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1385	-	-	1323	-	-	184	242	948	217	211	890
Mov Cap-2 Maneuver	-	-	-	-	-	-	184	242	-	217	211	-
Stage 1	-	-	-	-	-	-	388	390	-	643	733	-
Stage 2	-	-	-	-	-	-	600	709	-	337	337	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	4.1	0.6	34.7	14
HCM LOS			D	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	184	334	1385	-	-	1323	-	-	216	890
HCM Lane V/C Ratio	0.446	0.064	0.177	-	-	0.013	-	-	0.229	0.165
HCM Control Delay (s)	39.4	16.5	8.2	0	-	7.8	0	-	26.5	9.8
HCM Lane LOS	E	C	A	A	-	A	A	-	D	A
HCM 95th %tile Q(veh)	2.1	0.2	0.6	-	-	0	-	-	0.9	0.6

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	10	57	73	6	60	1	111	6	2	1	24	12
Future Vol, veh/h	10	57	73	6	60	1	111	6	2	1	24	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	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	77	77	77	77	77	77	77	77	77	77	77	77
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	74	95	8	78	1	144	8	3	1	31	16

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	79	0	0	169	0	0	266	243	122	248	290	79
Stage 1	-	-	-	-	-	-	148	148	-	95	95	-
Stage 2	-	-	-	-	-	-	118	95	-	153	195	-
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	1519	-	-	1409	-	-	687	659	929	706	620	981
Stage 1	-	-	-	-	-	-	855	775	-	912	816	-
Stage 2	-	-	-	-	-	-	887	816	-	849	739	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1519	-	-	1409	-	-	642	648	929	689	610	981
Mov Cap-2 Maneuver	-	-	-	-	-	-	642	648	-	689	610	-
Stage 1	-	-	-	-	-	-	846	767	-	903	811	-
Stage 2	-	-	-	-	-	-	834	811	-	830	732	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.7	12.3	10.5
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	646	1519	-	-	1409	-	-	698
HCM Lane V/C Ratio	0.239	0.009	-	-	0.006	-	-	0.069
HCM Control Delay (s)	12.3	7.4	0	-	7.6	0	-	10.5
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.9	0	-	-	0	-	-	0.2

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	89	0	0	81	25	0	0	0	47	0	0
Future Vol, veh/h	0	89	0	0	81	25	0	0	0	47	0	0
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	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	92	92	85	85	92	92	92	85	92	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	105	0	0	95	29	0	0	0	55	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	124	0	0	105	0	0	215	229	105	215	215	110
Stage 1	-	-	-	-	-	-	105	105	-	110	110	-
Stage 2	-	-	-	-	-	-	110	124	-	105	105	-
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	1463	-	-	1486	-	-	742	671	949	742	683	943
Stage 1	-	-	-	-	-	-	901	808	-	895	804	-
Stage 2	-	-	-	-	-	-	895	793	-	901	808	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1463	-	-	1486	-	-	742	671	949	742	683	943
Mov Cap-2 Maneuver	-	-	-	-	-	-	742	671	-	742	683	-
Stage 1	-	-	-	-	-	-	901	808	-	895	804	-
Stage 2	-	-	-	-	-	-	895	793	-	901	808	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	0	10.2
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1463	-	-	1486	-	-	742
HCM Lane V/C Ratio	-	-	-	-	-	-	-	0.075
HCM Control Delay (s)	0	0	-	-	0	-	-	10.2
HCM Lane LOS	A	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	0.2

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	6	27	103	93	40	0	62	118	114	0	70	3
Future Vol, veh/h	6	27	103	93	40	0	62	118	114	0	70	3
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	32	121	109	47	0	73	139	134	0	82	4
Number of Lanes	1	1	0	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	2
HCM Control Delay	9.7	11.3	11	9.6
HCM LOS	A	B	B	A

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	70%	0%	0%
Vol Thru, %	0%	51%	0%	21%	30%	100%	96%
Vol Right, %	0%	49%	0%	79%	0%	0%	4%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	62	232	6	130	133	0	73
LT Vol	62	0	6	0	93	0	0
Through Vol	0	118	0	27	40	0	70
RT Vol	0	114	0	103	0	0	3
Lane Flow Rate	73	273	7	153	156	0	86
Geometry Grp	7	7	7	7	6	7	7
Degree of Util (X)	0.124	0.399	0.013	0.229	0.265	0	0.141
Departure Headway (Hd)	6.11	5.258	6.458	5.391	6.087	5.923	5.894
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	590	688	555	667	591	0	609
Service Time	3.81	2.958	4.189	3.121	4.116	3.653	3.624
HCM Lane V/C Ratio	0.124	0.397	0.013	0.229	0.264	0	0.141
HCM Control Delay	9.7	11.4	9.3	9.7	11.3	8.7	9.6
HCM Lane LOS	A	B	A	A	B	N	A
HCM 95th-tile Q	0.4	1.9	0	0.9	1.1	0	0.5

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	55	1043	168	884	112	112	182	119
v/c Ratio	0.31	0.75	0.70	0.49	0.37	0.14	0.59	0.14
Control Delay	38.3	22.0	50.1	14.9	25.0	7.1	31.2	10.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.3	22.0	50.1	14.9	25.0	7.1	31.2	10.4
Queue Length 50th (ft)	21	167	66	128	38	3	67	8
Queue Length 95th (ft)	65	332	#208	264	77	18	121	24
Internal Link Dist (ft)		4010		607		1657		634
Turn Bay Length (ft)								
Base Capacity (vph)	195	1800	251	1956	373	983	375	1005
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.58	0.67	0.45	0.30	0.11	0.49	0.12

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	741	145	143	719	32	95	17	78	155	43	58
Future Volume (veh/h)	47	741	145	143	719	32	95	17	78	155	43	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	55	872	171	168	846	38	112	20	92	182	51	68
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	91	1186	232	212	1622	73	371	403	359	356	403	359
Arrive On Green	0.05	0.40	0.40	0.12	0.47	0.47	0.23	0.23	0.23	0.23	0.23	0.23
Sat Flow, veh/h	1781	2962	581	1781	3464	156	1273	1777	1585	1281	1777	1585
Grp Volume(v), veh/h	55	523	520	168	434	450	112	20	92	182	51	68
Grp Sat Flow(s),veh/h/ln	1781	1777	1766	1781	1777	1842	1273	1777	1585	1281	1777	1585
Q Serve(g_s), s	1.7	14.2	14.2	5.2	9.7	9.7	4.4	0.5	2.7	7.7	1.3	2.0
Cycle Q Clear(g_c), s	1.7	14.2	14.2	5.2	9.7	9.7	6.4	0.5	2.7	10.4	1.3	2.0
Prop In Lane	1.00		0.33	1.00		0.08	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	91	711	707	212	832	863	371	403	359	356	403	359
V/C Ratio(X)	0.60	0.74	0.74	0.79	0.52	0.52	0.30	0.05	0.26	0.51	0.13	0.19
Avail Cap(c_a), veh/h	220	1024	1018	283	1024	1062	442	501	447	427	501	447
HCM Platoon Ratio	1.00	1.00	1.00	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	26.4	14.5	14.5	24.3	10.6	10.6	20.3	17.2	18.0	22.3	17.5	17.7
Incr Delay (d2), s/veh	6.3	1.6	1.6	10.5	0.5	0.5	0.5	0.1	0.4	1.1	0.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	5.2	5.2	2.7	3.3	3.4	1.3	0.2	1.0	2.3	0.5	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.7	16.1	16.1	34.8	11.1	11.1	20.8	17.2	18.4	23.4	17.6	18.0
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		1098			1052			224			301	
Approach Delay, s/veh		16.9			14.9			19.5			21.2	
Approach LOS		B			B			B			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.7	27.6		17.5	7.8	31.5		17.5
Change Period (Y+Rc), s	4.9	4.9		4.6	4.9	4.9		4.6
Max Green Setting (Gmax), s	9.0	32.7		16.0	7.0	32.7		16.0
Max Q Clear Time (g_c+I1), s	7.2	16.2		12.4	3.7	11.7		8.4
Green Ext Time (p_c), s	0.1	6.5		0.4	0.0	5.8		0.6

Intersection Summary			
HCM 6th Ctrl Delay			16.8
HCM 6th LOS			B

Notes

User approved pedestrian interval to be less than phase max green.

Lane Group	EBT	WBL	WBT	NBL	NBT
Lane Group Flow (vph)	1017	42	1225	137	16
v/c Ratio	0.35	0.14	0.52	0.39	0.02
Control Delay	9.6	24.5	7.3	22.6	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	9.6	24.5	7.3	22.6	0.1
Queue Length 50th (ft)	45	10	100	31	0
Queue Length 95th (ft)	126	38	162	85	0
Internal Link Dist (ft)	443		965		645
Turn Bay Length (ft)					
Base Capacity (vph)	3191	1021	3405	992	1266
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.32	0.04	0.36	0.14	0.01

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	697	127	34	992	0	111	0	13	0	0	0
Future Volume (veh/h)	0	697	127	34	992	0	111	0	13	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	860	157	42	1225	0	137	0	16	0	0	0
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	0	2	2	2	2	0	2	2	2	2	2	2
Cap, veh/h	0	1878	341	85	2201	0	402	0	176	0	208	0
Arrive On Green	0.00	0.43	0.43	0.05	0.62	0.00	0.11	0.00	0.11	0.00	0.00	0.00
Sat Flow, veh/h	0	4512	789	1781	3647	0	1781	0	1585	0	1870	0
Grp Volume(v), veh/h	0	673	344	42	1225	0	137	0	16	0	0	0
Grp Sat Flow(s),veh/h/ln	0	1702	1728	1781	1777	0	1781	0	1585	0	1870	0
Q Serve(g_s), s	0.0	4.9	5.0	0.8	7.1	0.0	2.6	0.0	0.3	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	4.9	5.0	0.8	7.1	0.0	2.6	0.0	0.3	0.0	0.0	0.0
Prop In Lane	0.00		0.46	1.00		0.00	1.00		1.00	0.00		0.00
Lane Grp Cap(c), veh/h	0	1472	747	85	2201	0	402	0	176	0	208	0
V/C Ratio(X)	0.00	0.46	0.46	0.49	0.56	0.00	0.34	0.00	0.09	0.00	0.00	0.00
Avail Cap(c_a), veh/h	0	2715	1378	1218	5759	0	1832	0	1448	0	1709	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)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	7.1	7.1	16.4	3.9	0.0	15.1	0.0	14.1	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.2	0.4	4.4	0.2	0.0	0.5	0.0	0.2	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	0.0	1.2	1.2	0.4	0.9	0.0	0.9	0.0	0.1	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	7.3	7.5	20.7	4.1	0.0	15.6	0.0	14.3	0.0	0.0	0.0
LnGrp LOS	A	A	A	C	A	A	B	A	B	A	A	A
Approach Vol, veh/h		1017			1267			153			0	
Approach Delay, s/veh		7.4			4.7			15.4			0.0	
Approach LOS		A			A			B				
Timer - Assigned Phs		2	3	4		6		8				
Phs Duration (G+Y+Rc), s		8.5	6.6	20.1		8.5		26.7				
Change Period (Y+Rc), s		4.6	4.9	4.9		4.6		4.9				
Max Green Setting (Gmax), s		32.2	24.1	28.1		32.2		57.1				
Max Q Clear Time (g_c+I1), s		4.6	2.8	7.0		0.0		9.1				
Green Ext Time (p_c), s		0.4	0.1	7.2		0.0		12.8				
Intersection Summary												
HCM 6th Ctrl Delay			6.5									
HCM 6th LOS			A									

Lane Group	EBT	WBL	WBT	NBL	NBT
Lane Group Flow (vph)	842	52	1204	110	38
v/c Ratio	0.45	0.19	0.52	0.31	0.06
Control Delay	15.2	33.0	10.6	29.8	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	15.2	33.0	10.6	29.8	0.2
Queue Length 50th (ft)	97	14	84	29	0
Queue Length 95th (ft)	271	66	348	112	0
Internal Link Dist (ft)	965		1195		1198
Turn Bay Length (ft)					
Base Capacity (vph)	2520	311	3034	571	1379
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.33	0.17	0.40	0.19	0.03

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	575	107	42	975	0	89	0	31	0	0	0
Future Volume (veh/h)	0	575	107	42	975	0	89	0	31	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	710	132	52	1204	0	110	0	38	0	0	0
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	0	2	2	2	2	0	2	2	2	2	2	2
Cap, veh/h	0	1243	231	101	2184	0	168	0	174	0	5	0
Arrive On Green	0.00	0.42	0.42	0.06	0.61	0.00	0.09	0.00	0.11	0.00	0.00	0.00
Sat Flow, veh/h	0	3085	556	1781	3647	0	1781	0	1585	0	-76087	0
Grp Volume(v), veh/h	0	422	420	52	1204	0	110	0	38	0	0	0
Grp Sat Flow(s),veh/h/ln	0	1777	1770	1781	1777	0	1781	0	1585	0	1870	0
Q Serve(g_s), s	0.0	6.3	6.3	1.0	6.8	0.0	2.1	0.0	0.8	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	6.3	6.3	1.0	6.8	0.0	2.1	0.0	0.8	0.0	0.0	0.0
Prop In Lane	0.00		0.31	1.00		0.00	1.00		1.00	0.00		0.00
Lane Grp Cap(c), veh/h	0	738	735	101	2184	0	168	0	174	0	5	0
V/C Ratio(X)	0.00	0.57	0.57	0.51	0.55	0.00	0.65	0.00	0.22	0.00	0.00	0.00
Avail Cap(c_a), veh/h	0	1851	1844	377	4959	0	692	0	2166	0	1579	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)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	7.7	7.7	15.8	3.9	0.0	15.1	0.0	14.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.7	0.7	4.0	0.2	0.0	4.2	0.0	0.6	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	0.0	1.6	1.6	0.4	0.8	0.0	0.9	0.0	0.2	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	8.4	8.4	19.8	4.1	0.0	19.3	0.0	14.6	0.0	0.0	0.0
LnGrp LOS	A	A	A	B	A	A	B	A	B	A	A	A
Approach Vol, veh/h		842			1256			148			0	
Approach Delay, s/veh		8.4			4.7			18.1			0.0	
Approach LOS		A			A			B				

Timer - Assigned Phs		2	3	4	5	6		8
Phs Duration (G+Y+Rc), s		8.4	6.9	19.2	7.9	0.5		26.1
Change Period (Y+Rc), s		4.6	4.9	4.9	4.6	4.6		4.9
Max Green Setting (Gmax), s		47.1	7.3	35.9	13.4	29.1		48.1
Max Q Clear Time (g_c+I1), s		2.8	3.0	8.3	4.1	0.0		8.8
Green Ext Time (p_c), s		0.2	0.0	6.0	0.2	0.0		11.9

Intersection Summary		
HCM 6th Ctrl Delay		7.0
HCM 6th LOS		A

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	367	304	44	19	807	42	41	87	22	404
v/c Ratio	0.69	0.13	0.04	0.14	0.71	0.20	0.17	0.48	0.09	0.59
Control Delay	37.1	10.0	0.1	44.7	29.7	40.8	22.6	49.6	32.4	16.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.1	10.0	0.1	44.7	29.7	40.8	22.6	49.6	32.4	16.6
Queue Length 50th (ft)	173	26	0	10	190	18	11	44	11	141
Queue Length 95th (ft)	#382	88	0	35	#328	60	35	#122	29	165
Internal Link Dist (ft)		1195			2587		1879		775	
Turn Bay Length (ft)										
Base Capacity (vph)	588	2379	1077	135	1365	223	722	188	780	738
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.62	0.13	0.04	0.14	0.59	0.19	0.06	0.46	0.03	0.55

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	312	258	37	16	640	46	36	19	16	74	19	343
Future Volume (veh/h)	312	258	37	16	640	46	36	19	16	74	19	343
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	367	304	44	19	753	54	42	22	19	87	22	404
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	410	1715	763	38	920	66	67	188	162	112	427	726
Arrive On Green	0.23	0.48	0.48	0.02	0.27	0.27	0.04	0.20	0.20	0.06	0.23	0.23
Sat Flow, veh/h	1781	3554	1582	1781	3362	241	1781	926	800	1781	1870	1581
Grp Volume(v), veh/h	367	304	44	19	398	409	42	0	41	87	22	404
Grp Sat Flow(s),veh/h/ln	1781	1777	1582	1781	1777	1826	1781	0	1726	1781	1870	1581
Q Serve(g_s), s	16.5	4.0	1.2	0.9	17.3	17.3	1.9	0.0	1.6	4.0	0.8	15.3
Cycle Q Clear(g_c), s	16.5	4.0	1.2	0.9	17.3	17.3	1.9	0.0	1.6	4.0	0.8	15.3
Prop In Lane	1.00		1.00	1.00		0.13	1.00		0.46	1.00		1.00
Lane Grp Cap(c), veh/h	410	1715	763	38	486	500	67	0	350	112	427	726
V/C Ratio(X)	0.89	0.18	0.06	0.50	0.82	0.82	0.63	0.00	0.12	0.78	0.05	0.56
Avail Cap(c_a), veh/h	499	1930	859	114	582	598	147	0	597	160	660	923
HCM Platoon Ratio	1.00	1.00	1.00	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	1.00	1.00
Uniform Delay (d), s/veh	30.8	12.1	11.4	39.9	28.0	28.0	39.1	0.0	26.8	38.1	24.9	16.2
Incr Delay (d2), s/veh	16.3	0.0	0.0	9.7	7.7	7.5	9.4	0.0	0.1	14.2	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.7	1.5	0.4	0.5	8.1	8.3	1.0	0.0	0.7	2.1	0.3	5.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.0	12.1	11.4	49.6	35.7	35.6	48.5	0.0	27.0	52.2	24.9	16.9
LnGrp LOS	D	B	B	D	D	D	D	A	C	D	C	B
Approach Vol, veh/h		715			826			83			513	
Approach Delay, s/veh		30.0			36.0			37.9			23.2	
Approach LOS		C			D			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.8	21.3	6.7	44.7	7.7	23.4	23.9	27.5
Change Period (Y+Rc), s	4.6	4.6	4.9	4.9	4.6	4.6	4.9	4.9
Max Green Setting (Gmax), s	7.4	28.5	5.3	44.8	6.8	29.1	23.1	27.0
Max Q Clear Time (g_c+I1), s	6.0	3.6	2.9	6.0	3.9	17.3	18.5	19.3
Green Ext Time (p_c), s	0.0	0.1	0.0	2.3	0.0	1.3	0.5	3.1

Intersection Summary		
HCM 6th Ctrl Delay		31.0
HCM 6th LOS		C

Intersection	
Intersection Delay, s/veh	16.2
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	43	170	34	2	365	14	57	4	5	31	11	128
Future Vol, veh/h	43	170	34	2	365	14	57	4	5	31	11	128
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	51	200	40	2	429	16	67	5	6	36	13	151
Number of Lanes	1	1	0	1	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	12.1	22.1	11.2	11.1
HCM LOS	B	C	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	100%	0%	100%	0%
Vol Thru, %	0%	44%	0%	83%	0%	96%	0%	8%
Vol Right, %	0%	56%	0%	17%	0%	4%	0%	92%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	57	9	43	204	2	379	31	139
LT Vol	57	0	43	0	2	0	31	0
Through Vol	0	4	0	170	0	365	0	11
RT Vol	0	5	0	34	0	14	0	128
Lane Flow Rate	67	11	51	240	2	446	36	164
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.14	0.019	0.092	0.396	0.004	0.721	0.074	0.278
Departure Headway (Hd)	7.532	6.623	6.562	5.937	6.353	5.821	7.281	6.115
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	474	537	545	605	563	620	491	585
Service Time	5.31	4.401	4.314	3.688	4.096	3.564	5.046	3.879
HCM Lane V/C Ratio	0.141	0.02	0.094	0.397	0.004	0.719	0.073	0.28
HCM Control Delay	11.5	9.5	10	12.6	9.1	22.2	10.6	11.2
HCM Lane LOS	B	A	A	B	A	C	B	B
HCM 95th-tile Q	0.5	0.1	0.3	1.9	0	6	0.2	1.1

Intersection	
Int Delay, s/veh	8.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	55	98	52	7	77	17	142	4	25	47	11	160
Future Vol, veh/h	55	98	52	7	77	17	142	4	25	47	11	160
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	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	62	110	58	8	87	19	160	4	28	53	12	180

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	106	0	0	168	0	0	443	356	110	392	405	97
Stage 1	-	-	-	-	-	-	234	234	-	113	113	-
Stage 2	-	-	-	-	-	-	209	122	-	279	292	-
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	1485	-	-	1410	-	-	525	570	943	567	535	959
Stage 1	-	-	-	-	-	-	769	711	-	892	802	-
Stage 2	-	-	-	-	-	-	793	795	-	728	671	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1485	-	-	1410	-	-	402	540	943	525	507	959
Mov Cap-2 Maneuver	-	-	-	-	-	-	402	540	-	525	507	-
Stage 1	-	-	-	-	-	-	734	678	-	851	797	-
Stage 2	-	-	-	-	-	-	631	790	-	669	640	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2	0.5	18	10.6
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	402	855	1485	-	-	1410	-	-	525	907
HCM Lane V/C Ratio	0.397	0.038	0.042	-	-	0.006	-	-	0.101	0.212
HCM Control Delay (s)	19.7	9.4	7.5	0	-	7.6	0	-	12.6	10
HCM Lane LOS	C	A	A	A	-	A	A	-	B	B
HCM 95th %tile Q(veh)	1.9	0.1	0.1	-	-	0	-	-	0.3	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	7	51	113	1	40	0	54	4	2	0	7	11
Future Vol, veh/h	7	51	113	1	40	0	54	4	2	0	7	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	77	77	77	77	77	77	77	77	77	77	77	77
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	66	147	1	52	0	70	5	3	0	9	14

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	52	0	0	213	0	0	224	212	140	216	285	52
Stage 1	-	-	-	-	-	-	158	158	-	54	54	-
Stage 2	-	-	-	-	-	-	66	54	-	162	231	-
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	1554	-	-	1357	-	-	732	685	908	740	624	1016
Stage 1	-	-	-	-	-	-	844	767	-	958	850	-
Stage 2	-	-	-	-	-	-	945	850	-	840	713	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1554	-	-	1357	-	-	709	680	908	729	619	1016
Mov Cap-2 Maneuver	-	-	-	-	-	-	709	680	-	729	619	-
Stage 1	-	-	-	-	-	-	838	762	-	951	849	-
Stage 2	-	-	-	-	-	-	921	849	-	826	708	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.2	10.7	9.6
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	712	1554	-	-	1357	-	-	813
HCM Lane V/C Ratio	0.109	0.006	-	-	0.001	-	-	0.029
HCM Control Delay (s)	10.7	7.3	0	-	7.7	0	-	9.6
HCM Lane LOS	B	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.4	0	-	-	0	-	-	0.1

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	242	0	0	266	165	0	0	0	99	0	3
Future Vol, veh/h	0	242	0	0	266	165	0	0	0	99	0	3
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	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	92	92	85	85	92	92	92	85	92	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	285	0	0	313	194	0	0	0	116	0	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	507	0	0	285	0	0	697	792	285	695	695	410
Stage 1	-	-	-	-	-	-	285	285	-	410	410	-
Stage 2	-	-	-	-	-	-	412	507	-	285	285	-
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	1058	-	-	1277	-	-	356	322	754	357	366	642
Stage 1	-	-	-	-	-	-	722	676	-	619	595	-
Stage 2	-	-	-	-	-	-	617	539	-	722	676	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1058	-	-	1277	-	-	354	322	754	357	366	642
Mov Cap-2 Maneuver	-	-	-	-	-	-	354	322	-	357	366	-
Stage 1	-	-	-	-	-	-	722	676	-	619	595	-
Stage 2	-	-	-	-	-	-	614	539	-	722	676	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	0	19.8
HCM LOS			A	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1058	-	-	1277	-	-	362
HCM Lane V/C Ratio	-	-	-	-	-	-	-	0.331
HCM Control Delay (s)	0	0	-	-	0	-	-	19.8
HCM Lane LOS	A	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	1.4

Intersection	
Intersection Delay, s/veh	17.5
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	9	42	231	89	106	0	281	30	47	0	87	26
Future Vol, veh/h	9	42	231	89	106	0	281	30	47	0	87	26
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	49	272	105	125	0	331	35	55	0	102	31
Number of Lanes	1	1	0	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	2
HCM Control Delay	16.8	16.3	20.2	12.5
HCM LOS	C	C	C	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	46%	0%	0%
Vol Thru, %	0%	39%	0%	15%	54%	100%	77%
Vol Right, %	0%	61%	0%	85%	0%	0%	23%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	281	77	9	273	195	0	113
LT Vol	281	0	9	0	89	0	0
Through Vol	0	30	0	42	106	0	87
RT Vol	0	47	0	231	0	0	26
Lane Flow Rate	331	91	11	321	229	0	133
Geometry Grp	7	7	7	7	6	7	7
Degree of Util (X)	0.662	0.158	0.022	0.564	0.46	0	0.265
Departure Headway (Hd)	7.209	6.264	7.434	6.318	7.217	7.347	7.181
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	502	573	482	572	500	0	500
Service Time	4.949	4.003	5.175	4.059	5.262	5.1	4.934
HCM Lane V/C Ratio	0.659	0.159	0.023	0.561	0.458	0	0.266
HCM Control Delay	23	10.2	10.3	17	16.3	10.1	12.5
HCM Lane LOS	C	B	B	C	C	N	B
HCM 95th-tile Q	4.8	0.6	0.1	3.5	2.4	0	1.1

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	55	1052	180	934	112	114	182	119
v/c Ratio	0.31	0.76	0.74	0.51	0.37	0.14	0.59	0.14
Control Delay	38.6	22.1	53.6	15.2	25.2	7.1	31.5	10.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.6	22.1	53.6	15.2	25.2	7.1	31.5	10.5
Queue Length 50th (ft)	21	170	71	139	39	3	67	8
Queue Length 95th (ft)	65	335	#225	282	77	18	121	24
Internal Link Dist (ft)		4010		607		1657		634
Turn Bay Length (ft)								
Base Capacity (vph)	193	1784	248	1939	369	976	371	997
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.59	0.73	0.48	0.30	0.12	0.49	0.12

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	749	145	153	762	32	95	17	80	155	43	58
Future Volume (veh/h)	47	749	145	153	762	32	95	17	80	155	43	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	55	881	171	180	896	38	112	20	94	182	51	68
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	90	1185	230	225	1650	70	368	403	359	351	403	359
Arrive On Green	0.05	0.40	0.40	0.13	0.47	0.47	0.23	0.23	0.23	0.23	0.23	0.23
Sat Flow, veh/h	1781	2968	576	1781	3473	147	1273	1777	1585	1279	1777	1585
Grp Volume(v), veh/h	55	527	525	180	458	476	112	20	94	182	51	68
Grp Sat Flow(s),veh/h/ln	1781	1777	1767	1781	1777	1844	1273	1777	1585	1279	1777	1585
Q Serve(g_s), s	1.8	14.7	14.7	5.7	10.6	10.6	4.5	0.5	2.8	7.9	1.3	2.0
Cycle Q Clear(g_c), s	1.8	14.7	14.7	5.7	10.6	10.6	6.5	0.5	2.8	10.8	1.3	2.0
Prop In Lane	1.00		0.33	1.00		0.08	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	90	709	705	225	844	876	368	403	359	351	403	359
V/C Ratio(X)	0.61	0.74	0.74	0.80	0.54	0.54	0.30	0.05	0.26	0.52	0.13	0.19
Avail Cap(c_a), veh/h	215	1000	994	276	1000	1037	430	489	436	414	489	436
HCM Platoon Ratio	1.00	1.00	1.00	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	27.0	14.9	14.9	24.7	10.8	10.8	20.8	17.6	18.5	22.9	17.9	18.2
Incr Delay (d2), s/veh	6.5	1.9	1.9	12.7	0.5	0.5	0.5	0.1	0.4	1.2	0.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	5.5	5.5	3.0	3.6	3.7	1.3	0.2	1.0	2.4	0.5	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.5	16.8	16.8	37.4	11.3	11.3	21.3	17.6	18.9	24.1	18.0	18.4
LnGrp LOS	C	B	B	D	B	B	C	B	B	C	B	B
Approach Vol, veh/h		1107			1114			226			301	
Approach Delay, s/veh		17.6			15.5			19.9			21.8	
Approach LOS		B			B			B			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	12.2	28.1		17.8	7.8	32.5		17.8				
Change Period (Y+Rc), s	4.9	4.9		4.6	4.9	4.9		4.6				
Max Green Setting (Gmax), s	9.0	32.7		16.0	7.0	32.7		16.0				
Max Q Clear Time (g_c+I1), s	7.7	16.7		12.8	3.8	12.6		8.5				
Green Ext Time (p_c), s	0.1	6.5		0.4	0.0	6.1		0.6				
Intersection Summary												
HCM 6th Ctrl Delay			17.4									
HCM 6th LOS			B									

Notes

User approved pedestrian interval to be less than phase max green.

Lane Group	EBT	WBL	WBT	NBL	NBT
Lane Group Flow (vph)	1040	49	1336	137	17
v/c Ratio	0.38	0.18	0.55	0.41	0.02
Control Delay	11.3	26.4	7.7	24.5	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	11.3	26.4	7.7	24.5	0.1
Queue Length 50th (ft)	85	14	115	37	0
Queue Length 95th (ft)	135	45	193	90	0
Internal Link Dist (ft)	443		965		645
Turn Bay Length (ft)					
Base Capacity (vph)	3070	971	3342	939	1225
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.34	0.05	0.40	0.15	0.01

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	715	127	40	1082	0	111	0	14	0	0	0
Future Volume (veh/h)	0	715	127	40	1082	0	111	0	14	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	883	157	49	1336	0	137	0	17	0	0	0
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	0	2	2	2	2	0	2	2	2	2	2	2
Cap, veh/h	0	2025	358	94	2287	0	384	0	176	0	207	0
Arrive On Green	0.00	0.46	0.46	0.05	0.64	0.00	0.11	0.00	0.11	0.00	0.00	0.00
Sat Flow, veh/h	0	4532	772	1781	3647	0	1781	0	1585	0	1870	0
Grp Volume(v), veh/h	0	688	352	49	1336	0	137	0	17	0	0	0
Grp Sat Flow(s),veh/h/ln	0	1702	1731	1781	1777	0	1781	0	1585	0	1870	0
Q Serve(g_s), s	0.0	5.3	5.3	1.0	8.3	0.0	2.9	0.0	0.4	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	5.3	5.3	1.0	8.3	0.0	2.9	0.0	0.4	0.0	0.0	0.0
Prop In Lane	0.00		0.45	1.00		0.00	1.00		1.00	0.00		0.00
Lane Grp Cap(c), veh/h	0	1580	804	94	2287	0	384	0	176	0	207	0
V/C Ratio(X)	0.00	0.44	0.44	0.52	0.58	0.00	0.36	0.00	0.10	0.00	0.00	0.00
Avail Cap(c_a), veh/h	0	2471	1257	1109	5242	0	1668	0	1318	0	1556	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)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	7.0	7.0	17.9	3.9	0.0	16.6	0.0	15.5	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.2	0.4	4.4	0.2	0.0	0.6	0.0	0.2	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	0.0	1.3	1.4	0.5	1.1	0.0	1.1	0.0	0.1	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	7.2	7.4	22.2	4.2	0.0	17.1	0.0	15.7	0.0	0.0	0.0
LnGrp LOS	A	A	A	C	A	A	B	A	B	A	A	A
Approach Vol, veh/h		1040			1385			154			0	
Approach Delay, s/veh		7.2			4.8			17.0			0.0	
Approach LOS		A			A			B				
Timer - Assigned Phs		2	3	4		6		8				
Phs Duration (G+Y+Rc), s		8.9	6.9	22.9		8.9		29.8				
Change Period (Y+Rc), s		4.6	4.9	4.9		4.6		4.9				
Max Green Setting (Gmax), s		32.2	24.1	28.1		32.2		57.1				
Max Q Clear Time (g_c+I1), s		4.9	3.0	7.3		0.0		10.3				
Green Ext Time (p_c), s		0.4	0.1	7.3		0.0		14.6				
Intersection Summary												
HCM 6th Ctrl Delay			6.5									
HCM 6th LOS			A									

Lane Group	EBT	WBL	WBT	NBL	NBT
Lane Group Flow (vph)	865	59	1322	110	40
v/c Ratio	0.46	0.23	0.56	0.32	0.07
Control Delay	15.3	33.6	11.3	30.2	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	15.3	33.6	11.3	30.2	0.2
Queue Length 50th (ft)	102	16	100	29	0
Queue Length 95th (ft)	281	72	398	112	0
Internal Link Dist (ft)	965		1195		1198
Turn Bay Length (ft)					
Base Capacity (vph)	2467	294	3018	540	1372
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.35	0.20	0.44	0.20	0.03

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	594	107	48	1071	0	89	0	32	0	0	0
Future Volume (veh/h)	0	594	107	48	1071	0	89	0	32	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	733	132	59	1322	0	110	0	40	0	0	0
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	0	2	2	2	2	0	2	2	2	2	2	2
Cap, veh/h	0	1331	240	109	2262	0	163	0	169	0	5	0
Arrive On Green	0.00	0.44	0.44	0.06	0.64	0.00	0.09	0.00	0.11	0.00	0.00	0.00
Sat Flow, veh/h	0	3102	542	1781	3647	0	1781	0	1585	0	-75854	0
Grp Volume(v), veh/h	0	433	432	59	1322	0	110	0	40	0	0	0
Grp Sat Flow(s),veh/h/ln	0	1777	1773	1781	1777	0	1781	0	1585	0	1870	0
Q Serve(g_s), s	0.0	6.6	6.6	1.2	8.0	0.0	2.2	0.0	0.9	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	6.6	6.6	1.2	8.0	0.0	2.2	0.0	0.9	0.0	0.0	0.0
Prop In Lane	0.00		0.31	1.00		0.00	1.00		1.00	0.00		0.00
Lane Grp Cap(c), veh/h	0	786	784	109	2262	0	163	0	169	0	5	0
V/C Ratio(X)	0.00	0.55	0.55	0.54	0.58	0.00	0.67	0.00	0.24	0.00	0.00	0.00
Avail Cap(c_a), veh/h	0	1727	1723	352	4627	0	646	0	2021	0	1473	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)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	7.6	7.6	16.8	3.9	0.0	16.2	0.0	15.1	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.6	0.6	4.1	0.2	0.0	4.8	0.0	0.7	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	0.0	1.7	1.7	0.5	1.0	0.0	1.0	0.0	0.3	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	8.2	8.2	20.9	4.1	0.0	21.0	0.0	15.9	0.0	0.0	0.0
LnGrp LOS	A	A	A	C	A	A	C	A	B	A	A	A
Approach Vol, veh/h		865			1381			150			0	
Approach Delay, s/veh		8.2			4.8			19.6			0.0	
Approach LOS		A			A			B				

Timer - Assigned Phs		2	3	4	5	6		8
Phs Duration (G+Y+Rc), s		8.5	7.2	21.2	8.0	0.5		28.4
Change Period (Y+Rc), s		4.6	4.9	4.9	4.6	4.6		4.9
Max Green Setting (Gmax), s		47.1	7.3	35.9	13.4	29.1		48.1
Max Q Clear Time (g_c+I1), s		2.9	3.2	8.6	4.2	0.0		10.0
Green Ext Time (p_c), s		0.2	0.0	6.2	0.2	0.0		13.6

Intersection Summary		
HCM 6th Ctrl Delay		7.0
HCM 6th LOS		A

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	391	304	44	19	812	42	43	112	26	522
v/c Ratio	0.74	0.14	0.04	0.16	0.77	0.21	0.19	0.66	0.10	0.72
Control Delay	39.2	10.0	0.1	45.3	32.6	41.1	23.1	60.0	32.6	21.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.2	10.0	0.1	45.3	32.6	41.1	23.1	60.0	32.6	21.9
Queue Length 50th (ft)	188	26	0	10	192	18	12	58	13	~225
Queue Length 95th (ft)	#418	88	0	35	#333	60	36	#167	32	247
Internal Link Dist (ft)		1195			2587		1879		775	
Turn Bay Length (ft)										
Base Capacity (vph)	528	2192	1001	121	1225	206	653	169	701	720
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.74	0.14	0.04	0.16	0.66	0.20	0.07	0.66	0.04	0.72

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	332	258	37	16	640	50	36	20	16	95	22	444
Future Volume (veh/h)	332	258	37	16	640	50	36	20	16	95	22	444
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	391	304	44	19	753	59	42	24	19	112	26	522
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	421	1685	750	37	863	68	62	223	176	137	509	805
Arrive On Green	0.24	0.47	0.47	0.02	0.26	0.26	0.04	0.23	0.23	0.08	0.27	0.27
Sat Flow, veh/h	1781	3554	1582	1781	3338	261	1781	967	766	1781	1870	1582
Grp Volume(v), veh/h	391	304	44	19	401	411	42	0	43	112	26	522
Grp Sat Flow(s),veh/h/ln	1781	1777	1582	1781	1777	1823	1781	0	1733	1781	1870	1582
Q Serve(g_s), s	20.6	4.7	1.4	1.0	20.7	20.8	2.2	0.0	1.9	6.0	1.0	23.3
Cycle Q Clear(g_c), s	20.6	4.7	1.4	1.0	20.7	20.8	2.2	0.0	1.9	6.0	1.0	23.3
Prop In Lane	1.00		1.00	1.00		0.14	1.00		0.44	1.00		1.00
Lane Grp Cap(c), veh/h	421	1685	750	37	459	471	62	0	399	137	509	805
V/C Ratio(X)	0.93	0.18	0.06	0.52	0.87	0.87	0.67	0.00	0.11	0.82	0.05	0.65
Avail Cap(c_a), veh/h	428	1685	750	98	499	512	126	0	514	137	566	854
HCM Platoon Ratio	1.00	1.00	1.00	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	1.00	1.00
Uniform Delay (d), s/veh	35.9	14.5	13.7	46.6	34.1	34.1	45.8	0.0	29.2	43.7	25.8	17.3
Incr Delay (d2), s/veh	26.4	0.1	0.0	10.7	14.7	14.5	11.8	0.0	0.1	30.4	0.0	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.9	1.9	0.5	0.6	10.6	10.9	1.2	0.0	0.8	3.8	0.4	8.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	62.3	14.6	13.7	57.3	48.8	48.6	57.6	0.0	29.3	74.1	25.8	18.9
LnGrp LOS	E	B	B	E	D	D	E	A	C	E	C	B
Approach Vol, veh/h		739			831			85			660	
Approach Delay, s/veh		39.8			48.9			43.3			28.5	
Approach LOS		D			D			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	26.7	6.9	50.5	8.0	30.8	27.6	29.7
Change Period (Y+Rc), s	4.6	4.6	4.9	4.9	4.6	4.6	4.9	4.9
Max Green Setting (Gmax), s	7.4	28.5	5.3	44.8	6.8	29.1	23.1	27.0
Max Q Clear Time (g_c+I1), s	8.0	3.9	3.0	6.7	4.2	25.3	22.6	22.8
Green Ext Time (p_c), s	0.0	0.2	0.0	2.3	0.0	0.9	0.1	1.9

Intersection Summary			
HCM 6th Ctrl Delay			40.0
HCM 6th LOS			D

Intersection	
Intersection Delay, s/veh	16.9
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	43	191	34	2	369	14	57	5	5	31	13	128
Future Vol, veh/h	43	191	34	2	369	14	57	5	5	31	13	128
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	51	225	40	2	434	16	67	6	6	36	15	151
Number of Lanes	1	1	0	1	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	12.9	23.2	11.4	11.4
HCM LOS	B	C	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	100%	0%	100%	0%
Vol Thru, %	0%	50%	0%	85%	0%	96%	0%	9%
Vol Right, %	0%	50%	0%	15%	0%	4%	0%	91%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	57	10	43	225	2	383	31	141
LT Vol	57	0	43	0	2	0	31	0
Through Vol	0	5	0	191	0	369	0	13
RT Vol	0	5	0	34	0	14	0	128
Lane Flow Rate	67	12	51	265	2	451	36	166
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.142	0.022	0.093	0.44	0.004	0.736	0.075	0.286
Departure Headway (Hd)	7.636	6.767	6.597	5.982	6.41	5.878	7.373	6.215
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	467	526	541	601	557	613	484	576
Service Time	5.423	4.553	4.358	3.743	4.164	3.632	5.146	3.987
HCM Lane V/C Ratio	0.143	0.023	0.094	0.441	0.004	0.736	0.074	0.288
HCM Control Delay	11.7	9.7	10	13.4	9.2	23.3	10.7	11.5
HCM Lane LOS	B	A	A	B	A	C	B	B
HCM 95th-tile Q	0.5	0.1	0.3	2.2	0	6.4	0.2	1.2

Intersection	
Int Delay, s/veh	8.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	55	119	52	7	81	17	142	5	25	47	13	160
Future Vol, veh/h	55	119	52	7	81	17	142	5	25	47	13	160
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	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	62	134	58	8	91	19	160	6	28	53	15	180

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	110	0	0	192	0	0	472	384	134	421	433	101
Stage 1	-	-	-	-	-	-	258	258	-	117	117	-
Stage 2	-	-	-	-	-	-	214	126	-	304	316	-
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	1480	-	-	1381	-	-	502	550	915	543	516	954
Stage 1	-	-	-	-	-	-	747	694	-	888	799	-
Stage 2	-	-	-	-	-	-	788	792	-	705	655	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1480	-	-	1381	-	-	382	521	915	501	489	954
Mov Cap-2 Maneuver	-	-	-	-	-	-	382	521	-	501	489	-
Stage 1	-	-	-	-	-	-	712	661	-	846	794	-
Stage 2	-	-	-	-	-	-	624	787	-	646	624	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.8	0.5	19	10.8
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	382	813	1480	-	-	1381	-	-	501	890
HCM Lane V/C Ratio	0.418	0.041	0.042	-	-	0.006	-	-	0.105	0.218
HCM Control Delay (s)	21	9.6	7.5	0	-	7.6	0	-	13	10.2
HCM Lane LOS	C	A	A	A	-	A	A	-	B	B
HCM 95th %tile Q(veh)	2	0.1	0.1	-	-	0	-	-	0.4	0.8

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	7	57	127	1	42	0	56	4	2	0	7	11
Future Vol, veh/h	7	57	127	1	42	0	56	4	2	0	7	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	77	77	77	77	77	77	77	77	77	77	77	77
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	74	165	1	55	0	73	5	3	0	9	14

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	55	0	0	239	0	0	244	232	157	236	314	55
Stage 1	-	-	-	-	-	-	175	175	-	57	57	-
Stage 2	-	-	-	-	-	-	69	57	-	179	257	-
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	1550	-	-	1328	-	-	710	668	889	718	601	1012
Stage 1	-	-	-	-	-	-	827	754	-	955	847	-
Stage 2	-	-	-	-	-	-	941	847	-	823	695	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1550	-	-	1328	-	-	687	663	889	707	596	1012
Mov Cap-2 Maneuver	-	-	-	-	-	-	687	663	-	707	596	-
Stage 1	-	-	-	-	-	-	821	749	-	948	846	-
Stage 2	-	-	-	-	-	-	917	846	-	809	690	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.2	10.9	9.7
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	690	1550	-	-	1328	-	-	796
HCM Lane V/C Ratio	0.117	0.006	-	-	0.001	-	-	0.029
HCM Control Delay (s)	10.9	7.3	0	-	7.7	0	-	9.7
HCM Lane LOS	B	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.4	0	-	-	0	-	-	0.1

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	242	0	0	266	165	0	0	0	102	0	3
Future Vol, veh/h	0	242	0	0	266	165	0	0	0	102	0	3
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	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	92	92	85	85	92	92	92	85	92	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	285	0	0	313	194	0	0	0	120	0	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	507	0	0	285	0	0	697	792	285	695	695	410
Stage 1	-	-	-	-	-	-	285	285	-	410	410	-
Stage 2	-	-	-	-	-	-	412	507	-	285	285	-
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	1058	-	-	1277	-	-	356	322	754	357	366	642
Stage 1	-	-	-	-	-	-	722	676	-	619	595	-
Stage 2	-	-	-	-	-	-	617	539	-	722	676	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1058	-	-	1277	-	-	354	322	754	357	366	642
Mov Cap-2 Maneuver	-	-	-	-	-	-	354	322	-	357	366	-
Stage 1	-	-	-	-	-	-	722	676	-	619	595	-
Stage 2	-	-	-	-	-	-	614	539	-	722	676	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	0	20
HCM LOS			A	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1058	-	-	1277	-	-	362
HCM Lane V/C Ratio	-	-	-	-	-	-	-	0.341
HCM Control Delay (s)	0	0	-	-	0	-	-	20
HCM Lane LOS	A	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	1.5

Intersection	
Intersection Delay, s/veh	22.7
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	9	44	231	89	106	1	281	54	47	3	212	26
Future Vol, veh/h	9	44	231	89	106	1	281	54	47	3	212	26
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	52	272	105	125	1	331	64	55	4	249	31
Number of Lanes	1	1	0	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	2
HCM Control Delay	22.1	20.2	25.3	21.5
HCM LOS	C	C	D	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	45%	100%	0%
Vol Thru, %	0%	53%	0%	16%	54%	0%	89%
Vol Right, %	0%	47%	0%	84%	1%	0%	11%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	281	101	9	275	196	3	238
LT Vol	281	0	9	0	89	3	0
Through Vol	0	54	0	44	106	0	212
RT Vol	0	47	0	231	1	0	26
Lane Flow Rate	331	119	11	324	231	4	280
Geometry Grp	7	7	7	7	6	7	7
Degree of Util (X)	0.737	0.237	0.025	0.651	0.528	0.008	0.602
Departure Headway (Hd)	8.029	7.178	8.363	7.244	8.251	8.339	7.743
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	453	501	430	501	436	429	465
Service Time	5.753	4.902	6.084	4.964	6.311	6.095	5.498
HCM Lane V/C Ratio	0.731	0.238	0.026	0.647	0.53	0.009	0.602
HCM Control Delay	30.1	12.1	11.3	22.5	20.2	11.2	21.6
HCM Lane LOS	D	B	B	C	C	B	C
HCM 95th-tile Q	6	0.9	0.1	4.6	3	0	3.9

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	36	1379	178	1120	172	247	119	79
v/c Ratio	0.22	0.89	0.79	0.55	0.59	0.29	0.47	0.10
Control Delay	38.0	28.6	60.7	14.4	32.5	5.6	29.9	12.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.0	28.6	60.7	14.4	32.5	5.6	29.9	12.3
Queue Length 50th (ft)	15	260	76	105	69	6	46	7
Queue Length 95th (ft)	48	#560	#222	358	113	25	83	20
Internal Link Dist (ft)		4010		607		1657		634
Turn Bay Length (ft)								
Base Capacity (vph)	177	1644	227	2042	357	992	304	921
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.20	0.84	0.78	0.55	0.48	0.25	0.39	0.09

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	1060	112	151	907	45	146	25	185	101	34	33
Future Volume (veh/h)	31	1060	112	151	907	45	146	25	185	101	34	33
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	36	1247	132	178	1067	53	172	29	218	119	40	39
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	64	1432	151	218	1818	90	380	408	364	224	417	356
Arrive On Green	0.04	0.44	0.44	0.12	0.53	0.53	0.23	0.23	0.23	0.23	0.23	0.23
Sat Flow, veh/h	1781	3243	342	1781	3445	171	1320	1777	1585	1133	1816	1552
Grp Volume(v), veh/h	36	681	698	178	550	570	172	29	218	119	39	40
Grp Sat Flow(s),veh/h/ln	1781	1777	1809	1781	1777	1840	1320	1777	1585	1133	1777	1591
Q Serve(g_s), s	1.4	24.2	24.4	6.8	14.8	14.8	8.3	0.9	8.6	7.3	1.2	1.4
Cycle Q Clear(g_c), s	1.4	24.2	24.4	6.8	14.8	14.8	9.6	0.9	8.6	15.9	1.2	1.4
Prop In Lane	1.00		0.19	1.00		0.09	1.00		1.00	1.00		0.98
Lane Grp Cap(c), veh/h	64	785	799	218	938	971	380	408	364	224	408	365
V/C Ratio(X)	0.56	0.87	0.87	0.82	0.59	0.59	0.45	0.07	0.60	0.53	0.10	0.11
Avail Cap(c_a), veh/h	179	834	849	230	938	971	380	408	364	224	408	365
HCM Platoon Ratio	1.00	1.00	1.00	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	33.1	17.6	17.7	29.8	11.3	11.3	25.0	21.0	24.0	31.1	21.1	21.2
Incr Delay (d2), s/veh	7.5	9.3	9.6	19.3	1.0	0.9	0.8	0.1	2.7	2.4	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	10.8	11.1	4.0	5.2	5.4	2.6	0.4	3.4	2.1	0.5	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.5	27.0	27.3	49.1	12.2	12.2	25.9	21.1	26.7	33.4	21.2	21.3
LnGrp LOS	D	C	C	D	B	B	C	C	C	C	C	C
Approach Vol, veh/h		1415			1298			419			198	
Approach Delay, s/veh		27.5			17.3			26.0			28.6	
Approach LOS		C			B			C			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	13.4	35.7		20.6	7.4	41.7		20.6
Change Period (Y+Rc), s	4.9	4.9		4.6	4.9	4.9		4.6
Max Green Setting (Gmax), s	9.0	32.7		16.0	7.0	32.7		16.0
Max Q Clear Time (g_c+I1), s	8.8	26.4		17.9	3.4	16.8		11.6
Green Ext Time (p_c), s	0.0	4.3		0.0	0.0	6.9		0.9

Intersection Summary			
HCM 6th Ctrl Delay			23.4
HCM 6th LOS			C

Notes

User approved pedestrian interval to be less than phase max green.

Lane Group	EBT	WBL	WBT	NBL	NBT
Lane Group Flow (vph)	2001	52	1210	498	70
v/c Ratio	0.99	0.30	0.68	0.94	0.08
Control Delay	42.9	38.7	16.8	54.6	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	42.9	38.7	16.8	54.6	0.2
Queue Length 50th (ft)	~409	26	220	253	0
Queue Length 95th (ft)	#436	53	240	#404	0
Internal Link Dist (ft)	443		965		645
Turn Bay Length (ft)					
Base Capacity (vph)	2019	549	2739	530	892
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.99	0.09	0.44	0.94	0.08

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1212	409	42	980	0	403	0	57	0	0	0
Future Volume (veh/h)	0	1212	409	42	980	0	403	0	57	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	1496	505	52	1210	0	498	0	70	0	0	0
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	0	2	2	2	2	0	2	2	2	2	2	2
Cap, veh/h	0	1655	550	81	1960	0	661	0	498	0	588	0
Arrive On Green	0.00	0.44	0.44	0.05	0.55	0.00	0.31	0.00	0.31	0.00	0.00	0.00
Sat Flow, veh/h	0	3956	1260	1781	3647	0	1781	0	1585	0	1870	0
Grp Volume(v), veh/h	0	1342	659	52	1210	0	498	0	70	0	0	0
Grp Sat Flow(s),veh/h/ln	0	1702	1644	1781	1777	0	1781	0	1585	0	1870	0
Q Serve(g_s), s	0.0	25.9	26.6	2.0	16.4	0.0	18.8	0.0	2.2	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	25.9	26.6	2.0	16.4	0.0	18.8	0.0	2.2	0.0	0.0	0.0
Prop In Lane	0.00		0.77	1.00		0.00	1.00		1.00	0.00		0.00
Lane Grp Cap(c), veh/h	0	1487	718	81	1960	0	661	0	498	0	588	0
V/C Ratio(X)	0.00	0.90	0.92	0.64	0.62	0.00	0.75	0.00	0.14	0.00	0.00	0.00
Avail Cap(c_a), veh/h	0	1498	723	608	3023	0	838	0	655	0	773	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)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	18.5	18.7	33.2	10.8	0.0	23.1	0.0	17.4	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	7.9	16.6	8.3	0.3	0.0	2.9	0.0	0.1	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	0.0	10.7	12.3	1.0	5.5	0.0	7.8	0.0	0.8	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	26.4	35.3	41.5	11.1	0.0	26.0	0.0	17.5	0.0	0.0	0.0
LnGrp LOS	A	C	D	D	B	A	C	A	B	A	A	A
Approach Vol, veh/h		2001			1262			568			0	
Approach Delay, s/veh		29.4			12.4			25.0			0.0	
Approach LOS		C			B			C				

Timer - Assigned Phs		2	3	4		6		8				
Phs Duration (G+Y+Rc), s		26.8	8.1	35.8		26.8		43.9				
Change Period (Y+Rc), s		4.6	4.9	4.9		4.6		4.9				
Max Green Setting (Gmax), s		29.2	24.1	31.1		29.2		60.1				
Max Q Clear Time (g_c+I1), s		20.8	4.0	28.6		0.0		18.4				
Green Ext Time (p_c), s		1.4	0.1	2.2		0.0		12.1				

Intersection Summary		
HCM 6th Ctrl Delay		23.1
HCM 6th LOS		C

Lane Group	EBT	WBL	WBT	NBL	NBT
Lane Group Flow (vph)	1608	67	817	456	73
v/c Ratio	0.98	0.55	0.40	1.13	0.13
Control Delay	40.9	56.2	11.3	117.6	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	40.9	56.2	11.3	117.6	0.5
Queue Length 50th (ft)	319	29	77	~228	0
Queue Length 95th (ft)	#738	#104	227	#543	0
Internal Link Dist (ft)	965		1195		1198
Turn Bay Length (ft)					
Base Capacity (vph)	1633	122	2159	402	1166
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.98	0.55	0.38	1.13	0.06

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	946	356	54	662	0	369	0	59	0	0	0
Future Volume (veh/h)	0	946	356	54	662	0	369	0	59	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	1168	440	67	817	0	456	0	73	0	0	0
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	0	2	2	2	2	0	2	2	2	2	2	2
Cap, veh/h	0	1264	463	94	2206	0	428	0	381	0	3	0
Arrive On Green	0.00	0.50	0.50	0.05	0.62	0.00	0.24	0.00	0.24	0.00	0.00	0.00
Sat Flow, veh/h	0	2639	933	1781	3647	0	1781	0	1585	0	-86037	0
Grp Volume(v), veh/h	0	806	802	67	817	0	456	0	73	0	0	0
Grp Sat Flow(s),veh/h/ln	0	1777	1702	1781	1777	0	1781	0	1585	0	1870	0
Q Serve(g_s), s	0.0	28.5	30.7	2.5	7.7	0.0	16.4	0.0	2.5	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	28.5	30.7	2.5	7.7	0.0	16.4	0.0	2.5	0.0	0.0	0.0
Prop In Lane	0.00		0.55	1.00		0.00	1.00		1.00	0.00		0.00
Lane Grp Cap(c), veh/h	0	882	845	94	2206	0	428	0	381	0	3	0
V/C Ratio(X)	0.00	0.91	0.95	0.71	0.37	0.00	1.07	0.00	0.19	0.00	0.00	0.00
Avail Cap(c_a), veh/h	0	887	850	130	2290	0	428	0	1188	0	827	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)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	15.8	16.4	31.8	6.4	0.0	25.9	0.0	20.7	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	13.6	19.7	10.5	0.1	0.0	62.2	0.0	0.2	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	0.0	13.2	14.7	1.3	2.3	0.0	13.9	0.0	0.9	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	29.5	36.0	42.4	6.5	0.0	88.1	0.0	20.9	0.0	0.0	0.0
LnGrp LOS	A	C	D	D	A	A	F	A	C	A	A	A
Approach Vol, veh/h		1608			884			529			0	
Approach Delay, s/veh		32.8			9.2			78.8			0.0	
Approach LOS		C			A			E				

Timer - Assigned Phs		2	3	4	5	6		8				
Phs Duration (G+Y+Rc), s		21.0	8.5	38.8	21.0	0.0		47.3				
Change Period (Y+Rc), s		4.6	4.9	4.9	4.6	4.6		4.9				
Max Green Setting (Gmax), s		51.2	5.0	34.1	16.4	30.2		44.0				
Max Q Clear Time (g_c+I1), s		4.5	4.5	32.7	18.4	0.0		9.7				
Green Ext Time (p_c), s		0.5	0.0	1.2	0.0	0.0		6.7				

Intersection Summary			
HCM 6th Ctrl Delay			33.9
HCM 6th LOS			C

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	312	838	36	13	581	24	32	25	12	268
v/c Ratio	0.53	0.30	0.03	0.07	0.56	0.12	0.10	0.13	0.03	0.34
Control Delay	27.1	8.5	0.0	34.1	20.3	34.3	16.7	34.3	20.3	5.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.1	8.5	0.0	34.1	20.3	34.3	16.7	34.3	20.3	5.4
Queue Length 50th (ft)	41	0	0	2	47	4	3	5	2	12
Queue Length 95th (ft)	#346	246	0	25	194	38	26	39	17	67
Internal Link Dist (ft)		1195			2587		1879		775	
Turn Bay Length (ft)										
Base Capacity (vph)	593	2825	1260	196	2103	196	1110	196	1194	791
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.53	0.30	0.03	0.07	0.28	0.12	0.03	0.13	0.01	0.34

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	265	712	31	11	467	27	20	14	14	21	10	228
Future Volume (veh/h)	265	712	31	11	467	27	20	14	14	21	10	228
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	312	838	36	13	549	32	24	16	16	25	12	268
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	371	1556	692	29	839	49	50	154	154	51	338	616
Arrive On Green	0.21	0.44	0.44	0.02	0.25	0.25	0.03	0.18	0.18	0.03	0.18	0.18
Sat Flow, veh/h	1781	3554	1581	1781	3412	199	1781	858	858	1781	1870	1580
Grp Volume(v), veh/h	312	838	36	13	285	296	24	0	32	25	12	268
Grp Sat Flow(s),veh/h/ln	1781	1777	1581	1781	1777	1834	1781	0	1716	1781	1870	1580
Q Serve(g_s), s	9.5	9.8	0.7	0.4	8.1	8.2	0.7	0.0	0.9	0.8	0.3	7.0
Cycle Q Clear(g_c), s	9.5	9.8	0.7	0.4	8.1	8.2	0.7	0.0	0.9	0.8	0.3	7.0
Prop In Lane	1.00		1.00	1.00		0.11	1.00		0.50	1.00		1.00
Lane Grp Cap(c), veh/h	371	1556	692	29	437	451	50	0	309	51	338	616
V/C Ratio(X)	0.84	0.54	0.05	0.45	0.65	0.66	0.48	0.00	0.10	0.49	0.04	0.44
Avail Cap(c_a), veh/h	477	2340	1042	158	852	879	158	0	880	158	960	1140
HCM Platoon Ratio	1.00	1.00	1.00	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	1.00	1.00
Uniform Delay (d), s/veh	21.4	11.7	9.1	27.5	19.1	19.1	27.0	0.0	19.3	26.9	19.0	12.7
Incr Delay (d2), s/veh	10.3	0.3	0.0	10.4	1.7	1.6	7.2	0.0	0.1	7.0	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	3.3	0.2	0.2	3.2	3.3	0.4	0.0	0.3	0.4	0.1	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.7	11.9	9.1	37.8	20.7	20.7	34.2	0.0	19.5	34.0	19.1	13.1
LnGrp LOS	C	B	A	D	C	C	C	A	B	C	B	B
Approach Vol, veh/h		1186			594			56			305	
Approach Delay, s/veh		17.1			21.1			25.8			15.1	
Approach LOS		B			C			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.2	14.7	5.8	29.6	6.2	14.8	16.6	18.8
Change Period (Y+Rc), s	4.6	4.6	4.9	4.9	4.6	4.6	4.9	4.9
Max Green Setting (Gmax), s	5.0	28.9	5.0	37.1	5.0	28.9	15.1	27.0
Max Q Clear Time (g_c+I1), s	2.8	2.9	2.4	11.8	2.7	9.0	11.5	10.2
Green Ext Time (p_c), s	0.0	0.1	0.0	6.6	0.0	0.9	0.3	3.3

Intersection Summary			
HCM 6th Ctrl Delay			18.1
HCM 6th LOS			B

Intersection	
Intersection Delay, s/veh	18.1
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	175	408	51	5	274	37	37	12	6	22	8	105
Future Vol, veh/h	175	408	51	5	274	37	37	12	6	22	8	105
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	188	439	55	5	295	40	40	13	6	24	9	113
Number of Lanes	1	1	0	1	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	21.1	16.1	11.1	11.2
HCM LOS	C	C	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	100%	0%	100%	0%
Vol Thru, %	0%	67%	0%	89%	0%	88%	0%	7%
Vol Right, %	0%	33%	0%	11%	0%	12%	0%	93%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	37	18	175	459	5	311	22	113
LT Vol	37	0	175	0	5	0	22	0
Through Vol	0	12	0	408	0	274	0	8
RT Vol	0	6	0	51	0	37	0	105
Lane Flow Rate	40	19	188	494	5	334	24	122
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.088	0.039	0.324	0.769	0.01	0.56	0.051	0.221
Departure Headway (Hd)	7.924	7.172	6.192	5.609	6.62	6.028	7.711	6.535
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	451	497	580	647	539	595	463	548
Service Time	5.697	4.945	3.936	3.352	4.374	3.783	5.475	4.298
HCM Lane V/C Ratio	0.089	0.038	0.324	0.764	0.009	0.561	0.052	0.223
HCM Control Delay	11.5	10.2	11.9	24.6	9.4	16.2	10.9	11.2
HCM Lane LOS	B	B	B	C	A	C	B	B
HCM 95th-tile Q	0.3	0.1	1.4	7.2	0	3.5	0.2	0.8

Intersection	
Int Delay, s/veh	8.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	211	94	129	15	109	59	80	12	7	35	8	126
Future Vol, veh/h	211	94	129	15	109	59	80	12	7	35	8	126
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	-	-	-	0	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	237	106	145	17	122	66	90	13	8	39	9	142

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	188	0	0	251	0	0	845	802	106	852	914	155
Stage 1	-	-	-	-	-	-	580	580	-	189	189	-
Stage 2	-	-	-	-	-	-	265	222	-	663	725	-
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	1386	-	-	1314	-	-	283	317	948	280	273	891
Stage 1	-	-	-	-	-	-	500	500	-	813	744	-
Stage 2	-	-	-	-	-	-	740	720	-	450	430	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1386	-	-	1314	-	-	193	249	948	223	215	891
Mov Cap-2 Maneuver	-	-	-	-	-	-	193	249	-	223	215	-
Stage 1	-	-	-	-	-	-	399	399	-	649	733	-
Stage 2	-	-	-	-	-	-	606	709	-	344	343	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	4	0.6	34.5	13.9
HCM LOS			D	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	193	342	1386	-	-	1314	-	-	221	891
HCM Lane V/C Ratio	0.466	0.062	0.171	-	-	0.013	-	-	0.219	0.159
HCM Control Delay (s)	38.9	16.2	8.1	0	-	7.8	0	-	25.8	9.8
HCM Lane LOS	E	C	A	A	-	A	A	-	D	A
HCM 95th %tile Q(veh)	2.2	0.2	0.6	-	-	0	-	-	0.8	0.6

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	10	57	73	6	60	1	110	6	2	1	24	12
Future Vol, veh/h	10	57	73	6	60	1	110	6	2	1	24	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	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	77	77	77	77	77	77	77	77	77	77	77	77
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	74	95	8	78	1	143	8	3	1	31	16

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	79	0	0	169	0	0	266	243	122	248	290	79
Stage 1	-	-	-	-	-	-	148	148	-	95	95	-
Stage 2	-	-	-	-	-	-	118	95	-	153	195	-
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	1519	-	-	1409	-	-	687	659	929	706	620	981
Stage 1	-	-	-	-	-	-	855	775	-	912	816	-
Stage 2	-	-	-	-	-	-	887	816	-	849	739	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1519	-	-	1409	-	-	642	648	929	689	610	981
Mov Cap-2 Maneuver	-	-	-	-	-	-	642	648	-	689	610	-
Stage 1	-	-	-	-	-	-	846	767	-	903	811	-
Stage 2	-	-	-	-	-	-	834	811	-	830	732	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.7	12.3	10.5
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	646	1519	-	-	1409	-	-	698
HCM Lane V/C Ratio	0.237	0.009	-	-	0.006	-	-	0.069
HCM Control Delay (s)	12.3	7.4	0	-	7.6	0	-	10.5
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.9	0	-	-	0	-	-	0.2

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	89	0	0	80	25	0	0	0	47	0	0
Future Vol, veh/h	0	89	0	0	80	25	0	0	0	47	0	0
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	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	92	92	85	85	92	92	92	85	92	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	105	0	0	94	29	0	0	0	55	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	123	0	0	105	0	0	214	228	105	214	214	109
Stage 1	-	-	-	-	-	-	105	105	-	109	109	-
Stage 2	-	-	-	-	-	-	109	123	-	105	105	-
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	1464	-	-	1486	-	-	743	671	949	743	684	945
Stage 1	-	-	-	-	-	-	901	808	-	896	805	-
Stage 2	-	-	-	-	-	-	896	794	-	901	808	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1464	-	-	1486	-	-	743	671	949	743	684	945
Mov Cap-2 Maneuver	-	-	-	-	-	-	743	671	-	743	684	-
Stage 1	-	-	-	-	-	-	901	808	-	896	805	-
Stage 2	-	-	-	-	-	-	896	794	-	901	808	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	0	10.2
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1464	-	-	1486	-	-	743
HCM Lane V/C Ratio	-	-	-	-	-	-	-	0.074
HCM Control Delay (s)	0	0	-	-	0	-	-	10.2
HCM Lane LOS	A	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	0.2

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	6	27	103	93	40	0	62	118	114	0	70	3
Future Vol, veh/h	6	27	103	93	40	0	62	118	114	0	70	3
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	32	121	109	47	0	73	139	134	0	82	4
Number of Lanes	1	1	0	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	2
HCM Control Delay	9.7	11.3	11	9.6
HCM LOS	A	B	B	A

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	70%	0%	0%
Vol Thru, %	0%	51%	0%	21%	30%	100%	96%
Vol Right, %	0%	49%	0%	79%	0%	0%	4%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	62	232	6	130	133	0	73
LT Vol	62	0	6	0	93	0	0
Through Vol	0	118	0	27	40	0	70
RT Vol	0	114	0	103	0	0	3
Lane Flow Rate	73	273	7	153	156	0	86
Geometry Grp	7	7	7	7	6	7	7
Degree of Util (X)	0.124	0.399	0.013	0.229	0.265	0	0.141
Departure Headway (Hd)	6.11	5.258	6.458	5.391	6.087	5.923	5.894
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	590	688	555	667	591	0	609
Service Time	3.81	2.958	4.189	3.121	4.116	3.653	3.624
HCM Lane V/C Ratio	0.124	0.397	0.013	0.229	0.264	0	0.141
HCM Control Delay	9.7	11.4	9.3	9.7	11.3	8.7	9.6
HCM Lane LOS	A	B	A	A	B	N	A
HCM 95th-tile Q	0.4	1.9	0	0.9	1.1	0	0.5

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	55	1046	171	894	112	113	182	119
v/c Ratio	0.31	0.76	0.71	0.49	0.37	0.14	0.59	0.14
Control Delay	38.4	22.1	50.7	14.9	25.0	7.1	31.2	10.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.4	22.1	50.7	14.9	25.0	7.1	31.2	10.4
Queue Length 50th (ft)	21	168	67	131	39	3	67	8
Queue Length 95th (ft)	65	332	#211	268	77	18	121	24
Internal Link Dist (ft)		4010		607		1657		634
Turn Bay Length (ft)								
Base Capacity (vph)	194	1795	250	1950	372	981	374	1003
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.58	0.68	0.46	0.30	0.12	0.49	0.12

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	744	145	145	728	32	95	17	79	155	43	58
Future Volume (veh/h)	47	744	145	145	728	32	95	17	79	155	43	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	55	875	171	171	856	38	112	20	93	182	51	68
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	91	1186	232	216	1629	72	371	403	360	355	403	360
Arrive On Green	0.05	0.40	0.40	0.12	0.47	0.47	0.23	0.23	0.23	0.23	0.23	0.23
Sat Flow, veh/h	1781	2964	579	1781	3466	154	1273	1777	1585	1280	1777	1585
Grp Volume(v), veh/h	55	525	521	171	439	455	112	20	93	182	51	68
Grp Sat Flow(s),veh/h/ln	1781	1777	1766	1781	1777	1843	1273	1777	1585	1280	1777	1585
Q Serve(g_s), s	1.7	14.4	14.4	5.3	9.9	9.9	4.5	0.5	2.8	7.8	1.3	2.0
Cycle Q Clear(g_c), s	1.7	14.4	14.4	5.3	9.9	9.9	6.4	0.5	2.8	10.5	1.3	2.0
Prop In Lane	1.00		0.33	1.00		0.08	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	91	711	707	216	835	866	371	403	360	355	403	360
V/C Ratio(X)	0.61	0.74	0.74	0.79	0.53	0.53	0.30	0.05	0.26	0.51	0.13	0.19
Avail Cap(c_a), veh/h	218	1017	1011	281	1017	1055	438	498	444	423	498	444
HCM Platoon Ratio	1.00	1.00	1.00	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	26.6	14.6	14.6	24.4	10.7	10.7	20.4	17.3	18.1	22.5	17.6	17.8
Incr Delay (d2), s/veh	6.4	1.7	1.7	11.1	0.5	0.5	0.5	0.1	0.4	1.1	0.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	5.3	5.2	2.8	3.3	3.5	1.3	0.2	1.0	2.3	0.5	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.9	16.3	16.3	35.5	11.2	11.1	20.9	17.3	18.5	23.6	17.7	18.1
LnGrp LOS	C	B	B	D	B	B	C	B	B	C	B	B
Approach Vol, veh/h		1101			1065			225			301	
Approach Delay, s/veh		17.1			15.1			19.6			21.4	
Approach LOS		B			B			B			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.8	27.8		17.6	7.8	31.8		17.6				
Change Period (Y+Rc), s	4.9	4.9		4.6	4.9	4.9		4.6				
Max Green Setting (Gmax), s	9.0	32.7		16.0	7.0	32.7		16.0				
Max Q Clear Time (g_c+I1), s	7.3	16.4		12.5	3.7	11.9		8.4				
Green Ext Time (p_c), s	0.1	6.5		0.4	0.0	5.9		0.6				

Intersection Summary			
HCM 6th Ctrl Delay			17.0
HCM 6th LOS			B

Notes

User approved pedestrian interval to be less than phase max green.

Lane Group	EBT	WBL	WBT	NBL	NBT
Lane Group Flow (vph)	1026	43	1249	137	16
v/c Ratio	0.35	0.15	0.53	0.39	0.02
Control Delay	9.6	24.7	7.4	22.9	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	9.6	24.7	7.4	22.9	0.1
Queue Length 50th (ft)	45	11	103	32	0
Queue Length 95th (ft)	128	39	168	85	0
Internal Link Dist (ft)	443		965		645
Turn Bay Length (ft)					
Base Capacity (vph)	3164	1013	3400	983	1259
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.32	0.04	0.37	0.14	0.01

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	704	127	35	1012	0	111	0	13	0	0	0
Future Volume (veh/h)	0	704	127	35	1012	0	111	0	13	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	869	157	43	1249	0	137	0	16	0	0	0
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	0	2	2	2	2	0	2	2	2	2	2	2
Cap, veh/h	0	1914	344	86	2220	0	398	0	176	0	208	0
Arrive On Green	0.00	0.44	0.44	0.05	0.62	0.00	0.11	0.00	0.11	0.00	0.00	0.00
Sat Flow, veh/h	0	4520	782	1781	3647	0	1781	0	1585	0	1870	0
Grp Volume(v), veh/h	0	679	347	43	1249	0	137	0	16	0	0	0
Grp Sat Flow(s),veh/h/ln	0	1702	1730	1781	1777	0	1781	0	1585	0	1870	0
Q Serve(g_s), s	0.0	5.0	5.1	0.8	7.3	0.0	2.7	0.0	0.3	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	5.0	5.1	0.8	7.3	0.0	2.7	0.0	0.3	0.0	0.0	0.0
Prop In Lane	0.00		0.45	1.00		0.00	1.00		1.00	0.00		0.00
Lane Grp Cap(c), veh/h	0	1498	761	86	2220	0	398	0	176	0	208	0
V/C Ratio(X)	0.00	0.45	0.46	0.50	0.56	0.00	0.34	0.00	0.09	0.00	0.00	0.00
Avail Cap(c_a), veh/h	0	2660	1352	1194	5643	0	1795	0	1419	0	1675	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)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	7.0	7.1	16.7	3.9	0.0	15.4	0.0	14.4	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.2	0.4	4.4	0.2	0.0	0.5	0.0	0.2	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	0.0	1.2	1.3	0.4	0.9	0.0	0.9	0.0	0.1	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	7.3	7.5	21.0	4.1	0.0	15.9	0.0	14.6	0.0	0.0	0.0
LnGrp LOS	A	A	A	C	A	A	B	A	B	A	A	A
Approach Vol, veh/h		1026			1292			153			0	
Approach Delay, s/veh		7.3			4.7			15.8			0.0	
Approach LOS		A			A			B				

Timer - Assigned Phs		2	3	4		6		8				
Phs Duration (G+Y+Rc), s		8.6	6.6	20.7		8.6		27.4				
Change Period (Y+Rc), s		4.6	4.9	4.9		4.6		4.9				
Max Green Setting (Gmax), s		32.2	24.1	28.1		32.2		57.1				
Max Q Clear Time (g_c+I1), s		4.7	2.8	7.1		0.0		9.3				
Green Ext Time (p_c), s		0.4	0.1	7.2		0.0		13.2				

Intersection Summary		
HCM 6th Ctrl Delay		6.5
HCM 6th LOS		A

Lane Group	EBT	WBL	WBT	NBL	NBT
Lane Group Flow (vph)	851	53	1231	110	40
v/c Ratio	0.45	0.20	0.53	0.31	0.07
Control Delay	15.3	33.1	10.8	29.9	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	15.3	33.1	10.8	29.9	0.2
Queue Length 50th (ft)	99	14	87	29	0
Queue Length 95th (ft)	275	66	360	112	0
Internal Link Dist (ft)	965		1195		1198
Turn Bay Length (ft)					
Base Capacity (vph)	2511	308	3026	566	1376
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.34	0.17	0.41	0.19	0.03

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	582	107	43	997	0	89	0	32	0	0	0
Future Volume (veh/h)	0	582	107	43	997	0	89	0	32	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	719	132	53	1231	0	110	0	40	0	0	0
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	0	2	2	2	2	0	2	2	2	2	2	2
Cap, veh/h	0	1252	230	103	2190	0	168	0	175	0	5	0
Arrive On Green	0.00	0.42	0.42	0.06	0.62	0.00	0.09	0.00	0.11	0.00	0.00	0.00
Sat Flow, veh/h	0	3092	550	1781	3647	0	1781	0	1585	0	-75676	0
Grp Volume(v), veh/h	0	426	425	53	1231	0	110	0	40	0	0	0
Grp Sat Flow(s),veh/h/ln	0	1777	1771	1781	1777	0	1781	0	1585	0	1870	0
Q Serve(g_s), s	0.0	6.4	6.4	1.0	7.1	0.0	2.1	0.0	0.8	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	6.4	6.4	1.0	7.1	0.0	2.1	0.0	0.8	0.0	0.0	0.0
Prop In Lane	0.00		0.31	1.00		0.00	1.00		1.00	0.00		0.00
Lane Grp Cap(c), veh/h	0	742	740	103	2190	0	168	0	175	0	5	0
V/C Ratio(X)	0.00	0.57	0.57	0.52	0.56	0.00	0.66	0.00	0.23	0.00	0.00	0.00
Avail Cap(c_a), veh/h	0	1837	1831	374	4922	0	687	0	2150	0	1567	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)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	7.7	7.7	15.9	3.9	0.0	15.2	0.0	14.1	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.7	0.7	4.0	0.2	0.0	4.3	0.0	0.7	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	0.0	1.7	1.7	0.5	0.8	0.0	0.9	0.0	0.3	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	8.4	8.5	19.9	4.1	0.0	19.5	0.0	14.8	0.0	0.0	0.0
LnGrp LOS	A	A	A	B	A	A	B	A	B	A	A	A
Approach Vol, veh/h		851			1284			150			0	
Approach Delay, s/veh		8.5			4.8			18.2			0.0	
Approach LOS		A			A			B				
Timer - Assigned Phs		2	3	4	5	6		8				
Phs Duration (G+Y+Rc), s		8.4	6.9	19.4	7.9	0.6		26.3				
Change Period (Y+Rc), s		4.6	4.9	4.9	4.6	4.6		4.9				
Max Green Setting (Gmax), s		47.1	7.3	35.9	13.4	29.1		48.1				
Max Q Clear Time (g_c+I1), s		2.8	3.0	8.4	4.1	0.0		9.1				
Green Ext Time (p_c), s		0.2	0.0	6.1	0.2	0.0		12.3				
Intersection Summary												
HCM 6th Ctrl Delay			7.0									
HCM 6th LOS			A									

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	367	312	44	19	833	42	43	87	22	404
v/c Ratio	0.70	0.13	0.04	0.14	0.72	0.20	0.18	0.49	0.09	0.59
Control Delay	37.5	10.0	0.1	44.8	30.0	40.8	23.1	50.1	32.4	16.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.5	10.0	0.1	44.8	30.0	40.8	23.1	50.1	32.4	16.9
Queue Length 50th (ft)	174	27	0	10	198	18	12	44	11	142
Queue Length 95th (ft)	#382	91	0	35	#359	60	36	#122	29	166
Internal Link Dist (ft)		1195			2587		1879		775	
Turn Bay Length (ft)										
Base Capacity (vph)	580	2375	1075	132	1345	221	715	185	769	729
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.63	0.13	0.04	0.14	0.62	0.19	0.06	0.47	0.03	0.55

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	312	265	37	16	662	46	36	20	16	74	19	343
Future Volume (veh/h)	312	265	37	16	662	46	36	20	16	74	19	343
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	367	312	44	19	779	54	42	24	19	87	22	404
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	409	1728	769	38	937	65	66	196	155	112	426	724
Arrive On Green	0.23	0.49	0.49	0.02	0.28	0.28	0.04	0.20	0.20	0.06	0.23	0.23
Sat Flow, veh/h	1781	3554	1582	1781	3371	234	1781	967	766	1781	1870	1581
Grp Volume(v), veh/h	367	312	44	19	411	422	42	0	43	87	22	404
Grp Sat Flow(s),veh/h/ln	1781	1777	1582	1781	1777	1828	1781	0	1733	1781	1870	1581
Q Serve(g_s), s	16.7	4.1	1.2	0.9	18.1	18.2	1.9	0.0	1.7	4.0	0.8	15.6
Cycle Q Clear(g_c), s	16.7	4.1	1.2	0.9	18.1	18.2	1.9	0.0	1.7	4.0	0.8	15.6
Prop In Lane	1.00		1.00	1.00		0.13	1.00		0.44	1.00		1.00
Lane Grp Cap(c), veh/h	409	1728	769	38	494	508	66	0	351	112	426	724
V/C Ratio(X)	0.90	0.18	0.06	0.50	0.83	0.83	0.63	0.00	0.12	0.78	0.05	0.56
Avail Cap(c_a), veh/h	492	1904	847	113	574	590	145	0	591	158	651	914
HCM Platoon Ratio	1.00	1.00	1.00	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	1.00	1.00
Uniform Delay (d), s/veh	31.2	12.1	11.3	40.5	28.3	28.3	39.7	0.0	27.3	38.6	25.2	16.5
Incr Delay (d2), s/veh	16.9	0.0	0.0	9.8	8.9	8.7	9.6	0.0	0.2	14.7	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.9	1.6	0.4	0.5	8.6	8.9	1.0	0.0	0.7	2.2	0.3	5.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.1	12.1	11.4	50.3	37.2	37.0	49.2	0.0	27.4	53.3	25.3	17.2
LnGrp LOS	D	B	B	D	D	D	D	A	C	D	C	B
Approach Vol, veh/h		723			852			85			513	
Approach Delay, s/veh		30.4			37.4			38.2			23.7	
Approach LOS		C			D			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.8	21.5	6.7	45.6	7.7	23.7	24.1	28.1
Change Period (Y+Rc), s	4.6	4.6	4.9	4.9	4.6	4.6	4.9	4.9
Max Green Setting (Gmax), s	7.4	28.5	5.3	44.8	6.8	29.1	23.1	27.0
Max Q Clear Time (g_c+I1), s	6.0	3.7	2.9	6.1	3.9	17.6	18.7	20.2
Green Ext Time (p_c), s	0.0	0.2	0.0	2.4	0.0	1.3	0.5	2.9

Intersection Summary			
HCM 6th Ctrl Delay			31.9
HCM 6th LOS			C

Intersection	
Intersection Delay, s/veh	18
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	43	178	34	2	387	14	57	4	5	31	11	128
Future Vol, veh/h	43	178	34	2	387	14	57	4	5	31	11	128
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	51	209	40	2	455	16	67	5	6	36	13	151
Number of Lanes	1	1	0	1	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	12.5	25.3	11.4	11.4
HCM LOS	B	D	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	100%	0%	100%	0%
Vol Thru, %	0%	44%	0%	84%	0%	97%	0%	8%
Vol Right, %	0%	56%	0%	16%	0%	3%	0%	92%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	57	9	43	212	2	401	31	139
LT Vol	57	0	43	0	2	0	31	0
Through Vol	0	4	0	178	0	387	0	11
RT Vol	0	5	0	34	0	14	0	128
Lane Flow Rate	67	11	51	249	2	472	36	164
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.143	0.02	0.093	0.415	0.004	0.767	0.075	0.283
Departure Headway (Hd)	7.651	6.742	6.617	5.995	6.383	5.852	7.388	6.221
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	466	528	540	599	560	618	483	574
Service Time	5.437	4.527	4.378	3.756	4.134	3.603	5.161	3.993
HCM Lane V/C Ratio	0.144	0.021	0.094	0.416	0.004	0.764	0.075	0.286
HCM Control Delay	11.7	9.7	10.1	13	9.2	25.4	10.8	11.5
HCM Lane LOS	B	A	B	B	A	D	B	B
HCM 95th-tile Q	0.5	0.1	0.3	2	0	7.1	0.2	1.2

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	62	98	52	7	77	19	142	4	25	52	11	182
Future Vol, veh/h	62	98	52	7	77	19	142	4	25	52	11	182
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	70	110	58	8	87	21	160	4	28	58	12	204
Number of Lanes	1	1	1	1	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	3	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	3	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	3
HCM Control Delay	10.3	10.8	12	10.9
HCM LOS	B	B	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	0%	100%	0%	100%	0%
Vol Thru, %	0%	14%	0%	100%	0%	0%	80%	0%	6%
Vol Right, %	0%	86%	0%	0%	100%	0%	20%	0%	94%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	142	29	62	98	52	7	96	52	193
LT Vol	142	0	62	0	0	7	0	52	0
Through Vol	0	4	0	98	0	0	77	0	11
RT Vol	0	25	0	0	52	0	19	0	182
Lane Flow Rate	160	33	70	110	58	8	108	58	217
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.303	0.052	0.133	0.195	0.092	0.016	0.195	0.109	0.335
Departure Headway (Hd)	6.847	5.734	6.88	6.374	5.665	7.173	6.524	6.727	5.558
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	523	622	520	562	630	498	548	532	646
Service Time	4.602	3.489	4.633	4.126	3.417	4.934	4.285	4.477	3.308
HCM Lane V/C Ratio	0.306	0.053	0.135	0.196	0.092	0.016	0.197	0.109	0.336
HCM Control Delay	12.6	8.8	10.7	10.7	9	10.1	10.9	10.3	11.1
HCM Lane LOS	B	A	B	B	A	B	B	B	B
HCM 95th-tile Q	1.3	0.2	0.5	0.7	0.3	0	0.7	0.4	1.5

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	7	52	116	1	41	0	55	4	2	0	7	11
Future Vol, veh/h	7	52	116	1	41	0	55	4	2	0	7	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	77	77	77	77	77	77	77	77	77	77	77	77
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	68	151	1	53	0	71	5	3	0	9	14

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	53	0	0	219	0	0	229	217	144	221	292	53
Stage 1	-	-	-	-	-	-	162	162	-	55	55	-
Stage 2	-	-	-	-	-	-	67	55	-	166	237	-
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	1553	-	-	1350	-	-	726	681	903	735	619	1014
Stage 1	-	-	-	-	-	-	840	764	-	957	849	-
Stage 2	-	-	-	-	-	-	943	849	-	836	709	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1553	-	-	1350	-	-	703	676	903	724	614	1014
Mov Cap-2 Maneuver	-	-	-	-	-	-	703	676	-	724	614	-
Stage 1	-	-	-	-	-	-	834	759	-	950	848	-
Stage 2	-	-	-	-	-	-	919	848	-	822	704	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.2	10.7	9.6
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	706	1553	-	-	1350	-	-	809
HCM Lane V/C Ratio	0.112	0.006	-	-	0.001	-	-	0.029
HCM Control Delay (s)	10.7	7.3	0	-	7.7	0	-	9.6
HCM Lane LOS	B	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.4	0	-	-	0	-	-	0.1

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	242	0	0	266	172	0	0	0	102	0	3
Future Vol, veh/h	0	242	0	0	266	172	0	0	0	102	0	3
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	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	92	92	85	85	92	92	92	85	92	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	285	0	0	313	202	0	0	0	120	0	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	515	0	0	285	0	0	701	800	285	699	699	414
Stage 1	-	-	-	-	-	-	285	285	-	414	414	-
Stage 2	-	-	-	-	-	-	416	515	-	285	285	-
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	1051	-	-	1277	-	-	353	318	754	354	364	638
Stage 1	-	-	-	-	-	-	722	676	-	616	593	-
Stage 2	-	-	-	-	-	-	614	535	-	722	676	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1051	-	-	1277	-	-	351	318	754	354	364	638
Mov Cap-2 Maneuver	-	-	-	-	-	-	351	318	-	354	364	-
Stage 1	-	-	-	-	-	-	722	676	-	616	593	-
Stage 2	-	-	-	-	-	-	611	535	-	722	676	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	0	20.2
HCM LOS			A	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1051	-	-	1277	-	-	359
HCM Lane V/C Ratio	-	-	-	-	-	-	-	0.344
HCM Control Delay (s)	0	0	-	-	0	-	-	20.2
HCM Lane LOS	A	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	1.5

Intersection	
Intersection Delay, s/veh	17.8
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	9	44	231	90	113	0	281	30	47	0	87	26
Future Vol, veh/h	9	44	231	90	113	0	281	30	47	0	87	26
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	52	272	106	133	0	331	35	55	0	102	31
Number of Lanes	1	1	0	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	2
HCM Control Delay	17.1	16.8	20.6	12.6
HCM LOS	C	C	C	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	44%	0%	0%
Vol Thru, %	0%	39%	0%	16%	56%	100%	77%
Vol Right, %	0%	61%	0%	84%	0%	0%	23%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	281	77	9	275	203	0	113
LT Vol	281	0	9	0	90	0	0
Through Vol	0	30	0	44	113	0	87
RT Vol	0	47	0	231	0	0	26
Lane Flow Rate	331	91	11	324	239	0	133
Geometry Grp	7	7	7	7	6	7	7
Degree of Util (X)	0.667	0.159	0.022	0.572	0.48	0	0.267
Departure Headway (Hd)	7.259	6.313	7.472	6.36	7.238	7.409	7.243
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	499	568	479	566	497	0	495
Service Time	5.002	4.056	5.214	4.102	5.285	5.166	5
HCM Lane V/C Ratio	0.663	0.16	0.023	0.572	0.481	0	0.269
HCM Control Delay	23.4	10.3	10.4	17.3	16.8	10.2	12.6
HCM Lane LOS	C	B	B	C	C	N	B
HCM 95th-tile Q	4.9	0.6	0.1	3.6	2.6	0	1.1

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	55	1056	182	945	112	115	182	119
v/c Ratio	0.31	0.76	0.75	0.52	0.37	0.14	0.60	0.14
Control Delay	38.6	22.2	53.9	15.2	25.2	7.0	31.6	10.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.6	22.2	53.9	15.2	25.2	7.0	31.6	10.5
Queue Length 50th (ft)	21	171	72	141	39	3	67	8
Queue Length 95th (ft)	65	337	#228	287	77	17	121	24
Internal Link Dist (ft)		4010		607		1657		634
Turn Bay Length (ft)								
Base Capacity (vph)	193	1782	248	1936	369	975	370	996
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.59	0.73	0.49	0.30	0.12	0.49	0.12

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	752	145	155	771	32	95	17	81	155	43	58
Future Volume (veh/h)	47	752	145	155	771	32	95	17	81	155	43	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	55	885	171	182	907	38	112	20	95	182	51	68
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	90	1186	229	227	1656	69	368	403	360	350	403	360
Arrive On Green	0.05	0.40	0.40	0.13	0.48	0.48	0.23	0.23	0.23	0.23	0.23	0.23
Sat Flow, veh/h	1781	2970	574	1781	3475	146	1273	1777	1585	1277	1777	1585
Grp Volume(v), veh/h	55	529	527	182	464	481	112	20	95	182	51	68
Grp Sat Flow(s),veh/h/ln	1781	1777	1767	1781	1777	1844	1273	1777	1585	1277	1777	1585
Q Serve(g_s), s	1.8	14.9	14.9	5.8	10.8	10.8	4.6	0.5	2.9	8.0	1.3	2.0
Cycle Q Clear(g_c), s	1.8	14.9	14.9	5.8	10.8	10.8	6.6	0.5	2.9	10.9	1.3	2.0
Prop In Lane	1.00		0.32	1.00		0.08	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	90	710	706	227	847	879	368	403	360	350	403	360
V/C Ratio(X)	0.61	0.75	0.75	0.80	0.55	0.55	0.30	0.05	0.26	0.52	0.13	0.19
Avail Cap(c_a), veh/h	213	993	988	274	993	1031	427	486	434	410	486	434
HCM Platoon Ratio	1.00	1.00	1.00	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	27.2	15.0	15.0	24.8	10.8	10.8	20.9	17.7	18.6	23.1	18.0	18.3
Incr Delay (d2), s/veh	6.6	2.0	2.0	13.2	0.6	0.5	0.5	0.1	0.4	1.2	0.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	5.6	5.6	3.1	3.7	3.8	1.3	0.2	1.0	2.4	0.5	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.8	17.0	17.0	38.0	11.4	11.4	21.4	17.7	19.0	24.3	18.1	18.5
LnGrp LOS	C	B	B	D	B	B	C	B	B	C	B	B
Approach Vol, veh/h		1111			1127			227			301	
Approach Delay, s/veh		17.8			15.7			20.1			21.9	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	12.4	28.3		17.9	7.9	32.8		17.9				
Change Period (Y+Rc), s	4.9	4.9		4.6	4.9	4.9		4.6				
Max Green Setting (Gmax), s	9.0	32.7		16.0	7.0	32.7		16.0				
Max Q Clear Time (g_c+I1), s	7.8	16.9		12.9	3.8	12.8		8.6				
Green Ext Time (p_c), s	0.1	6.4		0.4	0.0	6.2		0.6				

Intersection Summary			
HCM 6th Ctrl Delay			17.6
HCM 6th LOS			B

Notes

User approved pedestrian interval to be less than phase max green.

Lane Group	EBT	WBL	WBT	NBL	NBT
Lane Group Flow (vph)	1047	51	1360	137	19
v/c Ratio	0.38	0.18	0.56	0.41	0.02
Control Delay	11.4	26.7	7.7	24.8	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	11.4	26.7	7.7	24.8	0.1
Queue Length 50th (ft)	86	15	119	38	0
Queue Length 95th (ft)	137	47	198	91	0
Internal Link Dist (ft)	443		965		645
Turn Bay Length (ft)					
Base Capacity (vph)	3047	961	3327	928	1217
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.34	0.05	0.41	0.15	0.02

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	721	127	41	1102	0	111	0	15	0	0	0
Future Volume (veh/h)	0	721	127	41	1102	0	111	0	15	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	890	157	51	1360	0	137	0	19	0	0	0
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	0	2	2	2	2	0	2	2	2	2	2	2
Cap, veh/h	0	2054	361	97	2304	0	381	0	177	0	209	0
Arrive On Green	0.00	0.47	0.47	0.05	0.65	0.00	0.11	0.00	0.11	0.00	0.00	0.00
Sat Flow, veh/h	0	4537	767	1781	3647	0	1781	0	1585	0	1870	0
Grp Volume(v), veh/h	0	693	354	51	1360	0	137	0	19	0	0	0
Grp Sat Flow(s),veh/h/ln	0	1702	1732	1781	1777	0	1781	0	1585	0	1870	0
Q Serve(g_s), s	0.0	5.4	5.4	1.1	8.6	0.0	2.9	0.0	0.4	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	5.4	5.4	1.1	8.6	0.0	2.9	0.0	0.4	0.0	0.0	0.0
Prop In Lane	0.00		0.44	1.00		0.00	1.00		1.00	0.00		0.00
Lane Grp Cap(c), veh/h	0	1600	814	97	2304	0	381	0	177	0	209	0
V/C Ratio(X)	0.00	0.43	0.44	0.53	0.59	0.00	0.36	0.00	0.11	0.00	0.00	0.00
Avail Cap(c_a), veh/h	0	2419	1231	1085	5131	0	1632	0	1290	0	1523	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)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	7.0	7.0	18.2	4.0	0.0	16.9	0.0	15.8	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.2	0.4	4.4	0.2	0.0	0.6	0.0	0.3	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	0.0	1.3	1.4	0.5	1.2	0.0	1.1	0.0	0.1	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	7.2	7.3	22.6	4.2	0.0	17.5	0.0	16.1	0.0	0.0	0.0
LnGrp LOS	A	A	A	C	A	A	B	A	B	A	A	A
Approach Vol, veh/h		1047			1411			156			0	
Approach Delay, s/veh		7.2			4.9			17.3			0.0	
Approach LOS		A			A			B				
Timer - Assigned Phs		2	3	4		6		8				
Phs Duration (G+Y+Rc), s		9.0	7.0	23.5		9.0		30.5				
Change Period (Y+Rc), s		4.6	4.9	4.9		4.6		4.9				
Max Green Setting (Gmax), s		32.2	24.1	28.1		32.2		57.1				
Max Q Clear Time (g_c+I1), s		4.9	3.1	7.4		0.0		10.6				
Green Ext Time (p_c), s		0.5	0.1	7.3		0.0		15.0				
Intersection Summary												
HCM 6th Ctrl Delay			6.6									
HCM 6th LOS			A									

Lane Group	EBT	WBL	WBT	NBL	NBT
Lane Group Flow (vph)	874	60	1348	110	41
v/c Ratio	0.46	0.23	0.57	0.32	0.07
Control Delay	15.4	33.7	11.4	30.3	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	15.4	33.7	11.4	30.3	0.2
Queue Length 50th (ft)	104	16	102	29	0
Queue Length 95th (ft)	284	73	409	112	0
Internal Link Dist (ft)	965		1195		1198
Turn Bay Length (ft)					
Base Capacity (vph)	2460	292	3013	537	1370
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.36	0.21	0.45	0.20	0.03

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	601	107	49	1092	0	89	0	33	0	0	0
Future Volume (veh/h)	0	601	107	49	1092	0	89	0	33	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	742	132	60	1348	0	110	0	41	0	0	0
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	0	2	2	2	2	0	2	2	2	2	2	2
Cap, veh/h	0	1356	241	110	2282	0	162	0	167	0	5	0
Arrive On Green	0.00	0.45	0.45	0.06	0.64	0.00	0.09	0.00	0.11	0.00	0.00	0.00
Sat Flow, veh/h	0	3108	536	1781	3647	0	1781	0	1585	0	-75714	0
Grp Volume(v), veh/h	0	437	437	60	1348	0	110	0	41	0	0	0
Grp Sat Flow(s),veh/h/ln	0	1777	1774	1781	1777	0	1781	0	1585	0	1870	0
Q Serve(g_s), s	0.0	6.8	6.8	1.2	8.2	0.0	2.3	0.0	0.9	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	6.8	6.8	1.2	8.2	0.0	2.3	0.0	0.9	0.0	0.0	0.0
Prop In Lane	0.00		0.30	1.00		0.00	1.00		1.00	0.00		0.00
Lane Grp Cap(c), veh/h	0	800	798	110	2282	0	162	0	167	0	5	0
V/C Ratio(X)	0.00	0.55	0.55	0.54	0.59	0.00	0.68	0.00	0.25	0.00	0.00	0.00
Avail Cap(c_a), veh/h	0	1695	1692	346	4542	0	634	0	1984	0	1446	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)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	7.6	7.6	17.1	3.9	0.0	16.6	0.0	15.5	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.6	0.6	4.1	0.2	0.0	4.9	0.0	0.8	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	0.0	1.8	1.8	0.6	1.0	0.0	1.0	0.0	0.3	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	8.1	8.1	21.3	4.1	0.0	21.5	0.0	16.2	0.0	0.0	0.0
LnGrp LOS	A	A	A	C	A	A	C	A	B	A	A	A
Approach Vol, veh/h		874			1408			151			0	
Approach Delay, s/veh		8.1			4.9			20.1			0.0	
Approach LOS		A			A			C				
Timer - Assigned Phs		2	3	4	5	6		8				
Phs Duration (G+Y+Rc), s		8.6	7.2	21.8	8.0	0.6		29.1				
Change Period (Y+Rc), s		4.6	4.9	4.9	4.6	4.6		4.9				
Max Green Setting (Gmax), s		47.1	7.3	35.9	13.4	29.1		48.1				
Max Q Clear Time (g_c+I1), s		2.9	3.2	8.8	4.3	0.0		10.2				
Green Ext Time (p_c), s		0.2	0.0	6.3	0.2	0.0		13.9				
Intersection Summary												
HCM 6th Ctrl Delay			7.0									
HCM 6th LOS			A									

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	391	312	44	19	838	42	43	112	26	522
v/c Ratio	0.75	0.14	0.04	0.16	0.78	0.22	0.19	0.67	0.10	0.73
Control Delay	39.8	10.0	0.1	45.4	33.0	41.2	23.2	60.7	32.7	22.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.8	10.0	0.1	45.4	33.0	41.2	23.2	60.7	32.7	22.4
Queue Length 50th (ft)	188	27	0	10	200	18	12	58	13	~227
Queue Length 95th (ft)	#418	91	0	35	#362	60	36	#167	32	248
Internal Link Dist (ft)		1195			2587		1879		775	
Turn Bay Length (ft)										
Base Capacity (vph)	523	2199	1004	120	1214	204	647	167	694	714
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.75	0.14	0.04	0.16	0.69	0.21	0.07	0.67	0.04	0.73

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	332	265	37	16	662	50	36	20	16	95	22	444
Future Volume (veh/h)	332	265	37	16	662	50	36	20	16	95	22	444
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	391	312	44	19	779	59	42	24	19	112	26	522
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	420	1695	755	37	877	66	62	223	177	136	509	804
Arrive On Green	0.24	0.48	0.48	0.02	0.26	0.26	0.03	0.23	0.23	0.08	0.27	0.27
Sat Flow, veh/h	1781	3554	1582	1781	3347	253	1781	967	766	1781	1870	1582
Grp Volume(v), veh/h	391	312	44	19	413	425	42	0	43	112	26	522
Grp Sat Flow(s),veh/h/ln	1781	1777	1582	1781	1777	1824	1781	0	1733	1781	1870	1582
Q Serve(g_s), s	20.9	4.9	1.5	1.0	21.8	21.8	2.3	0.0	1.9	6.0	1.0	23.6
Cycle Q Clear(g_c), s	20.9	4.9	1.5	1.0	21.8	21.8	2.3	0.0	1.9	6.0	1.0	23.6
Prop In Lane	1.00		1.00	1.00		0.14	1.00		0.44	1.00		1.00
Lane Grp Cap(c), veh/h	420	1695	755	37	465	478	62	0	400	136	509	804
V/C Ratio(X)	0.93	0.18	0.06	0.52	0.89	0.89	0.68	0.00	0.11	0.83	0.05	0.65
Avail Cap(c_a), veh/h	423	1695	755	97	494	507	125	0	508	136	560	847
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.4	14.6	13.7	47.1	34.5	34.5	46.4	0.0	29.5	44.3	26.1	17.6
Incr Delay (d2), s/veh	27.1	0.1	0.0	10.8	17.1	16.8	12.0	0.0	0.1	32.4	0.0	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.0	1.9	0.5	0.6	11.4	11.7	1.2	0.0	0.8	3.9	0.4	8.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.5	14.6	13.7	57.9	51.6	51.3	58.4	0.0	29.6	76.6	26.2	19.2
LnGrp LOS	E	B	B	E	D	D	E	A	C	E	C	B
Approach Vol, veh/h		747			857			85			660	
Approach Delay, s/veh		40.1			51.6			43.8			29.2	
Approach LOS		D			D			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	27.0	6.9	51.3	8.0	31.0	27.8	30.4
Change Period (Y+Rc), s	4.6	4.6	4.9	4.9	4.6	4.6	4.9	4.9
Max Green Setting (Gmax), s	7.4	28.5	5.3	44.8	6.8	29.1	23.1	27.0
Max Q Clear Time (g_c+I1), s	8.0	3.9	3.0	6.9	4.3	25.6	22.9	23.8
Green Ext Time (p_c), s	0.0	0.2	0.0	2.4	0.0	0.8	0.0	1.6

Intersection Summary			
HCM 6th Ctrl Delay			41.4
HCM 6th LOS			D

Intersection	
Intersection Delay, s/veh	18.8
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	43	199	34	2	391	14	57	5	5	31	14	128
Future Vol, veh/h	43	199	34	2	391	14	57	5	5	31	14	128
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	51	234	40	2	460	16	67	6	6	36	16	151
Number of Lanes	1	1	0	1	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	13.3	26.8	11.6	11.6
HCM LOS	B	D	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	100%	0%	100%	0%
Vol Thru, %	0%	50%	0%	85%	0%	97%	0%	10%
Vol Right, %	0%	50%	0%	15%	0%	3%	0%	90%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	57	10	43	233	2	405	31	142
LT Vol	57	0	43	0	2	0	31	0
Through Vol	0	5	0	199	0	391	0	14
RT Vol	0	5	0	34	0	14	0	128
Lane Flow Rate	67	12	51	274	2	476	36	167
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.145	0.023	0.094	0.461	0.004	0.784	0.076	0.294
Departure Headway (Hd)	7.764	6.893	6.662	6.05	6.45	5.92	7.485	6.33
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	459	515	536	592	553	610	476	565
Service Time	5.561	4.689	4.431	3.819	4.21	3.679	5.267	4.111
HCM Lane V/C Ratio	0.146	0.023	0.095	0.463	0.004	0.78	0.076	0.296
HCM Control Delay	11.9	9.9	10.1	13.9	9.2	26.9	10.9	11.8
HCM Lane LOS	B	A	B	B	A	D	B	B
HCM 95th-tile Q	0.5	0.1	0.3	2.4	0	7.5	0.2	1.2

Intersection	
Intersection Delay, s/veh	11.2
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	62	119	52	7	81	19	142	5	25	52	14	182
Future Vol, veh/h	62	119	52	7	81	19	142	5	25	52	14	182
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	70	134	58	8	91	21	160	6	28	58	16	204
Number of Lanes	1	1	1	1	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	3	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	3	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	3
HCM Control Delay	10.6	11	12.1	11.3
HCM LOS	B	B	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	0%	100%	0%	100%	0%
Vol Thru, %	0%	17%	0%	100%	0%	0%	81%	0%	7%
Vol Right, %	0%	83%	0%	0%	100%	0%	19%	0%	93%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	142	30	62	119	52	7	100	52	196
LT Vol	142	0	62	0	0	7	0	52	0
Through Vol	0	5	0	119	0	0	81	0	14
RT Vol	0	25	0	0	52	0	19	0	182
Lane Flow Rate	160	34	70	134	58	8	112	58	220
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.309	0.055	0.134	0.239	0.093	0.016	0.207	0.111	0.347
Departure Headway (Hd)	6.965	5.872	6.934	6.427	5.718	7.273	6.629	6.835	5.676
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	515	607	516	558	624	490	539	523	632
Service Time	4.726	3.632	4.694	4.187	3.478	5.042	4.397	4.594	3.434
HCM Lane V/C Ratio	0.311	0.056	0.136	0.24	0.093	0.016	0.208	0.111	0.348
HCM Control Delay	12.8	9	10.8	11.2	9.1	10.2	11.1	10.5	11.5
HCM Lane LOS	B	A	B	B	A	B	B	B	B
HCM 95th-tile Q	1.3	0.2	0.5	0.9	0.3	0	0.8	0.4	1.5

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	7	58	131	1	41	0	58	4	2	0	7	11
Future Vol, veh/h	7	58	131	1	41	0	58	4	2	0	7	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	77	77	77	77	77	77	77	77	77	77	77	77
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	75	170	1	53	0	75	5	3	0	9	14

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	53	0	0	245	0	0	245	233	160	237	318	53
Stage 1	-	-	-	-	-	-	178	178	-	55	55	-
Stage 2	-	-	-	-	-	-	67	55	-	182	263	-
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	1553	-	-	1321	-	-	709	667	885	717	598	1014
Stage 1	-	-	-	-	-	-	824	752	-	957	849	-
Stage 2	-	-	-	-	-	-	943	849	-	820	691	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1553	-	-	1321	-	-	686	662	885	706	593	1014
Mov Cap-2 Maneuver	-	-	-	-	-	-	686	662	-	706	593	-
Stage 1	-	-	-	-	-	-	818	747	-	950	848	-
Stage 2	-	-	-	-	-	-	919	848	-	806	686	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.2	10.9	9.7
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	689	1553	-	-	1321	-	-	795
HCM Lane V/C Ratio	0.121	0.006	-	-	0.001	-	-	0.029
HCM Control Delay (s)	10.9	7.3	0	-	7.7	0	-	9.7
HCM Lane LOS	B	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.4	0	-	-	0	-	-	0.1

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	0	242	0	0	266	172	0	0	0	105	0	3
Future Vol, veh/h	0	242	0	0	266	172	0	0	0	105	0	3
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	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	92	92	85	85	92	92	92	85	92	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	285	0	0	313	202	0	0	0	124	0	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	515	0	0	285	0	0	701	800	285	699	699	414
Stage 1	-	-	-	-	-	-	285	285	-	414	414	-
Stage 2	-	-	-	-	-	-	416	515	-	285	285	-
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	1051	-	-	1277	-	-	353	318	754	354	364	638
Stage 1	-	-	-	-	-	-	722	676	-	616	593	-
Stage 2	-	-	-	-	-	-	614	535	-	722	676	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1051	-	-	1277	-	-	351	318	754	354	364	638
Mov Cap-2 Maneuver	-	-	-	-	-	-	351	318	-	354	364	-
Stage 1	-	-	-	-	-	-	722	676	-	616	593	-
Stage 2	-	-	-	-	-	-	611	535	-	722	676	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	0	20.5
HCM LOS			A	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1051	-	-	1277	-	-	358
HCM Lane V/C Ratio	-	-	-	-	-	-	-	0.355
HCM Control Delay (s)	0	0	-	-	0	-	-	20.5
HCM Lane LOS	A	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	1.6

Intersection	
Intersection Delay, s/veh	23.5
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	9	47	231	90	114	1	281	54	47	3	212	26
Future Vol, veh/h	9	47	231	90	114	1	281	54	47	3	212	26
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	55	272	106	134	1	331	64	55	4	249	31
Number of Lanes	1	1	0	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	2
HCM Control Delay	22.9	21.3	26.1	22.1
HCM LOS	C	C	D	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	44%	100%	0%
Vol Thru, %	0%	53%	0%	17%	56%	0%	89%
Vol Right, %	0%	47%	0%	83%	0%	0%	11%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	281	101	9	278	205	3	238
LT Vol	281	0	9	0	90	3	0
Through Vol	0	54	0	47	114	0	212
RT Vol	0	47	0	231	1	0	26
Lane Flow Rate	331	119	11	327	241	4	280
Geometry Grp	7	7	7	7	6	7	7
Degree of Util (X)	0.744	0.239	0.025	0.663	0.556	0.008	0.61
Departure Headway (Hd)	8.098	7.246	8.409	7.295	8.305	8.439	7.842
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	446	495	426	494	434	424	459
Service Time	5.847	4.995	6.157	5.043	6.362	6.19	5.593
HCM Lane V/C Ratio	0.742	0.24	0.026	0.662	0.555	0.009	0.61
HCM Control Delay	31	12.3	11.4	23.3	21.3	11.3	22.2
HCM Lane LOS	D	B	B	C	C	B	C
HCM 95th-tile Q	6.1	0.9	0.1	4.8	3.3	0	4

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	36	1396	180	1129	172	249	119	79
v/c Ratio	0.22	0.90	0.80	0.55	0.59	0.29	0.48	0.10
Control Delay	38.0	29.4	61.5	14.5	32.6	5.7	30.0	12.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.0	29.4	61.5	14.5	32.6	5.7	30.0	12.3
Queue Length 50th (ft)	15	265	77	107	69	6	46	7
Queue Length 95th (ft)	48	#571	#225	363	113	26	83	20
Internal Link Dist (ft)		4010		607		1657		634
Turn Bay Length (ft)								
Base Capacity (vph)	176	1639	227	2044	356	988	302	918
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.20	0.85	0.79	0.55	0.48	0.25	0.39	0.09

Intersection Summary

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	1074	112	153	915	45	146	25	187	101	34	33
Future Volume (veh/h)	31	1074	112	153	915	45	146	25	187	101	34	33
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	36	1264	132	180	1076	53	172	29	220	119	40	39
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	64	1439	150	220	1828	90	378	406	362	220	415	354
Arrive On Green	0.04	0.44	0.44	0.12	0.53	0.53	0.23	0.23	0.23	0.23	0.23	0.23
Sat Flow, veh/h	1781	3248	338	1781	3447	170	1320	1777	1585	1131	1816	1552
Grp Volume(v), veh/h	36	689	707	180	555	574	172	29	220	119	39	40
Grp Sat Flow(s),veh/h/ln	1781	1777	1810	1781	1777	1840	1320	1777	1585	1131	1777	1591
Q Serve(g_s), s	1.4	24.8	25.0	6.9	14.9	14.9	8.3	0.9	8.7	7.3	1.2	1.4
Cycle Q Clear(g_c), s	1.4	24.8	25.0	6.9	14.9	14.9	9.7	0.9	8.7	16.0	1.2	1.4
Prop In Lane	1.00		0.19	1.00		0.09	1.00		1.00	1.00		0.98
Lane Grp Cap(c), veh/h	64	787	801	220	942	976	378	406	362	220	406	363
V/C Ratio(X)	0.56	0.88	0.88	0.82	0.59	0.59	0.46	0.07	0.61	0.54	0.10	0.11
Avail Cap(c_a), veh/h	178	829	844	229	942	976	378	406	362	220	406	363
HCM Platoon Ratio	1.00	1.00	1.00	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	33.2	17.8	17.8	30.0	11.2	11.2	25.3	21.2	24.2	31.4	21.3	21.4
Incr Delay (d2), s/veh	7.5	10.1	10.4	19.9	1.0	0.9	0.9	0.1	2.9	2.6	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	11.2	11.5	4.1	5.3	5.5	2.6	0.4	3.4	2.1	0.5	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.8	27.9	28.2	49.8	12.2	12.2	26.1	21.3	27.2	34.1	21.4	21.5
LnGrp LOS	D	C	C	D	B	B	C	C	C	C	C	C
Approach Vol, veh/h		1432			1309			421			198	
Approach Delay, s/veh		28.4			17.4			26.3			29.1	
Approach LOS		C			B			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.5	35.9		20.6	7.4	42.1		20.6				
Change Period (Y+Rc), s	4.9	4.9		4.6	4.9	4.9		4.6				
Max Green Setting (Gmax), s	9.0	32.7		16.0	7.0	32.7		16.0				
Max Q Clear Time (g_c+I1), s	8.9	27.0		18.0	3.4	16.9		11.7				
Green Ext Time (p_c), s	0.0	4.0		0.0	0.0	6.9		0.9				
Intersection Summary												
HCM 6th Ctrl Delay			23.9									
HCM 6th LOS			C									

Notes

User approved pedestrian interval to be less than phase max green.

Lane Group	EBT	WBL	WBT	NBL	NBT
Lane Group Flow (vph)	2035	53	1230	498	73
v/c Ratio	1.01	0.30	0.69	0.94	0.08
Control Delay	46.4	39.0	17.0	55.1	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	46.4	39.0	17.0	55.1	0.2
Queue Length 50th (ft)	~423	26	225	253	0
Queue Length 95th (ft)	#449	54	245	#409	0
Internal Link Dist (ft)	443		965		645
Turn Bay Length (ft)					
Base Capacity (vph)	2024	548	2735	529	892
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.01	0.10	0.45	0.94	0.08

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1239	409	43	996	0	403	0	59	0	0	0
Future Volume (veh/h)	0	1239	409	43	996	0	403	0	59	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	1530	505	53	1230	0	498	0	73	0	0	0
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	0	2	2	2	2	0	2	2	2	2	2	2
Cap, veh/h	0	1667	541	81	1961	0	661	0	498	0	587	0
Arrive On Green	0.00	0.44	0.44	0.05	0.55	0.00	0.31	0.00	0.31	0.00	0.00	0.00
Sat Flow, veh/h	0	3982	1238	1781	3647	0	1781	0	1585	0	1870	0
Grp Volume(v), veh/h	0	1363	672	53	1230	0	498	0	73	0	0	0
Grp Sat Flow(s),veh/h/ln	0	1702	1648	1781	1777	0	1781	0	1585	0	1870	0
Q Serve(g_s), s	0.0	26.6	27.5	2.1	16.8	0.0	18.9	0.0	2.3	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	26.6	27.5	2.1	16.8	0.0	18.9	0.0	2.3	0.0	0.0	0.0
Prop In Lane	0.00		0.75	1.00		0.00	1.00		1.00	0.00		0.00
Lane Grp Cap(c), veh/h	0	1488	720	81	1961	0	661	0	498	0	587	0
V/C Ratio(X)	0.00	0.92	0.93	0.65	0.63	0.00	0.75	0.00	0.15	0.00	0.00	0.00
Avail Cap(c_a), veh/h	0	1494	723	606	3014	0	836	0	653	0	771	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)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	18.7	19.0	33.3	10.9	0.0	23.1	0.0	17.5	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	9.2	19.1	8.5	0.3	0.0	3.0	0.0	0.1	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	0.0	11.2	13.1	1.1	5.7	0.0	7.9	0.0	0.8	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	27.9	38.0	41.7	11.2	0.0	26.1	0.0	17.6	0.0	0.0	0.0
LnGrp LOS	A	C	D	D	B	A	C	A	B	A	A	A
Approach Vol, veh/h		2035			1283			571			0	
Approach Delay, s/veh		31.3			12.5			25.0			0.0	
Approach LOS		C			B			C				

Timer - Assigned Phs		2	3	4		6		8				
Phs Duration (G+Y+Rc), s		26.9	8.1	35.9		26.9		44.0				
Change Period (Y+Rc), s		4.6	4.9	4.9		4.6		4.9				
Max Green Setting (Gmax), s		29.2	24.1	31.1		29.2		60.1				
Max Q Clear Time (g_c+I1), s		20.9	4.1	29.5		0.0		18.8				
Green Ext Time (p_c), s		1.4	0.1	1.5		0.0		12.4				

Intersection Summary			
HCM 6th Ctrl Delay			24.1
HCM 6th LOS			C

Lane Group	EBT	WBL	WBT	NBL	NBT
Lane Group Flow (vph)	1644	68	838	456	75
v/c Ratio	1.01	0.56	0.41	1.13	0.13
Control Delay	46.0	56.8	11.4	117.6	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	46.0	56.8	11.4	117.6	0.5
Queue Length 50th (ft)	334	29	80	~228	0
Queue Length 95th (ft)	#764	#105	234	#543	0
Internal Link Dist (ft)	965		1195		1198
Turn Bay Length (ft)					
Base Capacity (vph)	1634	122	2159	402	1166
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.01	0.56	0.39	1.13	0.06

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	975	356	55	679	0	369	0	61	0	0	0
Future Volume (veh/h)	0	975	356	55	679	0	369	0	61	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	1204	440	68	838	0	456	0	75	0	0	0
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	0	2	2	2	2	0	2	2	2	2	2	2
Cap, veh/h	0	1279	454	94	2211	0	426	0	379	0	3	0
Arrive On Green	0.00	0.50	0.50	0.05	0.62	0.00	0.24	0.00	0.24	0.00	0.00	0.00
Sat Flow, veh/h	0	2664	912	1781	3647	0	1781	0	1585	0	-86037	0
Grp Volume(v), veh/h	0	821	823	68	838	0	456	0	75	0	0	0
Grp Sat Flow(s),veh/h/ln	0	1777	1706	1781	1777	0	1781	0	1585	0	1870	0
Q Serve(g_s), s	0.0	29.6	32.1	2.6	8.0	0.0	16.4	0.0	2.6	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	29.6	32.1	2.6	8.0	0.0	16.4	0.0	2.6	0.0	0.0	0.0
Prop In Lane	0.00		0.53	1.00		0.00	1.00		1.00	0.00		0.00
Lane Grp Cap(c), veh/h	0	884	849	94	2211	0	426	0	379	0	3	0
V/C Ratio(X)	0.00	0.93	0.97	0.72	0.38	0.00	1.07	0.00	0.20	0.00	0.00	0.00
Avail Cap(c_a), veh/h	0	884	849	130	2282	0	426	0	1184	0	824	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)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	16.1	16.7	31.9	6.4	0.0	26.1	0.0	20.8	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	15.8	23.5	11.4	0.1	0.0	63.4	0.0	0.3	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	0.0	14.1	16.2	1.4	2.4	0.0	14.0	0.0	0.9	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	31.9	40.3	43.3	6.5	0.0	89.5	0.0	21.1	0.0	0.0	0.0
LnGrp LOS	A	C	D	D	A	A	F	A	C	A	A	A
Approach Vol, veh/h		1644			906			531			0	
Approach Delay, s/veh		36.1			9.3			79.8			0.0	
Approach LOS		D			A			E				
Timer - Assigned Phs		2	3	4	5	6		8				
Phs Duration (G+Y+Rc), s		21.0	8.5	39.0	21.0	0.0		47.5				
Change Period (Y+Rc), s		4.6	4.9	4.9	4.6	4.6		4.9				
Max Green Setting (Gmax), s		51.2	5.0	34.1	16.4	30.2		44.0				
Max Q Clear Time (g_c+I1), s		4.6	4.6	34.1	18.4	0.0		10.0				
Green Ext Time (p_c), s		0.5	0.0	0.0	0.0	0.0		7.0				
Intersection Summary												
HCM 6th Ctrl Delay			35.7									
HCM 6th LOS			D									

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	312	874	36	13	603	24	34	25	13	268
v/c Ratio	0.53	0.31	0.03	0.07	0.58	0.12	0.11	0.13	0.03	0.34
Control Delay	27.4	8.6	0.0	34.3	20.4	34.5	17.0	34.5	20.5	5.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.4	8.6	0.0	34.3	20.4	34.5	17.0	34.5	20.5	5.7
Queue Length 50th (ft)	42	0	0	2	50	4	3	5	2	13
Queue Length 95th (ft)	#346	260	0	25	202	38	27	39	18	70
Internal Link Dist (ft)		1195			2587		1879		775	
Turn Bay Length (ft)										
Base Capacity (vph)	589	2827	1261	195	2090	195	1107	195	1187	784
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.53	0.31	0.03	0.07	0.29	0.12	0.03	0.13	0.01	0.34

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	265	743	31	11	485	27	20	15	14	21	11	228
Future Volume (veh/h)	265	743	31	11	485	27	20	15	14	21	11	228
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	312	874	36	13	571	32	24	18	16	25	13	268
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	370	1574	700	29	861	48	49	164	146	51	337	614
Arrive On Green	0.21	0.44	0.44	0.02	0.25	0.25	0.03	0.18	0.18	0.03	0.18	0.18
Sat Flow, veh/h	1781	3554	1581	1781	3421	191	1781	913	811	1781	1870	1580
Grp Volume(v), veh/h	312	874	36	13	296	307	24	0	34	25	13	268
Grp Sat Flow(s),veh/h/ln	1781	1777	1581	1781	1777	1835	1781	0	1724	1781	1870	1580
Q Serve(g_s), s	9.6	10.4	0.7	0.4	8.6	8.6	0.8	0.0	0.9	0.8	0.3	7.1
Cycle Q Clear(g_c), s	9.6	10.4	0.7	0.4	8.6	8.6	0.8	0.0	0.9	0.8	0.3	7.1
Prop In Lane	1.00		1.00	1.00		0.10	1.00		0.47	1.00		1.00
Lane Grp Cap(c), veh/h	370	1574	700	29	447	462	49	0	310	51	337	614
V/C Ratio(X)	0.84	0.56	0.05	0.45	0.66	0.66	0.49	0.00	0.11	0.49	0.04	0.44
Avail Cap(c_a), veh/h	471	2308	1027	156	840	868	156	0	872	156	946	1128
HCM Platoon Ratio	1.00	1.00	1.00	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	1.00	1.00
Uniform Delay (d), s/veh	21.7	11.8	9.1	27.8	19.2	19.2	27.4	0.0	19.6	27.3	19.3	12.9
Incr Delay (d2), s/veh	10.7	0.3	0.0	10.4	1.7	1.6	7.2	0.0	0.2	7.1	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	3.5	0.2	0.3	3.4	3.5	0.4	0.0	0.4	0.4	0.1	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.5	12.1	9.1	38.2	20.9	20.9	34.6	0.0	19.8	34.4	19.4	13.4
LnGrp LOS	C	B	A	D	C	C	C	A	B	C	B	B
Approach Vol, veh/h		1222			616			58			306	
Approach Delay, s/veh		17.2			21.2			25.9			15.3	
Approach LOS		B			C			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.2	14.9	5.8	30.2	6.2	14.9	16.8	19.3
Change Period (Y+Rc), s	4.6	4.6	4.9	4.9	4.6	4.6	4.9	4.9
Max Green Setting (Gmax), s	5.0	28.9	5.0	37.1	5.0	28.9	15.1	27.0
Max Q Clear Time (g_c+I1), s	2.8	2.9	2.4	12.4	2.8	9.1	11.6	10.6
Green Ext Time (p_c), s	0.0	0.1	0.0	6.9	0.0	0.9	0.3	3.4

Intersection Summary			
HCM 6th Ctrl Delay			18.3
HCM 6th LOS			B

Intersection	
Intersection Delay, s/veh	20.8
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	175	438	51	5	292	37	37	13	6	22	9	105
Future Vol, veh/h	175	438	51	5	292	37	37	13	6	22	9	105
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	188	471	55	5	314	40	40	14	6	24	10	113
Number of Lanes	1	1	0	1	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	25.2	17.6	11.2	11.3
HCM LOS	D	C	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	100%	0%	100%	0%
Vol Thru, %	0%	68%	0%	90%	0%	89%	0%	8%
Vol Right, %	0%	32%	0%	10%	0%	11%	0%	92%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	37	19	175	489	5	329	22	114
LT Vol	37	0	175	0	5	0	22	0
Through Vol	0	13	0	438	0	292	0	9
RT Vol	0	6	0	51	0	37	0	105
Lane Flow Rate	40	20	188	526	5	354	24	123
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.089	0.042	0.327	0.828	0.01	0.6	0.052	0.227
Departure Headway (Hd)	8.068	7.328	6.247	5.668	6.692	6.105	7.842	6.671
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	442	486	576	636	533	591	455	536
Service Time	5.847	5.106	3.993	3.413	4.449	3.862	5.612	4.439
HCM Lane V/C Ratio	0.09	0.041	0.326	0.827	0.009	0.599	0.053	0.229
HCM Control Delay	11.6	10.4	12	29.9	9.5	17.7	11	11.4
HCM Lane LOS	B	B	B	D	A	C	B	B
HCM 95th-tile Q	0.3	0.1	1.4	8.8	0	4	0.2	0.9

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	242	94	129	15	109	65	80	13	7	39	8	145
Future Vol, veh/h	242	94	129	15	109	65	80	13	7	39	8	145
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	272	106	145	17	122	73	90	15	8	44	9	163
Number of Lanes	1	1	1	1	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	3	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	3	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	3
HCM Control Delay	13.7	13.3	12.2	12
HCM LOS	B	B	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	0%	100%	0%	100%	0%
Vol Thru, %	0%	65%	0%	100%	0%	0%	63%	0%	5%
Vol Right, %	0%	35%	0%	0%	100%	0%	37%	0%	95%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	80	20	242	94	129	15	174	39	153
LT Vol	80	0	242	0	0	15	0	39	0
Through Vol	0	13	0	94	0	0	109	0	8
RT Vol	0	7	0	0	129	0	65	0	145
Lane Flow Rate	90	22	272	106	145	17	196	44	172
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.199	0.045	0.518	0.186	0.227	0.036	0.37	0.093	0.308
Departure Headway (Hd)	7.982	7.225	6.857	6.351	5.643	7.591	6.816	7.739	6.56
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	452	498	522	560	631	474	532	466	552
Service Time	5.693	4.936	4.65	4.144	3.434	5.291	4.516	5.439	4.26
HCM Lane V/C Ratio	0.199	0.044	0.521	0.189	0.23	0.036	0.368	0.094	0.312
HCM Control Delay	12.7	10.3	16.9	10.6	10.1	10.6	13.5	11.2	12.2
HCM Lane LOS	B	B	C	B	B	B	B	B	B
HCM 95th-tile Q	0.7	0.1	2.9	0.7	0.9	0.1	1.7	0.3	1.3

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	10	58	75	6	62	1	114	6	2	1	24	12
Future Vol, veh/h	10	58	75	6	62	1	114	6	2	1	24	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	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	77	77	77	77	77	77	77	77	77	77	77	77
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	75	97	8	81	1	148	8	3	1	31	16

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	82	0	0	172	0	0	271	248	124	253	296	82
Stage 1	-	-	-	-	-	-	150	150	-	98	98	-
Stage 2	-	-	-	-	-	-	121	98	-	155	198	-
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	1515	-	-	1405	-	-	682	655	927	700	616	978
Stage 1	-	-	-	-	-	-	853	773	-	908	814	-
Stage 2	-	-	-	-	-	-	883	814	-	847	737	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1515	-	-	1405	-	-	637	645	927	683	606	978
Mov Cap-2 Maneuver	-	-	-	-	-	-	637	645	-	683	606	-
Stage 1	-	-	-	-	-	-	844	765	-	899	809	-
Stage 2	-	-	-	-	-	-	830	809	-	828	730	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.7	12.5	10.6
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	641	1515	-	-	1405	-	-	694
HCM Lane V/C Ratio	0.247	0.009	-	-	0.006	-	-	0.069
HCM Control Delay (s)	12.5	7.4	0	-	7.6	0	-	10.6
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	1	0	-	-	0	-	-	0.2

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	90	0	0	81	25	0	0	0	48	0	0
Future Vol, veh/h	0	90	0	0	81	25	0	0	0	48	0	0
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	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	92	92	85	85	92	92	92	85	92	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	106	0	0	95	29	0	0	0	56	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	124	0	0	106	0	0	216	230	106	216	216	110
Stage 1	-	-	-	-	-	-	106	106	-	110	110	-
Stage 2	-	-	-	-	-	-	110	124	-	106	106	-
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	1463	-	-	1485	-	-	740	670	948	740	682	943
Stage 1	-	-	-	-	-	-	900	807	-	895	804	-
Stage 2	-	-	-	-	-	-	895	793	-	900	807	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1463	-	-	1485	-	-	740	670	948	740	682	943
Mov Cap-2 Maneuver	-	-	-	-	-	-	740	670	-	740	682	-
Stage 1	-	-	-	-	-	-	900	807	-	895	804	-
Stage 2	-	-	-	-	-	-	895	793	-	900	807	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	0	10.3
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1463	-	-	1485	-	-	740
HCM Lane V/C Ratio	-	-	-	-	-	-	-	0.076
HCM Control Delay (s)	0	0	-	-	0	-	-	10.3
HCM Lane LOS	A	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	0.2

Intersection	
Intersection Delay, s/veh	10.6
Intersection LOS	B

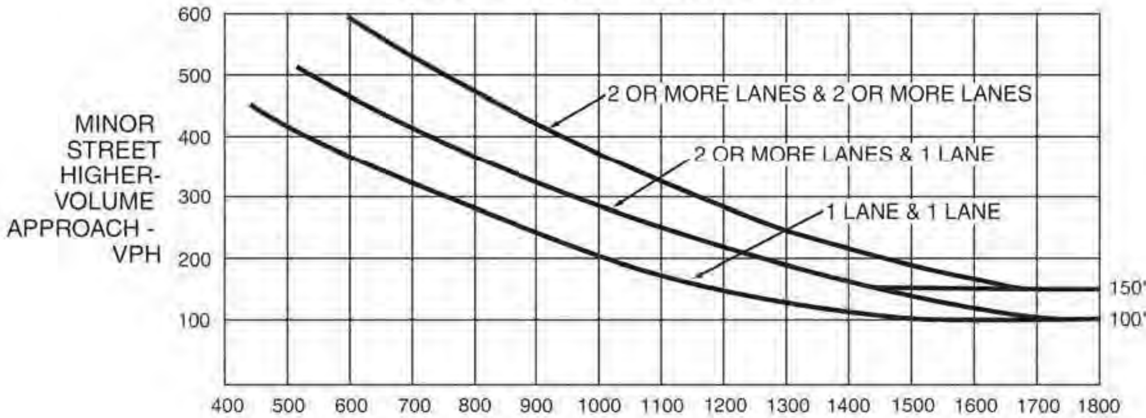
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	28	103	93	41	0	62	118	115	0	70	3
Future Vol, veh/h	6	28	103	93	41	0	62	118	115	0	70	3
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	33	121	109	48	0	73	139	135	0	82	4
Number of Lanes	1	1	0	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	2
HCM Control Delay	9.8	11.3	11	9.6
HCM LOS	A	B	B	A

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	69%	0%	0%
Vol Thru, %	0%	51%	0%	21%	31%	100%	96%
Vol Right, %	0%	49%	0%	79%	0%	0%	4%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	62	233	6	131	134	0	73
LT Vol	62	0	6	0	93	0	0
Through Vol	0	118	0	28	41	0	70
RT Vol	0	115	0	103	0	0	3
Lane Flow Rate	73	274	7	154	158	0	86
Geometry Grp	7	7	7	7	6	7	7
Degree of Util (X)	0.124	0.401	0.013	0.231	0.267	0	0.141
Departure Headway (Hd)	6.117	5.264	6.466	5.403	6.093	5.934	5.905
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	589	688	554	666	591	0	608
Service Time	3.817	2.964	4.194	3.131	4.121	3.664	3.634
HCM Lane V/C Ratio	0.124	0.398	0.013	0.231	0.267	0	0.141
HCM Control Delay	9.7	11.4	9.3	9.8	11.3	8.7	9.6
HCM Lane LOS	A	B	A	A	B	N	A
HCM 95th-tile Q	0.4	1.9	0	0.9	1.1	0	0.5

KDA

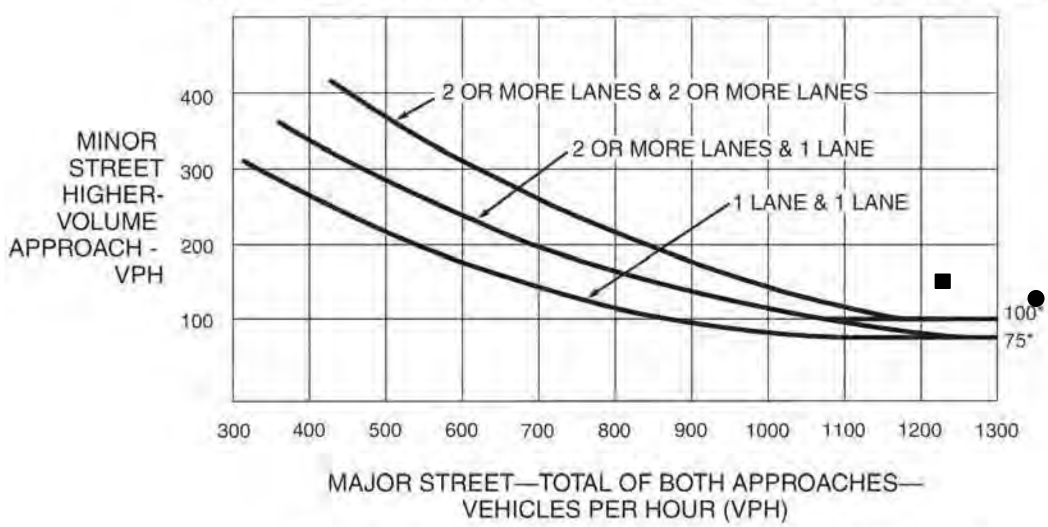
Figure 4C-3. Warrant 3, Peak Hour



*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.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)

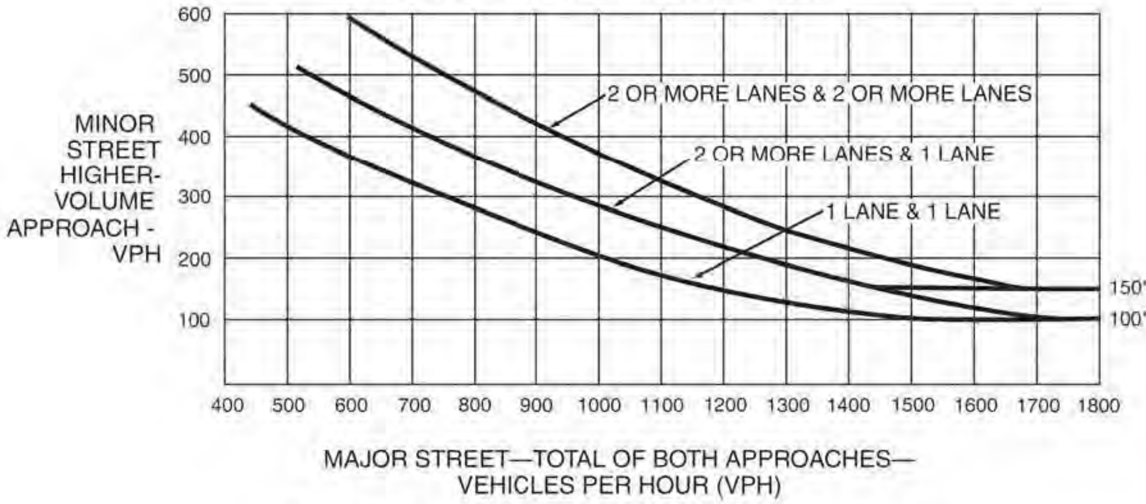


*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

SB 99 RAMPS – E ROBERTSON BLVD : EXISTING

AM (●) : MAJOR 1350 MINOR 114
PM (■) : MAJOR 1231 MINOR 158

Figure 4C-3. Warrant 3, Peak Hour



*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.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

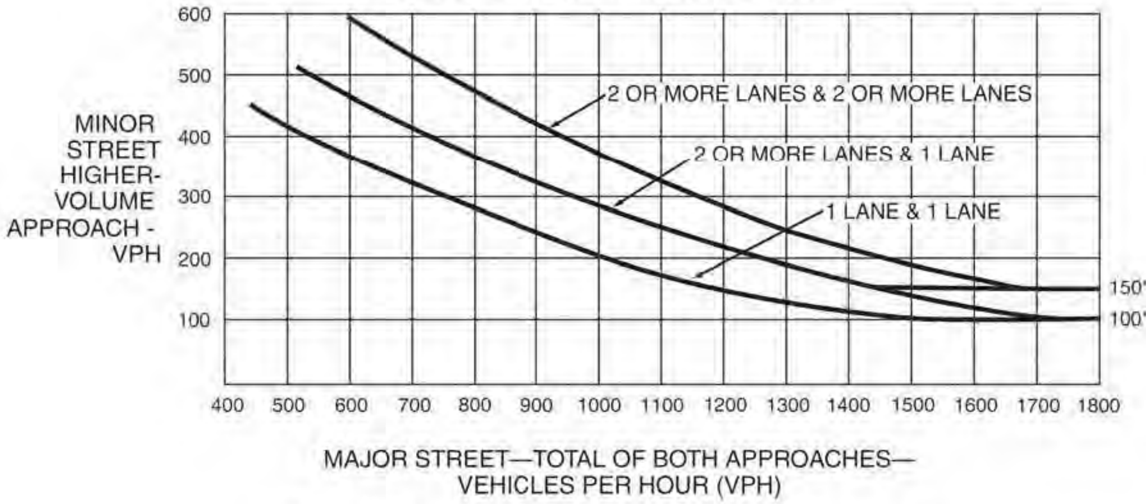
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)

*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

NB 99 RAMPS – E ROBERTSON BLVD : EXISTING

AM (●) : MAJOR 1031 MINOR 202
PM (■) : MAJOR 918 MINOR 258

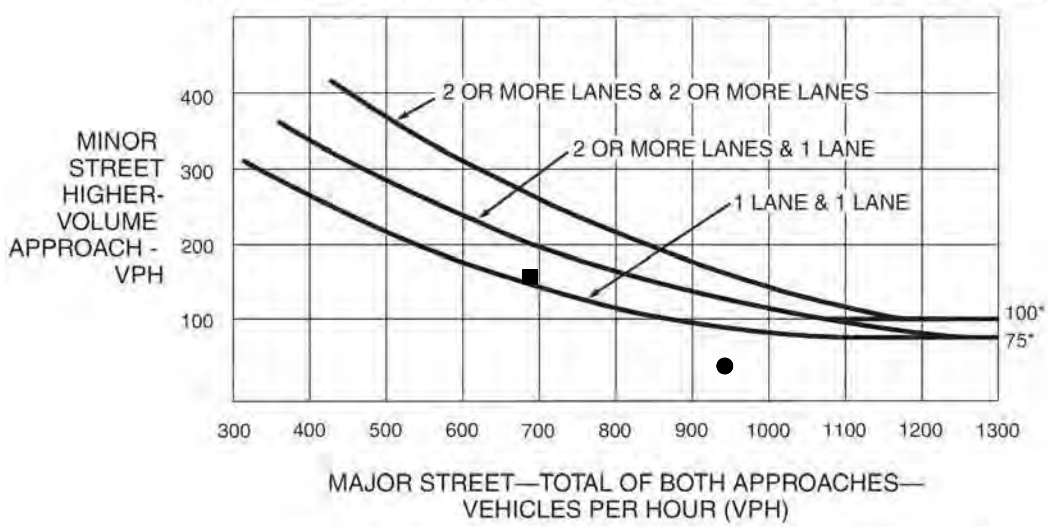
Figure 4C-3. Warrant 3, Peak Hour



*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.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)

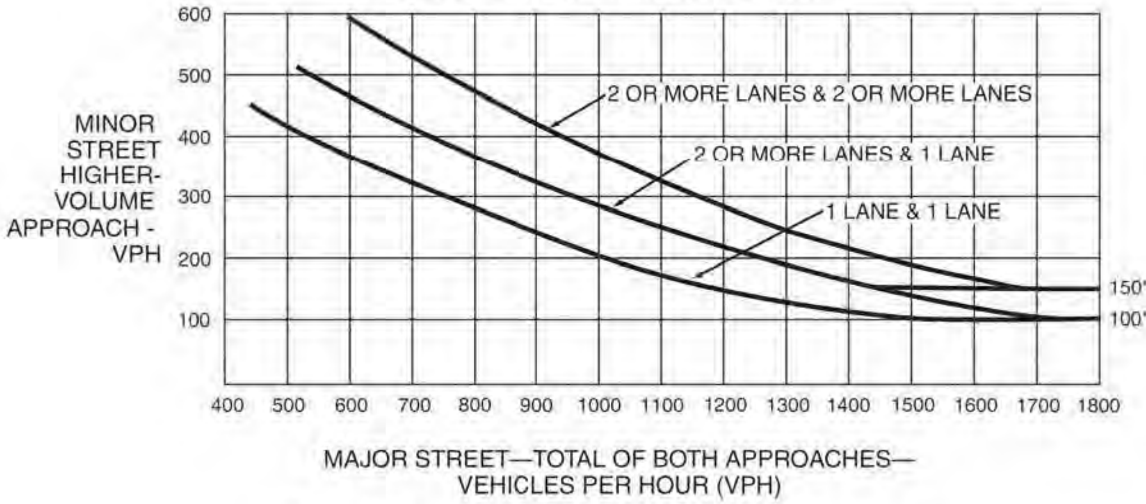


*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

MONTGOMERY LAKE WAY – E ROBERTSON BLVD : EXISTING

AM (●) : MAJOR 931 MINOR 44
PM (■) : MAJOR 697 MINOR 160

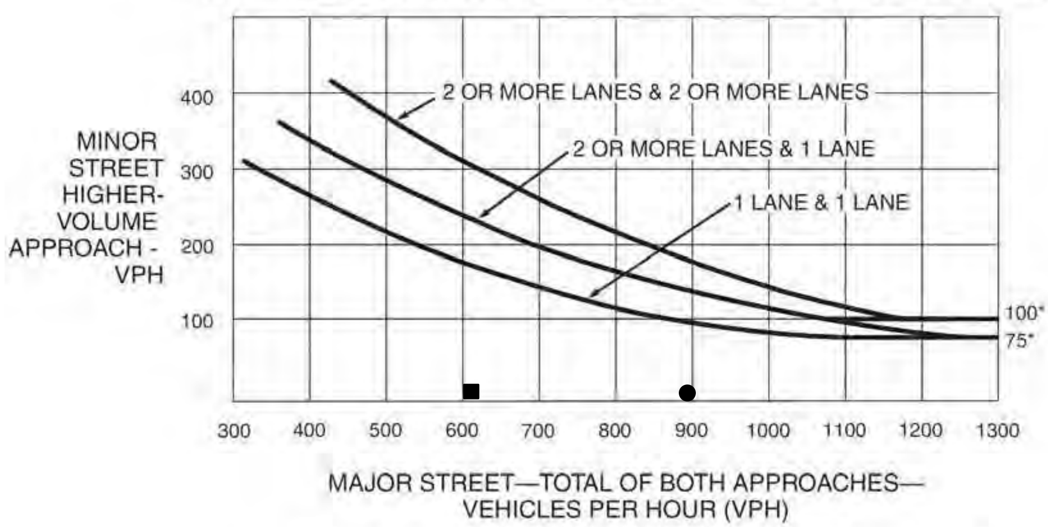
Figure 4C-3. Warrant 3, Peak Hour



*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.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)

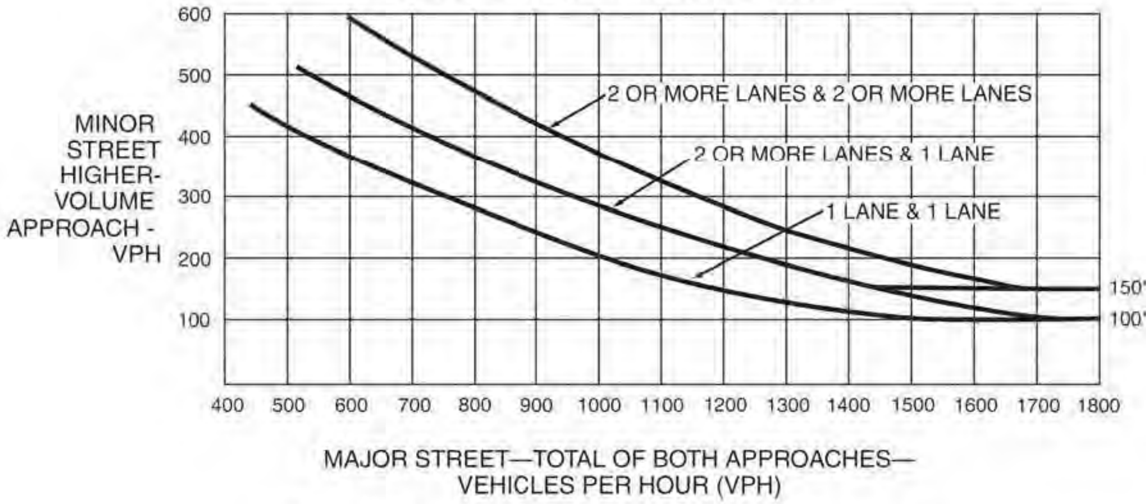


*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

GENOA LAKE WAY – E ROBERTSON BLVD : EXISTING

AM (●) : MAJOR 899 MINOR 3
PM (■) : MAJOR 603 MINOR 5

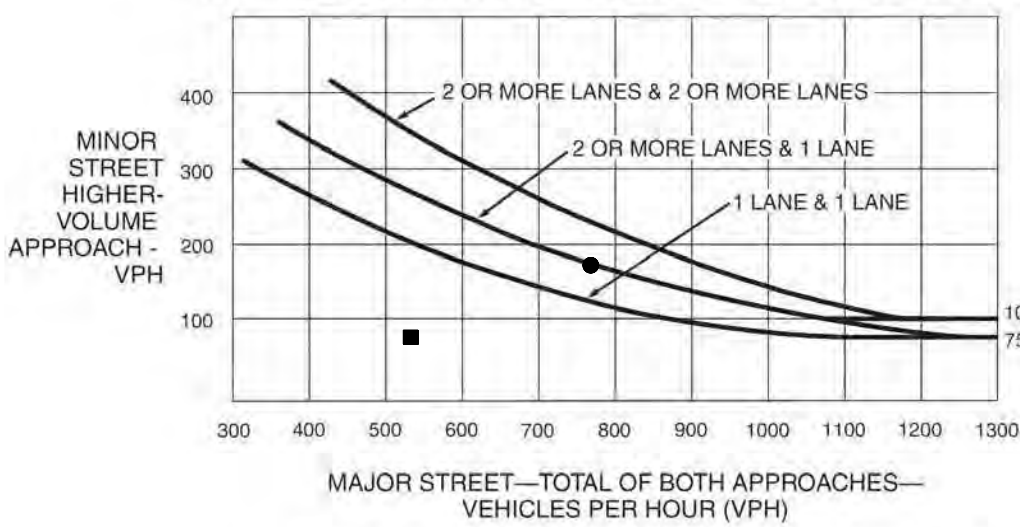
Figure 4C-3. Warrant 3, Peak Hour



*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.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)

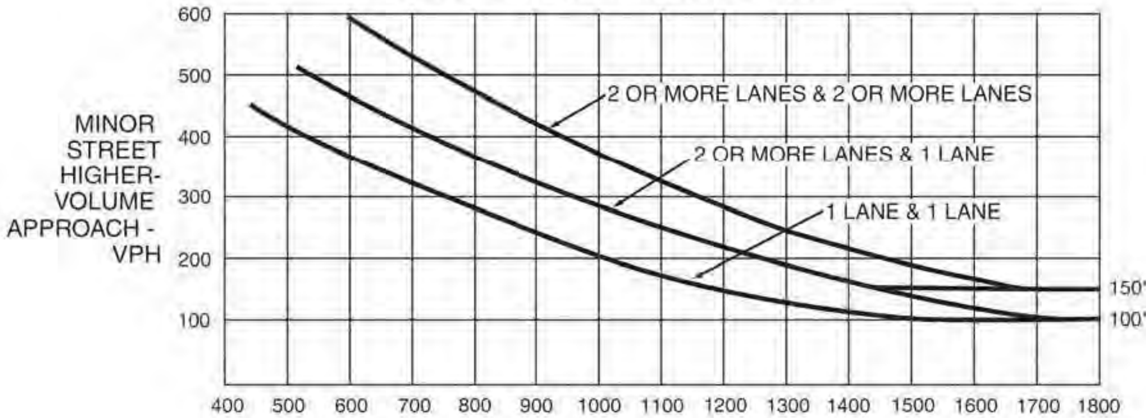


*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

E FIG TREE ROAD– E ROBERTSON BLVD : EXISTING

AM (●) : MAJOR 766 MINOR 186
PM (■) : MAJOR 538 MINOR 85

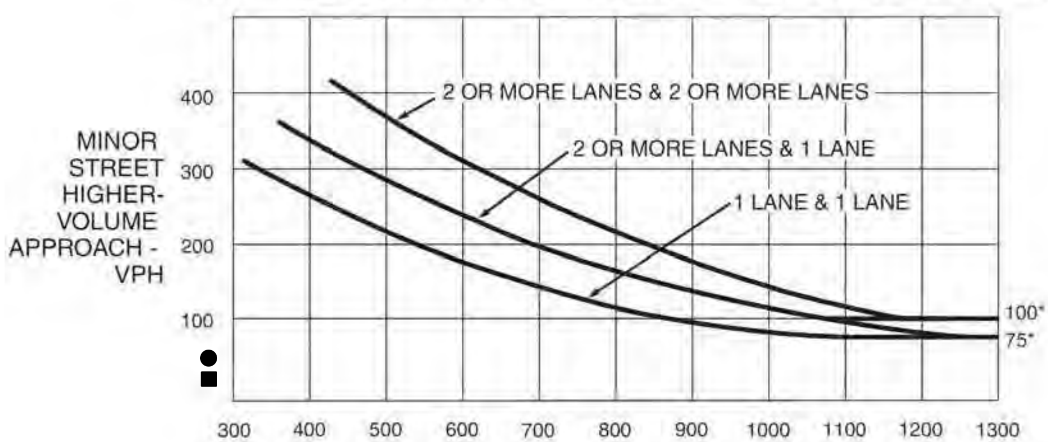
Figure 4C-3. Warrant 3, Peak Hour



*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.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)

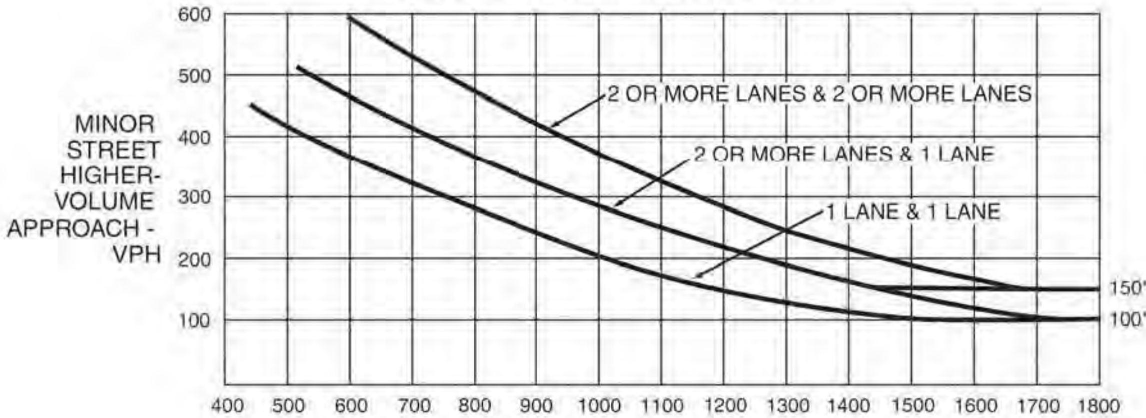


*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

LAKE MCCLURE DRIVE– E ROBERTSON BLVD : EXISTING

AM (●) : MAJOR 288 MINOR 53
PM (■) : MAJOR 284 MINOR 24

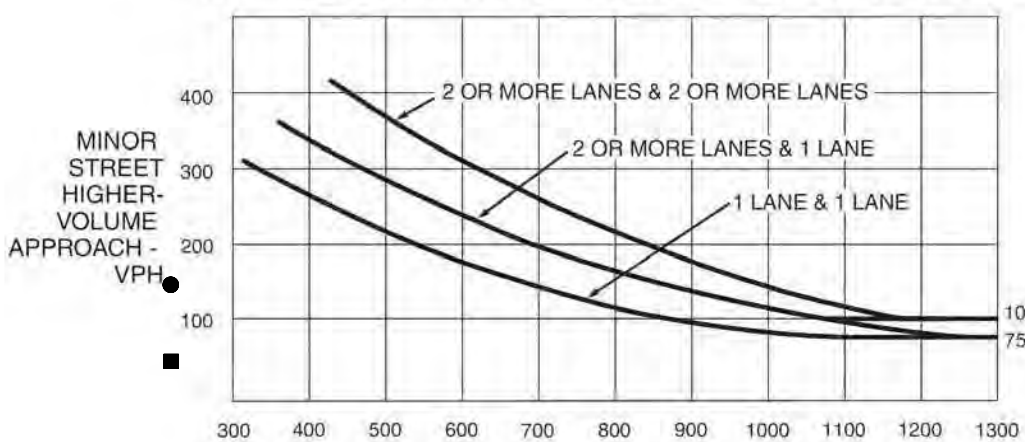
Figure 4C-3. Warrant 3, Peak Hour



*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.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)

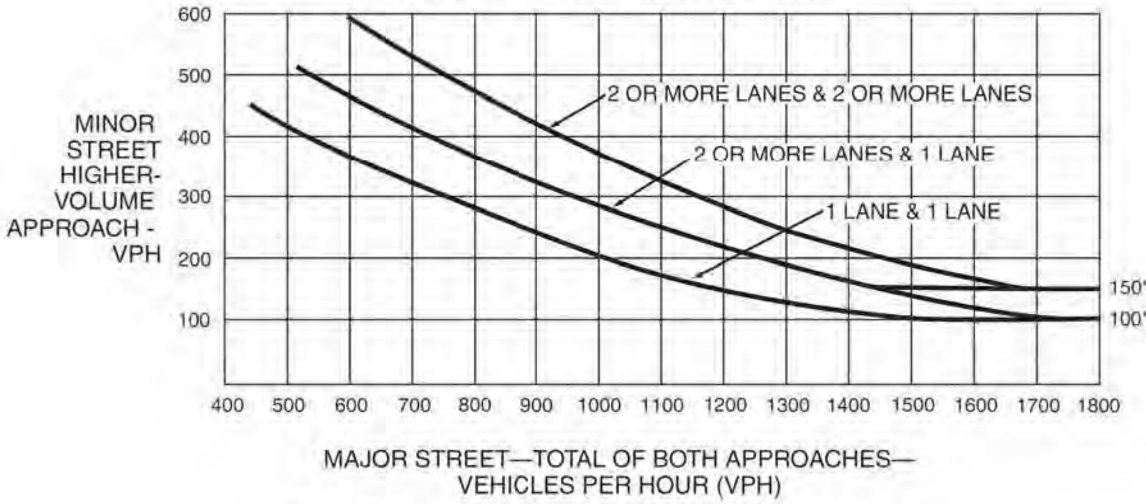


*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

MILLERTON WAY– E ROBERTSON BLVD : EXISTING

AM (●) : MAJOR 146 MINOR 142
PM (■) : MAJOR 209 MINOR 59

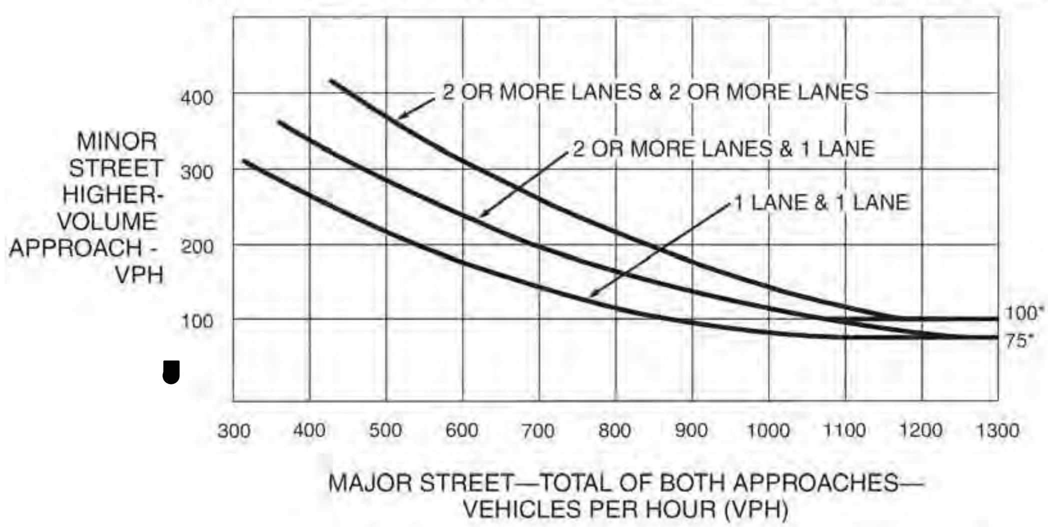
Figure 4C-3. Warrant 3, Peak Hour



*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.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)

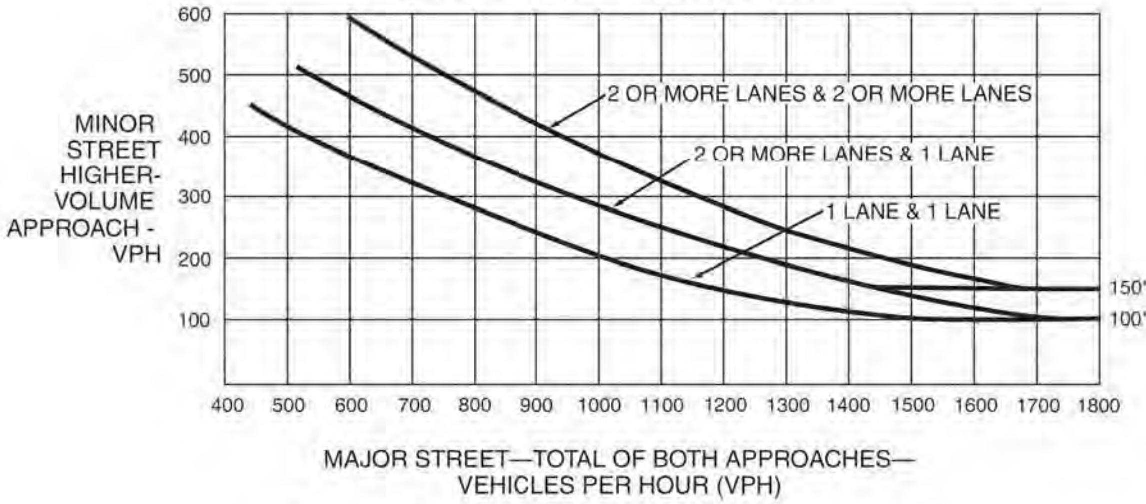


*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

COUNTY ROAD 19– AVENUE 26 : EXISTING

AM (●) : MAJOR 92 MINOR 34
PM (■) : MAJOR 92 MINOR 37

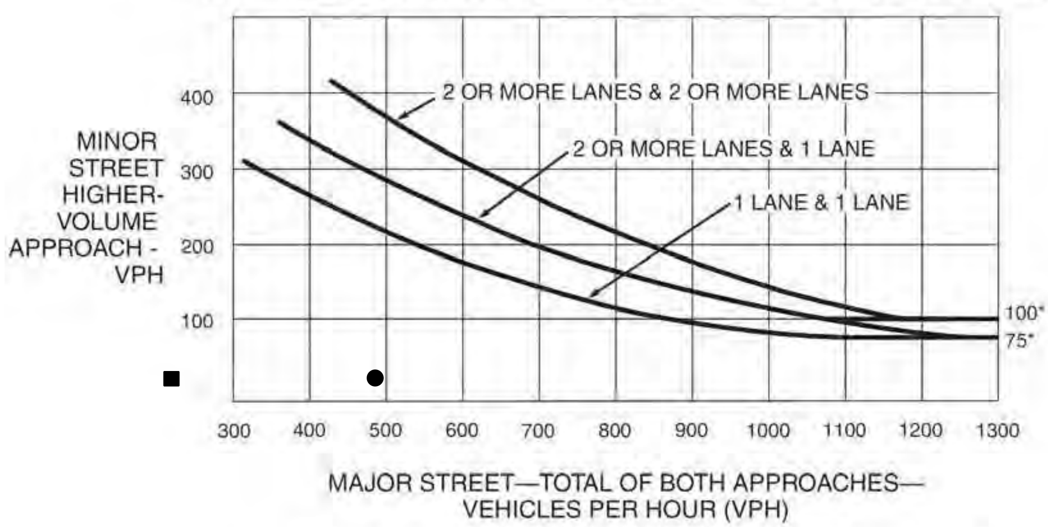
Figure 4C-3. Warrant 3, Peak Hour



*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.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)

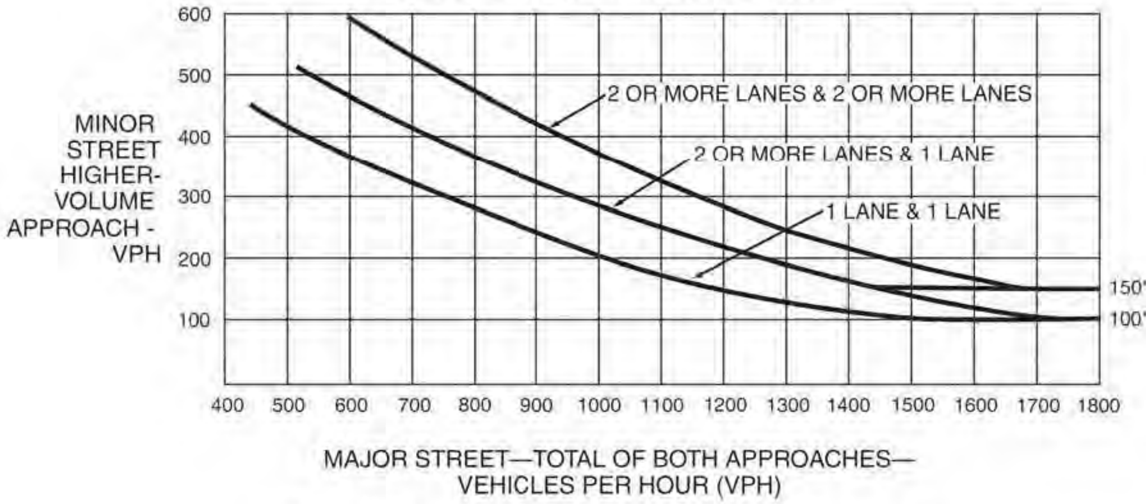


*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

FALLEN LEAF WAY– SOUTH LAKE TAHOE DRIVE : EXISTING

AM (●) : MAJOR 492	MINOR 25
PM (■) : MAJOR 118	MINOR 21

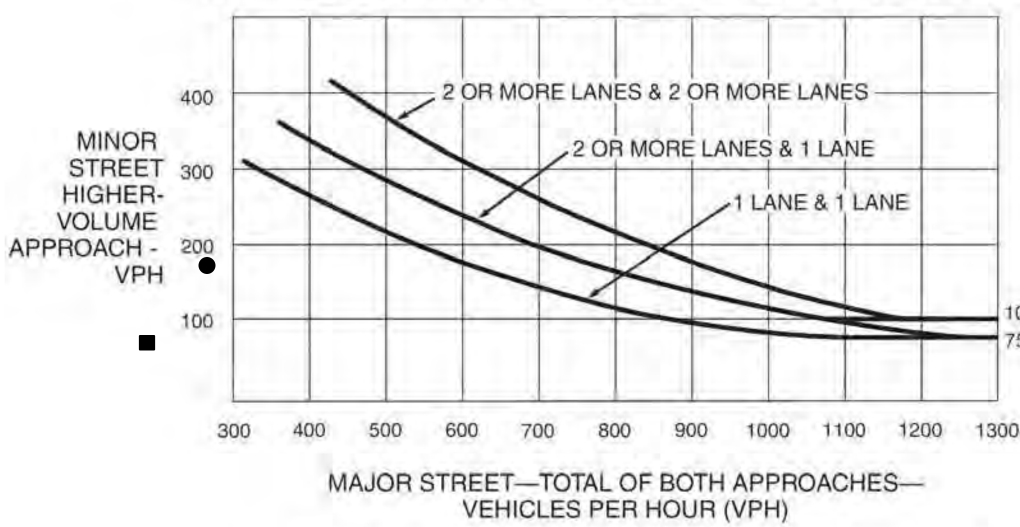
Figure 4C-3. Warrant 3, Peak Hour



*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.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)

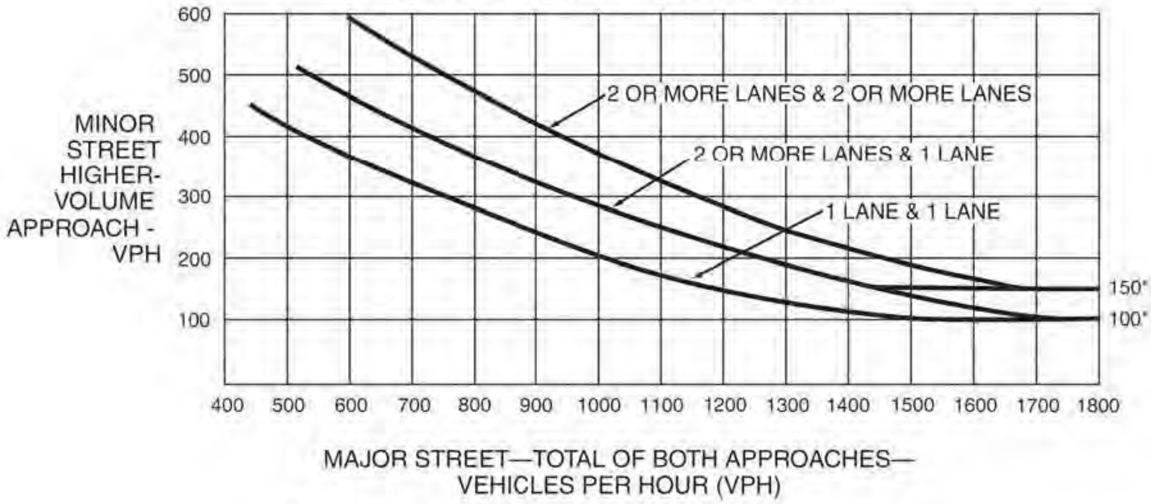


*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

NORTH FIG TREE BLVD– SOUTH LAKE TAHOE DRIVE : EXISTING

AM (●) : MAJOR 250 MINOR 186
PM (■) : MAJOR 54 MINOR 85

Figure 4C-3. Warrant 3, Peak Hour



*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.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

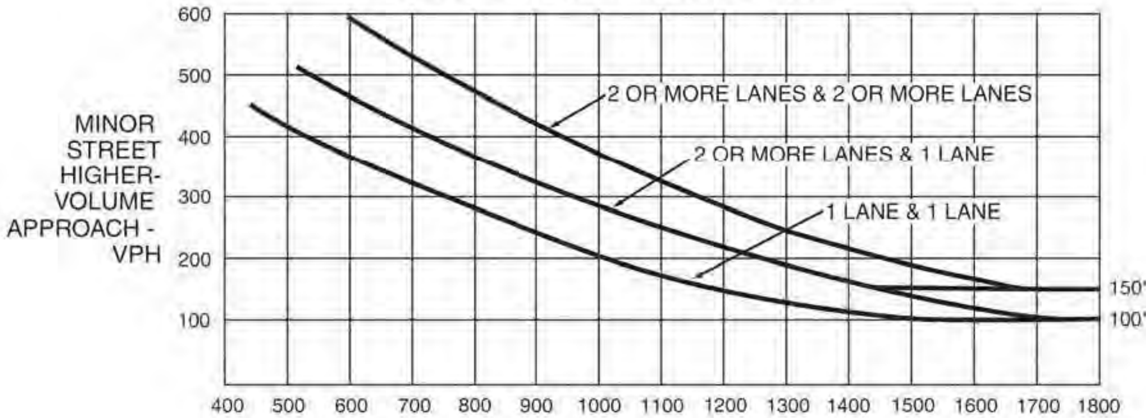
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)

*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

MONTGOMERY LAKE WAY – E ROBERTSON BLVD : EXISTING PLUS PROJECT (BUILDOUT)

AM (●) : MAJOR 2106 MINOR 60
PM (■) : MAJOR 2130 MINOR 198

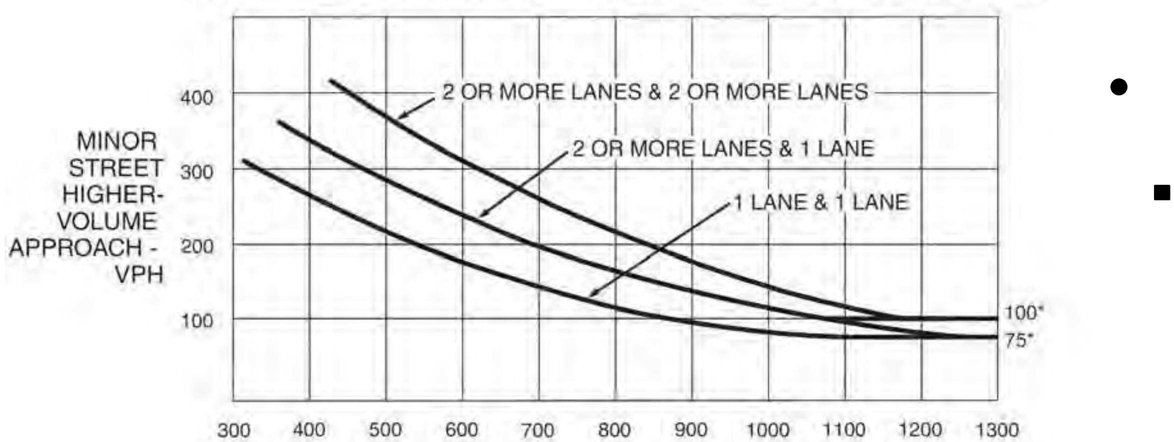
Figure 4C-3. Warrant 3, Peak Hour



*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.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)

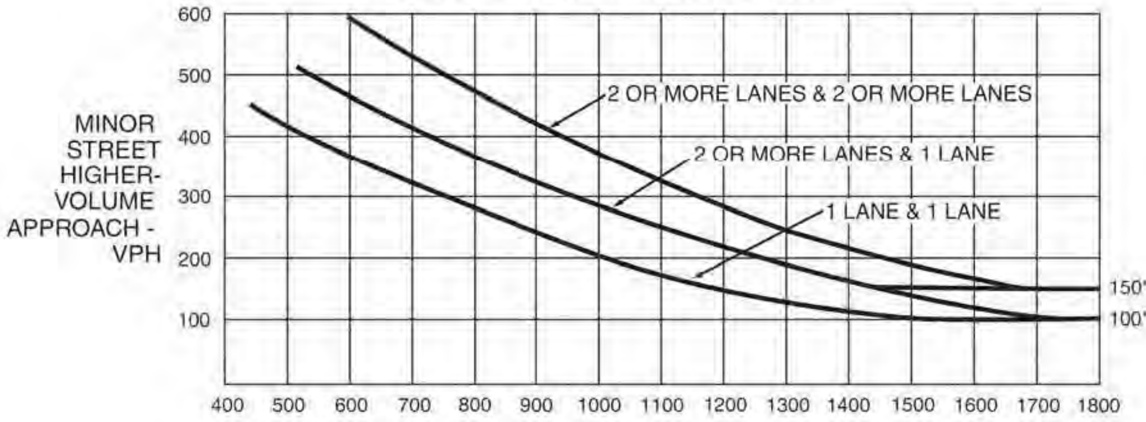


*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

GENOA LAKE WAY – E ROBERTSON BLVD : EXISTING PLUS PROJECT (BUILDOUT)

AM (●) : MAJOR 1768 MINOR 406
PM (■) : MAJOR 1865 MINOR 271

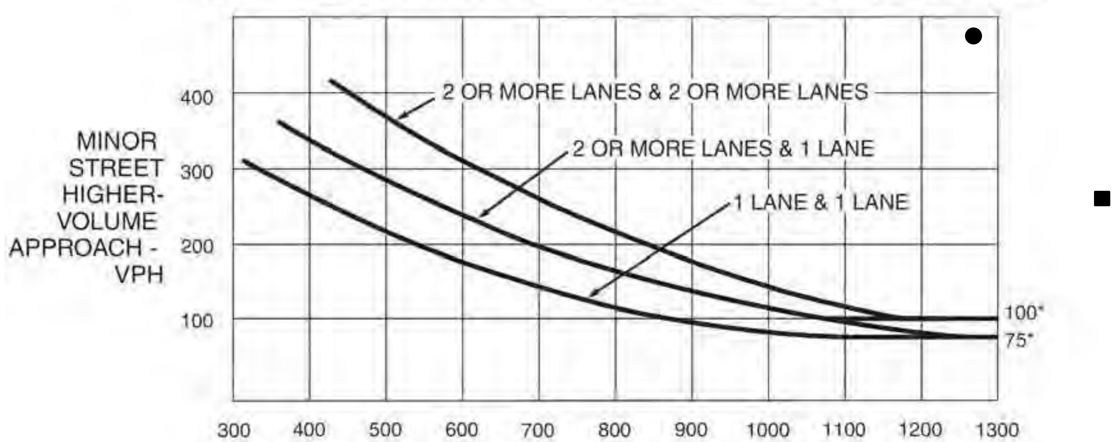
Figure 4C-3. Warrant 3, Peak Hour



*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.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)

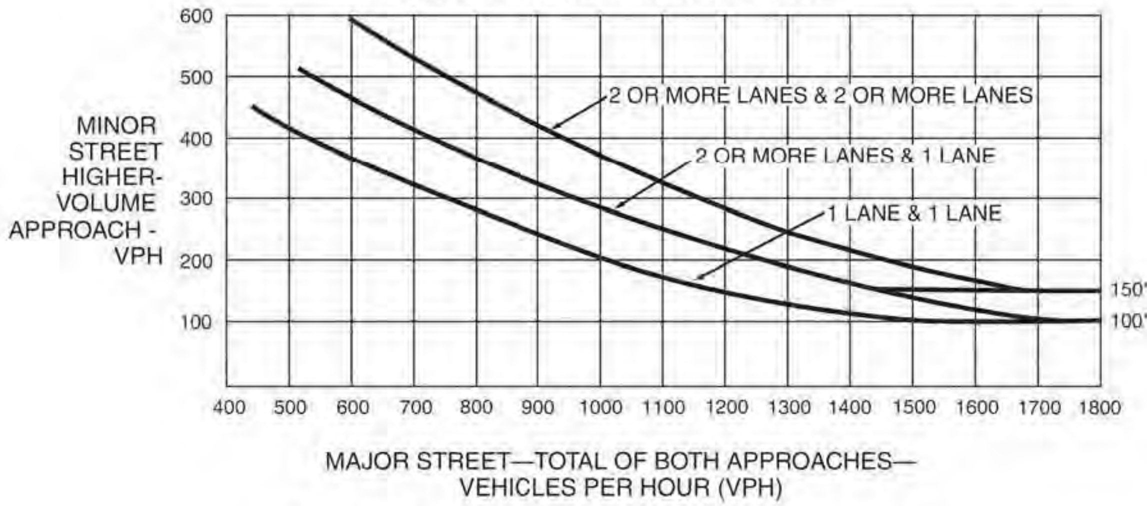


*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

E FIG TREE ROAD– E ROBERTSON BLVD : EXISTING PLUS PROJECT (BUILDOUT)

AM (●) : MAJOR 1288 MINOR 488
PM (■) : MAJOR 1444 MINOR 241

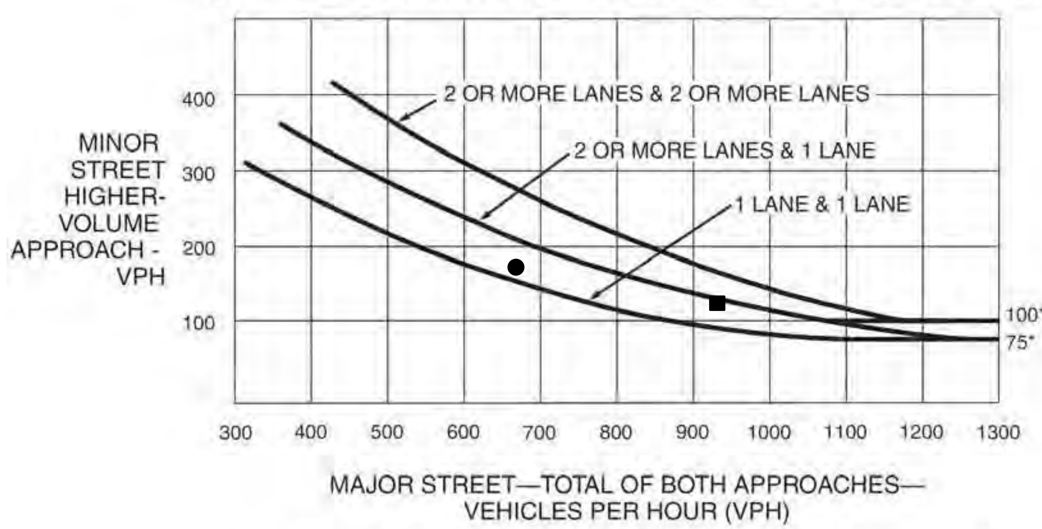
Figure 4C-3. Warrant 3, Peak Hour



*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.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)

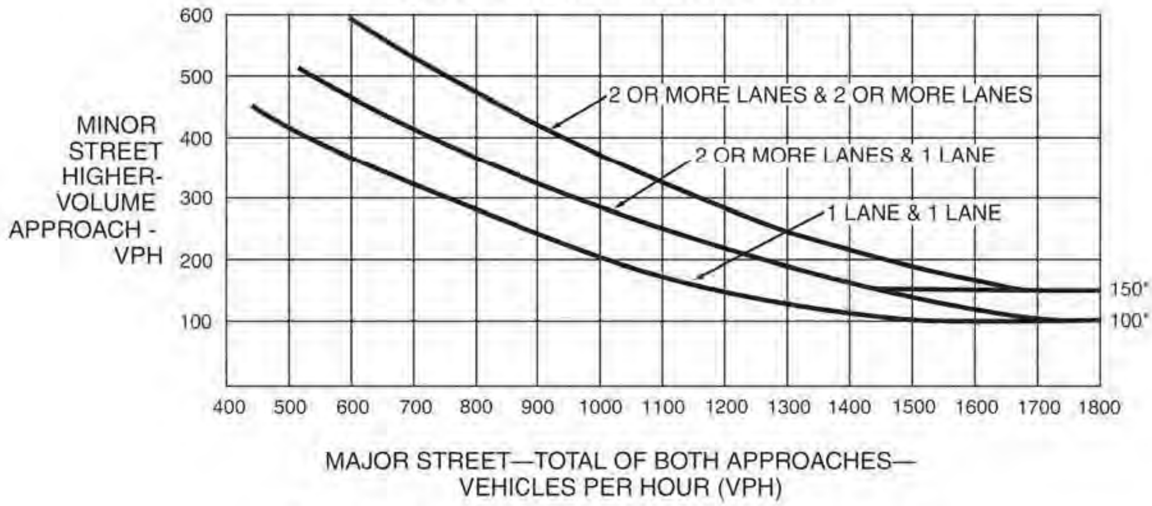


*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

LAKE MCCLURE DRIVE– E ROBERTSON BLVD : EXISTING PLUS PROJECT (BUILDOUT)

AM (●) : MAJOR 678 MINOR 172
PM (■) : MAJOR 923 MINOR 126

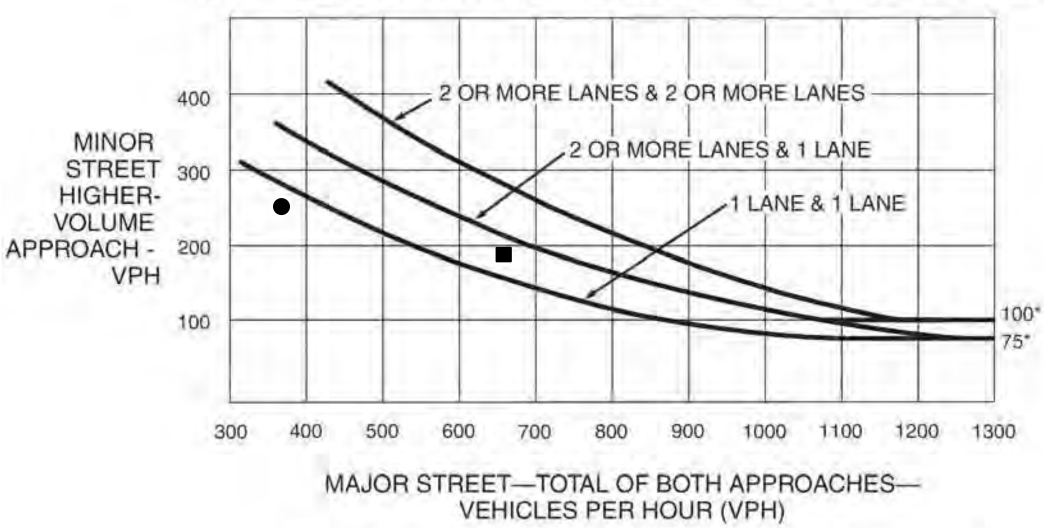
Figure 4C-3. Warrant 3, Peak Hour



*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.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)

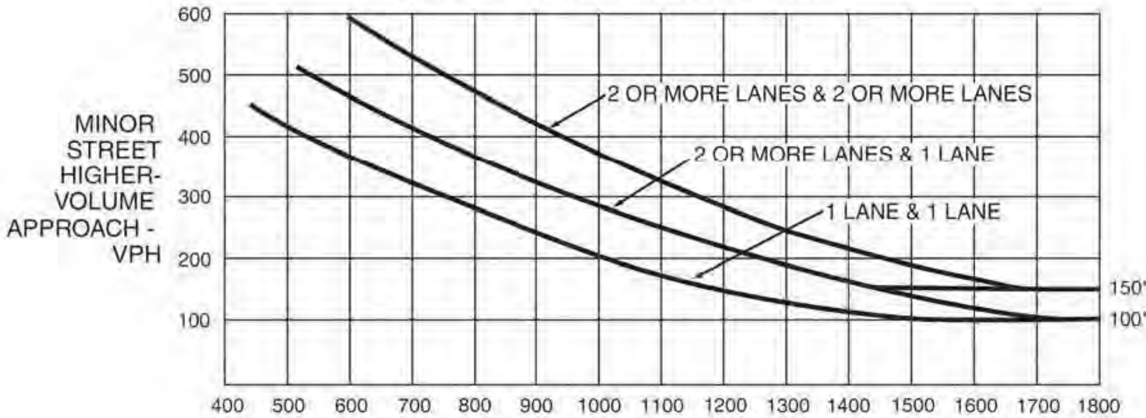


*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

MILLERTON WAY– E ROBERTSON BLVD : EXISTING PLUS PROJECT (BUILDOUT)

AM (●) : MAJOR 375 MINOR 251
PM (■) : MAJOR 660 MINOR 190

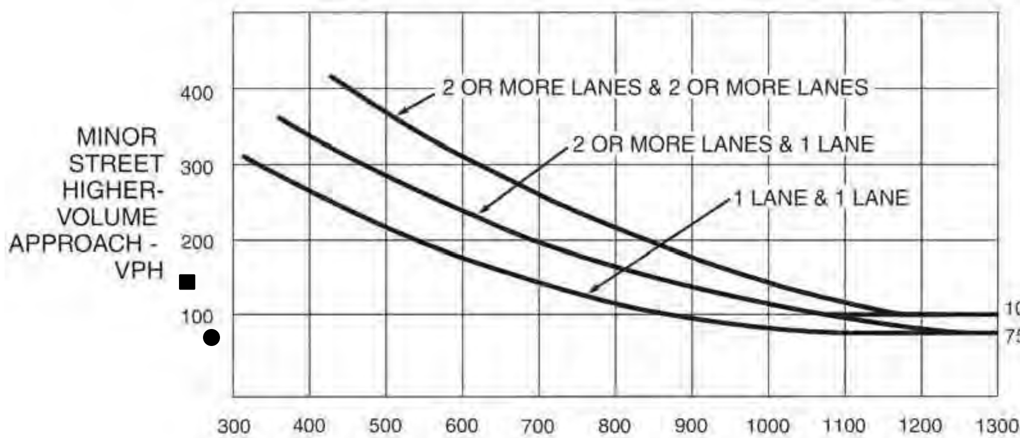
Figure 4C-3. Warrant 3, Peak Hour



*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.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)

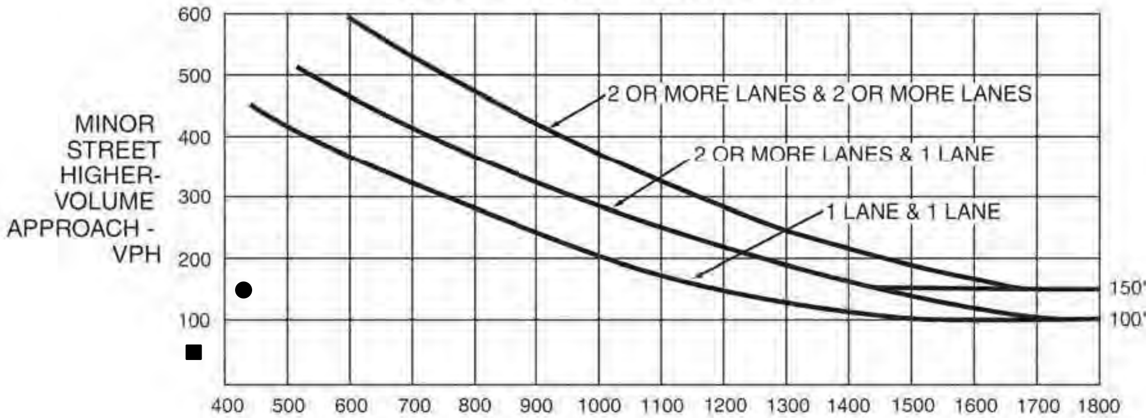


*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

COUNTY ROAD 19– AVENUE 26 : EXISTING PLUS PROJECT (BUILDOUT)

AM (●) : MAJOR 281 MINOR 71
PM (■) : MAJOR 247 MINOR 150

Figure 4C-3. Warrant 3, Peak Hour

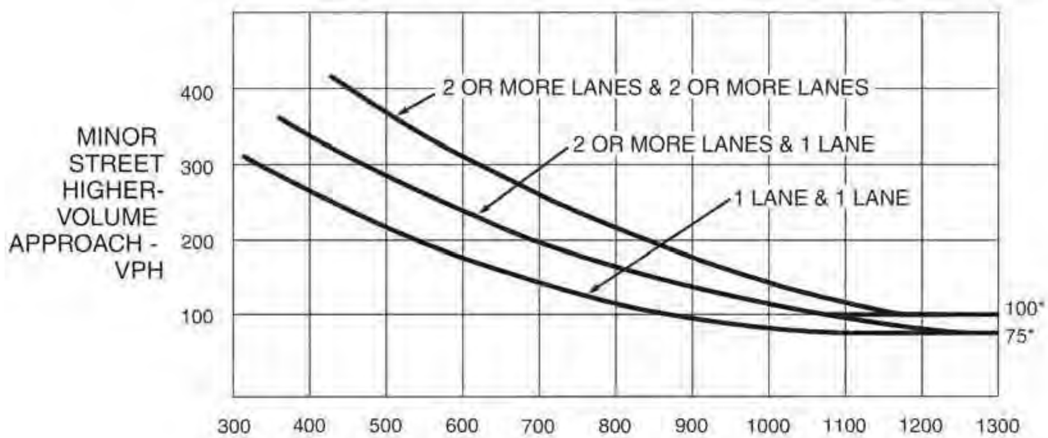


MAJOR STREET—TOTAL OF BOTH APPROACHES—
VEHICLES PER HOUR (VPH)

*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.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



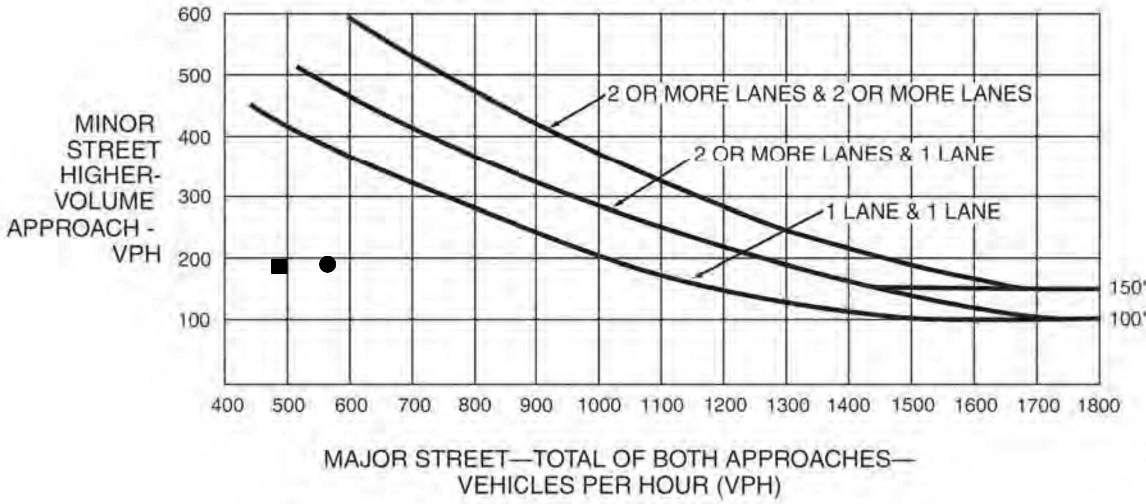
MAJOR STREET—TOTAL OF BOTH APPROACHES—
VEHICLES PER HOUR (VPH)

*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

FALLEN LEAF WAY– SOUTH LAKE TAHOE DRIVE : EXISTING PLUS PROJECT (BUILDOUT)

AM (●) : MAJOR 434 MINOR 152
PM (■) : MAJOR 300 MINOR 68

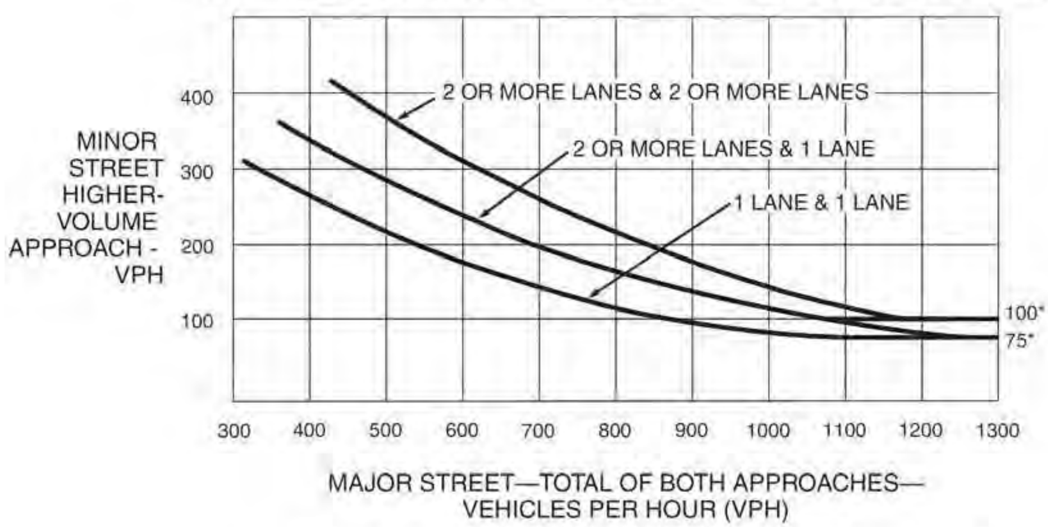
Figure 4C-3. Warrant 3, Peak Hour



*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.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)

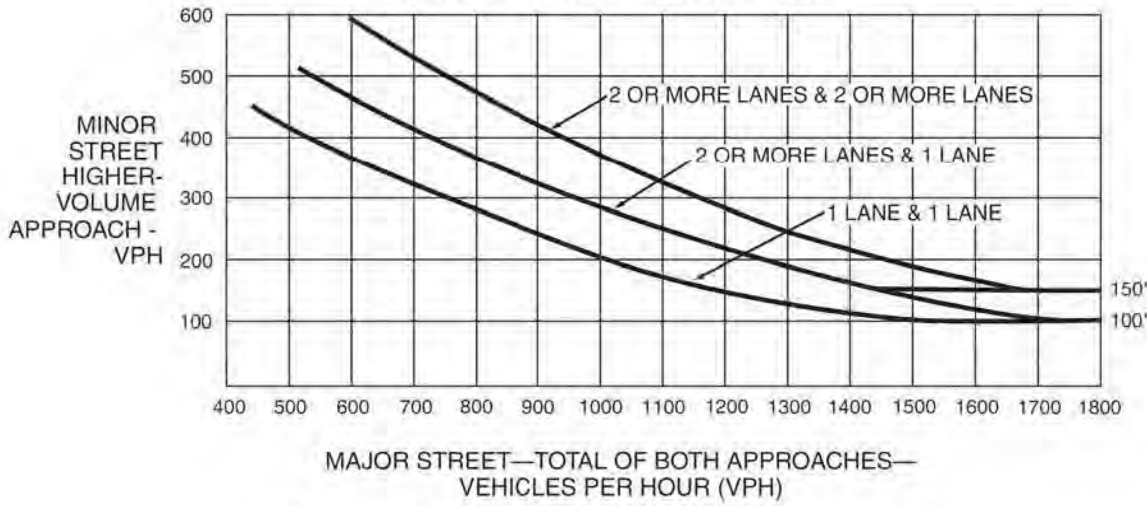


*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

NORTH FIG TREE BLVD– SOUTH LAKE TAHOE DRIVE : EXISTING PLUS PROJECT (BUILDOUT)

AM (●) : MAJOR 560 MINOR 195
PM (■) : MAJOR 394 MINOR 191

Figure 4C-3. Warrant 3, Peak Hour



*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.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

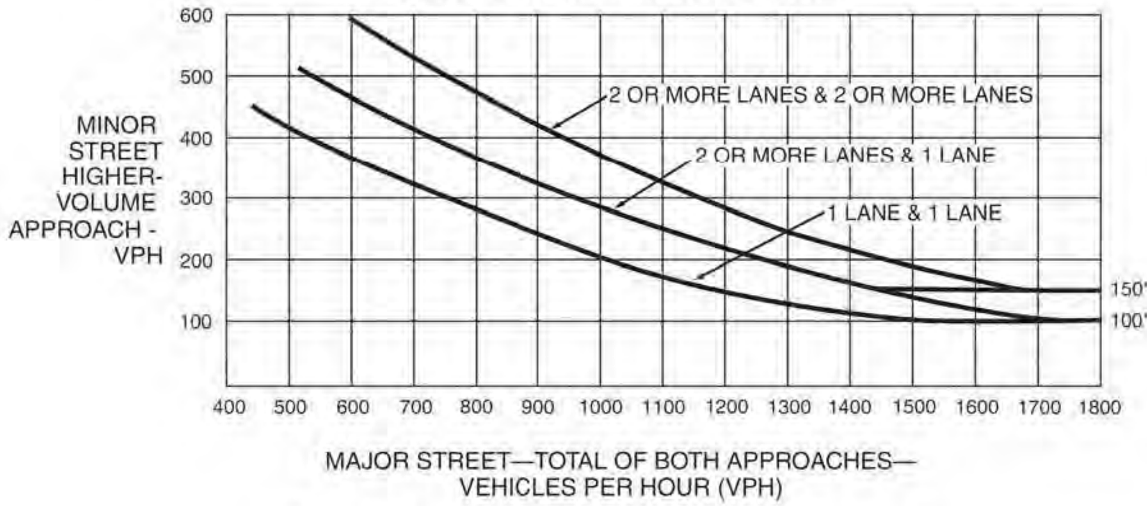
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)

*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

LAKE MCCLURE DRIVE– E ROBERTSON BLVD : EXISTING PLUS APPROVED PROJECT

AM (●) : MAJOR 325 MINOR 53
PM (■) : MAJOR 330 MINOR 24

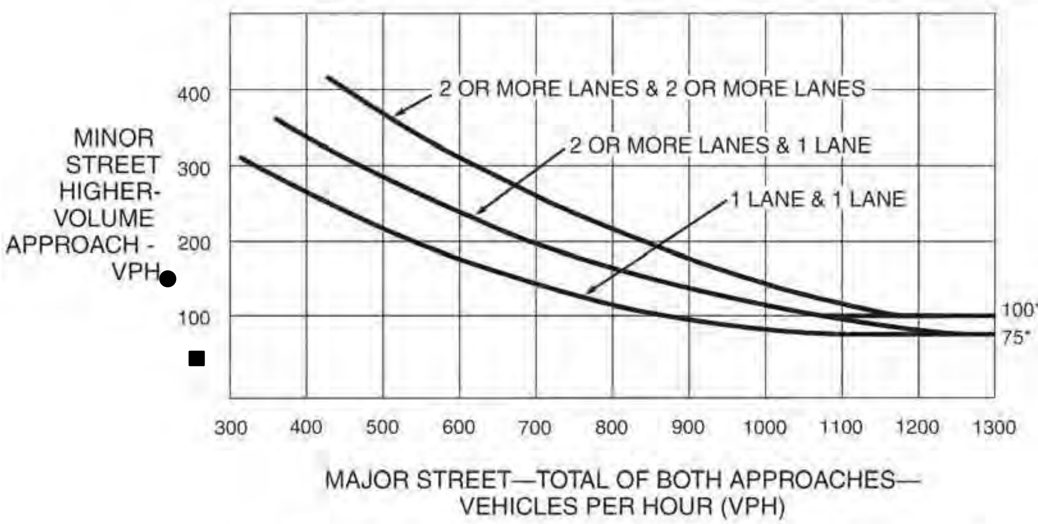
Figure 4C-3. Warrant 3, Peak Hour



*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.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

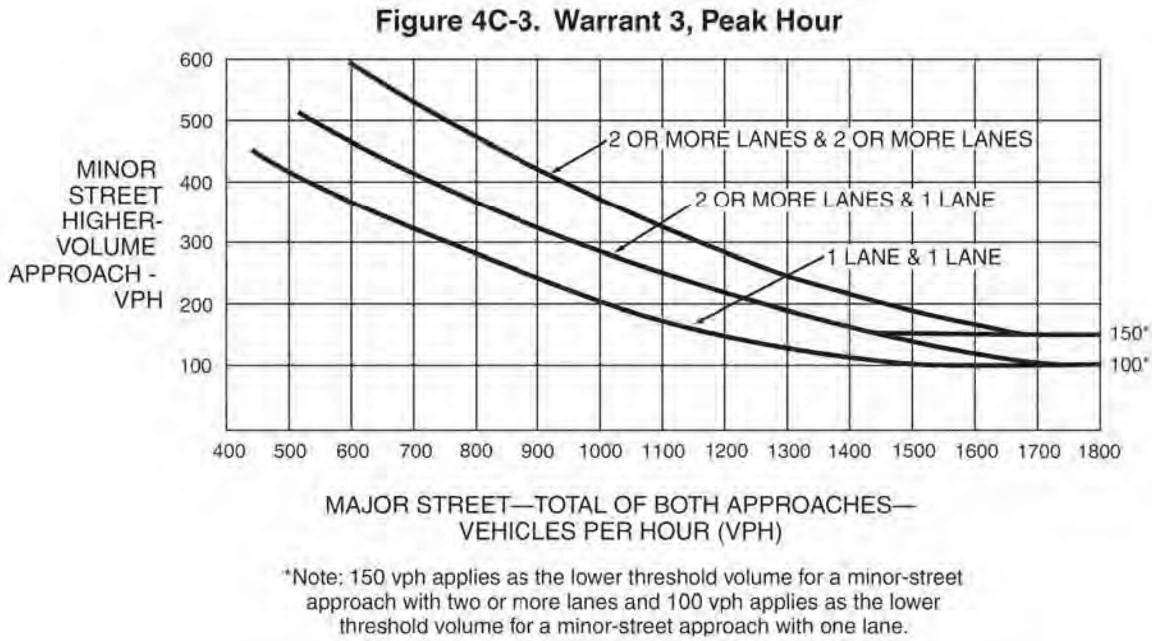
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)

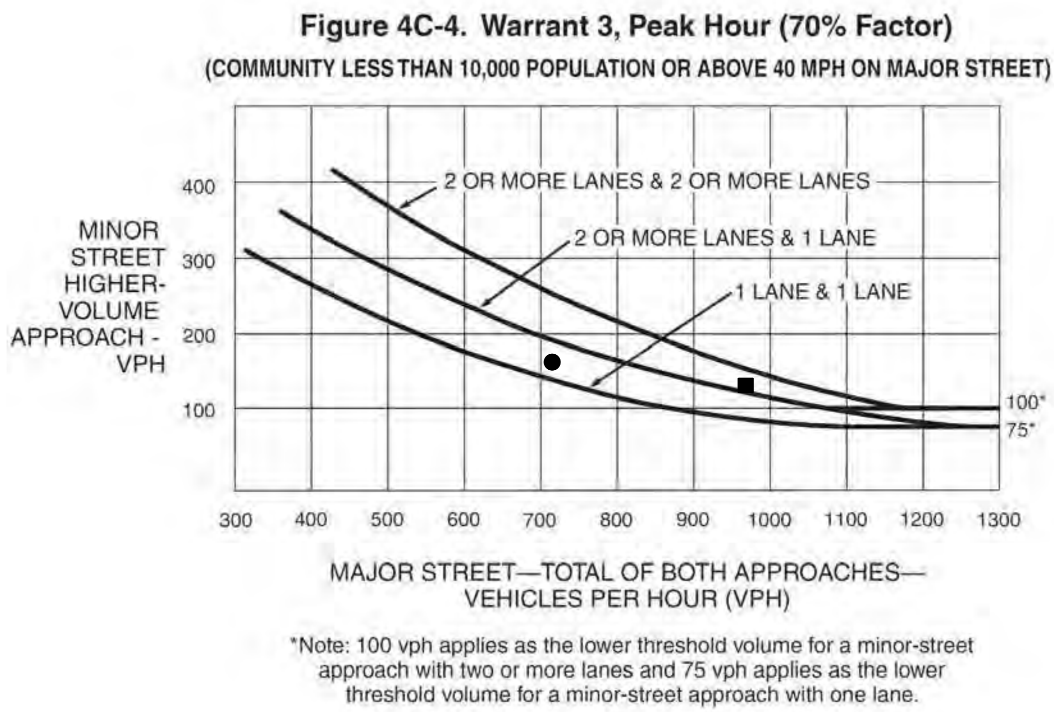


*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

MILLERTON WAY– E ROBERTSON BLVD : EXISTING PLUS APPROVED PROJECT

AM (●) : MAJOR 175 MINOR 157
PM (■) : MAJOR 254 MINOR 68





LAKE MCCLURE DRIVE– E ROBERTSON BLVD : EPAP PLUS PROJECT (BUILDOUT)

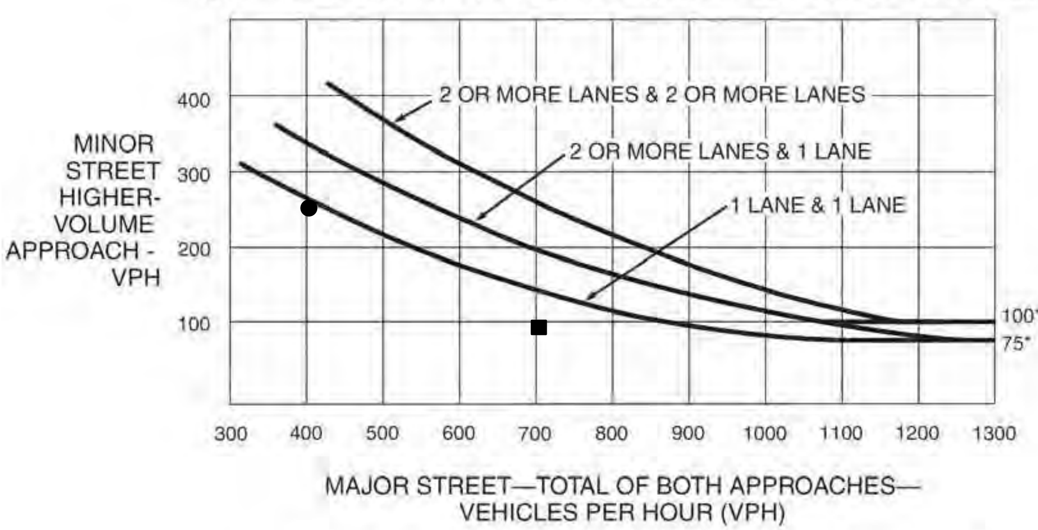
AM (●) : MAJOR 715 MINOR 177
PM (■) : MAJOR 966 MINOR 126

Figure 4C-3. Warrant 3, Peak Hour

*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.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

MILLERTON WAY– E ROBERTSON BLVD : EPAP PLUS PROJECT (BUILDOUT)

AM (●) : MAJOR 404 MINOR 251
PM (■) : MAJOR 706 MINOR 190

KDA

TECHNICAL MEMORANDUM

Date: August 18, 2020

To: Dylan Stone, MCTC
Erik Ruehr, VRPA

From: Lawrence Liao, ETG

Subject: **Madera County SB743 Sub-Regional Baseline VMT Memo**

OVERVIEW

SB 743 requires the Governor's Office of Planning and Research (OPR) to identify new metrics for identifying and mitigating transportation impacts within CEQA. For land use projects, OPR identified Vehicle Miles Traveled (VMT) per capita, VMT per employee, and net VMT as new metrics for transportation analysis. For transportation projects, lead agencies for roadway capacity projects have discretion, consistent with CEQA and planning requirements, to choose which metric to use to evaluate transportation impacts. July 1, 2020 is the statewide implementation date for SB 743.

MCTC has collaborated with state, regional, and local partners to develop tools and strategies able to aid towards analyzing VMT impacts for new land use and transportation projects. Sub-regional baseline VMT per capita and per job within Madera County cities and unincorporated communities/areas have been developed as the preferred transportation analysis metric required under SB 743. This technical memorandum summarizes the assumptions and methodology used in the development of the sub-regional baseline VMT.

SUB-REGIONS IN MADERA COUNTY

There are six air basins defined in the MCTC model, which are

- air basin 1 - unincorporated valley
- air basin 2 - City of Chowchilla
- air basin 3 - City of Madera
- air basin 4 - south east county growth area

- air basin 5 - foothill/mountains

MCTC air basin map is shown in *Figure 1*.

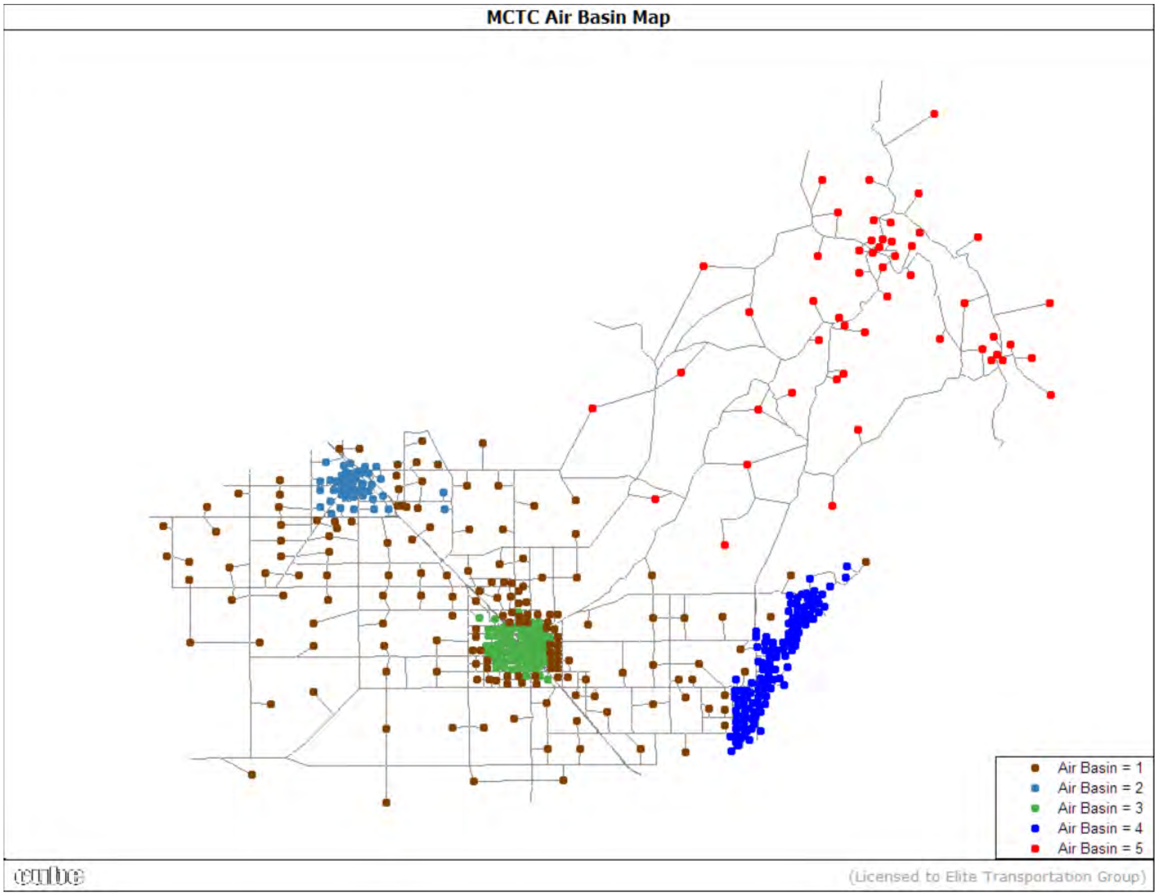


Figure 1. MCTC Air Basin Map

Those air basins were used to represent sub-regions in the Madera County. The latest MCTC Model was used to develop the baseline VMT for each of those six sub-regions.

TRIP LENGTH ADJUSTMENT FOR GATEWAY TRIPS

One of the requirements for SB 743 VMT is to account for the entire trip length from origin to destination (O-D). The O-D trip lengths for internal trips, whose origin and destination are both within the model area, are clearly defined and can be obtained by skimming the distance from the highway network. However, the MCTC model cannot be used to estimate the length of the portion of internal-to-external and external-to-internal (IX/XI) trips that are outside of the model area. Several methods have been suggested to account for this average trip lengths of external portion of IX/XI trips. We utilized the travel demand models from adjacent counties, namely, Merced and Fresno counties, to estimate the average trip lengths, per gateway, for the portion of IX/XI trips that are outside of the model area. This external average trip lengths were included in the VMT calculation for IX/XI trips. A diagram illustrating how the external average trip lengths are accounted for in IX/XI VMT is shown in *Figure 2*.

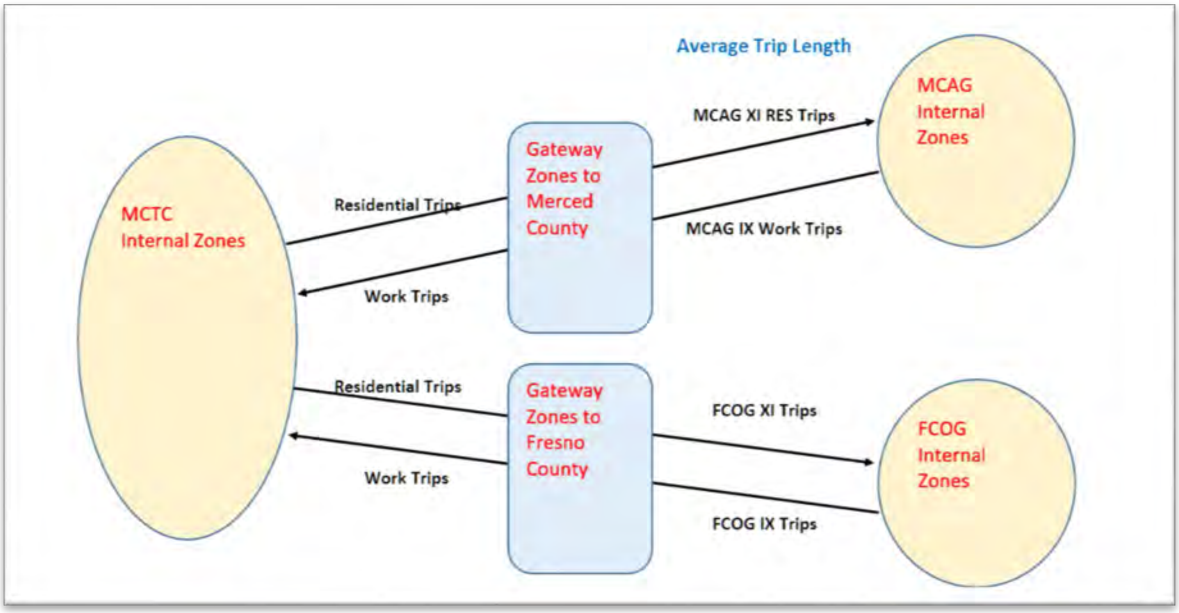


Figure 2. Inclusion of External Average Trip Length in IX/XI VMT

One unique feature of the MCTC model is that the distances of some gateway links are inflated to account for the external average trip lengths for IX/XI trips in the trip distribution model. These gateway link distances were calibrated specifically for the trip distribution model, hence, might not be as accurate as the external average trip lengths described in the previous paragraph. To avoid double-counting of the external average trip lengths, we reset the gateway link distances to real distances before skimming the O-D distances from the highway network.

BASELINE AVERAGE RESIDENTIAL VMT PER CAPITA FOR EACH SUB REGION

VMT per capita were generated by residential, or home based, trips at the production ends. For residential VMT we summed up all outbound home-based trips, including HW, HS, HK, HC, HO trip purposes, from each internal TAZ. The O-D distances were skimmed off the highway network between each O-D pair in the model including gateway TAZs. For the IX/XI trips, external average trip lengths, per gateway, were added to the skimmed O-D distances. The product of total residential trips and the total O-D distance was the total residential VMT for that TAZ. The baseline VMT per capita for an air basin was calculated by dividing the total residential VMT by the total population in that air basin. The sub-regional baseline VMT per capita are shown in *Table 1*.

MCTC Average VMT per Capita by Air Basin

Air Basin	VMT	Population	VMT per Capita
1	519,641	37,204	14.0
2	165,659	14,848	11.2
3	290,174	58,891	4.9
4	98,010	7,917	12.4
5	513,456	39,468	13.0
TOTAL	**1,586,940**	**158,328**	**10.0**

Table 1. Sub-Regional Baseline VMT per Capita

BASELINE AVERAGE WORK VMT PER JOB FOR EACH SUB REGION

VMT per job were generated by home-based work (HW) trips at the attraction ends. Thus, for work VMT we summed up all inbound HW trips to each internal TAZ. The O-D distances were skimmed off the highway network between each O-D pair in the model including gateway TAZs. For the IX/XI trips, external average trip lengths, per gateway, were added to the skimmed O-D distances. The product of total HW trips and the total O-D distance was the work VMT for that TAZ. The baseline VMT per job for an air basin was calculated by dividing the total work VMT by the total jobs in that air basin. The sub-regional baseline VMT per job are shown in *Table 2*.

MCTC Average VMT per Job by Air Basin

Air Basin	VMT	Jobs	VMT per Job
1	581,611	22,926	25.4
2	47,986	3,648	13.2
3	165,606	17,931	9.2
4	90,416	4,467	20.2
5	75,049	8,030	9.4
TOTAL	**960,669**	**57,002**	**16.9**

Table 2. Sub-Regional Baseline VMT per Job