Notice of Preparation and Responses

A

APPENDIX

THE TOWN OF CORTE MADERA
MARIN COUNTY CALIFORNIA

240 Tamal Vista Blvd.
Suite 110
Corte Madera, CA 94925

www.townofcortemadera.org

Town Manager
Town Council
415-927-5050

Town Clerk
415-927-5085

Finance Department
415-927-5055

Central Marin Fire Department
415-927-5077

Planning Department
415-927-5064

Building Department
415-927-5062

Public works Department
628-258-0294

Parks and Recreation Department
415-927-5072

Sanitary District No. 2
628-258-0294

Central Marin Police Authority
415-927-5150

Notice of Preparation

To: Interested Parties

Date: March 15, 2022

Subject: Notice of Preparation of Draft Supplemental Environmental Impact Report

Town of Corte Madera 2023-2031 General Plan Housing, Land Use, and Safety Elements Amendments and Zoning Amendments

Lead Agency: Town of Corte Madera

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

Project Title: Town of Corte Madera 2023-2031 General Plan Housing, Land Use, and Safety Elements Amendments and Zoning Amendments

Project Applicant: Town of Corte Madera

Project Location: Town of Corte Madera

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

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

All parties that have submitted their names and mailing addresses will be notified as part of the project's CEQA review process. If you wish to be placed on the mailing list or have any questions or need additional information, please contact the person identified below. A copy of the NOP and attachment document is on the Town's website (https://www.townofcortemadera.org/), on the Town's Housing website (https://www.cortemaderahousing.org) and is on file at the Town Hall offices, located at 240 Tamal Vista Blvd, Suite 110, Corte Madera, CA 94925.

Scoping Meeting:

Date: March 31, 2022
Time: 6:30 PM
Location: Via teleconference meeting via Zoom.
Link: https://us06web.zoom.us/j/88395259464
Meeting ID: 883 9525 9464
Information on how to participate in the meeting will also be posted on the Town's website (https://www.townofcortemadera.org) and on the Town's Housing website (https://www.cortemaderahousing.org) three days prior to the scheduled meeting.

30-Day NOP Review Period: In accordance with CEQA, should your agency have any comments, it is requested to provide a written response to this NOP within the 30-day NOP review period between March 16, 2022 and April 15, 2022. Written comments must be received via email or at the mailing address below no later than 5:00 p.m. on April 15, 2022.

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

Adam Wolff, Director of Planning and Building
Town of Corte Madera
PO Box 159
Corte Madera, CA 94976-0159
awolff@tcmmail.org

March 15, 2022 _____

Date Adam Wolff, Director of Planning and Building

Town of Corte Madera
2023-2031 Housing, Land Use, and Safety Elements Amendments, and Zoning Amendments
Notice of Preparation

2023-2031 Housing Element Update Overview

The Town of Corte Madera (Town) has begun the process of updating its Housing Element in order update the Town's housing policies and programs through 2031 and to accommodate the Regional Housing Needs Allocation (RHNA) for the Town as determined by the California Department of Housing and Development and the Association of Bay Area Governments. The Housing Element update also requires amendments to the General Plan Land Use Element and Safety Element, as well as the Town's Municipal Code, including the Zoning Ordinance.

Setting/Project Location

The Town of Corte Madera is located in Marin County, approximately eight miles north of the Golden Gate Bridge. Incorporated in 1916, the Town of Corte Madera encompasses approximately 4.5 square miles in total. However, 1.25 square miles of this area is submerged under bay waters and .67 square mile is protected marshland, leaving a net land area of 2.55 square miles. Parks, open space, and flood control areas comprise 0.38 square mile of this net land area. The eastern border of the Town is on San Francisco Bay; the western edge is bordered by unincorporated Marin County lands, mostly in open space preserves. Mount Tamalpais lies immediately west of the Town. Adjacent to Corte Madera are the City of Larkspur to the north, the City of Mill Valley to the south, and the Town of Tiburon to the southeast. Corte Madera's regional location is shown in Figure 1, Regional Map.

General Plan Elements to be Amended

Housing Element

State law requires the Town to have and maintain a general plan with specific contents in order to provide a vision for the Town's future, and inform local decisions about land use and development, including issues such as circulation, conservation, and safety. The Housing Element is one of the state-mandated elements of the General Plan. State law specifically requires the Town to update the Housing Element of its General Plan by January 15, 2023, while making any changes to other elements of the General Plan needed to maintain internal consistency and undertaking any related changes to the Town's Municipal Code (including the Town's Zoning Ordinance).

The Town's Housing Element for the 2015-2023 planning period was adopted in May 2015. In accordance with State law, the eight-year planning period for the updated Housing Element will extend from 2023 to 2031; this is also referred to as the 6th Cycle Housing Element Update. The Town is updating its Housing Element to comply with the requirements of State law by analyzing existing and projected housing needs, and updating goals, policies, objectives, and implementation programs for the preservation, improvement, and development of housing for all income categories.

Regional Housing Needs Allocation (RHNA)

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

Table 1 Corte Madera 2023-2031 Final RHNA Allocation

Income Level	Units
Very Low Income (Less than 50 percent of Area Median Income)	213
Low Income (50 to 80 percent of Area Median Income)	123
Moderate Income (80 to 120 percent of Area Median Income)	108
Above Moderate Income (Above 120 percent of Area Median Income)	281
Total Allocation	725

SOURCE: ABAG 2021

Community Outreach

Over the last 6 months, the Town has held seven public workshops, including a six-part Housing Element Workshop series. One of the primary goals of the workshop series was to engage the community in a conversation that focused on identifying varying housing-related policy considerations and issues, and methodically developing Corte Madera's vision and planning framework for addressing regional and local housing needs, and meeting the State-mandated RHNA. Workshops were held on the following dates:

October 13, 2021 Introduction to the Housing Element Update

November 10, 2021 Corte Madera Housing: Existing Conditions, Opportunities & Challenges

December 8, 2021 Potential Housing Opportunity Sites

January 12, 2022 Planning for 700+ Homes, Part 1

February 9, 2022	Planning for 700+ Homes, Part 2
February 15, 2022	Planning Commission and Town Council Joint Meeting
March 9, 2022	Next Steps: CEQA, Programs & Policies, Safety Element

Housing Opportunity Sites

The Housing Element Update will identify specific sites appropriate for the development of multifamily housing (including affordable units), and the Town would rezone those sites as necessary to meet the requirements of State law. The preliminary list of existing and proposed sites that can accommodate development of multifamily housing includes sites that are located throughout Corte Madera, and is subject to refinement based on additional public input and review of the draft Housing Element by Town's Planning Commission and Town Council, and HCD. A summary of the development potential for all nine opportunity sites is included below in Table 2 Housing Opportunity Sites Potential Development Summary. Locations of the potential housing opportunity sites are shown on Figure 2, Housing Opportunity Sites.

Table 2 Housing Opportunity Sites Potential Development Summary

Opportunity Sites	Existing		Housing Element Update	
	Acreage	Existing Commercial Buildings Square Footage	Maximum New Residential Units	Assumed Likely New Commercial Square Footage
9 Sites	21.95	271,024 SF	773	237,167 SF

Notes:
1. Assumes existing commercial buildings would be replaced by new mixed-use residential/commercial development.
2. Assumes net 773 new multi-family residential units.
3. Assumes net reduction of 33,857 square feet of commercial (271,024 sf existing minus 237,167 sf proposed).
4. Assumed likely new residential units and assumed likely commercial square footage are only estimates. Actual development at any opportunity site must be consistent with the general plan land use and zoning designations and could include more or less commercial square footage and residential units.
5. Maximum new residential units shown does not reflect potential for application of density bonus on opportunity sites.

Safety Element Update

The Safety Element is also a state-mandated component of a General Plan. The Safety Element focuses on the protection of the community from risks associated with climate change, earthquakes, floods, fires, toxic waste, and other hazards. The Safety Element is the means by which the Town defines what measures will be undertaken to reduce potential risk of personal injury, property damage, and economic and social dislocation resulting from natural and human-made hazards. The extent of a hazard depends on local conditions since most hazards are confined to a particular area or site. Various health and safety hazards should be considered in planning the location, design, intensity, density, and type of land uses in a given area. Long-term costs to the Town, such as maintenance, liability exposure, and emergency services, are potentially greater where high hazards exist.

The Town is required to update the General Plan Safety Element to address climate change resiliency. Senate Bill (SB) 379 requires all cities to review and update their General Plan Safety Elements with climate change adaptation measures. The required review and update of the Safety Element consists of the following three components:

- A vulnerability assessment that identifies the risks climate change poses to the local jurisdictions;
- Identification of adaptation and resiliency goals, policies, and objectives; and
- Feasible implementation measures.

The Safety Element update will also address other legislative mandates to reduce fire risk, plan for emergency evacuation, and reduce risks from flooding. The update will occur simultaneously and in conjunction with the Housing Element Update.

Land Use Element Update

The Town will update the existing Land Use Element to address revised land use designations, acreages, and housing unit numbers to reflect changes made to the Housing Element. The supplemental EIR will evaluate only the change in General Plan buildout resulting from the amendments to the Land Use and Housing Elements. The EIR will not evaluate total buildout of the amended General Plan.

Municipal Code Amendments

The proposed project includes amending Title 18 (Zoning) of the Town of Corte Madera Municipal Code to revise the Zoning Map to rezone all of the opportunity sites. Amendments to other sections of the municipal code may be necessary.

Supplemental EIR Approach

Consistent with CEQA Guidelines Section 15163, the EIR will be supplemental to the 2009 *Town of Corte Madera General Plan Revised Final EIR* (general plan EIR), updating existing analysis where appropriate, and presenting new analysis where necessary. This supplemental EIR will evaluate only the change in General Plan buildout resulting from the amendments to the general plan elements. The supplemental EIR will not evaluate total buildout of the amended General Plan.

CEQA Guidelines section 15146 states that, "The degree of specificity required in an EIR will correspond to the degree of specificity involved in the underlying activity which is described in the EIR." The underlying activity is adoption of the 2023-2031 Housing Element and associated general plan and zoning amendments. Therefore, the supplemental EIR will evaluate the environmental impacts of the 2023-2031 Housing Element to the greatest degree feasible; however, additional environmental review in compliance with CEQA may be required when development proposals requiring discretionary action are proposed. This process is called "tiering." "Tiering" or "tier"

means the coverage of general matters and environmental effects in an EIR prepared for a policy, plan, program or ordinance followed by narrower or site-specific EIRs or negative declaration that incorporate by reference the discussion in any prior EIR and which concentrate on the environmental effects that (a) are capable of being mitigated, or (b) were not analyzed as significant effects on the environment in the prior EIR.

Probable Environmental Effects

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

- Agricultural and Forestry Resources;
- Cultural Resources (with the exception of Tribal Cultural Resources);
- Geology and Soils (including Paleontological Resources);
- Human Health/Risk of Upset (with the exception of Wildfire);
- Hydrology and Water Quality; and
- Mineral Resources.

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

Aesthetics and Visual Resources

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

Air Quality

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

Biological Resources

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

Energy

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

Greenhouse Gas Emissions

The Town adopted an updated climate action plan (CAP) in 2020. The CAP includes GHG emissions projections for the years 2030 and 2050 based on projected residential and non-residential growth in Corte Madera. Measures to reduce GHG emissions are then defined based on the emissions reduction volume needed to meet the CAP GHG emission reduction target for 2030 of 40 percent below 1990 levels. With implementation of the reduction measures, GHG emissions in Corte Madera would be reduced approximately 49 percent, or nine percent more than needed to meet the 2030 target.

The proposed GHG impact analysis approach is to determine whether the proposed project could be considered consistent with the 2020 CAP, and if so, to streamline the GHG emissions analysis pursuant to CEQA Guidelines section 15183.5. If GHG emissions produced from implementing development consistent with the proposed project do not increase projected 2030 emissions by more than nine percent, the proposed project could be found to be consistent with the CAP. In this case, the proposed project could be considered consistent with the CAP. Pursuant to CEQA Guidelines section 15183.5, the proposed project GHG impact would be less than significant provided each new future individual project made possible by the proposed project is conditioned to implement applicable GHG reduction measures included in the CAP.

Noise

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

Public Services

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

Public services to be addressed include fire protection and emergency medical services, law enforcement, public schools, water supply and service, wastewater service, solid waste service, and electrical, natural gas, and telephone services, and parks and recreation. Cumulative project impacts to public services will also be discussed.

Sea Level Rise

CEQA does not require the evaluation of the environment's impact on a project, but does require an analysis if a project contributes to an environmental effect that could have an effect on a project.

The Town's 2020 Climate Action Plan documents projected flooding impacts on Corte Madera from sea level rise. The general plan EIR also addresses sea level rise. Existing documentation will be used in this section of the supplemental EIR to present the anticipated flooding impacts of sea level rise, and a qualitative discussion as to how the project could exacerbate these flooding issues.

Transportation

The transportation section of the supplemental EIR will address the vehicle miles traveled (VMT) impacts of the project. VMT was not a required component of a CEQA transportation impact analysis when the general plan EIR was prepared. The transportation section will also include an analysis of local transportation operational effects of increased housing based on level of service (LOS). The study intersections will be primarily located at US 101 ramps, Tamalpais Boulevard, Corte Madera Avenue, Madera Boulevard/Tamal Vista Boulevard, and Paradise Drive, which are the major roads to and through Corte Madera.

Tribal Cultural Resources

This section of the supplemental EIR will report on the Town's SB 18 and AB 52 Tribal Consultation process. If consultation does occur, this section will address whether the proposed project may have an adverse change on the significance of a tribal cultural resource.

Wildfire

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

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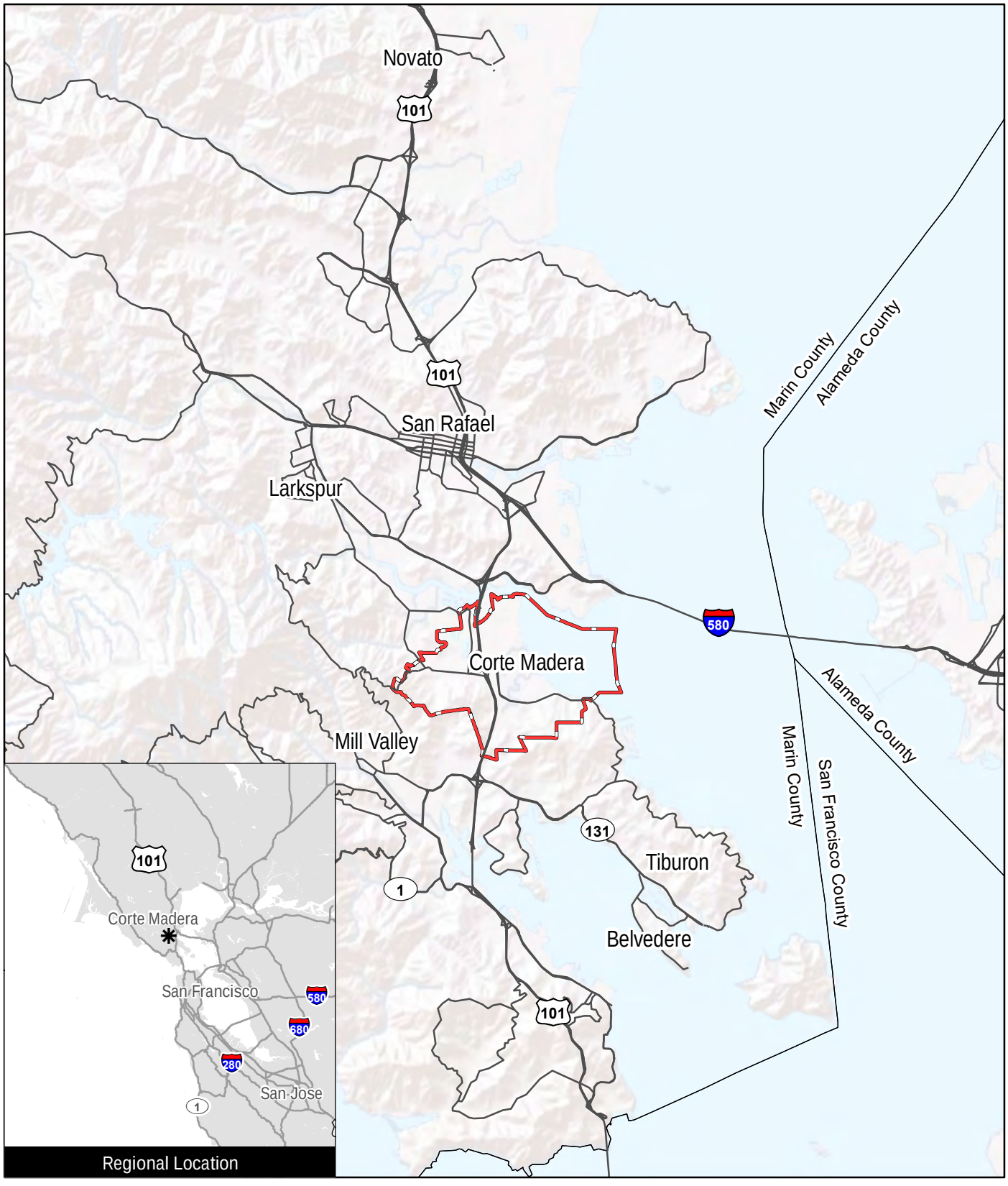


Figure 1

Regional Map

Town of Corte Madera General Plan Housing, Land Use, and Safety Elements Amendments and Zoning Amendments NOP

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Source: Town of Corte Madera 2022

Figure 2
Housing Opportunity Sites

Town of Corte Madera General Plan, Land Use, and Safety Elements Amendments and Zoning Amendments NOP

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STATE OF CALIFORNIA — Gavin Newsom, Governor

NATIVE AMERICAN HERITAGE COMMISSION

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

March 17, 2022

Adam Wolff
Town of Corte Madera
P.O. Box 159
Corte Madera, CA 94976

Re: 2005062023, Town of Corte Madera 2023-2031 Housing, Land Use, & Safety Elements Amendments & Zoning Amendments Project, Marin County

Dear Mr. Wolff:

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

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

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

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

AB 52

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

1. Fourteen Day Period to Provide Notice of Completion of an Application/Decision to Undertake a Project: Within fourteen (14) days of determining that an application for a project is complete or of a decision by a public agency to undertake a project, a lead agency shall provide formal notification to a designated contact of, or tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, to be accomplished by at least one written notice that includes:

a. A brief description of the project.

b. The lead agency contact information.

c. Notification that the California Native American tribe has 30 days to request consultation. (Pub. Resources Code §21080.3.1 (d)).

d. A "California Native American tribe" is defined as a Native American tribe located in California that is on the contact list maintained by the NAHC for the purposes of Chapter 905 of Statutes of 2004 (SB 18). (Pub. Resources Code §21073).

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

a. For purposes of AB 52, "consultation shall have the same meaning as provided in Gov. Code §65352.4 (SB 18). (Pub. Resources Code §21080.3.1 (b)).

3. Mandatory Topics of Consultation If Requested by a Tribe: The following topics of consultation, if a tribe requests to discuss them, are mandatory topics of consultation:

a. Alternatives to the project.

b. Recommended mitigation measures.

c. Significant effects. (Pub. Resources Code §21080.3.2 (a)).

4. Discretionary Topics of Consultation: The following topics are discretionary topics of consultation:

a. Type of environmental review necessary.

b. Significance of the tribal cultural resources.

c. Significance of the project's impacts on tribal cultural resources.

d. If necessary, project alternatives or appropriate measures for preservation or mitigation that the tribe may recommend to the lead agency. (Pub. Resources Code §21080.3.2 (a)).

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

6. Discussion of Impacts to Tribal Cultural Resources in the Environmental Document: If a project may have a significant impact on a tribal cultural resource, the lead agency's environmental document shall discuss both of the following:

a. Whether the proposed project has a significant impact on an identified tribal cultural resource.

b. Whether feasible alternatives or mitigation measures, including those measures that may be agreed to pursuant to Public Resources Code §21082.3, subdivision (a), avoid or substantially lessen the impact on the identified tribal cultural resource. (Pub. Resources Code §21082.3 (b)).

7. Conclusion of Consultation: Consultation with a tribe shall be considered concluded when either of the following occurs:

a. The parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or

b. A party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached. (Pub. Resources Code §21080.3.2 (b)).

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

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

10. Examples of Mitigation Measures That, If Feasible, May Be Considered to Avoid or Minimize Significant Adverse Impacts to Tribal Cultural Resources:

a. Avoidance and preservation of the resources in place, including, but not limited to:

i. Planning and construction to avoid the resources and protect the cultural and natural context.

ii. Planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.

b. Treating the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:

i. Protecting the cultural character and integrity of the resource.

ii. Protecting the traditional use of the resource.

iii. Protecting the confidentiality of the resource.

c. Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.

d. Protecting the resource. (Pub. Resource Code §21084.3 (b)).

e. Please note that a federally recognized California Native American tribe or a non-federally recognized California Native American tribe that is on the contact list maintained by the NAHC to protect a California prehistoric, archaeological, cultural, spiritual, or ceremonial place may acquire and hold conservation easements if the conservation easement is voluntarily conveyed. (Civ. Code §815.3 (c)).

f. Please note that it is the policy of the state that Native American remains and associated grave artifacts shall be repatriated. (Pub. Resources Code §5097.991).

11. Prerequisites for Certifying an Environmental Impact Report or Adopting a Mitigated Negative Declaration or Negative Declaration with a Significant Impact on an Identified Tribal Cultural Resource: An Environmental Impact Report may not be certified, nor may a mitigated negative declaration or a negative declaration be adopted unless one of the following occurs:

a. The consultation process between the tribes and the lead agency has occurred as provided in Public Resources Code §21080.3.1 and §21080.3.2 and concluded pursuant to Public Resources Code §21080.3.2.

b. The tribe that requested consultation failed to provide comments to the lead agency or otherwise failed to engage in the consultation process.

c. The lead agency provided notice of the project to the tribe in compliance with Public Resources Code §21080.3.1 (d) and the tribe failed to request consultation within 30 days. (Pub. Resources Code §21082.3 (d)).

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

SB 18

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

Some of SB 18's provisions include:

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

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

NAHC Recommendations for Cultural Resources Assessments

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

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

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

b. The final written report should be submitted within 3 months after work has been completed to the appropriate regional CHRIS center.

3. Contact the NAHC for:

a. A Sacred Lands File search. Remember that tribes do not always record their sacred sites in the Sacred Lands File, nor are they required to do so. A Sacred Lands File search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with the geographic area of the project's APE.

b. A Native American Tribal Consultation List of appropriate tribes for consultation concerning the project site and to assist in planning for avoidance, preservation in place, or, failing both, mitigation measures.

4. Remember that the lack of surface evidence of archaeological resources (including tribal cultural resources) does not preclude their subsurface existence.

a. Lead agencies should include in their mitigation and monitoring reporting program plan provisions for the identification and evaluation of inadvertently discovered archaeological resources per Cal. Code Regs., tit. 14, §15064.5(f) (CEQA Guidelines §15064.5(f)). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American with knowledge of cultural resources should monitor all ground-disturbing activities.

b. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the disposition of recovered cultural items that are not burial associated in consultation with culturally affiliated Native Americans.

c. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the treatment and disposition of inadvertently discovered Native American human remains. Health and Safety Code §7050.5, Public Resources Code §5097.98, and Cal. Code Regs., tit. 14, §15064.5, subdivisions (d) and (e) (CEQA Guidelines §15064.5, subds. (d) and (e)) address the processes to be followed in the event of an inadvertent discovery of any Native American human remains and associated grave goods in a location other than a dedicated cemetery.

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

Sincerely,

Cody Campagne

Cody Campagne
Cultural Resources Analyst

cc: State Clearinghouse

California Department of Transportation

DISTRICT 4
OFFICE OF TRANSIT AND COMMUNITY PLANNING
P.O. BOX 23660, MS–10D | OAKLAND, CA 94623-0660
www.dot.ca.gov

April 12, 2022

SCH #: 2005062023
GTS #: 04-MRN-2022-00232
GTS ID: 25867
Co/Rt/Pm: MRN/101/7.4

Adam Wolff, Director of Planning and Building
Town of Corte Madera
P.O. Box 159
Corte Madera, CA 94976

Re: Town of Corte Madera 2023-2031 Housing, Land Use, and Safety Elements Amendments, and Zoning Amendments Notice of Preparation (NOP) for Draft Environmental Impact Report (DEIR)

Dear Adam Wolff:

Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for this project. We are committed to ensuring that impacts to the State's multimodal transportation system and to our natural environment are identified and mitigated to support a safe, sustainable, integrated and efficient transportation system. The following comments are based on our review of the March 2022 NOP.

Project Understanding

The Town of Corte Madera will be preparing an update to its Housing Element in order to accommodate the housing numbers allocated to the Town by the California Department of Housing and Development and the Association of Bay Area Governments. In accordance with State law, the eight-year planning period for the updated Housing Element will extend from 2023 to 2031; this is also referred to as the 6th Cycle Housing Element Update. The Housing Element update also requires amendments to the General Plan Land Use Element and Safety Element, as well as the Town's Zoning Code.

Travel Demand Analysis

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

Guide (*link*). Please note that current and future land use projects proposed near and adjacent to the State Transportation Network (STN) shall be assessed, in part, through the TISG.

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

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

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

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

Sincerely,

Mark Leong

MARK LEONG
District Branch Chief
Local Development Review

c: State Clearinghouse

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State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
Bay Delta Region
2825 Cordelia Road, Suite 100
Fairfield, CA 94534
(707) 428-2002
www.wildlife.ca.gov

GAVIN NEWSOM, Governor
CHARLTON H. BONHAM, Director

April 15, 2022

Mr. Adam Wolff
Town of Corte Madera
Post Office Box 159
Corte Madera, CA 94976
awolff@tcmmail.org

Subject: Town of Corte Madera 2023-2031 General Plan Housing, Land Use, and Safety Elements Amendments and Zoning Amendments, Notice of Preparation of a Draft Supplemental Environmental Impact Report, SCH No. 2005062023, Marin County

Dear Mr. Wolff:

The California Department of Fish and Wildlife (CDFW) has reviewed the Notice of Preparation (NOP) of a draft supplemental Environmental Impact Report (EIR) from the Town of Corte Madera (Town) for the Town of Corte Madera 2023-2031 General Plan Housing, Land Use, and Safety Elements Amendments and Zoning Amendments (Project) pursuant to the California Environmental Quality Act (CEQA) and CEQA Guidelines.[1] CDFW previously submitted comments in response to the NOP and Initial Study for a draft EIR for the Town of Corte Madera General Plan in a letter date June 21, 2005.

CDFW is submitting comments on the NOP to inform the Town, as the Lead Agency, of potentially significant impacts to biological resources associated with the Project.

CDFW ROLE

CDFW is a **Trustee Agency** with responsibility under CEQA pursuant to CEQA Guidelines section 15386 for commenting on projects that could impact fish, plant, and wildlife resources. CDFW is also considered a **Responsible Agency** if a project would require discretionary approval, such as permits issued under the California Endangered Species Act (CESA) or Native Plant Protection Act, a Lake or Streambed Alteration Agreement, or other provisions of the Fish and Game Code that afford protection to the state's fish and wildlife trust resources.

PROJECT DESCRIPTION AND LOCATION

The Project would update the Housing Element within the Town's General Plan, as well as amend and update associated portions of the General Plan Land Use Element,

[1] CEQA is codified in the California Public Resources Code in Section 21000 et seq. The "CEQA Guidelines" are found in Title 14 of the California Code of Regulations, commencing with Section 15000.

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Safety Element, and zoning map. The Housing Element would identify locations in the Town to meet the need for a maximum of 773 housing units and a minimum of 725 housing units. The timeframe for the Housing Element update would be 2023 through 2031. The Project is located in the Town of Corte Madera.

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

- Footprints of permanent Project features and temporarily impacted areas, such as staging areas and access routes.
- Land use changes that would reduce open space or agricultural land uses and increase residential or other land use involving increased development.
- Area and plans for any proposed buildings/structures, ground disturbing activities, fencing, paving, stationary machinery, landscaping, floodwalls or levees, and stormwater systems.
- Operational features of the Project, including level of anticipated human presence (describe seasonal or daily peaks in activity, if relevant), artificial lighting/light reflection, noise, traffic generation, and other features.
- Construction schedule, activities, equipment, and crew sizes.

The NOP states that the Project is consistent with the Town of Corte Madera General Plan (April 2009) certified Environmental Impact Report (EIR) and that the Project may tier its analysis from that EIR (NOP pages 4-5). CDFW recommends that the Project clearly identify the analyses and information from the General Plan EIR that the Project will rely upon. The CEQA Guidelines direct program EIRs to provide a clear process and checklist for evaluation of subsequent projects; for example, the CEQA Guidelines section 15168, subdivision (c)(4) states, "Where the later activities involve site-specific operations, the agency should use a written checklist or similar device to document the evaluation of the site and the activity to determine whether the environmental effects of the operation were within the scope of the program EIR." If the Town implemented a checklist or procedure based on CEQA Guidelines section 15183.3 and associated *Appendix N Checklist*, CDFW recommends providing that procedure or checklist as an appendix to the draft supplemental EIR. Whether a formal checklist or procedure was implemented, the Project should clearly cite the specific portions of the General Plan EIR, including page and section references, containing the analysis of the Project

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activities' significant effects and indicate whether it incorporates all applicable mitigation measures from the General Plan EIR.

REGULATORY REQUIREMENTS

California Endangered Species Act and Native Plant Protection Act

Please be advised that a CESA Incidental Take Permit (ITP) must be obtained if the Project has the potential to result in take[2] of plants or animals listed under CESA or NPPA, either during construction or over the life of the Project. If the Project will impact CESA or NPPA listed species, including but not limited to those identified in **Attachment 1: Special-Status Species**, early consultation with CDFW is encouraged, as significant modification to the Project and mitigation measures may be required to obtain an ITP. Issuance of an ITP is subject to CEQA documentation; the CEQA document must specify impacts, mitigation measures, and a mitigation monitoring and reporting program.

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

Lake and Streambed Alteration

CDFW requires a Lake and Streambed Alteration (LSA) Notification, pursuant to Fish and Game Code section 1600 et seq., for Project activities affecting lakes or streams and associated riparian habitat. Notification is required for any activity that may substantially divert or obstruct the natural flow; change or use material from the bed, channel, or bank including associated riparian or wetland resources; or deposit or dispose of material where it may pass into a river, lake, or stream. Work within ephemeral streams, drainage ditches, washes, watercourses with a subsurface flow, and floodplains are subject to notification requirements. In addition, infrastructure installed beneath such aquatic features, such as through hydraulic directional drilling, is also subject to notification. CDFW, as a responsible agency under CEQA, will consider the EIR for the Project. CDFW may not execute the final LSA Agreement until it has complied with CEQA as the responsible agency.

[2] Take is defined in Fish and Game Code section 86 as hunt, pursue, catch, capture, or kill, or attempt any of those activities.

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Nesting Birds

CDFW also has authority over actions that may disturb or destroy active nest sites or take birds. Fish and Game Code sections 3503, 3503.5, and 3513 protect birds, their eggs, and nests. Migratory birds are also protected under the federal Migratory Bird Treaty Act.

Fully Protected Species

Fully Protected species, including those listed in **Attachment 1**, may not be taken or possessed at any time (Fish & G. Code, §§ 3511, 4700, 5050, & 5515).

ENVIRONMENTAL SETTING

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

CDFW recommends that the draft EIR provide baseline habitat assessments for special-status plant, fish, and wildlife species located and potentially located within the Project area and surrounding lands, including but not limited to all rare, threatened, or endangered species (CEQA Guidelines, § 15380). The draft EIR should describe aquatic habitats, such as wetlands, vernal pools, and/or waters of the U.S. or State, and any sensitive natural communities[3] or riparian habitat occurring on or adjacent to the Project site. Fully protected, threatened or endangered, and other special-status species that are known to occur, or have the potential to occur in or near the Project area, include but are not limited to, those listed in **Attachment 1**.

Habitat descriptions and the potential for species occurrence should include information from multiple sources, such as aerial imagery; historical and recent survey data; field reconnaissance; scientific literature and reports; the U.S. Fish and Wildlife Service's (USFWS) Information, Planning, and Consultation System; findings from positive occurrence databases such as the California Natural Diversity Database (CNDDB); and sensitive natural community information available on the Marin County Fine Scale Vegetation Map[4]. Based on the data and information from the habitat assessment, the draft supplemental EIR should adequately assess which special-status species are likely to occur on or near the Project site, and whether they could be impacted by the Project.

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[3] For sensitive natural communities see https://wildlife.ca.gov/Data/VegCAMP/Natural-Communities#sensitive%20natural%20communities

[4] One Tam hosts the Marin Fine Scale Vegetation Web Map at https://parksconservancy.maps.arcgis.com/apps/webappviewer/index.html?id=4ef2881436bc4365be881b17f69ab067

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CDFW recommends that prior to Project implementation, surveys be conducted for special-status species with potential to occur, following recommended survey protocols[5] if available.

Botanical surveys[6] for special-status plant species, including those with a California Rare Plant Rank[7], must be conducted during the blooming period for all species potentially impacted by the Project within the Project area and adjacent habitats that may be indirectly impacted by, for example, changes to hydrology, and require the identification of reference populations. More than one year of surveys may be necessary given environmental conditions.

IMPACT ANALYSIS AND MITIGATION MEASURES

The draft EIR should discuss all direct and indirect impacts (temporary and permanent), including reasonably foreseeable impacts, that may occur with implementation of the Project (CEQA Guidelines, §§ 15126, 15126.2, & 15358). This includes evaluating and describing impacts such as:

- Encroachments into riparian habitats, drainage ditches, wetlands, or other sensitive areas.
- Potential for impacts to special-status species or sensitive natural communities.
- Loss or modification of breeding, nesting, dispersal, and foraging habitat, including vegetation removal, alteration of soils and hydrology, and removal of habitat structural features (e.g., snags, rock outcrops, overhanging banks).
- Permanent and temporary habitat disturbances associated with ground disturbance, noise, lighting, reflection, air pollution, traffic, or human presence.
- Obstruction of movement corridors, fish passage, or access to water sources and other core habitat features.

The draft supplemental EIR should also identify reasonably foreseeable future projects in the Project vicinity, disclose any cumulative impacts associated with these projects, determine the significance of each cumulative impact, and assess the significance of the Project's contribution to the impact (CEQA Guidelines, § 15355). Although a project's impacts may be less-than-significant individually, its contributions to a

[5] Survey and monitoring protocols and guidelines are available at https://wildlife.ca.gov/Conservation/Survey-Protocols.
[6] Please refer to CDFW protocols for surveying and evaluating impacts to rare plants, and survey report requirements at https://wildlife.ca.gov/Conservation/Plants
[7] http://www.cnps.org/cnps/rareplants/inventory/

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cumulative impact may be considerable; a contribution to a significant cumulative impact, e.g., reduction of habitat for a special-status species, should be considered cumulatively considerable.

Based on the comprehensive analysis of the direct, indirect, and cumulative impacts of the Project, the CEQA Guidelines direct the Lead Agency to consider and describe all feasible mitigation measures to avoid potentially significant impacts in the draft EIR, and mitigate potentially significant impacts of the Project on the environment (CEQA Guidelines, §§ 15021, 15063, 15071, 15126.4 & 15370). This includes a discussion of impact avoidance and minimization measures for special-status species, which are recommended to be developed in early consultation with CDFW, USFWS, and the National Marine Fisheries Service. Project-specific measures should be incorporated as enforceable Project conditions to reduce impacts to biological resources to less-than-significant levels.

Fully protected species such as those listed in **Attachment 1**, may not be taken or possessed at any time (Fish & G. Code, §§ 3511, 4700, 5050, & 5515). Therefore, the draft supplemental EIR should include measures to ensure complete avoidance of these species.

ENVIRONMENTAL DATA

CEQA requires that information developed in EIRs and negative declarations be incorporated into a database which may be used to make subsequent or supplemental environmental determinations (Pub. Resources Code, § 21003, subd. (e).). Accordingly, please report any special-status species and natural communities detected during Project surveys to CNDDB[8].

FILING FEES

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

[8] The CNNDB online field survey form and other methods for submitting data can be found at https://wildlife.ca.gov/Data/CNDDB/Submitting-Data. The types of information reported to CNDDB can be found at https://wildlife.ca.gov/Data/CNDDB/Plants-and-Animals.

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CONCLUSION

CDFW appreciates the opportunity to comment on the NOP to assist the Town in identifying and mitigating Project impacts on biological resources.

If you have any questions, please contact Amanda Culpepper, Senior Environmental Scientist (Specialist), at amanda.culpepper@wildlife.ca.gov, or Melanie Day, Senior Environmental Scientist (Supervisory), at (707) 210-4415 or melanie.day@wildlife.ca.gov.

Sincerely,

DocuSigned by:
Erin Chappell
B77E9A6211EF486...

Erin Chappell
Regional Manager
Bay Delta Region

Attachment 1: Special-Status Species

ec: State Clearinghouse (SCH No. 2005062023)

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Attachment 1: Special-Status Species

Scientific Name	Common Name	Status
	Birds	
Rallus obsoletus obsoletus	California Ridgway's rail (formerly California clapper rail)	SE, FE, FP
Laterallus jamaicensis coturniculus	California black rail	ST, FP
Strix occidentalis caurina	northern spotted owl	ST, FT
Haliaeetus leucocephalus	bald eagle	SE, FP, BGE
Aquila chrysaetos	golden eagle	FP, BGE
Circus hudsonius	northern harrier	SSC
Asio Flammeus	short-eared owl	SSC
Geothlypis trichas sinuosa	saltmarsh common yellowthroat	SSC
Melospiza melodia samuelis	San Pablo song sparrow	SSC
Elanus leucurus	white-tailed kite	FP
	Fish	
Spirinchus thaleichthys	longfin smelt	ST, FC
Oncorhynchus kisutch pop. 4	Coho salmon south of Punta Gorda	SE, FE
Oncorhynchus mykiss irideus pop. 8	central California coast steelhead	FT
	Amphibians	
Rana draytonii	California red-legged frog	FT, SSC
Rana boylii	foothill yellow-legged frog, northwest/north coast clade	SSC

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Dicamptodon ensatus	California giant salamander	SSC
Mammals		
Reithrodontomys raviventris	salt-marsh harvest mouse	SE, FE, FP
Corynorhinus townsendii	Townsend's big-eared bat	SSC
Antrozous pallidus	pallid bat	SSC
Lasiurus blossevillii	western red bat	SSC
Taxidea taxus	American badger	SSC
Reptiles		
Emys marmorata	western pond turtle	SSC
Invertebrates		
Danaus plexippus pop. 1	monarch butterfly	FC, ICP[9]
Bombus caliginosus	obscure bumble bee	ICP
Bombus occidentalis	western bumble bee	ICP
Plants		
Castilleja affinis var. *neglecta*	Tiburon paintbrush	ST, FE, CRPR[10] 1B.2
Streptanthus glandulosus ssp. *niger*	Tiburon jewelflower	SE, FE, CRPR 1B.1
Pentachaeta bellidiflora	White-rayed pentachaeta	SE, FE, CRPR 1B.1
Calochortus tiburonensis	Tiburon mariposa-lily	ST, FT, CRPR 1B.1

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

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

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Hesperolinon congestum	Marin western flax	ST, FT, CRPR 1B.1
Trifolium amoenum	two-fork clover	SE, CRPR 1B.1
Amorpha californica var. *napensis*	Napa false indigo	CRPR 1B.2
Polygonum marinense	Marin knotweed	CRPR 3.1

FE = federally listed as endangered under the Endangered Species Act (ESA); FT = federally listed as threatened under ESA; FC = candidate for federal listing under ESA; SE = state listed as endangered under CESA; ST = state listed as threatened under CESA; CE= candidate for state listing as threatened or endangered; SFP = state fully protected under Fish and Game Code; SSC = state species of special concern; BGE = Bald and Golden Eagle Protection Act; ICP = state invertebrate of conservation priority; CRPR = California rare plant rank

GRAHAM STREET REALTY
REAL ESTATE INVESTMENTS

VIA ELECTRONIC MAIL [AWOLFF@TCMMAIL.ORG]

April 15, 2022

Adam Wolff
Director of Planning and Building
Town of Corte Madera
P.O. Box 159
Corte Madera, CA 94976-0159

Re: Town of Corte Madera Housing Element — 100 and 240 Tamal Vista Boulevard

Good afternoon,

We represent the owners of certain properties located at 100 and 240 Tamal Vista Boulevard in the Town of Corte Madera (together, "Properties"), and are responding to the Notice of Preparation of Draft Supplemental Environmental Impact Report for the Housing Element, dated March 15, 2022.

The transaction by which the Properties were acquires on or about December 15, 2021 and, in connection therewith, we recently learned that the Town of Corte Madera ("Town") is updating its Housing Element. As you know, part of the update includes the Town identifying various properties as Housing Opportunity Sites.

Recognizing that the Town has been engaged in its process for several months, and that we have only just learned of the update, we respectfully request that these Properties be included on the list of Housing Opportunity Sites because we believe the Properties are relevant as potential housing sites. 100 Tamal Vista Boulevard (approximately 1.5 acres) is adjacent to and contiguous with 2 other sites already identified — 400 and 500 Tamal Vista Boulevard. 100 Tamal Vista is a flat site with a mixed neighborhood context, and access to both 400 and 500 Tamal Vista Boulevard is partially via 100 Tamal Vista for both ingress and egress. In addition, 100, 400, and 500 Tamal Vista Boulevard all share parking, trash, and other services, being operated cooperatively as part of a contiguous complex. Expanding the available housing footprint to include an additional 1.5 acres at 100 Tamal Vista Boulevard would result in a more compatible adjacency with 400 and 500 Tamal Vista Boulevard, whereby residents at future 400 and 500 homes would not have to travel through a commercial property to gain access to their homes. Furthermore, allowing for some of the housing to be built along the street frontage (especially for rental units) provides for a more commercially viable housing product.

240 Tamal Vista Boulevard (approximately 1.66 acres) is also a relatively flat site with a mixed neighborhood context. It is located across Lucky Drive from existing residential, and is separated from 100, 400, and 500 Tamal Vista Boulevard by just one other property. Including 240 Tamal Vista Boulevard would also expand the residential context of the neighborhood and provide a

location for much needed housing in an area already contemplated for it. 240 Tamal Vista Boulevard is relatively obsolete office stock in its current configuration, and is less than 50% occupied. Based in part on all of the foregoing reasons, we believe 240 Tamal Vista Boulevard could better serve the community as a housing site. If the same density ranges indicated for 400 and 500 Tamal Vista Boulevard were applied to the additional 3.1 acres at the Properties, the end result could yield approximately 93-108 new dwelling units.

We respectfully request that these Properties be included on the Housing Opportunity Sites list and studied as part of the Environmental Review process. Should they prove out as feasible, at the conclusion of the Housing Element update, and assuming an appropriate allocation and mix of market rate and affordable units, Property ownership would, as soon as practicable, pursue redevelopment at each of these locations.

Please contact me if you would like to further discuss any of these matters.

Very truly yours,

Graham Street Realty II, LLC
Todd Williams, General Counsel

Opportunity Sites List

B

APPENDIX

Opportunity Site	Existing						Housing Element Update				
	Address	Acreage	General Plan Land Use Designation[2]	Existing Use	Existing Zoning (FAR & DU/Acre)[1]	Square Footage	Proposed FAR & DU/Acre	Footprint Acreage	Proposed Allowed Use[2]	Maximum Units	Assumed Likely Commercial
1	601 Tamalpais	0.475	Mixed-Use Commercial	Vacant commercial	C-1 .34 FAR[7]; 15.1 to 20 du/acre[8]	6,941 SF	.34 FAR; 25 du/ac	.162	Apartments/Condos + commercial	11	4,139 SF
2	41 Tamal Vista	2.1	Mixed-Use Commercial	Vacant movie theater	MX-1 .34 FAR 15.1 to 20 du/acre	11,040 SF	.34 FAR; 35 du/ac	.714	Apartments/Condos + commercial	73	18,382 SF
3	400 & 500 Tamal Plaza	3.0	Mixed-Use Commercial	Commercial building with mix of tenants	M .34 FAR 15.1 to 20 du/acre	59,424 SF	.34 FAR; 35 du/ac	1.02	Apartments/Condos + commercial	105	26,152 SF
4	2 & 10 Fifer, 110 & 150 Nellen	3.44	Mixed-Use Commercial	Gym, Big-5 & Office	C-3 .34 FAR 15.1 to 20 du/acre	43,249 SF	.34 FAR 35 du/ac	1.170	Apartments/Condos + commercial	120	30,045 SF
5	111 Lucky	0.99	Mixed-Use Commercial	Commercial (clothing store)	C-3 .34 FAR 15.1 to 20 du/acre	7,517 SF	.34 FAR 25 du/ac	.337	Apartments/Condos + commercial	25	8,712 SF
6	1400 Redwood Highway	7.48	Mixed-Use Regional Serving Retail	Macy's	C-2 .47 FAR 5 to 7.5 du/acre	109,920 SF	.47 FAR 40 du/ac	3.516	Apartments/Condos + commercial	300	110,811 SF
7	5804 Paradise	1.16	Mixed-Use Commercial	Commercial (dog daycare)	C-4 .34 FAR 15.1 to 20 du/acre	7,800 SF	.34 FAR 35 du/ac	0.394	Apartments/Condos + commercial	40	10,106 SF
8	5750 Paradise (3 parcels)	1.76	Mixed-Use Commercial	Herc Rentasl	C-4 .34 FAR 15.1 to 20 du/acre	10,713 SF	.34 FAR 35 du/ac	0.598	Apartments/Condos + commercial	61	15,332 SF
9	5651 Paradise (3 parcels)	1.54	Local Serving Commercial	Gym	C-1 .34 FAR[9]	14,420 SF	.34 FAR 25 du/ac	0.524	Apartments/Condos + commercial	38	13,488 SF

Opportunity Site	Existing						Housing Element Update				
	Address	Acreage	General Plan Land Use Designation[2]	Existing Use	Existing Zoning (FAR & DU/Acre)[1]	Square Footage	Proposed FAR & DU/Acre	Footprint Acreage	Proposed Allowed Use[2]	Maximum Units	Assumed Likely Commercial
10	100 Tamal Vista	1.50	Mixed-Use Commercial	Office building	M .34 FAR 15.1 to 20 du/acre	23,330 SF	.34 FAR 35 du/ac	.510	Apartments/Condos + commercial	52	13,068 SF
11	240 Tamal Vista	1.66[10]	Mixed-Use Commercial	Office building	O 0.34 FAR	25,071 SF	.34 FAR 35 du/ac	.564	Apartments/Condos + commercial	58	14,462 SF
Totals		25.11				319,425 SF				883	264,697[5] SF
Net Change										+883[3, 6]	<54,728>[4]

Notes:

1. C-1 (Local Shopping); C-2 (Regional Shopping); C-3 (Highway Commercial); C-4 (Commercial Service); MX-1 (Tamal Vista Mixed Use Corridor); M (Light Industrial); O (Professional and Administrative Office)
2. Assumes existing commercial building would be replaced by new residential development or mixed-use residential/commercial development.
3. Assumes net 883 new multi-family residential units.
4. Assumes net reduction of 33,857 square feet of commercial (271,024 sf existing minus 237,167 sf proposed).
5. Assumed likely commercial square footage are only estimates and utilize a FAR of .20. Actual development at any opportunity site must be consistent with the general plan land use and zoning designations and could include more or less commercial square footage.
6. Maximum new residential units shown does not reflect potential for application of density bonus on opportunity sites.
7. The allowable FAR for Sites 1, 2, 3, 4, 5, 7 & 8 is 0.34 and up to 0.4 for a mixed-use project.
8. Sites 1, 2, 3, 4, 5, 7, & 8 allow for up to 20 dwelling units per acre for senior housing projects.
9. In accordance with the C-1 zoning district, Site 9 would allow for residential units at densities determined by the Planning Commission to conform with the General Plan.
10. Site 11 acreage total is provided by property owner and does not match Marin County mapping data.

CalEEMod Results

C

APPENDIX

EMC PLANNING GROUP INC.
A LAND USE PLANNING & DESIGN FIRM

301 Lighthouse Avenue Suite C Monterey California 93940
Tel 831·649·1799 Fax 831·649·8399 www.emcplanning.com

To: **Teri Wissler Adam, Senior Principal and Project Manager**

From: **Sally Rideout EMPA, Principal; Zane Mortensen, Assistant Planner**

Cc: **File**

Date: **May 19,2022**

Re: **Town of Corte Madera 6th Cycle Housing Element – Greenhouse Gas Emissions Modeling Methodology and Assumptions**

Project Description and Setting

This memorandum describes the methodology and assumptions used in the emissions modeling prepared for the 6th cycle update to the Town of Corte Madera Housing Element. The Town of Corte Madera (Town) is updating its Housing Element consistent with the requirements under California State law. Part of the Housing Element update requires that the Town identify adequate housing sites to accommodate its share of Regional Housing Needs Allocation (RHNA). The Town 11 housing sites have been identified. This analysis quantifies operational Greenhouse gas (GHG) emissions that would be generated by the proposed change in land uses that would accommodate the RHNA.

The proposed housing element would change land use designations on 25.11 acres currently improved with 319,425 square feet of retail and commercial development, to a mixed use land use designation that would allow a combination of up to 884 residential units and approximately 264,697 square feet of commercial uses.

Scope of Assessment

The assessment focuses on operational GHG emissions that would result from development consistent with the proposed land use designations. This assessment describes the methodology

and assumptions used to quantify the net change in GHG emissions that would result at buildout of the proposed project using the California Emissions Estimator Model (CalEEMod) version 2020.4 software, a modeling platform recommended by the California Air Resources Board (CARB) and accepted by the air district. The model results will be used to inform the CEQA evaluation of project GHG emissions. Model results are attached to this assessment.

Methodology

Emissions Model

CalEEMod Version 2020.4 software, developed by Breeze Software, was used to estimate the proposed project's operational criteria air pollutant and GHG emissions. The CalEEMod software utilizes emissions models USEPA AP-42 emission factors, CARB vehicle emission models studies and studies commissioned by other California agencies such as the California Energy Commission and CalRecycle. The CalEEMod platform allows calculations of criteria air pollutant and GHG emissions from land use projects.

Data inputs to the model are based on existing and proposed land uses, and their CalEEMod default land uses while utilizing the size metrics provided in Table 2-2 of the proposed Housing Element. Per air district guidance for plan-level analysis, construction emissions are not quantified. The model results are then compared to determine the net change in GHG emissions that would result from development consistent with the proposed housing element land uses. Analysis of site- and project-specific construction and operational emissions of future individual development projects on the opportunity sites may be required as part of the associated future individual project application processes.

Assumptions

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

1. The proposed uses would be developed and operational in 2031.
2. Existing and proposed uses are connected to the municipal wastewater system.
3. Trip generation rates are adjusted based on information provided by the transportation engineer (Hexagon Transportation Consultants 2022).

Existing and Proposed Emissions Sources

Existing and proposed land use types and modeled CalEEMod default land use categories are presented in Table 1, Project Characteristics. Development of the proposed land uses would

Table 1 Project Characteristics

Project Land Use Type	CalEEMod Default Land Use[1]	Existing	Proposed
Mixed Use Residential[2]	Apartments Low Rise	-	74 Units
	Apartments Mid Rise	-	810 Units
Mixed Use Commercial[3]	Strip Mall	58,566 square feet	153,886 square feet
Regional Commercial	Regional Commercial	212,458 square feet	110,811square feet
Commercial	General Office Building	48,401 square feet	-

SOURCE: Breeze Software 2021, Town of Corte Madera 2022.
NOTES:
1. CalEEMod default land use subtype. Descriptions of the model default land use categories and subtypes are found in the User's Guide for CalEEMod Version 2020.4 available online at: http://www.aqmd.gov/caleemod/user's-guide
2. Mixed use residential uses consist of apartments and/or townhomes over ground floor commercial uses.
3. Mixed use commercial uses are assumed to include a mix of retail, restaurant, office, and professional services uses on the first floor of buildings.

Model Scenarios

Three modeling scenarios are modeled to estimate the net change in GHG emissions.

Existing Emissions 2021 Scenario

Existing operational GHG emissions are quantified based on the model's default land use emissions factors for the existing uses identified in Table 1 with an operational date of 2021. Site-specific information is not available in detail sufficient to provide a meaningful estimate of existing emissions reductions achieved through compliance with current regulatory measures that reduce emissions. In this scenario, the level of compliance on each opportunity site is unknown and therefore, compliance was not assumed in the model. As a result, the estimate of existing GHG emissions is conservative. Actual GHG emissions volumes are likely lower than reported in this assessment.

Baseline Emissions 2031 Scenario

CalEEMod default emissions factors take into account statewide programs and plans to reduce mobile-source GHG emissions through improved fuel economy and other measures. This scenario is used to capture mobile-source emissions reductions that would be expected due to increased vehicle fuel efficiencies in the future by quantifying emissions for the current mix of land uses at the 2031 buildout horizon. The data inputs are the same as the Existing Emissions 2021 Scenario.

Proposed Unmitigated Emissions 2031 Scenario

The "unmitigated" emissions scenario provides and estimate of operational emissions that would be generated by the proposed land uses in compliance with regulatory measures that reduce emissions. The modeled operational date is 2031. Regulatory compliance consistent with California Pollution Control Officers Association (CAPCOA) emissions reduction measures found in the *Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity* are referenced here parenthetically. Compliance with the following regulations is assumed:

- Current Title 24 Residential Building Energy Efficiency Standards (BEES) require 100 percent of electrical energy demand from renewable sources for certain low-rise residential uses including single-family and multi-family residential uses. The model's operational energy emission factors for energy demand Title 24 and non-Title 24 (plug ins) are adjusted to reflect the BEES for modeled Apartment Low-rise and Single-Family Housing uses;
- State Model Water Efficient Landscape Ordinance (MWELO) (CAPCOA WUW-4);
- Landscaping equipment is set to electric only to reflect phasing out of gas-powered landscaping tools potentially by 2024 (AB 1346). It is assumed that these or similar requirements will be in effect at buildout (CAPCOA A-1); and
- Solid waste diversion of 75 percent is applied consistent with waste diversion targets identified in AB 341. It is assumed that these or similar requirements will be in effect at buildout (CAPCOA SW-1).

Results

Detailed modeling results are attached to this memorandum. GHG emissions are reported in metric tons carbon dioxide equivalent (MT CO_2e) per year.

Unmitigated emissions for each CalEEMod source category in the three model scenarios are presented in Table 2, Existing and Proposed Unmitigated GHG Emissions.

Table 2 Existing and Proposed Unmitigated GHG Emissions

Source Category	GHG Emissions (MT CO_2e)		
	2021 Existing Uses	2031 Baseline Uses	2031 Proposed Uses
Area	<0.01	<0.01	70.24
Energy3	429.87	429.87	824.42
Mobile	9,495.90	7,192.99	8,632.57
Waste	165.75	165.75	344.27
Water	43.60	43.60	117.71
Total Project Emissions	10,136.13	7,832.22	9,989.22

Source: EMC Planning Group 2022, CalEEMod Results
Note: Results have been rounded, and may; therefore, vary slightly.

Net Unmitigated GHG Emissions at Buildout

When comparing existing uses (2021) to future buildout of the proposed uses (2031), the model results show that emissions generated by current development levels may be greater than the future buildout emissions in 2031. This is expected because the modeled emissions from existing land uses for the year 2021 do not take into account the model's default emissions factors for future fuel efficiencies and related mobile-source emissions reductions that will be achieved through statewide plans and programs. This is demonstrated in the second scenario where emissions from the current mix of land uses are modeled at the 2031 buildout year to provide a baseline. Under this scenario, mobile source emissions are reduced while emissions for all other sources remain constant, which is a much more realistic baseline to compare to the proposed project. The net GHG emissions attributable to the proposed project are derived by comparing the difference between the baseline and proposed levels of development at the 2031

buildout horizon. The net unmitigated GHG emissions are presented in Table 3, Net Unmitigated Annual GHG Emissions at 2031. The proposed project would result in an increase in annual operational GHG emissions of approximately 2,157 MT CO_2e per year.

Table 3 Net Unmitigated Annual GHG Emissions at 2031

Proposed Operational Emissions	Baseline Operational Emissions	Net Project Emissions
9,989.22	7,832.22	2,157

SOURCE: EMC Planning Group 2020
NOTES:
1. Results may vary due to rounding.
2. Expressed in MT CO_2e per year.

Sources

1. Breeze Software, a Division of Trinity Consultants. California Emissions Estimator (CalEEMod) Version 2020.4. May 2021. Available online at: http://www.aqmd.gov/caleemod/home
2. ----. 2021. CalEEMod User's Guide (Version 2020.4). May 2021. Available online at: http://www.aqmd.gov/caleemod/user's-guide
3. California Air Pollution Control Officers Association. 2010. *Quantifying Greenhouse Gas Mitigation Measures.* Accessed February 15, 2022 at: http://www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf
4. Bay Area Air Quality Management District. May 2017. California Environmental Quality Act Air Quality Guidelines. http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en
5. Hexagon Transportation Consultants. May 17, 2022. *Draft Coret Madera Housing Element Update*. San Jose CA.
6. Wolff, Adam, Director of Planning & Building, Town of Corte Madera. Email message to consultant, 29 April 2022.

Corte Madera HE Existing Land Uses GHG Emissions Baseline Year 2031 - Marin County, Annual

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

Corte Madera HE Existing Land Uses GHG Emissions - Baseline Year 2031 Operations

Marin County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	48.40	1000sqft	3.16	48,401.00	0
Strip Mall	58.57	1000sqft	5.59	58,566.00	0
Regional Shopping Center	212.46	1000sqft	16.36	212,460.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	69
Climate Zone	5			**Operational Year**	2031
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

NO CONSTRUCTION

Project Characteristics -

Land Use - Lot Acreage adjusted to match project description.

Vehicle Trips - Weekday Trips adusted per traffic engineer

Water And Wastewater - .

Mobile Land Use Mitigation -

Table Name	Column Name	Default Value	New Value
tblLandUse	LotAcreage	1.11	3.16
tblLandUse	LotAcreage	1.34	5.59
tblLandUse	LotAcreage	4.88	16.36

Corte Madera HE Existing Land Uses GHG Emissions Baseline Year 2031 - Marin County, Annual

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

tblVehicleTrips	WD_TR	9.74	10.84
tblVehicleTrips	WD_TR	37.75	67.52
tblVehicleTrips	WD_TR	44.32	54.45
tblWater	AerobicPercent	87.46	97.79
tblWater	AerobicPercent	87.46	97.79
tblWater	AerobicPercent	87.46	97.79
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00

2.0 Emissions Summary

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			2.9200e-003								0.0000	5.7100e-003	5.7100e-003	1.0000e-005	0.0000	6.0800e-003
Energy			0.0891								0.0000	426.1128	426.1128	0.0525	8.2100e-003	429.8710
Mobile			40.1837								0.0000	7,078.3662	7,078.3662	0.5095	0.3419	7,192.9938
Waste											66.9038	0.0000	66.9038	3.9539	0.0000	165.7513
Water											10.1464	20.0496	30.1960	0.2685	0.0225	43.6007
Total			**40.2757**								**77.0502**	**7,524.5344**	**7,601.5846**	**4.7843**	**0.3726**	**7,832.2229**

4.0 Operational Detail - 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

Corte Madera HE Existing Land Uses GHG Emissions Baseline Year 2031 - Marin County, Annual

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

Category	tons/yr										MT/yr					
Unmitigated			40.1837								0.0000	7,078.3662	7,078.3662	0.5095	0.3419	7,192.9938

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Office Building	524.67	106.97	33.88	943,673	943,673
Regional Shopping Center	14,345.30	9,798.66	4482.91	21,542,620	21,542,620
Strip Mall	3,188.92	2,462.11	1196.50	4,312,799	4,312,799
Total	18,058.88	12,367.74	5,713.29	26,799,092	26,799,092

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
Regional Shopping Center	9.50	7.30	7.30	16.30	64.70	19.00	54	35	11
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00	45	40	15

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Office Building	0.547817	0.061807	0.196074	0.123406	0.022883	0.005867	0.007115	0.003777	0.000649	0.000372	0.026862	0.000711	0.002661
Regional Shopping Center	0.547817	0.061807	0.196074	0.123406	0.022883	0.005867	0.007115	0.003777	0.000649	0.000372	0.026862	0.000711	0.002661
Strip Mall	0.547817	0.061807	0.196074	0.123406	0.022883	0.005867	0.007115	0.003777	0.000649	0.000372	0.026862	0.000711	0.002661

5.0 Energy Detail

Historical Energy Use: N

	ROG	NOx	CO	SO2	Fugitive 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 Unmitigated											0.0000	310.6999	310.6999	0.0503	6.0900e-003	313.7721

Corte Madera HE Existing Land Uses GHG Emissions Baseline Year 2031 - Marin County, Annual

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

NaturalGas Unmitigated			0.0891								0.0000	115.4130	115.4130	2.2100e-003	2.1200e-003	116.0988

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Office Building	926879			0.0382								0.0000	49.4618	49.4618	9.5000e-004	9.1000e-004	49.7557
Regional Shopping Center	968818			0.0399								0.0000	51.6998	51.6998	9.9000e-004	9.5000e-004	52.0070
Strip Mall	267061			0.0110								0.0000	14.2514	14.2514	2.7000e-004	2.6000e-004	14.3361
Total				**0.0891**								**0.0000**	**115.4130**	**115.4130**	**2.2100e-003**	**2.1200e-003**	**116.0988**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Office Building	582748	53.9181	8.7200e-003	1.0600e-003	54.4512
Regional Shopping Center	2.17559e+006	201.2938	0.0326	3.9500e-003	203.2843
Strip Mall	599716	55.4880	8.9800e-003	1.0900e-003	56.0367
Total		**310.6999**	**0.0503**	**6.1000e-003**	**313.7721**

6.0 Area Detail

	ROG	NOx	CO	SO2	Fugitive 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					
Unmitigated			2.9200e-003								0.0000	5.7100e-003	5.7100e-003	1.0000e-005	0.0000	6.0800e-003

Corte Madera HE Existing Land Uses GHG Emissions Baseline Year 2031 - Marin County, Annual

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

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping			2.9200e-003								0.0000	5.7100e-003	5.7100e-003	1.0000e-005	0.0000	6.0800e-003
Total			**2.9200e-003**								**0.0000**	**5.7100e-003**	**5.7100e-003**	**1.0000e-005**	**0.0000**	**6.0800e-003**
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

7.0 Water Detail

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Unmitigated	30.1960	0.2685	0.0225	43.6007

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Office Building	8.60231 / 5.27239	9.0576	0.0805	6.7400e-003	13.0785
Regional Shopping Center	15.7374 / 9.64553	16.5704	0.1473	0.0123	23.9263
Strip Mall	4.33843 / 2.65904	4.5680	0.0406	3.4000e-003	6.5959
Total		**30.1960**	**0.2685**	**0.0225**	**43.6007**

Corte Madera HE Existing Land Uses GHG Emissions Baseline Year 2031 - Marin County, Annual

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

8.0 Waste Detail

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Unmitigated	66.9038	3.9539	0.0000	165.7513

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Office Building	45.01	9.1366	0.5400	0.0000	22.6356
Regional Shopping Center	223.08	45.2832	2.6762	0.0000	112.1873
Strip Mall	61.5	12.4839	0.7378	0.0000	30.9284
Total		**66.9038**	**3.9539**	**0.0000**	**165.7513**

Corte Madera Housing Element- Proposed Unmitigated Emissions - Marin County, Annual

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

Corte Madera Housing Element- Proposed Unmitigated Emissions

Marin County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Low Rise	74.00	Dwelling Unit	5.35	74,000.00	183
Apartments Mid Rise	810.00	Dwelling Unit	14.06	810,000.00	2001
Strip Mall	153.90	1000sqft	0.00	153,900.00	0
Regional Shopping Center	110.80	1000sqft	5.70	110,800.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	69
Climate Zone	5			**Operational Year**	2031
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Population adjusted per DOF update 2.47 pph.
Mixed used residential over commercial acreage adjusted to match project description.

Vehicle Trips - Weekday Trips Adjusted per TIA

Energy Use - Residental low to mid rise elec from renewable sources.

Water And Wastewater - No septic systems.

Area Mitigation - Air district woodburn prohibition
AB-1346 2-stroke engines

Water Mitigation - Compliance with MWELO

Waste Mitigation - Compliance with AB-341.

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True

Corte Madera Housing Element- Proposed Unmitigated Emissions - Marin County, Annual

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

tblEnergyUse	NT24E	3,172.76	0.00
tblEnergyUse	NT24E	3,054.10	0.00
tblEnergyUse	T24E	49.64	0.00
tblEnergyUse	T24E	90.83	0.00
tblLandUse	LotAcreage	4.63	5.35
tblLandUse	LotAcreage	21.32	14.06
tblLandUse	LotAcreage	3.53	0.00
tblLandUse	LotAcreage	2.54	5.70
tblLandUse	Population	212.00	183.00
tblLandUse	Population	2,317.00	2,001.00
tblVehicleTrips	WD_TR	7.32	6.74
tblVehicleTrips	WD_TR	5.44	4.54
tblVehicleTrips	WD_TR	44.32	54.45
tblVehicleTrips	WD_TR	37.75	67.52
tblWater	AerobicPercent	87.46	97.79
tblWater	AerobicPercent	87.46	97.79
tblWater	AerobicPercent	87.46	97.79
tblWater	AerobicPercent	87.46	97.79
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00

2.0 Emissions Summary

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	5.3541	0.0905	4.9886	4.2000e-004		0.0296	0.0296		0.0296	0.0296	0.0000	42.8197	42.8197	6.0300e-003	6.5000e-004	43.1635

Corte Madera Housing Element- Proposed Unmitigated Emissions - Marin County, Annual

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

Energy	0.0512	0.4408	0.2121	2.7900e-003		0.0354	0.0354		0.0354	0.0354	0.0000	818.3286	818.3286	0.0602	0.0154	824.4222
Mobile	5.4769	4.6022	47.7448	0.0922	11.8136	0.0588	11.8724	3.1539	0.0547	3.2086	0.0000	8,496.5122	8,496.5122	0.6030	0.4060	8,632.5744
Waste						0.0000	0.0000		0.0000	0.0000	34.7404	0.0000	34.7404	2.0531	0.0000	86.0678
Water						0.0000	0.0000		0.0000	0.0000	21.8517	45.6167	67.4683	0.5786	0.0484	96.3613
Total	**10.8821**	**5.1336**	**52.9454**	**0.0954**	**11.8136**	**0.1238**	**11.9374**	**3.1539**	**0.1197**	**3.2736**	**56.5921**	**9,403.2773**	**9,459.8693**	**3.3009**	**0.4705**	**9,682.5892**

4.0 Operational Detail - 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	5.4769	4.6022	47.7448	0.0922	11.8136	0.0588	11.8724	3.1539	0.0547	3.2086	0.0000	8,496.5122	8,496.5122	0.6030	0.4060	8,632.5744
Unmitigated	5.4769	4.6022	47.7448	0.0922	11.8136	0.0588	11.8724	3.1539	0.0547	3.2086	0.0000	8,496.5122	8,496.5122	0.6030	0.4060	8,632.5744

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	498.76	602.36	464.72	1,174,891	1,174,891
Apartments Mid Rise	3,677.40	3,977.10	3312.90	8,471,970	8,471,970
Strip Mall	8,379.86	6,469.96	3144.18	11,333,193	11,333,193
Regional Shopping Center	7,481.22	5,110.10	2337.88	11,234,690	11,234,690
Total	20,037.23	16,159.51	9,259.68	32,214,743	32,214,743

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
Apartments Low Rise	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3
Apartments Mid Rise	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00	45	40	15
Regional Shopping Center	9.50	7.30	7.30	16.30	64.70	19.00	54	35	11

4.4 Fleet Mix

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

Corte Madera Housing Element- Proposed Unmitigated Emissions - Marin County, Annual

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

Apartments Low Rise	0.547817	0.061807	0.196074	0.123406	0.022883	0.005867	0.007115	0.003777	0.000649	0.000372	0.026862	0.000711	0.002661
Apartments Mid Rise	0.547817	0.061807	0.196074	0.123406	0.022883	0.005867	0.007115	0.003777	0.000649	0.000372	0.026862	0.000711	0.002661
Strip Mall	0.547817	0.061807	0.196074	0.123406	0.022883	0.005867	0.007115	0.003777	0.000649	0.000372	0.026862	0.000711	0.002661
Regional Shopping Center	0.547817	0.061807	0.196074	0.123406	0.022883	0.005867	0.007115	0.003777	0.000649	0.000372	0.026862	0.000711	0.002661

5.0 Energy Detail

Historical Energy Use: N

	ROG	NOx	CO	SO2	Fugitive 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 Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	311.9033	311.9033	0.0505	6.1200e-003	314.9875
NaturalGas Unmitigated	0.0512	0.4408	0.2121	2.7900e-003		0.0354	0.0354		0.0354	0.0354	0.0000	506.4254	506.4254	9.7100e-003	9.2800e-003	509.4348

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					
Apartments Low Rise	1.44418e+006	7.7900e-003	0.0666	0.0283	4.2000e-004		5.3800e-003	5.3800e-003		5.3800e-003	5.3800e-003	0.0000	77.0671	77.0671	1.4800e-003	1.4100e-003	77.5251
Apartments Mid Rise	6.83884e+006	0.0369	0.3151	0.1341	2.0100e-003		0.0255	0.0255		0.0255	0.0255	0.0000	364.9464	364.9464	6.9900e-003	6.6900e-003	367.1151
Regional Shopping Center	505248	2.7200e-003	0.0248	0.0208	1.5000e-004		1.8800e-003	1.8800e-003		1.8800e-003	1.8800e-003	0.0000	26.9620	26.9620	5.2000e-004	4.9000e-004	27.1222
Strip Mall	701784	3.7800e-003	0.0344	0.0289	2.1000e-004		2.6100e-003	2.6100e-003		2.6100e-003	2.6100e-003	0.0000	37.4499	37.4499	7.2000e-004	6.9000e-004	37.6724
Total		**0.0512**	**0.4408**	**0.2121**	**2.7900e-003**		**0.0354**	**0.0354**		**0.0354**	**0.0354**	**0.0000**	**506.4254**	**506.4254**	**9.7100e-003**	**9.2800e-003**	**509.4348**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	59966.6	5.5483	9.0000e-004	1.1000e-004	5.6032

Corte Madera Housing Element- Proposed Unmitigated Emissions - Marin County, Annual

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

Apartments Mid Rise	600566	55.5667	8.9900e-003	1.0900e-003	56.1161
Regional Shopping Center	1.13459e+006	104.9767	0.0170	2.0600e-003	106.0148
Strip Mall	1.57594e+006	145.8115	0.0236	2.8600e-003	147.2534
Total		**311.9033**	**0.0505**	**6.1200e-003**	**314.9874**

6.0 Area Detail

6.1 Regulatory Compliance - Area

Use Electric Lawnmower

Use Electric Leafblower

Use Electric Chainsaw

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive 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					
Unmitigated	5.3541	0.0905	4.9886	4.2000e-004		0.0296	0.0296		0.0296	0.0296	0.0000	42.8197	42.8197	6.0300e-003	6.5000e-004	43.1635

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	0.7603					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	4.4863					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	3.5700e-003	0.0305	0.0130	1.9000e-004		2.4700e-003	2.4700e-003		2.4700e-003	2.4700e-003	0.0000	35.3145	35.3145	6.8000e-004	6.5000e-004	35.5244

Corte Madera Housing Element- Proposed Unmitigated Emissions - Marin County, Annual

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

Landscaping	0.1040	0.0601	4.9756	2.3000e-004		0.0272	0.0272		0.0272	0.0272	0.0000	7.5052	7.5052	5.3500e-003	0.0000	7.6391
Total	**5.3541**	**0.0905**	**4.9886**	**4.2000e-004**		**0.0296**	**0.0296**		**0.0296**	**0.0296**	**0.0000**	**42.8197**	**42.8197**	**6.0300e-003**	**6.5000e-004**	**43.1635**

7.0 Water Detail

7.1 Regulatory Compliance - Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	67.4683	0.5786	0.0484	96.3613
Unmitigated	81.6162	0.7228	0.0605	117.7055

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	3.85712 / 2.85416	4.2200	0.0361	3.0200e-003	6.0244
Apartments Mid Rise	42.2198 / 31.2415	46.1917	0.3955	0.0331	65.9431
Regional Shopping Center	6.56579 / 4.7234	7.1397	0.0615	5.1500e-003	10.2109
Strip Mall	9.11981 / 6.56075	9.9170	0.0854	7.1500e-003	14.1829
Total		**67.4684**	**0.5786**	**0.0484**	**96.3613**

8.0 Waste Detail

8.1 Regulatory Compliance - Waste

Corte Madera Housing Element- Proposed Unmitigated Emissions - Marin County, Annual

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

Institute Recycling and Composting Services

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Unmitigated	34.7404	2.0531	0.0000	86.0678

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	8.51	1.7275	0.1021	0.0000	4.2797
Apartments Mid Rise	93.15	18.9086	1.1175	0.0000	46.8453
Regional Shopping Center	29.085	5.9040	0.3489	0.0000	14.6269
Strip Mall	40.3975	8.2003	0.4846	0.0000	20.3160
Total		**34.7404**	**2.0531**	**0.0000**	**86.0678**

EMFAC Results

D

APPENDIX

APPENDIX #

EMFAC2021

Corte Madera Housing Element

Proposed 2031 Operational Fuel Demand

Operational Date: 2031

Vehicle Class	Fuel	Process	Fuel	Kgal/day
All Other Buses	Dsl	IDLEX	Fuel	2.20E-05
All Other Buses	Dsl	RUNEX	Fuel	0.002053
LDA	Dsl	RUNEX	Fuel	0.007143
LDT1	Dsl	RUNEX	Fuel	3.70E-05
LDT2	Dsl	RUNEX	Fuel	0.005571
LHD1	Dsl	IDLEX	Fuel	0.000368
LHD1	Dsl	RUNEX	Fuel	0.065181
LHD2	Dsl	IDLEX	Fuel	0.0002
LHD2	Dsl	RUNEX	Fuel	0.02936
MDV	Dsl	RUNEX	Fuel	0.014234
MH	Dsl	RUNEX	Fuel	0.002955
Motor Coach	Dsl	IDLEX	Fuel	0.000116
Motor Coach	Dsl	RUNEX	Fuel	0.002729
PTO	Dsl	RUNEX	Fuel	0.004664
SBUS	Dsl	IDLEX	Fuel	0.000252
SBUS	Dsl	RUNEX	Fuel	0.002859
T6 CAIRP Class 4	Dsl	IDLEX	Fuel	1.24E-07
T6 CAIRP Class 4	Dsl	RUNEX	Fuel	1.54E-05
T6 CAIRP Class 5	Dsl	IDLEX	Fuel	1.68E-07
T6 CAIRP Class 5	Dsl	RUNEX	Fuel	2.10E-05
T6 CAIRP Class 6	Dsl	IDLEX	Fuel	4.94E-07
T6 CAIRP Class 6	Dsl	RUNEX	Fuel	5.43E-05
T6 CAIRP Class 7	Dsl	IDLEX	Fuel	8.88E-07
T6 CAIRP Class 7	Dsl	RUNEX	Fuel	0.000321
T6 Instate Delivery Class	Dsl	IDLEX	Fuel	0.000208
T6 Instate Delivery Class	Dsl	RUNEX	Fuel	0.004003
T6 Instate Delivery Class	Dsl	IDLEX	Fuel	0.000132
T6 Instate Delivery Class	Dsl	RUNEX	Fuel	0.002612
T6 Instate Delivery Class	Dsl	IDLEX	Fuel	0.000219
T6 Instate Delivery Class	Dsl	RUNEX	Fuel	0.004299
T6 Instate Delivery Class	Dsl	IDLEX	Fuel	1.17E-05
T6 Instate Delivery Class	Dsl	RUNEX	Fuel	0.000322
T6 Instate Other Class 4	Dsl	IDLEX	Fuel	0.000416
T6 Instate Other Class 4	Dsl	RUNEX	Fuel	0.008065
T6 Instate Other Class 5	Dsl	IDLEX	Fuel	0.000897
T6 Instate Other Class 5	Dsl	RUNEX	Fuel	0.019982
T6 Instate Other Class 6	Dsl	IDLEX	Fuel	0.000553
T6 Instate Other Class 6	Dsl	RUNEX	Fuel	0.011912
T6 Instate Other Class 7	Dsl	IDLEX	Fuel	0.000402
T6 Instate Other Class 7	Dsl	RUNEX	Fuel	0.008845
T6 Instate Tractor Class 6	Dsl	IDLEX	Fuel	5.10E-12
T6 Instate Tractor Class 6	Dsl	RUNEX	Fuel	9.80E-11

Fuel Type	Demand
Diesel	
Kgal/day	**3.77E-01**
KGal/yr	**1.37E+02**
Gas	
Kgal/day	**3.36E+00**
KGal/yr	**1225.133524**
Hybrid	
kgal/day	**2.13E-02**
Kgal/yr	**7.7622**
TOTAL	
KGal/yr	**1.37E+03**
Gal/yr	**1370344.712**
Mileage	
Check:	
VMT/yr	32,214,743
mpg	23.50849587

T6 Instate Tractor Class 7	Dsl	IDLEX	Fuel	2.12E-05
T6 Instate Tractor Class 7	Dsl	RUNEX	Fuel	0.00054
T6 OOS Class 4	Dsl	IDLEX	Fuel	1.70E-07
T6 OOS Class 4	Dsl	RUNEX	Fuel	2.07E-05
T6 OOS Class 5	Dsl	IDLEX	Fuel	2.28E-07
T6 OOS Class 5	Dsl	RUNEX	Fuel	2.83E-05
T6 OOS Class 6	Dsl	IDLEX	Fuel	6.73E-07
T6 OOS Class 6	Dsl	RUNEX	Fuel	7.33E-05
T6 OOS Class 7	Dsl	IDLEX	Fuel	1.15E-06
T6 OOS Class 7	Dsl	RUNEX	Fuel	0.000501
T6 Public Class 4	Dsl	IDLEX	Fuel	0.000116
T6 Public Class 4	Dsl	RUNEX	Fuel	0.001375
T6 Public Class 5	Dsl	IDLEX	Fuel	0.000217
T6 Public Class 5	Dsl	RUNEX	Fuel	0.002839
T6 Public Class 6	Dsl	IDLEX	Fuel	0.00018
T6 Public Class 6	Dsl	RUNEX	Fuel	0.002201
T6 Public Class 7	Dsl	IDLEX	Fuel	0.000302
T6 Public Class 7	Dsl	RUNEX	Fuel	0.004924
T6 Utility Class 5	Dsl	IDLEX	Fuel	1.35E-05
T6 Utility Class 5	Dsl	RUNEX	Fuel	0.000362
T6 Utility Class 6	Dsl	IDLEX	Fuel	2.60E-06
T6 Utility Class 6	Dsl	RUNEX	Fuel	6.86E-05
T6 Utility Class 7	Dsl	IDLEX	Fuel	2.92E-06
T6 Utility Class 7	Dsl	RUNEX	Fuel	9.44E-05
T7 CAIRP Class 8	Dsl	IDLEX	Fuel	0.001998
T7 CAIRP Class 8	Dsl	RUNEX	Fuel	0.025237
T7 NNOOS Class 8	Dsl	IDLEX	Fuel	0.002189
T7 NNOOS Class 8	Dsl	RUNEX	Fuel	0.030218
T7 NOOS Class 8	Dsl	IDLEX	Fuel	0.000931
T7 NOOS Class 8	Dsl	RUNEX	Fuel	0.010917
T7 Other Port Class 8	Dsl	IDLEX	Fuel	7.84E-05
T7 Other Port Class 8	Dsl	RUNEX	Fuel	0.002449
T7 POAK Class 8	Dsl	IDLEX	Fuel	0.000484
T7 POAK Class 8	Dsl	RUNEX	Fuel	0.008711
T7 POLA Class 8	Dsl	IDLEX	Fuel	9.21E-12
T7 POLA Class 8	Dsl	RUNEX	Fuel	2.15E-10
T7 Public Class 8	Dsl	IDLEX	Fuel	0.000585
T7 Public Class 8	Dsl	RUNEX	Fuel	0.014292
T7 Single Concrete/Trans	Dsl	IDLEX	Fuel	2.97E-05
T7 Single Concrete/Trans	Dsl	RUNEX	Fuel	0.000573
T7 Single Dump Class 8	Dsl	IDLEX	Fuel	0.000373
T7 Single Dump Class 8	Dsl	RUNEX	Fuel	0.007938
T7 Single Other Class 8	Dsl	IDLEX	Fuel	0.000474
T7 Single Other Class 8	Dsl	RUNEX	Fuel	0.008982
T7 SWCV Class 8	Dsl	IDLEX	Fuel	0.000224
T7 SWCV Class 8	Dsl	RUNEX	Fuel	0.015352

T7 Tractor Class 8	Dsl	IDLEX	Fuel	0.001468
T7 Tractor Class 8	Dsl	RUNEX	Fuel	0.02104
T7 Utility Class 8	Dsl	IDLEX	Fuel	9.08E-06
T7 Utility Class 8	Dsl	RUNEX	Fuel	0.000449
UBUS	Dsl	RUNEX	Fuel	0.006652
LDA	Gas	RUNEX	Fuel	1.302794
LDA	Gas	STREX	Fuel	0.045763
LDT1	Gas	RUNEX	Fuel	0.168831
LDT1	Gas	STREX	Fuel	0.006657
LDT2	Gas	RUNEX	Fuel	0.942504
LDT2	Gas	STREX	Fuel	0.031458
LHD1	Gas	IDLEX	Fuel	0.000629
LHD1	Gas	RUNEX	Fuel	0.175595
LHD1	Gas	STREX	Fuel	0.002006
LHD2	Gas	IDLEX	Fuel	9.15E-05
LHD2	Gas	RUNEX	Fuel	0.024409
LHD2	Gas	STREX	Fuel	0.000253
MCY	Gas	RUNEX	Fuel	0.00875
MCY	Gas	STREX	Fuel	0.000871
MDV	Gas	RUNEX	Fuel	0.542226
MDV	Gas	STREX	Fuel	0.018856
MH	Gas	RUNEX	Fuel	0.010487
MH	Gas	STREX	Fuel	1.90E-06
OBUS	Gas	IDLEX	Fuel	6.33E-05
OBUS	Gas	RUNEX	Fuel	0.015883
OBUS	Gas	STREX	Fuel	0.000104
SBUS	Gas	IDLEX	Fuel	0.000136
SBUS	Gas	RUNEX	Fuel	0.002263
SBUS	Gas	STREX	Fuel	1.25E-05
T6TS	Gas	IDLEX	Fuel	0.000273
T6TS	Gas	RUNEX	Fuel	0.045082
T6TS	Gas	STREX	Fuel	0.000485
T7IS	Gas	RUNEX	Fuel	0.000145
T7IS	Gas	STREX	Fuel	2.22E-06
UBUS	Gas	RUNEX	Fuel	0.00988
UBUS	Gas	STREX	Fuel	1.95E-05
LDA	Phe	RUNEX	Fuel	0.017226
LDA	Phe	STREX	Fuel	0.000819
LDT1	Phe	RUNEX	Fuel	3.49E-05
LDT1	Phe	STREX	Fuel	1.74E-06
LDT2	Phe	RUNEX	Fuel	0.001901
LDT2	Phe	STREX	Fuel	0.000102
MDV	Phe	RUNEX	Fuel	0.001105
MDV	Phe	STREX	Fuel	7.73E-05

Corte Madera Housing Element Update
Transportation Analysis

E

APPENDIX

HEXAGON TRANSPORTATION CONSULTANTS, INC.

Corte Madera Housing Element Update

Draft Transportation Analysis

Prepared for:

EMC Planning Group

September 12, 2022

Hexagon Transportation Consultants, Inc.
Hexagon Office: 100 Century Center Court, Suite 501
San Jose, CA 95112
Phone: 408.971.6100
Hexagon Job Number: 21SJ14
Client Name: Teri Wissler Adam, EMC Planning Group

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Executive Summary

This report presents the results of the transportation analysis (TA) conducted for the for the proposed Corte Madera Housing Element Update (HEU) project. The Town is updating its General Plan Housing Element as mandated by State law for the Regional Housing Needs Assessment (RHNA) 2023-2031 planning cycle. For analysis purposes, this amendment is projected to result in an increase in Corte Madera's housing allocation by 884 dwelling units and a reduction in the Town's commercial/office uses by 54,728 square feet.

The potential impacts of the HEU were evaluated in accordance with the standards and methodologies set forth by the Town of Corte Madera.

CEQA Transportation Analysis

Vehicle Miles Travelled (VMT) Impact

The proposed residential use would generate a VMT level (14.7 per resident) greater than the threshold (13.4 per capita), therefore the HEU would result in a significant transportation impact on VMT. Therefore, mitigation measures for the HEU are required to reduce VMT to below the threshold.

Mitigation: It is recommended that the HEU and all development projects associated with the HEU include travel demand management measures, including but not limited to the measures below, which have been identified as potentially VMT reducing in the California Air Pollution Control Officers Association (CAPCOA) Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity (December 2021). Potential VMT reduction estimates are included below. It should be noted that CAPCOA research indicates that VMT reductions probably wouldn't exceed 10 percent for development projects in suburban settings such as Corte Madera.

- Unbundle parking costs (i.e. sell or lease parking separately from the housing unit). Effectiveness: up to 15.7 percent reduction in GHG from VMT per the CAPCOA Handbook.
- Provide car-sharing, bike sharing, or scooter sharing programs. Effectiveness: 0.15 – 0.18 percent reduction in GHG from VMT for car share, 0.02 – 0.06 percent for bike share, and 0.07 percent for scooter share, per the CAPCOA Handbook. The higher car share and bike share values are for electric car and bike share programs.
- Subsidize transit passes for residents of affordable housing. Effectiveness: up to 5.5 percent reduction in GHG from VMT per the CAPCOA Handbook.
- Integrate affordable and below market rate housing. Effectiveness: up to 28.6 percent reduction in GHG from VMT per the CAPCOA Handbook.

With the implementation of a residential TDM Plan to include the above measures, the HEU VMT impact would be less than significant with mitigation.

Local Transportation Analysis

Project Trip Generation

Based on the ITE trip generation rates and applicable reductions, it is estimated that the proposed project would generate 2,956 new daily trips, including 348 new trips (63 inbound and 285 outbound) during the AM peak hour, 350 new trips (200 inbound and 150 outbound) during the mid-afternoon peak hour, and 503 new trips (320 inbound and 183 outbound) during the PM peak hour

Intersection Traffic Operations

Based on the Town of Corte Madera's intersection operations analysis criteria, the added project trips would cause adverse operations effects at the all-way stop controlled intersection of Tamal Vista Boulevard and Madera Boulevard. The results of the peak-hour signal warrant check indicates that the PM peak-hour volumes at this intersection would warrant signalization under existing plus project, cumulative, and cumulative plus project conditions.

It is recommended that the intersection be monitored as growth in the City occurs, and if warranted in the future, the intersection should be signalized or a roundabout should be installed if feasible, to improve the traffic operations to meet the Town's level of service standard.

1. Introduction

This report presents the results of the transportation analysis (TA) conducted for the proposed Corte Madera Housing Element Update (HEU) project. The Town is updating its General Plan Housing Element as mandated by State law for the Regional Housing Needs Assessment (RHNA) 2023-2031 planning cycle. For analysis purposes, this amendment is project to result in an increase in Corte Madera's housing allocation by 884 dwelling units and a reduction in the Town's commercial/office uses by 54,728 square feet (hereafter known as 'project'). Figure 1 shows the location of the proposed housing sites in the Town. Table 1 shows the breakdown of the potential increase in units and reduction in commercial uses by site.

Table 1
Housing Opportunity Sites Potential Development

		Existing	Proposed	
Opportunity Site	Address	Commercial/Office (Square Feet)	Maximum Units	Commercial (Square Feet)
1	601 Tamalpais[1]	6,941	11	4,139
2	41 Tamal Vista[1]	11,040	73	18,382
3	400 & 500 Tamal Plaza	59,424	105	26,152
4	2 & 10 Fifer, 110 & 150 Nellen	43,249	120	30,045
5	111 Lucky	7,517	25	8,712
6	1400 Redwood Highway	109,920	300	110,811
7	5804 Paradise	7,800	40	10,106
8	5750 Paradise (3 parcels)	10,713	61	15,332
9	5651 Paradise	14,420	38	13,488
10	100 Tamal Vista	23,330	53	13,068
11	240 Tamal Vista	25,071	58	14,462
Totals		**319,425**	**884**	**264,697**
Net Change			**+884**	**-54,728**

Notes:
[1] Existing commercial sites are vacant.

Scope of Study

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

CEQA VMT Analysis

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

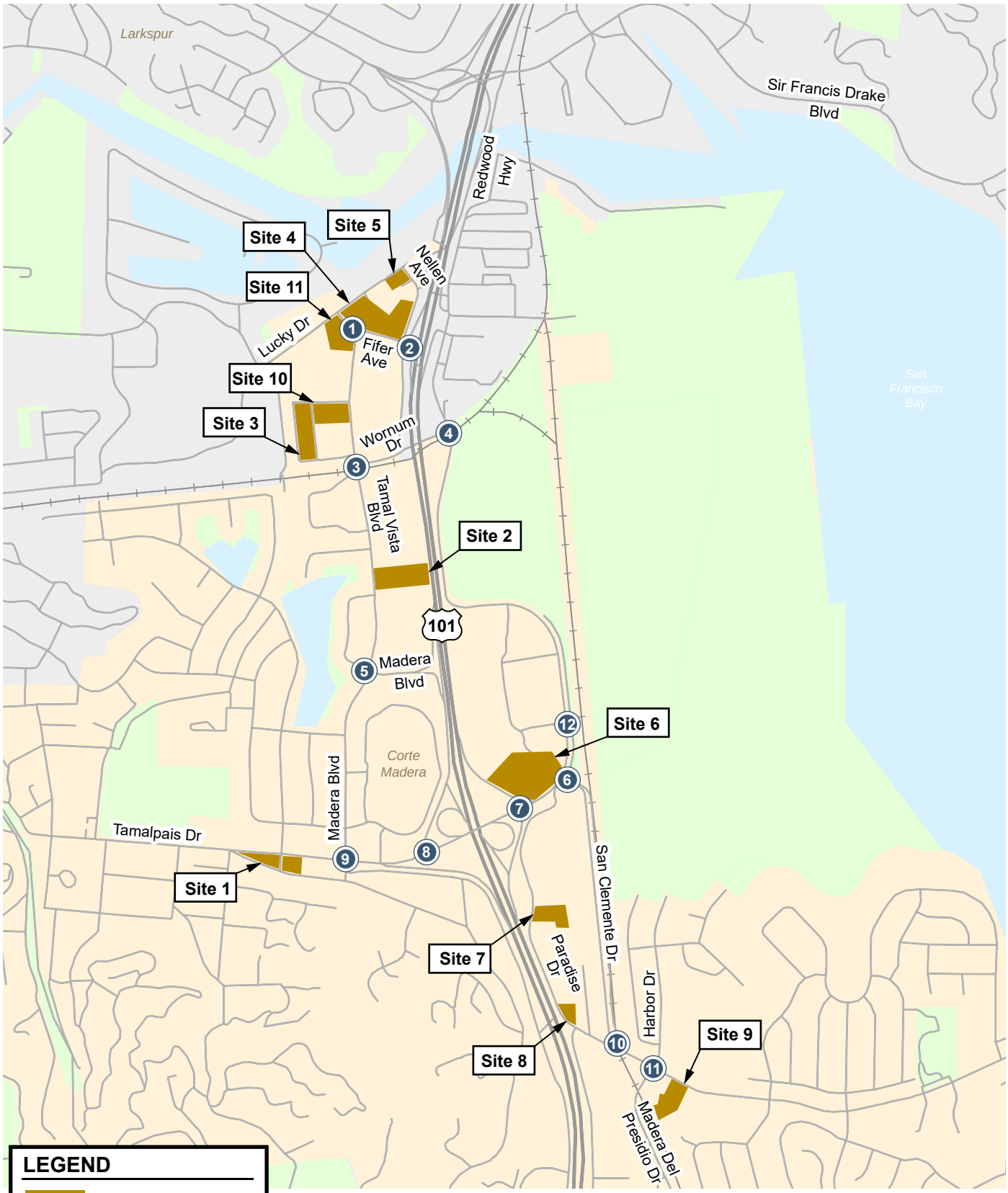


Figure 1
Site Location and Study Intersections

Local Transportation Analysis (LTA)

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

The intersection operations analysis is based on the AM (7:00 AM and 9:00 AM) and PM (4:00 PM and 6:00 PM) peak-hour level of service for ten signalized intersections and two unsignalized intersections in the vicinity of the project sites as illustrated in Figure 1. Traffic counts at five study intersections were approximately similar or higher during the mid-afternoon (2:00 PM to 4:00 PM) peak hour as compared to the PM peak hour due to schools. These intersections were also analyzed for the mid-afternoon peak hour. The list of study intersections and time-periods were determined in consultation with the Town staff. The following intersections were identified for analysis:

- Tamal Vista Boulevard and Fifer Avenue*
- Nellen Avenue/US 101 ramps and Fifer Avenue (unsignalized)
- Tamal Vista Boulevard and Wornum Drive*
- Redwood Highway and Wornum Drive
- Tamal Vista Boulevard and Madera Boulevard (unsignalized)
- San Clemente Drive and Tamalpais Drive/Redwood Highway*
- US 101 Northbound off ramp and Tamalpais Drive
- US 101 Southbound off ramp and Tamalpais Drive
- Madera Boulevard and Tamalpais Drive*
- San Clemente Drive and Paradise Drive
- Madera Del Presidio/Harbor Drive and Paradise Drive
- Redwood Highway and Village South Entrance*

*Intersections analyzed during the mid-afternoon peak hour

Traffic conditions were evaluated for the following scenarios:

- ***Existing Conditions.*** Existing traffic volumes at the study intersections were based on pre-pandemic traffic counts conducted between 2014 and 2018 and new counts collected in 2022 where pre-pandemic counts were not available. For locations where multiple counts were available, the highest turning movement counts were used for the analysis. The 2022 counts were factored by comparing the new counts to available pre-pandemic counts (see Appendix A).
- ***Existing Plus Project Conditions*.** Existing plus project traffic volumes were estimated by adding to existing traffic volumes the additional traffic generated by the proposed new development. Existing plus project conditions were evaluated relative to existing conditions to determine potential adverse project effects. In addition, roadway improvements at San Clemente Drive and Tamalpais Drive/Redwood Higwhay were assumed as directed by Town Staff.
- ***Cumulative Conditions.*** The cumulative scenario assumed a year 2031 horizon, which represents the RHNA planning cycle. An annual growth factor was developed using the TAMDM model and was applied to all study intersections. In addition, roadway improvements at San Clemente Drive and Tamalpais Drive/Redwood Higwhay were assumed as directed by Town Staff.

- ***Cumulative Plus Project Conditions.*** Cumulative plus project traffic volumes were estimated by adding to cumulative traffic volumes the additional traffic generated by the project. Cumulative plus project conditions were evaluated relative to cumulative conditions to determine potential adverse project effects.

Intersection Operations Analysis Methodology

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

Data Requirements

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

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

Level of Service Analysis Methodology and Standards

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

Signalized Intersections

The Town of Corte Madera utilizes SYNCHRO software and the Highway Capacity Manual (HCM) methodology to evaluate intersection operations. The HCM method evaluates signalized intersection operations on the basis of average control delay time for all vehicles at the intersection. Control delay is the amount of delay that is attributed to the particular traffic control device at the intersection, and includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. The correlation between average delay and level of service is shown in Table 2. In the Town of Corte Madera, the level of service standard for signalized intersections is LOS D.

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

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

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

Unsignalized Intersections

The study includes the analysis of two unsignalized intersections. Level of service analysis at unsignalized intersections is generally used to determine the need for modification in the type of intersection control (i.e., all-way stop or signalization). As part of the evaluation, traffic volumes, delays and traffic signal warrants are evaluated to determine if the existing intersection control is appropriate.

For unsignalized intersections, level of service depends on the average delay experienced by vehicles on the stop-controlled approaches. Thus, for all-way stop controlled intersections, level of service is determined by the average delay for all movements through the intersection. For side street stop-controlled intersections (two-way or T-intersections), operations are defined by the average control delay experienced by vehicles entering the intersection from the stop-controlled approaches on minor streets or from left-turn approaches on major streets. For two-way or T-intersections, the level of service is reported based on the average delay for the worst approach. The level of service definitions for unsignalized intersections is shown in Table 3. The Town of Corte Madera's adopted level of service standard for unsignalized intersections is LOS D.

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

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

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

Adverse Operational Effects on Intersections

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

- Policy CIR-1.2: Ensure that current Levels of Service at intersections are maintained when considering new development within Corte Madera
    - Implementation Program CIR-1.1.a: Level of Service Standards The town shall strive to maintain Level of Service (LOS) D operation during the weekday morning and evening peak periods at intersections of an arterial street with either another arterial or a collector street and intersections of two collector streets. For projected future conditions the LOS is to be calculated using the average traffic demand over the highest 60-minute period. For all types of controls the Level of Service standard is to be applied to the average operation of the intersection, and not that for any single movement or approach. Exceptions to meeting this standard include:

        1. Stop-controlled minor street approaches to either collector or arterial streets, where safety shall be the primary consideration;.

        2. Locations where the Town Engineer deems improvement to be technically, financially, or environmentally infeasible;

        3. Conditions where the improvement would result in significant adverse impacts to other travel modes, including walking, bicycling, or transit; or

        4. Locations where attainment would ensure the loss of an area's unique character.

Report Organization

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

2. Existing Transportation Conditions

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

Existing Roadway Network

Regional access to Corte Madera is provided via US 101. Major streets providing access to the housing sites include Tamal Vista Boulevard, Madera Boulevard, Redwood Highway, Paradise Drive, San Clemente Drive, Tamalpais Drive, Fifer Avenue, and Lucky Drive. These facilities are described below.

US 101 is an eight-lane freeway with three mixed-flow lanes and one high-occupancy vehicle (HOV) lane in each direction in the vicinity of the site. It extends north through San Francisco and south through Gilroy. Regional access to the Town is provided via its interchanges with Fifer Avenue, Madera Boulevard, and Tamalpais Drive.

Tamal Vista Boulevard is a north-south two-lane collector that extends from Fifer Avenue in the north to Madera Boulevard in the south, where it transitions into Madera Boulevard. Tamal Vista Boulevard has a two-way left turn lane with left turn pockets at intersections. Tamal Vista Boulevard has a posted speed limit of 30 mph. Sidewalks are provided on both sides of the street and new pedestrian crossings and Class II bike facilities were recently completed in 2020 as part of a “complete streets” rehabilitation. On-street parking is prohibited on both sides of the street.

Madera Boulevard is a north-south two-lane arterial that transitions from Casa Buena Drive at Tamalpais Drive and continues northward to the Council Crest Drive/Tamal Vista Boulevard intersection. At Council Crest Drive/Tamal Vista Boulevard, Madera Boulevard is a four-lane arterial that continues eastward to US 101. Between Council Crest Drive and Mohawk Avenue, Madera Boulevard has a southbound frontage street accessing the residential dwellings. Madera Boulevard has a landscaped median with left-turn pockets at intersections, a posted speed limit of 30 mph, and sidewalks on both sides of the street. On-street parking is prohibited on both sides of the street.

Redwood Highway is a north-south two to four lane collector that runs in the north-south direction between Greenbrae Boardwalk and San Clemente Drive, where it transitions into Tamalpais Drive. Redwood Highway north of Wornum Drive is in the City of Larkspur. Redwood Highway has four lanes and a landscaped median with left turn pockets south of the north village entrance driveway, after which it transitions to a two-lane street. South of Industrial Way, Redwood Highway has a posted speed limit of 30 mph. North of Industrial Way, there is a posted speed limit of 25 mph. There is a Class I bicycle and pedestrian path along the east side of the street south of Wornum Drive. Redwood Highway has

Class II bike lanes between Wornum Drive and Industrial Way. North of Industrial Way, Redwood Highway is a designated bike route. On-street parking is located on the west side of the street.

Paradise Drive is an east-west two to four lane collector between Tamalpais Drive and Tiburon city limits. Between Tamalpais Drive and San Clemente Drive, Paradise Drive has two lanes and a posted speed limit of 25 mph. A sidewalk is provided along the east side of the street along this entire section. On street parking is permitted along the east side of the street for the entire section. A small section of sidewalk and on-street parking, adjacent to Amy's Drive Thru, is provided along the west side of the street. Between San Clemente Drive and Prince Royal Drive, Paradise Drive has four lanes with a landscaped median and left turn pockets at intersections. There is a posted speed limit of 30 mph and parking is prohibited along both sides of the street. There are sidewalks along both sides of the street between San Clemente Drive and Seawolf Passage. East of Seawolf Passage, there are sidewalks along the south side of the street. East of Prince Royal Drive, Paradise Drive has two lanes with a separated bike/pedestrian path along the south side of the street until Westward Drive.

San Clemente Drive is a north-south four-lane arterial between Tamalpais Drive/Redwood Highway in the north and Paradise Drive in the south with a northbound left turn center lane. San Clemente Drive has a posted speed limit of 35 mph. There is a sidewalk along the west side of the street and a pedestrian/bicycle path along the east side of the street, separated by a landscaped median. On-street parking is prohibited on both sides of the street.

Tamalpais Drive is an east-west two-to-four lane arterial that transitions from Redwood Avenue in the west to San Clemente Drive in the east, where it transitions into Redwood Highway. Tamalpais Drive has a posted speed limit of 30 mph. There are sidewalks along both sides of the street between Redwood Avenue and the US 101 southbound off ramp. East of the US 101 southbound off ramp, there is a sidewalk on the south side of the street over the US 101 overpass. On-street parking is prohibited on both sides of the street west of Madera Boulevard. A bike route is designated west of Madera Boulevard.

Existing Pedestrian and Bicycle Facilities

Pedestrian facilities

Pedestrian facilities consist of sidewalks, crosswalks, and pedestrian signals at signalized intersections. The housing sites are proposed near the major streets in the Town that have pedestrian facilities: Tamal Vista Boulevard, Madera Boulevard, Redwood Highway, Paradise Drive, San Clemente Drive, and Tamalpais Drive. Continuous sidewalks are present on at least one side of these major streets.

Most of the signalized study intersections have crosswalks along at least two of the legs. Two of the study intersections have only one crosswalk: the US 101 northbound off ramp and Tamalpais Drive intersection, and the Redwood Highway and Village south entrance intersection.

Highway 101 geographically divides the Town, and connectivity between the east and west sides of the Town is limited to the Tamalpais Drive interchange, the Wornum Drive underpass, and the pedestrian overcrossing north of Wornum Drive. At the U.S. 101 ramps at Tamalpais Drive, the sidewalk merges into a pathway that brings pedestrians down from the overcrossing and provides access to bus stops near the Tamalpais Drive / U.S. 101 ramp intersections. The Caltrans U.S. Highway 101 Tamalpais Drive Overcrossing Project proposes to upgrade the structure over U.S. 101 at Tamalpais Drive overcrossing to include bike lanes and replace the existing nonstandard pedestrian facilities with Americans with Disabilities Act (ADA) compliant features.

Bicycle Facilities

Bicycle facilities in Corte Madera include bike paths, bike lanes, and bike routes. Bike paths (Class I facilities) separate pedestrians and bicyclists from motor vehicle traffic; however, pedestrians and bicyclists may have to share the path with other active transportation users. Bike lanes (Class II facilities) are lanes on roadways designated for use by bicycles with special lane markings, pavement legends, and signage. Bike routes (Class III facilities) are roadways shared between bicycles and vehicles. Bike routes are often designated for use by bicycles with "sharrow" pavement markings and signage. The existing bicycle facilities within the study area are described below and are shown on Figure 2.

A new Class I bicycle facility bridging over the Corte Madera Creek and connecting Sir Francis Drake Boulevard and Larkspur Landing to Redwood Highway was completed in July 2022, improving the multi-modal connection to the SMART Train and Larkspur ferry public transit facilities. A Class I bike path is located along the east side of Redwood Highway between Wornum Drive and San Clemente Drive and was recently rehabilitated. Additional Class I bike facilities exist on the east side of San Clemente Drive and along the former railroad right of way between Wornum Drive and Menke Park. The bike path on the south side of Wornum Drive continues into the Sandra Marker Trail and connects to the north-south path parallel to Holcomb Avenue.

Striped bike lanes (Class II bikeway) are present on Tamal Vista Boulevard for the entire street and Redwood Highway north of Wornum Drive to the US 101 northbound off-ramp. Along Redwood Highway, north of Industrial Way, in the City of Larkspur, a bike lane is present on the west side of the street and the east side of the street is signed as a bike route (Class III bikeway). Bike routes also exist along Tamalpais Drive west of Madera Boulevard.

Existing Transit Services

Existing transit service to Corte Madera is provided by Marin Transit and Golden Gate Transit (see Figure 3 and Table 4). Six Marin Transit bus routes (Route 17, 22, 36, 71, 613, 619) and three Golden Gate Transit (130, 132, 150) routes serve the Town. The Sonoma Marin Area Rapid Transit (SMART) train and Golden Gate Ferry provide regional access to cities to the north in Marin and Sonoma counties, and to San Francisco.

Table 4
Existing Transit Facilities

Bus Route	Route Description	Nearby Bus Stops	Weekday Hours of Operation[1]	Headway (minutes)[1]
Route 17 & 17X	Downtown San Rafael - Sausalito	US 101 at Paradise Drive Bus Pad, US 101 at Lucky Drive Bus Pad	5:30 AM - 11:30 PM	30-35
Route 22	Downtown San Rafael - Marin City	Tamalpais Drive & Casa Buena Drive	6:00 AM - 11:00 PM	60
Route 36	Canal - Marin City	US 101 at Paradise Drive Bus Pad, US 101 at Lucky Drive Bus Pad	6:00 AM - 8:20 PM	30
Route 71	Novato - Marin City	US 101 at Tamalpas Drive Bus Pad, US 101 at Lucky Drive Bus Pad	5:20 AM - 12:55 AM (next day)	30
Route 130	San Rafael - San Francisco	US 101 at Tamalpas Drive Bus Pad, US 101 at Fifer Avenue Bus Pad	5:45 AM - 12:09 AM	60
Route 132	San Anselmo - San Francisco	US 101 at Tamalpas Drive Bus Pad, US 101 at Fifer Avenue Bus Pad	5:43 AM - 9:23 AM	30
Route 150	Novato - San Francisco	US 101 at Tamalpas Drive Bus Pad, US 101 at Fifer Avenue Bus Pad	5:03 AM - 9:29 PM	60
Route 613	Paradise Cay - Hall MS - Redwood HS	Tamalpais Drive & Madera Boulevard, Paradise Drive & Prince Royal Drive	6:55 AM - 8:05 AM (westbound), 2:30 PM - 4:00 PM (eastbound)	--[2]
Route 619	Tiburon - Redwood HS	Along Tamal Vista Boulevard/Madera Drive between Fifer Avenue & Tamalpais Drive, US 101 at Paradise Drive Bus Pad	6:42 AM - 8:13 AM (westbound), 2:40 PM - 4:03 PM (eastbound	--[2]

Note:
1. Approximate weekday operation hours and headways during peak commute periods in the project area, as of April 2022.
2. Headway varies based on school start and end time.

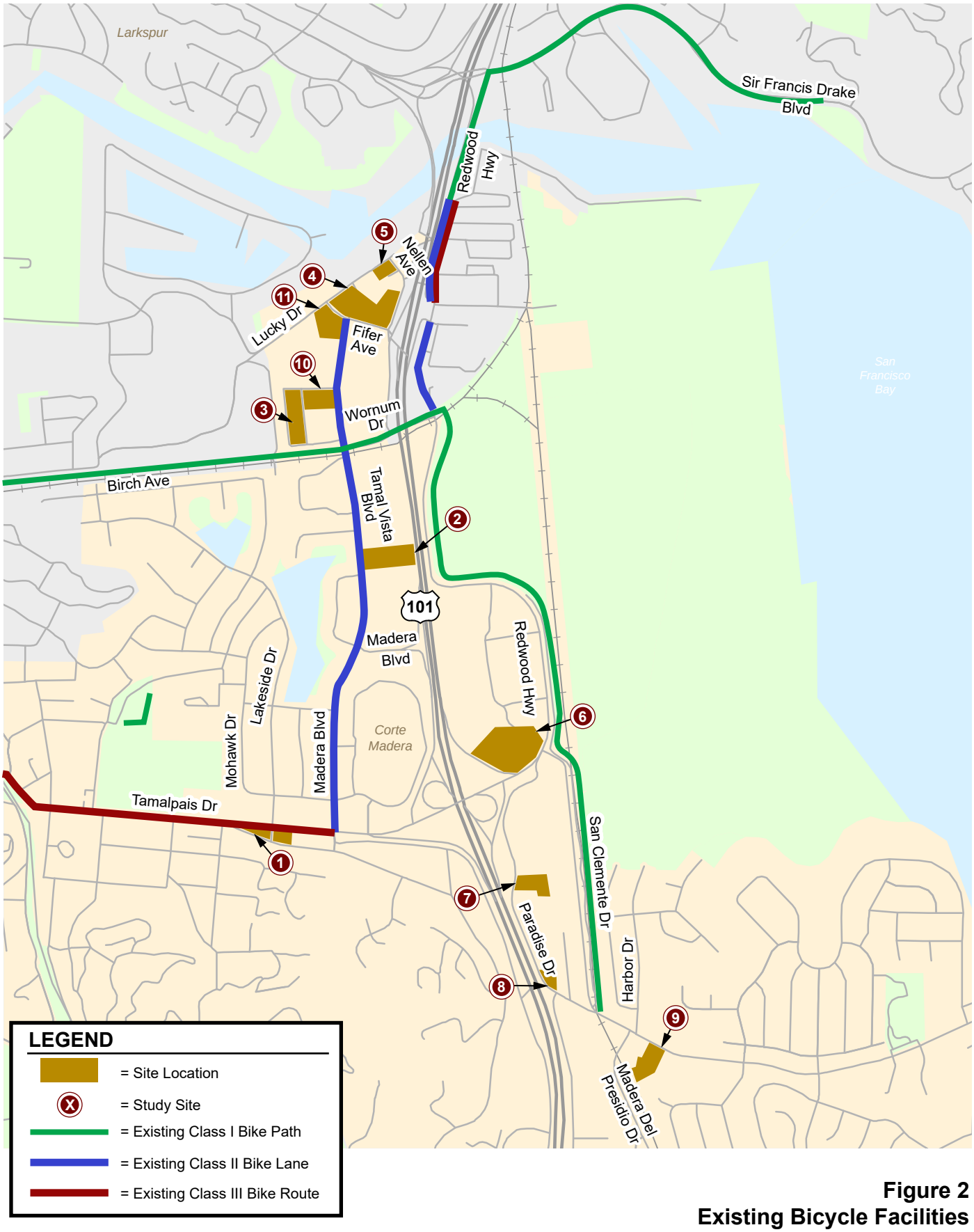


Figure 2
Existing Bicycle Facilities



Figure 3
Existing Transit Services

3. CEQA Transportation Analysis

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

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

Implementation of The HEU would not conflict with an applicable program, plan, ordinance, or policy establishing measures of effectiveness for the performance of addressing the circulation system, including transit, bicycle, and pedestrian facilities.

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

Specifically, any modifications or new transit, bicycle, and pedestrian facilities would be subject to and designed in accordance with all applicable General Plan policies. In particular, General Plan Policy CIR-1.1 supports safe and convenient linkages between all modes of travel within the planning area and extending between the Town and adjacent jurisdictions in the region. CIR-1.1a requires new development to incorporate convenient bicycle and pedestrian access and facilities in new development projects that link to Town and regional bicycle and pedestrian path connections. CIR-1.6 assures the adequacy and availability of the circulation system for all persons by implementing the Americans with Disabilities Act. CIR-1.7c supports streetscape design standards that support the concept of complete streets whereby all modes of transportation are accommodated. CIR-1.8 supports investment in local and regional transit and transportation plans that provide alternatives to automobile-intensive transportation programs through CIP actions aimed at reducing VMT. CIR 2.1b includes bicycle and

pedestrian improvements in the Town's updated Development Impact Fee program and within the Paradise/San Clemente Community Plan, prioritizing improved east/west connections in the Town. CIR 3.1 increases the Town's network of bicycle and pedestrian paths, especially Class I facilities, as viable alternatives to vehicular transportation, especially for access to neighborhoods, commercial centers, schools, parks, and other key activity centers. CIR 3.4 expands the number of public transit locations within Corte Madera, and CIR-3.5 emphasizes use of pedestrian pathways and sidewalks as an integral part of the Town's circulation system.

The Town has also adopted a Bicycle/Pedestrian Plan (adopted July 2016), which establishes the Town's vision for a network of bicycle and pedestrian facilities to encourage bicycling and walking as viable modes of travel around the Town. The Plan identifies specific improvement projects around the Town to improve the walking and bicycling environment. The plan proposes new or upgraded bicycle facilities and intersection improvements along major roads in the Town including Tamal Vista Boulevard, Madera Boulevard, Wornum Drive, Paradise Drive, San Clemente Drive, and Tamalpais Drive near which the proposed housing sites are located.

The proposed HEU sites are also well served by transit in the Town as shown in Figure 3. The transit services in the vicinity of the proposed housing sites include six Marin Transit bus routes (Route 17, 22, 36, 71, 613, 619) and three Golden Gate Transit (130, 132, 150) routes.

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

Mitigation Measure: None required.

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

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

Per OPR, a project's VMT is compared to the appropriate thresholds of significance based on the project location and type of development. When assessing a residential project, the project's VMT is divided by the number of residents expected to occupy the project to determine the VMT per capita. When assessing an office project, the project's VMT is divided by the number of employees. When assessing a retail project, the project's total VMT, as opposed to a per-capita or per-employee VMT metric, is measured. The total VMT for the region with and without the project is calculated. The difference between the two scenarios is the net change in total VMT that is attributable to the project.

If the proposed project is mixed-use, OPR recommends each component of the mixed-use project be evaluated independently and the significance threshold applied for each project type. Furthermore, if the proposed project is a redevelopment project and replaces VMT-generating land uses, and if the replacement leads to a net overall increase in VMT, then the thresholds described above for the proposed project uses should be applied.

VMT Thresholds of Significance

The HEU would result in an increase in Corte Madera's housing allocation by 884 dwelling units and a reduction in the Town's commercial/office uses by 54,728 square feet. Although there is a reduction in the Town's commercial/office uses, the increase in housing allocation would lead to a net overall increase in VMT, and the VMT threshold for the project uses (residential and commercial) would apply.

Since there is a reduction in commercial/office square footage, the VMT impact would be less than significant for these uses, and no additional VMT analysis is required for commercial/office uses.

OPR's guidelines state that for residential developments, the VMT analysis should be based on home-based VMT per resident. Consistent with OPR's guidelines, this analysis assumes 85 percent of the existing County average VMT per resident as the threshold of significance for residential development. Therefore, the HEU is considered to generate a significant VMT impact if the project sites' average home-based VMT per resident would exceed the existing County VMT per resident threshold.

Residential VMT Analysis

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

The model uses socioeconomic inputs (i.e., population, income, employment) aggregated into geographic areas, called transportation analysis zones (TAZs) and further refined micro analysis zones (MAZ) to estimate travel within the model area. For residential land uses, the VMT threshold is expressed in terms of home-based vehicle-miles travelled per resident. As estimated by the TAMDM model, the existing (2015) Marin County average residential VMT is estimated at 15.8 daily VMT per resident. Therefore, the VMT threshold for this project is 13.4 daily VMT per resident.

Table 5 shows the existing (2015) VMT per resident for each MAZ in which a proposed housing site is located. For MAZ's that do not have any existing residential uses, it is assumed that their VMT per resident would be similar to adjacent MAZ's with similar housing characteristics. The HEU VMT per resident was evaluated by conducting a weighted average of the VMT per resident and proposed housing for all project MAZs. The average VMT per resident for the HEU would be 14.7, which is 8.3 percent above the VMT threshold of 13.4. Therefore, the HEU would cause a significant impact on VMT.

Table 5
VMT Analysis

Site ID	Address	MAZ[1]	Proposed Residential (du)	VMT/Res[1]
1	601 Tamalpais[2]	813538	11	13.0
2	41 Tamal Vista	810084	73	13.6
3	400 & 500 Tamal Plaza[2]	811733	105	13.3
4	2 & 10 Fifer, 110 & 150 Nellen[2]	810924	120	13.6
5	111 Lucky[2]	810924	25	13.6
6	1400 Redwood Highway[2]	812476	300	16.1
7	5804 Paradise	813738	40	16.2
8	5750 Paradise	813738	61	16.2
9	5804 Paradise	810922	38	12.7
10	100 Tamal Vista[2]	811733	53	13.3
11	240 Tamal Vista[2]	810924	58	13.6
			Average VMT/Res for Proposed Housing	14.7
			VMT/Res Threshold (15% below County Average:15.8)	*13.4*
			Percent VMT/Res Reduction Required to Mitigate Significant Impact	**8.3%**

Notes:
MAZ = Micro Analysis Zone; VMT = Vehicular Miles Travelled; Res = Resident

1. Existing (2015) VMT/Res estimates reported for the MAZ in which the proposed housing site is located from the Transportation Authority of Marin's Demand Model (TAMDM).

2. These MAZs currently do not have any housing. It is assumed that their VMT/Res would be similar to the adjacent MAZs with similar housing characteristics. Therefore, VMT/Res for the MAZ was calculated using a weighted average of the adjacent MAZs.

VMT Impacts and Mitigation Measures

Because the residential use would generate a VMT level (14.7 per resident) greater than the threshold (13.4 per capita), therefore, the HEU would result in a significant transportation impact on VMT. Therefore, mitigation measures for the HEU are required to reduce VMT to below the threshold.

Mitigation: It is recommended that the HEU and all development projects associated with the HEU include travel demand management measures, including but not limited to the measures below, which have been identified as potentially VMT reducing in the California Air Pollution Control Officers Association (CAPCOA) Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity (December 2021). Potential VMT reduction estimates are included below. It should be noted that CAPCOA research indicates that VMT reductions probably wouldn't exceed 10 percent for development projects in suburban settings such as Corte Madera.

- Unbundle parking costs (i.e. sell or lease parking separately from the housing unit). Effectiveness: up to 15.7 percent reduction in GHG from VMT per the CAPCOA Handbook.
- Provide car-sharing, bike sharing, or scooter sharing programs. Effectiveness: 0.15 – 0.18 percent reduction in GHG from VMT for car share, 0.02 – 0.06 percent for bike share, and 0.07 percent for scooter share, per the CAPCOA Handbook. The higher car share and bike share values are for electric car and bike share programs.

- Subsidize transit passes for residents of affordable housing. Effectiveness: up to 5.5 percent reduction in GHG from VMT per the CAPCOA Handbook.
- Integrate affordable and below market rate housing. Effectiveness: up to 28.6 percent reduction in GHG from VMT per the CAPCOA Handbook.

With the implementation of a residential TDM Plan to include the above measures, the HEU VMT impact would be less than significant with mitigation.

Implementation of the HEU would not result in designs for on-site circulation, access, and parking areas that fail to meet Town or industry standard design guidelines.

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

Mitigation Measure: None required.

Implementation of the HEU would not result in inadequate emergency access to development sites.

There are no specific development projects associated with the HEU; and thus, specific housing sites developed under the HEU cannot be analyzed for adequacy of emergency access at this time. However, the Town maintains the roadway network that provides access to new development sites in accordance with industry design standards, which ensures that the physical network would be free of obstructions to emergency responders. Emergency access to new development sites proposed under the HEU would be subject to review by the Town and responsible emergency service agencies, thus ensuring the projects would be designed to meet all emergency access and design standards. The Town also requires the preparation of construction management plans that minimize temporary obstruction of traffic during site construction.

Additional vehicles associated with new development sites could increase delays for emergency response vehicles during peak commute hours. However, emergency responders maintain response plans which include use of alternate routes, sirens, and other methods to bypass congestion and minimize response times. In addition, California law requires drivers to yield the right-of-way to emergency vehicles and remain stopped until the emergency vehicle passes to ensure the safe and timely passage of emergency vehicles.

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

Mitigation Measure: None required.

4. Local Transportation Analysis

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

Intersection Operations Analysis

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

Project Trip Estimates

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

Trip Generation

AM and PM peak hour trip generation rates resulting from new development are typically estimated using trip rates published in the Institute of Transportation Engineers' (ITE) *Trip Generation Manual*, 11th Edition. Trips that would be generated by the proposed housing were estimated using the ITE trip rates for "Low-Rise Multifamily Housing" (Land use 220) and "Mid-Rise Multifamily Housing" (Land use 221) based on the proposed housing density on each site. Less than 25 dwelling units/acre were assumed to be "Low-Rise Multifamily Housing" and greater than 25 dwelling units /acre were assumed to be "Mid-Rise Multifamily Housing". Trips that are being generated by existing retail development on the sites or that would be generated by future retail development were estimated using the ITE trip rates for "Strip Retail Plaza (<40K)" (Land use 822) and "Strip Retail Plaza (40-150K) – Supermarket-No" (Land use 821). Trips that are being generated by existing office development on the sites were estimated using ITE trip rates for "General Office Building" (Land use 710). Trip credits were applied for locations where retail and office development would be removed.

ITE does not provide trip rates for a weekday mid-afternoon peak hour (2:00 PM to 4:00 PM). Mid-afternoon peak hour rates were computed based on time-of-day trip distribution data provided by the ITE Trip Generation Manual, 11th Edition.

After applying trip credits for existing uses, it is estimated that the proposed project would generate 2,956 new daily trips, including 348 new trips (63 inbound and 285 outbound) during the AM peak hour, 350 new trips (200 inbound and 150 outbound) during the mid-afternoon peak hour, and 503 new trips (320 inbound and 183 outbound) during the PM peak hour (see Table 6).

Table 6
Project Trip Generation Estimates

Land Use[1]	Size		Daily		AM Peak Hour				Mid-Afternoon Peak Hour [6,7]				PM Peak Hour			
			Rate	Trips	Rate	In	Out	Total	Rate	In	Out	Total	Rate	In	Out	Total
Proposed Uses																
Multifamily Housing (Low-Rise)[2]	74	DU	6.74	499	0.40	7	23	30	0.32	14	10	24	0.51	24	14	38
Multifamily Housing (Mid-Rise)[3]	810	DU	4.54	3,677	0.37	69	231	300	0.20	100	65	165	0.39	193	123	316
Strip Retail Plaza (<40K)[4]	153.9	KSF	54.45	8,379	2.36	218	145	363	6.10	469	469	938	6.59	507	507	1,014
Strip Retail Plaza (40 - 150K)[5]	110.8	KSF	67.52	7,482	1.73	119	73	192	4.67	254	264	518	5.19	282	293	575
Existing Uses																
Strip Retail Plaza (<40K)[4]	-40.5	KSF	54.45	-2,203	2.36	-57	-38	-95	6.10	-124	-123	-247	6.59	-134	-133	-267
Strip Retail Plaza (40 - 150K)[5]	-212.6	KSF	67.52	-14,354	1.73	-228	-140	-368	4.67	-487	-506	-993	5.19	-540	-563	-1103
General Office Building[6]	-48.4	KSF	10.84	-525	1.52	-65	-9	-74	1.13	-26	-29	-55	1.44	-12	-58	-70
Net Total Trips				**2,956**		**63**	**285**	**348**		**200**	**150**	**350**		**320**	**183**	**503**

Note:
1. Trip rates are from the ITE Trip Generation Manual, 11th Edition, 2021.
2. Multifamily Housing (Low-Rise) (Land Use 220), average rates expressed in trips per dwelling unit (DU) are used.
3. Multifamily Housing (Mid-Rise) (Land Use 221), average rates expressed in trips per dwelling unit (DU) are used.
4. Strip Retail Plaza (<40K) (Land Use 822), average rates expressed in trips per 1000 square feet are used.
5. Shopping Plaza (40-150K) - Supermarket - No (Land Use 821), average rates expressed in trips per 1000 square feet are used.
6. General Office Building (Land Use 710), average rates expressed in trips per 1000 square feet are used.
7. ITE Trip Generation manual does not provide trip rates for the mid-afternoon peak hour (2PM-4PM). Mid-afternoon peak hour rates have been computed based on vehicle time of day distribution data provided by the ITE Trip Generation Manual, 11th Edition.
8. Mid-Afternoon peak hour inbound and outbound splits for Land Use 220 and Land Use 221 have been computed based on vehicle time of day distribution data provided by the ITE Trip Generation Manual, 11th Edition. The manual does not provide inbound and outbound splits during the mid-afternoon peak hour for Land Use 821 and Land Use 822. PM peak hour inbound and outbound splits have been used for these uses.

A breakdown of trip generation estimates by site is included in Appendix C.

Trip Distribution and Assignment

The trip distribution patterns for the residential, commercial, and office uses were developed based on existing travel patterns on the surrounding roadway network, the location of complementary land uses like schools, and freeway access points. Figure 4 shows the distribution patterns for the project's residential uses during each peak hour. It is assumed that during the AM and mid-afternoon peak hours, a higher percentage of residential trips would be local due to school pick-up and drop-off, while during the PM peak hour a higher percentage of trips would be commute trips. Figure 5 shows the distribution patterns for the commercial uses, which would be predominantly local trips and the trip distribution pattern for the existing office uses. The peak-hour vehicle trips generated by the existing and proposed project uses were assigned to the roadway network in accordance with the trip distribution patterns for each land use and the locations of project sites (see Figure 6).

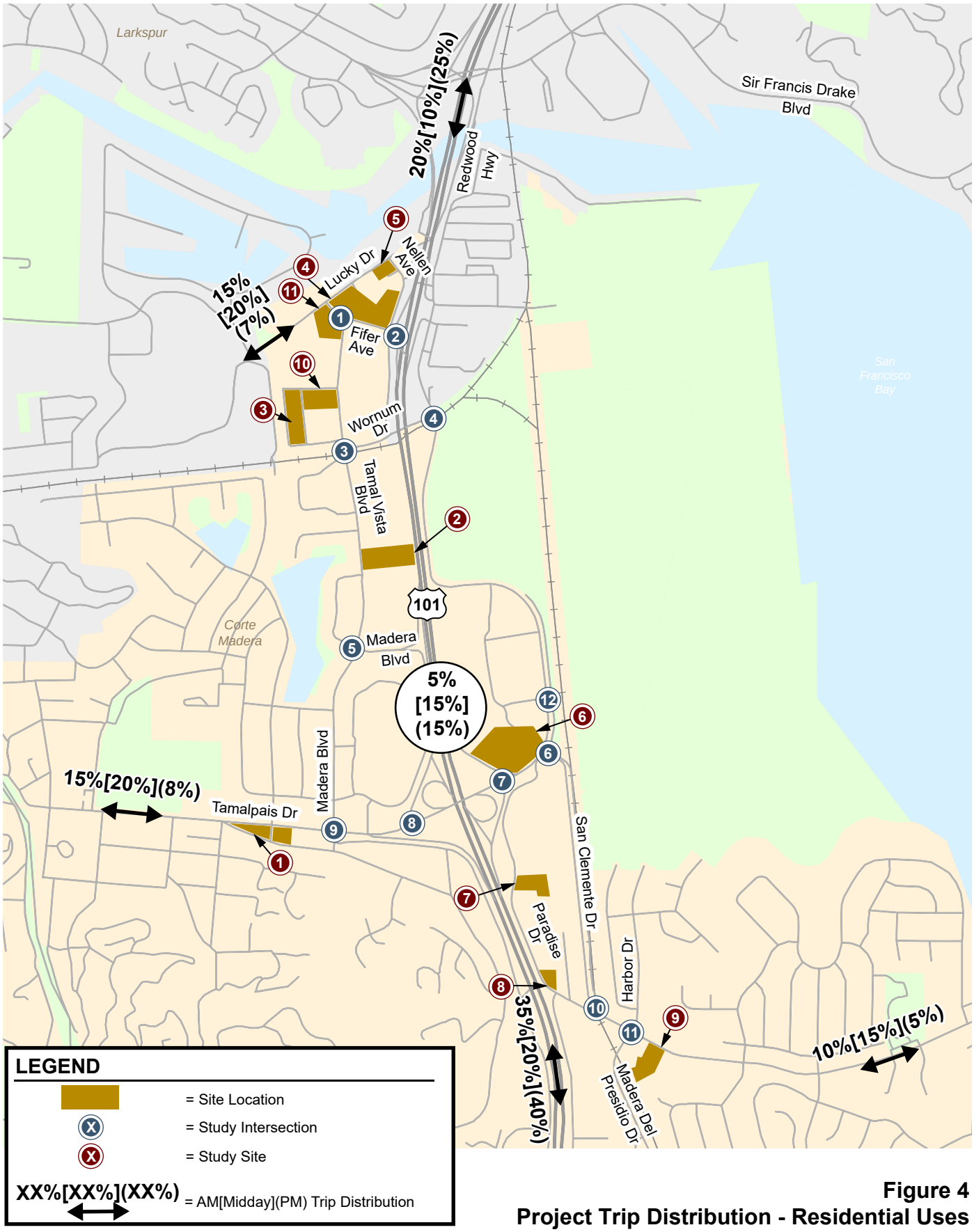


Figure 4
Project Trip Distribution - Residential Uses

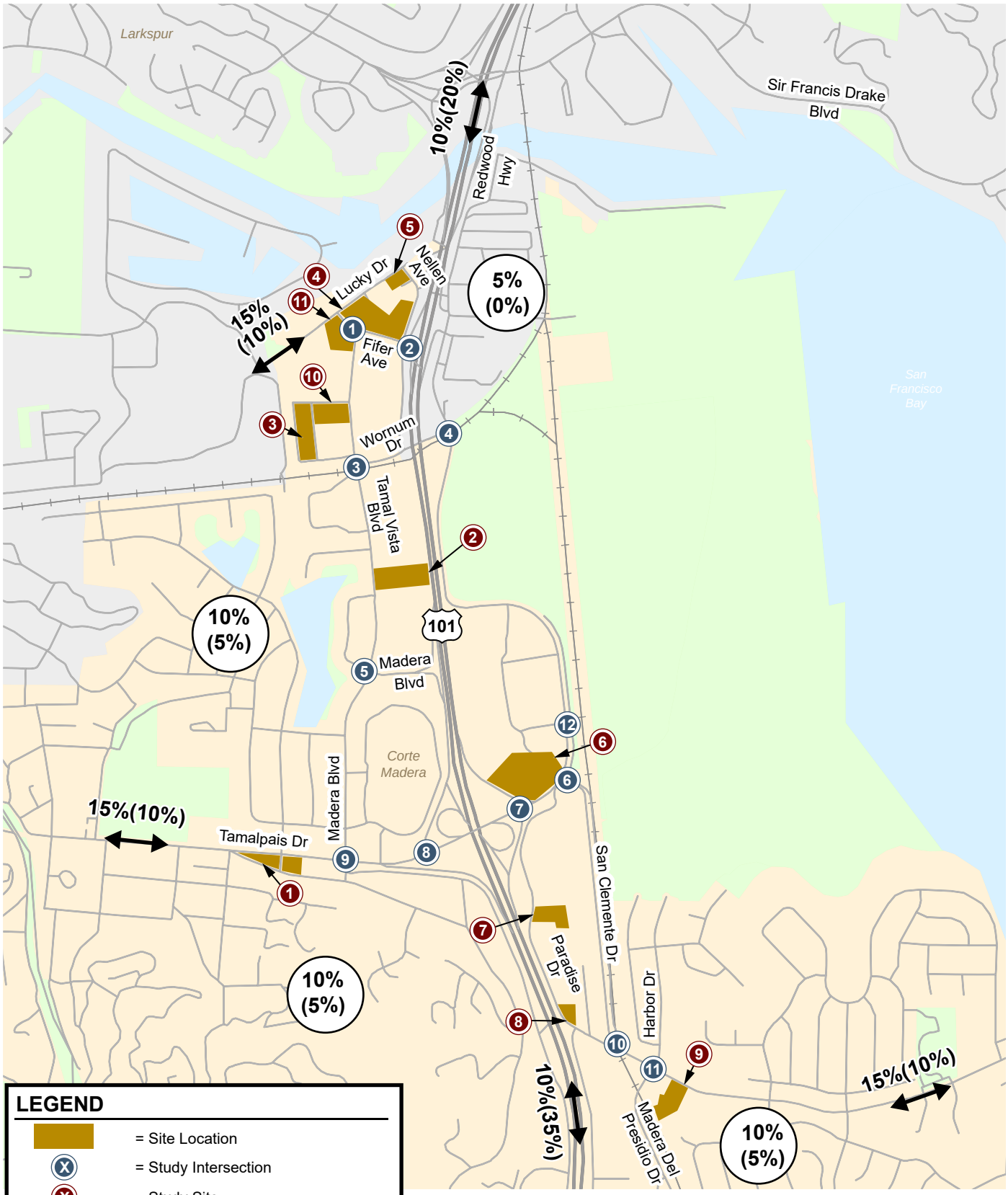


Figure 5
Project Trip Distribution - Commercial/Office Uses

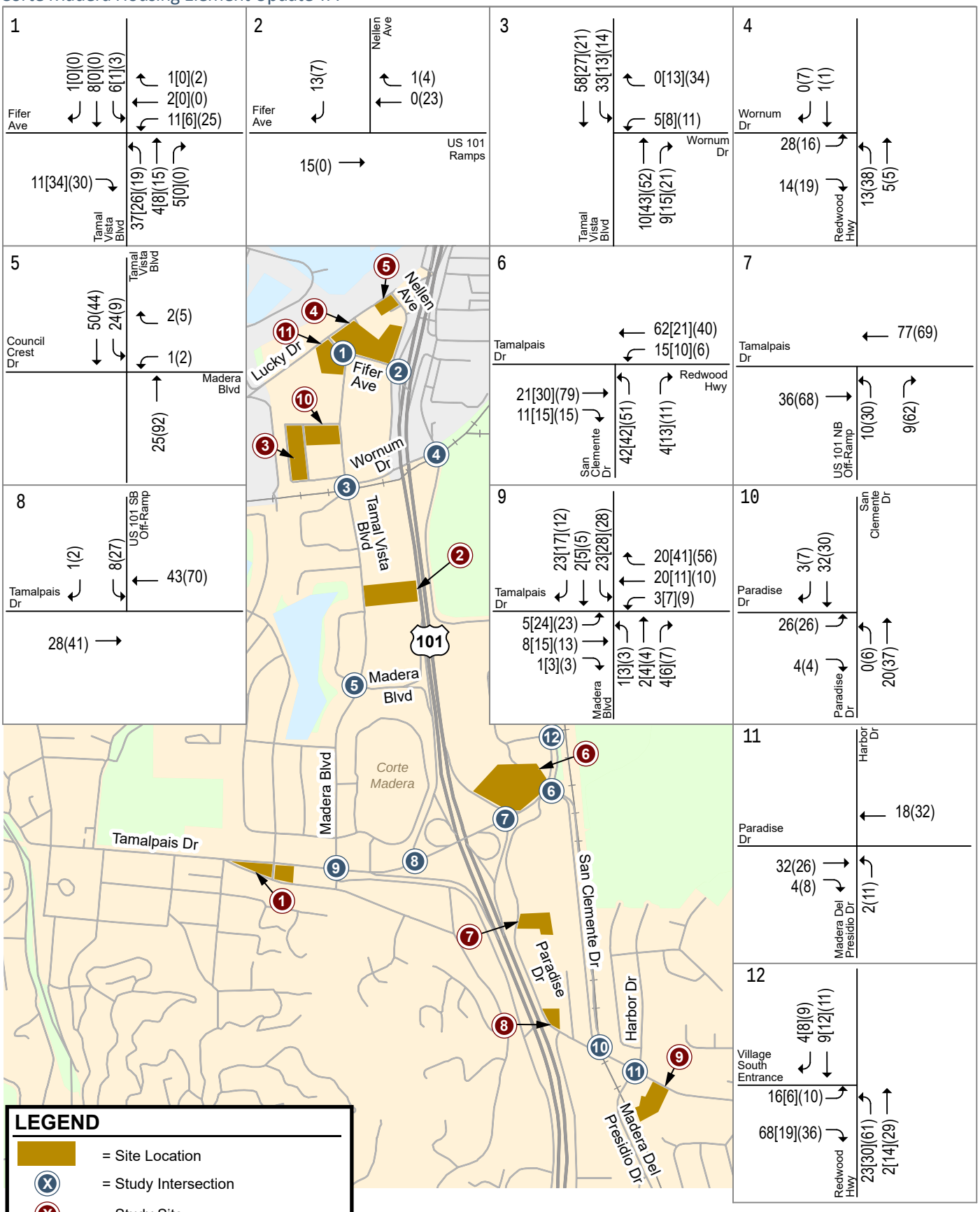


Figure 6
Project Trip Assignment

NORTH
Not to Scale

Intersection Lane Configurations and Traffic Volumes Under All Scenarios

Existing Lane Configurations and Traffic Volumes

The existing lane configurations at the study intersections are shown on Figure 7.

Existing AM, mid-afternoon, and PM traffic volumes at the study intersections were based on pre-pandemic traffic counts conducted in 2014, 2015, 2016, 2017, and 2018 and new AM and PM peak hour counts collected in 2022 where pre-pandemic counts were not available. No new counts were collected during the mid-afternoon peak period.

Since the pre-pandemic counts are older than two years, intersections that had multiple years of historical count data were explored to determine whether a growth factor should be applied. However, the more recent years of intersection traffic counts showed only a marginal increase in traffic volumes during the AM peak hour and a marginal decrease in traffic volumes during the PM peak hour. Therefore, the highest available count for each intersection was used for the analysis during each analysis peak hour, and no additional growth factor was applied to increase the counts to 2022.

Due to regional shelter-in-place orders during the COVID-19 pandemic, the 2022 traffic counts do not represent typical traffic conditions. These counts were factored by comparing new counts to available pre-pandemic counts. The factor was derived based on the highest available pre-pandemic count at two intersections (San Clemente Drive & Tamalpais Drive/Redwood Highway and Madera Boulevard & Tamalpais Drive) and new counts conducted at these intersections. Compared to the pre-pandemic counts, the new 2022 counts were approximately 7 percent lower during the AM peak hour, and the PM peak hour counts were approximately 10 percent lower. These percentages were used to adjust the 2022 intersection counts to reflect pre-COVID conditions. The adjusted existing peak-hour intersection volumes are shown on Figure 8. Intersection turning-movement counts conducted for this analysis are presented in Appendix A. The volume summary sheets with the adjusted existing counts are presented in Appendix B.

Existing Plus Project Lane Configurations and Traffic Volumes

Roadway improvements identified at the Tamalpais Drive/Redwood Highway & San Clemente Drive intersection in the Village at Corte Madera Expansion EIR (2017), were assumed to be implemented under existing plus project conditions as directed by Town Staff. The improvement includes widening of eastbound Tamalpais Drive/Redwood Highway at San Clemente Drive to three lanes and widening of the northbound San Clemente Drive approach to Tamalpais Drive/Redwood Highway to three left-turn lanes and one right-turn lane. As outlined in the Village at Corte Madera Expansion EIR, The Village is conditioned to fund 100 percent of the cost of implementing the improvement. Since one of the proposed development sites is located in The Village, it is reasonable to include this improvement in the existing plus project scenario.

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

Project trips were added to existing traffic volumes to obtain existing plus project traffic volumes (see Figure 9).

Cumulative Lane Configurations and Traffic Volumes

Roadway improvements identified at the Tamalpais Drive/Redwood Highway & San Clemente Drive intersection (described above) were assumed to be implemented under all cumulative scenarios as directed by Town Staff.

The cumulative scenario assumed a year 2031 horizon, which represents the RHNA planning cycle. An annual growth factor of 0.4 percent was developed using the 2015 and 2040 AM, mid-afternoon, and

PM peak hour TAMDM model link volumes along the major arterial and collector streets in the study area. The growth factor to year 2031 was applied to all study intersections. The cumulative peak-hour intersection volumes are shown on Figure 10.

Cumulative Plus Project Lane Configurations and Traffic Volumes

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

Project trips were added to cumulative traffic volumes to obtain cumulative plus project traffic volumes (see Figure 11).

Intersection Traffic Operations

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

Existing and Project Conditions

Intersection levels of service were evaluated against the standards of the City of Corte Madera. The results of the analysis show that all of the study intersections are currently operating at acceptable levels of service during the AM, mid-afternoon, and PM peak hours of traffic.

Most of the study intersections would continue to operate at an acceptable level of service under existing plus project conditions. The all way stop controlled intersection of Tamal Vista Boulevard and Madera Boulevard would operate at a substandard LOS E during the PM peak hour. This constitutes an adverse effect per the Town's level of service Policy CIR-1.2.

A signal warrant check per the *California Manual of Uniform Traffic Control Devices (CA MUTCD Section 4C, warrant 3)* was conducted for the intersection of Tamal Vista Boulevard and Madera Boulevard based on peak-hour traffic. The peak hour signal warrant would be met for the PM peak hour under existing plus project conditions. The peak-hour signal warrant calculation sheets can be found in Appendix E.

It is recommended that the intersection be monitored as growth in the City occurs, and if warranted in the future, the intersection should be signalized or a roundabout should be installed if feasible, to improve the traffic operations to meet the Town's level of service standard.

Cumulative and Project Conditions

Intersection levels of service were evaluated against the standards of the City of Corte Madera. The results of the analysis show that all of the study intersections would operate at acceptable levels of service during the AM, mid-afternoon, and PM peak hours of traffic under cumulative conditions.

Most of the intersections would continue to operate at an acceptable level of service under cumulative plus project conditions. The all way stop controlled intersection of Tamal Vista Boulevard and Madera Boulevard would operate at a substandard LOS E during the PM peak hour. This constitutes an adverse effect per the Town's level of service Policy CIR-1.2.

A signal warrant check per the *CA MUTCD Section 4C, warrant 3* was conducted for the intersection of Tamal Vista Boulevard and Madera Boulevard based on the peak-hour traffic. The peak hour signal warrant would be met for the PM peak hour under cumulative no project and cumulative plus project conditions. The peak-hour signal warrant calculation sheets can be found in Appendix E.

The recommendation outlined under existing plus project conditions would also be applicable under cumulative plus project conditions.

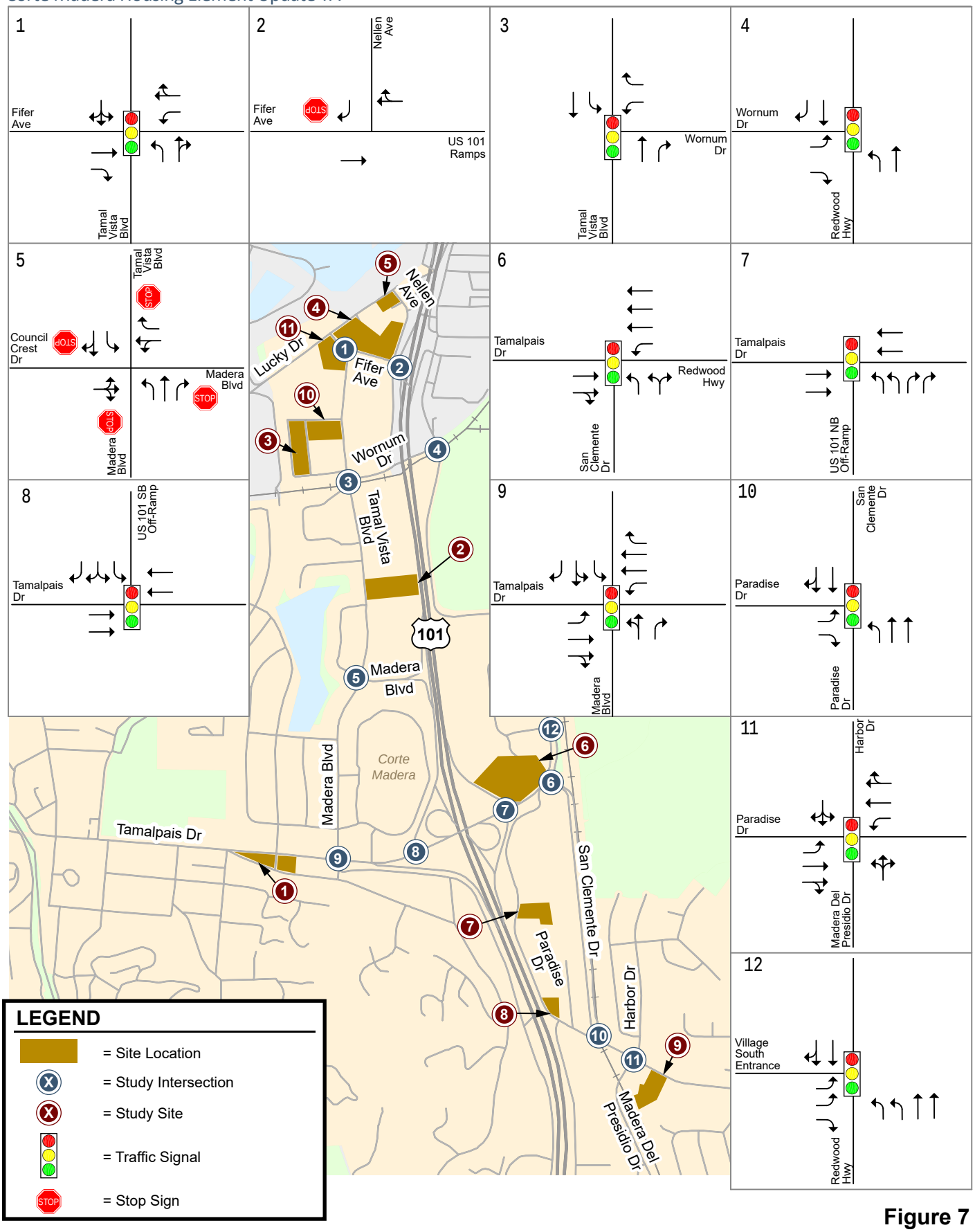


Figure 7
Existing Lane Configurations

NORTH
Not to Scale

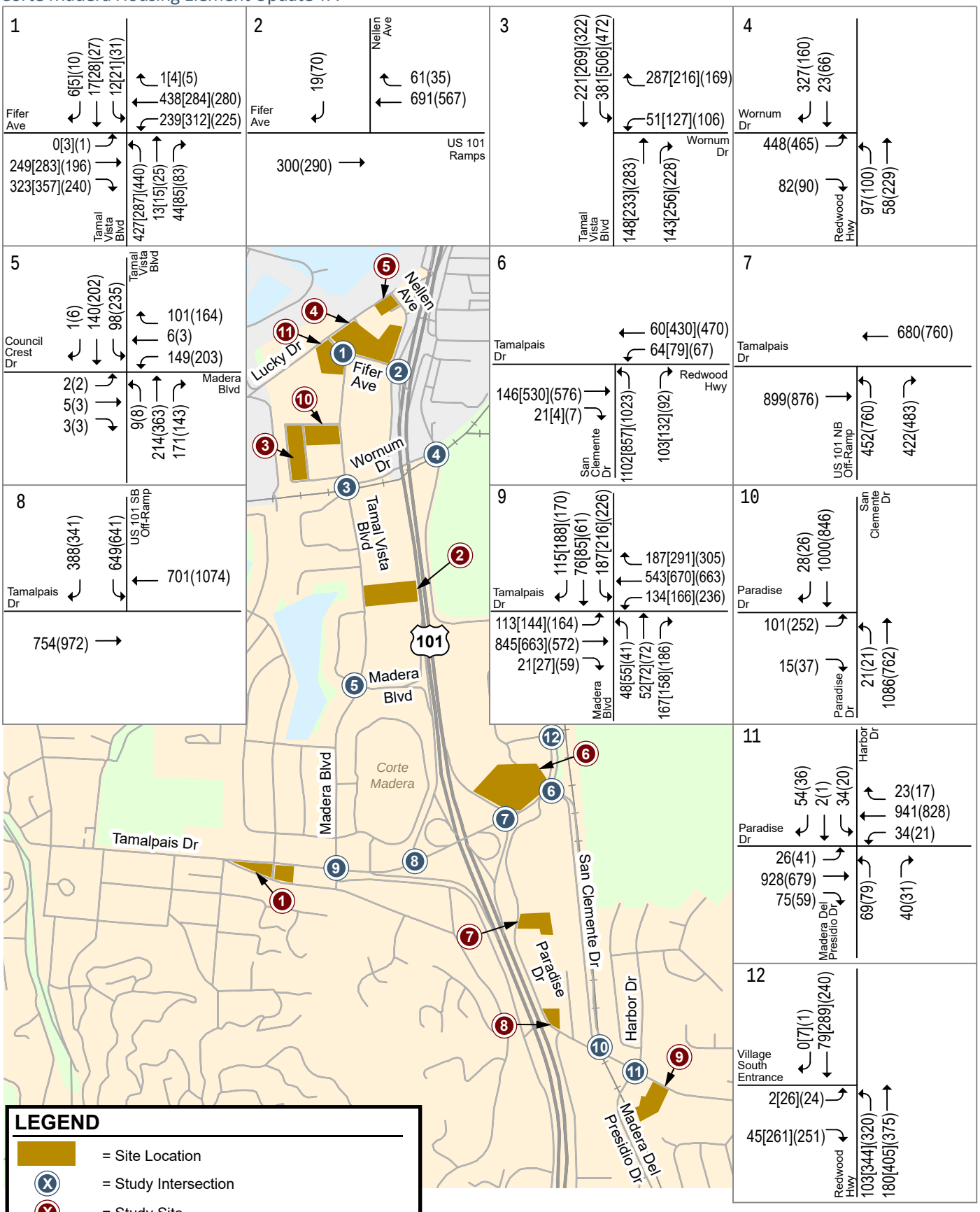


Figure 8
Existing Traffic Volumes

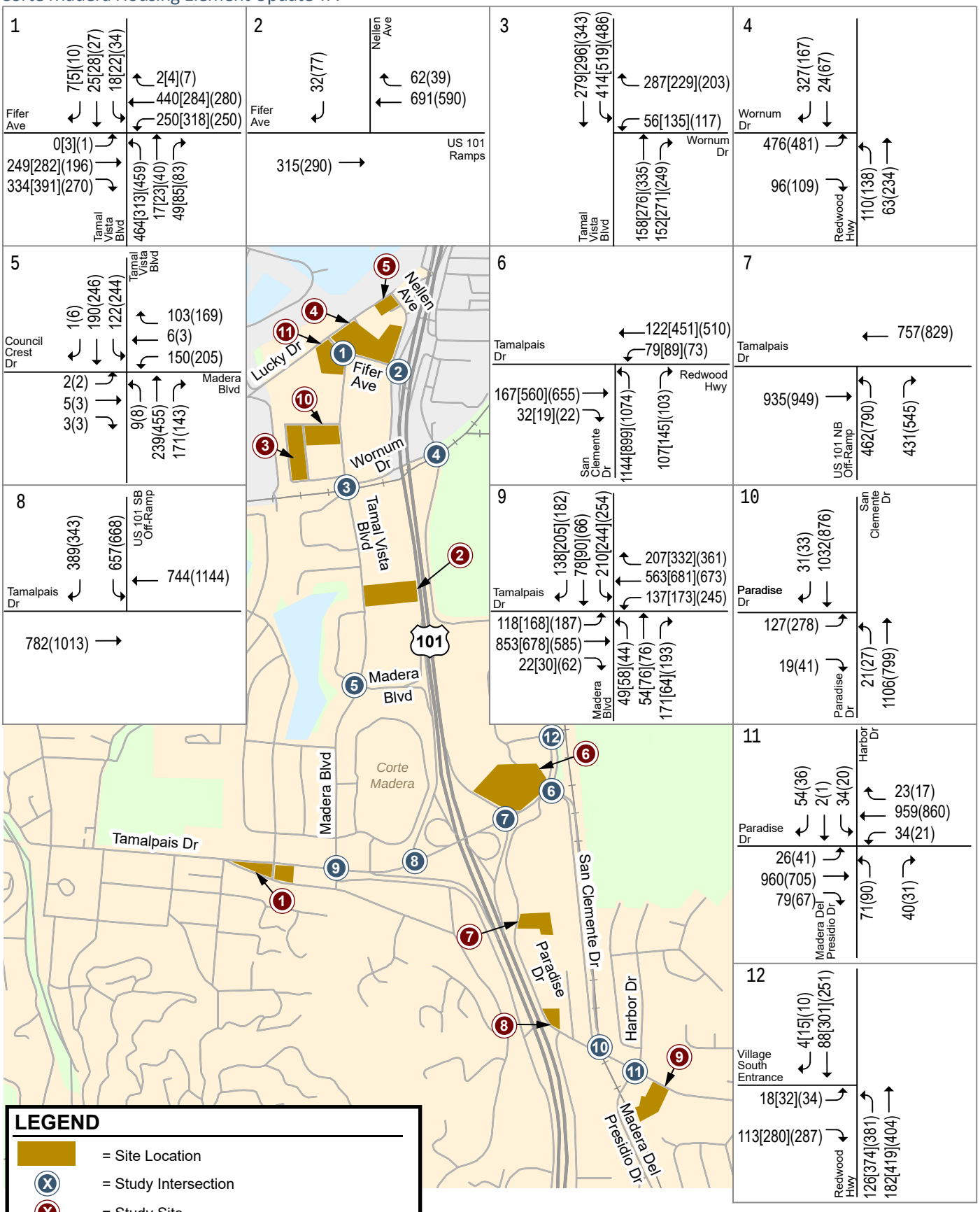


Figure 9
Existing Plus Project Traffic Volumes

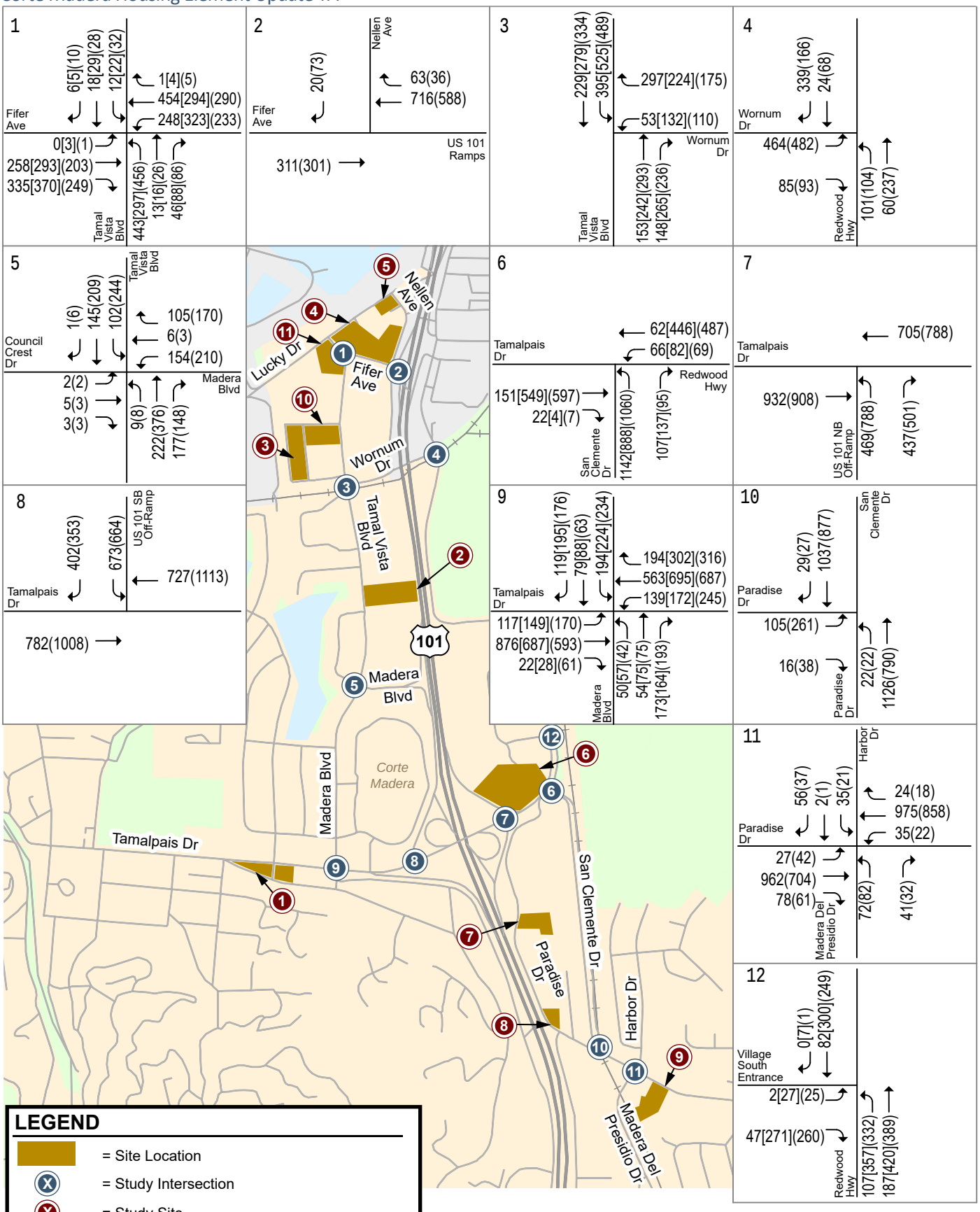


Figure 10
Cumulative Traffic Volumes

NORTH
Not to Scale

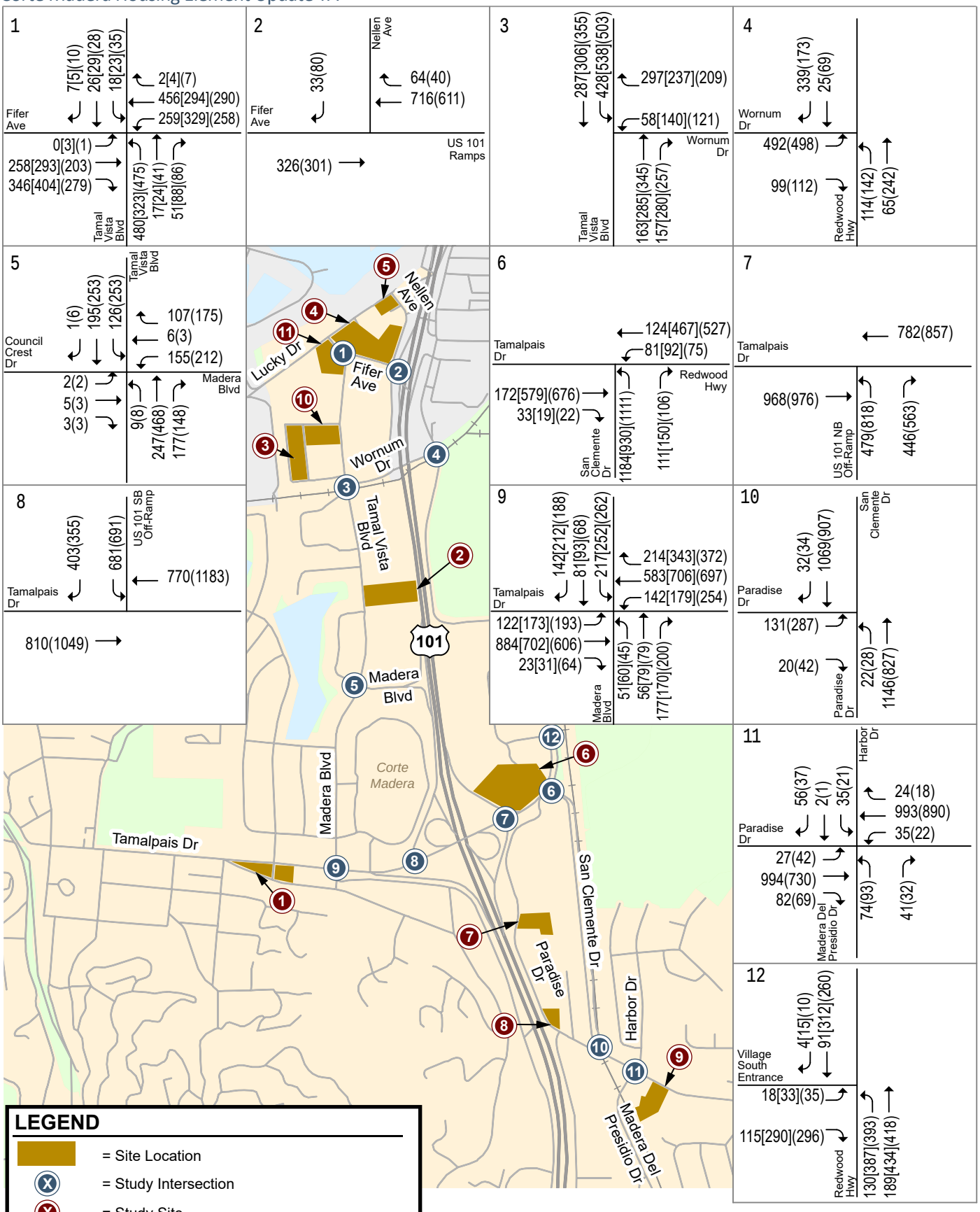


Figure 11
Cumulative Plus Project Traffic Volumes

Table 7
Intersection Level of Service Summary

#	Intersection	Intersection Control	LOS Standard	Peak Hour	Count Date	Existing Conditions Delay[1] (sec)	Existing Conditions LOS	Existing plus Project Delay[1] (sec)	Existing plus Project LOS	Cumulative Conditions Delay[1] (sec)	Cumulative Conditions LOS	Cumulative plus Project Delay[1] (sec)	Cumulative plus Project LOS
1	Tamal Vista Boulevard & Fifer Avenue[2]	Signal	D	AM	03/31/22	23.6	C	26.2	C	24.6	C	27.3	C
				MD	02/25/16	22.2	C	23.1	C	22.9	C	30.1	C
				PM	02/25/16	26.9	C	27.1	C	27.4	C	27.4	C
2	Nellen Avenue/US 101 ramps & Fifer Avenue	Side-Street Stop	D	AM	03/31/22	14.7	B	15.0	B	15.1	B	15.5	B
				PM	03/31/22	14.0	B	14.5	B	14.4	B	15.0	B
3	Tamal Vista Boulevard & Wornum Drive	Signal	D	AM	04/09/14	15.7	B	15.7	B	15.9	B	15.9	B
				MD	02/25/16	21.9	C	23.0	C	22.3	C	23.3	C
				PM	04/09/14	21.3	C	22.4	C	21.6	C	22.8	C
4	Redwood Highway & Wornum Drive	Signal	D	AM	03/31/22	30.3	C	31.4	C	30.6	C	31.6	C
				PM	10/15/15	29.5	C	32.4	C	29.9	C	32.8	C
5	Tamal Vista Boulevard & Madera Boulevard	All Way Stop	D	AM	04/09/14	11.9	B	13.1	B	12.2	B	13.5	B
				PM	04/09/14	23.5	C	**43.7**	**E**	26.1	D	**48.5**	**E**
6	San Clemente Drive & Tamalpais Drive/Redwood Highway	Signal	D	AM	02/27/18	16.0	B	12.9	B	12.6	B	13.0	B
				MD	02/27/18	15.6	B	12.7	B	12.5	B	13.0	B
				PM	10/15/15	17.4	B	13.6	B	13.0	B	14.0	B
7	US 101 NB off ramp & Tamalpais Drive	Signal	D	AM	04/09/14	11.4	B	11.4	B	11.6	B	11.6	B
				PM	04/09/14	15.4	B	15.8	B	15.7	B	16.2	B
8	US 101 SB off ramp & Tamalpais Drive	Signal	D	AM	02/17/18	13.7	B	13.7	B	14.0	B	14.0	B
				PM	04/09/14	12.7	B	12.9	B	13.0	B	13.3	B
9	Madera Boulevard & Tamalpais Drive	Signal	D	AM	05/25/17	30.1	C	31.2	C	30.7	C	31.9	C
				MD	02/27/18	33.9	C	36.5	D	34.8	C	37.9	D
				PM	04/09/14	41.1	D	44.1	D	42.8	D	46.1	D
10	San Clemente Drive & Paradise Drive	Signal	D	AM	05/25/17	5.5	A	6.0	A	5.6	A	6.2	A
				PM	05/25/17	9.1	A	10.1	B	9.4	A	10.5	B
11	Madera Del Presidio/Harbor Drive & Paradise Drive	Signal	D	AM	03/31/22	9.3	A	9.3	A	9.4	A	9.5	A
				PM	03/31/22	8.4	A	8.6	A	8.5	A	8.7	A
12	Redwood Highway & Village South Entrance	Signal	D	AM	03/31/22	12.3	B	20.5	C	12.5	B	20.4	C
				MD	10/15/15	23.0	C	23.5	C	23.1	C	23.6	C
				PM	10/15/15	23.4	C	24.4	C	23.5	C	24.4	C

Notes:
MD = Mid-Afternoon peak hour

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

2. Indicates the intersection level of service is calculated using the HCM 2000 module with the Synchro software. This intersection has unusual signal operations that cannot be supported by Synchro HCM 6th Edition module.

Bold Indicates substandard level of service
Bold The project would cause an adverse effect.

Corte Madera Housing Element Update
Transportation Analysis

Technical Appendices

September 12, 2022

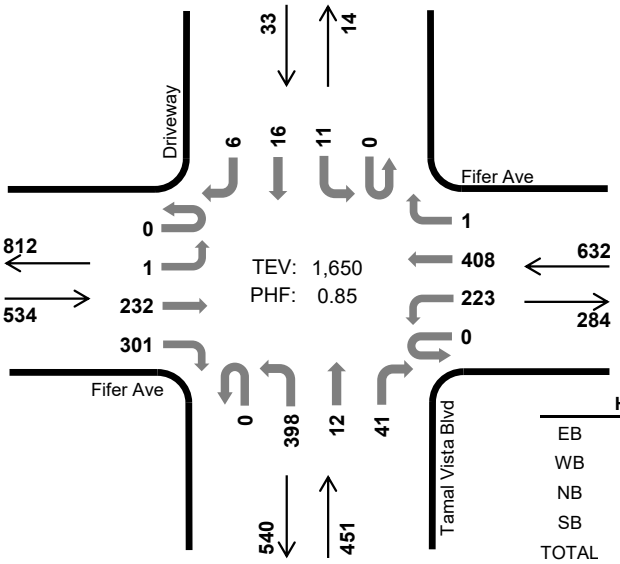
Appendix A

Traffic Counts

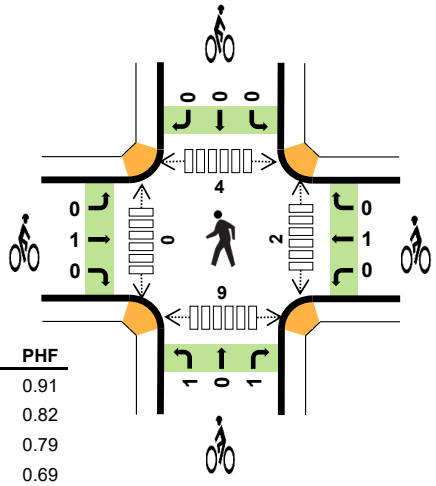
Tamal Vista Blvd
Fifer Ave

Date: 03/31/2022
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:45 AM to 8:45 AM

Peak Hour



	HV %:	PHF
EB	1.3%	0.91
WB	3.8%	0.82
NB	1.1%	0.79
SB	0.0%	0.69
TOTAL	2.2%	0.85



Two-Hour Count Summaries

Interval Start	Fifer Ave Eastbound				Fifer Ave Westbound				Tamal Vista Blvd Northbound				Driveway Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	37	26	0	44	42	0	0	42	1	9	0	0	0	0	201	0
7:15 AM	0	0	38	32	0	39	64	2	0	41	0	8	0	0	0	0	224	0
7:30 AM	0	0	44	35	0	34	83	1	0	45	1	8	0	0	2	1	254	0
7:45 AM	**0**	**0**	**45**	**57**	**0**	**36**	**109**	**0**	**0**	**112**	**1**	**13**	**0**	**2**	**2**	**0**	**377**	1,056
8:00 AM	**0**	**0**	**70**	**72**	**0**	**58**	**134**	**0**	**0**	**134**	**6**	**2**	**0**	**5**	**4**	**3**	**488**	1,343
8:15 AM	**0**	**0**	**62**	**85**	**0**	**59**	**102**	**0**	**0**	**102**	**1**	**12**	**0**	**3**	**6**	**0**	**432**	1,551
8:30 AM	**0**	**1**	**55**	**87**	**0**	**70**	**63**	**1**	**0**	**50**	**4**	**14**	**0**	**1**	**4**	**3**	**353**	**1,650**
8:45 AM	0	3	32	51	0	63	54	1	0	62	3	11	0	5	6	3	294	1,567
Count Total	0	4	383	445	0	403	651	5	0	588	17	77	0	16	24	10	2,623	0
Peak Hour All	**0**	**1**	**232**	**301**	**0**	**223**	**408**	**1**	**0**	**398**	**12**	**41**	**0**	**11**	**16**	**6**	**1,650**	**0**
Peak Hour HV	**0**	**0**	**0**	**7**	**0**	**14**	**10**	**0**	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**36**	**0**
Peak Hour HV%	**-**	**0%**	**0%**	**2%**	**-**	**6%**	**2%**	**0%**	**-**	**1%**	**0%**	**0%**	**-**	**0%**	**0%**	**0%**	**2%**	**0**

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

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	1	8	1	0	*10*	2	1	0	0	*3*	1	0	2	1	*4*
7:15 AM	2	2	0	0	*4*	0	0	1	0	*1*	0	0	0	0	*0*
7:30 AM	2	3	1	0	*6*	1	0	1	0	*2*	0	0	1	0	*1*
7:45 AM	**1**	**6**	**1**	**0**	***8***	**0**	**1**	**1**	**0**	***2***	**0**	**0**	**1**	**4**	*5*
8:00 AM	**4**	**4**	**1**	**0**	***9***	**1**	**0**	**0**	**0**	***1***	**0**	**0**	**2**	**4**	*6*
8:15 AM	**2**	**6**	**1**	**0**	***9***	**0**	**0**	**0**	**0**	***0***	**1**	**0**	**1**	**1**	*3*
8:30 AM	**0**	**8**	**2**	**0**	***10***	**0**	**0**	**1**	**0**	***1***	**1**	**0**	**0**	**0**	***1***
8:45 AM	1	4	1	0	*6*	0	0	0	0	*0*	2	0	2	0	*4*
Count Total	13	41	8	0	*62*	4	2	4	0	*10*	5	0	9	10	*24*
Peak Hour	**7**	**24**	**5**	**0**	***36***	**1**	**1**	**2**	**0**	***4***	**2**	**0**	**4**	**9**	***15***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Fifer Ave Eastbound				Fifer Ave Westbound				Tamal Vista Blvd Northbound				Driveway Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	0	1	0	5	3	0	0	0	0	1	0	0	0	0	10	0
7:15 AM	0	0	1	1	0	2	0	0	0	0	0	0	0	0	0	0	4	0
7:30 AM	0	0	1	1	0	2	1	0	0	0	0	1	0	0	0	0	6	0
7:45 AM	**0**	**0**	**0**	**1**	**0**	**2**	**4**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**8**	28
8:00 AM	**0**	**0**	**0**	**4**	**0**	**2**	**2**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**9**	27
8:15 AM	**0**	**0**	**0**	**2**	**0**	**3**	**3**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**9**	32
8:30 AM	**0**	**0**	**0**	**0**	**0**	**7**	**1**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**10**	**36**
8:45 AM	0	0	1	0	0	2	2	0	0	0	0	1	0	0	0	0	6	34
Count Total	0	0	3	10	0	25	16	0	0	5	0	3	0	0	0	0	62	0
Peak Hour	**0**	**0**	**0**	**7**	**0**	**14**	**10**	**0**	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**36**	**0**

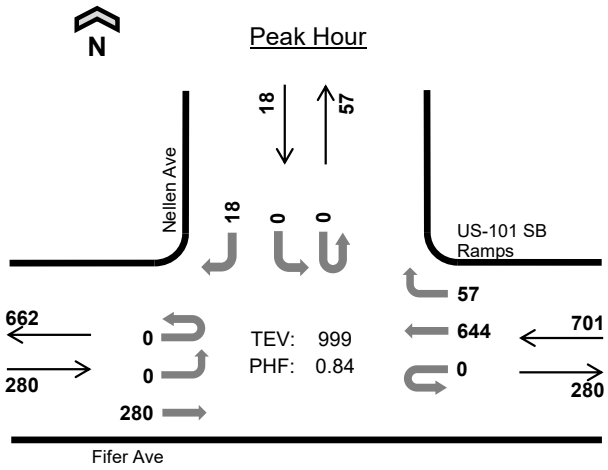
Two-Hour Count Summaries - Bikes

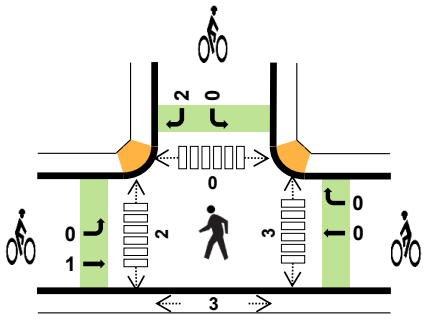
Interval Start	Fifer Ave Eastbound			Fifer Ave Westbound			Tamal Vista Blvd Northbound			Driveway Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	1	1	1	0	0	0	0	0	0	0	0	3	0
7:15 AM	0	0	0	0	0	0	1	0	0	0	0	0	1	0
7:30 AM	0	0	1	0	0	0	1	0	0	0	0	0	2	0
7:45 AM	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**2**	8
8:00 AM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	6
8:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	5
8:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**4**
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Count Total	0	2	2	1	1	0	3	0	1	0	0	0	10	0
Peak Hour	**0**	**1**	**0**	**0**	**1**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**4**	**0**

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

Nellen Ave
Fifer Ave

Date: 03/31/2022
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:45 AM to 8:45 AM





	HV %:	PHF
EB	0.0%	0.91
WB	4.3%	0.82
NB	-	-
SB	5.6%	0.75
TOTAL	3.1%	0.84

Two-Hour Count Summaries

Interval Start	Fifer Ave Eastbound				US-101 SB Ramps Westbound				N/A Northbound				Nellen Ave Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	44	0	0	0	96	6	0	0	0	0	0	0	0	0	146	0
7:15 AM	0	0	40	0	0	0	111	12	0	0	0	0	0	0	0	4	167	0
7:30 AM	0	0	48	0	0	0	121	12	0	0	0	0	0	0	0	2	183	0
7:45 AM	**0**	**0**	**60**	**0**	**0**	**0**	**161**	**10**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**233**	729
8:00 AM	**0**	**0**	**77**	**0**	**0**	**0**	**202**	**13**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**6**	**298**	881
8:15 AM	**0**	**0**	**74**	**0**	**0**	**0**	**162**	**27**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**267**	981
8:30 AM	**0**	**0**	**69**	**0**	**0**	**0**	**119**	**7**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**6**	**201**	**999**
8:45 AM	0	0	47	0	0	0	129	12	0	0	0	0	0	0	0	5	193	959
Count Total	0	0	459	0	0	0	1,101	99	0	0	0	0	0	0	0	29	1,688	0
Peak Hour All	**0**	**0**	**280**	**0**	**0**	**0**	**644**	**57**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**18**	**999**	**0**
Peak Hour HV	**0**	**0**	**0**	**0**	**0**	**0**	**29**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**31**	**0**
Peak Hour HV%	**-**	**-**	**0%**	**-**	**-**	**-**	**5%**	**2%**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**6%**	**3%**	**0**

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

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
7:00 AM	0	8	0	0	*8*	0	0	0	1	*1*	0	0	0	0	*0*
7:15 AM	1	1	0	0	*2*	0	0	0	0	*0*	4	2	0	0	*6*
7:30 AM	2	7	0	0	*9*	0	0	0	2	*2*	0	3	0	1	*4*
7:45 AM	**0**	**8**	**0**	**0**	***8***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
8:00 AM	**0**	**8**	**0**	**0**	***8***	**1**	**0**	**0**	**2**	***3***	**0**	**0**	**0**	**1**	*1*
8:15 AM	**0**	**8**	**0**	**0**	***8***	**0**	**0**	**0**	**0**	***0***	**2**	**0**	**0**	**0**	*2*
8:30 AM	**0**	**6**	**0**	**1**	***7***	**0**	**0**	**0**	**0**	***0***	**1**	**2**	**0**	**2**	***5***
8:45 AM	3	8	0	0	*11*	0	0	0	0	*0*	0	1	0	0	*1*
Count Total	6	54	0	1	*61*	1	0	0	5	*6*	7	8	0	4	*19*
Peak Hr	**0**	**30**	**0**	**1**	***31***	**1**	**0**	**0**	**2**	***3***	**3**	**2**	**0**	**3**	***8***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Fifer Ave				US-101 SB Ramps				N/A				Nellen Ave				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	8	0	0	0	0	0	0	0	0	0	8	0
7:15 AM	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	2	0
7:30 AM	0	0	2	0	0	0	7	0	0	0	0	0	0	0	0	0	9	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**7**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**8**	27
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**8**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**8**	27
8:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**8**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**8**	33
8:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**6**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**7**	**31**
8:45 AM	0	0	3	0	0	0	6	2	0	0	0	0	0	0	0	0	11	34
Count Total	0	0	6	0	0	0	51	3	0	0	0	0	0	0	0	1	61	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**29**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**31**	**0**

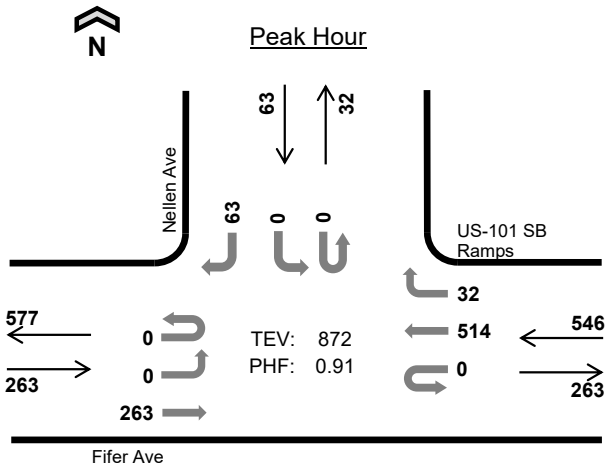
Two-Hour Count Summaries - Bikes

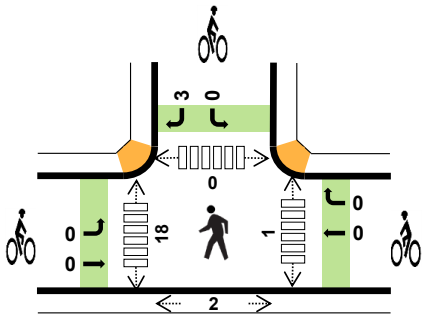
Interval Start	Fifer Ave			US-101 SB Ramps			N/A			Nellen Ave			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	1	1	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	2	2	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	3
8:00 AM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**3**	5
8:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	5
8:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Count Total	0	1	0	0	0	0	0	0	0	0	0	5	6	0
Peak Hour	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**3**	**0**

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

Nellen Ave
Fifer Ave

Date: 03/31/2022
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 5:00 PM to 6:00 PM





	HV %:	PHF
EB	1.1%	0.88
WB	0.9%	0.94
NB	-	-
SB	0.0%	0.72
TOTAL	0.9%	0.91

Two-Hour Count Summaries

Interval Start	Fifer Ave Eastbound				US-101 SB Ramps Westbound				N/A Northbound				Nellen Ave Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	73	0	0	0	126	13	0	0	0	0	0	0	0	20	232	0
4:15 PM	0	0	67	0	0	0	138	3	0	0	0	0	0	0	0	12	220	0
4:30 PM	0	0	70	0	0	0	121	7	0	0	0	0	0	0	0	9	207	0
4:45 PM	0	0	53	0	0	0	108	6	0	0	0	0	0	0	0	15	182	841
5:00 PM	**0**	**0**	**62**	**0**	**0**	**0**	**111**	**9**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**19**	**201**	810
5:15 PM	**0**	**0**	**75**	**0**	**0**	**0**	**136**	**7**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**22**	**240**	830
5:30 PM	**0**	**0**	**67**	**0**	**0**	**0**	**131**	**7**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**7**	**212**	835
5:45 PM	**0**	**0**	**59**	**0**	**0**	**0**	**136**	**9**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**15**	**219**	**872**
Count Total	0	0	526	0	0	0	1,007	61	0	0	0	0	0	0	0	119	1,713	0
Peak Hour All	**0**	**0**	**263**	**0**	**0**	**0**	**514**	**32**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**63**	**872**	**0**
Peak Hour HV	**0**	**0**	**3**	**0**	**0**	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**8**	**0**
Peak Hour HV%	**-**	**-**	**1%**	**-**	**-**	**-**	**1%**	**0%**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**0%**	**1%**	**0**

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

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	0	0	0	1	*1*	0	0	0	0	*0*	0	0	0	1	*1*
4:15 PM	0	1	0	0	*1*	0	0	0	0	*0*	1	1	0	1	*3*
4:30 PM	0	1	0	0	*1*	0	0	0	0	*0*	0	2	0	0	*2*
4:45 PM	0	2	0	0	*2*	0	0	0	0	*0*	0	5	0	2	*7*
5:00 PM	**0**	**4**	**0**	**0**	***4***	**0**	**0**	**0**	**0**	***0***	**0**	**7**	**0**	**1**	*8*
5:15 PM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***	**0**	**3**	**0**	**0**	*3*
5:30 PM	**1**	**1**	**0**	**0**	***2***	**0**	**0**	**0**	**3**	***3***	**0**	**5**	**0**	**0**	*5*
5:45 PM	**2**	**0**	**0**	**0**	***2***	**0**	**0**	**0**	**0**	***0***	**1**	**3**	**0**	**1**	***5***
Count Total	3	9	0	1	*13*	0	0	0	3	*3*	2	26	0	6	*34*
Peak Hr	**3**	**5**	**0**	**0**	***8***	**0**	**0**	**0**	**3**	***3***	**1**	**18**	**0**	**2**	***21***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Fifer Ave				US-101 SB Ramps				N/A				Nellen Ave				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
4:15 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0
4:30 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0
4:45 PM	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2	5
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	8
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	7
5:30 PM	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	8
5:45 PM	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**8**
Count Total	0	0	3	0	0	0	9	0	0	0	0	0	0	0	0	1	13	0
Peak Hour	**0**	**0**	**3**	**0**	**0**	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**8**	**0**

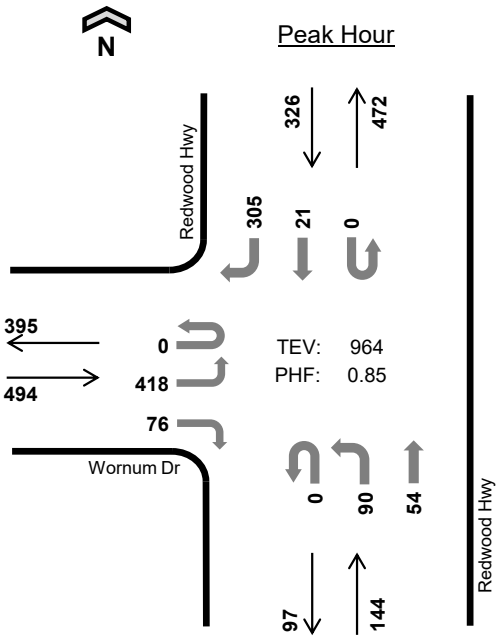
Two-Hour Count Summaries - Bikes

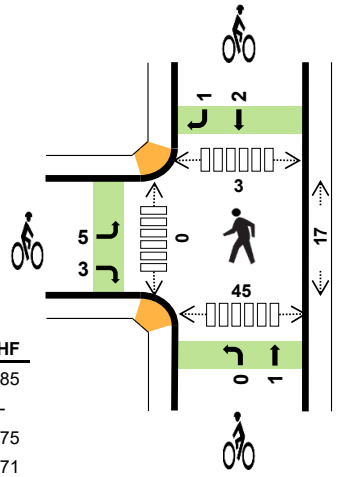
Interval Start	Fifer Ave			US-101 SB Ramps			N/A			Nellen Ave			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	**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
5:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**3**	3
5:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**
Count Total	0	0	0	0	0	0	0	0	0	0	0	3	3	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**3**	**0**

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

Redwood Hwy
Wornum Dr

Date: 03/31/2022
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:45 AM to 8:45 AM





	HV %:	PHF
EB	3.0%	0.85
WB	-	-
NB	3.5%	0.75
SB	1.5%	0.71
TOTAL	2.6%	0.85

Two-Hour Count Summaries

Interval Start	Wornum Dr Eastbound				N/A Westbound				Redwood Hwy Northbound				Redwood Hwy Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	70	0	8	0	0	0	0	0	10	2	0	0	0	1	31	122	0
7:15 AM	0	62	0	9	0	0	0	0	0	8	3	0	0	0	2	28	112	0
7:30 AM	0	68	0	11	0	0	0	0	0	12	6	0	0	0	7	46	150	0
7:45 AM	**0**	**73**	**0**	**16**	**0**	**0**	**0**	**0**	**0**	**34**	**12**	**0**	**0**	**0**	**3**	**89**	**227**	611
8:00 AM	**0**	**100**	**0**	**21**	**0**	**0**	**0**	**0**	**0**	**34**	**14**	**0**	**0**	**0**	**12**	**102**	**283**	772
8:15 AM	**0**	**119**	**0**	**19**	**0**	**0**	**0**	**0**	**0**	**17**	**12**	**0**	**0**	**0**	**2**	**66**	**235**	895
8:30 AM	**0**	**126**	**0**	**20**	**0**	**0**	**0**	**0**	**0**	**5**	**16**	**0**	**0**	**0**	**4**	**48**	**219**	**964**
8:45 AM	0	87	0	14	0	0	0	0	0	21	11	0	0	0	8	51	192	929
Count Total	0	705	0	118	0	0	0	0	0	141	76	0	0	0	39	461	1,540	0
Peak Hour All	**0**	**418**	**0**	**76**	**0**	**0**	**0**	**0**	**0**	**90**	**54**	**0**	**0**	**0**	**21**	**305**	**964**	**0**
Peak Hour HV	**0**	**14**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**3**	**2**	**0**	**0**	**0**	**1**	**4**	**25**	**0**
Peak Hour HV%	**-**	**3%**	**-**	**1%**	**-**	**-**	**-**	**-**	**-**	**3%**	**4%**	**-**	**-**	**-**	**5%**	**1%**	**3%**	**0**

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

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	2	0	0	1	*3*	1	0	0	0	*1*	4	0	0	3	*7*
7:15 AM	4	0	1	2	*7*	2	0	0	1	*3*	2	0	2	0	*4*
7:30 AM	6	0	0	2	*8*	1	0	0	3	*4*	5	0	2	5	*12*
7:45 AM	**1**	**0**	**1**	**0**	***2***	**2**	**0**	**1**	**2**	***5***	**7**	**0**	**1**	**21**	*29*
8:00 AM	**6**	**0**	**1**	**1**	***8***	**5**	**0**	**0**	**1**	***6***	**7**	**0**	**0**	**8**	*15*
8:15 AM	**3**	**0**	**2**	**1**	***6***	**1**	**0**	**0**	**0**	***1***	**1**	**0**	**0**	**10**	*11*
8:30 AM	**5**	**0**	**1**	**3**	***9***	**0**	**0**	**0**	**0**	***0***	**2**	**0**	**2**	**6**	***10***
8:45 AM	2	0	1	1	*4*	3	0	0	1	*4*	0	0	0	2	*2*
Count Total	29	0	7	11	*47*	15	0	1	8	*24*	28	0	7	55	*90*
Peak Hr	**15**	**0**	**5**	**5**	***25***	**8**	**0**	**1**	**3**	***12***	**17**	**0**	**3**	**45**	***65***

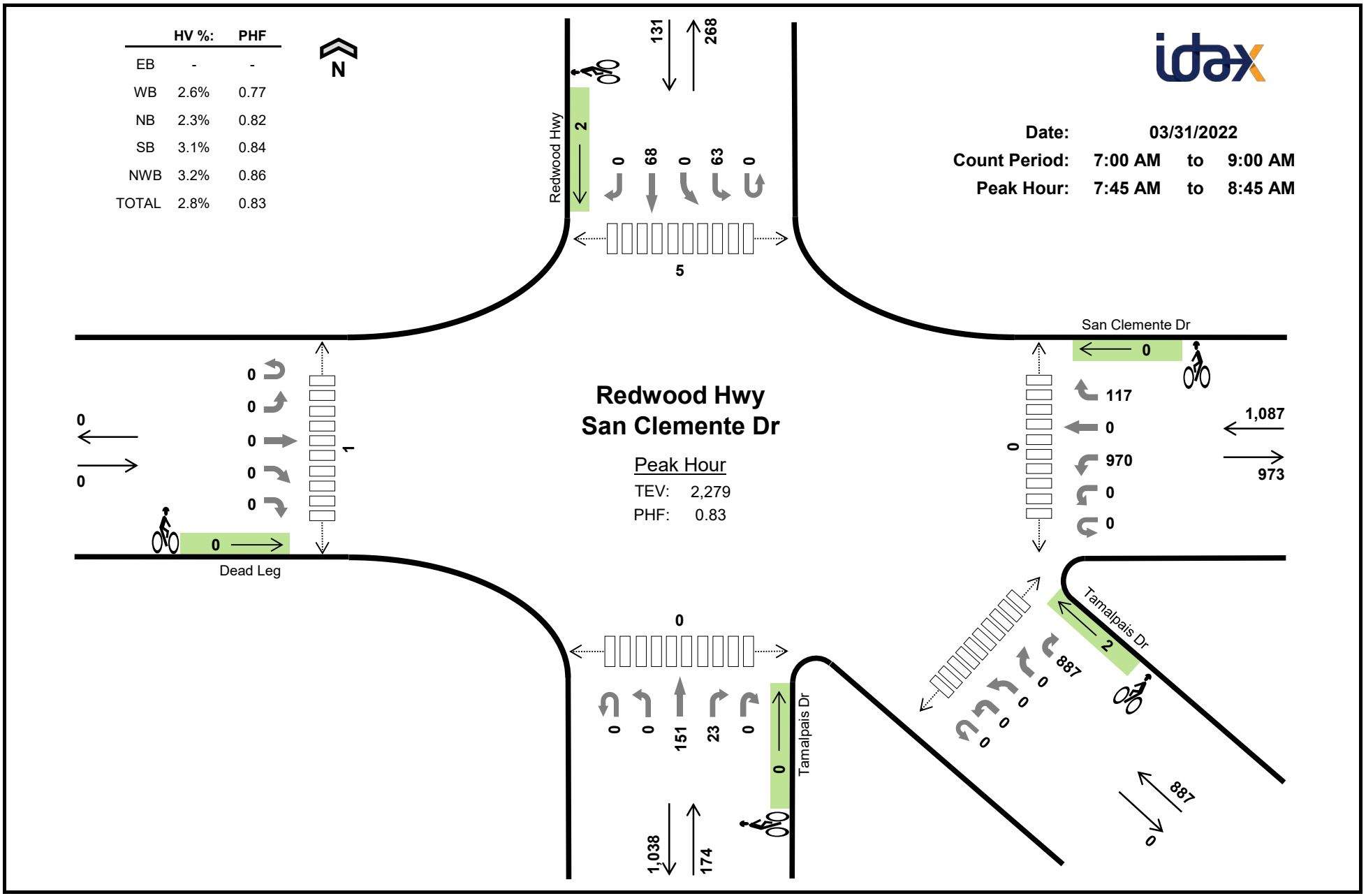
Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Wornum Dr				N/A				Redwood Hwy				Redwood Hwy				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	0
7:15 AM	0	4	0	0	0	0	0	0	0	0	1	0	0	0	1	1	7	0
7:30 AM	0	5	0	1	0	0	0	0	0	0	0	0	0	0	1	1	8	0
7:45 AM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	20
8:00 AM	**0**	**5**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**8**	25
8:15 AM	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**1**	**0**	**6**	24
8:30 AM	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**3**	**9**	**25**
8:45 AM	0	2	0	0	0	0	0	0	0	0	1	0	0	0	0	1	4	27
Count Total	0	27	0	2	0	0	0	0	0	3	4	0	0	0	3	8	47	0
Peak Hour	**0**	**14**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**3**	**2**	**0**	**0**	**0**	**1**	**4**	**25**	**0**

Two-Hour Count Summaries - Bikes

Interval Start	Wornum Dr			N/A			Redwood Hwy			Redwood Hwy			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	1	0	0	0	0	0	0	0	0	0	0	0	1	0
7:15 AM	1	0	1	0	0	0	0	0	0	0	0	1	3	0
7:30 AM	0	0	1	0	0	0	0	0	0	0	2	1	4	0
7:45 AM	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**1**	**5**	13
8:00 AM	**3**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**6**	18
8:15 AM	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	16
8:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**12**
8:45 AM	1	0	2	0	0	0	0	0	0	0	0	1	4	11
Count Total	8	0	7	0	0	0	0	1	0	0	4	4	24	0
Peak Hour	**5**	**0**	**3**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**2**	**1**	**12**	**0**

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



Project Manager: (415) 310-6469

project.manager.ca@idaxdata.com

Two-Hour Count Summaries

Interval Start		Dead Leg Eastbound					San Clemente Dr Westbound					Tamalpais Dr Northbound					Redwood Hwy Southbound					Tamalpais Dr Northwestbound					15-min Total	Rolling One Hour
		UT	LT	TH	BR	RT	UT	HL	LT	TH	RT	UT	LT	TH	RT	HR	UT	LT	BL	TH	RT	UT	HL	BL	BR	HR		
7:00 AM		0	0	0	0	0	0	0	69	0	8	1	0	18	0	0	0	5	0	3	0	0	0	0	0	75	179	0
7:15 AM		0	0	0	0	0	0	0	100	0	11	0	0	19	0	0	0	4	0	6	0	0	0	0	0	112	252	0
7:30 AM		0	0	0	0	0	0	0	169	0	12	0	0	33	0	0	0	12	0	9	0	0	0	0	0	146	381	0
7:45 AM		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**172**	**0**	**44**	**0**	**0**	**32**	**6**	**0**	**0**	**14**	**0**	**25**	**0**	**0**	**0**	**0**	**0**	**251**	**544**	1,356
8:00 AM		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**310**	**0**	**41**	**0**	**0**	**30**	**12**	**0**	**0**	**22**	**0**	**13**	**0**	**0**	**0**	**0**	**0**	**259**	**687**	1,864
8:15 AM		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**326**	**0**	**22**	**0**	**0**	**40**	**1**	**0**	**0**	**12**	**0**	**13**	**0**	**0**	**0**	**0**	**0**	**201**	**615**	2,227
8:30 AM		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**162**	**0**	**10**	**0**	**0**	**49**	**4**	**0**	**0**	**15**	**0**	**17**	**0**	**0**	**0**	**0**	**0**	**176**	**433**	**2,279**
8:45 AM		0	0	0	0	0	0	0	175	0	19	0	0	51	0	0	0	13	0	19	0	0	0	0	0	157	434	2,169
Count Total		0	0	0	0	0	0	0	1,483	0	167	1	0	272	23	0	0	97	0	105	0	0	0	0	0	1,377	3,525	0
Peak Hour	**All**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**970**	**0**	**117**	**0**	**0**	**151**	**23**	**0**	**0**	**63**	**0**	**68**	**0**	**0**	**0**	**0**	**0**	**887**	**2,279**	**0**
	HV	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**25**	**0**	**3**	**0**	**0**	**4**	**0**	**0**	**0**	**1**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**28**	**64**	**0**
	HV%	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**3%**	**-**	**3%**	**-**	**-**	**3%**	**0%**	**-**	**-**	**2%**	**-**	**4%**	**-**	**-**	**-**	**-**	**-**	**3%**	**3%**	**0**

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

Interval Start	Heavy Vehicle Totals						Bicycles						Pedestrians (Crossing Leg)					
	EB	WB	NB	SB	NWB	Total	EB	WB	NB	SB	NWB	Total	East	West	North	South	Southeast	Total
7:00 AM	0	8	1	0	3	*12*	0	0	0	0	0	*0*	0	0	0	0	0	*0*
7:15 AM	0	5	1	1	3	*10*	0	0	0	0	0	*0*	0	0	0	0	0	*0*
7:30 AM	0	3	1	1	7	*12*	0	0	0	1	1	*2*	0	0	1	0	1	*2*
7:45 AM	**0**	**7**	**1**	**2**	**13**	***23***	**0**	**0**	**0**	**0**	**0**	***0***	**0**	**1**	**2**	**0**	**3**	***6***
8:00 AM	**0**	**6**	**1**	**1**	**11**	***19***	**0**	**0**	**0**	**2**	**0**	***2***	**0**	**0**	**0**	**0**	**0**	***0***
8:15 AM	**0**	**11**	**1**	**0**	**2**	***14***	**0**	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**1**	**0**	**0**	***1***
8:30 AM	**0**	**4**	**1**	**1**	**2**	***8***	**0**	**0**	**0**	**0**	**2**	***2***	**0**	**0**	**2**	**0**	**0**	***2***
8:45 AM	0	7	2	1	2	*12*	0	0	0	1	0	*1*	0	0	0	0	0	*0*
Count Total	0	51	9	7	43	*110*	0	0	0	4	3	*7*	0	1	6	0	4	*11*
Peak Hr	**0**	**28**	**4**	**4**	**28**	***64***	**0**	**0**	**0**	**2**	**2**	***4***	**0**	**1**	**5**	**0**	**3**	*9*

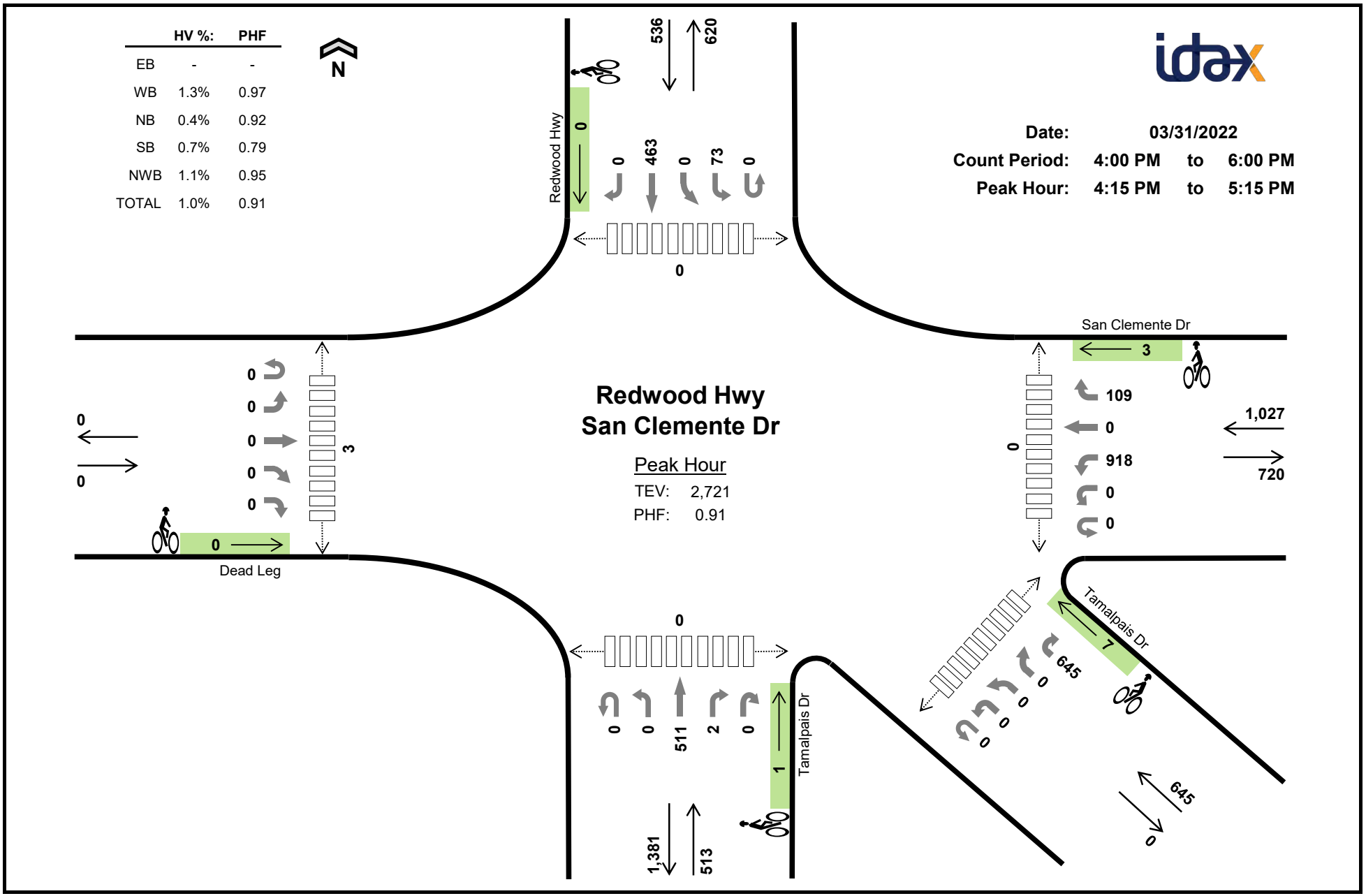
Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Dead Leg					San Clemente Dr					Tamalpais Dr					Redwood Hwy					Tamalpais Dr					15-min Total	Rolling One Hour
	Eastbound					Westbound					Northbound					Southbound					Northwestbound						
	UT	LT	TH	BR	RT	UT	HL	LT	TH	RT	UT	LT	TH	RT	HR	UT	LT	BL	TH	RT	UT	HL	BL	BR	HR		
7:00 AM	0	0	0	0	0	0	0	8	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	3	12	0
7:15 AM	0	0	0	0	0	0	0	5	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	3	10	0
7:30 AM	0	0	0	0	0	0	0	3	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	7	12	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**6**	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**13**	**23**	57
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**11**	**19**	64
8:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**10**	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**14**	68
8:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**2**	**8**	**64**
8:45 AM	0	0	0	0	0	0	0	7	0	0	0	0	2	0	0	0	0	0	1	0	0	0	0	0	2	12	53
Count Total	0	0	0	0	0	0	0	48	0	3	0	0	9	0	0	0	1	0	6	0	0	0	0	0	43	110	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**25**	**0**	**3**	**0**	**0**	**4**	**0**	**0**	**0**	**1**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**28**	64	**0**

Two-Hour Count Summaries - Bikes

Interval Start	Dead Leg					San Clemente Dr					Tamalpais Dr					Redwood Hwy					Tamalpais Dr					15-min Total	Rolling One Hour
	Eastbound					Westbound					Northbound					Southbound					Northwestbound						
	UT	LT	TH	BR	RT	UT	HL	LT	TH	RT	UT	LT	TH	RT	HR	UT	LT	BL	TH	RT	UT	HL	BL	BR	HR		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	2	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	2
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	4
8:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	4
8:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**2**	**4**
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	5
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	3	7	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	4	**0**

	HV %:	PHF
EB	-	-
WB	1.3%	0.97
NB	0.4%	0.92
SB	0.7%	0.79
NWB	1.1%	0.95
TOTAL	1.0%	0.91



Two-Hour Count Summaries

Interval Start		Dead Leg Eastbound					San Clemente Dr Westbound					Tamalpais Dr Northbound					Redwood Hwy Southbound					Tamalpais Dr Northwestbound					15-min Total	Rolling One Hour
		UT	LT	TH	BR	RT	UT	HL	LT	TH	RT	UT	LT	TH	RT	HR	UT	LT	BL	TH	RT	UT	HL	BL	BR	HR		
4:00 PM		0	0	0	0	0	0	0	221	0	27	0	0	141	0	0	0	16	0	129	0	0	0	0	0	139	673	0
4:15 PM		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**240**	**0**	**26**	**0**	**0**	**140**	**0**	**0**	**0**	**24**	**0**	**145**	**0**	**0**	**0**	**0**	**0**	**169**	**744**	0
4:30 PM		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**213**	**0**	**29**	**0**	**0**	**121**	**1**	**0**	**0**	**20**	**0**	**105**	**0**	**0**	**0**	**0**	**0**	**155**	**644**	0
4:45 PM		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**236**	**0**	**23**	**0**	**0**	**112**	**1**	**0**	**0**	**12**	**0**	**99**	**0**	**0**	**0**	**0**	**0**	**165**	**648**	2,709
5:00 PM		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**229**	**0**	**31**	**0**	**0**	**138**	**0**	**0**	**0**	**17**	**0**	**114**	**0**	**0**	**0**	**0**	**0**	**156**	**685**	**2,721**
5:15 PM		0	0	0	0	0	0	0	264	0	28	0	0	134	1	0	0	10	0	115	0	0	0	0	0	156	708	2,685
5:30 PM		0	0	0	0	0	0	0	194	0	26	0	0	139	0	0	0	26	0	76	0	0	0	0	0	157	618	2,659
5:45 PM		0	0	0	0	0	0	0	198	0	26	0	0	147	0	0	0	14	0	113	0	0	0	0	0	173	671	2,682
Count Total		0	0	0	0	0	0	0	1,795	0	216	0	0	1,072	3	0	0	139	0	896	0	0	0	0	0	1,270	5,391	0
Peak Hour	**All**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**918**	**0**	**109**	**0**	**0**	**511**	**2**	**0**	**0**	**73**	**0**	**463**	**0**	**0**	**0**	**0**	**0**	**645**	**2,721**	**0**
	HV	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**11**	**0**	**2**	**0**	**0**	**2**	**0**	**0**	**0**	**2**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**7**	**26**	**0**
	HV%	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**1%**	**-**	**2%**	**-**	**-**	**0%**	**0%**	**-**	**-**	**3%**	**-**	**0%**	**-**	**-**	**-**	**-**	**-**	**1%**	**1%**	**0**

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

Interval Start	Heavy Vehicle Totals						Bicycles						Pedestrians (Crossing Leg)					
	EB	WB	NB	SB	NWB	Total	EB	WB	NB	SB	NWB	Total	East	West	North	South	Southeast	Total
4:00 PM	0	8	0	3	4	*15*	0	1	0	0	2	*3*	0	0	3	0	1	*4*
4:15 PM	**0**	**4**	**2**	**1**	**2**	***9***	**0**	**1**	**0**	**0**	**0**	***1***	**0**	**0**	**0**	**0**	**3**	***3***
4:30 PM	**0**	**3**	**0**	**2**	**1**	***6***	**0**	**1**	**0**	**0**	**3**	***4***	**0**	**1**	**0**	**0**	**0**	***1***
4:45 PM	**0**	**2**	**0**	**0**	**1**	***3***	**0**	**0**	**0**	**0**	**1**	***1***	**0**	**1**	**0**	**0**	**3**	***4***
5:00 PM	**0**	**4**	**0**	**1**	**3**	***8***	**0**	**1**	**1**	**0**	**3**	***5***	**0**	**1**	**0**	**0**	**1**	***2***
5:15 PM	0	2	1	0	0	*3*	0	0	0	0	1	*1*	0	0	0	0	1	*1*
5:30 PM	0	0	0	0	1	*1*	0	1	0	3	1	*5*	0	0	0	0	1	*1*
5:45 PM	0	1	0	0	1	*2*	0	1	0	0	3	*4*	0	0	0	0	4	*4*
Count Total	0	24	3	7	13	*47*	0	6	1	3	14	*24*	0	3	3	0	14	*20*
Peak Hr	**0**	**13**	**2**	**4**	**7**	***26***	**0**	**3**	**1**	**0**	**7**	***11***	**0**	**3**	**0**	**0**	**7**	*10*

Two-Hour Count Summaries - Heavy Vehicles

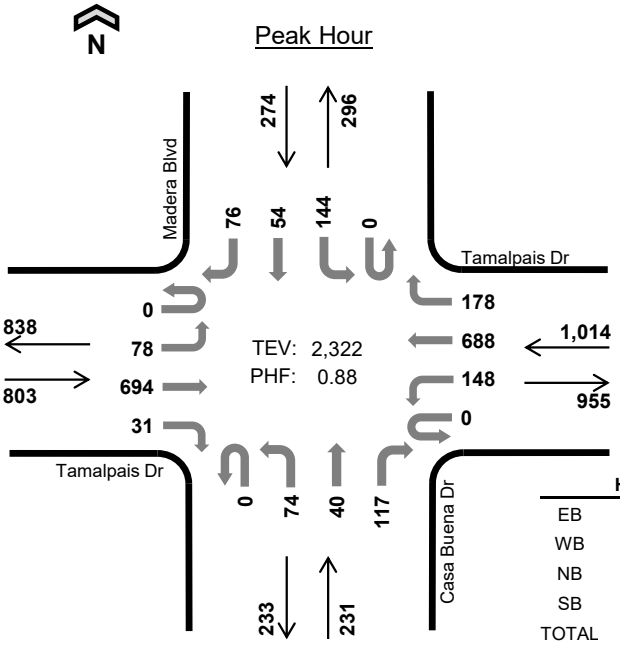
Interval Start	Dead Leg					San Clemente Dr					Tamalpais Dr					Redwood Hwy					Tamalpais Dr					15-min Total	Rolling One Hour
	Eastbound					Westbound					Northbound					Southbound					Northwestbound						
	UT	LT	TH	BR	RT	UT	HL	LT	TH	RT	UT	LT	TH	RT	HR	UT	LT	BL	TH	RT	UT	HL	BL	BR	HR		
4:00 PM	0	0	0	0	0	0	0	7	0	1	0	0	0	0	0	0	1	0	2	0	0	0	0	0	4	15	0
4:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**2**	**9**	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**6**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**3**	33
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**8**	**26**
5:15 PM	0	0	0	0	0	0	0	2	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	3	20
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	15
5:45 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	14
Count Total	0	0	0	0	0	0	0	21	0	3	0	0	3	0	0	0	3	0	4	0	0	0	0	0	13	47	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**11**	**0**	**2**	**0**	**0**	**2**	**0**	**0**	**0**	**2**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**7**	26	**0**

Two-Hour Count Summaries - Bikes

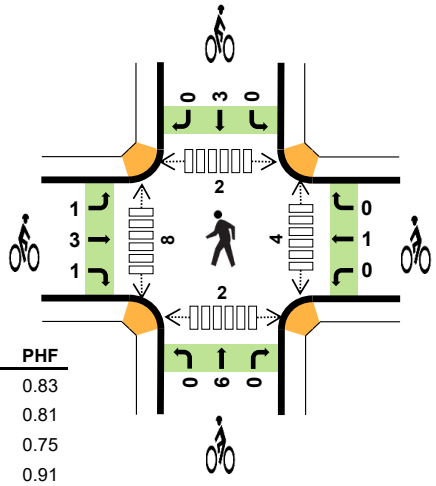
Interval Start	Dead Leg					San Clemente Dr					Tamalpais Dr					Redwood Hwy					Tamalpais Dr					15-min Total	Rolling One Hour
	Eastbound					Westbound					Northbound					Southbound					Northwestbound						
	UT	LT	TH	BR	RT	UT	HL	LT	TH	RT	UT	LT	TH	RT	HR	UT	LT	BL	TH	RT	UT	HL	BL	BR	HR		
4:00 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	3	0
4:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**4**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	9
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**5**	**11**
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	11
5:30 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	1	5	12
5:45 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	4	15
Count Total	0	0	0	0	0	0	0	6	0	0	0	0	1	0	0	0	3	0	0	0	0	0	0	0	14	24	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**7**	11	**0**

Madera Blvd
Tamalpais Dr

Date: 03/31/2022
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:45 AM to 8:45 AM



	HV %:	PHF
EB	1.9%	0.83
WB	2.6%	0.81
NB	1.7%	0.75
SB	1.5%	0.91
TOTAL	2.1%	0.88



Two-Hour Count Summaries

Interval Start	Tamalpais Dr Eastbound				Tamalpais Dr Westbound				Casa Buena Dr Northbound				Madera Blvd Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	9	55	4	1	23	37	13	0	8	7	21	1	10	7	4	200	0
7:15 AM	0	7	63	1	0	21	76	13	0	19	5	23	1	14	9	3	255	0
7:30 AM	0	9	95	8	0	15	90	29	0	15	16	27	0	12	12	3	331	0
7:45 AM	**0**	**16**	**132**	**6**	**0**	**26**	**158**	**39**	**0**	**25**	**11**	**30**	**0**	**23**	**14**	**14**	**494**	1,280
8:00 AM	**0**	**16**	**175**	**6**	**0**	**42**	**206**	**65**	**0**	**27**	**14**	**36**	**0**	**38**	**14**	**22**	**661**	1,741
8:15 AM	**0**	**26**	**206**	**10**	**0**	**42**	**201**	**44**	**0**	**18**	**13**	**23**	**0**	**47**	**17**	**11**	**658**	2,144
8:30 AM	**0**	**20**	**181**	**9**	**0**	**38**	**123**	**30**	**0**	**4**	**2**	**28**	**0**	**36**	**9**	**29**	**509**	**2,322**
8:45 AM	0	13	128	7	0	36	121	38	0	24	6	25	0	42	13	13	466	2,294
Count Total	0	116	1,035	51	1	243	1,012	271	0	140	74	213	2	222	95	99	3,574	0
Peak Hour All	**0**	**78**	**694**	**31**	**0**	**148**	**688**	**178**	**0**	**74**	**40**	**117**	**0**	**144**	**54**	**76**	**2,322**	**0**
Peak Hour HV	**0**	**2**	**13**	**0**	**0**	**7**	**16**	**3**	**0**	**0**	**0**	**4**	**0**	**3**	**0**	**1**	**49**	**0**
Peak Hour HV%	**-**	**3%**	**2%**	**0%**	**-**	**5%**	**2%**	**2%**	**-**	**0%**	**0%**	**3%**	**-**	**2%**	**0%**	**1%**	**2%**	**0**

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

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	2	5	0	1	*8*	0	0	0	0	*0*	1	2	1	1	*5*
7:15 AM	0	4	4	1	*9*	0	0	2	2	*4*	4	1	1	1	*7*
7:30 AM	5	3	0	2	*10*	2	0	0	1	*3*	3	3	0	0	*6*
7:45 AM	**3**	**5**	**2**	**2**	***12***	**0**	**1**	**2**	**2**	***5***	**3**	**1**	**0**	**0**	*4*
8:00 AM	**4**	**5**	**1**	**1**	***11***	**2**	**0**	**1**	**0**	***3***	**0**	**0**	**0**	**0**	*0*
8:15 AM	**3**	**5**	**1**	**0**	***9***	**1**	**0**	**2**	**1**	***4***	**0**	**6**	**1**	**1**	*8*
8:30 AM	**5**	**11**	**0**	**1**	***17***	**2**	**0**	**1**	**0**	***3***	**1**	**1**	**1**	**1**	***4***
8:45 AM	2	12	2	3	*19*	0	0	1	1	*2*	0	0	0	1	*1*
Count Total	24	50	10	11	*95*	7	1	9	7	*24*	12	14	4	5	*35*
Peak Hour	**15**	**26**	**4**	**4**	***49***	**5**	**1**	**6**	**3**	***15***	**4**	**8**	**2**	**2**	***16***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Tamalpais Dr				Tamalpais Dr				Casa Buena Dr				Madera Blvd				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	1	1	0	1	3	1	0	0	0	0	0	0	0	1	8	0
7:15 AM	0	0	0	0	0	1	3	0	0	2	1	1	0	1	0	0	9	0
7:30 AM	0	0	5	0	0	1	2	0	0	0	0	0	0	1	1	0	10	0
7:45 AM	**0**	**0**	**3**	**0**	**0**	**0**	**5**	**0**	**0**	**0**	**0**	**2**	**0**	**2**	**0**	**0**	**12**	39
8:00 AM	**0**	**1**	**3**	**0**	**0**	**2**	**3**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**11**	42
8:15 AM	**0**	**0**	**3**	**0**	**0**	**1**	**3**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**9**	42
8:30 AM	**0**	**1**	**4**	**0**	**0**	**4**	**5**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**17**	**49**
8:45 AM	0	0	1	1	0	2	9	1	0	1	0	1	0	2	0	1	19	56
Count Total	0	2	20	2	0	12	33	5	0	3	1	6	0	7	1	3	95	0
Peak Hour	**0**	**2**	**13**	**0**	**0**	**7**	**16**	**3**	**0**	**0**	**0**	**4**	**0**	**3**	**0**	**1**	**49**	**0**

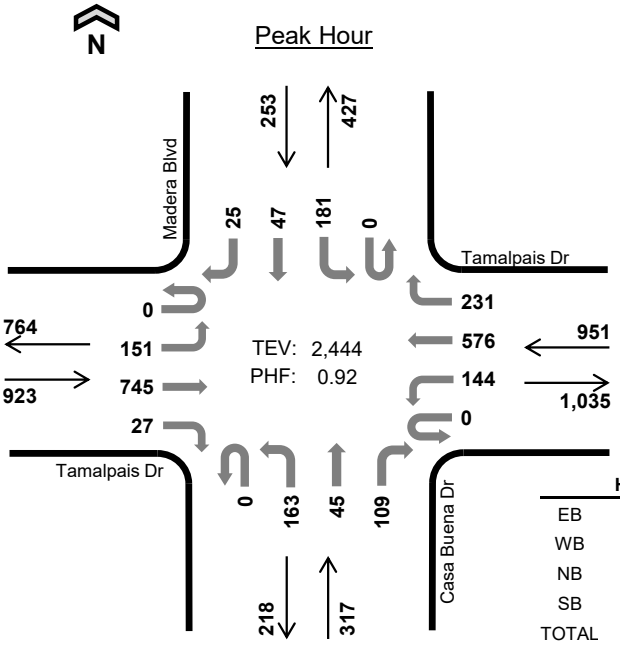
Two-Hour Count Summaries - Bikes

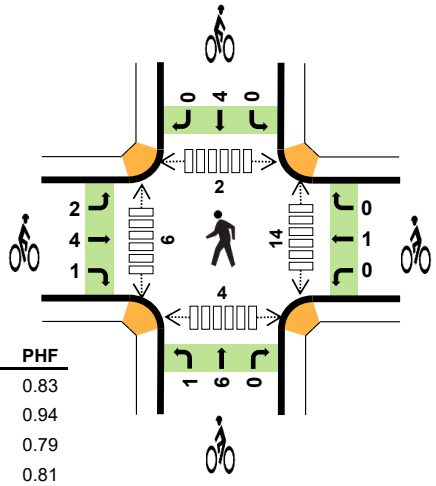
Interval Start	Tamalpais Dr			Tamalpais Dr			Casa Buena Dr			Madera Blvd			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	2	0	0	2	0	4	0
7:30 AM	0	2	0	0	0	0	0	0	0	0	1	0	3	0
7:45 AM	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**2**	**0**	**0**	**2**	**0**	**5**	12
8:00 AM	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**3**	15
8:15 AM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**1**	**0**	**4**	15
8:30 AM	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**3**	**15**
8:45 AM	0	0	0	0	0	0	0	1	0	0	1	0	2	12
Count Total	1	5	1	0	1	0	0	9	0	0	7	0	24	0
Peak Hour	**1**	**3**	**1**	**0**	**1**	**0**	**0**	**6**	**0**	**0**	**3**	**0**	**15**	**0**

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

Madera Blvd
Tamalpais Dr

Date: 03/31/2022
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:15 PM to 5:15 PM





	HV %:	PHF
EB	2.2%	0.83
WB	1.2%	0.94
NB	1.9%	0.79
SB	0.8%	0.81
TOTAL	1.6%	0.92

Two-Hour Count Summaries

Interval Start	Tamalpais Dr Eastbound				Tamalpais Dr Westbound				Casa Buena Dr Northbound				Madera Blvd Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	44	194	8	1	33	138	55	0	33	11	29	0	42	8	1	597	0
4:15 PM	**0**	**36**	**236**	**7**	**0**	**43**	**125**	**61**	**0**	**44**	**10**	**20**	**0**	**40**	**9**	**5**	**636**	0
4:30 PM	**0**	**40**	**171**	**8**	**0**	**22**	**148**	**59**	**0**	**35**	**10**	**26**	**0**	**54**	**15**	**9**	**597**	0
4:45 PM	**0**	**36**	**147**	**3**	**0**	**37**	**147**	**57**	**0**	**32**	**12**	**28**	**0**	**34**	**12**	**5**	**550**	2,380
5:00 PM	**0**	**39**	**191**	**9**	**0**	**42**	**156**	**54**	**0**	**52**	**13**	**35**	**0**	**53**	**11**	**6**	**661**	**2,444**
5:15 PM	0	33	167	3	0	38	178	69	0	33	8	30	0	42	22	13	636	2,444
5:30 PM	0	37	132	7	0	24	121	46	0	46	8	22	0	50	13	10	516	2,363
5:45 PM	0	30	146	1	0	15	145	46	0	25	5	34	0	58	14	2	521	2,334
Count Total	0	295	1,384	46	1	254	1,158	447	0	300	77	224	0	373	104	51	4,714	0
Peak Hour All	**0**	**151**	**745**	**27**	**0**	**144**	**576**	**231**	**0**	**163**	**45**	**109**	**0**	**181**	**47**	**25**	**2,444**	**0**
Peak Hour HV	**0**	**1**	**19**	**0**	**0**	**4**	**5**	**2**	**0**	**2**	**0**	**4**	**0**	**1**	**1**	**0**	**39**	**0**
Peak Hour HV%	**-**	**1%**	**3%**	**0%**	**-**	**3%**	**1%**	**1%**	**-**	**1%**	**0%**	**4%**	**-**	**1%**	**2%**	**0%**	**2%**	**0**

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

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	9	6	1	0	*16*	2	1	3	3	*9*	3	2	0	1	*6*
4:15 PM	**5**	**5**	**2**	**1**	***13***	**0**	**0**	**1**	**0**	***1***	**2**	**1**	**0**	**1**	*4*
4:30 PM	**5**	**2**	**2**	**0**	***9***	**3**	**0**	**4**	**0**	***7***	**3**	**4**	**2**	**0**	*9*
4:45 PM	**6**	**2**	**1**	**1**	***10***	**2**	**1**	**1**	**3**	***7***	**7**	**1**	**0**	**1**	*9*
5:00 PM	**4**	**2**	**1**	**0**	***7***	**2**	**0**	**1**	**1**	***4***	**2**	**0**	**0**	**2**	***4***
5:15 PM	6	1	0	6	*13*	2	0	6	1	*9*	2	0	1	1	*4*
5:30 PM	4	0	0	0	*4*	1	1	2	0	*4*	2	1	0	2	*5*
5:45 PM	1	0	0	1	*2*	1	2	3	4	*10*	4	0	5	1	*10*
Count Total	40	18	7	9	*74*	13	5	21	12	*51*	25	9	8	9	*51*
Peak Hour	**20**	**11**	**6**	**2**	***39***	**7**	**1**	**7**	**4**	***19***	**14**	**6**	**2**	**4**	***26***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Tamalpais Dr Eastbound				Tamalpais Dr Westbound				Casa Buena Dr Northbound				Madera Blvd Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	1	8	0	0	1	3	2	0	0	0	1	0	0	0	0	16	0
4:15 PM	**0**	**0**	**5**	**0**	**0**	**1**	**2**	**2**	**0**	**1**	**0**	**1**	**0**	**0**	**1**	**0**	**13**	0
4:30 PM	**0**	**0**	**5**	**0**	**0**	**1**	**1**	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**9**	0
4:45 PM	**0**	**1**	**5**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**10**	48
5:00 PM	**0**	**0**	**4**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**7**	**39**
5:15 PM	0	0	6	0	0	1	0	0	0	0	0	0	0	4	1	1	13	39
5:30 PM	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	4	34
5:45 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	2	26
Count Total	0	2	37	1	0	6	8	4	0	2	0	5	0	6	2	1	74	0
Peak Hour	**0**	**1**	**19**	**0**	**0**	**4**	**5**	**2**	**0**	**2**	**0**	**4**	**0**	**1**	**1**	**0**	**39**	**0**

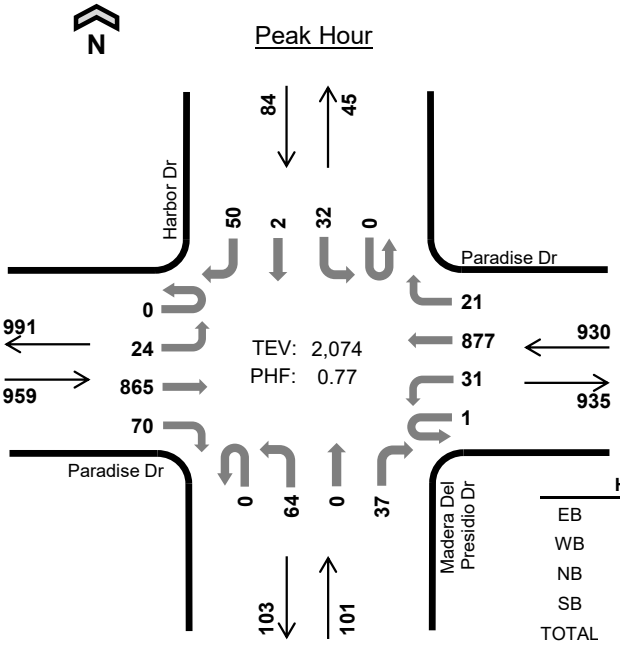
Two-Hour Count Summaries - Bikes

Interval Start	Tamalpais Dr Eastbound			Tamalpais Dr Westbound			Casa Buena Dr Northbound			Madera Blvd Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	2	0	1	0	0	3	0	0	1	2	9	0
4:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	0
4:30 PM	**1**	**1**	**1**	**0**	**0**	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**7**	0
4:45 PM	**1**	**1**	**0**	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**3**	**0**	**7**	24
5:00 PM	**0**	**2**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**4**	**19**
5:15 PM	1	1	0	0	0	0	0	6	0	0	0	1	9	27
5:30 PM	0	1	0	0	1	0	0	2	0	0	0	0	4	24
5:45 PM	0	1	0	0	2	0	0	3	0	1	2	1	10	27
Count Total	3	7	3	0	5	0	1	20	0	1	7	4	51	0
Peak Hour	**2**	**4**	**1**	**0**	**1**	**0**	**1**	**6**	**0**	**0**	**4**	**0**	**19**	**0**

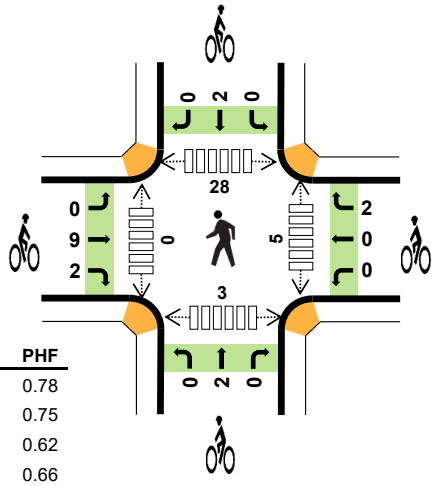
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Madera Del Presidio Dr
Paradise Dr

Date: 03/31/2022
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:45 AM to 8:45 AM



	HV %:	PHF
EB	3.2%	0.78
WB	1.8%	0.75
NB	3.0%	0.62
SB	0.0%	0.66
TOTAL	2.5%	0.77



Two-Hour Count Summaries

Interval Start	Paradise Dr Eastbound				Paradise Dr Westbound				Madera Del Presidio Dr Northbound				Harbor Dr Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	1	67	4	0	0	61	0	0	7	0	0	0	0	0	4	144	0
7:15 AM	0	2	99	6	0	3	75	0	0	7	1	2	0	0	1	5	201	0
7:30 AM	0	5	147	8	0	2	123	2	0	12	0	9	0	2	0	7	317	0
7:45 AM	**0**	**6**	**230**	**10**	**0**	**2**	**162**	**2**	**0**	**32**	**0**	**9**	**0**	**9**	**1**	**12**	**475**	1,137
8:00 AM	**0**	**3**	**289**	**17**	**0**	**5**	**300**	**1**	**0**	**10**	**0**	**19**	**0**	**15**	**0**	**17**	**676**	1,669
8:15 AM	**0**	**8**	**193**	**19**	**1**	**18**	**281**	**11**	**0**	**11**	**0**	**2**	**0**	**3**	**1**	**5**	**553**	2,021
8:30 AM	**0**	**7**	**153**	**24**	**0**	**6**	**134**	**7**	**0**	**11**	**0**	**7**	**0**	**5**	**0**	**16**	**370**	**2,074**
8:45 AM	0	6	142	24	0	4	154	1	0	14	0	4	0	0	0	8	357	1,956
Count Total	0	38	1,320	112	1	40	1,290	24	0	104	1	52	0	34	3	74	3,093	0
Peak Hour All	**0**	**24**	**865**	**70**	**1**	**31**	**877**	**21**	**0**	**64**	**0**	**37**	**0**	**32**	**2**	**50**	**2,074**	**0**
Peak Hour HV	**0**	**0**	**30**	**1**	**0**	**0**	**17**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**51**	**0**
Peak Hour HV%	**-**	**0%**	**3%**	**1%**	**0%**	**0%**	**2%**	**0%**	**-**	**5%**	**-**	**0%**	**-**	**0%**	**0%**	**0%**	**2%**	**0**

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

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	3	4	1	1	*9*	0	1	0	0	*1*	3	0	3	0	*6*
7:15 AM	2	2	0	0	*4*	0	0	0	0	*0*	0	0	1	0	*1*
7:30 AM	9	2	0	0	*11*	4	1	0	0	*5*	2	0	6	0	*8*
7:45 AM	**13**	**3**	**1**	**0**	***17***	**5**	**0**	**0**	**0**	***5***	**1**	**0**	**13**	**0**	*14*
8:00 AM	**10**	**5**	**0**	**0**	***15***	**1**	**1**	**2**	**2**	***6***	**1**	**0**	**7**	**0**	*8*
8:15 AM	**6**	**7**	**0**	**0**	***13***	**2**	**1**	**0**	**0**	***3***	**1**	**0**	**4**	**1**	*6*
8:30 AM	**2**	**2**	**2**	**0**	***6***	**3**	**0**	**0**	**0**	***3***	**2**	**0**	**4**	**2**	***8***
8:45 AM	2	8	0	0	*10*	2	0	0	0	*2*	4	0	6	1	*11*
Count Total	47	33	4	1	*85*	17	4	2	2	*25*	14	0	44	4	*62*
Peak Hour	**31**	**17**	**3**	**0**	***51***	**11**	**2**	**2**	**2**	***17***	**5**	**0**	**28**	**3**	***36***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Paradise Dr Eastbound				Paradise Dr Westbound				Madera Del Presidio Dr Northbound				Harbor Dr Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	3	0	0	0	4	0	0	1	0	0	0	0	0	1	9	0
7:15 AM	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	4	0
7:30 AM	0	0	8	1	0	0	2	0	0	0	0	0	0	0	0	0	11	0
7:45 AM	**0**	**0**	**13**	**0**	**0**	**0**	**3**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**17**	41
8:00 AM	**0**	**0**	**10**	**0**	**0**	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**15**	47
8:15 AM	**0**	**0**	**6**	**0**	**0**	**0**	**7**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**13**	56
8:30 AM	**0**	**0**	**1**	**1**	**0**	**0**	**2**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**6**	**51**
8:45 AM	0	1	1	0	0	0	8	0	0	0	0	0	0	0	0	0	10	44
Count Total	0	1	44	2	0	0	33	0	0	4	0	0	0	0	0	1	85	0
Peak Hour	**0**	**0**	**30**	**1**	**0**	**0**	**17**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**51**	**0**

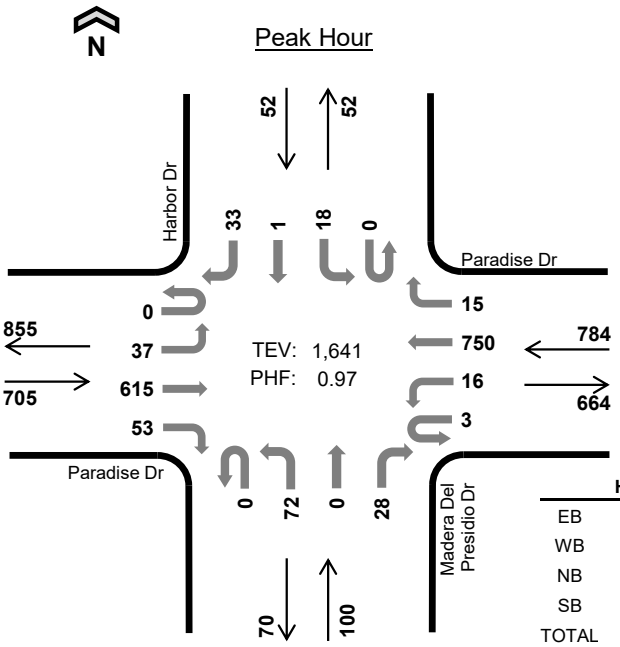
Two-Hour Count Summaries - Bikes

Interval Start	Paradise Dr Eastbound			Paradise Dr Westbound			Madera Del Presidio Dr Northbound			Harbor Dr Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	1	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	4	0	0	1	0	0	0	0	0	0	0	5	0
7:45 AM	**0**	**4**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	11
8:00 AM	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**2**	**0**	**0**	**2**	**0**	**6**	16
8:15 AM	**0**	**2**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	19
8:30 AM	**0**	**2**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**17**
8:45 AM	0	2	0	0	0	0	0	0	0	0	0	0	2	14
Count Total	0	15	2	0	2	2	0	2	0	0	2	0	25	0
Peak Hour	**0**	**9**	**2**	**0**	**0**	**2**	**0**	**2**	**0**	**0**	**2**	**0**	**17**	**0**

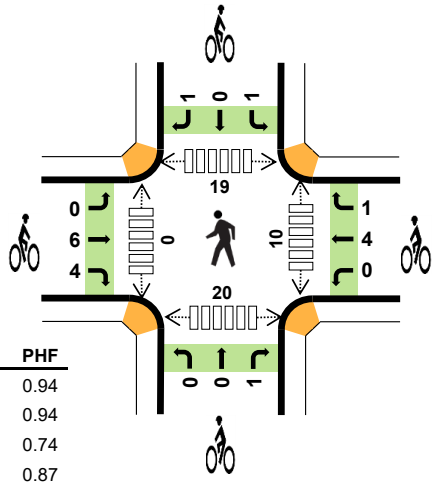
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Madera Del Presidio Dr
Paradise Dr

Date: 03/31/2022
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:15 PM to 5:15 PM



	HV %:	PHF
EB	1.3%	0.94
WB	1.4%	0.94
NB	1.0%	0.74
SB	3.8%	0.87
TOTAL	1.4%	0.97



Two-Hour Count Summaries

Interval Start		Paradise Dr Eastbound				Paradise Dr Westbound				Madera Del Presidio Dr Northbound				Harbor Dr Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	6	119	19	2	8	201	4	0	21	0	3	0	4	0	7	394	0
4:15 PM		**0**	**12**	**163**	**12**	**0**	**6**	**168**	**2**	**0**	**21**	**0**	**9**	**0**	**5**	**0**	**9**	**407**	0
4:30 PM		**0**	**10**	**135**	**21**	**2**	**3**	**191**	**3**	**0**	**12**	**0**	**6**	**0**	**4**	**0**	**5**	**392**	0
4:45 PM		**0**	**7**	**172**	**9**	**0**	**3**	**193**	**5**	**0**	**15**	**0**	**3**	**0**	**6**	**1**	**7**	**421**	1,614
5:00 PM		**0**	**8**	**145**	**11**	**1**	**4**	**198**	**5**	**0**	**24**	**0**	**10**	**0**	**3**	**0**	**12**	**421**	**1,641**
5:15 PM		0	16	143	11	0	7	138	5	0	22	0	1	0	4	0	8	355	1,589
5:30 PM		0	8	146	22	0	3	120	4	0	25	0	4	0	2	0	4	338	1,535
5:45 PM		0	13	159	11	0	3	119	2	0	23	0	17	0	8	0	4	359	1,473
Count Total		0	80	1,182	116	5	37	1,328	30	0	163	0	53	0	36	1	56	3,087	0
Peak Hour	**All**	**0**	**37**	**615**	**53**	**3**	**16**	**750**	**15**	**0**	**72**	**0**	**28**	**0**	**18**	**1**	**33**	**1,641**	**0**
	HV	**0**	**1**	**5**	**3**	**0**	**0**	**11**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**1**	**23**	**0**
	HV%	**-**	**3%**	**1%**	**6%**	**0%**	**0%**	**1%**	**0%**	**-**	**1%**	**-**	**0%**	**-**	**6%**	**0%**	**3%**	**1%**	**0**

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

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	6	5	0	0	*11*	5	0	1	0	*6*	2	0	6	5	*13*
4:15 PM	**1**	**3**	**0**	**0**	***4***	**0**	**2**	**0**	**2**	***4***	**1**	**0**	**9**	**5**	*15*
4:30 PM	**0**	**3**	**0**	**1**	***4***	**3**	**2**	**0**	**0**	***5***	**7**	**0**	**6**	**5**	*18*
4:45 PM	**2**	**1**	**0**	**0**	***3***	**2**	**1**	**1**	**0**	***4***	**1**	**0**	**2**	**5**	*8*
5:00 PM	**6**	**4**	**1**	**1**	***12***	**5**	**0**	**0**	**0**	***5***	**1**	**0**	**2**	**5**	***8***
5:15 PM	0	1	0	0	*1*	6	1	0	0	*7*	3	0	4	0	*7*
5:30 PM	1	0	0	0	*1*	7	4	0	0	*11*	3	0	6	1	*10*
5:45 PM	1	2	0	1	*4*	6	3	0	0	*9*	2	0	4	1	*7*
Count Total	17	19	1	3	*40*	34	13	2	2	*51*	20	0	39	27	*86*
Peak Hour	**9**	**11**	**1**	**2**	***23***	**10**	**5**	**1**	**2**	***18***	**10**	**0**	**19**	**20**	***49***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Paradise Dr Eastbound				Paradise Dr Westbound				Madera Del Presidio Dr Northbound				Harbor Dr Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	1	4	1	0	0	5	0	0	0	0	0	0	0	0	0	11	0
4:15 PM	**0**	**0**	**1**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**4**	0
4:45 PM	**0**	**0**	**2**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	22
5:00 PM	**0**	**1**	**2**	**3**	**0**	**0**	**4**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**12**	**23**
5:15 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	20
5:30 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	17
5:45 PM	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	1	4	18
Count Total	0	2	11	4	0	0	18	1	0	1	0	0	0	1	0	2	40	0
Peak Hour	**0**	**1**	**5**	**3**	**0**	**0**	**11**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**1**	**23**	**0**

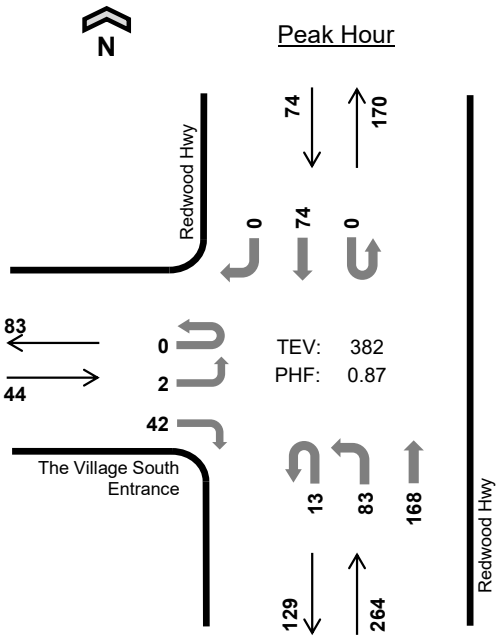
Two-Hour Count Summaries - Bikes

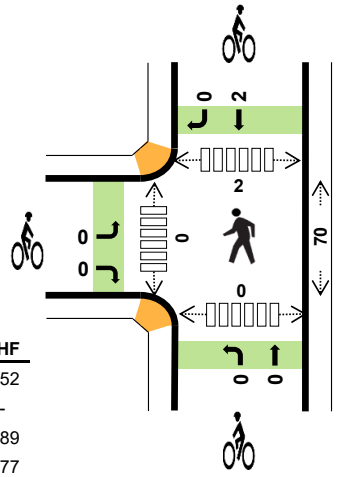
Interval Start	Paradise Dr Eastbound			Paradise Dr Westbound			Madera Del Presidio Dr Northbound			Harbor Dr Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	5	0	0	0	0	0	0	1	0	0	0	6	0
4:15 PM	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**4**	0
4:30 PM	**0**	**2**	**1**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	0
4:45 PM	**0**	**1**	**1**	**0**	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**4**	19
5:00 PM	**0**	**3**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**18**
5:15 PM	0	4	2	0	1	0	0	0	0	0	0	0	7	21
5:30 PM	0	7	0	0	4	0	0	0	0	0	0	0	11	27
5:45 PM	0	6	0	0	3	0	0	0	0	0	0	0	9	32
Count Total	0	28	6	0	12	1	0	0	2	1	0	1	51	0
Peak Hour	**0**	**6**	**4**	**0**	**4**	**1**	**0**	**0**	**1**	**1**	**0**	**1**	**18**	**0**

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

Redwood Hwy
The Village South Entrance

Date: 03/31/2022
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:45 AM to 8:45 AM





	HV %:	PHF
EB	4.5%	0.52
WB	-	-
NB	2.7%	0.89
SB	2.7%	0.77
TOTAL	2.9%	0.87

Two-Hour Count Summaries

Interval Start		The Village South Entrance				N/A				Redwood Hwy				Redwood Hwy				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM		0	0	0	1	0	0	0	0	2	7	18	0	0	0	5	0	33	0
7:15 AM		0	0	0	3	0	0	0	0	3	13	14	0	0	0	5	0	38	0
7:30 AM		0	1	0	5	0	0	0	0	4	16	24	0	1	0	12	1	64	0
7:45 AM		**0**	**0**	**0**	**21**	**0**	**0**	**0**	**0**	**2**	**13**	**59**	**0**	**0**	**0**	**15**	**0**	**110**	245
8:00 AM		**0**	**0**	**0**	**8**	**0**	**0**	**0**	**0**	**2**	**18**	**51**	**0**	**0**	**0**	**24**	**0**	**103**	315
8:15 AM		**0**	**2**	**0**	**6**	**0**	**0**	**0**	**0**	**5**	**29**	**27**	**0**	**0**	**0**	**17**	**0**	**86**	363
8:30 AM		**0**	**0**	**0**	**7**	**0**	**0**	**0**	**0**	**4**	**23**	**31**	**0**	**0**	**0**	**18**	**0**	**83**	**382**
8:45 AM		0	0	0	7	0	0	0	0	8	25	36	0	0	0	17	1	94	366
Count Total		0	3	0	58	0	0	0	0	30	144	260	0	1	0	113	2	611	0
Peak Hour	All	**0**	**2**	**0**	**42**	**0**	**0**	**0**	**0**	**13**	**83**	**168**	**0**	**0**	**0**	**74**	**0**	**382**	**0**
	HV	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**3**	**4**	**0**	**0**	**0**	**2**	**0**	**11**	**0**
	HV%	-	0%	-	5%	-	-	-	-	0%	4%	2%	-	-	-	3%	-	3%	0

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

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	0	0	1	1	*2*	0	0	0	0	*0*	3	0	0	0	*3*
7:15 AM	1	0	1	0	*2*	0	0	0	0	*0*	2	0	0	0	*2*
7:30 AM	1	0	1	0	*2*	0	0	1	2	*3*	14	0	0	0	*14*
7:45 AM	**1**	**0**	**1**	**1**	***3***	**0**	**0**	**0**	**0**	***0***	**29**	**0**	**1**	**0**	*30*
8:00 AM	**1**	**0**	**3**	**0**	***4***	**0**	**0**	**0**	**2**	***2***	**14**	**0**	**0**	**0**	*14*
8:15 AM	**0**	**0**	**2**	**0**	***2***	**0**	**0**	**0**	**0**	***0***	**16**	**0**	**1**	**0**	*17*
8:30 AM	**0**	**0**	**1**	**1**	***2***	**0**	**0**	**0**	**0**	***0***	**11**	**0**	**0**	**0**	***11***
8:45 AM	1	0	2	0	*3*	0	0	2	1	*3*	6	0	0	0	*6*
Count Total	5	0	12	3	*20*	0	0	3	5	*8*	95	0	2	0	*97*
Peak Hr	**2**	**0**	**7**	**2**	***11***	**0**	**0**	**0**	**2**	***2***	**70**	**0**	**2**	**0**	***72***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	The Village South Entrance				N/A				Redwood Hwy				Redwood Hwy				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	2	0
7:15 AM	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	2	0
7:30 AM	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	2	0
7:45 AM	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**3**	9
8:00 AM	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**2**	**0**	**0**	**0**	**0**	**0**	**4**	11
8:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**2**	11
8:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**0**	**2**	**11**
8:45 AM	0	0	0	1	0	0	0	0	0	2	0	0	0	0	0	0	3	11
Count Total	0	0	0	5	0	0	0	0	0	8	4	0	0	0	3	0	20	0
Peak Hour	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**3**	**4**	**0**	**0**	**0**	**2**	**0**	**11**	**0**

Two-Hour Count Summaries - Bikes

Interval Start	The Village South Entrance			N/A			Redwood Hwy			Redwood Hwy			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	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
7:30 AM	0	0	0	0	0	0	0	1	0	0	2	0	3	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	3
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**2**	5
8:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	5
8:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**
8:45 AM	0	0	0	0	0	0	0	2	0	0	1	0	3	5
Count Total	0	0	0	0	0	0	0	3	0	0	5	0	8	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**2**	**0**

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

MARKS TRAFFIC DATA

mietekm@comcast.net
916.806.0250

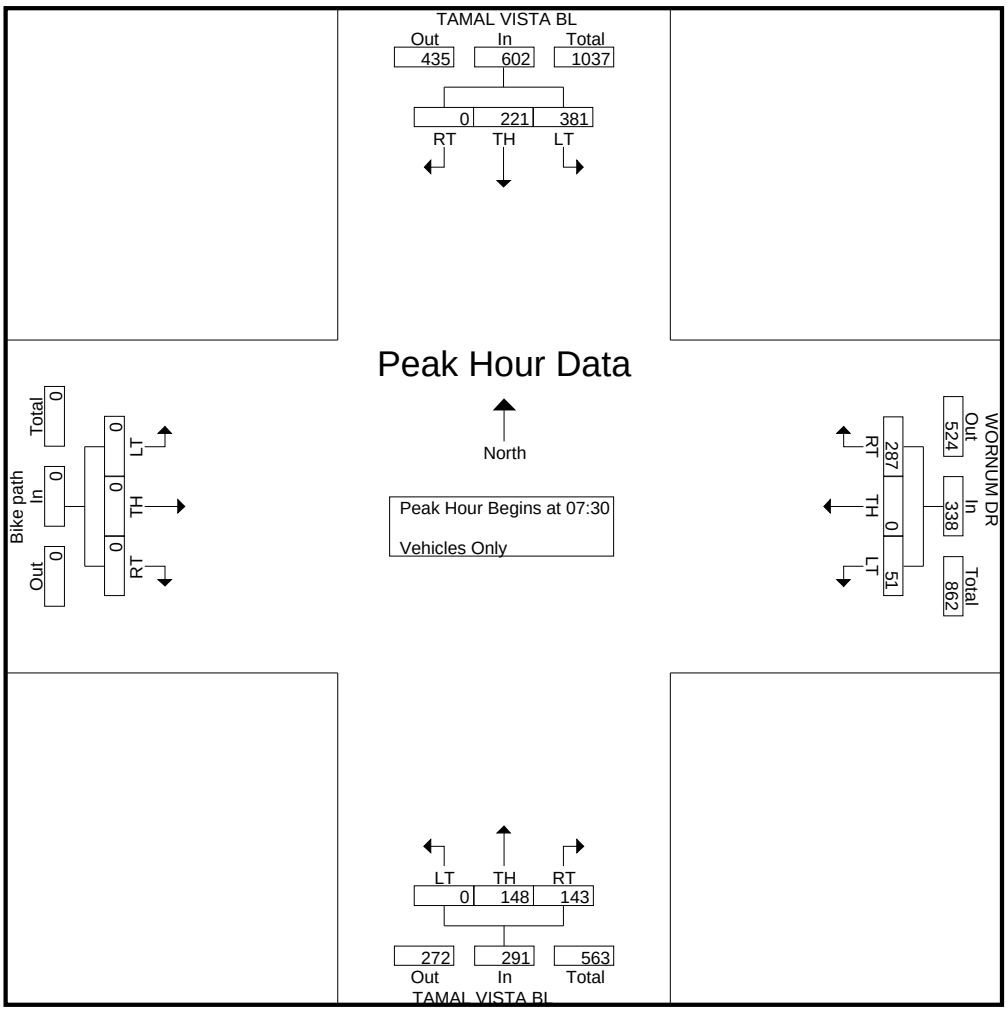
TOWN OF CORTE MADERA

File Name : tamal vista-wornum-a
Site Code : 1
Start Date : 4/9/2014
Page No : 1

Groups Printed- Vehicles Only

	TAMAL VISTA BL Southbound				WORNUM DR Westbound				TAMAL VISTA BL Northbound				Bike path Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
07:00	0	25	78	103	27	0	0	27	18	14	0	32	0	0	0	0	162
07:15	0	19	57	76	69	0	8	77	18	17	0	35	0	0	0	0	188
07:30	0	54	69	123	141	0	11	152	24	42	0	66	0	0	0	0	341
07:45	0	44	94	138	58	0	13	71	36	34	0	70	0	0	0	0	279
Total	0	142	298	440	295	0	32	327	96	107	0	203	0	0	0	0	970
08:00	0	65	102	167	56	0	14	70	34	52	0	86	0	0	0	0	323
08:15	0	58	116	174	32	0	13	45	49	20	0	69	0	0	0	0	288
08:30	0	61	92	153	49	0	14	63	27	40	0	67	0	0	0	0	283
08:45	0	67	85	152	33	0	18	51	34	37	0	71	0	0	0	0	274
Total	0	251	395	646	170	0	59	229	144	149	0	293	0	0	0	0	1168
Grand Total	0	393	693	1086	465	0	91	556	240	256	0	496	0	0	0	0	2138
Apprch %	0	36.2	63.8		83.6	0	16.4		48.4	51.6	0		0	0	0		
Total %	0	18.4	32.4	50.8	21.7	0	4.3	26	11.2	12	0	23.2	0	0	0	0	

	TAMAL VISTA BL Southbound				WORNUM DR Westbound				TAMAL VISTA BL Northbound				Bike path Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30																	
07:30	0	54	69	123	**141**	0	11	**152**	24	42	0	66	0	0	0	0	**341**
07:45	0	44	94	138	58	0	13	71	36	34	0	70	0	0	0	0	279
08:00	0	**65**	102	167	56	0	**14**	70	34	**52**	0	**86**	0	0	0	0	323
08:15	0	58	**116**	**174**	32	0	13	45	**49**	20	0	69	0	0	0	0	288
Total Volume	0	221	381	602	287	0	51	338	143	148	0	291	0	0	0	0	1231
% App. Total	0	36.7	63.3		84.9	0	15.1		49.1	50.9	0		0	0	0		
PHF	.000	.850	.821	.865	.509	.000	.911	.556	.730	.712	.000	.846	.000	.000	.000	.000	.902



MARKS TRAFFIC DATA

mietekm@comcast.net
916.806.0250

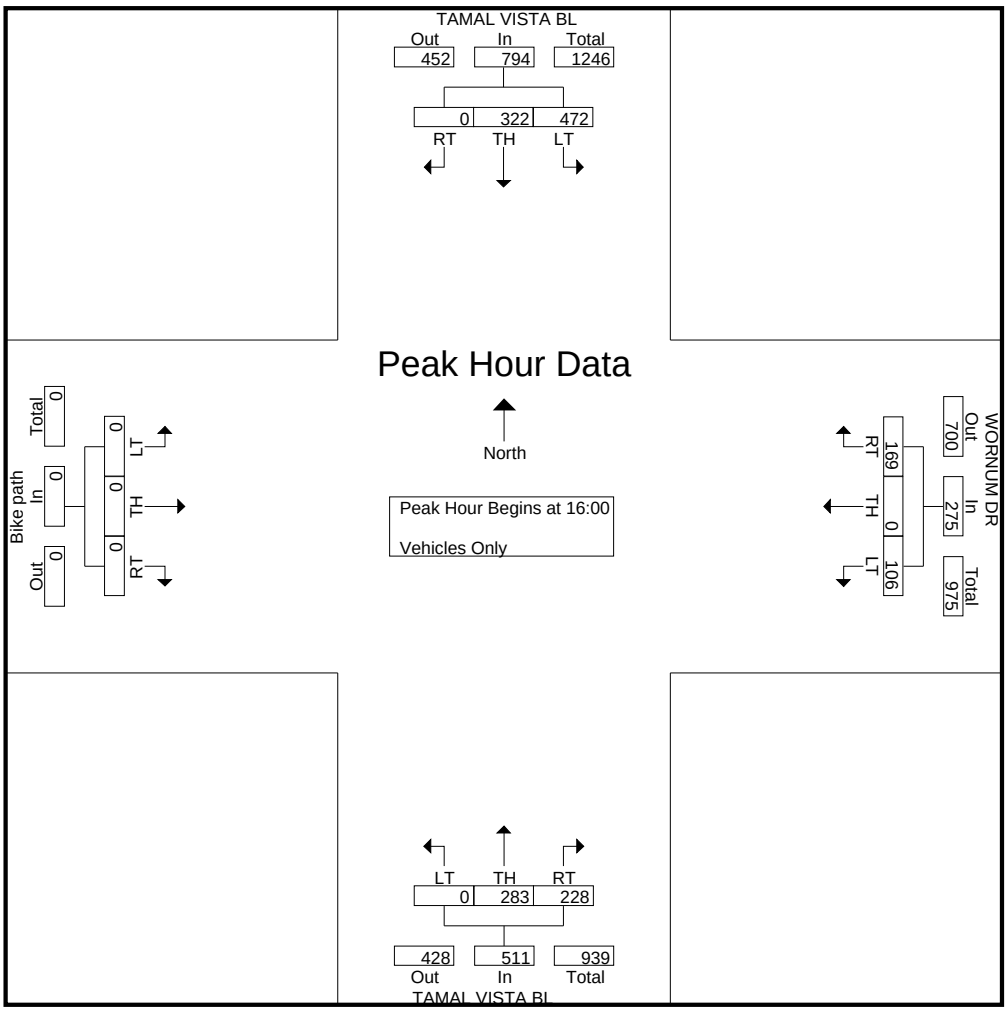
TOWN OF CORTE MADERA

File Name : tamal vista-wornum-p
Site Code : 1
Start Date : 4/9/2014
Page No : 1

Groups Printed- Vehicles Only

	TAMAL VISTA BL Southbound				WORNUM DR Westbound				TAMAL VISTA BL Northbound				Bike path Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
16:00	0	92	136	228	43	0	32	75	46	70	0	116	0	0	0	0	419
16:15	0	74	138	212	40	0	30	70	56	58	0	114	0	0	0	0	396
16:30	0	74	108	182	40	0	26	66	65	71	0	136	0	0	0	0	384
16:45	0	82	90	172	46	0	18	64	61	84	0	145	0	0	0	0	381
Total	0	322	472	794	169	0	106	275	228	283	0	511	0	0	0	0	1580
17:00	0	89	113	202	42	0	18	60	48	86	0	134	0	0	0	0	396
17:15	0	96	97	193	44	0	28	72	48	85	0	133	0	0	0	0	398
17:30	0	68	92	160	37	0	15	52	53	81	0	134	0	0	0	0	346
17:45	0	70	111	181	44	0	19	63	37	86	0	123	0	0	0	0	367
Total	0	323	413	736	167	0	80	247	186	338	0	524	0	0	0	0	1507
Grand Total	0	645	885	1530	336	0	186	522	414	621	0	1035	0	0	0	0	3087
Apprch %	0	42.2	57.8		64.4	0	35.6		40	60	0		0	0	0		
Total %	0	20.9	28.7	49.6	10.9	0	6	16.9	13.4	20.1	0	33.5	0	0	0	0	

	TAMAL VISTA BL Southbound				WORNUM DR Westbound				TAMAL VISTA BL Northbound				Bike path Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 16:00																	
16:00	0	**92**	136	**228**	43	0	**32**	**75**	46	70	0	116	0	0	0	0	**419**
16:15	0	74	**138**	212	40	0	30	70	56	58	0	114	0	0	0	0	396
16:30	0	74	108	182	40	0	26	66	**65**	71	0	136	0	0	0	0	384
16:45	0	82	90	172	**46**	0	18	64	61	**84**	0	**145**	0	0	0	0	381
Total Volume	0	322	472	794	169	0	106	275	228	283	0	511	0	0	0	0	1580
% App. Total	0	40.6	59.4		61.5	0	38.5		44.6	55.4	0		0	0	0		
PHF	.000	.875	.855	.871	.918	.000	.828	.917	.877	.842	.000	.881	.000	.000	.000	.000	.943



MARKS TRAFFIC DATA

mietekm@comcast.net
916.806.0250

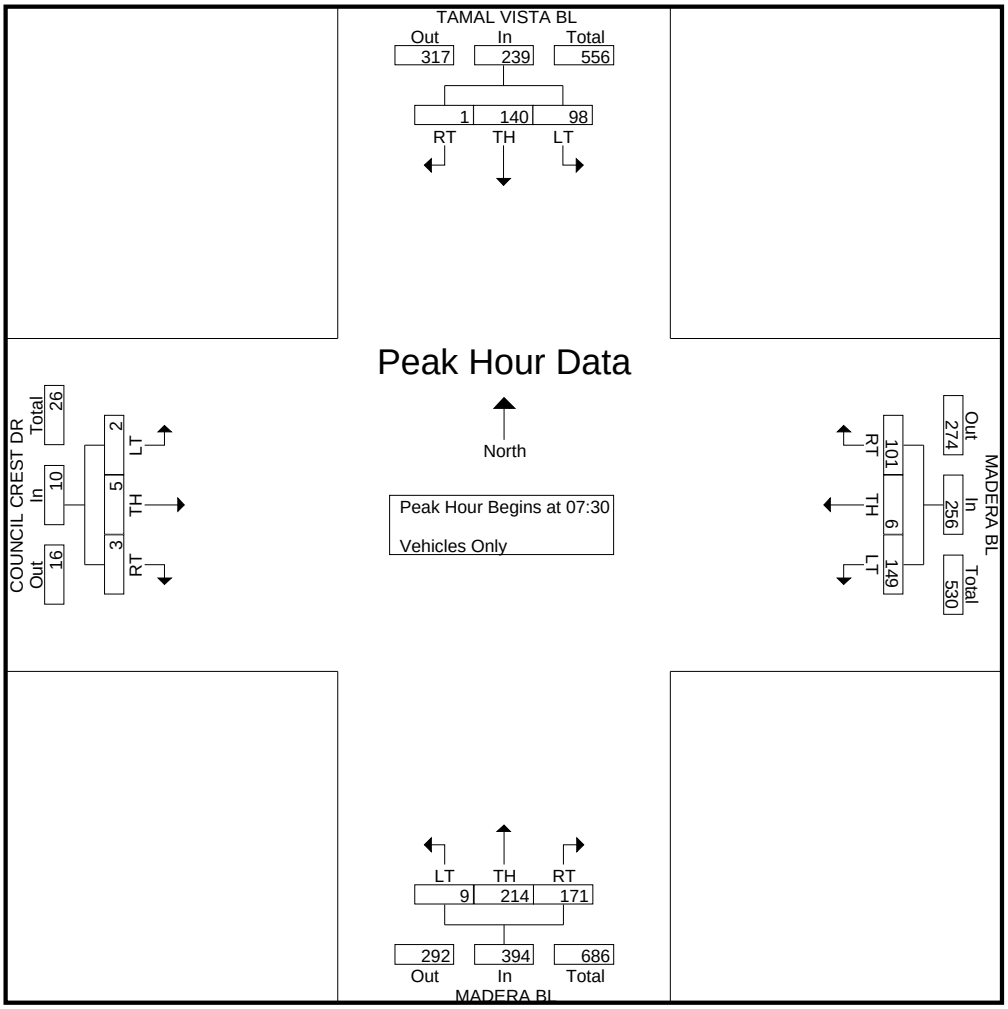
TOWN OF CORTE MADERA

File Name : tamal vista-madera-a
Site Code : 2
Start Date : 4/9/2014
Page No : 1

Groups Printed- Vehicles Only

	TAMAL VISTA BL Southbound				MADERA BL Westbound				MADERA BL Northbound				COUNCIL CREST DR Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
07:00	1	14	11	26	23	0	12	35	24	14	1	39	1	0	0	1	101
07:15	0	16	11	27	10	4	25	39	16	24	0	40	1	0	1	2	108
07:30	0	36	24	60	28	0	34	62	37	42	1	80	0	3	0	3	205
07:45	0	35	23	58	21	5	37	63	43	49	4	96	1	0	0	1	218
Total	1	101	69	171	82	9	108	199	120	129	6	255	3	3	1	7	632
08:00	0	38	34	72	28	0	47	75	54	77	0	131	2	1	2	5	283
08:15	1	31	17	49	24	1	31	56	37	46	4	87	0	1	0	1	193
08:30	0	25	24	49	13	1	38	52	35	55	2	92	1	1	0	2	195
08:45	0	30	17	47	32	1	28	61	27	49	0	76	0	1	0	1	185
Total	1	124	92	217	97	3	144	244	153	227	6	386	3	4	2	9	856
Grand Total	2	225	161	388	179	12	252	443	273	356	12	641	6	7	3	16	1488
Apprch %	0.5	58	41.5		40.4	2.7	56.9		42.6	55.5	1.9		37.5	43.8	18.8		
Total %	0.1	15.1	10.8	26.1	12	0.8	16.9	29.8	18.3	23.9	0.8	43.1	0.4	0.5	0.2	1.1	

	TAMAL VISTA BL Southbound				MADERA BL Westbound				MADERA BL Northbound				COUNCIL CREST DR Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30																	
07:30	0	36	24	60	**28**	0	34	62	37	42	1	80	0	**3**	0	3	205
07:45	0	35	23	58	21	**5**	37	63	43	49	**4**	96	1	0	0	1	218
08:00	0	**38**	**34**	**72**	28	0	**47**	**75**	**54**	**77**	0	**131**	**2**	1	**2**	**5**	**283**
08:15	**1**	31	17	49	24	1	31	56	37	46	4	87	0	1	0	1	193
Total Volume	1	140	98	239	101	6	149	256	171	214	9	394	3	5	2	10	899
% App. Total	0.4	58.6	41		39.5	2.3	58.2		43.4	54.3	2.3		30	50	20		
PHF	.250	.921	.721	.830	.902	.300	.793	.853	.792	.695	.563	.752	.375	.417	.250	.500	.794



MARKS TRAFFIC DATA

mietekm@comcast.net
916.806.0250

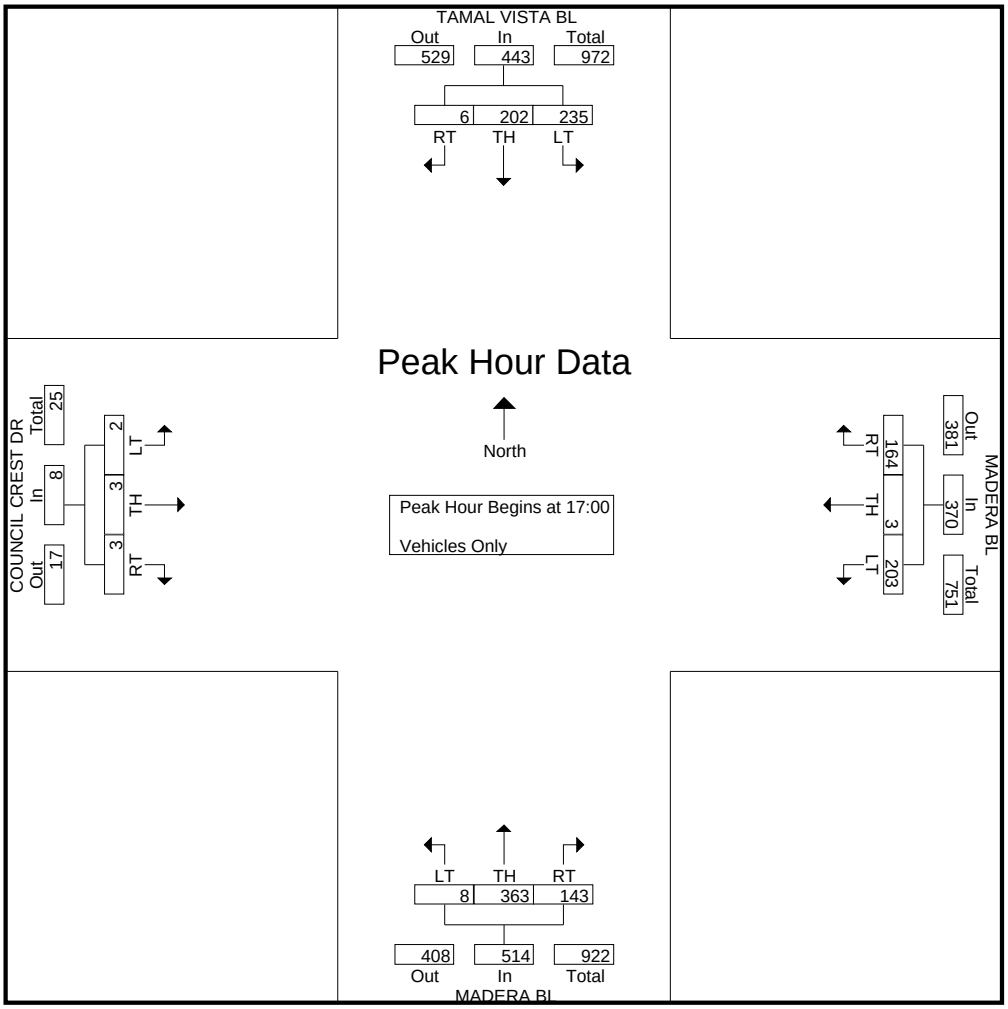
TOWN OF CORTE MADERA

File Name : tamal vista-madera-p
Site Code : 2
Start Date : 4/9/2014
Page No : 1

Groups Printed- Vehicles Only

	TAMAL VISTA BL Southbound				MADERA BL Westbound				MADERA BL Northbound				COUNCIL CREST DR Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
16:00	1	55	53	109	38	1	54	93	28	74	1	103	3	0	0	3	308
16:15	0	60	54	114	58	0	41	99	27	66	1	94	2	2	0	4	311
16:30	0	46	52	98	47	1	40	88	21	65	4	90	1	1	0	2	278
16:45	0	61	42	103	37	1	50	88	23	86	5	114	2	3	0	5	310
Total	1	222	201	424	180	3	185	368	99	291	11	401	8	6	0	14	1207
17:00	1	54	80	135	49	1	49	99	36	98	3	137	0	1	0	1	372
17:15	3	62	56	121	42	1	61	104	29	84	4	117	0	0	2	2	344
17:30	1	40	44	85	36	0	53	89	32	84	1	117	3	1	0	4	295
17:45	1	46	55	102	37	1	40	78	46	97	0	143	0	1	0	1	324
Total	6	202	235	443	164	3	203	370	143	363	8	514	3	3	2	8	1335
Grand Total	7	424	436	867	344	6	388	738	242	654	19	915	11	9	2	22	2542
Apprch %	0.8	48.9	50.3		46.6	0.8	52.6		26.4	71.5	2.1		50	40.9	9.1		
Total %	0.3	16.7	17.2	34.1	13.5	0.2	15.3	29	9.5	25.7	0.7	36	0.4	0.4	0.1	0.9	

	TAMAL VISTA BL Southbound				MADERA BL Westbound				MADERA BL Northbound				COUNCIL CREST DR Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 17:00																	
17:00	1	54	**80**	**135**	**49**	**1**	49	99	36	**98**	3	137	0	**1**	0	1	**372**
17:15	**3**	**62**	56	121	42	1	**61**	**104**	29	84	**4**	117	0	0	**2**	2	344
17:30	1	40	44	85	36	0	53	89	32	84	1	117	**3**	1	0	**4**	295
17:45	1	46	55	102	37	1	40	78	**46**	97	0	**143**	0	1	0	1	324
Total Volume	6	202	235	443	164	3	203	370	143	363	8	514	3	3	2	8	1335
% App. Total	1.4	45.6	53		44.3	0.8	54.9		27.8	70.6	1.6		37.5	37.5	25		
PHF	.500	.815	.734	.820	.837	.750	.832	.889	.777	.926	.500	.899	.250	.750	.250	.500	.897



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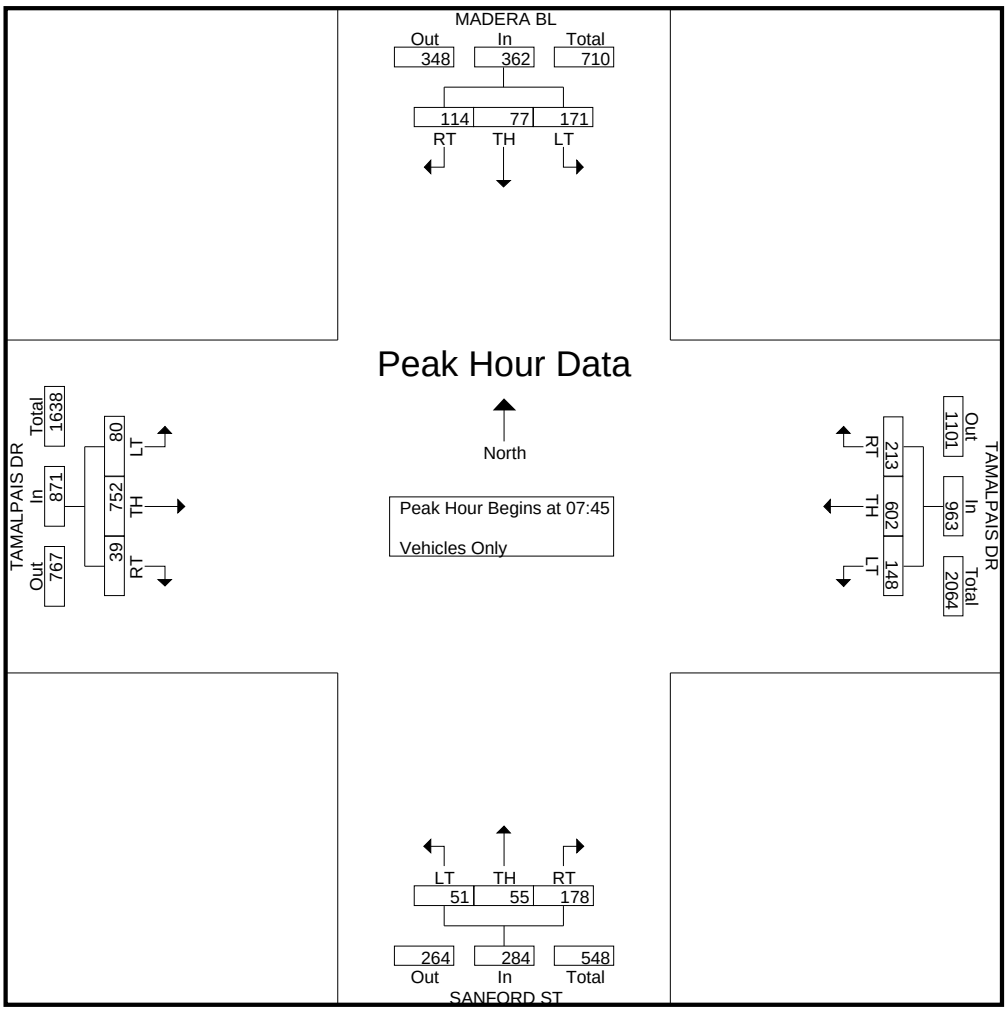
TOWN OF CORTE MADERA

File Name : madera-tamalpais-a
Site Code : 4
Start Date : 4/9/2014
Page No : 1

Groups Printed- Vehicles Only

	MADERA BL Southbound				TAMALPAIS DR Westbound				SANFORD ST Northbound				TAMALPAIS DR Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
07:00	7	7	20	34	17	46	21	84	30	3	1	34	8	81	11	100	252
07:15	19	9	16	44	22	60	23	105	26	4	6	36	9	118	9	136	321
07:30	21	9	32	62	43	106	25	174	46	15	9	70	9	148	13	170	476
07:45	28	10	33	71	65	198	52	315	47	17	21	85	8	165	16	189	660
Total	75	35	101	211	147	410	121	678	149	39	37	225	34	512	49	595	1709
08:00	26	28	56	110	72	180	31	283	43	18	12	73	9	201	22	232	698
08:15	26	22	53	101	34	134	32	200	46	9	8	63	12	209	18	239	603
08:30	34	17	29	80	42	90	33	165	42	11	10	63	10	177	24	211	519
08:45	27	11	31	69	51	117	46	214	51	11	7	69	10	209	24	243	595
Total	113	78	169	360	199	521	142	862	182	49	37	268	41	796	88	925	2415
Grand Total	188	113	270	571	346	931	263	1540	331	88	74	493	75	1308	137	1520	4124
Apprch %	32.9	19.8	47.3		22.5	60.5	17.1		67.1	17.8	15		4.9	86.1	9		
Total %	4.6	2.7	6.5	13.8	8.4	22.6	6.4	37.3	8	2.1	1.8	12	1.8	31.7	3.3	36.9	

	MADERA BL Southbound				TAMALPAIS DR Westbound				SANFORD ST Northbound				TAMALPAIS DR Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45																	
07:45	28	10	33	71	65	**198**	**52**	**315**	**47**	17	**21**	**85**	8	165	16	189	660
08:00	26	**28**	**56**	**110**	**72**	180	31	283	43	**18**	12	73	9	201	22	232	**698**
08:15	26	22	53	101	34	134	32	200	46	9	8	63	**12**	**209**	18	**239**	603
08:30	**34**	17	29	80	42	90	33	165	42	11	10	63	10	177	**24**	211	519
Total Volume	114	77	171	362	213	602	148	963	178	55	51	284	39	752	80	871	2480
% App. Total	31.5	21.3	47.2		22.1	62.5	15.4		62.7	19.4	18		4.5	86.3	9.2		
PHF	.838	.688	.763	.823	.740	.760	.712	.764	.947	.764	.607	.835	.813	.900	.833	.911	.888



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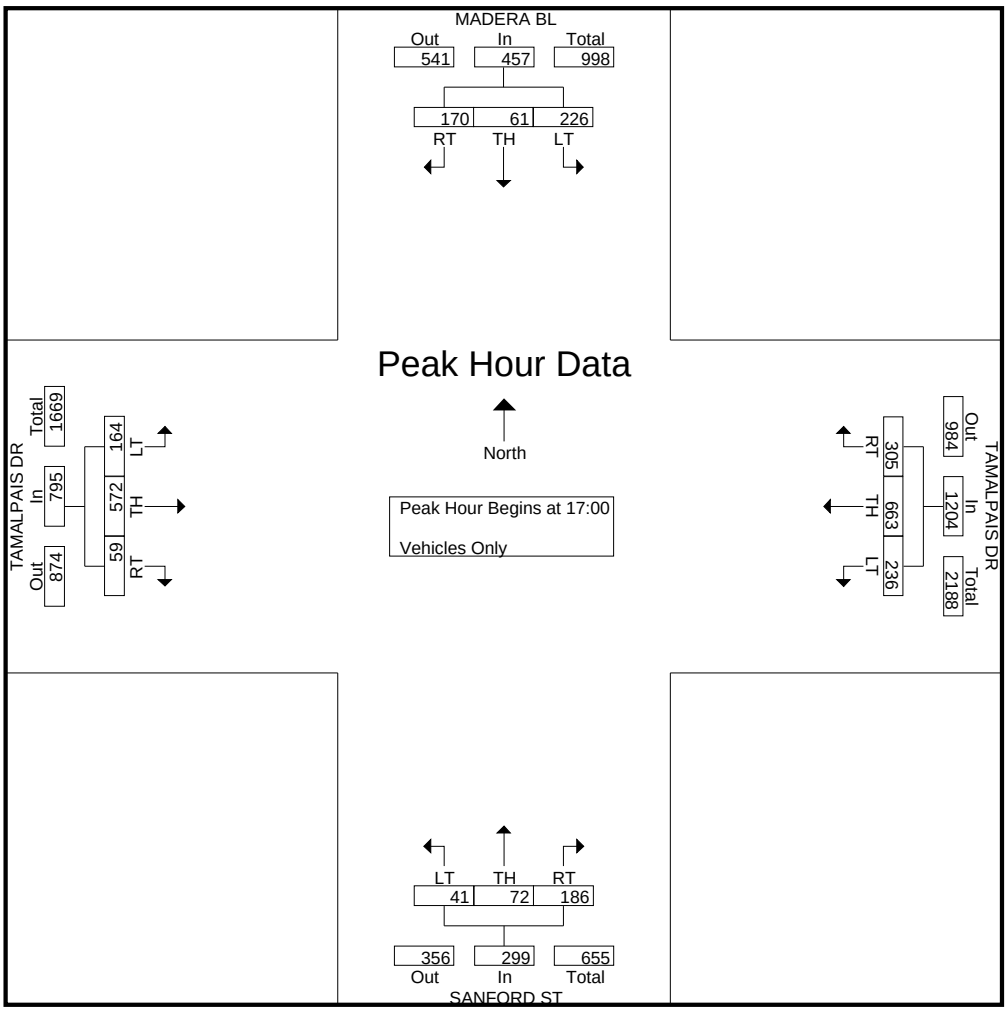
TOWN OF CORTE MADERA

File Name : madera-tamalpais-p
Site Code : 4
Start Date : 4/9/2014
Page No : 1

Groups Printed- Vehicles Only

	MADERA BL Southbound				TAMALPAIS DR Westbound				SANFORD ST Northbound				TAMALPAIS DR Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
16:00	48	13	57	118	59	135	39	233	44	17	7	68	12	144	29	185	604
16:15	46	18	59	123	47	146	40	233	37	12	8	57	8	158	41	207	620
16:30	53	15	53	121	58	127	41	226	44	15	8	67	10	151	40	201	615
16:45	50	21	45	116	65	171	47	283	45	10	8	63	13	158	41	212	674
Total	197	67	214	478	229	579	167	975	170	54	31	255	43	611	151	805	2513
17:00	39	22	57	118	74	150	46	270	47	21	6	74	15	139	41	195	657
17:15	51	17	56	124	66	182	63	311	40	17	9	66	19	172	54	245	746
17:30	36	14	59	109	76	168	62	306	50	15	10	75	12	144	29	185	675
17:45	44	8	54	106	89	163	65	317	49	19	16	84	13	117	40	170	677
Total	170	61	226	457	305	663	236	1204	186	72	41	299	59	572	164	795	2755
Grand Total	367	128	440	935	534	1242	403	2179	356	126	72	554	102	1183	315	1600	5268
Apprch %	39.3	13.7	47.1		24.5	57	18.5		64.3	22.7	13		6.4	73.9	19.7		
Total %	7	2.4	8.4	17.7	10.1	23.6	7.6	41.4	6.8	2.4	1.4	10.5	1.9	22.5	6	30.4	

	MADERA BL Southbound				TAMALPAIS DR Westbound				SANFORD ST Northbound				TAMALPAIS DR Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 17:00																	
17:00	39	**22**	57	118	74	150	46	270	47	**21**	6	74	15	139	41	195	657
17:15	**51**	17	56	**124**	66	**182**	63	311	40	17	9	66	**19**	**172**	**54**	**245**	**746**
17:30	36	14	**59**	109	76	168	62	306	**50**	15	10	75	12	144	29	185	675
17:45	44	8	54	106	**89**	163	**65**	**317**	49	19	**16**	**84**	13	117	40	170	677
Total Volume	170	61	226	457	305	663	236	1204	186	72	41	299	59	572	164	795	2755
% App. Total	37.2	13.3	49.5		25.3	55.1	19.6		62.2	24.1	13.7		7.4	71.9	20.6		
PHF	.833	.693	.958	.921	.857	.911	.908	.950	.930	.857	.641	.890	.776	.831	.759	.811	.923



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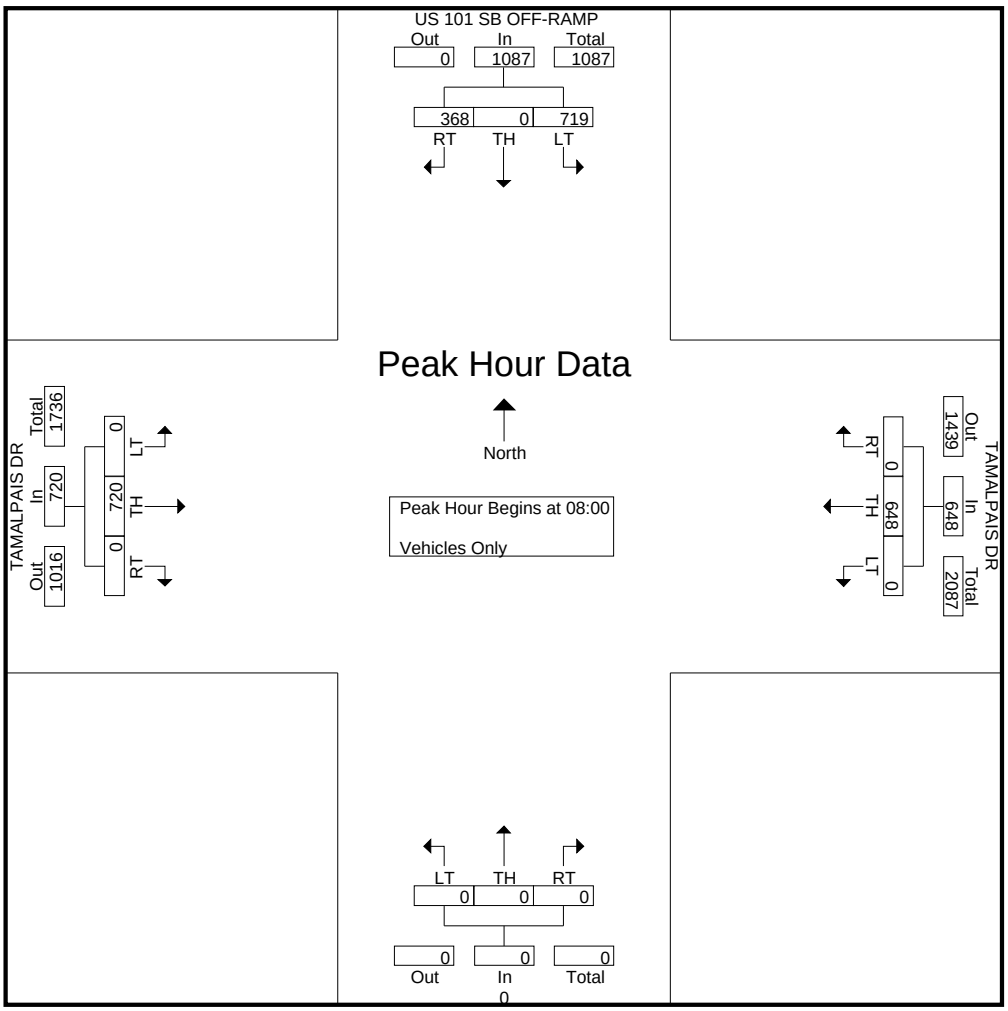
TOWN OF CORTE MADERA

File Name : 101sb-tamalpais-a
Site Code : 5
Start Date : 4/9/2014
Page No : 1

Groups Printed- Vehicles Only

	US 101 SB OFF-RAMP Southbound				TAMALPAIS DR Westbound				0 Northbound				TAMALPAIS DR Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
07:00	51	0	120	171	0	49	0	49	0	0	0	0	0	68	0	68	288
07:15	52	0	103	155	0	65	0	65	0	0	0	0	0	99	0	99	319
07:30	63	0	131	194	0	153	0	153	0	0	0	0	0	113	0	113	460
07:45	81	0	128	209	0	251	0	251	0	0	0	0	0	135	0	135	595
Total	247	0	482	729	0	518	0	518	0	0	0	0	0	415	0	415	1662
08:00	103	0	188	291	0	212	0	212	0	0	0	0	0	191	0	191	694
08:15	90	0	170	260	0	135	0	135	0	0	0	0	0	181	0	181	576
08:30	83	0	185	268	0	141	0	141	0	0	0	0	0	167	0	167	576
08:45	92	0	176	268	0	160	0	160	0	0	0	0	0	181	0	181	609
Total	368	0	719	1087	0	648	0	648	0	0	0	0	0	720	0	720	2455
Grand Total	615	0	1201	1816	0	1166	0	1166	0	0	0	0	0	1135	0	1135	4117
Apprch %	33.9	0	66.1		0	100	0		0	0	0		0	100	0		
Total %	14.9	0	29.2	44.1	0	28.3	0	28.3	0	0	0	0	0	27.6	0	27.6	

	US 101 SB OFF-RAMP Southbound				TAMALPAIS DR Westbound				0 Northbound				TAMALPAIS DR Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00																	
08:00	**103**	0	**188**	**291**	0	**212**	0	**212**	0	0	0	0	0	**191**	0	**191**	**694**
08:15	90	0	170	260	0	135	0	135	0	0	0	0	0	181	0	181	576
08:30	83	0	185	268	0	141	0	141	0	0	0	0	0	167	0	167	576
08:45	92	0	176	268	0	160	0	160	0	0	0	0	0	181	0	181	609
Total Volume	368	0	719	1087	0	648	0	648	0	0	0	0	0	720	0	720	2455
% App. Total	33.9	0	66.1		0	100	0		0	0	0		0	100	0		
PHF	.893	.000	.956	.934	.000	.764	.000	.764	.000	.000	.000	.000	.000	.942	.000	.942	.884



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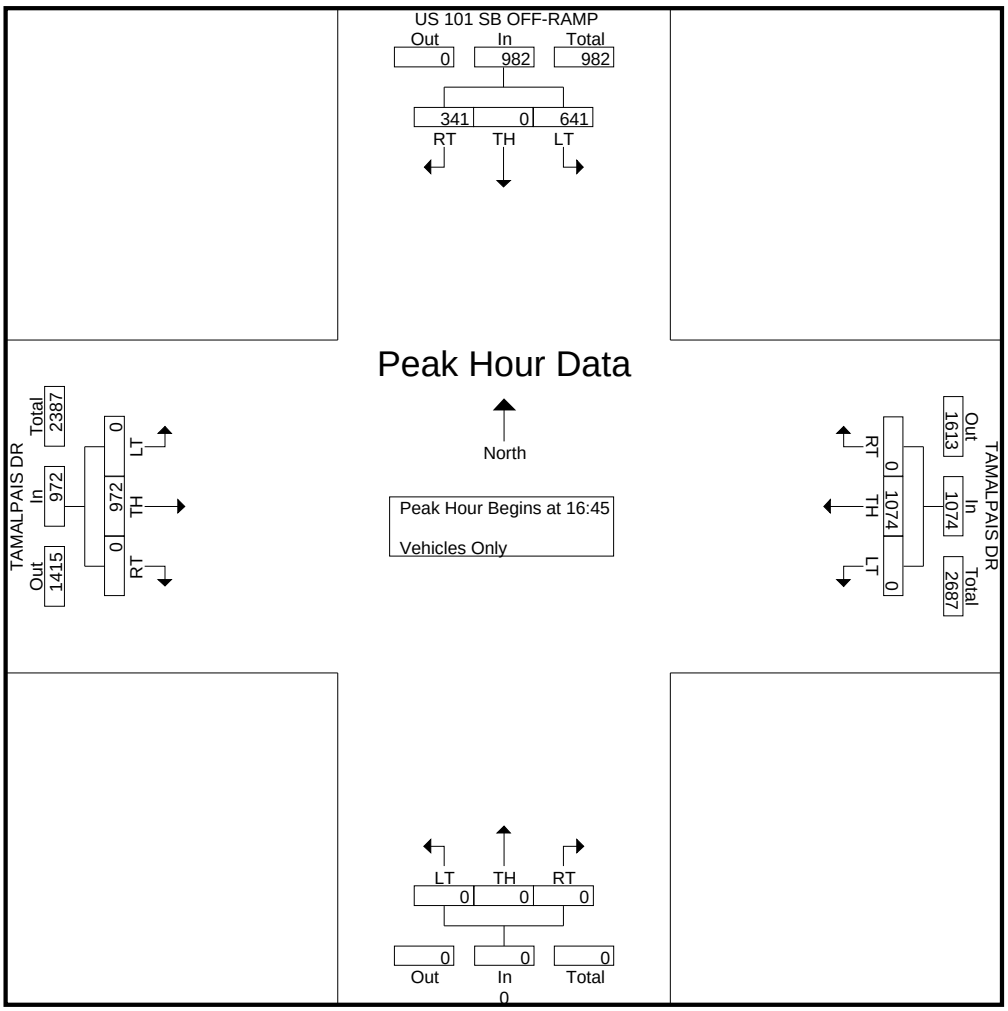
TOWN OF CORTE MADERA

File Name : 101sb-tamalpais-p
Site Code : 5
Start Date : 4/9/2014
Page No : 1

Groups Printed- Vehicles Only

	US 101 SB OFF-RAMP Southbound				TAMALPAIS DR Westbound				0 Northbound				TAMALPAIS DR Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
16:00	65	0	130	195	0	219	0	219	0	0	0	0	0	218	0	218	632
16:15	73	0	152	225	0	219	0	219	0	0	0	0	0	238	0	238	682
16:30	76	0	150	226	0	223	0	223	0	0	0	0	0	228	0	228	677
16:45	83	0	167	250	0	246	0	246	0	0	0	0	0	248	0	248	744
Total	297	0	599	896	0	907	0	907	0	0	0	0	0	932	0	932	2735
17:00	85	0	160	245	0	256	0	256	0	0	0	0	0	231	0	231	732
17:15	84	0	148	232	0	269	0	269	0	0	0	0	0	252	0	252	753
17:30	89	0	166	255	0	303	0	303	0	0	0	0	0	241	0	241	799
17:45	87	0	135	222	0	293	0	293	0	0	0	0	0	206	0	206	721
Total	345	0	609	954	0	1121	0	1121	0	0	0	0	0	930	0	930	3005
Grand Total	642	0	1208	1850	0	2028	0	2028	0	0	0	0	0	1862	0	1862	5740
Apprch %	34.7	0	65.3		0	100	0		0	0	0		0	100	0		
Total %	11.2	0	21	32.2	0	35.3	0	35.3	0	0	0	0	0	32.4	0	32.4	

	US 101 SB OFF-RAMP Southbound				TAMALPAIS DR Westbound				0 Northbound				TAMALPAIS DR Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 16:45																	
16:45	83	0	**167**	250	0	246	0	246	0	0	0	0	0	248	0	248	744
17:00	85	0	160	245	0	256	0	256	0	0	0	0	0	231	0	231	732
17:15	84	0	148	232	0	269	0	269	0	0	0	0	0	**252**	0	**252**	753
17:30	**89**	0	166	**255**	0	**303**	0	**303**	0	0	0	0	0	241	0	241	**799**
Total Volume	341	0	641	982	0	1074	0	1074	0	0	0	0	0	972	0	972	3028
% App. Total	34.7	0	65.3		0	100	0		0	0	0		0	100	0		
PHF	.958	.000	.960	.963	.000	.886	.000	.886	.000	.000	.000	.000	.000	.964	.000	.964	.947



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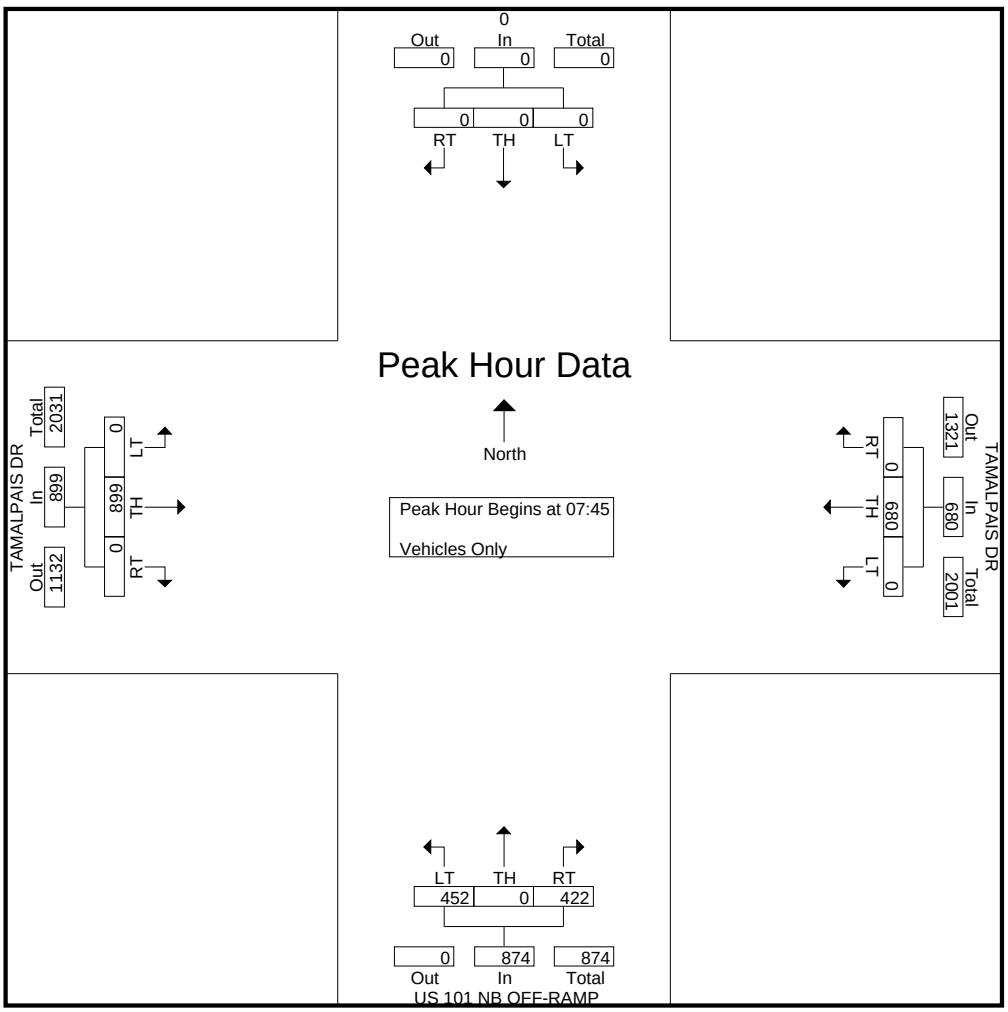
TOWN OF CORTE MADERA

File Name : 101nb-tamalpais-a
Site Code : 6
Start Date : 4/9/2014
Page No : 1

Groups Printed- Vehicles Only

	0 Southbound				TAMALPAIS DR Westbound				US 101 NB OFF-RAMP Northbound				TAMALPAIS DR Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
07:00	0	0	0	0	0	63	0	63	25	0	35	60	0	128	0	128	251
07:15	0	0	0	0	0	90	0	90	40	0	53	93	0	114	0	114	297
07:30	0	0	0	0	0	138	0	138	47	0	108	155	0	145	0	145	438
07:45	0	0	0	0	0	202	0	202	97	0	155	252	0	193	0	193	647
Total	0	0	0	0	0	493	0	493	209	0	351	560	0	580	0	580	1633
08:00	0	0	0	0	0	182	0	182	120	0	121	241	0	229	0	229	652
08:15	0	0	0	0	0	162	0	162	104	0	76	180	0	239	0	239	581
08:30	0	0	0	0	0	134	0	134	101	0	100	201	0	238	0	238	573
08:45	0	0	0	0	0	125	0	125	120	0	113	233	0	215	0	215	573
Total	0	0	0	0	0	603	0	603	445	0	410	855	0	921	0	921	2379
Grand Total	0	0	0	0	0	1096	0	1096	654	0	761	1415	0	1501	0	1501	4012
Apprch %	0	0	0		0	100	0		46.2	0	53.8		0	100	0		
Total %	0	0	0	0	0	27.3	0	27.3	16.3	0	19	35.3	0	37.4	0	37.4	

	0 Southbound				TAMALPAIS DR Westbound				US 101 NB OFF-RAMP Northbound				TAMALPAIS DR Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45																	
07:45	0	0	0	0	0	**202**	0	**202**	97	0	**155**	**252**	0	193	0	193	647
08:00	0	0	0	0	0	182	0	182	**120**	0	121	241	0	229	0	229	**652**
08:15	0	0	0	0	0	162	0	162	104	0	76	180	0	**239**	0	**239**	581
08:30	0	0	0	0	0	134	0	134	101	0	100	201	0	238	0	238	573
Total Volume	0	0	0	0	0	680	0	680	422	0	452	874	0	899	0	899	2453
% App. Total	0	0	0		0	100	0		48.3	0	51.7		0	100	0		
PHF	.000	.000	.000	.000	.000	.842	.000	.842	.879	.000	.729	.867	.000	.940	.000	.940	.941



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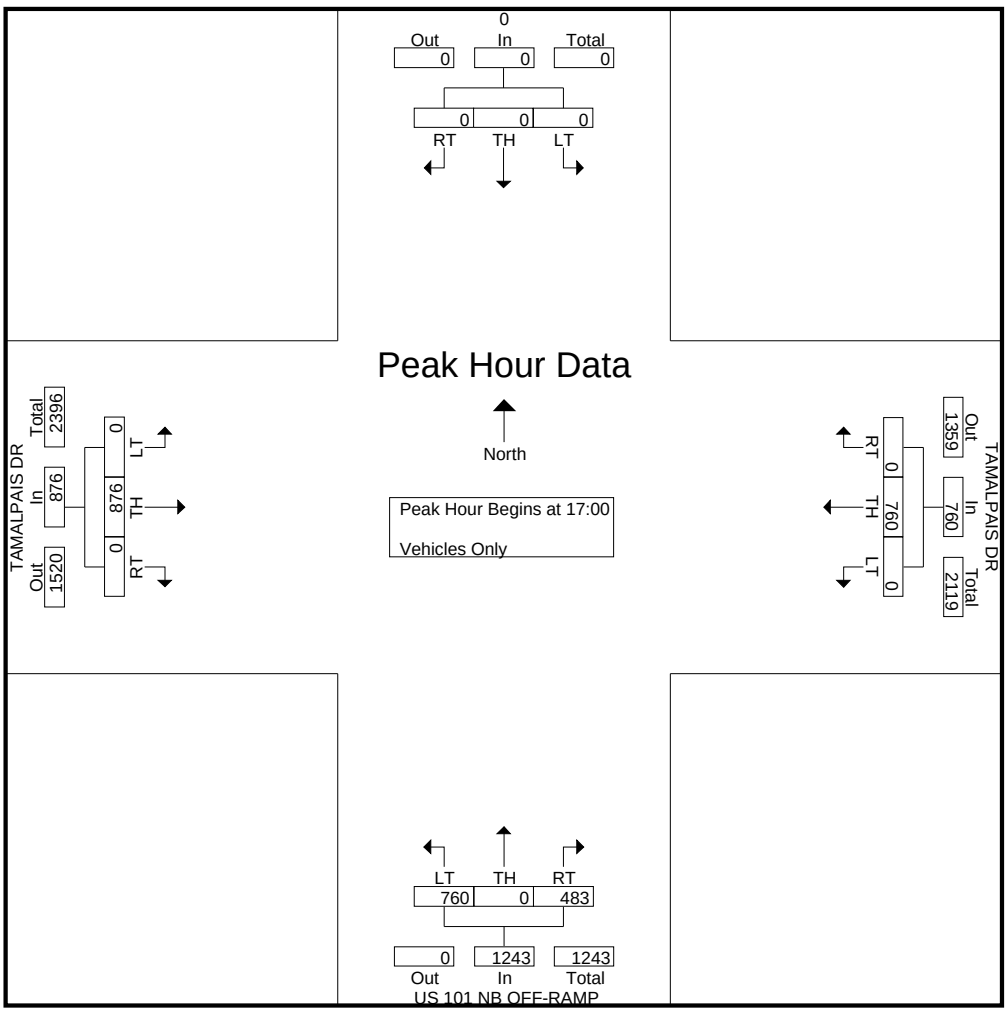
TOWN OF CORTE MADERA

File Name : 101nb-tamalpais-p
Site Code : 6
Start Date : 4/9/2014
Page No : 1

Groups Printed- Vehicles Only

	0 Southbound				TAMALPAIS DR Westbound				US 101 NB OFF-RAMP Northbound				TAMALPAIS DR Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
16:00	0	0	0	0	0	191	0	191	127	0	169	296	0	255	0	255	742
16:15	0	0	0	0	0	142	0	142	117	0	128	245	0	204	0	204	591
16:30	0	0	0	0	0	183	0	183	110	0	152	262	0	197	0	197	642
16:45	0	0	0	0	0	200	0	200	101	0	166	267	0	228	0	228	695
Total	0	0	0	0	0	716	0	716	455	0	615	1070	0	884	0	884	2670
17:00	0	0	0	0	0	204	0	204	122	0	172	294	0	223	0	223	721
17:15	0	0	0	0	0	178	0	178	120	0	186	306	0	215	0	215	699
17:30	0	0	0	0	0	194	0	194	116	0	195	311	0	238	0	238	743
17:45	0	0	0	0	0	184	0	184	125	0	207	332	0	200	0	200	716
Total	0	0	0	0	0	760	0	760	483	0	760	1243	0	876	0	876	2879
Grand Total	0	0	0	0	0	1476	0	1476	938	0	1375	2313	0	1760	0	1760	5549
Apprch %	0	0	0		0	100	0		40.6	0	59.4		0	100	0		
Total %	0	0	0	0	0	26.6	0	26.6	16.9	0	24.8	41.7	0	31.7	0	31.7	

	0 Southbound				TAMALPAIS DR Westbound				US 101 NB OFF-RAMP Northbound				TAMALPAIS DR Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 17:00																	
17:00	0	0	0	0	0	**204**	0	**204**	122	0	172	294	0	223	0	223	721
17:15	0	0	0	0	0	178	0	178	120	0	186	306	0	215	0	215	699
17:30	0	0	0	0	0	194	0	194	116	0	195	311	0	**238**	0	**238**	**743**
17:45	0	0	0	0	0	184	0	184	**125**	0	**207**	**332**	0	200	0	200	716
Total Volume	0	0	0	0	0	760	0	760	483	0	760	1243	0	876	0	876	2879
% App. Total	0	0	0		0	100	0		38.9	0	61.1		0	100	0		
PHF	.000	.000	.000	.000	.000	.931	.000	.931	.966	.000	.918	.936	.000	.920	.000	.920	.969



National Data & Surveying Services Intersection Turning Movement Count

Location: San Clemente Dr & Tamalpais Dr/Redwood Hwy
City: Corte Madera
Control: Signalized

Project ID: 18-08080-001
Date: 2/27/2018

Total

NS/EW Streets:	San Clemente Dr				San Clemente Dr				Tamalpais Dr/Redwood Hwy				Tamalpais Dr/Redwood Hwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1.5	0	1.5	0	0	0	0	0	0	1.5	0.5	0	1	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	125	0	28	0	0	0	0	0	0	15	0	0	11	9	0	0	188
7:15 AM	171	0	24	0	0	0	0	0	0	20	0	0	12	9	0	0	236
7:30 AM	230	0	49	0	0	0	0	0	0	19	4	0	7	2	0	0	311
7:45 AM	253	0	20	0	0	0	0	0	0	37	10	0	24	9	0	0	353
8:00 AM	313	0	24	0	0	0	0	0	0	30	10	0	11	14	0	0	402
8:15 AM	305	0	34	0	0	0	0	0	0	38	0	0	15	17	0	0	409
8:30 AM	231	0	25	0	0	0	0	0	0	41	1	0	14	20	0	0	332
8:45 AM	193	0	25	0	0	0	0	0	0	57	0	0	13	25	0	0	313
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	1821	0	229	0	0	0	0	0	0	257	25	0	107	105	0	0	2544
APPROACH %'s :	88.83%	0.00%	11.17%	0.00%					0.00%	91.13%	8.87%	0.00%	50.47%	49.53%	0.00%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	1102	0	103	0	0	0	0	0	0	146	21	0	64	60	0	0	1496
PEAK HR FACTOR :	0.880	0.000	0.757	0.000	0.000	0.000	0.000	0.000	0.000	0.890	0.525	0.000	0.667	0.750	0.000	0.000	0.914
	0.889								0.888				0.912				

	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
PM	1.5	0	1.5	0	0	0	0	0	0	1.5	0.5	0	1	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
2:00 PM	150	0	19	0	0	0	0	0	0	115	1	0	26	123	0	0	434
2:15 PM	160	0	9	0	0	0	0	0	0	109	3	0	20	120	0	0	421
2:30 PM	176	0	25	0	0	0	0	0	0	117	1	0	23	113	0	0	455
2:45 PM	184	0	42	0	0	0	0	0	0	140	2	0	17	113	0	0	498
3:00 PM	258	0	38	0	0	0	0	0	0	118	1	0	13	106	0	0	534
3:15 PM	230	0	26	0	0	0	0	0	0	140	0	0	23	119	0	0	538
3:30 PM	185	0	26	0	0	0	0	0	0	132	1	0	26	92	0	0	462
3:45 PM	175	0	24	0	0	0	0	0	0	112	1	0	21	119	0	0	452
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	1518	0	209	0	0	0	0	0	0	983	10	0	169	905	0	0	3794
APPROACH %'s :	87.90%	0.00%	12.10%	0.00%					0.00%	98.99%	1.01%	0.00%	15.74%	84.26%	0.00%	0.00%	
PEAK HR :	02:45 PM - 03:45 PM																TOTAL
PEAK HR VOL :	857	0	132	0	0	0	0	0	0	530	4	0	79	430	0	0	2032
PEAK HR FACTOR :	0.830	0.000	0.786	0.000	0.000	0.000	0.000	0.000	0.000	0.946	0.500	0.000	0.760	0.903	0.000	0.000	0.944
	0.835								0.940				0.896				

National Data & Surveying Services Intersection Turning Movement Count

Location: NB US-101 Ramps & Tamalpais Dr
City: Corte Madera
Control: Signalized

Project ID: 18-08080-002
Date: 2/27/2018

Total

NS/EW Streets:	NB US-101 Ramps				NB US-101 Ramps				Tamalpais Dr				Tamalpais Dr				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	0	2	0	0	0	0	0	0	2	0	0	0	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	52	0	20	0	0	0	0	0	0	105	63	0	0	55	53	0	348
7:15 AM	70	0	46	0	0	0	0	0	0	166	87	0	0	92	58	0	519
7:30 AM	86	0	63	0	0	0	0	0	0	164	105	0	0	146	85	0	649
7:45 AM	112	0	100	0	0	0	0	0	0	219	115	0	0	154	93	0	793
8:00 AM	105	0	126	0	0	0	0	0	0	282	136	0	0	187	136	0	972
8:15 AM	104	0	80	0	0	0	0	0	0	222	144	0	0	212	138	0	900
8:30 AM	92	0	88	0	0	0	0	0	0	187	109	0	0	145	127	0	748
8:45 AM	118	0	100	0	0	0	0	0	0	202	105	0	0	132	104	0	761
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	739	0	623	0	0	0	0	0	0	1547	864	0	0	1123	794	0	5690
APPROACH %'s :	54.26%	0.00%	45.74%	0.00%					0.00%	64.16%	35.84%	0.00%	0.00%	58.58%	41.42%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	413	0	394	0	0	0	0	0	0	910	504	0	0	698	494	0	3413
PEAK HR FACTOR :	0.922	0.000	0.782	0.000	0.000	0.000	0.000	0.000	0.000	0.807	0.875	0.000	0.000	0.823	0.895	0.000	0.878
	0.873								0.846				0.851				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	0	2	0	0	0	0	0	0	2	0	0	0	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
2:00 PM	126	0	94	0	0	0	0	0	0	202	144	0	0	138	129	0	833
2:15 PM	148	0	110	0	0	0	0	0	0	204	153	0	0	140	130	0	885
2:30 PM	129	0	113	0	0	0	0	0	0	198	149	0	0	151	127	0	867
2:45 PM	145	0	117	0	0	0	0	0	0	226	135	0	0	132	148	0	903
3:00 PM	166	0	117	0	0	0	0	0	0	211	187	0	0	196	155	0	1032
3:15 PM	168	0	116	0	0	0	0	0	0	184	196	0	0	211	161	0	1036
3:30 PM	173	0	99	0	0	0	0	0	0	198	218	0	0	169	133	0	990
3:45 PM	167	0	102	0	0	0	0	0	0	190	195	0	0	145	132	0	931
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	1222	0	868	0	0	0	0	0	0	1613	1377	0	0	1282	1115	0	7477
APPROACH %'s :	58.47%	0.00%	41.53%	0.00%					0.00%	53.95%	46.05%	0.00%	0.00%	53.48%	46.52%	0.00%	
PEAK HR :	03:00 PM - 04:00 PM																TOTAL
PEAK HR VOL :	674	0	434	0	0	0	0	0	0	783	796	0	0	721	581	0	3989
PEAK HR FACTOR :	0.974	0.000	0.927	0.000	0.000	0.000	0.000	0.000	0.000	0.928	0.913	0.000	0.000	0.854	0.902	0.000	0.963
	0.975								0.949				0.875				

National Data & Surveying Services Intersection Turning Movement Count

Location: SB US-101 Ramps & Tamalpais Dr
City: Corte Madera
Control: Signalized

Project ID: 18-08080-003
Date: 2/27/2018

Total

NS/EW Streets:	SB US-101 Ramps				SB US-101 Ramps				Tamalpais Dr				Tamalpais Dr				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	1.5	0	1.5	0	0	2	0	0	0	2	1	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	97	0	76	0	0	72	60	0	0	62	43	0	410
7:15 AM	0	0	0	0	146	0	69	0	0	113	88	0	0	89	69	0	574
7:30 AM	0	0	0	0	137	0	85	0	0	129	112	0	0	141	90	0	694
7:45 AM	0	0	0	0	174	0	112	0	0	164	108	0	0	174	76	0	808
8:00 AM	0	0	0	0	169	0	87	0	0	236	105	0	0	196	110	0	903
8:15 AM	0	0	0	0	158	0	89	0	0	203	145	0	0	181	120	0	896
8:30 AM	0	0	0	0	148	0	100	0	0	151	118	0	0	150	98	0	765
8:45 AM	0	0	0	0	169	0	103	0	0	140	101	0	0	172	72	0	757
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	1198	0	721	0	0	1208	837	0	0	1165	678	0	5807
APPROACH %'s :					62.43%	0.00%	37.57%	0.00%	0.00%	59.07%	40.93%	0.00%	0.00%	63.21%	36.79%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	0	0	0	0	649	0	388	0	0	754	476	0	0	701	404	0	3372
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.932	0.000	0.866	0.000	0.000	0.799	0.821	0.000	0.000	0.894	0.842	0.000	0.934
					0.906				0.884				0.903				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	1.5	0	1.5	0	0	2	0	0	0	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
2:00 PM	0	0	0	0	144	0	70	0	0	196	109	0	0	159	96	0	774
2:15 PM	0	0	0	0	157	0	70	0	0	204	100	0	0	217	84	0	832
2:30 PM	0	0	0	0	143	0	84	0	0	199	87	0	0	183	88	0	784
2:45 PM	0	0	0	0	178	0	77	0	0	202	86	0	0	212	72	0	827
3:00 PM	0	0	0	0	161	0	80	0	0	215	91	0	0	250	90	0	887
3:15 PM	0	0	0	0	163	0	89	0	0	232	105	0	0	274	124	0	987
3:30 PM	0	0	0	0	159	0	82	0	0	251	93	0	0	235	98	0	918
3:45 PM	0	0	0	0	149	0	77	0	0	248	121	0	0	240	75	0	910
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	1254	0	629	0	0	1747	792	0	0	1770	727	0	6919
APPROACH %'s :					66.60%	0.00%	33.40%	0.00%	0.00%	68.81%	31.19%	0.00%	0.00%	70.89%	29.11%	0.00%	
PEAK HR :	03:00 PM - 04:00 PM																TOTAL
PEAK HR VOL :	0	0	0	0	632	0	328	0	0	946	410	0	0	999	387	0	3702
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.969	0.000	0.921	0.000	0.000	0.942	0.847	0.000	0.000	0.911	0.780	0.000	0.938
					0.952				0.919				0.871				

National Data & Surveying Services Intersection Turning Movement Count

Location: Town Center Entrance & Tamalpais Dr
City: Corte Madera
Control: Signalized

Project ID: 18-08080-004
Date: 2/27/2018

Total

NS/EW Streets:	Town Center Entrance				Town Center Entrance				Tamalpais Dr				Tamalpais Dr				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	2	0	1	0	0	2	0	0	0	2	1	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	9	0	5	0	0	131	0	0	0	106	30	0	281
7:15 AM	0	0	0	0	20	0	5	0	0	191	0	0	0	137	23	0	376
7:30 AM	0	0	0	0	27	0	4	0	0	214	0	0	0	191	31	0	467
7:45 AM	0	0	0	0	26	0	4	0	0	257	0	0	0	248	43	0	578
8:00 AM	0	0	0	0	20	0	6	0	0	313	0	0	0	228	52	0	619
8:15 AM	0	0	0	0	32	0	2	0	0	316	0	0	0	204	65	0	619
8:30 AM	0	0	0	0	24	0	2	0	0	246	0	0	0	195	55	0	522
8:45 AM	0	0	0	0	28	0	4	0	0	201	0	0	0	198	77	0	508
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	186	0	32	0	0	1869	0	0	0	1507	376	0	3970
APPROACH %'s :					85.32%	0.00%	14.68%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	80.03%	19.97%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	0	0	0	0	102	0	14	0	0	1132	0	0	0	875	215	0	2338
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.797	0.000	0.583	0.000	0.000	0.896	0.000	0.000	0.000	0.882	0.827	0.000	0.944
					0.853				0.896				0.936				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	2	0	1	0	0	2	0	0	0	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
2:00 PM	0	0	0	0	95	0	9	0	0	219	0	0	0	164	72	0	559
2:15 PM	0	0	0	0	73	0	17	0	0	227	0	0	0	219	65	0	601
2:30 PM	0	0	0	0	78	0	10	0	0	208	0	0	0	200	71	0	567
2:45 PM	0	0	0	0	63	0	11	0	0	226	0	0	0	224	60	0	584
3:00 PM	0	0	0	0	89	0	10	0	0	216	0	0	0	285	43	0	643
3:15 PM	0	0	0	0	77	0	10	0	0	268	0	0	0	291	73	0	719
3:30 PM	0	0	0	0	74	0	10	0	0	272	0	0	0	246	69	0	671
3:45 PM	0	0	0	0	83	0	11	0	0	281	0	0	0	271	44	0	690
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	632	0	88	0	0	1917	0	0	0	1900	497	0	5034
APPROACH %'s :					87.78%	0.00%	12.22%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	79.27%	20.73%	0.00%	
PEAK HR :	03:00 PM - 04:00 PM																TOTAL
PEAK HR VOL :	0	0	0	0	323	0	41	0	0	1037	0	0	0	1093	229	0	2723
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.907	0.000	0.932	0.000	0.000	0.923	0.000	0.000	0.000	0.939	0.784	0.000	0.947
					0.919				0.923				0.908				

National Data & Surveying Services Intersection Turning Movement Count

Location: Madera Blvd & Tamalpais Dr
City: Corte Madera
Control: Signalized

Project ID: 18-08080-005
Date: 2/27/2018

Total

NS/EW Streets:	Madera Blvd				Madera Blvd				Tamalpais Dr				Tamalpais Dr				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0.5	0.5	1	0	1.5	0.5	1	0	1	2	0	0	1	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	4	5	32	0	19	9	27	0	14	83	5	0	26	72	16	0	312
7:15 AM	2	15	38	0	26	9	23	1	9	126	3	0	26	78	31	0	387
7:30 AM	6	13	30	0	32	11	21	0	8	156	7	0	41	114	36	0	475
7:45 AM	16	32	40	0	40	19	32	0	21	186	5	0	34	166	49	0	640
8:00 AM	17	19	52	0	45	22	32	1	10	211	6	0	37	145	45	0	642
8:15 AM	7	13	42	0	51	23	18	0	30	227	5	0	43	137	34	0	630
8:30 AM	4	8	36	0	28	17	24	1	28	180	8	0	40	114	38	0	526
8:45 AM	7	14	45	0	26	16	28	0	32	127	9	0	44	108	47	0	503
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	63	119	315	0	267	126	205	3	152	1296	48	0	291	934	296	0	4115
APPROACH %'s :	12.68%	23.94%	63.38%	0.00%	44.43%	20.97%	34.11%	0.50%	10.16%	86.63%	3.21%	0.00%	19.13%	61.41%	19.46%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	44	72	170	0	164	81	106	2	89	804	24	0	154	562	166	0	2438
PEAK HR FACTOR :	0.647	0.563	0.817	0.000	0.804	0.880	0.828	0.500	0.742	0.885	0.750	0.000	0.895	0.846	0.847	0.000	0.949
	0.813				0.883				0.875				0.886				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0.5	0.5	1	0	1.5	0.5	1	0	1	2	0	0	1	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
2:00 PM	9	20	39	0	55	12	34	0	27	134	6	0	34	101	33	0	504
2:15 PM	8	11	34	0	53	14	43	0	36	137	7	0	40	140	60	0	583
2:30 PM	10	8	33	0	53	12	45	1	29	130	4	0	42	113	49	0	529
2:45 PM	10	17	43	0	57	11	42	0	26	118	10	0	33	127	55	0	549
3:00 PM	20	18	33	0	50	15	48	0	38	135	8	0	51	172	77	0	665
3:15 PM	7	18	42	0	53	18	42	0	32	175	4	0	46	181	75	0	693
3:30 PM	15	18	42	0	62	23	52	1	39	174	5	0	30	142	79	0	682
3:45 PM	13	18	41	0	50	29	46	0	35	179	10	0	39	175	60	0	695
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	92	128	307	0	433	134	352	2	262	1182	54	0	315	1151	488	0	4900
APPROACH %'s :	17.46%	24.29%	58.25%	0.00%	47.01%	14.55%	38.22%	0.22%	17.49%	78.91%	3.60%	0.00%	16.12%	58.90%	24.97%	0.00%	
PEAK HR :	03:00 PM - 04:00 PM																TOTAL
PEAK HR VOL :	55	72	158	0	215	85	188	1	144	663	27	0	166	670	291	0	2735
PEAK HR FACTOR :	0.688	1.000	0.940	0.000	0.867	0.733	0.904	0.250	0.923	0.926	0.675	0.000	0.814	0.925	0.921	0.000	0.984
	0.950				0.886				0.931				0.933				

National Data & Surveying Services Intersection Turning Movement Count

Location: Paradise Dr & San Clemente Dr/Tamalpais Dr
City: Corte Madera
Control: 1-Way Stop(NB)

Project ID: 18-08080-006
Date: 2/27/2018

Total

NS/EW Streets:	Paradise Dr					Paradise Dr				San Clemente Dr/Tamalpais Dr					San Clemente Dr/Tamalpais Dr				
AM	NORTHBOUND					SOUTHBOUND				EASTBOUND					WESTBOUND				
	0	1	0	0	0	0	0	0	0	0	1.5	0.5	0	0	0	3	0	0	
	NL	NT	NR	NU	NR2	SL	ST	SR	SU	EL	ET	ER	EU	ET2	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	3	0	0	0	0	0	0	0	14	38	0	71	0	106	0	0	232
7:15 AM	0	0	3	0	0	0	0	0	0	0	15	47	0	146	0	156	0	0	367
7:30 AM	0	0	4	0	0	0	0	0	0	0	15	53	0	158	0	218	0	0	448
7:45 AM	0	0	7	0	1	0	0	0	0	0	30	61	0	224	0	244	0	0	567
8:00 AM	0	0	6	0	1	0	0	0	0	0	44	57	0	307	0	313	0	0	728
8:15 AM	0	0	9	0	0	0	0	0	0	0	24	84	0	190	0	342	0	0	649
8:30 AM	0	0	11	0	3	0	0	0	0	0	28	84	0	165	0	261	0	0	552
8:45 AM	0	0	12	0	2	0	0	0	0	0	38	87	0	174	0	236	0	0	549
	NL	NT	NR	NU	NR2	SL	ST	SR	SU	EL	ET	ER	EU	ET2	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	55	0	7	0	0	0	0	0	208	511	0	1435	0	1876	0	0	4092
APPROACH %'s :	0.00%	0.00%	88.71%	0.00%	11.29%					0.00%	9.66%	23.72%	0.00%	66.62%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																		TOTAL
PEAK HR VOL :	0	0	33	0	5	0	0	0	0	0	126	286	0	886	0	1160	0	0	2496
PEAK HR FACTOR :	0.000	0.000	0.750	0.000	0.417	0.000	0.000	0.000	0.000	0.000	0.716	0.851	0.000	0.721	0.000	0.848	0.000	0.000	0.857
			0.679									0.795				0.848			

PM	NORTHBOUND					SOUTHBOUND				EASTBOUND					WESTBOUND				
	0	1	0	0	0	0	0	0	0	0	1.5	0.5	0	0	0	3	0	0	
	NL	NT	NR	NU	NR2	SL	ST	SR	SU	EL	ET	ER	EU	ET2	WL	WT	WR	WU	TOTAL
2:00 PM	0	0	22	0	1	0	0	0	0	0	106	48	0	144	0	261	0	0	582
2:15 PM	0	0	15	0	5	0	0	0	0	0	98	51	0	162	0	267	0	0	598
2:30 PM	0	0	17	0	5	0	0	0	0	0	91	45	0	172	0	278	0	0	608
2:45 PM	0	0	23	0	5	0	0	0	0	0	98	41	0	207	0	279	0	0	653
3:00 PM	0	0	20	0	8	0	0	0	0	0	117	23	0	182	0	346	0	0	696
3:15 PM	0	0	16	0	3	0	0	0	0	0	105	46	0	151	0	360	0	0	681
3:30 PM	0	0	22	0	4	0	0	0	0	0	110	34	0	147	0	291	0	0	608
3:45 PM	0	0	23	0	3	0	0	0	0	0	110	35	0	144	0	269	0	0	584
	NL	NT	NR	NU	NR2	SL	ST	SR	SU	EL	ET	ER	EU	ET2	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	158	0	34	0	0	0	0	0	835	323	0	1309	0	2351	0	0	5010
APPROACH %'s :	0.00%	0.00%	82.29%	0.00%	17.71%					0.00%	33.85%	13.09%	0.00%	53.06%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	02:30 PM - 03:30 PM																		TOTAL
PEAK HR VOL :	0	0	76	0	21	0	0	0	0	0	411	155	0	712	0	1263	0	0	2638
PEAK HR FACTOR :	0.000	0.000	0.826	0.000	0.656	0.000	0.000	0.000	0.000	0.000	0.878	0.842	0.000	0.860	0.000	0.877	0.000	0.000	0.948
			0.866									0.923				0.877			

National Data & Surveying Services Intersection Turning Movement Count

Location: Paradise Dr & San Clemente Dr
City: Corte Madera
Control: Signalized

Project ID: 18-08080-007
Date: 2/27/2018

Total

NS/EW Streets:	Paradise Dr				Paradise Dr				San Clemente Dr				San Clemente Dr				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	1	1	0	0	0	0	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	4	103	0	20	3	0	0	0	0	0	0	82	0	2	0	214
7:15 AM	0	4	160	0	16	1	0	0	0	0	0	0	137	0	4	0	322
7:30 AM	0	3	222	0	30	6	0	0	0	0	0	0	152	0	2	0	415
7:45 AM	0	4	256	0	18	13	0	0	0	0	0	0	243	0	5	0	539
8:00 AM	0	4	319	0	30	1	0	0	0	0	0	0	334	0	5	0	693
8:15 AM	0	2	337	0	15	8	0	0	0	0	0	0	191	0	12	0	565
8:30 AM	0	8	226	0	32	1	0	0	0	0	0	0	166	0	16	0	449
8:45 AM	0	7	195	0	22	6	0	0	0	0	0	0	178	0	9	0	417
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	36	1818	0	183	39	0	0	0	0	0	0	1483	0	55	0	3614
APPROACH %'s :	0.00%	1.94%	98.06%	0.00%	82.43%	17.57%	0.00%	0.00%					96.42%	0.00%	3.58%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	0	18	1138	0	95	23	0	0	0	0	0	0	934	0	38	0	2246
PEAK HR FACTOR :	0.000	0.563	0.844	0.000	0.742	0.442	0.000	0.000	0.000	0.000	0.000	0.000	0.699	0.000	0.594	0.000	0.810
		0.853				0.894								0.717			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	1	1	0	0	0	0	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
2:00 PM	0	3	112	0	26	5	0	0	0	0	0	0	154	0	6	0	306
2:15 PM	0	6	150	0	15	1	0	0	0	0	0	0	173	0	6	0	351
2:30 PM	0	2	132	0	29	3	0	0	0	0	0	0	176	0	9	0	351
2:45 PM	0	6	164	0	20	8	0	0	0	0	0	0	224	0	6	0	428
3:00 PM	0	8	267	0	32	4	0	0	0	0	0	0	195	0	6	0	512
3:15 PM	0	14	250	1	22	8	0	0	0	0	0	0	146	0	9	0	450
3:30 PM	0	8	157	0	29	4	0	0	0	0	0	0	160	0	7	0	365
3:45 PM	0	3	181	0	21	4	0	0	0	0	0	0	154	0	8	0	371
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	50	1413	1	194	37	0	0	0	0	0	0	1382	0	57	0	3134
APPROACH %'s :	0.00%	3.42%	96.52%	0.07%	83.98%	16.02%	0.00%	0.00%					96.04%	0.00%	3.96%	0.00%	
PEAK HR :	02:45 PM - 03:45 PM																TOTAL
PEAK HR VOL :	0	36	838	1	103	24	0	0	0	0	0	0	725	0	28	0	1755
PEAK HR FACTOR :	0.000	0.643	0.785	0.250	0.805	0.750	0.000	0.000	0.000	0.000	0.000	0.000	0.809	0.000	0.778	0.000	0.857
		0.795				0.882								0.818			

National Data and Surveying Services

City of Corte Madera
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Heavy Trucks On Bank 2

(323) 782-0090
info@ndsdata.com

File Name : 17-7456-001 San Clemente Dr & Tamalpais Dr / Redwood Hwy
Date : 5/25/2017

Unshifted Count = All Vehicles & Uturns

	San Clemente Dr Southbound					Tamalpais Dr / Redwood Hwy Westbound					San Clemente Dr Northbound					Tamalpais Dr / Redwood Hwy Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
7:00	0	0	0	0	0	7	7	0	0	14	109	0	16	0	125	0	22	0	0	22	161	0
7:15	0	0	0	0	0	7	10	0	0	17	171	0	46	0	217	0	15	2	0	17	251	0
7:30	0	0	0	0	0	13	9	0	0	22	205	0	30	0	235	0	23	1	0	24	281	0
7:45	0	0	0	0	0	10	10	0	0	20	247	0	44	0	291	0	37	1	0	38	349	0
Total	0	0	0	0	0	37	36	0	0	73	732	0	136	0	868	0	97	4	0	101	1042	0
8:00	0	0	0	0	0	21	9	0	0	30	259	0	30	0	289	0	29	17	0	46	365	0
8:15	0	0	0	0	0	20	19	0	0	39	288	0	31	0	319	0	46	3	0	49	407	0
8:30	0	0	0	0	0	21	26	0	0	47	237	0	21	0	258	0	40	0	0	40	345	0
8:45	0	0	0	0	0	10	16	0	0	26	216	0	15	0	231	0	45	0	0	45	302	0
Total	0	0	0	0	0	72	70	0	0	142	1000	0	97	0	1097	0	160	20	0	180	1419	0
16:00	0	0	0	0	0	27	133	0	0	160	212	0	26	0	238	0	129	1	0	130	528	0
16:15	0	0	0	0	0	23	112	0	0	135	232	0	34	0	266	0	133	0	0	133	534	0
16:30	0	0	0	0	0	22	118	0	0	140	205	0	29	0	234	0	138	1	0	139	513	0
16:45	0	0	0	0	0	18	108	0	0	126	203	0	38	0	241	0	114	1	0	115	482	0
Total	0	0	0	0	0	90	471	0	0	561	852	0	127	0	979	0	514	3	0	517	2057	0
17:00	0	0	0	0	0	29	117	0	0	146	215	0	27	0	242	0	129	2	0	131	519	0
17:15	0	0	0	0	0	21	93	0	0	114	278	0	25	0	303	0	159	1	0	160	577	0
17:30	0	0	0	0	0	22	104	0	0	126	233	0	24	0	257	0	147	2	0	149	532	0
17:45	0	0	0	0	0	23	99	0	0	122	200	0	27	0	227	0	139	0	0	139	488	0
Total	0	0	0	0	0	95	413	0	0	508	926	0	103	0	1029	0	574	5	0	579	2116	0
Grand Total	0	0	0	0	0	294	990	0	0	1284	3510	0	463	0	3973	0	1345	32	0	1377	6634	0
Apprch %	0.0%	0.0%	0.0%	0.0%		22.9%	77.1%	0.0%	0.0%		88.3%	0.0%	11.7%	0.0%		0.0%	97.7%	2.3%	0.0%			
Total %	0.0%	0.0%	0.0%	0.0%	0.0%	4.4%	14.9%	0.0%	0.0%	19.4%	52.9%	0.0%	7.0%	0.0%	59.9%	0.0%	20.3%	0.5%	0.0%	20.8%	100.0%	

AM PEAK HOUR	San Clemente Dr Southbound					Tamalpais Dr / Redwood Hwy Westbound					San Clemente Dr Northbound					Tamalpais Dr / Redwood Hwy Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:45 to 08:45																					
Peak Hour For Entire Intersection Begins at 07:45																					
7:45	0	0	0	0	0	10	10	0	0	20	247	0	44	0	291	0	37	1	0	38	349
8:00	0	0	0	0	0	21	9	0	0	30	259	0	30	0	289	0	29	17	0	46	365
8:15	0	0	0	0	0	20	19	0	0	39	288	0	31	0	319	0	46	3	0	49	407
8:30	0	0	0	0	0	21	26	0	0	47	237	0	21	0	258	0	40	0	0	40	345
Total Volume	0	0	0	0	0	72	64	0	0	136	1031	0	126	0	1157	0	152	21	0	173	1466
% App Total	0.0%	0.0%	0.0%	0.0%		52.9%	47.1%	0.0%	0.0%		89.1%	0.0%	10.9%	0.0%		0.0%	87.9%	12.1%	0.0%		
PHF	.000	.000	.000	.000	.000	.857	.615	.000	.000	.723	.895	.000	.716	.000	.907	.000	.826	.309	.000	.883	.900

PM PEAK HOUR	San Clemente Dr Southbound					Tamalpais Dr / Redwood Hwy Westbound					San Clemente Dr Northbound					Tamalpais Dr / Redwood Hwy Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 17:00 to 18:00																					
Peak Hour For Entire Intersection Begins at 17:00																					
17:00	0	0	0	0	0	29	117	0	0	146	215	0	27	0	242	0	129	2	0	131	519
17:15	0	0	0	0	0	21	93	0	0	114	278	0	25	0	303	0	159	1	0	160	577
17:30	0	0	0	0	0	22	104	0	0	126	233	0	24	0	257	0	147	2	0	149	532
17:45	0	0	0	0	0	23	99	0	0	122	200	0	27	0	227	0	139	0	0	139	488
Total Volume	0	0	0	0	0	95	413	0	0	508	926	0	103	0	1029	0	574	5	0	579	2116
% App Total	0.0%	0.0%	0.0%	0.0%		18.7%	81.3%	0.0%	0.0%		90.0%	0.0%	10.0%	0.0%		0.0%	99.1%	0.9%	0.0%		
PHF	.000	.000	.000	.000	.000	.819	.882	.000	.000	.870	.833	.000	.954	.000	.849	.000	.903	.625	.000	.905	.917

National Data and Surveying Services

City of Corte Madera
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Heavy Trucks On Bank 2

(323) 782-0090
info@ndsdata.com

File Name : 17-7456-002 Nbound US-101 Ramps & Tamalpais Dr
Date : 5/25/2017

Unshifted Count = All Vehicles & Uturns

	Nbound US-101 Ramps Southbound					Tamalpais Dr Westbound					Nbound US-101 Ramps Northbound					Tamalpais Dr Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
7:00	0	0	0	0	0	0	72	48	0	120	50	0	23	0	73	0	136	85	0	221	414	0
7:15	0	0	0	0	0	0	100	77	0	177	75	0	49	0	124	0	163	88	0	251	552	0
7:30	0	0	0	0	0	0	135	90	0	225	75	0	66	0	141	0	169	108	0	277	643	0
7:45	0	0	0	0	0	0	166	98	0	264	111	0	89	0	200	0	207	108	0	315	779	0
Total	0	0	0	0	0	0	473	313	0	786	311	0	227	0	538	0	675	389	0	1064	2388	0
8:00	0	0	0	0	0	0	149	124	0	273	116	0	142	0	258	0	275	113	0	388	919	0
8:15	0	0	0	0	0	0	175	136	0	311	98	0	123	0	221	0	220	128	0	348	880	0
8:30	0	0	0	0	0	0	144	121	0	265	107	0	71	0	178	0	197	117	0	314	757	0
8:45	0	0	0	0	0	0	120	98	0	218	118	0	107	0	225	0	204	114	0	318	761	0
Total	0	0	0	0	0	0	588	479	0	1067	439	0	443	0	882	0	896	472	0	1368	3317	0
16:00	0	0	0	0	0	0	166	172	0	338	144	0	110	0	254	0	194	217	0	411	1003	0
16:15	0	0	0	0	0	0	183	177	0	360	161	0	104	0	265	0	241	220	0	461	1086	0
16:30	0	0	0	0	0	0	163	151	0	314	115	0	91	0	206	0	232	207	0	439	959	0
16:45	0	0	0	0	0	0	150	167	0	317	115	0	104	0	219	0	225	184	0	409	945	0
Total	0	0	0	0	0	0	662	667	0	1329	535	0	409	0	944	0	892	828	0	1720	3993	0
17:00	0	0	0	0	0	0	168	162	0	330	129	0	109	0	238	0	226	208	0	434	1002	0
17:15	0	0	0	0	0	0	204	155	0	359	142	0	118	0	260	0	267	150	0	417	1036	0
17:30	0	0	0	0	0	0	170	165	0	335	192	0	133	0	325	0	220	172	0	392	1052	0
17:45	0	0	0	0	0	0	160	139	0	299	169	0	153	0	322	0	243	127	0	370	991	0
Total	0	0	0	0	0	0	702	621	0	1323	632	0	513	0	1145	0	956	657	0	1613	4081	0
Grand Total	0	0	0	0	0	0	2425	2080	0	4505	1917	0	1592	0	3509	0	3419	2346	0	5765	13779	0
Apprch %	0.0%	0.0%	0.0%	0.0%		0.0%	53.8%	46.2%	0.0%		54.6%	0.0%	45.4%	0.0%		0.0%	59.3%	40.7%	0.0%			
Total %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	17.6%	15.1%	0.0%	32.7%	13.9%	0.0%	11.6%	0.0%	25.5%	0.0%	24.8%	17.0%	0.0%	41.8%	100.0%	

AM PEAK HOUR	Nbound US-101 Ramps Southbound					Tamalpais Dr Westbound					Nbound US-101 Ramps Northbound					Tamalpais Dr Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:45 to 08:45																					
Peak Hour For Entire Intersection Begins at 07:45																					
7:45	0	0	0	0	0	0	166	98	0	264	111	0	89	0	200	0	207	108	0	315	779
8:00	0	0	0	0	0	0	149	124	0	273	116	0	142	0	258	0	275	113	0	388	919
8:15	0	0	0	0	0	0	175	136	0	311	98	0	123	0	221	0	220	128	0	348	880
8:30	0	0	0	0	0	0	144	121	0	265	107	0	71	0	178	0	197	117	0	314	757
Total Volume	0	0	0	0	0	0	634	479	0	1113	432	0	425	0	857	0	899	466	0	1365	3335
% App Total	0.0%	0.0%	0.0%	0.0%		0.0%	57.0%	43.0%	0.0%		50.4%	0.0%	49.6%	0.0%		0.0%	65.9%	34.1%	0.0%		
PHF	.000	.000	.000	.000	.000	.000	.906	.881	.000	.895	.931	.000	.748	.000	.830	.000	.817	.910	.000	.880	.907

PM PEAK HOUR	Nbound US-101 Ramps Southbound					Tamalpais Dr Westbound					Nbound US-101 Ramps Northbound					Tamalpais Dr Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 17:00 to 18:00																					
Peak Hour For Entire Intersection Begins at 17:00																					
17:00	0	0	0	0	0	0	168	162	0	330	129	0	109	0	238	0	226	208	0	434	1002
17:15	0	0	0	0	0	0	204	155	0	359	142	0	118	0	260	0	267	150	0	417	1036
17:30	0	0	0	0	0	0	170	165	0	335	192	0	133	0	325	0	220	172	0	392	1052
17:45	0	0	0	0	0	0	160	139	0	299	169	0	153	0	322	0	243	127	0	370	991
Total Volume	0	0	0	0	0	0	702	621	0	1323	632	0	513	0	1145	0	956	657	0	1613	4081
% App Total	0.0%	0.0%	0.0%	0.0%		0.0%	53.1%	46.9%	0.0%		55.2%	0.0%	44.8%	0.0%		0.0%	59.3%	40.7%	0.0%		
PHF	.000	.000	.000	.000	.000	.000	.860	.941	.000	.921	.823	.000	.838	.000	.881	.000	.895	.790	.000	.929	.970

National Data and Surveying Services

City of Corte Madera
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Heavy Trucks On Bank 2

(323) 782-0090
info@ndsdata.com

File Name : 17-7456-004 Town Center Entrance & Tamalpais Dr
Date : 5/25/2017

Unshifted Count = All Vehicles & Uturns

	Town Center Entrance Southbound					Tamalpais Dr Westbound					Town Center Entrance Northbound					Tamalpais Dr Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
7:00	13	6	5	0	24	0	128	18	0	146	0	0	0	0	0	0	97	70	0	167	337	0
7:15	8	4	2	0	14	0	175	17	0	192	0	0	0	0	0	0	85	94	0	179	385	0
7:30	10	2	2	0	14	0	181	23	0	204	0	0	0	0	0	0	126	109	0	235	453	0
7:45	9	4	1	0	14	0	235	44	0	279	0	0	0	0	0	0	151	126	0	277	570	0
Total	40	16	10	0	66	0	719	102	0	821	0	0	0	0	0	0	459	399	0	858	1745	0
8:00	12	6	4	0	22	0	233	40	0	273	0	0	0	0	0	0	212	107	0	319	614	0
8:15	14	9	6	0	29	0	215	32	0	247	0	0	0	0	0	0	184	154	0	338	614	0
8:30	9	4	0	0	13	0	189	53	0	242	0	0	0	0	0	0	135	132	0	267	522	0
8:45	13	6	2	0	21	0	199	59	0	258	0	0	0	0	0	0	129	99	0	228	507	0
Total	48	25	12	0	85	0	836	184	0	1020	0	0	0	0	0	0	660	492	0	1152	2257	0
16:00	57	19	10	0	86	0	238	53	0	291	0	0	0	0	0	0	222	75	0	297	674	0
16:15	45	23	11	0	79	0	300	62	0	362	0	0	0	0	0	0	251	75	0	326	767	0
16:30	47	24	12	0	83	0	201	48	0	249	0	0	0	0	0	0	229	56	0	285	617	0
16:45	63	25	15	0	103	0	220	48	0	268	0	0	0	0	0	0	162	61	0	223	594	0
Total	212	91	48	0	351	0	959	211	0	1170	0	0	0	0	0	0	864	267	0	1131	2652	0
17:00	57	29	16	0	102	0	250	47	0	297	0	0	0	0	0	0	199	93	0	292	691	0
17:15	50	28	9	0	87	0	276	51	0	327	0	0	0	0	0	0	188	69	0	257	671	0
17:30	42	18	10	0	70	0	281	59	0	340	0	0	0	0	0	0	176	61	0	237	647	0
17:45	44	20	20	0	84	0	277	71	0	348	0	0	0	0	0	0	155	72	0	227	659	0
Total	193	95	55	0	343	0	1084	228	0	1312	0	0	0	0	0	0	718	295	0	1013	2668	0
Grand Total	493	227	125	0	845	0	3598	725	0	4323	0	0	0	0	0	0	2701	1453	0	4154	9322	0
Apprch %	58.3%	26.9%	14.8%	0.0%		0.0%	83.2%	16.8%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	65.0%	35.0%	0.0%			
Total %	5.3%	2.4%	1.3%	0.0%	9.1%	0.0%	38.6%	7.8%	0.0%	46.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	29.0%	15.6%	0.0%	44.6%	100.0%	

AM PEAK HOUR	Town Center Entrance Southbound					Tamalpais Dr Westbound					Town Center Entrance Northbound					Tamalpais Dr Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:45 to 08:45																					
Peak Hour For Entire Intersection Begins at 07:45																					
7:45	9	4	1	0	14	0	235	44	0	279	0	0	0	0	0	0	151	126	0	277	570
8:00	12	6	4	0	22	0	233	40	0	273	0	0	0	0	0	0	212	107	0	319	614
8:15	14	9	6	0	29	0	215	32	0	247	0	0	0	0	0	0	184	154	0	338	614
8:30	9	4	0	0	13	0	189	53	0	242	0	0	0	0	0	0	135	132	0	267	522
Total Volume	44	23	11	0	78	0	872	169	0	1041	0	0	0	0	0	0	682	519	0	1201	2320
% App Total	56.4%	29.5%	14.1%	0.0%		0.0%	83.8%	16.2%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	56.8%	43.2%	0.0%		
PHF	.786	.639	.458	.000	.672	.000	.928	.797	.000	.933	.000	.000	.000	.000	.000	.000	.804	.843	.000	.888	.945

PM PEAK HOUR	Town Center Entrance Southbound					Tamalpais Dr Westbound					Town Center Entrance Northbound					Tamalpais Dr Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:15 to 17:15																					
Peak Hour For Entire Intersection Begins at 16:15																					
16:15	45	23	11	0	79	0	300	62	0	362	0	0	0	0	0	0	251	75	0	326	767
16:30	47	24	12	0	83	0	201	48	0	249	0	0	0	0	0	0	229	56	0	285	617
16:45	63	25	15	0	103	0	220	48	0	268	0	0	0	0	0	0	162	61	0	223	594
17:00	57	29	16	0	102	0	250	47	0	297	0	0	0	0	0	0	199	93	0	292	691
Total Volume	212	101	54	0	367	0	971	205	0	1176	0	0	0	0	0	0	841	285	0	1126	2669
% App Total	57.8%	27.5%	14.7%	0.0%		0.0%	82.6%	17.4%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	74.7%	25.3%	0.0%		
PHF	.841	.871	.844	.000	.891	.000	.809	.827	.000	.812	.000	.000	.000	.000	.000	.000	.838	.766	.000	.863	.870

National Data and Surveying Services

City of Corte Madera
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Heavy Trucks On Bank 2

(323) 782-0090
info@ndsdata.com

File Name : 17-7456-003 Sbound US-101 Ramps & Tamalpais Dr
Date : 5/25/2017

Unshifted Count = All Vehicles & Uturns

	Sbound US-101 Ramps Southbound					Tamalpais Dr Westbound					Sbound US-101 Ramps Northbound					Tamalpais Dr Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
7:00	115	0	58	0	173	0	83	42	0	125	0	0	0	0	0	0	99	0	0	99	397	0
7:15	138	0	82	0	220	0	106	63	0	169	0	0	0	0	0	0	100	0	0	100	489	0
7:30	129	0	71	0	200	0	139	77	0	216	0	0	0	0	0	0	134	0	0	134	550	0
7:45	156	0	99	0	255	0	177	99	0	276	0	0	0	0	0	0	158	0	0	158	689	0
Total	538	0	310	0	848	0	505	281	0	786	0	0	0	0	0	0	491	0	0	491	2125	0
8:00	198	0	95	0	293	0	178	86	0	264	0	0	0	0	0	0	233	0	0	233	790	0
8:15	170	0	79	0	249	0	170	106	0	276	0	0	0	0	0	0	191	0	0	191	716	0
8:30	156	0	82	0	238	0	163	80	0	243	0	0	0	0	0	0	150	0	0	150	631	0
8:45	175	0	94	0	269	0	167	65	0	232	0	0	0	0	0	0	138	0	0	138	639	0
Total	699	0	350	0	1049	0	678	337	0	1015	0	0	0	0	0	0	712	0	0	712	2776	0
16:00	145	0	68	0	213	0	224	68	0	292	0	0	0	0	0	0	275	0	0	275	780	0
16:15	175	0	75	0	250	0	283	74	0	357	0	0	0	0	0	0	292	0	0	292	899	0
16:30	167	0	70	0	237	0	184	72	0	256	0	0	0	0	0	0	282	0	0	282	775	0
16:45	173	0	79	0	252	0	185	103	0	288	0	0	0	0	0	0	227	0	0	227	767	0
Total	660	0	292	0	952	0	876	317	0	1193	0	0	0	0	0	0	1076	0	0	1076	3221	0
17:00	196	0	77	0	273	0	217	63	0	280	0	0	0	0	0	0	249	0	0	249	802	0
17:15	167	0	81	0	248	0	245	84	0	329	0	0	0	0	0	0	236	0	0	236	813	0
17:30	169	0	85	0	254	0	264	105	0	369	0	0	0	0	0	0	228	0	0	228	851	0
17:45	174	0	86	0	260	0	250	90	0	340	0	0	0	0	0	0	191	0	0	191	791	0
Total	706	0	329	0	1035	0	976	342	0	1318	0	0	0	0	0	0	904	0	0	904	3257	0
Grand Total	2603	0	1281	0	3884	0	3035	1277	0	4312	0	0	0	0	0	0	3183	0	0	3183	11379	0
Apprch %	67.0%	0.0%	33.0%	0.0%		0.0%	70.4%	29.6%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	100.0%	0.0%	0.0%			
Total %	22.9%	0.0%	11.3%	0.0%	34.1%	0.0%	26.7%	11.2%	0.0%	37.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	28.0%	0.0%	0.0%	28.0%	100.0%	

AM PEAK HOUR	Sbound US-101 Ramps Southbound					Tamalpais Dr Westbound					Sbound US-101 Ramps Northbound					Tamalpais Dr Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:45 to 08:45																					
Peak Hour For Entire Intersection Begins at 07:45																					
7:45	156	0	99	0	255	0	177	99	0	276	0	0	0	0	0	0	158	0	0	158	689
8:00	198	0	95	0	293	0	178	86	0	264	0	0	0	0	0	0	233	0	0	233	790
8:15	170	0	79	0	249	0	170	106	0	276	0	0	0	0	0	0	191	0	0	191	716
8:30	156	0	82	0	238	0	163	80	0	243	0	0	0	0	0	0	150	0	0	150	631
Total Volume	680	0	355	0	1035	0	688	371	0	1059	0	0	0	0	0	0	732	0	0	732	2826
% App Total	65.7%	0.0%	34.3%	0.0%		0.0%	65.0%	35.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	100.0%	0.0%	0.0%		
PHF	.859	.000	.896	.000	.883	.000	.966	.875	.000	.959	.000	.000	.000	.000	.000	.000	.785	.000	.000	.785	.894

PM PEAK HOUR	Sbound US-101 Ramps Southbound					Tamalpais Dr Westbound					Sbound US-101 Ramps Northbound					Tamalpais Dr Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 17:00 to 18:00																					
Peak Hour For Entire Intersection Begins at 17:00																					
17:00	196	0	77	0	273	0	217	63	0	280	0	0	0	0	0	0	249	0	0	249	802
17:15	167	0	81	0	248	0	245	84	0	329	0	0	0	0	0	0	236	0	0	236	813
17:30	169	0	85	0	254	0	264	105	0	369	0	0	0	0	0	0	228	0	0	228	851
17:45	174	0	86	0	260	0	250	90	0	340	0	0	0	0	0	0	191	0	0	191	791
Total Volume	706	0	329	0	1035	0	976	342	0	1318	0	0	0	0	0	0	904	0	0	904	3257
% App Total	68.2%	0.0%	31.8%	0.0%		0.0%	74.1%	25.9%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	100.0%	0.0%	0.0%		
PHF	.901	.000	.956	.000	.948	.000	.924	.814	.000	.893	.000	.000	.000	.000	.000	.000	.908	.000	.000	.908	.957

National Data and Surveying Services

City of Corte Madera
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Heavy Trucks On Bank 2

(323) 782-0090
info@ndsdata.com

File Name : 17-7456-005 Madera Blvd & Tamalpais Dr
Date : 5/25/2017

Unshifted Count = All Vehicles & Uturns

	Madera Blvd Southbound					Tamalpais Dr Westbound					Madera Blvd Northbound					Tamalpais Dr Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
7:00	18	7	15	0	40	35	71	24	0	130	4	3	32	0	39	7	118	7	0	132	341	0
7:15	19	12	22	0	53	29	111	28	0	168	5	11	42	0	58	8	116	6	0	130	409	0
7:30	26	9	20	0	55	34	125	22	0	181	9	13	37	0	59	13	164	8	0	185	480	0
7:45	41	17	31	0	89	24	155	52	0	231	20	21	39	0	80	19	194	3	0	216	616	0
Total	104	45	88	0	237	122	462	126	0	710	38	48	150	0	236	47	592	24	0	663	1846	0
8:00	55	25	34	0	114	42	140	40	0	222	13	15	55	0	83	36	213	7	0	256	675	0
8:15	55	14	24	0	93	41	138	52	0	231	10	9	47	0	66	32	229	6	0	267	657	0
8:30	36	20	26	0	82	27	110	43	0	180	5	7	26	0	38	26	209	5	0	240	540	0
8:45	37	13	31	0	81	43	107	45	0	195	9	16	40	0	65	28	155	11	0	194	535	0
Total	183	72	115	0	370	153	495	180	0	828	37	47	168	0	252	122	806	29	0	957	2407	0
16:00	39	17	36	0	92	24	157	61	0	242	10	23	39	0	72	43	221	9	0	273	679	0
16:15	43	18	37	0	98	51	183	80	0	314	6	23	34	0	63	40	243	14	0	297	772	0
16:30	55	14	38	0	107	40	122	50	0	212	12	17	35	0	64	55	194	7	0	256	639	0
16:45	61	9	48	0	118	30	143	44	0	217	12	17	29	0	58	35	135	7	0	177	570	0
Total	198	58	159	0	415	145	605	235	0	985	40	80	137	0	257	173	793	37	0	1003	2660	0
17:00	54	19	48	0	121	51	148	64	0	263	14	14	46	0	74	48	188	10	0	246	704	0
17:15	62	19	42	0	123	42	154	89	0	285	10	13	35	0	58	39	165	8	0	212	678	0
17:30	59	16	46	0	121	38	174	66	0	278	5	13	33	0	51	31	147	4	0	182	632	0
17:45	40	14	33	0	87	61	149	83	0	293	13	25	33	0	71	41	149	8	0	198	649	0
Total	215	68	169	0	452	192	625	302	0	1119	42	65	147	0	254	159	649	30	0	838	2663	0
Grand Total	700	243	531	0	1474	612	2187	843	0	3642	157	240	602	0	999	501	2840	120	0	3461	9576	0
Apprch %	47.5%	16.5%	36.0%	0.0%		16.8%	60.0%	23.1%	0.0%		15.7%	24.0%	60.3%	0.0%		14.5%	82.1%	3.5%	0.0%			
Total %	7.3%	2.5%	5.5%	0.0%	15.4%	6.4%	22.8%	8.8%	0.0%	38.0%	1.6%	2.5%	6.3%	0.0%	10.4%	5.2%	29.7%	1.3%	0.0%	36.1%	100.0%	

AM PEAK HOUR	Madera Blvd Southbound					Tamalpais Dr Westbound					Madera Blvd Northbound					Tamalpais Dr Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:45 to 08:45																					
Peak Hour For Entire Intersection Begins at 07:45																					
7:45	41	17	31	0	89	24	155	52	0	231	20	21	39	0	80	19	194	3	0	216	616
8:00	55	25	34	0	114	42	140	40	0	222	13	15	55	0	83	36	213	7	0	256	675
8:15	55	14	24	0	93	41	138	52	0	231	10	9	47	0	66	32	229	6	0	267	657
8:30	36	20	26	0	82	27	110	43	0	180	5	7	26	0	38	26	209	5	0	240	540
Total Volume	187	76	115	0	378	134	543	187	0	864	48	52	167	0	267	113	845	21	0	979	2488
% App Total	49.5%	20.1%	30.4%	0.0%		15.5%	62.8%	21.6%	0.0%		18.0%	19.5%	62.5%	0.0%		11.5%	86.3%	2.1%	0.0%		
PHF	.850	.760	.846	.000	.829	.798	.876	.899	.000	.935	.600	.619	.759	.000	.804	.785	.922	.750	.000	.917	.921

PM PEAK HOUR	Madera Blvd Southbound					Tamalpais Dr Westbound					Madera Blvd Northbound					Tamalpais Dr Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:15 to 17:15																					
Peak Hour For Entire Intersection Begins at 16:15																					
16:15	43	18	37	0	98	51	183	80	0	314	6	23	34	0	63	40	243	14	0	297	772
16:30	55	14	38	0	107	40	122	50	0	212	12	17	35	0	64	55	194	7	0	256	639
16:45	61	9	48	0	118	30	143	44	0	217	12	17	29	0	58	35	135	7	0	177	570
17:00	54	19	48	0	121	51	148	64	0	263	14	14	46	0	74	48	188	10	0	246	704
Total Volume	213	60	171	0	444	172	596	238	0	1006	44	71	144	0	259	178	760	38	0	976	2685
% App Total	48.0%	13.5%	38.5%	0.0%		17.1%	59.2%	23.7%	0.0%		17.0%	27.4%	55.6%	0.0%		18.2%	77.9%	3.9%	0.0%		
PHF	.873	.789	.891	.000	.917	.843	.814	.744	.000	.801	.786	.772	.783	.000	.875	.809	.782	.679	.000	.822	.869

National Data and Surveying Services

City of Corte Madera
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Heavy Trucks On Bank 2

(323) 782-0090
info@ndsdata.com

File Name : 17-7456-006 San Clemente Dr & Paradise Dr
Date : 5/25/2017

Unshifted Count = All Vehicles & Uturns

	San Clemente Dr Southbound					Paradise Dr Westbound					San Clemente Dr Northbound					Paradise Dr Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
7:00	0	97	7	0	104	0	0	0	0	0	4	102	0	0	106	24	0	1	0	25	235	0
7:15	0	134	3	0	137	0	0	0	0	0	0	195	0	0	195	24	0	3	0	27	359	0
7:30	0	180	4	0	184	0	0	0	0	0	3	221	0	0	224	29	0	3	0	32	440	0
7:45	0	226	2	0	228	0	0	0	0	0	3	280	0	0	283	20	0	5	0	25	536	0
Total	0	637	16	0	653	0	0	0	0	0	10	798	0	0	808	97	0	12	0	109	1570	0
8:00	0	346	9	0	355	0	0	0	0	0	7	258	0	1	266	29	0	3	0	32	653	1
8:15	0	239	6	0	245	0	0	0	0	0	3	324	0	0	327	25	0	4	0	29	601	0
8:30	0	189	11	0	200	0	0	0	0	0	7	224	0	0	231	27	0	3	0	30	461	0
8:45	0	165	5	0	170	0	0	0	0	0	7	198	0	0	205	20	0	7	0	27	402	0
Total	0	939	31	0	970	0	0	0	0	0	24	1004	0	1	1029	101	0	17	0	118	2117	1
16:00	0	167	5	0	172	0	0	0	0	0	4	228	0	0	232	33	0	11	0	44	448	0
16:15	0	203	9	0	212	0	0	0	0	0	6	209	0	0	215	43	0	11	0	54	481	0
16:30	0	174	3	0	177	0	0	0	0	0	6	203	0	0	209	39	0	11	0	50	436	0
16:45	0	184	5	0	189	0	0	0	0	0	9	165	0	0	174	54	0	11	0	65	428	0
Total	0	728	22	0	750	0	0	0	0	0	25	805	0	0	830	169	0	44	0	213	1793	0
17:00	0	196	9	0	205	0	0	0	0	0	5	207	0	0	212	73	0	9	0	82	499	0
17:15	0	196	7	0	203	0	0	0	0	0	7	200	0	0	207	56	0	13	0	69	479	0
17:30	0	204	6	0	210	0	0	0	0	0	2	185	0	0	187	61	0	8	0	69	466	0
17:45	0	250	4	0	254	0	0	0	0	0	7	170	0	0	177	62	0	7	0	69	500	0
Total	0	846	26	0	872	0	0	0	0	0	21	762	0	0	783	252	0	37	0	289	1944	0
Grand Total	0	3150	95	0	3245	0	0	0	0	0	80	3369	0	1	3450	619	0	110	0	729	7424	1
Apprch %	0.0%	97.1%	2.9%	0.0%		0.0%	0.0%	0.0%	0.0%		2.3%	97.7%	0.0%	0.0%		84.9%	0.0%	15.1%	0.0%			
Total %	0.0%	42.4%	1.3%	0.0%	43.7%	0.0%	0.0%	0.0%	0.0%	0.0%	1.1%	45.4%	0.0%	0.0%	46.5%	8.3%	0.0%	1.5%	0.0%	9.8%	100.0%	

AM PEAK HOUR	San Clemente Dr Southbound					Paradise Dr Westbound					San Clemente Dr Northbound					Paradise Dr Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:45 to 08:45																					
Peak Hour For Entire Intersection Begins at 07:45																					
7:45	0	226	2	0	228	0	0	0	0	0	3	280	0	0	283	20	0	5	0	25	536
8:00	0	346	9	0	355	0	0	0	0	0	7	258	0	1	266	29	0	3	0	32	653
8:15	0	239	6	0	245	0	0	0	0	0	3	324	0	0	327	25	0	4	0	29	601
8:30	0	189	11	0	200	0	0	0	0	0	7	224	0	0	231	27	0	3	0	30	461
Total Volume	0	1000	28	0	1028	0	0	0	0	0	20	1086	0	1	1107	101	0	15	0	116	2251
% App Total	0.0%	97.3%	2.7%	0.0%		0.0%	0.0%	0.0%	0.0%		1.8%	98.1%	0.0%	0.1%		87.1%	0.0%	12.9%	0.0%		
PHF	.000	.723	.636	.000	.724	.000	.000	.000	.000	.000	.714	.838	.000	.250	.846	.871	.000	.750	.000	.906	.862

PM PEAK HOUR	San Clemente Dr Southbound					Paradise Dr Westbound					San Clemente Dr Northbound					Paradise Dr Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 17:00 to 18:00																					
Peak Hour For Entire Intersection Begins at 17:00																					
17:00	0	196	9	0	205	0	0	0	0	0	5	207	0	0	212	73	0	9	0	82	499
17:15	0	196	7	0	203	0	0	0	0	0	7	200	0	0	207	56	0	13	0	69	479
17:30	0	204	6	0	210	0	0	0	0	0	2	185	0	0	187	61	0	8	0	69	466
17:45	0	250	4	0	254	0	0	0	0	0	7	170	0	0	177	62	0	7	0	69	500
Total Volume	0	846	26	0	872	0	0	0	0	0	21	762	0	0	783	252	0	37	0	289	1944
% App Total	0.0%	97.0%	3.0%	0.0%		0.0%	0.0%	0.0%	0.0%		2.7%	97.3%	0.0%	0.0%		87.2%	0.0%	12.8%	0.0%		
PHF	.000	.846	.722	.000	.858	.000	.000	.000	.000	.000	.750	.920	.000	.000	.923	.863	.000	.712	.000	.881	.972

National Data and Surveying Services

City of Corte Madera
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Heavy Trucks On Bank 2

(323) 782-0090
info@ndsdata.com

File Name : 17-7456-101 Paradise Dr & Tamalpais Dr
Date : 5/25/2017

Unshifted Count = All Vehicles & Uturns

	Paradise Dr Southbound					Tamalpais Dr Westbound					Paradise Dr Northbound					Tamalpais Dr Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
7:00	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	98	50	0	148	150	0
7:15	0	0	0	0	0	0	0	0	0	0	0	8	3	0	11	0	127	60	0	187	198	0
7:30	0	0	0	0	0	0	0	0	0	0	0	7	0	0	7	0	167	48	0	215	222	0
7:45	0	0	0	0	0	0	0	0	0	0	0	10	2	0	12	0	220	51	0	271	283	0
Total	0	0	0	0	0	0	0	0	0	0	0	27	5	0	32	0	612	209	0	821	853	0
8:00	0	0	0	0	0	0	0	0	0	0	0	7	3	0	10	0	313	77	0	390	400	0
8:15	0	0	0	0	0	0	0	0	0	0	0	11	0	0	11	0	222	74	0	296	307	0
8:30	0	0	0	0	0	0	0	0	0	0	0	13	1	0	14	0	178	67	0	245	259	0
8:45	0	0	0	0	0	0	0	0	0	0	0	8	0	0	8	0	158	107	0	265	273	0
Total	0	0	0	0	0	0	0	0	0	0	0	39	4	0	43	0	871	325	0	1196	1239	0
16:00	0	0	0	0	0	0	0	0	0	0	0	15	1	0	16	0	152	33	0	185	201	0
16:15	0	0	0	0	0	0	0	0	0	0	0	18	2	0	20	0	189	40	0	229	249	0
16:30	0	0	0	0	0	0	0	0	0	0	0	14	3	0	17	0	168	39	0	207	224	0
16:45	0	0	0	0	0	0	0	0	0	0	0	7	1	0	8	0	181	32	0	213	221	0
Total	0	0	0	0	0	0	0	0	0	0	0	54	7	0	61	0	690	144	0	834	895	0
17:00	0	0	0	0	0	0	0	0	0	0	0	17	4	0	21	0	175	48	0	223	244	0
17:15	0	0	0	0	0	0	0	0	0	0	0	14	3	0	17	0	195	36	0	231	248	0
17:30	0	0	0	0	0	0	0	0	0	0	0	22	1	0	23	0	192	28	0	220	243	0
17:45	0	0	0	0	0	0	0	0	0	0	0	12	4	0	16	0	241	33	0	274	290	0
Total	0	0	0	0	0	0	0	0	0	0	0	65	12	0	77	0	803	145	0	948	1025	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	185	28	0	213	0	2976	823	0	3799	4012	0
Apprch %	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	86.9%	13.1%	0.0%		0.0%	78.3%	21.7%	0.0%			
Total %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	4.6%	0.7%	0.0%	5.3%	0.0%	74.2%	20.5%	0.0%	94.7%	100.0%	

AM PEAK HOUR	Paradise Dr Southbound					Tamalpais Dr Westbound					Paradise Dr Northbound					Tamalpais Dr Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:45 to 08:45																					
Peak Hour For Entire Intersection Begins at 07:45																					
7:45	0	0	0	0	0	0	0	0	0	0	0	10	2	0	12	0	220	51	0	271	283
8:00	0	0	0	0	0	0	0	0	0	0	0	7	3	0	10	0	313	77	0	390	400
8:15	0	0	0	0	0	0	0	0	0	0	0	11	0	0	11	0	222	74	0	296	307
8:30	0	0	0	0	0	0	0	0	0	0	0	13	1	0	14	0	178	67	0	245	259
Total Volume	0	0	0	0	0	0	0	0	0	0	0	41	6	0	47	0	933	269	0	1202	1249
% App Total	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	87.2%	12.8%	0.0%		0.0%	77.6%	22.4%	0.0%		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.788	.500	.000	.839	.000	.745	.873	.000	.771	.781

PM PEAK HOUR	Paradise Dr Southbound					Tamalpais Dr Westbound					Paradise Dr Northbound					Tamalpais Dr Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 17:00 to 18:00																					
Peak Hour For Entire Intersection Begins at 17:00																					
17:00	0	0	0	0	0	0	0	0	0	0	0	17	4	0	21	0	175	48	0	223	244
17:15	0	0	0	0	0	0	0	0	0	0	0	14	3	0	17	0	195	36	0	231	248
17:30	0	0	0	0	0	0	0	0	0	0	0	22	1	0	23	0	192	28	0	220	243
17:45	0	0	0	0	0	0	0	0	0	0	0	12	4	0	16	0	241	33	0	274	290
Total Volume	0	0	0	0	0	0	0	0	0	0	0	65	12	0	77	0	803	145	0	948	1025
% App Total	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	84.4%	15.6%	0.0%		0.0%	84.7%	15.3%	0.0%		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.739	.750	.000	.837	.000	.833	.755	.000	.865	.884

ALL TRAFFIC DATA

City of Corte Madera
All Vehicles on Unshifted
Peds & Bikes on Bank 1
Nothing on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 15-7802-001 Redwood Highway-Wornum Drive.ppd
Date : 10/15/2015

Unshifted Count = All Vehicles

	Redwood Highway Southbound					Wornum Drive Westbound					Redwood Highway Northbound					Wornum Drive Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturn Total
16:00	0	13	48	0	61	0	0	0	0	0	21	64	0	0	85	142	0	27	0	169	315	0
16:15	0	20	34	1	55	0	0	0	0	0	29	58	0	0	87	122	0	25	0	147	289	1
16:30	0	14	36	0	50	0	0	0	0	0	26	61	0	0	87	110	0	23	0	133	270	0
16:45	0	19	42	0	61	0	0	0	0	0	24	46	0	0	70	91	0	15	0	106	237	0
Total	0	66	160	1	227	0	0	0	0	0	100	229	0	0	329	465	0	90	0	555	1111	1
17:00	0	15	38	0	53	0	0	0	0	0	44	51	0	0	95	87	0	18	0	105	253	0
17:15	0	16	47	0	63	0	0	0	0	0	19	60	0	0	79	78	0	22	0	100	242	0
17:30	0	13	32	0	45	0	0	0	0	0	31	47	0	0	78	114	0	27	0	141	264	0
17:45	0	16	32	0	48	0	0	0	0	0	30	54	0	0	84	85	0	15	0	100	232	0
Total	0	60	149	0	209	0	0	0	0	0	124	212	0	0	336	364	0	82	0	446	991	0
Grand Total	0	126	309	1	436	0	0	0	0	0	224	441	0	0	665	829	0	172	0	1001	2102	1
Apprch %	0.0%	28.9%	70.9%	0.2%		0.0%	0.0%	0.0%	0.0%		33.7%	66.3%	0.0%	0.0%		82.8%	0.0%	17.2%	0.0%			
Total %	0.0%	6.0%	14.7%	0.0%	20.7%	0.0%	0.0%	0.0%	0.0%	0.0%	10.7%	21.0%	0.0%	0.0%	31.6%	39.4%	0.0%	8.2%	0.0%	47.6%	100.0%	

ALL TRAFFIC DATA

City of Corte Madera
All Vehicles on Unshifted
Peds & Bikes on Bank 1
Nothing on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 15-7802-001 Redwood Highway-Wornum Drive.ppd
Date : 10/15/2015

Unshifted Count = All Vehicles

PM PEAK HOUR	Redwood Highway Southbound					Wornum Drive Westbound					Redwood Highway Northbound					Wornum Drive Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:00 to 17:00																					
Peak Hour For Entire Intersection Begins at 16:00																					
16:00	0	13	48	0	61	0	0	0	0	0	21	64	0	0	85	142	0	27	0	169	315
16:15	0	20	34	1	55	0	0	0	0	0	29	58	0	0	87	122	0	25	0	147	289
16:30	0	14	36	0	50	0	0	0	0	0	26	61	0	0	87	110	0	23	0	133	270
16:45	0	19	42	0	61	0	0	0	0	0	24	46	0	0	70	91	0	15	0	106	237
Total Volume	0	66	160	1	227	0	0	0	0	0	100	229	0	0	329	465	0	90	0	555	1111
% App Total	0.0%	29.1%	70.5%	0.4%		0.0%	0.0%	0.0%	0.0%		30.4%	69.6%	0.0%	0.0%		83.8%	0.0%	16.2%	0.0%		
PHF	.000	.825	.833	.250	.930	.000	.000	.000	.000	.000	.862	.895	.000	.000	.945	.819	.000	.833	.000	.821	.882

ALL TRAFFIC DATA

City of Corte Madera
All Vehicles on Unshifted
Peds & Bikes on Bank 1
Nothing on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 15-7802-002 Northeast Village Entrance-Redwood Highway
Date : 10/15/2015

Unshifted Count = All Vehicles

	Parking Lot Entrance Southbound					Redwood Highway Westbound					Northeast Village Entrance Northbound					Redwood Highway Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturn Total
14:00	3	0	6	0	9	5	43	1	0	49	26	0	16	0	42	1	19	20	0	40	140	0
14:15	0	0	2	0	2	2	61	0	0	63	35	0	13	1	49	2	16	14	0	32	146	1
14:30	0	0	2	0	2	7	55	0	0	62	27	0	13	0	40	1	35	12	0	48	152	0
14:45	1	0	1	0	2	7	58	4	0	69	22	0	9	0	31	2	36	14	0	52	154	0
Total	4	0	11	0	15	21	217	5	0	243	110	0	51	1	162	6	106	60	0	172	592	1
15:00	0	0	1	0	1	2	79	1	0	82	28	0	12	0	40	3	23	11	0	37	160	0
15:15	1	0	1	0	2	3	86	1	0	90	21	0	6	0	27	2	27	11	0	40	159	0
15:30	1	0	3	0	4	2	75	1	1	79	12	0	9	0	21	3	23	12	0	38	142	1
15:45	4	1	3	0	8	4	68	1	0	73	13	0	9	0	22	3	24	12	0	39	142	0
Total	6	1	8	0	15	11	308	4	1	324	74	0	36	0	110	11	97	46	0	154	603	1
16:00	1	1	3	0	5	5	71	0	0	76	10	0	7	0	17	6	27	12	0	45	143	0
16:15	0	0	3	0	3	6	67	0	0	73	19	1	8	1	29	4	20	13	0	37	142	1
16:30	1	0	2	0	3	5	61	0	0	66	9	0	5	0	14	4	24	13	0	41	124	0
16:45	3	1	3	0	7	4	62	1	0	67	7	0	8	0	15	1	28	11	0	40	129	0
Total	5	2	11	0	18	20	261	1	0	282	45	1	28	1	75	15	99	49	0	163	538	1
17:00	1	0	4	0	5	4	52	0	0	56	15	0	13	0	28	2	20	11	0	33	122	0
17:15	6	0	6	0	12	7	59	0	0	66	10	0	5	0	15	1	23	13	0	37	130	0
17:30	1	0	0	0	1	3	49	2	0	54	13	0	3	0	16	0	31	12	0	43	114	0
17:45	1	0	1	0	2	3	70	0	0	73	12	0	10	0	22	0	24	9	0	33	130	0
Total	9	0	11	0	20	17	230	2	0	249	50	0	31	0	81	3	98	45	0	146	496	0
Grand Total	24	3	41	0	68	69	1016	12	1	1098	279	1	146	2	428	35	400	200	0	635	2229	3
Apprch %	35.3%	4.4%	60.3%	0.0%		6.3%	92.5%	1.1%	0.1%		65.2%	0.2%	34.1%	0.5%		5.5%	63.0%	31.5%	0.0%			
Total %	1.1%	0.1%	1.8%	0.0%	3.1%	3.1%	45.6%	0.5%	0.0%	49.3%	12.5%	0.0%	6.6%	0.1%	19.2%	1.6%	17.9%	9.0%	0.0%	28.5%	100.0%	

ALL TRAFFIC DATA

City of Corte Madera
All Vehicles on Unshifted
Peds & Bikes on Bank 1
Nothing on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 15-7802-002 Northeast Village Entrance-Redwood Highway
Date : 10/15/2015

Unshifted Count = All Vehicles

PM PEAK HOUR	Parking Lot Entrance Southbound					Redwood Highway Westbound					Northeast Village Entrance Northbound					Redwood Highway Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 14:30 to 15:30																					
Peak Hour For Entire Intersection Begins at 14:30																					
14:30	0	0	2	0	2	7	55	0	0	62	27	0	13	0	40	1	35	12	0	48	152
14:45	1	0	1	0	2	7	58	4	0	69	22	0	9	0	31	2	36	14	0	52	154
15:00	0	0	1	0	1	2	79	1	0	82	28	0	12	0	40	3	23	11	0	37	160
15:15	1	0	1	0	2	3	86	1	0	90	21	0	6	0	27	2	27	11	0	40	159
Total Volume	2	0	5	0	7	19	278	6	0	303	98	0	40	0	138	8	121	48	0	177	625
% App Total	28.6%	0.0%	71.4%	0.0%		6.3%	91.7%	2.0%	0.0%		71.0%	0.0%	29.0%	0.0%		4.5%	68.4%	27.1%	0.0%		
PHF	.500	.000	.625	.000	.875	.679	.808	.375	.000	.842	.875	.000	.769	.000	.863	.667	.840	.857	.000	.851	.977

ALL TRAFFIC DATA

City of Corte Madera
All Vehicles on Unshifted
Peds & Bikes on Bank 1
Nothing on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 15-7802-003 Redwood Highway-East Village Entrance.ppd
Date : 10/15/2015

Unshifted Count = All Vehicles

	Redwood Highway Southbound					Westbound					Redwood Highway Northbound					East Village Entrance Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturn Total
14:00	0	38	2	0	40	0	0	0	0	0	32	39	0	1	72	8	0	35	0	43	155	1
14:15	0	30	0	0	30	0	0	0	0	0	46	56	0	1	103	4	0	33	0	37	170	1
14:30	0	43	0	0	43	0	0	0	0	0	45	57	0	0	102	8	0	34	0	42	187	0
14:45	0	44	1	0	45	0	0	0	0	0	33	62	0	1	96	3	0	39	0	42	183	1
Total	0	155	3	0	158	0	0	0	0	0	156	214	0	3	373	23	0	141	0	164	695	3
15:00	0	37	0	0	37	0	0	0	0	0	28	75	0	1	104	11	0	44	0	55	196	1
15:15	0	34	1	0	35	0	0	0	0	0	29	85	0	3	117	6	0	40	0	46	198	3
15:30	0	34	1	0	35	0	0	0	0	0	32	73	0	4	109	6	0	23	0	29	173	4
15:45	0	40	2	0	42	0	0	0	0	0	36	68	0	0	104	4	0	36	0	40	186	0
Total	0	145	4	0	149	0	0	0	0	0	125	301	0	8	434	27	0	143	0	170	753	8
16:00	0	36	0	0	36	0	0	0	0	0	23	71	0	0	94	5	0	27	0	32	162	0
16:15	0	26	1	0	27	0	0	0	0	0	26	66	0	1	93	7	0	29	0	36	156	1
16:30	0	31	0	0	31	0	0	0	0	0	32	62	0	0	94	4	0	26	0	30	155	0
16:45	0	38	0	0	38	0	0	0	0	0	46	66	0	0	112	2	0	24	0	26	176	0
Total	0	131	1	0	132	0	0	0	0	0	127	265	0	1	393	18	0	106	0	124	649	1
17:00	0	35	0	0	35	0	0	0	0	0	25	52	0	0	77	5	0	23	0	28	140	0
17:15	0	32	1	0	33	0	0	0	0	0	36	63	0	0	99	4	0	27	0	31	163	0
17:30	0	36	0	0	36	0	0	0	0	0	21	53	0	0	74	2	0	27	0	29	139	0
17:45	0	33	1	0	34	0	0	0	0	0	35	69	0	0	104	4	0	26	0	30	168	0
Total	0	136	2	0	138	0	0	0	0	0	117	237	0	0	354	15	0	103	0	118	610	0
Grand Total	0	567	10	0	577	0	0	0	0	0	525	1017	0	12	1554	83	0	493	0	576	2707	12
Apprch %	0.0%	98.3%	1.7%	0.0%		0.0%	0.0%	0.0%	0.0%		33.8%	65.4%	0.0%	0.8%		14.4%	0.0%	85.6%	0.0%			
Total %	0.0%	20.9%	0.4%	0.0%	21.3%	0.0%	0.0%	0.0%	0.0%	0.0%	19.4%	37.6%	0.0%	0.4%	57.4%	3.1%	0.0%	18.2%	0.0%	21.3%	100.0%	

ALL TRAFFIC DATA

City of Corte Madera
All Vehicles on Unshifted
Peds & Bikes on Bank 1
Nothing on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 15-7802-003 Redwood Highway-East Village Entrance.ppd
Date : 10/15/2015

Unshifted Count = All Vehicles

PM PEAK HOUR	Redwood Highway Southbound					Westbound					Redwood Highway Northbound					East Village Entrance Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 14:30 to 15:30																					
Peak Hour For Entire Intersection Begins at 14:30																					
14:30	0	43	0	0	43	0	0	0	0	0	45	57	0	0	102	8	0	34	0	42	187
14:45	0	44	1	0	45	0	0	0	0	0	33	62	0	1	96	3	0	39	0	42	183
15:00	0	37	0	0	37	0	0	0	0	0	28	75	0	1	104	11	0	44	0	55	196
15:15	0	34	1	0	35	0	0	0	0	0	29	85	0	3	117	6	0	40	0	46	198
Total Volume	0	158	2	0	160	0	0	0	0	0	135	279	0	5	419	28	0	157	0	185	764
% App Total	0.0%	98.8%	1.3%	0.0%		0.0%	0.0%	0.0%	0.0%		32.2%	66.6%	0.0%	1.2%		15.1%	0.0%	84.9%	0.0%		
PHF	.000	.898	.500	.000	.889	.000	.000	.000	.000	.000	.750	.821	.000	.417	.895	.636	.000	.892	.000	.841	.965

ALL TRAFFIC DATA

City of Corte Madera
All Vehicles on Unshifted
Peds & Bikes on Bank 1
Nothing on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 15-7802-004 Redwood Highway-Southeast Village Entrance
Date : 10/15/2015

Unshifted Count = All Vehicles

	Redwood Highway Southbound					Westbound					Redwood Highway Northbound					Southeast Village Entrance Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturn Total
14:00	0	69	1	0	70	0	0	0	0	0	69	68	0	3	140	5	0	54	0	59	269	3
14:15	0	70	0	0	70	0	0	0	0	0	60	93	0	9	162	10	0	71	0	81	313	9
14:30	0	71	3	0	74	0	0	0	0	0	80	90	0	6	176	11	0	67	0	78	328	6
14:45	0	87	1	0	88	0	0	0	0	0	61	86	0	8	155	11	0	56	0	67	310	8
Total	0	297	5	0	302	0	0	0	0	0	270	337	0	26	633	37	0	248	0	285	1220	26
15:00	0	81	1	1	83	0	0	0	0	0	74	97	0	11	182	5	0	77	0	82	347	12
15:15	0	76	3	0	79	0	0	0	0	0	74	108	0	10	192	7	0	60	0	67	338	10
15:30	0	59	1	0	60	0	0	0	0	0	87	102	0	11	200	8	0	57	0	65	325	11
15:45	0	73	2	0	75	0	0	0	0	0	68	98	0	9	175	6	0	67	0	73	323	9
Total	0	289	7	1	297	0	0	0	0	0	303	405	0	41	749	26	0	261	0	287	1333	42
16:00	0	63	1	0	64	0	0	0	0	0	80	88	0	9	177	7	0	58	0	65	306	9
16:15	0	59	0	0	59	0	0	0	0	0	64	89	0	9	162	4	0	68	1	73	294	10
16:30	0	55	0	0	55	0	0	0	0	0	75	88	0	19	182	6	0	61	0	67	304	19
16:45	0	63	0	0	63	0	0	0	0	0	54	110	0	10	174	6	0	64	0	70	307	10
Total	0	240	1	0	241	0	0	0	0	0	273	375	0	47	695	23	0	251	1	275	1211	48
17:00	0	59	0	0	59	0	0	0	0	0	67	76	0	11	154	2	0	72	0	74	287	11
17:15	0	55	0	1	56	0	0	0	0	0	65	94	0	8	167	7	0	57	0	64	287	9
17:30	0	63	2	0	65	0	0	0	0	0	41	66	0	8	115	5	0	52	0	57	237	8
17:45	0	57	0	0	57	0	0	0	0	0	74	100	0	4	178	3	0	58	0	61	296	4
Total	0	234	2	1	237	0	0	0	0	0	247	336	0	31	614	17	0	239	0	256	1107	32
Grand Total	0	1060	15	2	1077	0	0	0	0	0	1093	1453	0	145	2691	103	0	999	1	1103	4871	148
Apprch %	0.0%	98.4%	1.4%	0.2%		0.0%	0.0%	0.0%	0.0%		40.6%	54.0%	0.0%	5.4%		9.3%	0.0%	90.6%	0.1%			
Total %	0.0%	21.8%	0.3%	0.0%	22.1%	0.0%	0.0%	0.0%	0.0%	0.0%	22.4%	29.8%	0.0%	3.0%	55.2%	2.1%	0.0%	20.5%	0.0%	22.6%	100.0%	

ALL TRAFFIC DATA

City of Corte Madera
All Vehicles on Unshifted
Peds & Bikes on Bank 1
Nothing on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 15-7802-004 Redwood Highway-Southeast Village Entrance
Date : 10/15/2015

Unshifted Count = All Vehicles

PM PEAK HOUR	Redwood Highway Southbound					Westbound					Redwood Highway Northbound					Southeast Village Entrance Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 15:00 to 16:00																					
Peak Hour For Entire Intersection Begins at 15:00																					
15:00	0	81	1	1	83	0	0	0	0	0	74	97	0	11	182	5	0	77	0	82	347
15:15	0	76	3	0	79	0	0	0	0	0	74	108	0	10	192	7	0	60	0	67	338
15:30	0	59	1	0	60	0	0	0	0	0	87	102	0	11	200	8	0	57	0	65	325
15:45	0	73	2	0	75	0	0	0	0	0	68	98	0	9	175	6	0	67	0	73	323
Total Volume	0	289	7	1	297	0	0	0	0	0	303	405	0	41	749	26	0	261	0	287	1333
% App Total	0.0%	97.3%	2.4%	0.3%		0.0%	0.0%	0.0%	0.0%		40.5%	54.1%	0.0%	5.5%		9.1%	0.0%	90.9%	0.0%		
PHF	.000	.892	.583	.250	.895	.000	.000	.000	.000	.000	.871	.938	.000	.932	.936	.813	.000	.847	.000	.875	.960

ALL TRAFFIC DATA

City of Corte Madera
All Vehicles on Unshifted
Peds & Bikes on Bank 1
Nothing on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 15-7802-005 San Clemente Drive-Redwood Highway-Tama
Date : 10/15/2015

Unshifted Count = All Vehicles

	Southbound					Redwood Highway Westbound					San Clemente Drive Northbound					Tamalpais Drive Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturn Total
16:00	0	0	0	0	0	24	105	0	0	129	230	0	23	0	253	0	150	3	1	154	536	1
16:15	0	0	0	0	0	19	115	0	0	134	224	0	30	0	254	0	134	1	1	136	524	1
16:30	0	0	0	0	0	24	108	0	0	132	231	0	23	0	254	0	159	1	0	160	546	0
16:45	0	0	0	0	0	18	115	0	0	133	268	0	24	0	292	0	145	2	0	147	572	0
Total	0	0	0	0	0	85	443	0	0	528	953	0	100	0	1053	0	588	7	2	597	2178	2
17:00	0	0	0	0	0	9	142	0	0	151	266	0	22	0	288	0	128	2	0	130	569	0
17:15	0	0	0	0	0	16	105	0	0	121	258	0	23	0	281	0	144	2	0	146	548	0
17:30	0	0	0	0	0	19	102	0	0	121	198	0	17	0	215	0	107	3	0	110	446	0
17:45	0	0	0	0	0	19	101	0	0	120	236	0	30	0	266	0	146	0	0	146	532	0
Total	0	0	0	0	0	63	450	0	0	513	958	0	92	0	1050	0	525	7	0	532	2095	0
Grand Total	0	0	0	0	0	148	893	0	0	1041	1911	0	192	0	2103	0	1113	14	2	1129	4273	2
Apprch %	0.0%	0.0%	0.0%	0.0%		14.2%	85.8%	0.0%	0.0%		90.9%	0.0%	9.1%	0.0%		0.0%	98.6%	1.2%	0.2%			
Total %	0.0%	0.0%	0.0%	0.0%	0.0%	3.5%	20.9%	0.0%	0.0%	24.4%	44.7%	0.0%	4.5%	0.0%	49.2%	0.0%	26.0%	0.3%	0.0%	26.4%	100.0%	

ALL TRAFFIC DATA

City of Corte Madera
All Vehicles on Unshifted
Peds & Bikes on Bank 1
Nothing on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 15-7802-005 San Clemente Drive-Redwood Highway-Tama
Date : 10/15/2015

Unshifted Count = All Vehicles

PM PEAK HOUR	Southbound					Redwood Highway Westbound					San Clemente Drive Northbound					Tamalpais Drive Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:30 to 17:30																					
Peak Hour For Entire Intersection Begins at 16:30																					
16:30	0	0	0	0	0	24	108	0	0	132	231	0	23	0	254	0	159	1	0	160	546
16:45	0	0	0	0	0	18	115	0	0	133	268	0	24	0	292	0	145	2	0	147	572
17:00	0	0	0	0	0	9	142	0	0	151	266	0	22	0	288	0	128	2	0	130	569
17:15	0	0	0	0	0	16	105	0	0	121	258	0	23	0	281	0	144	2	0	146	548
Total Volume	0	0	0	0	0	67	470	0	0	537	1023	0	92	0	1115	0	576	7	0	583	2235
% App Total	0.0%	0.0%	0.0%	0.0%		12.5%	87.5%	0.0%	0.0%		91.7%	0.0%	8.3%	0.0%		0.0%	98.8%	1.2%	0.0%		
PHF	.000	.000	.000	.000	.000	.698	.827	.000	.000	.889	.954	.000	.958	.000	.955	.000	.906	.875	.000	.911	.977

ALL TRAFFIC DATA

City of Corte Madera
All Vehicles on Unshifted
Peds & Bikes on Bank 1
Nothing on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 15-7802-005B Paradise Drive-Tamalpais Drive.ppd
Date : 10/15/2015

Unshifted Count = All Vehicles

	Paradise Drive Southbound					Tamalpais Drive Westbound					Paradise Drive Northbound					Tamalpais Drive Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturn Total
16:00	0	0	0	0	0	0	0	0	0	0	0	16	1	0	17	0	128	32	0	160	177	0
16:15	0	0	0	0	0	0	0	0	0	0	0	13	4	0	17	0	142	49	0	191	208	0
16:30	0	0	0	0	0	0	0	0	0	0	0	16	3	0	19	3	168	27	0	198	217	0
16:45	0	0	0	0	0	0	0	0	0	0	0	16	4	0	20	0	138	27	0	165	185	0
Total	0	0	0	0	0	0	0	0	0	0	0	61	12	0	73	3	576	135	0	714	787	0
17:00	0	0	0	0	0	0	0	0	0	0	0	18	4	0	22	0	188	41	0	229	251	0
17:15	0	0	0	0	0	0	0	0	0	0	0	11	1	0	12	0	164	26	0	190	202	0
17:30	0	0	0	0	0	0	0	0	0	0	0	12	1	0	13	0	171	23	0	194	207	0
17:45	0	0	0	0	0	0	0	0	0	0	0	10	2	0	12	1	159	33	0	193	205	0
Total	0	0	0	0	0	0	0	0	0	0	0	51	8	0	59	1	682	123	0	806	865	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	112	20	0	132	4	1258	258	0	1520	1652	0
Apprch %	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	84.8%	15.2%	0.0%		0.3%	82.8%	17.0%	0.0%			
Total %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	6.8%	1.2%	0.0%	8.0%	0.2%	76.2%	15.6%	0.0%	92.0%	100.0%	

ALL TRAFFIC DATA

City of Corte Madera
All Vehicles on Unshifted
Peds & Bikes on Bank 1
Nothing on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 15-7802-005B Paradise Drive-Tamalpais Drive.ppd
Date : 10/15/2015

Unshifted Count = All Vehicles

PM PEAK HOUR	Paradise Drive Southbound					Tamalpais Drive Westbound					Paradise Drive Northbound					Tamalpais Drive Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 17:00 to 18:00																					
Peak Hour For Entire Intersection Begins at 17:00																					
17:00	0	0	0	0	0	0	0	0	0	0	0	18	4	0	22	0	188	41	0	229	251
17:15	0	0	0	0	0	0	0	0	0	0	0	11	1	0	12	0	164	26	0	190	202
17:30	0	0	0	0	0	0	0	0	0	0	0	12	1	0	13	0	171	23	0	194	207
17:45	0	0	0	0	0	0	0	0	0	0	0	10	2	0	12	1	159	33	0	193	205
Total Volume	0	0	0	0	0	0	0	0	0	0	0	51	8	0	59	1	682	123	0	806	865
% App Total	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	86.4%	13.6%	0.0%		0.1%	84.6%	15.3%	0.0%		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.708	.500	.000	.670	.250	.907	.750	.000	.880	.862

ALL TRAFFIC DATA

City of Corte Madera
All Vehicles on Unshifted
Peds & Bikes on Bank 1
Nothing on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 15-7802-006 US 101 NB Ramps-Tamalpais Drive.ppd
Date : 10/15/2015

Unshifted Count = All Vehicles

	US 101 NB Ramps Southbound					Tamalpais Drive Westbound					US 101 NB Ramps Northbound					Tamalpais Drive Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturn Total
16:00	0	0	0	0	0	0	154	178	0	332	150	0	85	0	235	0	203	230	0	433	1000	0
16:15	0	0	0	0	0	0	175	160	0	335	146	0	97	0	243	0	228	212	0	440	1018	0
16:30	0	0	0	0	0	0	159	181	0	340	132	0	107	0	239	0	230	200	0	430	1009	0
16:45	0	0	0	0	0	0	193	189	0	382	131	0	101	0	232	0	226	190	0	416	1030	0
Total	0	0	0	0	0	0	681	708	0	1389	559	0	390	0	949	0	887	832	0	1719	4057	0
17:00	0	0	0	0	0	0	207	199	0	406	160	0	107	0	267	0	224	201	0	425	1098	0
17:15	0	0	0	0	0	0	182	183	0	365	155	0	96	0	251	0	210	203	0	413	1029	0
17:30	0	0	0	0	0	0	167	139	0	306	166	0	104	0	270	0	213	171	0	384	960	0
17:45	0	0	0	0	0	0	179	157	0	336	117	0	84	0	201	0	212	139	0	351	888	0
Total	0	0	0	0	0	0	735	678	0	1413	598	0	391	0	989	0	859	714	0	1573	3975	0
Grand Total	0	0	0	0	0	0	1416	1386	0	2802	1157	0	781	0	1938	0	1746	1546	0	3292	8032	0
Apprch %	0.0%	0.0%	0.0%	0.0%		0.0%	50.5%	49.5%	0.0%		59.7%	0.0%	40.3%	0.0%		0.0%	53.0%	47.0%	0.0%			
Total %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	17.6%	17.3%	0.0%	34.9%	14.4%	0.0%	9.7%	0.0%	24.1%	0.0%	21.7%	19.2%	0.0%	41.0%	100.0%	

ALL TRAFFIC DATA

City of Corte Madera
All Vehicles on Unshifted
Peds & Bikes on Bank 1
Nothing on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 15-7802-006 US 101 NB Ramps-Tamalpais Drive.ppd
Date : 10/15/2015

Unshifted Count = All Vehicles

PM PEAK HOUR	US 101 NB Ramps Southbound					Tamalpais Drive Westbound					US 101 NB Ramps Northbound					Tamalpais Drive Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:30 to 17:30																					
Peak Hour For Entire Intersection Begins at 16:30																					
16:30	0	0	0	0	0	0	159	181	0	340	132	0	107	0	239	0	230	200	0	430	1009
16:45	0	0	0	0	0	0	193	189	0	382	131	0	101	0	232	0	226	190	0	416	1030
17:00	0	0	0	0	0	0	207	199	0	406	160	0	107	0	267	0	224	201	0	425	1098
17:15	0	0	0	0	0	0	182	183	0	365	155	0	96	0	251	0	210	203	0	413	1029
Total Volume	0	0	0	0	0	0	741	752	0	1493	578	0	411	0	989	0	890	794	0	1684	4166
% App Total	0.0%	0.0%	0.0%	0.0%		0.0%	49.6%	50.4%	0.0%		58.4%	0.0%	41.6%	0.0%		0.0%	52.9%	47.1%	0.0%		
PHF	.000	.000	.000	.000	.000	.000	.895	.945	.000	.919	.903	.000	.960	.000	.926	.000	.967	.978	.000	.979	.949

ALL TRAFFIC DATA

City of Corte Madera
All Vehicles on Unshifted
Peds & Bikes on Bank 1
Nothing on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 15-7802-007 US 101 SB Ramps-Tamalpais Drive.ppd
Date : 10/15/2015

Unshifted Count = All Vehicles

	US 101 SB Ramps Southbound					Tamalpais Drive Westbound					US 101 SB Ramps Northbound					Tamalpais Drive Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturn Total
16:00	168	0	77	0	245	0	209	99	0	308	0	0	0	0	0	0	269	90	0	359	912	0
16:15	164	0	63	0	227	0	229	93	0	322	0	0	0	0	0	0	270	101	0	371	920	0
16:30	190	0	90	0	280	0	207	82	0	289	0	0	0	0	0	0	250	96	0	346	915	0
16:45	182	0	70	0	252	0	225	100	0	325	0	0	0	0	0	0	238	96	0	334	911	0
Total	704	0	300	0	1004	0	870	374	0	1244	0	0	0	0	0	0	1027	383	0	1410	3658	0
17:00	169	0	87	0	256	0	253	103	0	356	0	0	0	0	0	0	255	97	0	352	964	0
17:15	163	0	86	0	249	0	244	98	0	342	0	0	0	0	0	0	246	93	0	339	930	0
17:30	167	0	76	0	243	0	234	96	0	330	0	0	0	0	0	0	221	81	0	302	875	0
17:45	160	0	70	0	230	0	203	95	0	298	0	0	0	0	0	0	187	87	0	274	802	0
Total	659	0	319	0	978	0	934	392	0	1326	0	0	0	0	0	0	909	358	0	1267	3571	0
Grand Total	1363	0	619	0	1982	0	1804	766	0	2570	0	0	0	0	0	0	1936	741	0	2677	7229	0
Apprch %	68.8%	0.0%	31.2%	0.0%		0.0%	70.2%	29.8%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	72.3%	27.7%	0.0%			
Total %	18.9%	0.0%	8.6%	0.0%	27.4%	0.0%	25.0%	10.6%	0.0%	35.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	26.8%	10.3%	0.0%	37.0%	100.0%	

ALL TRAFFIC DATA

City of Corte Madera
All Vehicles on Unshifted
Peds & Bikes on Bank 1
Nothing on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 15-7802-007 US 101 SB Ramps-Tamalpais Drive.ppd
Date : 10/15/2015

Unshifted Count = All Vehicles

PM PEAK HOUR	US 101 SB Ramps Southbound					Tamalpais Drive Westbound					US 101 SB Ramps Northbound					Tamalpais Drive Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:30 to 17:30																					
Peak Hour For Entire Intersection Begins at 16:30																					
16:30	190	0	90	0	280	0	207	82	0	289	0	0	0	0	0	0	250	96	0	346	915
16:45	182	0	70	0	252	0	225	100	0	325	0	0	0	0	0	0	238	96	0	334	911
17:00	169	0	87	0	256	0	253	103	0	356	0	0	0	0	0	0	255	97	0	352	964
17:15	163	0	86	0	249	0	244	98	0	342	0	0	0	0	0	0	246	93	0	339	930
Total Volume	704	0	333	0	1037	0	929	383	0	1312	0	0	0	0	0	0	989	382	0	1371	3720
% App Total	67.9%	0.0%	32.1%	0.0%		0.0%	70.8%	29.2%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	72.1%	27.9%	0.0%		
PHF	.926	.000	.925	.000	.926	.000	.918	.930	.000	.921	.000	.000	.000	.000	.000	.000	.970	.985	.000	.974	.965

ALL TRAFFIC DATA

City of Corte Madera
All Vehicles on Unshifted
Peds & Bikes on Bank 1
Nothing on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 15-7802-008 Town Center Entrance-Tamalpais Drive.ppd
Date : 10/15/2015

Unshifted Count = All Vehicles

	Town Center Entrance Southbound					Tamalpais Drive Westbound					Northbound					Tamalpais Drive Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturn Total
16:00	67	0	6	0	73	0	232	55	0	287	0	0	0	0	0	0	304	0	0	304	664	0
16:15	68	0	10	0	78	0	231	54	0	285	0	0	0	0	0	0	284	0	0	284	647	0
16:30	81	0	9	0	90	0	243	52	0	295	0	0	0	0	0	0	273	0	0	273	658	0
16:45	69	0	3	0	72	0	240	58	0	298	0	0	0	0	0	0	265	0	0	265	635	0
Total	285	0	28	0	313	0	946	219	0	1165	0	0	0	0	0	0	1126	0	0	1126	2604	0
17:00	96	0	7	0	103	0	265	71	0	336	0	0	0	0	0	0	260	0	0	260	699	0
17:15	73	0	11	0	84	0	261	68	0	329	0	0	0	0	0	0	264	0	0	264	677	0
17:30	66	0	11	0	77	0	261	51	0	312	0	0	0	0	0	0	233	0	0	233	622	0
17:45	81	0	8	0	89	0	219	55	0	274	0	0	0	0	0	0	190	0	0	190	553	0
Total	316	0	37	0	353	0	1006	245	0	1251	0	0	0	0	0	0	947	0	0	947	2551	0
Grand Total	601	0	65	0	666	0	1952	464	0	2416	0	0	0	0	0	0	2073	0	0	2073	5155	0
Apprch %	90.2%	0.0%	9.8%	0.0%		0.0%	80.8%	19.2%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	100.0%	0.0%	0.0%			
Total %	11.7%	0.0%	1.3%	0.0%	12.9%	0.0%	37.9%	9.0%	0.0%	46.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	40.2%	0.0%	0.0%	40.2%	100.0%	

ALL TRAFFIC DATA

City of Corte Madera
All Vehicles on Unshifted
Peds & Bikes on Bank 1
Nothing on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 15-7802-008 Town Center Entrance-Tamalpais Drive.ppd
Date : 10/15/2015

Unshifted Count = All Vehicles

PM PEAK HOUR	Town Center Entrance Southbound					Tamalpais Drive Westbound					Northbound					Tamalpais Drive Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:30 to 17:30																					
Peak Hour For Entire Intersection Begins at 16:30																					
16:30	81	0	9	0	90	0	243	52	0	295	0	0	0	0	0	0	273	0	0	273	658
16:45	69	0	3	0	72	0	240	58	0	298	0	0	0	0	0	0	265	0	0	265	635
17:00	96	0	7	0	103	0	265	71	0	336	0	0	0	0	0	0	260	0	0	260	699
17:15	73	0	11	0	84	0	261	68	0	329	0	0	0	0	0	0	264	0	0	264	677
Total Volume	319	0	30	0	349	0	1009	249	0	1258	0	0	0	0	0	0	1062	0	0	1062	2669
% App Total	91.4%	0.0%	8.6%	0.0%		0.0%	80.2%	19.8%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	100.0%	0.0%	0.0%		
PHF	.831	.000	.682	.000	.847	.000	.952	.877	.000	.936	.000	.000	.000	.000	.000	.000	.973	.000	.000	.973	.955

ALL TRAFFIC DATA

City of Corte Madera
All Vehicles on Unshifted
Peds & Bikes on Bank 1
Nothing on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 15-7802-009 Madera Boulevard-Tamalpais Drive.ppd
Date : 10/15/2015

Unshifted Count = All Vehicles

	Madera Boulevard Southbound					Tamalpais Drive Westbound					Sanford Street Northbound					Tamalpais Drive Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturn Total
16:00	60	13	36	0	109	40	130	72	0	242	9	21	46	0	76	46	197	13	0	256	683	0
16:15	52	33	44	0	129	45	112	76	1	234	7	14	35	0	56	42	197	11	0	250	669	1
16:30	41	15	39	0	95	46	144	67	0	257	11	14	59	0	84	51	170	13	0	234	670	0
16:45	53	16	48	0	117	26	134	73	2	235	12	21	51	0	84	37	156	12	0	205	641	2
Total	206	77	167	0	450	157	520	288	3	968	39	70	191	0	300	176	720	49	0	945	2663	3
17:00	54	18	47	1	120	56	146	62	2	266	9	17	36	0	62	54	169	11	0	234	682	3
17:15	66	14	38	0	118	40	151	77	0	268	13	19	57	0	89	42	143	10	0	195	670	0
17:30	53	16	37	0	106	53	140	82	0	275	7	9	36	0	52	54	139	11	0	204	637	0
17:45	41	16	34	2	93	30	127	69	1	227	15	19	31	0	65	39	119	9	0	167	552	3
Total	214	64	156	3	437	179	564	290	3	1036	44	64	160	0	268	189	570	41	0	800	2541	6
Grand Total	420	141	323	3	887	336	1084	578	6	2004	83	134	351	0	568	365	1290	90	0	1745	5204	9
Apprch %	47.4%	15.9%	36.4%	0.3%		16.8%	54.1%	28.8%	0.3%		14.6%	23.6%	61.8%	0.0%		20.9%	73.9%	5.2%	0.0%			
Total %	8.1%	2.7%	6.2%	0.1%	17.0%	6.5%	20.8%	11.1%	0.1%	38.5%	1.6%	2.6%	6.7%	0.0%	10.9%	7.0%	24.8%	1.7%	0.0%	33.5%	100.0%	

ALL TRAFFIC DATA

City of Corte Madera
All Vehicles on Unshifted
Peds & Bikes on Bank 1
Nothing on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 15-7802-009 Madera Boulevard-Tamalpais Drive.ppd
Date : 10/15/2015

Unshifted Count = All Vehicles

PM PEAK HOUR	Madera Boulevard Southbound					Tamalpais Drive Westbound					Sanford Street Northbound					Tamalpais Drive Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:00 to 17:00																					
Peak Hour For Entire Intersection Begins at 16:00																					
16:00	60	13	36	0	109	40	130	72	0	242	9	21	46	0	76	46	197	13	0	256	683
16:15	52	33	44	0	129	45	112	76	1	234	7	14	35	0	56	42	197	11	0	250	669
16:30	41	15	39	0	95	46	144	67	0	257	11	14	59	0	84	51	170	13	0	234	670
16:45	53	16	48	0	117	26	134	73	2	235	12	21	51	0	84	37	156	12	0	205	641
Total Volume	206	77	167	0	450	157	520	288	3	968	39	70	191	0	300	176	720	49	0	945	2663
% App Total	45.8%	17.1%	37.1%	0.0%		16.2%	53.7%	29.8%	0.3%		13.0%	23.3%	63.7%	0.0%		18.6%	76.2%	5.2%	0.0%		
PHF	.858	.583	.870	.000	.872	.853	.903	.947	.375	.942	.813	.833	.809	.000	.893	.863	.914	.942	.000	.923	.975

ALL TRAFFIC DATA

City of Corte Madera
All Vehicles on Unshifted
Peds & Bikes on Bank 1
Nothing on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 15-7802-010 North Village Entrance-Redwood Highway.ppc
Date : 10/15/2015

Unshifted Count = All Vehicles

	North Village Entrance Southbound					Redwood Highway Westbound					Northbound					Redwood Highway Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturn Total
14:00	0	0	0	0	0	2	70	0	0	72	5	0	8	0	13	0	29	10	0	39	124	0
14:15	0	0	0	0	0	3	98	0	0	101	10	0	2	0	12	0	31	7	0	38	151	0
14:30	0	0	0	0	0	1	80	0	1	82	7	0	3	0	10	0	44	10	1	55	147	2
14:45	0	0	0	0	0	4	77	0	0	81	12	0	3	0	15	0	49	8	0	57	153	0
Total	0	0	0	0	0	10	325	0	1	336	34	0	16	0	50	0	153	35	1	189	575	2
15:00	0	0	0	0	0	1	109	0	0	110	9	0	5	0	14	0	31	12	0	43	167	0
15:15	0	0	0	0	0	1	108	0	0	109	6	0	8	0	14	0	34	5	0	39	162	0
15:30	0	0	0	0	0	3	84	0	0	87	12	0	2	0	14	0	35	5	0	40	141	0
15:45	0	0	0	0	0	3	83	0	0	86	9	0	6	0	15	0	33	7	1	41	142	1
Total	0	0	0	0	0	8	384	0	0	392	36	0	21	0	57	0	133	29	1	163	612	1
Grand Total	0	0	0	0	0	18	709	0	1	728	70	0	37	0	107	0	286	64	2	352	1187	3
Apprch %	0.0%	0.0%	0.0%	0.0%		2.5%	97.4%	0.0%	0.1%		65.4%	0.0%	34.6%	0.0%		0.0%	81.3%	18.2%	0.6%			
Total %	0.0%	0.0%	0.0%	0.0%	0.0%	1.5%	59.7%	0.0%	0.1%	61.3%	5.9%	0.0%	3.1%	0.0%	9.0%	0.0%	24.1%	5.4%	0.2%	29.7%	100.0%	

ALL TRAFFIC DATA

City of Corte Madera
All Vehicles on Unshifted
Peds & Bikes on Bank 1
Nothing on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 15-7802-010 North Village Entrance-Redwood Highway.ppc
Date : 10/15/2015

Unshifted Count = All Vehicles

PM PEAK HOUR	North Village Entrance Southbound					Redwood Highway Westbound					Northbound					Redwood Highway Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 14:30 to 15:30																					
Peak Hour For Entire Intersection Begins at 14:30																					
14:30	0	0	0	0	0	1	80	0	1	82	7	0	3	0	10	0	44	10	1	55	147
14:45	0	0	0	0	0	4	77	0	0	81	12	0	3	0	15	0	49	8	0	57	153
15:00	0	0	0	0	0	1	109	0	0	110	9	0	5	0	14	0	31	12	0	43	167
15:15	0	0	0	0	0	1	108	0	0	109	6	0	8	0	14	0	34	5	0	39	162
Total Volume	0	0	0	0	0	7	374	0	1	382	34	0	19	0	53	0	158	35	1	194	629
% App Total	0.0%	0.0%	0.0%	0.0%		1.8%	97.9%	0.0%	0.3%		64.2%	0.0%	35.8%	0.0%		0.0%	81.4%	18.0%	0.5%		
PHF	.000	.000	.000	.000	.000	.438	.858	.000	.250	.868	.708	.000	.594	.000	.883	.000	.806	.729	.250	.851	.942

National Data and Surveying Services

City of Corte Madera
All Vehicles & Uturns On Unshifted
Nothing On Bank 1
Nothing On Bank 2

(323) 782-0090
info@ndsdata.com

File Name : 17-7141-001 Redwood Hwy & Industrial Way
Date : 2/23/2017

Unshifted Count = All Vehicles & Uturns

	Redwood Hwy Southbound					Industrial Way Westbound					Redwood Hwy Northbound					Industrial Way Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
16:00	0	11	22	0	33	6	15	2	0	23	142	30	21	0	193	0	0	0	0	0	249	0
16:15	1	4	17	0	22	13	12	1	0	26	121	16	13	0	150	0	0	0	0	0	198	0
16:30	0	8	8	0	16	7	15	0	0	22	126	25	9	0	160	0	0	0	0	0	198	0
16:45	0	10	9	0	19	11	5	0	0	16	103	17	12	0	132	0	0	0	0	0	167	0
Total	1	33	56	0	90	37	47	3	0	87	492	88	55	0	635	0	0	0	0	0	812	0
17:00	1	7	22	0	30	6	12	2	0	20	136	29	12	0	177	0	0	0	0	0	227	0
17:15	0	4	13	0	17	6	15	1	0	22	102	12	7	0	121	0	0	0	0	0	160	0
17:30	0	5	21	0	26	5	3	1	0	9	129	22	4	0	155	0	0	0	0	0	190	0
17:45	0	12	12	0	24	7	4	2	0	13	107	22	10	0	139	0	0	0	0	0	176	0
Total	1	28	68	0	97	24	34	6	0	64	474	85	33	0	592	0	0	0	0	0	753	0
Grand Total	2	61	124	0	187	61	81	9	0	151	966	173	88	0	1227	0	0	0	0	0	1565	0
Apprch %	1.1%	32.6%	66.3%	0.0%		40.4%	53.6%	6.0%	0.0%		78.7%	14.1%	7.2%	0.0%		0.0%	0.0%	0.0%	0.0%			
Total %	0.1%	3.9%	7.9%	0.0%	11.9%	3.9%	5.2%	0.6%	0.0%	9.6%	61.7%	11.1%	5.6%	0.0%	78.4%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	

PM PEAK HOUR	Redwood Hwy Southbound					Industrial Way Westbound					Redwood Hwy Northbound					Industrial Way Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:00 to 17:00																					
Peak Hour For Entire Intersection Begins at 16:00																					
16:00	0	11	22	0	33	6	15	2	0	23	142	30	21	0	193	0	0	0	0	0	249
16:15	1	4	17	0	22	13	12	1	0	26	121	16	13	0	150	0	0	0	0	0	198
16:30	0	8	8	0	16	7	15	0	0	22	126	25	9	0	160	0	0	0	0	0	198
16:45	0	10	9	0	19	11	5	0	0	16	103	17	12	0	132	0	0	0	0	0	167
Total Volume	1	33	56	0	90	37	47	3	0	87	492	88	55	0	635	0	0	0	0	0	812
% App Total	1.1%	36.7%	62.2%	0.0%		42.5%	54.0%	3.4%	0.0%		77.5%	13.9%	8.7%	0.0%		0.0%	0.0%	0.0%	0.0%		
PHF	.250	.750	.636	.000	.682	.712	.783	.375	.000	.837	.866	.733	.655	.000	.823	.000	.000	.000	.000	.000	.815

ALL TRAFFIC DATA

City of Corte Madera
All Vehicles & Uturns On Unshifted
Nothing On Bank 1
Nothing On Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 16-7106-001 Tamal Vista Boulevard & Fifer Avenue
Date : 2/25/2016

Unshifted Count = All Vehicles & Uturns

	Tamal Vista Boulevard Southbound					Fifer Avenue Westbound					Tamal Vista Boulevard Northbound					Fifer Avenue Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
14:00	5	7	0	0	12	98	46	0	0	144	76	6	20	0	102	0	31	66	0	97	355	0
14:15	5	8	0	0	13	84	95	3	0	182	78	2	23	0	103	0	62	72	0	134	432	0
14:30	7	7	2	0	16	80	71	1	0	152	59	5	22	0	86	1	103	118	0	222	476	0
14:45	6	8	1	0	15	75	60	0	0	135	64	4	15	0	83	0	73	112	0	185	418	0
Total	23	30	3	0	56	337	272	4	0	613	277	17	80	0	374	1	269	368	0	638	1681	0
15:00	3	5	2	0	10	73	58	0	0	131	86	4	25	0	115	2	45	55	0	102	358	0
15:15	3	4	4	0	11	65	65	2	0	132	84	7	16	0	107	0	49	92	0	141	391	0
15:30	6	8	0	0	14	76	49	0	0	125	69	4	16	0	89	2	79	104	0	185	413	0
15:45	4	3	0	0	7	78	66	1	0	145	85	5	21	0	111	0	59	67	0	126	389	0
Total	16	20	6	0	42	292	238	3	0	533	324	20	78	0	422	4	232	318	0	554	1551	0
16:00	7	0	3	0	10	77	65	1	0	143	75	8	17	0	100	0	57	80	0	137	390	0
16:15	7	7	4	0	18	83	65	3	0	151	89	7	14	0	110	1	41	70	0	112	391	0
16:30	5	2	1	0	8	85	48	1	0	134	101	6	16	0	123	1	48	82	0	131	396	0
16:45	8	3	3	0	14	67	57	3	0	127	88	8	24	0	120	0	62	58	0	120	381	0
Total	27	12	11	0	50	312	235	8	0	555	353	29	71	0	453	2	208	290	0	500	1558	0
17:00	7	10	2	0	19	50	74	0	0	124	103	3	18	0	124	1	35	61	0	97	364	0
17:15	8	5	3	0	16	42	66	1	0	109	134	7	22	0	163	0	47	57	0	104	392	0
17:30	8	9	2	0	19	66	83	1	0	150	115	7	19	0	141	0	52	64	0	116	426	0
17:45	6	3	3	0	12	52	75	1	0	128	115	7	18	0	140	0	47	42	0	89	369	0
Total	29	27	10	0	66	210	298	3	0	511	467	24	77	0	568	1	181	224	0	406	1551	0
Grand Total	95	89	30	0	214	1151	1043	18	0	2212	1421	90	306	0	1817	8	890	1200	0	2098	6341	0
Apprch %	44.4%	41.6%	14.0%	0.0%		52.0%	47.2%	0.8%	0.0%		78.2%	5.0%	16.8%	0.0%		0.4%	42.4%	57.2%	0.0%			
Total %	1.5%	1.4%	0.5%	0.0%	3.4%	18.2%	16.4%	0.3%	0.0%	34.9%	22.4%	1.4%	4.8%	0.0%	28.7%	0.1%	14.0%	18.9%	0.0%	33.1%	100.0%	

NOON PEAK	Tamal Vista Boulevard Southbound					Fifer Avenue Westbound					Tamal Vista Boulevard Northbound					Fifer Avenue Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 14:15 to 15:15																					
Peak Hour For Entire Intersection Begins at 14:15																					
14:15	5	8	0	0	13	84	95	3	0	182	78	2	23	0	103	0	62	72	0	134	432
14:30	7	7	2	0	16	80	71	1	0	152	59	5	22	0	86	1	103	118	0	222	476
14:45	6	8	1	0	15	75	60	0	0	135	64	4	15	0	83	0	73	112	0	185	418
15:00	3	5	2	0	10	73	58	0	0	131	86	4	25	0	115	2	45	55	0	102	358
Total Volume	21	28	5	0	54	312	284	4	0	600	287	15	85	0	387	3	283	357	0	643	1684
% App Total	38.9%	51.9%	9.3%	0.0%		52.0%	47.3%	0.7%	0.0%		74.2%	3.9%	22.0%	0.0%		0.5%	44.0%	55.5%	0.0%		
PHF	.750	.875	.625	.000	.844	.929	.747	.333	.000	.824	.834	.750	.850	.000	.841	.375	.687	.756	.000	.724	.884

PM PEAK HOUR	Tamal Vista Boulevard Southbound					Fifer Avenue Westbound					Tamal Vista Boulevard Northbound					Fifer Avenue Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:45 to 17:45																					
Peak Hour For Entire Intersection Begins at 16:45																					
16:45	8	3	3	0	14	67	57	3	0	127	88	8	24	0	120	0	62	58	0	120	381
17:00	7	10	2	0	19	50	74	0	0	124	103	3	18	0	124	1	35	61	0	97	364
17:15	8	5	3	0	16	42	66	1	0	109	134	7	22	0	163	0	47	57	0	104	392
17:30	8	9	2	0	19	66	83	1	0	150	115	7	19	0	141	0	52	64	0	116	426
Total Volume	31	27	10	0	68	225	280	5	0	510	440	25	83	0	548	1	196	240	0	437	1563
% App Total	45.6%	39.7%	14.7%	0.0%		44.1%	54.9%	1.0%	0.0%		80.3%	4.6%	15.1%	0.0%		0.2%	44.9%	54.9%	0.0%		
PHF	.969	.675	.833	.000	.895	.840	.843	.417	.000	.850	.821	.781	.865	.000	.840	.250	.790	.938	.000	.910	.917

ALL TRAFFIC DATA

City of Corte Madera
All Vehicles & Uturns On Unshifted
Nothing On Bank 1
Nothing On Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 16-7106-002 Tamal Vista Boulevard & Wornum Drive
Date : 2/25/2016

Unshifted Count = All Vehicles & Uturns

	Tamal Vista Boulevard Southbound					Wornum Drive Westbound					Tamal Vista Boulevard Northbound					Wornum Drive Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
14:00	134	52	0	0	186	32	0	55	0	87	0	62	59	0	121	0	0	0	0	0	394	0
14:15	96	75	0	0	171	22	0	70	0	92	0	63	65	0	128	0	0	0	0	0	391	0
14:30	142	80	0	0	222	33	0	53	0	86	0	38	63	0	101	0	0	0	0	0	409	0
14:45	126	70	0	0	196	29	0	56	0	85	0	46	67	0	113	0	0	0	0	0	394	0
Total	498	277	0	0	775	116	0	234	0	350	0	209	254	0	463	0	0	0	0	0	1588	0
15:00	131	57	0	0	188	35	0	50	0	85	0	71	68	0	139	0	0	0	0	0	412	0
15:15	107	62	0	0	169	30	0	57	0	87	0	78	58	0	136	0	0	0	0	0	392	0
15:30	143	66	0	0	209	19	0	34	0	53	0	71	51	0	122	0	0	0	0	0	384	0
15:45	118	59	0	0	177	13	0	41	0	54	0	75	42	0	117	0	0	0	0	0	348	0
Total	499	244	0	0	743	97	0	182	0	279	0	295	219	0	514	0	0	0	0	0	1536	0
16:00	111	62	0	0	173	22	0	40	0	62	0	66	46	0	112	0	0	0	0	0	347	0
16:15	106	62	0	0	168	18	0	45	0	63	0	86	43	0	129	0	0	0	0	0	360	0
16:30	117	102	0	0	219	26	0	45	0	71	0	74	44	0	118	0	0	0	0	0	408	0
16:45	80	79	0	0	159	18	0	42	0	60	0	68	35	0	103	0	0	0	0	0	322	0
Total	414	305	0	0	719	84	0	172	0	256	0	294	168	0	462	0	0	0	0	0	1437	0
17:00	75	73	0	1	149	17	0	46	0	63	0	81	47	0	128	0	0	0	0	0	340	1
17:15	72	55	0	0	127	18	0	49	0	67	0	113	37	0	150	0	0	0	0	0	344	0
17:30	80	84	0	0	164	17	0	56	0	73	0	77	31	0	108	0	0	0	0	0	345	0
17:45	57	56	0	0	113	20	0	64	0	84	0	84	41	0	125	0	0	0	0	0	322	0
Total	284	268	0	1	553	72	0	215	0	287	0	355	156	0	511	0	0	0	0	0	1351	1
Grand Total	1695	1094	0	1	2790	369	0	803	0	1172	0	1153	797	0	1950	0	0	0	0	0	5912	1
Apprch %	60.8%	39.2%	0.0%	0.0%		31.5%	0.0%	68.5%	0.0%		0.0%	59.1%	40.9%	0.0%		0.0%	0.0%	0.0%	0.0%			
Total %	28.7%	18.5%	0.0%	0.0%	47.2%	6.2%	0.0%	13.6%	0.0%	19.8%	0.0%	19.5%	13.5%	0.0%	33.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	

NOON PEAK	Tamal Vista Boulevard Southbound					Wornum Drive Westbound					Tamal Vista Boulevard Northbound					Wornum Drive Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 14:30 to 15:30																					
Peak Hour For Entire Intersection Begins at 14:30																					
14:30	142	80	0	0	222	33	0	53	0	86	0	38	63	0	101	0	0	0	0	0	409
14:45	126	70	0	0	196	29	0	56	0	85	0	46	67	0	113	0	0	0	0	0	394
15:00	131	57	0	0	188	35	0	50	0	85	0	71	68	0	139	0	0	0	0	0	412
15:15	107	62	0	0	169	30	0	57	0	87	0	78	58	0	136	0	0	0	0	0	392
Total Volume	506	269	0	0	775	127	0	216	0	343	0	233	256	0	489	0	0	0	0	0	1607
% App Total	65.3%	34.7%	0.0%	0.0%		37.0%	0.0%	63.0%	0.0%		0.0%	47.6%	52.4%	0.0%		0.0%	0.0%	0.0%	0.0%		
PHF	.891	.841	.000	.000	.873	.907	.000	.947	.000	.986	.000	.747	.941	.000	.879	.000	.000	.000	.000	.000	.975

PM PEAK HOUR	Tamal Vista Boulevard Southbound					Wornum Drive Westbound					Tamal Vista Boulevard Northbound					Wornum Drive Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:00 to 17:00																					
Peak Hour For Entire Intersection Begins at 16:00																					
16:00	111	62	0	0	173	22	0	40	0	62	0	66	46	0	112	0	0	0	0	0	347
16:15	106	62	0	0	168	18	0	45	0	63	0	86	43	0	129	0	0	0	0	0	360
16:30	117	102	0	0	219	26	0	45	0	71	0	74	44	0	118	0	0	0	0	0	408
16:45	80	79	0	0	159	18	0	42	0	60	0	68	35	0	103	0	0	0	0	0	322
Total Volume	414	305	0	0	719	84	0	172	0	256	0	294	168	0	462	0	0	0	0	0	1437
% App Total	57.6%	42.4%	0.0%	0.0%		32.8%	0.0%	67.2%	0.0%		0.0%	63.6%	36.4%	0.0%		0.0%	0.0%	0.0%	0.0%		
PHF	.885	.748	.000	.000	.821	.808	.000	.956	.000	.901	.000	.855	.913	.000	.895	.000	.000	.000	.000	.000	.881

ALL TRAFFIC DATA

City of Corte Madera
All Vehicles & Uturns On Unshifted
Nothing On Bank 1
Nothing On Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 16-7106-003 Nellen Avenue & Wornum Drive
Date : 2/25/2016

Unshifted Count = All Vehicles & Uturns

	Nellen Avenue Southbound					Wornum Drive Westbound					Nellen Avenue Northbound					Wornum Drive Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
14:00	1	0	1	0	2	0	84	0	1	85	0	0	0	0	0	2	188	0	0	190	277	1
14:15	5	0	3	0	8	0	89	0	0	89	0	0	0	0	0	1	159	0	0	160	257	0
14:30	3	0	3	0	6	0	82	0	0	82	0	0	0	0	0	2	204	0	0	206	294	0
14:45	3	0	3	0	6	0	81	0	1	82	0	0	0	0	0	2	184	0	0	186	274	1
Total	12	0	10	0	22	0	336	0	2	338	0	0	0	0	0	7	735	0	0	742	1102	2
15:00	2	0	2	0	4	0	87	1	0	88	0	0	0	0	0	3	204	0	0	207	299	0
15:15	4	0	2	0	6	0	80	0	0	80	0	0	0	0	0	1	166	0	0	167	253	0
15:30	14	0	0	0	14	0	55	1	1	57	0	0	0	0	0	0	193	0	0	193	264	1
15:45	2	0	3	0	5	0	52	1	0	53	0	0	0	0	0	2	160	0	0	162	220	0
Total	22	0	7	0	29	0	274	3	1	278	0	0	0	0	0	6	723	0	0	729	1036	1
16:00	2	0	2	0	4	0	60	1	0	61	0	0	0	0	0	3	155	0	0	158	223	0
16:15	2	0	3	0	5	0	61	1	0	62	0	0	0	0	0	0	148	0	1	149	216	1
16:30	8	0	3	0	11	0	68	0	0	68	0	0	0	0	0	1	169	0	0	170	249	0
16:45	2	0	0	0	2	0	62	1	0	63	0	0	0	0	0	2	108	0	0	110	175	0
Total	14	0	8	0	22	0	251	3	0	254	0	0	0	0	0	6	580	0	1	587	863	1
17:00	0	0	1	0	1	0	64	0	1	65	0	0	0	0	0	1	123	0	0	124	190	1
17:15	3	0	2	0	5	0	62	0	0	62	0	0	0	0	0	0	108	0	0	108	175	0
17:30	2	0	1	0	3	0	71	0	0	71	0	0	0	0	0	0	100	0	3	103	177	3
17:45	1	0	2	0	3	0	70	0	1	71	0	0	0	0	0	1	90	0	2	93	167	3
Total	6	0	6	0	12	0	267	0	2	269	0	0	0	0	0	2	421	0	5	428	709	7
Grand Total	54	0	31	0	85	0	1128	6	5	1139	0	0	0	0	0	21	2459	0	6	2486	3710	11
Apprch %	63.5%	0.0%	36.5%	0.0%		0.0%	99.0%	0.5%	0.4%		0.0%	0.0%	0.0%	0.0%		0.8%	98.9%	0.0%	0.2%			
Total %	1.5%	0.0%	0.8%	0.0%	2.3%	0.0%	30.4%	0.2%	0.1%	30.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.6%	66.3%	0.0%	0.2%	67.0%	100.0%	

NOON PEAK	Nellen Avenue Southbound					Wornum Drive Westbound					Nellen Avenue Northbound					Wornum Drive Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 14:15 to 15:15																					
Peak Hour For Entire Intersection Begins at 14:15																					
14:15	5	0	3	0	8	0	89	0	0	89	0	0	0	0	0	1	159	0	0	160	257
14:30	3	0	3	0	6	0	82	0	0	82	0	0	0	0	0	2	204	0	0	206	294
14:45	3	0	3	0	6	0	81	0	1	82	0	0	0	0	0	2	184	0	0	186	274
15:00	2	0	2	0	4	0	87	1	0	88	0	0	0	0	0	3	204	0	0	207	299
Total Volume	13	0	11	0	24	0	339	1	1	341	0	0	0	0	0	8	751	0	0	759	1124
% App Total	54.2%	0.0%	45.8%	0.0%		0.0%	99.4%	0.3%	0.3%		0.0%	0.0%	0.0%	0.0%		1.1%	98.9%	0.0%	0.0%		
PHF	.650	.000	.917	.000	.750	.000	.952	.250	.250	.958	.000	.000	.000	.000	.000	.667	.920	.000	.000	.917	.940

PM PEAK HOUR	Nellen Avenue Southbound					Wornum Drive Westbound					Nellen Avenue Northbound					Wornum Drive Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:00 to 17:00																					
Peak Hour For Entire Intersection Begins at 16:00																					
16:00	2	0	2	0	4	0	60	1	0	61	0	0	0	0	0	3	155	0	0	158	223
16:15	2	0	3	0	5	0	61	1	0	62	0	0	0	0	0	0	148	0	1	149	216
16:30	8	0	3	0	11	0	68	0	0	68	0	0	0	0	0	1	169	0	0	170	249
16:45	2	0	0	0	2	0	62	1	0	63	0	0	0	0	0	2	108	0	0	110	175
Total Volume	14	0	8	0	22	0	251	3	0	254	0	0	0	0	0	6	580	0	1	587	863
% App Total	63.6%	0.0%	36.4%	0.0%		0.0%	98.8%	1.2%	0.0%		0.0%	0.0%	0.0%	0.0%		1.0%	98.8%	0.0%	0.2%		
PHF	.438	.000	.667	.000	.500	.000	.923	.750	.000	.934	.000	.000	.000	.000	.000	.500	.858	.000	.250	.863	.866

ALL TRAFFIC DATA

City of Corte Madera
All Vehicles & Uturns On Unshifted
Nothing On Bank 1
Nothing On Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 15-7885-001 Redwood Highway & Southeast Village Entrance
Date : 11/7/2015

Unshifted Count = All Vehicles & Uturns

	Redwood Highway Southbound					Southeast Village Entrance Westbound					Redwood Highway Northbound					Southeast Village Entrance Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
13:00	0	83	4	0	87	0	0	0	0	0	134	137	0	4	275	16	0	109	0	125	487	4
13:15	0	88	5	0	93	0	0	0	0	0	134	128	0	8	270	7	0	125	0	132	495	8
13:30	0	79	3	0	82	0	0	0	0	0	136	117	0	5	258	11	0	124	0	135	475	5
13:45	0	92	5	0	97	0	0	0	0	0	156	128	0	6	290	11	0	123	1	135	522	7
Total	0	342	17	0	359	0	0	0	0	0	560	510	0	23	1093	45	0	481	1	527	1979	24
14:00	0	90	4	0	94	0	0	0	0	0	152	112	0	11	275	4	0	128	0	132	501	11
14:15	0	79	1	0	80	0	0	0	0	0	147	105	0	8	260	7	0	120	0	127	467	8
14:30	0	97	1	0	98	0	0	0	0	0	142	88	0	7	237	11	0	109	0	120	455	7
14:45	0	100	3	0	103	0	0	0	0	0	158	105	0	2	265	20	0	102	0	122	490	2
Total	0	366	9	0	375	0	0	0	0	0	599	410	0	28	1037	42	0	459	0	501	1913	28
Grand Total	0	708	26	0	734	0	0	0	0	0	1159	920	0	51	2130	87	0	940	1	1028	3892	52
Apprch %	0.0%	96.5%	3.5%	0.0%		0.0%	0.0%	0.0%	0.0%		54.4%	43.2%	0.0%	2.4%		8.5%	0.0%	91.4%	0.1%			
Total %	0.0%	18.2%	0.7%	0.0%	18.9%	0.0%	0.0%	0.0%	0.0%	0.0%	29.8%	23.6%	0.0%	1.3%	54.7%	2.2%	0.0%	24.2%	0.0%	26.4%	100.0%	

NOON PEAK	Redwood Highway Southbound					Southeast Village Entrance Westbound					Redwood Highway Northbound					Southeast Village Entrance Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 13:15 to 14:15																					
Peak Hour For Entire Intersection Begins at 13:15																					
13:15	0	88	5	0	93	0	0	0	0	0	134	128	0	8	270	7	0	125	0	132	495
13:30	0	79	3	0	82	0	0	0	0	0	136	117	0	5	258	11	0	124	0	135	475
13:45	0	92	5	0	97	0	0	0	0	0	156	128	0	6	290	11	0	123	1	135	522
14:00	0	90	4	0	94	0	0	0	0	0	152	112	0	11	275	4	0	128	0	132	501
Total Volume	0	349	17	0	366	0	0	0	0	0	578	485	0	30	1093	33	0	500	1	534	1993
% App Total	0.0%	95.4%	4.6%	0.0%		0.0%	0.0%	0.0%	0.0%		52.9%	44.4%	0.0%	2.7%		6.2%	0.0%	93.6%	0.2%		
PHF	.000	.948	.850	.000	.943	.000	.000	.000	.000	.000	.926	.947	.000	.682	.942	.750	.000	.977	.250	.989	.955

ALL TRAFFIC DATA

City of Corte Madera
All Vehicles & Uturns On Unshifted
Nothing On Bank 1
Nothing On Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 15-7885-002 Redwood Highway & East Village Entrance
Date : 11/7/2015

Unshifted Count = All Vehicles & Uturns

	Redwood Highway Southbound					East Village Entrance Westbound					Redwood Highway Northbound					East Village Entrance Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
13:00	0	45	6	0	51	0	0	0	0	0	65	83	0	4	152	18	0	40	0	58	261	4
13:15	0	43	6	0	49	0	0	0	0	0	72	63	0	1	136	9	0	47	0	56	241	1
13:30	0	28	1	0	29	0	0	0	0	0	66	61	0	0	127	10	0	55	0	65	221	0
13:45	0	56	2	0	58	0	0	0	0	0	70	70	0	0	140	7	0	39	0	46	244	0
Total	0	172	15	0	187	0	0	0	0	0	273	277	0	5	555	44	0	181	0	225	967	5
14:00	0	47	5	0	52	0	0	0	0	0	55	59	0	0	114	12	0	45	0	57	223	0
14:15	0	34	5	0	39	0	0	0	0	0	58	53	0	1	112	12	0	52	0	64	215	1
14:30	0	41	5	0	46	0	0	0	0	0	50	49	0	2	101	20	0	52	0	72	219	2
14:45	0	44	1	0	45	0	0	0	0	0	57	65	0	1	123	17	0	55	0	72	240	1
Total	0	166	16	0	182	0	0	0	0	0	220	226	0	4	450	61	0	204	0	265	897	4
Grand Total	0	338	31	0	369	0	0	0	0	0	493	503	0	9	1005	105	0	385	0	490	1864	9
Apprch %	0.0%	91.6%	8.4%	0.0%		0.0%	0.0%	0.0%	0.0%		49.1%	50.0%	0.0%	0.9%		21.4%	0.0%	78.6%	0.0%			
Total %	0.0%	18.1%	1.7%	0.0%	19.8%	0.0%	0.0%	0.0%	0.0%	0.0%	26.4%	27.0%	0.0%	0.5%	53.9%	5.6%	0.0%	20.7%	0.0%	26.3%	100.0%	

NOON PEAK	Redwood Highway Southbound					East Village Entrance Westbound					Redwood Highway Northbound					East Village Entrance Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 13:00 to 14:00																					
Peak Hour For Entire Intersection Begins at 13:00																					
13:00	0	45	6	0	51	0	0	0	0	0	65	83	0	4	152	18	0	40	0	58	261
13:15	0	43	6	0	49	0	0	0	0	0	72	63	0	1	136	9	0	47	0	56	241
13:30	0	28	1	0	29	0	0	0	0	0	66	61	0	0	127	10	0	55	0	65	221
13:45	0	56	2	0	58	0	0	0	0	0	70	70	0	0	140	7	0	39	0	46	244
Total Volume	0	172	15	0	187	0	0	0	0	0	273	277	0	5	555	44	0	181	0	225	967
% App Total	0.0%	92.0%	8.0%	0.0%		0.0%	0.0%	0.0%	0.0%		49.2%	49.9%	0.0%	0.9%		19.6%	0.0%	80.4%	0.0%		
PHF	.000	.768	.625	.000	.806	.000	.000	.000	.000	.000	.948	.834	.000	.313	.913	.611	.000	.823	.000	.865	.926

ALL TRAFFIC DATA

City of Corte Madera
All Vehicles & Uturns On Unshifted
Nothing On Bank 1
Nothing On Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 15-7885-003 Northeast Village Entrance & Redwood Highway
Date : 11/7/2015

Unshifted Count = All Vehicles & Uturns

	Northeast Village Entrance Southbound					Redwood Highway Westbound					Northeast Village Entrance Northbound					Redwood Highway Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
13:00	7	1	6	0	14	13	95	4	0	112	28	24	20	0	72	3	24	34	0	61	259	0
13:15	7	5	11	0	23	13	54	4	1	72	26	28	11	0	65	8	22	42	0	72	232	1
13:30	6	2	11	0	19	8	60	4	0	72	31	16	4	0	51	5	17	24	0	46	188	0
13:45	11	3	4	0	18	11	66	1	0	78	37	23	16	0	76	7	25	35	0	67	239	0
Total	31	11	32	0	74	45	275	13	1	334	122	91	51	0	264	23	88	135	0	246	918	1
14:00	7	6	7	0	20	10	55	4	0	69	25	21	15	0	61	1	27	26	0	54	204	0
14:15	8	5	9	0	22	7	68	2	0	77	23	20	13	0	56	4	14	30	1	49	204	1
14:30	7	1	9	0	17	10	63	2	0	75	20	27	16	0	63	0	18	31	0	49	204	0
14:45	7	0	12	0	19	10	73	1	0	84	31	6	14	1	52	3	18	36	0	57	212	1
Total	29	12	37	0	78	37	259	9	0	305	99	74	58	1	232	8	77	123	1	209	824	2
Grand Total	60	23	69	0	152	82	534	22	1	639	221	165	109	1	496	31	165	258	1	455	1742	3
Apprch %	39.5%	15.1%	45.4%	0.0%		12.8%	83.6%	3.4%	0.2%		44.6%	33.3%	22.0%	0.2%		6.8%	36.3%	56.7%	0.2%			
Total %	3.4%	1.3%	4.0%	0.0%	8.7%	4.7%	30.7%	1.3%	0.1%	36.7%	12.7%	9.5%	6.3%	0.1%	28.5%	1.8%	9.5%	14.8%	0.1%	26.1%	100.0%	

NOON PEAK	Northeast Village Entrance Southbound					Redwood Highway Westbound					Northeast Village Entrance Northbound					Redwood Highway Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 13:00 to 14:00																					
Peak Hour For Entire Intersection Begins at 13:00																					
13:00	7	1	6	0	14	13	95	4	0	112	28	24	20	0	72	3	24	34	0	61	259
13:15	7	5	11	0	23	13	54	4	1	72	26	28	11	0	65	8	22	42	0	72	232
13:30	6	2	11	0	19	8	60	4	0	72	31	16	4	0	51	5	17	24	0	46	188
13:45	11	3	4	0	18	11	66	1	0	78	37	23	16	0	76	7	25	35	0	67	239
Total Volume	31	11	32	0	74	45	275	13	1	334	122	91	51	0	264	23	88	135	0	246	918
% App Total	41.9%	14.9%	43.2%	0.0%		13.5%	82.3%	3.9%	0.3%		46.2%	34.5%	19.3%	0.0%		9.3%	35.8%	54.9%	0.0%		
PHF	.705	.550	.727	.000	.804	.865	.724	.813	.250	.746	.824	.813	.638	.000	.868	.719	.880	.804	.000	.854	.886

ALL TRAFFIC DATA

City of Corte Madera
All Vehicles & Uturns On Unshifted
Nothing On Bank 1
Nothing On Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 15-7885-004 North Village Entrance & Redwood Highway
Date : 11/7/2015

Unshifted Count = All Vehicles & Uturns

	North Village Entrance Southbound					Redwood Highway Westbound					North Village Entrance Northbound					Redwood Highway Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
13:00	0	0	0	0	0	14	113	0	0	127	7	0	9	0	16	0	55	15	0	70	213	0
13:15	0	0	0	0	0	3	86	0	1	90	5	0	6	0	11	0	62	12	0	74	175	1
13:30	0	0	0	0	0	8	95	0	0	103	6	0	9	0	15	0	37	12	0	49	167	0
13:45	0	0	0	0	0	12	92	0	1	105	7	0	9	0	16	0	61	13	0	74	195	1
Total	0	0	0	0	0	37	386	0	2	425	25	0	33	0	58	0	215	52	0	267	750	2
14:00	0	0	0	0	0	6	80	0	0	86	11	0	5	0	16	0	44	10	0	54	156	0
14:15	0	0	0	0	0	8	95	0	0	103	16	0	6	0	22	0	44	13	0	57	182	0
14:30	0	0	0	0	0	7	82	0	0	89	10	0	6	0	16	0	42	16	0	58	163	0
14:45	0	0	0	0	0	9	109	0	0	118	7	0	6	0	13	0	51	13	0	64	195	0
Total	0	0	0	0	0	30	366	0	0	396	44	0	23	0	67	0	181	52	0	233	696	0
Grand Total	0	0	0	0	0	67	752	0	2	821	69	0	56	0	125	0	396	104	0	500	1446	2
Apprch %	0.0%	0.0%	0.0%	0.0%		8.2%	91.6%	0.0%	0.2%		55.2%	0.0%	44.8%	0.0%		0.0%	79.2%	20.8%	0.0%			
Total %	0.0%	0.0%	0.0%	0.0%	0.0%	4.6%	52.0%	0.0%	0.1%	56.8%	4.8%	0.0%	3.9%	0.0%	8.6%	0.0%	27.4%	7.2%	0.0%	34.6%	100.0%	

NOON PEAK	North Village Entrance Southbound					Redwood Highway Westbound					North Village Entrance Northbound					Redwood Highway Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 13:00 to 14:00																					
Peak Hour For Entire Intersection Begins at 13:00																					
13:00	0	0	0	0	0	14	113	0	0	127	7	0	9	0	16	0	55	15	0	70	213
13:15	0	0	0	0	0	3	86	0	1	90	5	0	6	0	11	0	62	12	0	74	175
13:30	0	0	0	0	0	8	95	0	0	103	6	0	9	0	15	0	37	12	0	49	167
13:45	0	0	0	0	0	12	92	0	1	105	7	0	9	0	16	0	61	13	0	74	195
Total Volume	0	0	0	0	0	37	386	0	2	425	25	0	33	0	58	0	215	52	0	267	750
% App Total	0.0%	0.0%	0.0%	0.0%		8.7%	90.8%	0.0%	0.5%		43.1%	0.0%	56.9%	0.0%		0.0%	80.5%	19.5%	0.0%		
PHF	.000	.000	.000	.000	.000	.661	.854	.000	.500	.837	.893	.000	.917	.000	.906	.000	.867	.867	.000	.902	.880

Appendix B

Traffic Volumes

Intersection Number: 1
Synchro Node Number: 1
Intersection Name: Tamal Vista Boulevard and Fifer Avenue
Peak Hour: AM
Date of Analysis: 4/7/20222
Count Date: 03/31/22

Scenario	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	6	17	12	1	438	239	44	13	427	323	249	0	*1769*
Proposed Project Trips	1	8	6	1	2	11	5	4	37	11	0	0	*86*
Existing + Project Conditions	7	25	18	2	440	250	49	17	464	334	249	0	*1855*
													0
Cumulative Conditions	6	18	12	1	454	248	46	13	443	335	258	0	*1834*
													0
Cumulative + Project Conditions	7	26	18	2	456	259	51	17	480	346	258	0	*1920*

Intersection Number: 2
Synchro Node Number: 2
Intersection Name: Nellen Avenue/US 101 ramps and Fifer Avenue
Peak Hour: AM
Date of Analysis: 4/7/20222
Count Date: 03/31/22

Scenario	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	19	0	0	61	691	0	0	0	0	0	300	0	*1071*
Proposed Project Trips	13	0	0	1	0	0	0	0	0	0	15	0	*29*
Existing + Project Conditions	32	0	0	62	691	0	0	0	0	0	315	0	*1100*
													0
Cumulative Conditions	20	0	0	63	716	0	0	0	0	0	311	0	*1110*
													0
Cumulative + Project Conditions	33	0	0	64	716	0	0	0	0	0	326	0	*1139*

Intersection Number: 3
Synchro Node Number: 3
Intersection Name: Tamal Vista Boulevard and Wornum Drive
Peak Hour: AM
Date of Analysis: 4/7/20222
Count Date: 04/09/14

Scenario	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	0	221	381	287	0	51	143	148	0	0	0	0	*1231*
Proposed Project Trips	0	58	33	0	0	5	9	10	0	0	0	0	*115*
Existing + Project Conditions	0	279	414	287	0	56	152	158	0	0	0	0	*1346*
													0
Cumulative Conditions	0	229	395	297	0	53	148	153	0	0	0	0	*1275*
													0
Cumulative + Project Conditions	0	287	428	297	0	58	157	163	0	0	0	0	*1390*

Intersection Number: 4
Synchro Node Number: 4
Intersection Name: Redwood Highway and Wornum Drive
Peak Hour: AM
Date of Analysis: 4/7/20222
Count Date: 03/31/22

	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
Scenario	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	327	23	0	0	0	0	0	58	97	82	0	448	*1035*
Proposed Project Trips	0	1	0	0	0	0	0	5	13	14	0	28	*61*
Existing + Project Conditions	327	24	0	0	0	0	0	63	110	96	0	476	*1096*
													0
Cumulative Conditions	339	24	0	0	0	0	0	60	101	85	0	464	*1073*
													0
Cumulative + Project Conditions	339	25	0	0	0	0	0	65	114	99	0	492	*1134*

Intersection Number: 5
Synchro Node Number: 5
Intersection Name: Tamal Vista Boulevard and Madera Boulevard
Peak Hour: AM
Date of Analysis: 4/7/20222
Count Date: 04/09/14

	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
Scenario	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	1	140	98	101	6	149	171	214	9	3	5	2	*899*
Proposed Project Trips	0	50	24	2	0	1	0	25	0	0	0	0	*102*
Existing + Project Conditions	1	190	122	103	6	150	171	239	9	3	5	2	*1001*
													0
Cumulative Conditions	1	145	102	105	6	154	177	222	9	3	5	2	*931*
													0
Cumulative + Project Conditions	1	195	126	107	6	155	177	247	9	3	5	2	*1033*

Intersection Number: 6
Synchro Node Number: 6
Intersection Name: San Clemente Drive and Tamalpais Drive/Redwood Highway
Peak Hour: AM
Date of Analysis: 4/7/20222
Count Date: 02/27/18

	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
Scenario	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	0	0	0	0	60	64	103	0	1102	21	146	0	*1496*
Proposed Project Trips	0	0	0	0	62	15	4	0	42	11	21	0	*155*
Existing + Project Conditions	0	0	0	0	122	79	107	0	1144	32	167	0	*1651*
													0
Cumulative Conditions	0	0	0	0	62	66	107	0	1142	22	151	0	*1550*
													0
Cumulative + Project Conditions	0	0	0	0	124	81	111	0	1184	33	172	0	*1705*

Intersection Number: 7
Synchro Node Number: 7
Intersection Name: US 101 NB off ramp and Tamalpais Drive
Peak Hour: AM
Date of Analysis: 4/7/20222
Count Date: 04/09/14

	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
Scenario	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	0	0	0	0	680	0	422	0	452	0	899	0	*2453*
Proposed Project Trips	0	0	0	0	77	0	9	0	10	0	36	0	*132*
Existing + Project Conditions	0	0	0	0	757	0	431	0	462	0	935	0	*2585*
													0
Cumulative Conditions	0	0	0	0	705	0	437	0	469	0	932	0	*2543*
													0
Cumulative + Project Conditions	0	0	0	0	782	0	446	0	479	0	968	0	*2675*

Intersection Number: 8
Synchro Node Number: 8
Intersection Name: US 101 SB off ramp and Tamalpais Drive
Peak Hour: AM
Date of Analysis: 4/7/20222
Count Date: 02/17/18

	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
Scenario	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	388	0	649	0	701	0	0	0	0	0	754	0	*2492*
Proposed Project Trips	1	0	8	0	43	0	0	0	0	0	28	0	*80*
Existing + Project Conditions	389	0	657	0	744	0	0	0	0	0	782	0	*2572*
													0
Cumulative Conditions	402	0	673	0	727	0	0	0	0	0	782	0	*2584*
													0
Cumulative + Project Conditions	403	0	681	0	770	0	0	0	0	0	810	0	*2664*

Intersection Number: 9
Synchro Node Number: 9
Intersection Name: Madera Boulevard and Tamalpais Drive
Peak Hour: AM
Date of Analysis: 4/7/20222
Count Date: 05/25/17

	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
Scenario	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	115	76	187	187	543	134	167	52	48	21	845	113	*2488*
Proposed Project Trips	23	2	23	20	20	3	4	2	1	1	8	5	*112*
Existing + Project Conditions	138	78	210	207	563	137	171	54	49	22	853	118	*2600*
													0
Cumulative Conditions	119	79	194	194	563	139	173	54	50	22	876	117	*2580*
													0
Cumulative + Project Conditions	142	81	217	214	583	142	177	56	51	23	884	122	*2692*

Intersection Number: 10
Synchro Node Number: 10
Intersection Name: San Clemente Drive and Paradise Drive
Peak Hour: AM
Date of Analysis: 4/7/20222
Count Date: 05/25/17

	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
Scenario	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	28	1000	0	0	0	0	0	1086	21	15	0	101	*2251*
Proposed Project Trips	3	32	0	0	0	0	0	20	0	4	0	26	*85*
Existing + Project Conditions	31	1032	0	0	0	0	0	1106	21	19	0	127	*2336*
													0
Cumulative Conditions	29	1037	0	0	0	0	0	1126	22	16	0	105	*2335*
													0
Cumulative + Project Conditions	32	1069	0	0	0	0	0	1146	22	20	0	131	*2420*

Intersection Number: 11
Synchro Node Number: 11
Intersection Name: Madera Del Presidio/Harbor Drive and Paradise Drive
Peak Hour: AM
Date of Analysis: 4/7/20222
Count Date: 03/31/22

	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
Scenario	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	54	2	34	23	941	34	40	0	69	75	928	26	*2226*
Proposed Project Trips	0	0	0	0	18	0	0	0	2	4	32	0	*56*
Existing + Project Conditions	54	2	34	23	959	34	40	0	71	79	960	26	*2282*
													0
Cumulative Conditions	56	2	35	24	975	35	41	0	72	78	962	27	*2307*
													0
Cumulative + Project Conditions	56	2	35	24	993	35	41	0	74	82	994	27	*2363*

Intersection Number: 12
Synchro Node Number: 12
Intersection Name: Redwood Hwy. and Village South Entrance
Peak Hour: AM
Date of Analysis: 4/7/20222
Count Date: 03/31/22

	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
Scenario	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	0	79	0	0	0	0	0	180	103	45	0	2	*409*
Proposed Project Trips	4	9	0	0	0	0	0	2	23	68	0	16	*122*
Existing + Project Conditions	4	88	0	0	0	0	0	182	126	113	0	18	*531*
													0
Cumulative Conditions	0	82	0	0	0	0	0	187	107	47	0	2	*425*
													0
Cumulative + Project Conditions	4	91	0	0	0	0	0	189	130	115	0	18	*547*

Intersection Number: 1
Synchro Node Number: 1
Intersection Name: Tamal Vista Boulevard and Fifer Avenue
Peak Hour: MD
Date of Analysis: 4/7/20222
Count Date: 03/31/22

	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
Scenario	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	5	28	21	4	284	312	85	15	287	357	283	3	*1684*
Proposed Project Trips	0	0	1	0	0	6	0	8	26	34	0	0	*75*
Existing + Project Conditions	5	28	22	4	284	318	85	23	313	391	283	3	*1759*
													0
Cumulative Conditions	5	29	22	4	294	323	88	16	297	370	293	3	*1744*
													0
Cumulative + Project Conditions	5	29	23	4	294	329	88	24	323	404	293	3	*1819*

Intersection Number: 3
Synchro Node Number: 3
Intersection Name: Tamal Vista Boulevard and Wornum Drive
Peak Hour: MD
Date of Analysis: 4/7/20222
Count Date: 04/09/14

	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
Scenario	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	0	269	506	216	0	127	256	233	0	0	0	0	*1607*
Proposed Project Trips	0	27	13	13	0	8	15	43	0	0	0	0	*119*
Existing + Project Conditions	0	296	519	229	0	135	271	276	0	0	0	0	*1726*
													0
Cumulative Conditions	0	279	525	224	0	132	265	242	0	0	0	0	*1667*
													0
Cumulative + Project Conditions	0	306	538	237	0	140	280	285	0	0	0	0	*1786*

Intersection Number: 6
Synchro Node Number: 6
Intersection Name: San Clemente Drive and Tamalpais Drive/Redwood Highway
Peak Hour: MD
Date of Analysis: 4/7/20222
Count Date: 02/27/18

	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
Scenario	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	0	0	0	0	430	79	132	0	857	4	530	0	*2032*
Proposed Project Trips	0	0	0	0	21	10	13	0	42	15	30	0	*131*
Existing + Project Conditions	0	0	0	0	451	89	145	0	899	19	560	0	*2163*
													0
Cumulative Conditions	0	0	0	0	446	82	137	0	888	4	549	0	*2106*
													0
Cumulative + Project Conditions	0	0	0	0	467	92	150	0	930	19	579	0	*2237*

Intersection Number: 9
Synchro Node Number: 9
Intersection Name: Madera Boulevard and Tamalpais Drive
Peak Hour: MD
Date of Analysis: 4/7/20222
Count Date: 05/25/17

Scenario	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	188	85	216	291	670	166	158	72	55	27	663	144	*2735*
Proposed Project Trips	17	5	28	41	11	7	6	4	3	3	15	24	*164*
Existing + Project Conditions	205	90	244	332	681	173	164	76	58	30	678	168	*2899*
													0
Cumulative Conditions	195	88	224	302	695	172	164	75	57	28	687	149	*2836*
													0
Cumulative + Project Conditions	212	93	252	343	706	179	170	79	60	31	702	173	*3000*

Intersection Number: 12
Synchro Node Number: 12
Intersection Name: Redwood Hwy. and Village South Entrance
Peak Hour: MD
Date of Analysis: 4/7/20222
Count Date: 03/31/22

Scenario	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	7	289	0	0	0	0	0	405	344	261	0	26	*1332*
Proposed Project Trips	8	12	0	0	0	0	0	14	30	19	0	6	*89*
Existing + Project Conditions	15	301	0	0	0	0	0	419	374	280	0	32	*1421*
													0
Cumulative Conditions	7	300	0	0	0	0	0	420	357	271	0	27	*1382*
													0
Cumulative + Project Conditions	15	312	0	0	0	0	0	434	387	290	0	33	*1471*

Intersection Number: 1
Synchro Node Number: 1
Intersection Name: Tamal Vista Boulevard and Fifer Avenue
Peak Hour: AM
Date of Analysis: 4/7/20222
Count Date: 03/31/22

Scenario	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	10	27	31	5	280	225	83	25	440	240	196	1	*1563*
Proposed Project Trips	0	0	3	2	0	25	0	15	19	30	0	0	*94*
Existing + Project Conditions	10	27	34	7	280	250	83	40	459	270	196	1	*1657*
													0
Cumulative Conditions	10	28	32	5	290	233	86	26	456	249	203	1	*1619*
													0
Cumulative + Project Conditions	10	28	35	7	290	258	86	41	475	279	203	1	*1713*

Intersection Number: 2
Synchro Node Number: 2
Intersection Name: Nellen Avenue/US 101 ramps and Fifer Avenue
Peak Hour: AM
Date of Analysis: 4/7/20222
Count Date: 03/31/22

Scenario	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	70	0	0	35	567	0	0	0	0	0	290	0	*962*
Proposed Project Trips	7	0	0	4	23	0	0	0	0	0	0	0	*34*
Existing + Project Conditions	77	0	0	39	590	0	0	0	0	0	290	0	*996*
													0
Cumulative Conditions	73	0	0	36	588	0	0	0	0	0	301	0	*998*
													0
Cumulative + Project Conditions	80	0	0	40	611	0	0	0	0	0	301	0	*1032*

Intersection Number: 3
Synchro Node Number: 3
Intersection Name: Tamal Vista Boulevard and Wornum Drive
Peak Hour: AM
Date of Analysis: 4/7/20222
Count Date: 04/09/14

Scenario	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	0	322	472	169	0	106	228	283	0	0	0	0	*1580*
Proposed Project Trips	0	21	14	34	0	11	21	52	0	0	0	0	*153*
Existing + Project Conditions	0	343	486	203	0	117	249	335	0	0	0	0	*1733*
													0
Cumulative Conditions	0	334	489	175	0	110	236	293	0	0	0	0	*1637*
													0
Cumulative + Project Conditions	0	355	503	209	0	121	257	345	0	0	0	0	*1790*

Intersection Number: 4
Synchro Node Number: 4
Intersection Name: Redwood Highway and Wornum Drive
Peak Hour: AM
Date of Analysis: 4/7/20222
Count Date: 03/31/22

	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
Scenario	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	160	66	0	0	0	0	0	229	100	90	0	465	*1110*
Proposed Project Trips	7	1	0	0	0	0	0	5	38	19	0	16	*86*
Existing + Project Conditions	167	67	0	0	0	0	0	234	138	109	0	481	*1196*
													0
Cumulative Conditions	166	68	0	0	0	0	0	237	104	93	0	482	*1150*
													0
Cumulative + Project Conditions	173	69	0	0	0	0	0	242	142	112	0	498	*1236*

Intersection Number: 5
Synchro Node Number: 5
Intersection Name: Tamal Vista Boulevard and Madera Boulevard
Peak Hour: AM
Date of Analysis: 4/7/20222
Count Date: 04/09/14

	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
Scenario	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	6	202	235	164	3	203	143	363	8	3	3	2	*1335*
Proposed Project Trips	0	44	9	5	0	2	0	92	0	0	0	0	*152*
Existing + Project Conditions	6	246	244	169	3	205	143	455	8	3	3	2	*1487*
													0
Cumulative Conditions	6	209	244	170	3	210	148	376	8	3	3	2	*1382*
													0
Cumulative + Project Conditions	6	253	253	175	3	212	148	468	8	3	3	2	*1534*

Intersection Number: 6
Synchro Node Number: 6
Intersection Name: San Clemente Drive and Tamalpais Drive/Redwood Highway
Peak Hour: AM
Date of Analysis: 4/7/20222
Count Date: 02/27/18

	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
Scenario	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	0	0	0	0	470	67	92	0	1023	7	576	0	*2235*
Proposed Project Trips	0	0	0	0	40	6	11	0	51	15	79	0	*202*
Existing + Project Conditions	0	0	0	0	510	73	103	0	1074	22	655	0	*2437*
													0
Cumulative Conditions	0	0	0	0	487	69	95	0	1060	7	597	0	*2315*
													0
Cumulative + Project Conditions	0	0	0	0	527	75	106	0	1111	22	676	0	*2517*

Intersection Number: 7
Synchro Node Number: 7
Intersection Name: US 101 NB off ramp and Tamalpais Drive
Peak Hour: AM
Date of Analysis: 4/7/20222
Count Date: 04/09/14

	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
Scenario	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	0	0	0	0	760	0	483	0	760	0	876	0	*2879*
Proposed Project Trips	0	0	0	0	69	0	62	0	30	0	68	0	*229*
Existing + Project Conditions	0	0	0	0	829	0	545	0	790	0	944	0	*3108*
													0
Cumulative Conditions	0	0	0	0	788	0	501	0	788	0	908	0	*2985*
													0
Cumulative + Project Conditions	0	0	0	0	857	0	563	0	818	0	976	0	*3214*

Intersection Number: 8
Synchro Node Number: 8
Intersection Name: US 101 SB off ramp and Tamalpais Drive
Peak Hour: AM
Date of Analysis: 4/7/20222
Count Date: 02/17/18

	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
Scenario	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	341	0	641	0	1074	0	0	0	0	0	972	0	*3028*
Proposed Project Trips	2	0	27	0	70	0	0	0	0	0	41	0	*140*
Existing + Project Conditions	343	0	668	0	1144	0	0	0	0	0	1013	0	*3168*
													0
Cumulative Conditions	353	0	664	0	1113	0	0	0	0	0	1008	0	*3138*
													0
Cumulative + Project Conditions	355	0	691	0	1183	0	0	0	0	0	1049	0	*3278*

Intersection Number: 9
Synchro Node Number: 9
Intersection Name: Madera Boulevard and Tamalpais Drive
Peak Hour: AM
Date of Analysis: 4/7/20222
Count Date: 05/25/17

	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
Scenario	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	170	61	226	305	663	236	186	72	41	59	572	164	*2755*
Proposed Project Trips	12	5	28	56	10	9	7	4	3	3	13	23	*173*
Existing + Project Conditions	182	66	254	361	673	245	193	76	44	62	585	187	*2928*
													0
Cumulative Conditions	176	63	234	316	687	245	193	75	42	61	593	170	*2855*
													0
Cumulative + Project Conditions	188	68	262	372	697	254	200	79	45	64	606	193	*3028*

Intersection Number: 10
Synchro Node Number: 10
Intersection Name: San Clemente Drive and Paradise Drive
Peak Hour: AM
Date of Analysis: 4/7/20222
Count Date: 05/25/17

Scenario	Southbound Approach RT	Southbound Approach TH	Southbound Approach LT	Westbound Approach RT	Westbound Approach TH	Westbound Approach LT	Northbound Approach RT	Northbound Approach TH	Northbound Approach LT	Eastbound Approach RT	Eastbound Approach TH	Eastbound Approach LT	Total
Existing Conditions	26	846	0	0	0	0	0	762	21	37	0	252	*1944*
Proposed Project Trips	7	30	0	0	0	0	0	37	6	4	0	26	*110*
Existing + Project Conditions	33	876	0	0	0	0	0	799	27	41	0	278	*2054*
													0
Cumulative Conditions	27	877	0	0	0	0	0	790	22	38	0	261	*2015*
													0
Cumulative + Project Conditions	34	907	0	0	0	0	0	827	28	42	0	287	*2125*

Intersection Number: 11
Synchro Node Number: 11
Intersection Name: Madera Del Presidio/Harbor Drive and Paradise Drive
Peak Hour: AM
Date of Analysis: 4/7/20222
Count Date: 03/31/22

Scenario	Southbound Approach RT	Southbound Approach TH	Southbound Approach LT	Westbound Approach RT	Westbound Approach TH	Westbound Approach LT	Northbound Approach RT	Northbound Approach TH	Northbound Approach LT	Eastbound Approach RT	Eastbound Approach TH	Eastbound Approach LT	Total
Existing Conditions	36	1	20	17	828	21	31	0	79	59	679	41	*1812*
Proposed Project Trips	0	0	0	0	32	0	0	0	11	8	26	0	*77*
Existing + Project Conditions	36	1	20	17	860	21	31	0	90	67	705	41	*1889*
													0
Cumulative Conditions	37	1	21	18	858	22	32	0	82	61	704	42	*1878*
													0
Cumulative + Project Conditions	37	1	21	18	890	22	32	0	93	69	730	42	*1955*

Intersection Number: 12
Synchro Node Number: 12
Intersection Name: Redwood Hwy. and Village South Entrance
Peak Hour: AM
Date of Analysis: 4/7/20222
Count Date: 03/31/22

Scenario	Southbound Approach RT	Southbound Approach TH	Southbound Approach LT	Westbound Approach RT	Westbound Approach TH	Westbound Approach LT	Northbound Approach RT	Northbound Approach TH	Northbound Approach LT	Eastbound Approach RT	Eastbound Approach TH	Eastbound Approach LT	Total
Existing Conditions	1	240	0	0	0	0	0	375	320	251	0	24	*1211*
Proposed Project Trips	9	11	0	0	0	0	0	29	61	36	0	10	*156*
Existing + Project Conditions	10	251	0	0	0	0	0	404	381	287	0	34	*1367*
													0
Cumulative Conditions	1	249	0	0	0	0	0	389	332	260	0	25	*1256*
													0
Cumulative + Project Conditions	10	260	0	0	0	0	0	418	393	296	0	35	*1412*

Appendix C

Trip Generation Estimates by Site

CORTE MADERA HOUSING ELEMENT - TRIP GENERATION BY SITE

Land Use[1]	Size		Daily		AM Peak Hour						Mid-Afternoon Peak Hour[7,8]						PM Peak Hour					
			Rate	Trips	Rate	In	Out	In	Out	Total	Rate	In	Out	In	Out	Total	Rate	In	Out	In	Out	Total
Site 1 - 601 Tamalpais																						
Multifamily Housing (Low-Rise)[2]	11	DU	6.74	74	0.40	24%	76%	1	3	4	0.32	57%	43%	2	2	4	0.51	63%	37%	4	2	6
Strip Retail Plaza (<40K)[4]	4.1	KSF	54.45	225	2.36	60%	40%	6	4	10	6.10	50%	50%	13	12	25	6.59	50%	50%	14	13	27
Net Site Trips				**300**				**7**	**7**	**14**				**15**	**14**	**29**				**18**	**15**	**33**
Site 2 - 41 Tamal Vista Boulevard																						
Multifamily Housing (Mid-Rise)[3]	73	DU	4.54	331	0.37	23%	77%	6	21	27	0.20	61%	39%	9	6	15	0.39	61%	39%	17	11	28
Strip Retail Plaza (<40K)[4]	18.4	KSF	54.45	1,001	2.36	60%	40%	26	17	43	6.10	50%	50%	56	56	112	6.59	50%	50%	61	60	121
Net Site Trips				**1,332**				**32**	**38**	**70**				**65**	**62**	**127**				**78**	**71**	**149**
Site 3 - 400 & 500 Tamal Vista Plaza																						
Multifamily Housing (Mid-Rise)[3]	105	DU	4.54	477	0.37	23%	77%	9	30	39	0.20	61%	39%	13	8	21	0.39	61%	39%	25	16	41
Strip Retail Plaza (<40K)[4]	26.2	KSF	54.45	1,424	2.36	60%	40%	37	25	62	6.10	50%	50%	80	79	159	6.59	50%	50%	86	86	172
Existing - Strip Retail Plaza (40 - 150K)	-59.4	KSF	67.52	-4,012	1.73	62%	38%	-64	-39	-103	4.67	49%	51%	-136	-142	-278	5.19	49%	51%	-151	-157	-308
Net Site Trips				-2,112				-18	16	-2				-43	-55	-98				-40	-55	-95
Site 4 - 2 & 10 Fifer Avenue, 110 & 150 Nellen Avenue																						
Multifamily Housing (Mid-Rise)[3]	120	DU	4.54	545	0.37	23%	77%	10	34	44	0.20	61%	39%	15	9	24	0.39	61%	39%	29	18	47
Strip Retail Plaza (<40K)[4]	30.0	KSF	54.45	1,636	2.36	60%	40%	43	28	71	6.10	50%	50%	92	91	183	6.59	50%	50%	99	99	198
Existing - Strip Retail Plaza (40 - 150K)[5]	-43.2	KSF	67.52	-2,920	1.73	62%	38%	-47	-28	-75	4.67	49%	51%	-99	-103	-202	5.19	49%	51%	-110	-114	-224
Net Site Trips				-739				6	34	40				8	-3	5				18	3	21
Site 5 - 111 Lucky Drive																						
Multifamily Housing (Low-Rise)[2]	25	DU	6.74	169	0.40	24%	76%	2	8	10	0.32	57%	43%	5	3	8	0.51	63%	37%	8	5	13
Strip Retail Plaza (<40K)[4]	8.7	KSF	54.45	474	2.36	60%	40%	13	8	21	6.10	50%	50%	27	26	53	6.59	50%	50%	29	28	57
Existing - Strip Retail Plaza (<40K)[4]	-7.5	KSF	54.45	-409	2.36	60%	40%	-11	-7	-18	6.10	50%	50%	-23	-23	-46	6.59	50%	50%	-25	-25	-50
Net Site Trips				234				4	9	13				9	6	15				12	8	20
Site 6 - 1400 Redwood Highway																						
Multifamily Housing (Mid-Rise)[3]	300	DU	4.54	1,362	0.37	23%	77%	26	85	111	0.20	61%	39%	37	24	61	0.39	61%	39%	71	46	117
Strip Retail Plaza (40 - 150K)[5]	110.8	KSF	67.52	7,482	1.73	62%	38%	119	73	192	4.67	49%	51%	254	264	518	5.19	49%	51%	282	293	575
Existing - Strip Retail Plaza (40 - 150K)[5]	-109.9	KSF	67.52	-7,422	1.73	62%	38%	-118	-72	-190	4.67	49%	51%	-251	-262	-513	5.19	49%	51%	-279	-291	-570
Net Site Trips				1,422				27	86	113				40	26	66				74	48	122
Site 7 - 5804 Paradise Drive																						
Multifamily Housing (Mid-Rise)[3]	40	DU	4.54	182	0.37	23%	77%	3	12	15	0.20	61%	39%	5	3	8	0.39	61%	39%	10	6	16
Strip Retail Plaza (<40K)[4]	10	KSF	54.45	550	2.36	60%	40%	14	10	24	6.10	50%	50%	31	31	62	6.59	50%	50%	34	33	67
Existing - Strip Retail Plaza (<40K)[4]	-7.8	KSF	54.45	-425	2.36	60%	40%	-11	-7	-18	6.10	50%	50%	-24	-24	-48	6.59	50%	50%	-26	-25	-51
Net Site Trips				307				6	15	21				12	10	22				18	14	32
Site 8 - 5750 Paradise Drive																						
Multifamily Housing (Mid-Rise)[3]	61	DU	4.54	277	0.37	23%	77%	5	18	23	0.20	61%	39%	7	5	12	0.39	61%	39%	15	9	24
Strip Retail Plaza (<40K)[4]	15	KSF	54.45	835	2.36	60%	40%	22	14	36	6.10	50%	50%	47	46	93	6.59	50%	50%	51	50	101
Existing - Strip Retail Plaza (<40K)[4]	-10.7	KSF	54.45	-583	2.36	60%	40%	-15	-10	-25	6.10	50%	50%	-33	-32	-65	6.59	50%	50%	-36	-35	-71
Net Site Trips				528				12	22	34				21	19	40				30	24	54
Site 9 - 5651 Paradise Drive																						
Multifamily Housing (Low-Rise)[2]	38	DU	6.74	256	0.40	24%	76%	4	11	15	0.32	57%	43%	7	5	12	0.51	63%	37%	12	7	19
Strip Retail Plaza (<40K)[4]	13	KSF	54.45	734	2.36	60%	40%	19	13	32	6.10	50%	50%	41	41	82	6.59	50%	50%	45	44	89
Existing - Strip Retail Plaza (<40K)[4]	-14.4	KSF	54.45	-785	2.36	60%	40%	-20	-14	-34	6.10	50%	50%	-44	-44	-88	6.59	50%	50%	-48	-47	-95
Net Site Trips				205				3	10	13				4	2	6				9	4	13
Site 10 - 100 Tamal Vista Boulevard																						
Multifamily Housing (Mid-Rise)[3]	53	DU	4.54	241	0.37	23%	77%	5	15	20	0.20	61%	39%	7	4	11	0.39	61%	39%	13	8	21
Strip Retail Plaza (<40K)[4]	13	KSF	54.45	712	2.36	60%	40%	19	12	31	6.10	50%	50%	40	40	80	6.59	50%	50%	43	43	86
Existing - General Office Building[6]	-23.3	KSF	10.84	-253	1.52	88%	12%	-31	-4	-35	1.13	46%	54%	-12	-14	-26	1.44	17%	83%	-6	-28	-34
Net Site Trips				699				-7	23	16				35	30	65				50	23	73

Site 11 - 240 Tamal Vista Boulevard																						
Multifamily Housing (Mid-Rise)[3]	58	DU	4.54	263	0.37	23%	77%	5	16	21	0.20	61%	39%	7	5	12	0.39	61%	39%	14	9	23
Strip Retail Plaza (<40K)[4]	14	KSF	54.45	787	2.36	60%	40%	20	14	34	6.10	50%	50%	44	44	88	6.59	50%	50%	48	47	95
Existing - General Office Building[6]	-25.1	KSF	10.84	-272	1.52	88%	12%	-33	-5	-38	1.13	46%	54%	-13	-15	-28	1.44	17%	83%	-6	-30	-36
Net Site Trips				779				-8	25	17				38	34	72				56	26	82

Notes

[1] Trip rates are from the ITE Trip Generation Manual, 11th Edition, 2021.

[2] Multifamily Housing (Low-Rise) (Land Use 220), average rates expressed in trips per dwelling unit (DU) are used.

[3] Multifamily Housing (Mid-Rise) (Land Use 221), average rates expressed in trips per dwelling unit (DU) are used.

[4] Strip Retail Plaza (<40K) (Land Use 822), average rates expressed in trips per 1000 square feet are used.

[5] Shopping Plaza (40-150K) - Supermarket - No (Land Use 821), average rates expressed in trips per 1000 square feet are used.

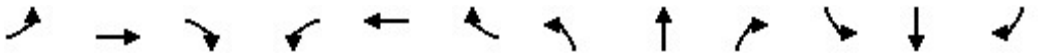
[6] General Office Building (Land Use 710), average rates expressed in trips per 1000 square feet are used.

[7] ITE Trip Generation manual does not provide trip rates for the mid-afternoon peak hour (2PM-4PM). Mid-afternoon peak hour rates have been computed based on vehicle time of day distribution data proved by the ITE Trip Generation Manual, 11th Edition.

[8] Mid-Afternoon peak hour inbound and outbound splits for Land Use 220 and Land Use 221 have been computed based on vehicle time of day distribution data provided by the ITE Trip Generation Manual, 11th Edition. The manual does not provide inbound and outbound splits during the mid-afternoon peak hour for Land Use 821 and Land Use 822. PM peak hour inbound and outbound splits have been used for these uses.

Appendix D

Level of Service Calculations



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	249	323	239	438	1	427	13	44	12	17	6
Future Volume (vph)	0	249	323	239	438	1	427	13	44	12	17	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6	4.6	4.0	4.6		4.6	4.6			4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Frt		1.00	0.85	1.00	1.00		1.00	0.88			0.98	
Flt Protected		1.00	1.00	0.95	1.00		0.95	1.00			0.98	
Satd. Flow (prot)		1863	1583	1770	1862		1770	1646			1786	
Flt Permitted		1.00	1.00	0.39	1.00		0.95	1.00			0.98	
Satd. Flow (perm)		1863	1583	720	1862		1770	1646			1786	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	271	351	260	476	1	464	14	48	13	18	7
RTOR Reduction (vph)	0	0	126	0	0	0	0	32	0	0	7	0
Lane Group Flow (vph)	0	271	225	260	477	0	464	30	0	0	31	0
Turn Type		NA	pm+ov	pm+pt	NA		Split	NA		Split	NA	
Protected Phases		2	8	1	6		8	8		7	7	
Permitted Phases			2	6								
Actuated Green, G (s)		30.0	64.1	47.7	47.7		34.1	34.1			5.0	
Effective Green, g (s)		30.0	64.1	47.7	47.7		34.1	34.1			5.0	
Actuated g/C Ratio		0.30	0.64	0.48	0.48		0.34	0.34			0.05	
Clearance Time (s)		4.6	4.6	4.0	4.6		4.6	4.6			4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)		558	1014	487	888		603	561			89	
v/s Ratio Prot		0.15	0.08	0.07	c0.26		c0.26	0.02			c0.02	
v/s Ratio Perm			0.07	0.18								
v/c Ratio		0.49	0.22	0.53	0.54		0.77	0.05			0.35	
Uniform Delay, d1		28.7	7.5	16.9	18.4		29.4	22.1			45.9	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2		3.0	0.1	1.1	2.3		5.9	0.0			2.4	
Delay (s)		31.7	7.6	18.1	20.7		35.3	22.2			48.3	
Level of Service		C	A	B	C		D	C			D	
Approach Delay (s)		18.1			19.8			33.8			48.3	
Approach LOS		B			B			C			D	

Intersection Summary			
HCM 2000 Control Delay	23.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	17.2
Intersection Capacity Utilization	67.7%	ICU Level of Service	C
Analysis Period (min)	15		

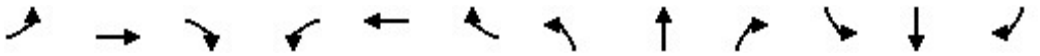
c Critical Lane Group



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	51	287	148	143	381	221
Future Volume (vph)	51	287	148	143	381	221
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.0	4.6	4.6	4.0	4.6
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	1863	1583	1770	1863
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	55	312	161	155	414	240
RTOR Reduction (vph)	0	118	0	117	0	0
Lane Group Flow (vph)	55	194	161	38	414	240
Turn Type	custom	pm+ov	NA	custom	Prot	NA
Protected Phases	3	1	2	3	1	6
Permitted Phases	4	4		2 4		
Actuated Green, G (s)	8.4	62.2	16.2	24.6	62.2	82.4
Effective Green, g (s)	8.4	62.2	16.2	24.6	62.2	82.4
Actuated g/C Ratio	0.08	0.62	0.16	0.25	0.62	0.82
Clearance Time (s)	4.6	4.0	4.6	4.6	4.0	4.6
Vehicle Extension (s)	1.0	2.7	5.5	1.0	2.7	3.5
Lane Grp Cap (vph)	148	984	301	462	1100	1535
v/s Ratio Prot	c0.03	0.12	c0.09	0.01	c0.23	0.13
v/s Ratio Perm				0.02		
v/c Ratio	0.37	0.20	0.53	0.08	0.38	0.16
Uniform Delay, d1	43.3	8.1	38.4	29.0	9.3	1.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	0.0	3.8	0.0	1.0	0.2
Delay (s)	43.9	8.2	42.3	29.0	10.3	2.0
Level of Service	D	A	D	C	B	A
Approach Delay (s)	13.5		35.8			7.3
Approach LOS	B		D			A

Intersection Summary			
HCM 2000 Control Delay	15.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	17.2
Intersection Capacity Utilization	46.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	928	75	34	941	23	69	0	40	34	2	54
Future Volume (vph)	26	928	75	34	941	23	69	0	40	34	2	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.6		4.0	4.6			4.2			4.6	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frt	1.00	0.99		1.00	1.00			0.95			0.92	
Flt Protected	0.95	1.00		0.95	1.00			0.97			0.98	
Satd. Flow (prot)	1770	3499		1770	3527			1717			1680	
Flt Permitted	0.95	1.00		0.95	1.00			0.83			0.87	
Satd. Flow (perm)	1770	3499		1770	3527			1477			1492	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	28	1009	82	37	1023	25	75	0	43	37	2	59
RTOR Reduction (vph)	0	7	0	0	2	0	0	91	0	0	53	0
Lane Group Flow (vph)	28	1084	0	37	1046	0	0	27	0	0	45	0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			4			8	
Permitted Phases							4			8		
Actuated Green, G (s)	3.6	36.8		4.0	37.2			6.4			6.0	
Effective Green, g (s)	3.6	36.8		4.0	37.2			6.4			6.0	
Actuated g/C Ratio	0.06	0.61		0.07	0.62			0.11			0.10	
Clearance Time (s)	4.0	4.6		4.0	4.6			4.2			4.6	
Vehicle Extension (s)	2.0	3.0		2.0	3.0			2.0			2.0	
Lane Grp Cap (vph)	106	2146		118	2186			157			149	
v/s Ratio Prot	0.02	c0.31		c0.02	0.30							
v/s Ratio Perm								0.02			c0.03	
v/c Ratio	0.26	0.51		0.31	0.48			0.17			0.30	
Uniform Delay, d1	26.9	6.5		26.7	6.2			24.4			25.1	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.5	0.9		0.6	0.8			0.2			0.4	
Delay (s)	27.4	7.4		27.2	6.9			24.6			25.5	
Level of Service	C	A		C	A			C			C	
Approach Delay (s)		7.9			7.6			24.6			25.5	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	9.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	13.2
Intersection Capacity Utilization	46.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	300	691	61	0	19
Future Vol, veh/h	0	300	691	61	0	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	326	751	66	0	21

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	784
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	0	-	-	-	0	393
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	393
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	14.7
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	393
HCM Lane V/C Ratio	-	-	-	0.053
HCM Control Delay (s)	-	-	-	14.7
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0.2



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	448	82	97	58	23	327
Future Volume (veh/h)	448	82	97	58	23	327
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	487	0	105	63	25	228
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	522	465	168	1165	923	1247
Arrive On Green	0.29	0.00	0.09	0.62	0.49	0.49
Sat Flow, veh/h	1781	1585	1781	1870	1870	1585
Grp Volume(v), veh/h	487	0	105	63	25	228
Grp Sat Flow(s),veh/h/ln	1781	1585	1781	1870	1870	1585
Q Serve(g_s), s	26.6	0.0	5.7	1.3	0.7	3.6
Cycle Q Clear(g_c), s	26.6	0.0	5.7	1.3	0.7	3.6
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	522	465	168	1165	923	1247
V/C Ratio(X)	0.93	0.00	0.62	0.05	0.03	0.18
Avail Cap(c_a), veh/h	816	726	258	1165	923	1247
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.4	0.0	43.6	7.4	13.0	2.7
Incr Delay (d2), s/veh	9.4	0.0	1.4	0.1	0.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.6	0.0	2.6	0.5	0.3	3.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	43.8	0.0	45.0	7.4	13.1	3.0
LnGrp LOS	D	A	D	A	B	A
Approach Vol, veh/h	487			168	253	
Approach Delay, s/veh	43.8			30.9	4.0	
Approach LOS	D			C	A	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	13.0	53.5		33.5		66.5
Change Period (Y+Rc), s	3.5	* 4.2		* 4.2		* 4.2
Max Green Setting (Gmax), s	14.5	* 28		* 46		* 28
Max Q Clear Time (g_c+I1), s	7.7	5.6		28.6		3.3
Green Ext Time (p_c), s	0.0	0.5		0.7		0.2

Intersection Summary		
HCM 6th Ctrl Delay		30.3
HCM 6th LOS		C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay, s/veh	11.9
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	5	3	149	6	101	9	214	171	98	140	1
Future Vol, veh/h	2	5	3	149	6	101	9	214	171	98	140	1
Peak Hour Factor	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	2	5	3	162	7	110	10	233	186	107	152	1
Number of Lanes	0	1	0	0	1	1	1	1	1	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	2	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	3	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	2	2	1
HCM Control Delay	10.2	12.1	11.9	11.8
HCM LOS	B	B	B	B

Lane	NBLn1	NBLn2	NBLn3	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	20%	96%	0%	100%	0%
Vol Thru, %	0%	100%	0%	50%	4%	0%	0%	99%
Vol Right, %	0%	0%	100%	30%	0%	100%	0%	1%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	9	214	171	10	155	101	98	141
LT Vol	9	0	0	2	149	0	98	0
Through Vol	0	214	0	5	6	0	0	140
RT Vol	0	0	171	3	0	101	0	1
Lane Flow Rate	10	233	186	11	168	110	107	153
Geometry Grp	8	8	8	8	8	8	8	8
Degree of Util (X)	0.018	0.404	0.286	0.022	0.332	0.18	0.208	0.278
Departure Headway (Hd)	6.756	6.25	5.542	7.251	7.093	5.904	7.042	6.53
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	529	575	647	491	505	606	509	549
Service Time	4.508	4.002	3.293	5.031	4.848	3.658	4.799	4.287
HCM Lane V/C Ratio	0.019	0.405	0.287	0.022	0.333	0.182	0.21	0.279
HCM Control Delay	9.6	13.2	10.5	10.2	13.4	10	11.7	11.8
HCM Lane LOS	A	B	B	B	B	A	B	B
HCM 95th-tile Q	0.1	1.9	1.2	0.1	1.4	0.7	0.8	1.1



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	146	21	64	60	1102	103
Future Volume (veh/h)	146	21	64	60	1102	103
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	159	23	70	65	1303	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	581	83	215	1946	1609	716
Arrive On Green	0.19	0.19	0.12	0.38	0.45	0.00
Sat Flow, veh/h	3216	444	1781	5274	3563	1585
Grp Volume(v), veh/h	89	93	70	65	1303	0
Grp Sat Flow(s),veh/h/ln	1777	1790	1781	1702	1781	1585
Q Serve(g_s), s	2.3	2.4	1.9	0.4	17.0	0.0
Cycle Q Clear(g_c), s	2.3	2.4	1.9	0.4	17.0	0.0
Prop In Lane		0.25	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	331	333	215	1946	1609	716
V/C Ratio(X)	0.27	0.28	0.33	0.03	0.81	0.00
Avail Cap(c_a), veh/h	1127	1136	331	4559	1856	826
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	18.8	18.8	21.6	10.4	12.7	0.0
Incr Delay (d2), s/veh	0.2	0.2	1.2	0.0	2.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.9	0.8	0.1	6.1	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	18.9	18.9	22.9	10.4	15.5	0.0
LnGrp LOS	B	B	C	B	B	A
Approach Vol, veh/h	182			135	1303	
Approach Delay, s/veh	18.9			16.9	15.5	
Approach LOS	B			B	B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	10.5	15.0		28.3		25.5
Change Period (Y+Rc), s	4.0	* 5		4.0		5.0
Max Green Setting (Gmax), s	10.0	* 34		28.0		48.0
Max Q Clear Time (g_c+I1), s	3.9	4.4		19.0		2.4
Green Ext Time (p_c), s	0.1	0.7		5.3		0.6

Intersection Summary	
HCM 6th Ctrl Delay	16.0
HCM 6th LOS	B

Notes

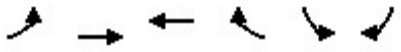
User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	899	0	0	680	452	422
Future Volume (veh/h)	899	0	0	680	452	422
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	0	0	1870	1870	1870
Adj Flow Rate, veh/h	977	0	0	739	491	275
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	0	0	2	2	2
Cap, veh/h	2387	0	0	2387	593	479
Arrive On Green	0.67	0.00	0.00	0.67	0.17	0.17
Sat Flow, veh/h	3741	0	0	3741	3456	2790
Grp Volume(v), veh/h	977	0	0	739	491	275
Grp Sat Flow(s),veh/h/ln	1777	0	0	1777	1728	1395
Q Serve(g_s), s	7.7	0.0	0.0	5.3	8.5	5.6
Cycle Q Clear(g_c), s	7.7	0.0	0.0	5.3	8.5	5.6
Prop In Lane		0.00	0.00		1.00	1.00
Lane Grp Cap(c), veh/h	2387	0	0	2387	593	479
V/C Ratio(X)	0.41	0.00	0.00	0.31	0.83	0.57
Avail Cap(c_a), veh/h	2387	0	0	2387	909	733
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	4.6	0.0	0.0	4.2	24.8	23.6
Incr Delay (d2), s/veh	0.5	0.0	0.0	0.3	2.2	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	0.0	0.0	1.4	3.4	1.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	5.1	0.0	0.0	4.6	27.0	24.0
LnGrp LOS	A	A	A	A	C	C
Approach Vol, veh/h	977			739	766	
Approach Delay, s/veh	5.1			4.6	25.9	
Approach LOS	A			A	C	

Timer - Assigned Phs	2				6	8
Phs Duration (G+Y+Rc), s	46.7				46.7	15.3
Change Period (Y+Rc), s	5.0				5.0	4.7
Max Green Setting (Gmax), s	36.0				36.0	16.3
Max Q Clear Time (g_c+I1), s	9.7				7.3	10.5
Green Ext Time (p_c), s	1.5				1.1	0.1

Intersection Summary		
HCM 6th Ctrl Delay	11.4	
HCM 6th LOS	B	



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	754	701	0	649	388
Future Volume (veh/h)	0	754	701	0	649	388
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	0	1870	1870	0	1870	1870
Adj Flow Rate, veh/h	0	820	762	0	705	346
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	0	2	2
Cap, veh/h	0	2125	2125	0	875	389
Arrive On Green	0.00	0.60	0.60	0.00	0.25	0.25
Sat Flow, veh/h	0	3741	3741	0	3563	1585
Grp Volume(v), veh/h	0	820	762	0	705	346
Grp Sat Flow(s),veh/h/ln	0	1777	1777	0	1781	1585
Q Serve(g_s), s	0.0	7.5	6.8	0.0	11.5	13.1
Cycle Q Clear(g_c), s	0.0	7.5	6.8	0.0	11.5	13.1
Prop In Lane	0.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	2125	2125	0	875	389
V/C Ratio(X)	0.00	0.39	0.36	0.00	0.81	0.89
Avail Cap(c_a), veh/h	0	2125	2125	0	1511	672
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	6.5	6.4	0.0	22.0	22.6
Incr Delay (d2), s/veh	0.0	0.5	0.5	0.0	0.7	3.7
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	2.3	2.1	0.0	4.5	4.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	7.0	6.8	0.0	22.7	26.3
LnGrp LOS	A	A	A	A	C	C
Approach Vol, veh/h		820	762		1051	
Approach Delay, s/veh		7.0	6.8		23.9	
Approach LOS		A	A		C	

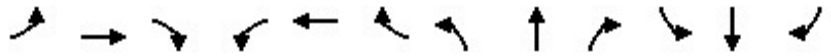
Timer - Assigned Phs	2	4	6
Phs Duration (G+Y+Rc), s	42.1	19.9	42.1
Change Period (Y+Rc), s	5.0	* 4.7	5.0
Max Green Setting (Gmax), s	26.0	* 26	26.0
Max Q Clear Time (g_c+I1), s	9.5	15.1	8.8
Green Ext Time (p_c), s	1.2	0.2	1.1

Intersection Summary	
HCM 6th Ctrl Delay	13.7
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	113	845	21	134	543	187	48	52	167	187	76	115
Future Volume (veh/h)	113	845	21	134	543	187	48	52	167	187	76	115
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	123	918	22	146	590	50	52	57	105	143	167	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	149	2019	48	172	2070	923	69	75	278	194	203	172
Arrive On Green	0.08	0.57	0.57	0.10	0.58	0.58	0.08	0.08	0.08	0.11	0.11	0.11
Sat Flow, veh/h	1781	3547	85	1781	3554	1585	871	955	1585	1781	1870	1585
Grp Volume(v), veh/h	123	460	480	146	590	50	109	0	105	143	167	5
Grp Sat Flow(s),veh/h/ln	1781	1777	1855	1781	1777	1585	1827	0	1585	1781	1870	1585
Q Serve(g_s), s	8.4	18.7	18.7	10.0	10.3	1.7	7.2	0.0	7.3	9.6	10.8	0.3
Cycle Q Clear(g_c), s	8.4	18.7	18.7	10.0	10.3	1.7	7.2	0.0	7.3	9.6	10.8	0.3
Prop In Lane	1.00		0.05	1.00		1.00	0.48		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	149	1011	1056	172	2070	923	144	0	278	194	203	172
V/C Ratio(X)	0.83	0.45	0.45	0.85	0.29	0.05	0.76	0.00	0.38	0.74	0.82	0.03
Avail Cap(c_a), veh/h	230	1011	1056	230	2070	923	418	0	516	365	383	325
HCM Platoon Ratio	1.00	1.00	1.00	1.00	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	55.9	15.5	15.5	55.1	13.0	11.2	56.0	0.0	45.2	53.6	54.1	49.4
Incr Delay (d2), s/veh	7.7	1.5	1.4	15.6	0.3	0.1	3.1	0.0	0.3	2.1	3.1	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	4.1	7.8	8.2	5.2	4.2	0.6	3.5	0.0	2.9	4.4	5.3	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.6	17.0	16.9	70.7	13.3	11.3	59.0	0.0	45.5	55.6	57.2	49.4
LnGrp LOS	E	B	B	E	B	B	E	A	D	E	E	D
Approach Vol, veh/h		1063			786			214			315	
Approach Delay, s/veh		22.4			23.8			52.4			56.4	
Approach LOS		C			C			D			E	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	14.3	77.2		14.4	16.0	75.6		18.1
Change Period (Y+Rc), s	4.0	5.0		4.6	4.0	5.0		4.6
Max Green Setting (Gmax), s	10.3	36.0		28.4	16.0	36.0		25.4
Max Q Clear Time (g_c+I1), s	10.4	12.3		9.3	12.0	20.7		12.8
Green Ext Time (p_c), s	0.1	4.3		0.5	0.1	5.5		0.6

Intersection Summary	
HCM 6th Ctrl Delay	30.1
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	101	15	21	1086	1000	28
Future Volume (veh/h)	101	15	21	1086	1000	28
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	110	0	23	1180	1087	28
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	175		424	2702	2380	61
Arrive On Green	0.10	0.00	0.02	0.76	0.67	0.67
Sat Flow, veh/h	1781	1585	1781	3647	3633	91
Grp Volume(v), veh/h	110	0	23	1180	546	569
Grp Sat Flow(s),veh/h/ln	1781	1585	1781	1777	1777	1854
Q Serve(g_s), s	3.6	0.0	0.2	7.1	8.7	8.7
Cycle Q Clear(g_c), s	3.6	0.0	0.2	7.1	8.7	8.7
Prop In Lane	1.00	1.00	1.00			0.05
Lane Grp Cap(c), veh/h	175		424	2702	1195	1247
V/C Ratio(X)	0.63		0.05	0.44	0.46	0.46
Avail Cap(c_a), veh/h	564		505	2702	1195	1247
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.0	0.0	3.3	2.6	4.6	4.6
Incr Delay (d2), s/veh	1.4	0.0	0.0	0.5	1.3	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.0	0.0	1.2	2.4	2.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	27.4	0.0	3.3	3.1	5.9	5.9
LnGrp LOS	C		A	A	A	A
Approach Vol, veh/h	110	A		1203	1115	
Approach Delay, s/veh	27.4			3.1	5.9	
Approach LOS	C			A	A	

Timer - Assigned Phs	2		4	5	6
Phs Duration (G+Y+Rc), s	50.1		9.9	5.3	44.8
Change Period (Y+Rc), s	4.5		4.0	4.0	4.5
Max Green Setting (Gmax), s	32.5		19.0	4.0	24.5
Max Q Clear Time (g_c+I1), s	9.1		5.6	2.2	10.7
Green Ext Time (p_c), s	9.6		0.1	0.0	6.3

Intersection Summary	
HCM 6th Ctrl Delay	5.5
HCM 6th LOS	A

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.



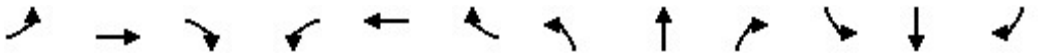
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	2	45	103	180	79	0
Future Volume (veh/h)	2	45	103	180	79	0
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	2	0	112	196	86	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	7	3	351	3214	2677	0
Arrive On Green	0.00	0.00	0.10	0.90	0.75	0.00
Sat Flow, veh/h	3456	1585	3456	3647	3741	0
Grp Volume(v), veh/h	2	0	112	196	86	0
Grp Sat Flow(s),veh/h/ln	1728	1585	1728	1777	1777	0
Q Serve(g_s), s	0.1	0.0	2.8	0.5	0.6	0.0
Cycle Q Clear(g_c), s	0.1	0.0	2.8	0.5	0.6	0.0
Prop In Lane	1.00	1.00	1.00			0.00
Lane Grp Cap(c), veh/h	7	3	351	3214	2677	0
V/C Ratio(X)	0.27	0.00	0.32	0.06	0.03	0.00
Avail Cap(c_a), veh/h	1226	562	944	3214	2677	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	46.3	0.0	38.8	0.5	2.9	0.0
Incr Delay (d2), s/veh	18.0	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
%ile BackOfQ(50%),veh/ln	0.0	0.0	1.2	0.0	0.2	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	64.3	0.0	39.3	0.5	2.9	0.0
LnGrp LOS	E	A	D	A	A	A
Approach Vol, veh/h	2			308	86	
Approach Delay, s/veh	64.3			14.6	2.9	
Approach LOS	E			B	A	

Timer - Assigned Phs	2			5	6	8
Phs Duration (G+Y+Rc), s	88.8			14.0	74.8	4.2
Change Period (Y+Rc), s	* 4.7			4.6	* 4.7	4.0
Max Green Setting (Gmax), s	* 51			25.4	* 21	33.0
Max Q Clear Time (g_c+I1), s	2.5			4.8	2.6	2.1
Green Ext Time (p_c), s	2.0			0.3	0.5	0.0

Intersection Summary	
HCM 6th Ctrl Delay	12.3
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	283	357	312	284	4	287	15	85	21	28	5
Future Volume (vph)	3	283	357	312	284	4	287	15	85	21	28	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6	4.6	4.0	4.6		4.6	4.6			4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Frt		1.00	0.85	1.00	1.00		1.00	0.87			0.99	
Flt Protected		1.00	1.00	0.95	1.00		0.95	1.00			0.98	
Satd. Flow (prot)		1862	1583	1770	1859		1770	1625			1805	
Flt Permitted		1.00	1.00	0.39	1.00		0.95	1.00			0.98	
Satd. Flow (perm)		1858	1583	730	1859		1770	1625			1805	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	3	308	388	339	309	4	312	16	92	23	30	5
RTOR Reduction (vph)	0	0	158	0	0	0	0	71	0	0	4	0
Lane Group Flow (vph)	0	311	230	339	313	0	312	37	0	0	54	0
Turn Type	Perm	NA	pm+ov	pm+pt	NA		Split	NA		Split	NA	
Protected Phases		2	8	1	6		8	8		7	7	
Permitted Phases	2		2	6								
Actuated Green, G (s)		36.4	59.4	56.5	56.5		23.0	23.0			7.3	
Effective Green, g (s)		36.4	59.4	56.5	56.5		23.0	23.0			7.3	
Actuated g/C Ratio		0.36	0.59	0.56	0.56		0.23	0.23			0.07	
Clearance Time (s)		4.6	4.6	4.0	4.6		4.6	4.6			4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)		676	940	579	1050		407	373			131	
v/s Ratio Prot			0.06	c0.09	0.17		c0.18	0.02			c0.03	
v/s Ratio Perm		0.17	0.09	c0.24								
v/c Ratio		0.46	0.25	0.59	0.30		0.77	0.10			0.41	
Uniform Delay, d1		24.3	9.6	12.9	11.4		36.0	30.3			44.3	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2		2.2	0.1	1.5	0.7		8.4	0.1			2.1	
Delay (s)		26.5	9.8	14.4	12.1		44.4	30.5			46.4	
Level of Service		C	A	B	B		D	C			D	
Approach Delay (s)		17.2			13.3			40.8			46.4	
Approach LOS		B			B			D			D	

Intersection Summary			
HCM 2000 Control Delay	22.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	17.2
Intersection Capacity Utilization	66.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	127	216	233	256	506	269
Future Volume (vph)	127	216	233	256	506	269
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.0	4.6	4.6	4.0	4.6
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	1863	1583	1770	1863
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	138	235	253	278	550	292
RTOR Reduction (vph)	0	106	0	25	0	0
Lane Group Flow (vph)	138	129	253	253	550	292
Turn Type	custom	pm+ov	NA	custom	Prot	NA
Protected Phases	3	1	2	3	1	6
Permitted Phases	4	4		2 4		
Actuated Green, G (s)	11.0	54.7	21.1	32.1	54.7	79.8
Effective Green, g (s)	11.0	54.7	21.1	32.1	54.7	79.8
Actuated g/C Ratio	0.11	0.55	0.21	0.32	0.55	0.80
Clearance Time (s)	4.6	4.0	4.6	4.6	4.0	4.6
Vehicle Extension (s)	1.0	2.7	5.5	1.0	2.7	3.5
Lane Grp Cap (vph)	194	865	393	580	968	1486
v/s Ratio Prot	c0.08	0.08	c0.14	0.05	c0.31	0.16
v/s Ratio Perm				0.11		
v/c Ratio	0.71	0.15	0.64	0.44	0.57	0.20
Uniform Delay, d1	43.0	11.2	36.0	26.8	14.9	2.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	9.8	0.0	5.4	0.2	2.4	0.3
Delay (s)	52.7	11.2	41.4	27.0	17.3	2.7
Level of Service	D	B	D	C	B	A
Approach Delay (s)	26.6		33.8			12.2
Approach LOS	C		C			B

Intersection Summary			
HCM 2000 Control Delay	21.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	17.2
Intersection Capacity Utilization	58.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM 6th Signalized Intersection Summary
6: San Clemente Dr & Tamalpais Dr/Redwood Hwy

06/07/2022



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	530	4	79	430	857	132
Future Volume (veh/h)	530	4	79	430	857	132
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	576	4	86	467	1065	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	820	6	240	2230	1406	626
Arrive On Green	0.23	0.23	0.13	0.44	0.39	0.00
Sat Flow, veh/h	3711	25	1781	5274	3563	1585
Grp Volume(v), veh/h	283	297	86	467	1065	0
Grp Sat Flow(s),veh/h/ln	1777	1866	1781	1702	1781	1585
Q Serve(g_s), s	7.8	7.8	2.3	3.0	13.8	0.0
Cycle Q Clear(g_c), s	7.8	7.8	2.3	3.0	13.8	0.0
Prop In Lane		0.01	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	403	423	240	2230	1406	626
V/C Ratio(X)	0.70	0.70	0.36	0.21	0.76	0.00
Avail Cap(c_a), veh/h	1135	1192	334	4591	1868	831
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	19.0	19.0	21.0	9.3	13.9	0.0
Incr Delay (d2), s/veh	0.8	0.8	1.3	0.1	1.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	3.1	1.0	0.9	4.9	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	19.8	19.8	22.3	9.4	15.5	0.0
LnGrp LOS	B	B	C	A	B	A
Approach Vol, veh/h	580			553	1065	
Approach Delay, s/veh	19.8			11.4	15.5	
Approach LOS	B			B	B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	11.2	17.1		25.1		28.3
Change Period (Y+Rc), s	4.0	* 5		4.0		5.0
Max Green Setting (Gmax), s	10.0	* 34		28.0		48.0
Max Q Clear Time (g_c+I1), s	4.3	9.8		15.8		5.0
Green Ext Time (p_c), s	0.1	2.3		5.3		5.1

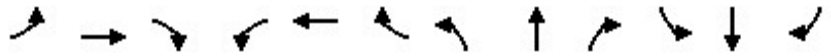
Intersection Summary	
HCM 6th Ctrl Delay	15.6
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	144	663	27	166	670	291	55	72	158	216	85	188
Future Volume (veh/h)	144	663	27	166	670	291	55	72	158	216	85	188
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	157	721	28	180	728	163	60	78	95	164	192	84
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	184	1812	70	207	1892	844	75	98	334	219	230	195
Arrive On Green	0.10	0.52	0.52	0.12	0.53	0.53	0.09	0.09	0.09	0.12	0.12	0.12
Sat Flow, veh/h	1781	3487	135	1781	3554	1585	796	1035	1585	1781	1870	1585
Grp Volume(v), veh/h	157	367	382	180	728	163	138	0	95	164	192	84
Grp Sat Flow(s),veh/h/ln	1781	1777	1846	1781	1777	1585	1831	0	1585	1781	1870	1585
Q Serve(g_s), s	10.7	15.5	15.5	12.3	14.9	6.6	9.2	0.0	6.2	11.0	12.4	6.1
Cycle Q Clear(g_c), s	10.7	15.5	15.5	12.3	14.9	6.6	9.2	0.0	6.2	11.0	12.4	6.1
Prop In Lane	1.00		0.07	1.00		1.00	0.43		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	184	923	959	207	1892	844	173	0	334	219	230	195
V/C Ratio(X)	0.85	0.40	0.40	0.87	0.38	0.19	0.80	0.00	0.28	0.75	0.83	0.43
Avail Cap(c_a), veh/h	259	923	959	259	1892	844	434	0	560	351	368	312
HCM Platoon Ratio	1.00	1.00	1.00	1.00	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	54.7	18.0	18.0	53.9	17.0	15.1	55.0	0.0	41.1	52.5	53.1	50.3
Incr Delay (d2), s/veh	13.3	1.3	1.2	19.5	0.6	0.5	3.2	0.0	0.2	1.9	4.5	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	5.5	6.7	6.9	6.6	6.2	2.5	4.4	0.0	2.5	5.1	6.1	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	68.0	19.3	19.3	73.4	17.6	15.6	58.1	0.0	41.3	54.4	57.6	50.9
LnGrp LOS	E	B	B	E	B	B	E	A	D	D	E	D
Approach Vol, veh/h		906			1071			233			440	
Approach Delay, s/veh		27.7			26.7			51.3			55.1	
Approach LOS		C			C			D			E	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	16.8	71.0		16.3	18.4	69.4		19.9
Change Period (Y+Rc), s	4.0	5.0		4.6	4.0	5.0		4.6
Max Green Setting (Gmax), s	18.8	34.0		29.4	18.0	34.0		24.4
Max Q Clear Time (g_c+I1), s	12.7	16.9		11.2	14.3	17.5		14.4
Green Ext Time (p_c), s	0.1	5.3		0.6	0.1	4.3		0.8

Intersection Summary	
HCM 6th Ctrl Delay	33.9
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.



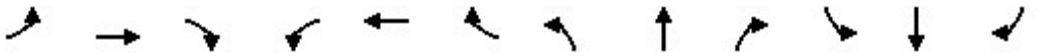
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	26	261	344	405	289	7
Future Volume (veh/h)	26	261	344	405	289	7
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	28	235	374	440	314	8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	600	275	478	2604	1930	49
Arrive On Green	0.17	0.17	0.14	0.73	0.55	0.55
Sat Flow, veh/h	3456	1585	3456	3647	3634	90
Grp Volume(v), veh/h	28	235	374	440	157	165
Grp Sat Flow(s),veh/h/ln	1728	1585	1728	1777	1777	1854
Q Serve(g_s), s	0.6	13.4	9.7	3.5	4.1	4.1
Cycle Q Clear(g_c), s	0.6	13.4	9.7	3.5	4.1	4.1
Prop In Lane	1.00	1.00	1.00			0.05
Lane Grp Cap(c), veh/h	600	275	478	2604	969	1011
V/C Ratio(X)	0.05	0.85	0.78	0.17	0.16	0.16
Avail Cap(c_a), veh/h	1226	562	944	2604	969	1011
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.0	37.3	38.7	3.8	10.6	10.6
Incr Delay (d2), s/veh	0.0	7.4	2.9	0.1	0.4	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	5.7	4.3	1.1	1.6	1.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	32.0	44.7	41.6	3.9	10.9	10.9
LnGrp LOS	C	D	D	A	B	B
Approach Vol, veh/h	263			814	322	
Approach Delay, s/veh	43.3			21.2	10.9	
Approach LOS	D			C	B	

Timer - Assigned Phs	2		5	6	8
Phs Duration (G+Y+Rc), s	72.8		17.5	55.4	20.2
Change Period (Y+Rc), s	* 4.7		4.6	* 4.7	4.0
Max Green Setting (Gmax), s	* 51		25.4	* 21	33.0
Max Q Clear Time (g_c+I1), s	5.5		11.7	6.1	15.4
Green Ext Time (p_c), s	4.8		1.1	2.2	0.8

Intersection Summary	
HCM 6th Ctrl Delay	23.0
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	196	240	225	280	5	440	25	83	31	27	10
Future Volume (vph)	1	196	240	225	280	5	440	25	83	31	27	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6	4.6	4.0	4.6		4.6	4.6			4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Frt		1.00	0.85	1.00	1.00		1.00	0.88			0.98	
Flt Protected		1.00	1.00	0.95	1.00		0.95	1.00			0.98	
Satd. Flow (prot)		1862	1583	1770	1858		1770	1648			1784	
Flt Permitted		1.00	1.00	0.45	1.00		0.95	1.00			0.98	
Satd. Flow (perm)		1861	1583	843	1858		1770	1648			1784	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	213	261	245	304	5	478	27	90	34	29	11
RTOR Reduction (vph)	0	0	103	0	1	0	0	61	0	0	6	0
Lane Group Flow (vph)	0	214	158	245	308	0	478	56	0	0	68	0
Turn Type	Perm	NA	pm+ov	pm+pt	NA		Split	NA		Split	NA	
Protected Phases		2	8	1	6		8	8		7	7	
Permitted Phases	2		2	6								
Actuated Green, G (s)		28.8	60.7	46.9	46.9		31.9	31.9			8.0	
Effective Green, g (s)		28.8	60.7	46.9	46.9		31.9	31.9			8.0	
Actuated g/C Ratio		0.29	0.61	0.47	0.47		0.32	0.32			0.08	
Clearance Time (s)		4.6	4.6	4.0	4.6		4.6	4.6			4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)		535	960	526	871		564	525			142	
v/s Ratio Prot			0.05	c0.07	0.17		c0.27	0.03			c0.04	
v/s Ratio Perm		0.12	0.05	c0.15								
v/c Ratio		0.40	0.17	0.47	0.35		0.85	0.11			0.48	
Uniform Delay, d1		28.6	8.6	16.9	16.9		31.8	24.0			44.0	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2		2.2	0.1	0.7	1.1		11.3	0.1			2.5	
Delay (s)		30.9	8.7	17.5	18.0		43.1	24.1			46.5	
Level of Service		C	A	B	B		D	C			D	
Approach Delay (s)		18.7			17.8			39.4			46.5	
Approach LOS		B			B			D			D	

Intersection Summary			
HCM 2000 Control Delay	26.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	17.2
Intersection Capacity Utilization	68.0%	ICU Level of Service	C
Analysis Period (min)	15		

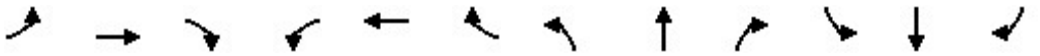
c Critical Lane Group



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	106	169	283	228	472	322
Future Volume (vph)	106	169	283	228	472	322
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.0	4.6	4.6	4.0	4.6
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	1863	1583	1770	1863
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	115	184	308	248	513	350
RTOR Reduction (vph)	0	88	0	63	0	0
Lane Group Flow (vph)	115	96	308	185	513	350
Turn Type	custom	pm+ov	NA	custom	Prot	NA
Protected Phases	3	1	2	3	1	6
Permitted Phases	4	4		2 4		
Actuated Green, G (s)	10.3	52.4	24.1	34.4	52.4	80.5
Effective Green, g (s)	10.3	52.4	24.1	34.4	52.4	80.5
Actuated g/C Ratio	0.10	0.52	0.24	0.34	0.52	0.80
Clearance Time (s)	4.6	4.0	4.6	4.6	4.0	4.6
Vehicle Extension (s)	1.0	2.7	5.5	1.0	2.7	3.5
Lane Grp Cap (vph)	182	829	448	617	927	1499
v/s Ratio Prot	c0.06	0.06	c0.17	0.03	c0.29	0.19
v/s Ratio Perm				0.09		
v/c Ratio	0.63	0.12	0.69	0.30	0.55	0.23
Uniform Delay, d1	43.0	12.1	34.5	24.0	16.0	2.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.2	0.0	6.1	0.1	2.4	0.4
Delay (s)	48.2	12.1	40.6	24.1	18.3	2.7
Level of Service	D	B	D	C	B	A
Approach Delay (s)	26.0		33.2			12.0
Approach LOS	C		C			B

Intersection Summary			
HCM 2000 Control Delay	21.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	17.2
Intersection Capacity Utilization	58.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	41	679	59	21	828	17	79	0	31	20	1	36
Future Volume (vph)	41	679	59	21	828	17	79	0	31	20	1	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.6		4.0	4.6			4.2			4.6	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frt	1.00	0.99		1.00	1.00			0.96			0.92	
Flt Protected	0.95	1.00		0.95	1.00			0.97			0.98	
Satd. Flow (prot)	1770	3497		1770	3529			1730			1675	
Flt Permitted	0.95	1.00		0.95	1.00			0.75			0.89	
Satd. Flow (perm)	1770	3497		1770	3529			1340			1512	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	45	738	64	23	900	18	86	0	34	22	1	39
RTOR Reduction (vph)	0	7	0	0	2	0	0	91	0	0	35	0
Lane Group Flow (vph)	45	795	0	23	916	0	0	29	0	0	27	0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			4			8	
Permitted Phases							4			8		
Actuated Green, G (s)	3.6	39.0		2.0	37.4			6.2			5.8	
Effective Green, g (s)	3.6	39.0		2.0	37.4			6.2			5.8	
Actuated g/C Ratio	0.06	0.65		0.03	0.62			0.10			0.10	
Clearance Time (s)	4.0	4.6		4.0	4.6			4.2			4.6	
Vehicle Extension (s)	2.0	3.0		2.0	3.0			2.0			2.0	
Lane Grp Cap (vph)	106	2273		59	2199			138			146	
v/s Ratio Prot	c0.03	0.23		0.01	c0.26							
v/s Ratio Perm								c0.02			0.02	
v/c Ratio	0.42	0.35		0.39	0.42			0.21			0.18	
Uniform Delay, d1	27.2	4.8		28.4	5.8			24.6			24.9	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	1.0	0.4		1.6	0.6			0.3			0.2	
Delay (s)	28.2	5.2		30.0	6.3			24.9			25.1	
Level of Service	C	A		C	A			C			C	
Approach Delay (s)		6.4			6.9			24.9			25.1	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	8.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	13.2
Intersection Capacity Utilization	53.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	290	567	35	0	70
Future Vol, veh/h	0	290	567	35	0	70
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	315	616	38	0	76

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	635
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	0	-	-	-	0	478
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	478
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	14
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	478
HCM Lane V/C Ratio	-	-	-	0.159
HCM Control Delay (s)	-	-	-	14
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0.6



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	465	90	100	229	66	160
Future Volume (veh/h)	465	90	100	229	66	160
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	505	9	109	249	72	47
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	541	481	170	1146	902	1246
Arrive On Green	0.30	0.30	0.10	0.61	0.48	0.48
Sat Flow, veh/h	1781	1585	1781	1870	1870	1585
Grp Volume(v), veh/h	505	9	109	249	72	47
Grp Sat Flow(s),veh/h/ln	1781	1585	1781	1870	1870	1585
Q Serve(g_s), s	27.6	0.4	5.9	6.0	2.1	0.7
Cycle Q Clear(g_c), s	27.6	0.4	5.9	6.0	2.1	0.7
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	541	481	170	1146	902	1246
V/C Ratio(X)	0.93	0.02	0.64	0.22	0.08	0.04
Avail Cap(c_a), veh/h	905	805	223	1146	902	1246
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.9	24.4	43.6	8.7	13.9	2.4
Incr Delay (d2), s/veh	7.1	0.0	1.5	0.4	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.7	0.4	2.7	2.4	0.9	0.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	41.0	24.4	45.1	9.1	14.1	2.4
LnGrp LOS	D	C	D	A	B	A
Approach Vol, veh/h	514			358	119	
Approach Delay, s/veh	40.7			20.1	9.5	
Approach LOS	D			C	A	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	13.0	52.4		34.5		65.5
Change Period (Y+Rc), s	3.5	* 4.2		* 4.2		* 4.2
Max Green Setting (Gmax), s	12.5	* 25		* 51		* 25
Max Q Clear Time (g_c+I1), s	7.9	4.1		29.6		8.0
Green Ext Time (p_c), s	0.0	0.3		0.8		0.8

Intersection Summary	
HCM 6th Ctrl Delay	29.5
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

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	2	3	3	203	3	164	8	363	143	235	202	6
Future Vol, veh/h	2	3	3	203	3	164	8	363	143	235	202	6
Peak Hour Factor	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	2	3	3	221	3	178	9	395	155	255	220	7
Number of Lanes	0	1	0	0	1	1	1	1	1	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	2	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	3	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	2	2	1
HCM Control Delay	12.4	17.8	30.7	20
HCM LOS	B	C	D	C

Lane	NBLn1	NBLn2	NBLn3	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	25%	99%	0%	100%	0%
Vol Thru, %	0%	100%	0%	38%	1%	0%	0%	97%
Vol Right, %	0%	0%	100%	38%	0%	100%	0%	3%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	8	363	143	8	206	164	235	208
LT Vol	8	0	0	2	203	0	235	0
Through Vol	0	363	0	3	3	0	0	202
RT Vol	0	0	143	3	0	164	0	6
Lane Flow Rate	9	395	155	9	224	178	255	226
Geometry Grp	8	8	8	8	8	8	8	8
Degree of Util (X)	0.02	0.834	0.298	0.023	0.531	0.363	0.586	0.485
Departure Headway (Hd)	8.119	7.607	6.891	9.367	8.536	7.321	8.263	7.729
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	441	477	521	381	423	490	437	466
Service Time	5.871	5.359	4.643	7.158	6.293	5.077	6.022	5.488
HCM Lane V/C Ratio	0.02	0.828	0.298	0.024	0.53	0.363	0.584	0.485
HCM Control Delay	11	38.3	12.6	12.4	20.6	14.2	22.1	17.6
HCM Lane LOS	B	E	B	B	C	B	C	C
HCM 95th-tile Q	0.1	8.2	1.2	0.1	3	1.6	3.7	2.6



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	576	7	67	470	1023	92
Future Volume (veh/h)	576	7	67	470	1023	92
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	626	8	73	511	1205	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	858	11	213	2184	1483	660
Arrive On Green	0.24	0.24	0.12	0.43	0.42	0.00
Sat Flow, veh/h	3687	46	1781	5274	3563	1585
Grp Volume(v), veh/h	309	325	73	511	1205	0
Grp Sat Flow(s),veh/h/ln	1777	1862	1781	1702	1781	1585
Q Serve(g_s), s	9.3	9.3	2.2	3.7	17.2	0.0
Cycle Q Clear(g_c), s	9.3	9.3	2.2	3.7	17.2	0.0
Prop In Lane		0.02	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	425	445	213	2184	1483	660
V/C Ratio(X)	0.73	0.73	0.34	0.23	0.81	0.00
Avail Cap(c_a), veh/h	1050	1100	309	4246	1728	769
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	20.2	20.2	23.3	10.5	14.9	0.0
Incr Delay (d2), s/veh	0.9	0.9	1.4	0.1	2.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	3.8	0.9	1.2	6.5	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	21.2	21.1	24.7	10.6	17.8	0.0
LnGrp LOS	C	C	C	B	B	A
Approach Vol, veh/h	634			584	1205	
Approach Delay, s/veh	21.1			12.3	17.8	
Approach LOS	C			B	B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	10.9	18.8		28.0		29.7
Change Period (Y+Rc), s	4.0	* 5		4.0		5.0
Max Green Setting (Gmax), s	10.9	* 34		28.0		48.0
Max Q Clear Time (g_c+I1), s	4.2	11.3		19.2		5.7
Green Ext Time (p_c), s	0.1	2.5		4.8		5.7

Intersection Summary	
HCM 6th Ctrl Delay	17.4
HCM 6th LOS	B

Notes

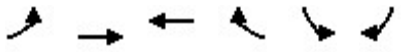
User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	876	0	0	760	760	483
Future Volume (veh/h)	876	0	0	760	760	483
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	0	0	1870	1870	1870
Adj Flow Rate, veh/h	952	0	0	826	826	341
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	0	0	2	2	2
Cap, veh/h	2052	0	0	2052	919	742
Arrive On Green	0.58	0.00	0.00	0.58	0.27	0.27
Sat Flow, veh/h	3741	0	0	3741	3456	2790
Grp Volume(v), veh/h	952	0	0	826	826	341
Grp Sat Flow(s),veh/h/ln	1777	0	0	1777	1728	1395
Q Serve(g_s), s	9.6	0.0	0.0	7.9	14.3	6.3
Cycle Q Clear(g_c), s	9.6	0.0	0.0	7.9	14.3	6.3
Prop In Lane		0.00	0.00		1.00	1.00
Lane Grp Cap(c), veh/h	2052	0	0	2052	919	742
V/C Ratio(X)	0.46	0.00	0.00	0.40	0.90	0.46
Avail Cap(c_a), veh/h	2052	0	0	2052	1131	913
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	7.6	0.0	0.0	7.2	21.9	19.0
Incr Delay (d2), s/veh	0.8	0.0	0.0	0.6	7.5	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	0.0	0.0	2.5	6.3	1.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	8.3	0.0	0.0	7.8	29.4	19.2
LnGrp LOS	A	A	A	A	C	B
Approach Vol, veh/h	952			826	1167	
Approach Delay, s/veh	8.3			7.8	26.4	
Approach LOS	A			A	C	

Timer - Assigned Phs	2				6	8
Phs Duration (G+Y+Rc), s	40.8				40.8	21.2
Change Period (Y+Rc), s	5.0				5.0	4.7
Max Green Setting (Gmax), s	32.0				32.0	20.3
Max Q Clear Time (g_c+I1), s	11.6				9.9	16.3
Green Ext Time (p_c), s	1.5				1.2	0.2

Intersection Summary						
HCM 6th Ctrl Delay			15.4			
HCM 6th LOS			B			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	972	1074	0	641	341
Future Volume (veh/h)	0	972	1074	0	641	341
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	0	1870	1870	0	1870	1870
Adj Flow Rate, veh/h	0	1057	1167	0	697	295
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	0	2	2
Cap, veh/h	0	2203	2203	0	796	354
Arrive On Green	0.00	0.62	0.62	0.00	0.22	0.22
Sat Flow, veh/h	0	3741	3741	0	3563	1585
Grp Volume(v), veh/h	0	1057	1167	0	697	295
Grp Sat Flow(s),veh/h/ln	0	1777	1777	0	1781	1585
Q Serve(g_s), s	0.0	10.0	11.5	0.0	11.7	11.0
Cycle Q Clear(g_c), s	0.0	10.0	11.5	0.0	11.7	11.0
Prop In Lane	0.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	2203	2203	0	796	354
V/C Ratio(X)	0.00	0.48	0.53	0.00	0.88	0.83
Avail Cap(c_a), veh/h	0	2203	2203	0	1437	639
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	6.4	6.7	0.0	23.2	23.0
Incr Delay (d2), s/veh	0.0	0.8	0.9	0.0	1.2	2.0
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	3.0	3.5	0.0	4.7	4.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	7.1	7.6	0.0	24.5	24.9
LnGrp LOS	A	A	A	A	C	C
Approach Vol, veh/h		1057	1167		992	
Approach Delay, s/veh		7.1	7.6		24.6	
Approach LOS		A	A		C	

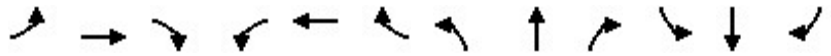
Timer - Assigned Phs	2	4	6
Phs Duration (G+Y+Rc), s	43.4	18.6	43.4
Change Period (Y+Rc), s	5.0	* 4.7	5.0
Max Green Setting (Gmax), s	27.3	* 25	27.3
Max Q Clear Time (g_c+I1), s	12.0	13.7	13.5
Green Ext Time (p_c), s	1.6	0.2	1.8

Intersection Summary	
HCM 6th Ctrl Delay	12.7
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	164	572	59	236	663	305	41	72	186	226	61	170
Future Volume (veh/h)	164	572	59	236	663	305	41	72	186	226	61	170
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	178	622	63	257	721	179	45	78	125	156	192	65
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	204	1649	167	244	1878	838	59	102	356	219	230	195
Arrive On Green	0.11	0.51	0.51	0.14	0.53	0.53	0.09	0.09	0.09	0.12	0.12	0.12
Sat Flow, veh/h	1781	3258	330	1781	3554	1585	672	1165	1585	1781	1870	1585
Grp Volume(v), veh/h	178	339	346	257	721	179	123	0	125	156	192	65
Grp Sat Flow(s),veh/h/ln	1781	1777	1811	1781	1777	1585	1837	0	1585	1781	1870	1585
Q Serve(g_s), s	12.2	14.4	14.5	17.0	14.9	7.4	8.1	0.0	8.2	10.4	12.4	4.7
Cycle Q Clear(g_c), s	12.2	14.4	14.5	17.0	14.9	7.4	8.1	0.0	8.2	10.4	12.4	4.7
Prop In Lane	1.00		0.18	1.00		1.00	0.37		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	204	899	917	244	1878	838	160	0	356	219	230	195
V/C Ratio(X)	0.87	0.38	0.38	1.05	0.38	0.21	0.77	0.00	0.35	0.71	0.84	0.33
Avail Cap(c_a), veh/h	244	899	917	244	1878	838	435	0	593	351	368	312
HCM Platoon Ratio	1.00	1.00	1.00	1.00	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	54.0	18.7	18.7	53.5	17.3	15.5	55.4	0.0	40.5	52.3	53.2	49.8
Incr Delay (d2), s/veh	21.7	1.2	1.2	72.0	0.6	0.6	2.9	0.0	0.2	1.6	4.5	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.7	6.2	6.4	12.5	6.2	2.8	3.9	0.0	3.3	4.8	6.1	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	75.7	19.9	19.9	125.5	17.9	16.1	58.2	0.0	40.7	53.9	57.7	50.1
LnGrp LOS	E	B	B	F	B	B	E	A	D	D	E	D
Approach Vol, veh/h		863			1157			248			413	
Approach Delay, s/veh		31.4			41.5			49.4			55.1	
Approach LOS		C			D			D			E	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	18.2	70.5		15.4	21.0	67.8		19.8
Change Period (Y+Rc), s	4.0	5.0		4.6	4.0	5.0		4.6
Max Green Setting (Gmax), s	17.0	35.0		29.4	17.0	35.0		24.4
Max Q Clear Time (g_c+I1), s	14.2	16.9		10.2	19.0	16.5		14.4
Green Ext Time (p_c), s	0.1	5.4		0.6	0.0	4.1		0.8

Intersection Summary	
HCM 6th Ctrl Delay	41.1
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	252	37	21	762	846	26
Future Volume (veh/h)	252	37	21	762	846	26
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	274	0	23	828	920	26
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	328		419	2396	2069	58
Arrive On Green	0.18	0.00	0.02	0.67	0.59	0.59
Sat Flow, veh/h	1781	1585	1781	3647	3623	100
Grp Volume(v), veh/h	274	0	23	828	463	483
Grp Sat Flow(s),veh/h/ln	1781	1585	1781	1777	1777	1852
Q Serve(g_s), s	8.9	0.0	0.3	5.9	8.8	8.8
Cycle Q Clear(g_c), s	8.9	0.0	0.3	5.9	8.8	8.8
Prop In Lane	1.00	1.00	1.00			0.05
Lane Grp Cap(c), veh/h	328		419	2396	1042	1086
V/C Ratio(X)	0.84		0.05	0.35	0.44	0.44
Avail Cap(c_a), veh/h	564		500	2396	1042	1086
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.6	0.0	4.9	4.2	6.9	6.9
Incr Delay (d2), s/veh	2.2	0.0	0.0	0.4	1.4	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	0.0	0.1	1.5	2.9	3.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	25.8	0.0	4.9	4.5	8.3	8.3
LnGrp LOS	C		A	A	A	A
Approach Vol, veh/h	274	A		851	946	
Approach Delay, s/veh	25.8			4.6	8.3	
Approach LOS	C			A	A	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		44.9		15.1	5.3	39.7
Change Period (Y+Rc), s		4.5		4.0	4.0	4.5
Max Green Setting (Gmax), s		32.5		19.0	4.0	24.5
Max Q Clear Time (g_c+I1), s		7.9		10.9	2.3	10.8
Green Ext Time (p_c), s		6.3		0.3	0.0	5.2

Intersection Summary	
HCM 6th Ctrl Delay	9.1
HCM 6th LOS	A

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.



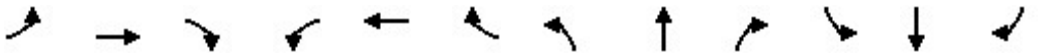
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	24	251	320	375	240	1
Future Volume (veh/h)	24	251	320	375	240	1
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	26	224	348	408	261	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	576	264	450	2629	2034	8
Arrive On Green	0.17	0.17	0.13	0.74	0.56	0.56
Sat Flow, veh/h	3456	1585	3456	3647	3724	14
Grp Volume(v), veh/h	26	224	348	408	128	134
Grp Sat Flow(s),veh/h/ln	1728	1585	1728	1777	1777	1868
Q Serve(g_s), s	0.6	12.8	9.1	3.1	3.2	3.2
Cycle Q Clear(g_c), s	0.6	12.8	9.1	3.1	3.2	3.2
Prop In Lane	1.00	1.00	1.00			0.01
Lane Grp Cap(c), veh/h	576	264	450	2629	995	1046
V/C Ratio(X)	0.05	0.85	0.77	0.16	0.13	0.13
Avail Cap(c_a), veh/h	1226	562	944	2629	995	1046
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.5	37.6	39.1	3.6	9.7	9.7
Incr Delay (d2), s/veh	0.0	7.4	2.9	0.1	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	5.4	4.0	0.9	1.2	1.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	32.6	45.1	42.0	3.7	10.0	9.9
LnGrp LOS	C	D	D	A	A	A
Approach Vol, veh/h	250			756	262	
Approach Delay, s/veh	43.8			21.3	10.0	
Approach LOS	D			C	A	

Timer - Assigned Phs	2		5	6	8
Phs Duration (G+Y+Rc), s	73.5		16.7	56.8	19.5
Change Period (Y+Rc), s	* 4.7		4.6	* 4.7	4.0
Max Green Setting (Gmax), s	* 51		25.4	* 21	33.0
Max Q Clear Time (g_c+I1), s	5.1		11.1	5.2	14.8
Green Ext Time (p_c), s	4.4		1.1	1.8	0.8

Intersection Summary	
HCM 6th Ctrl Delay	23.4
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	249	334	250	440	2	464	17	49	18	25	7
Future Volume (vph)	0	249	334	250	440	2	464	17	49	18	25	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6	4.6	4.0	4.6		4.6	4.6			4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Frt		1.00	0.85	1.00	1.00		1.00	0.89			0.98	
Flt Protected		1.00	1.00	0.95	1.00		0.95	1.00			0.98	
Satd. Flow (prot)		1863	1583	1770	1862		1770	1654			1794	
Flt Permitted		1.00	1.00	0.34	1.00		0.95	1.00			0.98	
Satd. Flow (perm)		1863	1583	637	1862		1770	1654			1794	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	271	363	272	478	2	504	18	53	20	27	8
RTOR Reduction (vph)	0	0	139	0	0	0	0	34	0	0	7	0
Lane Group Flow (vph)	0	271	224	272	480	0	504	37	0	0	48	0
Turn Type		NA	pm+ov	pm+pt	NA		Split	NA		Split	NA	
Protected Phases		2	8	1	6		8	8		7	7	
Permitted Phases			2	6								
Actuated Green, G (s)		25.7	61.7	43.9	43.9		36.0	36.0			6.9	
Effective Green, g (s)		25.7	61.7	43.9	43.9		36.0	36.0			6.9	
Actuated g/C Ratio		0.26	0.62	0.44	0.44		0.36	0.36			0.07	
Clearance Time (s)		4.6	4.6	4.0	4.6		4.6	4.6			4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)		478	976	440	817		637	595			123	
v/s Ratio Prot		0.15	0.08	0.09	c0.26		c0.28	0.02			c0.03	
v/s Ratio Perm			0.06	c0.18								
v/c Ratio		0.57	0.23	0.62	0.59		0.79	0.06			0.39	
Uniform Delay, d1		32.3	8.5	19.6	21.2		28.6	21.0			44.5	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2		4.8	0.1	2.6	3.1		6.7	0.0			2.1	
Delay (s)		37.1	8.7	22.2	24.3		35.3	21.0			46.6	
Level of Service		D	A	C	C		D	C			D	
Approach Delay (s)		20.8			23.5			33.5			46.6	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM 2000 Control Delay	26.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	17.2
Intersection Capacity Utilization	70.3%	ICU Level of Service	C
Analysis Period (min)	15		

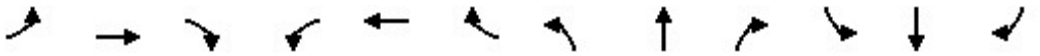
c Critical Lane Group



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	56	287	158	152	414	279
Future Volume (vph)	56	287	158	152	414	279
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.0	4.6	4.6	4.0	4.6
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	1863	1583	1770	1863
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	61	312	172	165	450	303
RTOR Reduction (vph)	0	120	0	98	0	0
Lane Group Flow (vph)	61	192	172	67	450	303
Turn Type	custom	pm+ov	NA	custom	Prot	NA
Protected Phases	3	1	2	3	1	6
Permitted Phases	4	4		2 4		
Actuated Green, G (s)	8.5	61.6	16.7	25.2	61.6	82.3
Effective Green, g (s)	8.5	61.6	16.7	25.2	61.6	82.3
Actuated g/C Ratio	0.08	0.62	0.17	0.25	0.62	0.82
Clearance Time (s)	4.6	4.0	4.6	4.6	4.0	4.6
Vehicle Extension (s)	1.0	2.7	5.5	1.0	2.7	3.5
Lane Grp Cap (vph)	150	975	311	471	1090	1533
v/s Ratio Prot	c0.03	0.12	c0.09	0.01	c0.25	0.16
v/s Ratio Perm				0.03		
v/c Ratio	0.41	0.20	0.55	0.14	0.41	0.20
Uniform Delay, d1	43.4	8.4	38.2	29.0	9.9	1.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	0.0	4.1	0.1	1.2	0.3
Delay (s)	44.0	8.4	42.3	29.1	11.0	2.2
Level of Service	D	A	D	C	B	A
Approach Delay (s)	14.2		35.8			7.5
Approach LOS	B		D			A

Intersection Summary			
HCM 2000 Control Delay	15.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	17.2
Intersection Capacity Utilization	48.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	960	79	34	959	23	71	0	40	34	2	54
Future Volume (vph)	26	960	79	34	959	23	71	0	40	34	2	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.6		4.0	4.6			4.2			4.6	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frt	1.00	0.99		1.00	1.00			0.95			0.92	
Flt Protected	0.95	1.00		0.95	1.00			0.97			0.98	
Satd. Flow (prot)	1770	3499		1770	3527			1718			1680	
Flt Permitted	0.95	1.00		0.95	1.00			0.83			0.87	
Satd. Flow (perm)	1770	3499		1770	3527			1476			1490	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	28	1043	86	37	1042	25	77	0	43	37	2	59
RTOR Reduction (vph)	0	7	0	0	2	0	0	91	0	0	53	0
Lane Group Flow (vph)	28	1122	0	37	1065	0	0	29	0	0	45	0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			4			8	
Permitted Phases							4			8		
Actuated Green, G (s)	3.6	36.8		4.0	37.2			6.4			6.0	
Effective Green, g (s)	3.6	36.8		4.0	37.2			6.4			6.0	
Actuated g/C Ratio	0.06	0.61		0.07	0.62			0.11			0.10	
Clearance Time (s)	4.0	4.6		4.0	4.6			4.2			4.6	
Vehicle Extension (s)	2.0	3.0		2.0	3.0			2.0			2.0	
Lane Grp Cap (vph)	106	2146		118	2186			157			149	
v/s Ratio Prot	0.02	c0.32		c0.02	0.30							
v/s Ratio Perm								0.02			c0.03	
v/c Ratio	0.26	0.52		0.31	0.49			0.18			0.30	
Uniform Delay, d1	26.9	6.6		26.7	6.2			24.4			25.1	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.5	0.9		0.6	0.8			0.2			0.4	
Delay (s)	27.4	7.5		27.2	7.0			24.6			25.5	
Level of Service	C	A		C	A			C			C	
Approach Delay (s)		8.0			7.7			24.6			25.5	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	9.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	13.2
Intersection Capacity Utilization	47.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	315	691	62	0	32
Future Vol, veh/h	0	315	691	62	0	32
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	342	751	67	0	35

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	785
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	0	-	-	-	0	393
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	393
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	15
HCM LOS			C

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	393
HCM Lane V/C Ratio	-	-	-	0.089
HCM Control Delay (s)	-	-	-	15
HCM Lane LOS	-	-	-	C
HCM 95th %tile Q(veh)	-	-	-	0.3



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	476	96	110	63	24	327
Future Volume (veh/h)	476	96	110	63	24	327
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	517	15	120	68	26	228
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	552	491	172	1133	888	1244
Arrive On Green	0.31	0.31	0.10	0.61	0.47	0.47
Sat Flow, veh/h	1781	1585	1781	1870	1870	1585
Grp Volume(v), veh/h	517	15	120	68	26	228
Grp Sat Flow(s),veh/h/ln	1781	1585	1781	1870	1870	1585
Q Serve(g_s), s	28.2	0.7	6.5	1.5	0.7	3.6
Cycle Q Clear(g_c), s	28.2	0.7	6.5	1.5	0.7	3.6
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	552	491	172	1133	888	1244
V/C Ratio(X)	0.94	0.03	0.70	0.06	0.03	0.18
Avail Cap(c_a), veh/h	816	726	258	1133	888	1244
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.5	24.0	43.8	8.1	14.0	2.7
Incr Delay (d2), s/veh	11.2	0.0	1.9	0.1	0.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.6	0.7	2.9	0.6	0.3	3.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	44.8	24.0	45.7	8.2	14.1	3.0
LnGrp LOS	D	C	D	A	B	A
Approach Vol, veh/h	532			188	254	
Approach Delay, s/veh	44.2			32.1	4.2	
Approach LOS	D			C	A	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	13.1	51.7		35.2		64.8
Change Period (Y+Rc), s	3.5	* 4.2		* 4.2		* 4.2
Max Green Setting (Gmax), s	14.5	* 28		* 46		* 28
Max Q Clear Time (g_c+I1), s	8.5	5.6		30.2		3.5
Green Ext Time (p_c), s	0.0	0.5		0.8		0.2

Intersection Summary		
HCM 6th Ctrl Delay		31.4
HCM 6th LOS		C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

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	2	5	3	150	6	103	9	239	171	122	190	1
Future Vol, veh/h	2	5	3	150	6	103	9	239	171	122	190	1
Peak Hour Factor	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	2	5	3	163	7	112	10	260	186	133	207	1
Number of Lanes	0	1	0	0	1	1	1	1	1	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	2	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	3	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	2	2	1
HCM Control Delay	10.7	12.7	13.3	13.2
HCM LOS	B	B	B	B

Lane	NBLn1	NBLn2	NBLn3	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	20%	96%	0%	100%	0%
Vol Thru, %	0%	100%	0%	50%	4%	0%	0%	99%
Vol Right, %	0%	0%	100%	30%	0%	100%	0%	1%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	9	239	171	10	156	103	122	191
LT Vol	9	0	0	2	150	0	122	0
Through Vol	0	239	0	5	6	0	0	190
RT Vol	0	0	171	3	0	103	0	1
Lane Flow Rate	10	260	186	11	170	112	133	208
Geometry Grp	8	8	8	8	8	8	8	8
Degree of Util (X)	0.019	0.47	0.3	0.023	0.35	0.194	0.265	0.385
Departure Headway (Hd)	7.019	6.512	5.802	7.769	7.439	6.247	7.188	6.676
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	508	551	617	464	482	571	497	536
Service Time	4.787	4.28	3.569	5.469	5.215	4.022	4.963	4.451
HCM Lane V/C Ratio	0.02	0.472	0.301	0.024	0.353	0.196	0.268	0.388
HCM Control Delay	9.9	15	11.1	10.7	14.2	10.5	12.6	13.6
HCM Lane LOS	A	B	B	B	B	B	B	B
HCM 95th-tile Q	0.1	2.5	1.3	0.1	1.6	0.7	1.1	1.8



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	167	32	79	122	1144	107
Future Volume (veh/h)	167	32	79	122	1144	107
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	182	35	86	133	1243	116
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	875	161	249	2158	1987	627
Arrive On Green	0.20	0.20	0.14	0.42	0.40	0.40
Sat Flow, veh/h	4502	797	1781	5274	5023	1585
Grp Volume(v), veh/h	141	76	86	133	1243	116
Grp Sat Flow(s),veh/h/ln	1702	1727	1781	1702	1674	1585
Q Serve(g_s), s	1.7	1.8	2.2	0.8	9.8	2.4
Cycle Q Clear(g_c), s	1.7	1.8	2.2	0.8	9.8	2.4
Prop In Lane		0.46	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	687	349	249	2158	1987	627
V/C Ratio(X)	0.21	0.22	0.34	0.06	0.63	0.18
Avail Cap(c_a), veh/h	2343	1189	360	4948	2840	896
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.5	16.5	19.2	8.5	12.0	9.8
Incr Delay (d2), s/veh	0.1	0.1	1.2	0.0	0.5	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.7	0.9	0.2	3.1	0.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	16.5	16.6	20.4	8.5	12.5	10.0
LnGrp LOS	B	B	C	A	B	A
Approach Vol, veh/h	217			219	1359	
Approach Delay, s/veh	16.5			13.2	12.3	
Approach LOS	B			B	B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	10.9	15.0		23.6		25.9
Change Period (Y+Rc), s	4.0	* 5		4.0		5.0
Max Green Setting (Gmax), s	10.9	* 34		28.0		48.0
Max Q Clear Time (g_c+I1), s	4.2	3.8		11.8		2.8
Green Ext Time (p_c), s	0.1	0.9		7.8		1.3

Intersection Summary	
HCM 6th Ctrl Delay	12.9
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

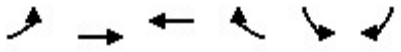
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	935	0	0	757	462	431
Future Volume (veh/h)	935	0	0	757	462	431
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	0	0	1870	1870	1870
Adj Flow Rate, veh/h	1016	0	0	823	502	284
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	0	0	2	2	2
Cap, veh/h	2376	0	0	2376	604	488
Arrive On Green	0.67	0.00	0.00	0.67	0.17	0.17
Sat Flow, veh/h	3741	0	0	3741	3456	2790
Grp Volume(v), veh/h	1016	0	0	823	502	284
Grp Sat Flow(s),veh/h/ln	1777	0	0	1777	1728	1395
Q Serve(g_s), s	8.2	0.0	0.0	6.2	8.7	5.8
Cycle Q Clear(g_c), s	8.2	0.0	0.0	6.2	8.7	5.8
Prop In Lane		0.00	0.00		1.00	1.00
Lane Grp Cap(c), veh/h	2376	0	0	2376	604	488
V/C Ratio(X)	0.43	0.00	0.00	0.35	0.83	0.58
Avail Cap(c_a), veh/h	2376	0	0	2376	909	733
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	4.8	0.0	0.0	4.4	24.7	23.5
Incr Delay (d2), s/veh	0.6	0.0	0.0	0.4	2.5	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	0.0	0.0	1.6	3.5	1.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	5.3	0.0	0.0	4.8	27.2	23.9
LnGrp LOS	A	A	A	A	C	C
Approach Vol, veh/h	1016			823	786	
Approach Delay, s/veh	5.3			4.8	26.0	
Approach LOS	A			A	C	

Timer - Assigned Phs	2				6	8
Phs Duration (G+Y+Rc), s	46.5				46.5	15.5
Change Period (Y+Rc), s	5.0				5.0	4.7
Max Green Setting (Gmax), s	36.0				36.0	16.3
Max Q Clear Time (g_c+I1), s	10.2				8.2	10.7
Green Ext Time (p_c), s	1.6				1.3	0.1

Intersection Summary		
HCM 6th Ctrl Delay	11.4	
HCM 6th LOS	B	



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	782	744	0	657	389
Future Volume (veh/h)	0	782	744	0	657	389
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	0	1870	1870	0	1870	1870
Adj Flow Rate, veh/h	0	850	809	0	714	347
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	0	2	2
Cap, veh/h	0	2123	2123	0	877	390
Arrive On Green	0.00	0.60	0.60	0.00	0.25	0.25
Sat Flow, veh/h	0	3741	3741	0	3563	1585
Grp Volume(v), veh/h	0	850	809	0	714	347
Grp Sat Flow(s),veh/h/ln	0	1777	1777	0	1781	1585
Q Serve(g_s), s	0.0	7.8	7.4	0.0	11.7	13.1
Cycle Q Clear(g_c), s	0.0	7.8	7.4	0.0	11.7	13.1
Prop In Lane	0.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	2123	2123	0	877	390
V/C Ratio(X)	0.00	0.40	0.38	0.00	0.81	0.89
Avail Cap(c_a), veh/h	0	2123	2123	0	1511	672
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	6.6	6.5	0.0	22.0	22.6
Incr Delay (d2), s/veh	0.0	0.6	0.5	0.0	0.7	3.8
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	2.4	2.3	0.0	4.6	4.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	7.2	7.0	0.0	22.7	26.3
LnGrp LOS	A	A	A	A	C	C
Approach Vol, veh/h		850	809		1061	
Approach Delay, s/veh		7.2	7.0		23.9	
Approach LOS		A	A		C	

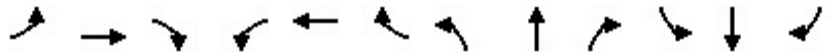
Timer - Assigned Phs	2	4	6
Phs Duration (G+Y+Rc), s	42.0	20.0	42.0
Change Period (Y+Rc), s	5.0	* 4.7	5.0
Max Green Setting (Gmax), s	26.0	* 26	26.0
Max Q Clear Time (g_c+I1), s	9.8	15.1	9.4
Green Ext Time (p_c), s	1.3	0.2	1.2

Intersection Summary	
HCM 6th Ctrl Delay	13.7
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	118	853	22	137	563	207	49	54	171	210	78	138
Future Volume (veh/h)	118	853	22	137	563	207	49	54	171	210	78	138
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	128	927	23	149	612	72	53	59	109	156	185	30
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	154	1967	49	175	2015	899	70	78	284	212	222	188
Arrive On Green	0.09	0.56	0.56	0.10	0.57	0.57	0.08	0.08	0.08	0.12	0.12	0.12
Sat Flow, veh/h	1781	3543	88	1781	3554	1585	865	963	1585	1781	1870	1585
Grp Volume(v), veh/h	128	465	485	149	612	72	112	0	109	156	185	30
Grp Sat Flow(s),veh/h/ln	1781	1777	1855	1781	1777	1585	1827	0	1585	1781	1870	1585
Q Serve(g_s), s	8.8	19.5	19.5	10.2	11.2	2.6	7.4	0.0	7.5	10.5	12.0	2.1
Cycle Q Clear(g_c), s	8.8	19.5	19.5	10.2	11.2	2.6	7.4	0.0	7.5	10.5	12.0	2.1
Prop In Lane	1.00		0.05	1.00		1.00	0.47		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	154	986	1030	175	2015	899	148	0	284	212	222	188
V/C Ratio(X)	0.83	0.47	0.47	0.85	0.30	0.08	0.76	0.00	0.38	0.74	0.83	0.16
Avail Cap(c_a), veh/h	230	986	1030	230	2015	899	418	0	519	365	383	325
HCM Platoon Ratio	1.00	1.00	1.00	1.00	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	55.8	16.6	16.6	55.0	14.0	12.2	55.8	0.0	44.8	52.8	53.4	49.1
Incr Delay (d2), s/veh	9.5	1.6	1.5	16.5	0.4	0.2	3.0	0.0	0.3	1.9	3.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	8.3	8.6	5.4	4.6	0.9	3.6	0.0	3.0	4.8	5.8	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	65.3	18.2	18.2	71.5	14.4	12.3	58.8	0.0	45.2	54.6	56.5	49.2
LnGrp LOS	E	B	B	E	B	B	E	A	D	D	E	D
Approach Vol, veh/h		1078			833			221			371	
Approach Delay, s/veh		23.8			24.5			52.1			55.1	
Approach LOS		C			C			D			E	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	14.7	75.3		14.6	16.2	73.8		19.3
Change Period (Y+Rc), s	4.0	5.0		4.6	4.0	5.0		4.6
Max Green Setting (Gmax), s	10.8	36.0		28.4	16.0	36.0		25.4
Max Q Clear Time (g_c+I1), s	10.8	13.2		9.5	12.2	21.5		14.0
Green Ext Time (p_c), s	0.1	4.6		0.5	0.1	5.4		0.7

Intersection Summary	
HCM 6th Ctrl Delay	31.2
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	127	19	21	1106	1032	31
Future Volume (veh/h)	127	19	21	1106	1032	31
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	138	0	23	1202	1122	32
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	187		406	2677	2348	67
Arrive On Green	0.10	0.00	0.02	0.75	0.67	0.67
Sat Flow, veh/h	1781	1585	1781	3647	3622	101
Grp Volume(v), veh/h	138	0	23	1202	565	589
Grp Sat Flow(s),veh/h/ln	1781	1585	1781	1777	1777	1852
Q Serve(g_s), s	4.5	0.0	0.2	7.6	9.4	9.4
Cycle Q Clear(g_c), s	4.5	0.0	0.2	7.6	9.4	9.4
Prop In Lane	1.00	1.00	1.00			0.05
Lane Grp Cap(c), veh/h	187		406	2677	1182	1233
V/C Ratio(X)	0.74		0.06	0.45	0.48	0.48
Avail Cap(c_a), veh/h	564		487	2677	1182	1233
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.1	0.0	3.5	2.8	4.9	4.9
Incr Delay (d2), s/veh	2.1	0.0	0.0	0.5	1.4	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.0	0.0	1.3	2.7	2.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	28.2	0.0	3.5	3.3	6.3	6.3
LnGrp LOS	C		A	A	A	A
Approach Vol, veh/h	138	A		1225	1154	
Approach Delay, s/veh	28.2			3.3	6.3	
Approach LOS	C			A	A	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		49.7		10.3	5.3	44.4
Change Period (Y+Rc), s		4.5		4.0	4.0	4.5
Max Green Setting (Gmax), s		32.5		19.0	4.0	24.5
Max Q Clear Time (g_c+I1), s		9.6		6.5	2.2	11.4
Green Ext Time (p_c), s		9.7		0.1	0.0	6.3

Intersection Summary		
HCM 6th Ctrl Delay		6.0
HCM 6th LOS		A

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.



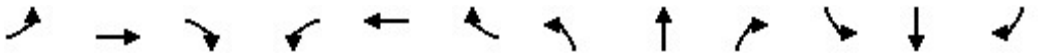
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	18	113	126	182	88	4
Future Volume (veh/h)	18	113	126	182	88	4
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	20	74	137	198	96	4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	221	101	361	2994	2394	99
Arrive On Green	0.06	0.06	0.10	0.84	0.69	0.69
Sat Flow, veh/h	3456	1585	3456	3647	3571	144
Grp Volume(v), veh/h	20	74	137	198	49	51
Grp Sat Flow(s),veh/h/ln	1728	1585	1728	1777	1777	1844
Q Serve(g_s), s	0.5	4.3	3.4	0.9	0.8	0.8
Cycle Q Clear(g_c), s	0.5	4.3	3.4	0.9	0.8	0.8
Prop In Lane	1.00	1.00	1.00			0.08
Lane Grp Cap(c), veh/h	221	101	361	2994	1224	1270
V/C Ratio(X)	0.09	0.73	0.38	0.07	0.04	0.04
Avail Cap(c_a), veh/h	1226	562	944	2994	1224	1270
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.0	42.7	38.8	1.2	4.6	4.6
Incr Delay (d2), s/veh	0.2	9.6	0.7	0.0	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	1.9	1.5	0.1	0.3	0.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	41.2	52.3	39.5	1.3	4.7	4.7
LnGrp LOS	D	D	D	A	A	A
Approach Vol, veh/h	94			335	100	
Approach Delay, s/veh	50.0			16.9	4.7	
Approach LOS	D			B	A	

Timer - Assigned Phs	2		5	6	8
Phs Duration (G+Y+Rc), s	83.1		14.3	68.7	9.9
Change Period (Y+Rc), s	* 4.7		4.6	* 4.7	4.0
Max Green Setting (Gmax), s	* 51		25.4	* 21	33.0
Max Q Clear Time (g_c+I1), s	2.9		5.4	2.8	6.3
Green Ext Time (p_c), s	2.0		0.4	0.6	0.3

Intersection Summary	
HCM 6th Ctrl Delay	20.5
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	283	391	318	284	4	313	23	85	22	28	5
Future Volume (vph)	3	283	391	318	284	4	313	23	85	22	28	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6	4.6	4.0	4.6		4.6	4.6			4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Frt		1.00	0.85	1.00	1.00		1.00	0.88			0.99	
Flt Protected		1.00	1.00	0.95	1.00		0.95	1.00			0.98	
Satd. Flow (prot)		1862	1583	1770	1859		1770	1643			1805	
Flt Permitted		1.00	1.00	0.38	1.00		0.95	1.00			0.98	
Satd. Flow (perm)		1858	1583	706	1859		1770	1643			1805	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	3	308	425	346	309	4	340	25	92	24	30	5
RTOR Reduction (vph)	0	0	174	0	0	0	0	70	0	0	4	0
Lane Group Flow (vph)	0	311	251	346	313	0	340	47	0	0	55	0
Turn Type	Perm	NA	pm+ov	pm+pt	NA		Split	NA		Split	NA	
Protected Phases		2	8	1	6		8	8		7	7	
Permitted Phases	2		2	6								
Actuated Green, G (s)		34.7	59.0	55.1	55.1		24.3	24.3			7.4	
Effective Green, g (s)		34.7	59.0	55.1	55.1		24.3	24.3			7.4	
Actuated g/C Ratio		0.35	0.59	0.55	0.55		0.24	0.24			0.07	
Clearance Time (s)		4.6	4.6	4.0	4.6		4.6	4.6			4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)		644	933	563	1024		430	399			133	
v/s Ratio Prot			0.07	c0.10	0.17		c0.19	0.03			c0.03	
v/s Ratio Perm		0.17	0.09	c0.24								
v/c Ratio		0.48	0.27	0.61	0.31		0.79	0.12			0.42	
Uniform Delay, d1		25.6	10.0	13.8	12.1		35.5	29.5			44.2	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2		2.6	0.2	2.0	0.8		9.6	0.1			2.1	
Delay (s)		28.2	10.1	15.8	12.9		45.0	29.6			46.3	
Level of Service		C	B	B	B		D	C			D	
Approach Delay (s)		17.8			14.4			41.1			46.3	
Approach LOS		B			B			D			D	

Intersection Summary			
HCM 2000 Control Delay	23.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	17.2
Intersection Capacity Utilization	68.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	135	229	276	271	519	296
Future Volume (vph)	135	229	276	271	519	296
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.0	4.6	4.6	4.0	4.6
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	1863	1583	1770	1863
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	147	249	300	295	564	322
RTOR Reduction (vph)	0	120	0	22	0	0
Lane Group Flow (vph)	147	129	300	273	564	322
Turn Type	custom	pm+ov	NA	custom	Prot	NA
Protected Phases	3	1	2	3	1	6
Permitted Phases	4	4		2 4		
Actuated Green, G (s)	11.1	51.9	23.8	34.9	51.9	79.7
Effective Green, g (s)	11.1	51.9	23.8	34.9	51.9	79.7
Actuated g/C Ratio	0.11	0.52	0.24	0.35	0.52	0.80
Clearance Time (s)	4.6	4.0	4.6	4.6	4.0	4.6
Vehicle Extension (s)	1.0	2.7	5.5	1.0	2.7	3.5
Lane Grp Cap (vph)	196	821	443	625	918	1484
v/s Ratio Prot	c0.08	0.08	c0.16	0.05	c0.32	0.17
v/s Ratio Perm				0.12		
v/c Ratio	0.75	0.16	0.68	0.44	0.61	0.22
Uniform Delay, d1	43.1	12.6	34.6	25.0	17.0	2.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	13.3	0.0	5.8	0.2	3.1	0.3
Delay (s)	56.4	12.6	40.4	25.2	20.1	2.8
Level of Service	E	B	D	C	C	A
Approach Delay (s)	28.9		32.8			13.8
Approach LOS	C		C			B

Intersection Summary			
HCM 2000 Control Delay	23.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	17.2
Intersection Capacity Utilization	61.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM 6th Signalized Intersection Summary
6: San Clemente Dr & Tamalpais Dr/Redwood Hwy

06/07/2022



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	560	19	89	451	899	145
Future Volume (veh/h)	560	19	89	451	899	145
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	609	21	97	490	977	158
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1097	38	275	2334	1748	552
Arrive On Green	0.22	0.22	0.15	0.46	0.35	0.35
Sat Flow, veh/h	5237	174	1781	5274	5023	1585
Grp Volume(v), veh/h	408	222	97	490	977	158
Grp Sat Flow(s),veh/h/ln	1702	1839	1781	1702	1674	1585
Q Serve(g_s), s	4.9	5.0	2.3	2.7	7.3	3.3
Cycle Q Clear(g_c), s	4.9	5.0	2.3	2.7	7.3	3.3
Prop In Lane		0.09	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	737	398	275	2334	1748	552
V/C Ratio(X)	0.55	0.56	0.35	0.21	0.56	0.29
Avail Cap(c_a), veh/h	2513	1357	386	5305	3044	961
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.1	16.1	17.5	7.5	12.2	10.9
Incr Delay (d2), s/veh	0.2	0.5	1.1	0.1	0.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	1.9	0.9	0.7	2.3	1.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	16.4	16.6	18.6	7.6	12.6	11.3
LnGrp LOS	B	B	B	A	B	B
Approach Vol, veh/h	630			587	1135	
Approach Delay, s/veh	16.4			9.4	12.4	
Approach LOS	B			A	B	

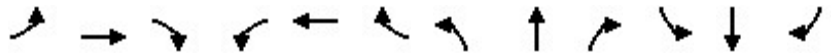
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	11.1	15.0		20.1		26.1
Change Period (Y+Rc), s	4.0	* 5		4.0		5.0
Max Green Setting (Gmax), s	10.0	* 34		28.0		48.0
Max Q Clear Time (g_c+I1), s	4.3	7.0		9.3		4.7
Green Ext Time (p_c), s	0.1	2.8		6.8		5.4

Intersection Summary	
HCM 6th Ctrl Delay	12.7
HCM 6th LOS	B

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.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	168	678	30	173	681	332	58	76	164	244	90	205
Future Volume (veh/h)	168	678	30	173	681	332	58	76	164	244	90	205
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	183	737	32	188	740	208	63	83	101	182	215	103
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	210	1728	75	214	1780	794	78	103	348	241	253	215
Arrive On Green	0.12	0.50	0.50	0.12	0.50	0.50	0.10	0.10	0.10	0.14	0.14	0.14
Sat Flow, veh/h	1781	3470	151	1781	3554	1585	790	1041	1585	1781	1870	1585
Grp Volume(v), veh/h	183	377	392	188	740	208	146	0	101	182	215	103
Grp Sat Flow(s),veh/h/ln	1781	1777	1843	1781	1777	1585	1831	0	1585	1781	1870	1585
Q Serve(g_s), s	12.5	16.8	16.8	12.9	16.3	9.3	9.7	0.0	6.6	12.2	13.9	7.4
Cycle Q Clear(g_c), s	12.5	16.8	16.8	12.9	16.3	9.3	9.7	0.0	6.6	12.2	13.9	7.4
Prop In Lane	1.00		0.08	1.00		1.00	0.43		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	210	885	918	214	1780	794	182	0	348	241	253	215
V/C Ratio(X)	0.87	0.43	0.43	0.88	0.42	0.26	0.80	0.00	0.29	0.75	0.85	0.48
Avail Cap(c_a), veh/h	259	885	918	259	1780	794	434	0	567	351	368	312
HCM Platoon Ratio	1.00	1.00	1.00	1.00	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	53.8	19.8	19.8	53.6	19.5	17.8	54.7	0.0	40.3	51.6	52.4	49.6
Incr Delay (d2), s/veh	20.2	1.5	1.5	21.4	0.7	0.8	3.2	0.0	0.2	2.6	8.3	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	6.8	7.3	7.5	7.0	6.9	3.6	4.6	0.0	2.6	5.6	7.1	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	74.0	21.3	21.3	75.1	20.2	18.6	57.8	0.0	40.5	54.2	60.7	50.2
LnGrp LOS	E	C	C	E	C	B	E	A	D	D	E	D
Approach Vol, veh/h		952			1136			247			500	
Approach Delay, s/veh		31.4			29.0			50.7			56.1	
Approach LOS		C			C			D			E	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	18.6	67.1		16.9	18.9	66.8		21.4
Change Period (Y+Rc), s	4.0	5.0		4.6	4.0	5.0		4.6
Max Green Setting (Gmax), s	18.6	34.0		29.4	18.0	34.0		24.4
Max Q Clear Time (g_c+I1), s	14.5	18.3		11.7	14.9	18.8		15.9
Green Ext Time (p_c), s	0.1	5.3		0.6	0.1	4.3		0.9

Intersection Summary	
HCM 6th Ctrl Delay	36.5
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.



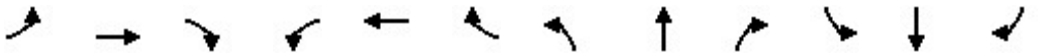
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	32	280	374	419	301	15
Future Volume (veh/h)	32	280	374	419	301	15
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	35	255	407	455	327	16
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	645	296	512	2558	1800	88
Arrive On Green	0.19	0.19	0.15	0.72	0.52	0.52
Sat Flow, veh/h	3456	1585	3456	3647	3542	168
Grp Volume(v), veh/h	35	255	407	455	168	175
Grp Sat Flow(s),veh/h/ln	1728	1585	1728	1777	1777	1840
Q Serve(g_s), s	0.8	14.5	10.6	3.8	4.6	4.7
Cycle Q Clear(g_c), s	0.8	14.5	10.6	3.8	4.6	4.7
Prop In Lane	1.00	1.00	1.00			0.09
Lane Grp Cap(c), veh/h	645	296	512	2558	927	961
V/C Ratio(X)	0.05	0.86	0.79	0.18	0.18	0.18
Avail Cap(c_a), veh/h	1226	562	944	2558	927	961
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.1	36.7	38.2	4.2	11.7	11.7
Incr Delay (d2), s/veh	0.0	7.3	2.8	0.2	0.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	6.1	4.6	1.2	1.9	1.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	31.1	44.0	41.1	4.3	12.2	12.2
LnGrp LOS	C	D	D	A	B	B
Approach Vol, veh/h	290			862	343	
Approach Delay, s/veh	42.4			21.7	12.2	
Approach LOS	D			C	B	

Timer - Assigned Phs	2		5	6	8
Phs Duration (G+Y+Rc), s	71.6		18.4	53.2	21.4
Change Period (Y+Rc), s	* 4.7		4.6	* 4.7	4.0
Max Green Setting (Gmax), s	* 51		25.4	* 21	33.0
Max Q Clear Time (g_c+I1), s	5.8		12.6	6.7	16.5
Green Ext Time (p_c), s	4.9		1.2	2.3	0.9

Intersection Summary	
HCM 6th Ctrl Delay	23.5
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	196	270	250	280	7	459	40	83	34	27	10
Future Volume (vph)	1	196	270	250	280	7	459	40	83	34	27	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6	4.6	4.0	4.6		4.6	4.6			4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Frt		1.00	0.85	1.00	1.00		1.00	0.90			0.98	
Flt Protected		1.00	1.00	0.95	1.00		0.95	1.00			0.98	
Satd. Flow (prot)		1862	1583	1770	1856		1770	1674			1784	
Flt Permitted		1.00	1.00	0.44	1.00		0.95	1.00			0.98	
Satd. Flow (perm)		1861	1583	814	1856		1770	1674			1784	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	213	293	272	304	8	499	43	90	37	29	11
RTOR Reduction (vph)	0	0	117	0	1	0	0	60	0	0	6	0
Lane Group Flow (vph)	0	214	176	272	311	0	499	73	0	0	71	0
Turn Type	Perm	NA	pm+ov	pm+pt	NA		Split	NA		Split	NA	
Protected Phases		2	8	1	6		8	8		7	7	
Permitted Phases	2		2	6								
Actuated Green, G (s)		26.9	60.0	45.6	45.6		33.1	33.1			8.1	
Effective Green, g (s)		26.9	60.0	45.6	45.6		33.1	33.1			8.1	
Actuated g/C Ratio		0.27	0.60	0.46	0.46		0.33	0.33			0.08	
Clearance Time (s)		4.6	4.6	4.0	4.6		4.6	4.6			4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)		500	949	511	846		585	554			144	
v/s Ratio Prot			0.06	c0.08	0.17		c0.28	0.04			c0.04	
v/s Ratio Perm		0.12	0.05	c0.16								
v/c Ratio		0.43	0.19	0.53	0.37		0.85	0.13			0.49	
Uniform Delay, d1		30.2	9.0	18.0	17.8		31.2	23.4			44.0	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2		2.7	0.1	1.1	1.2		11.6	0.1			2.6	
Delay (s)		32.9	9.1	19.1	19.0		42.7	23.5			46.6	
Level of Service		C	A	B	B		D	C			D	
Approach Delay (s)		19.1			19.1			38.7			46.6	
Approach LOS		B			B			D			D	

Intersection Summary			
HCM 2000 Control Delay	27.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	17.2
Intersection Capacity Utilization	69.5%	ICU Level of Service	C
Analysis Period (min)	15		

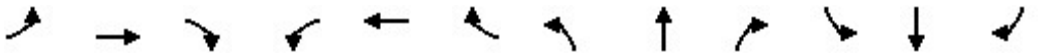
c Critical Lane Group



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	117	203	335	249	486	343
Future Volume (vph)	117	203	335	249	486	343
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.0	4.6	4.6	4.0	4.6
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	1863	1583	1770	1863
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	127	221	364	271	528	373
RTOR Reduction (vph)	0	114	0	55	0	0
Lane Group Flow (vph)	127	107	364	216	528	373
Turn Type	custom	pm+ov	NA	custom	Prot	NA
Protected Phases	3	1	2	3	1	6
Permitted Phases	4	4		2 4		
Actuated Green, G (s)	10.7	48.2	27.9	38.6	48.2	80.1
Effective Green, g (s)	10.7	48.2	27.9	38.6	48.2	80.1
Actuated g/C Ratio	0.11	0.48	0.28	0.39	0.48	0.80
Clearance Time (s)	4.6	4.0	4.6	4.6	4.0	4.6
Vehicle Extension (s)	1.0	2.7	5.5	1.0	2.7	3.5
Lane Grp Cap (vph)	189	763	519	683	853	1492
v/s Ratio Prot	c0.07	0.07	c0.20	0.03	c0.30	0.20
v/s Ratio Perm				0.10		
v/c Ratio	0.67	0.14	0.70	0.32	0.62	0.25
Uniform Delay, d1	43.0	14.4	32.3	21.5	19.1	2.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.2	0.0	5.8	0.1	3.4	0.4
Delay (s)	50.1	14.4	38.1	21.6	22.5	2.9
Level of Service	D	B	D	C	C	A
Approach Delay (s)	27.5		31.0			14.4
Approach LOS	C		C			B

Intersection Summary			
HCM 2000 Control Delay	22.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	17.2
Intersection Capacity Utilization	62.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	41	705	67	21	860	17	90	0	31	20	1	36
Future Volume (vph)	41	705	67	21	860	17	90	0	31	20	1	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.6		4.0	4.6			4.2			4.6	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frt	1.00	0.99		1.00	1.00			0.97			0.92	
Flt Protected	0.95	1.00		0.95	1.00			0.96			0.98	
Satd. Flow (prot)	1770	3493		1770	3529			1734			1675	
Flt Permitted	0.95	1.00		0.95	1.00			0.74			0.89	
Satd. Flow (perm)	1770	3493		1770	3529			1333			1510	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	45	766	73	23	935	18	98	0	34	22	1	39
RTOR Reduction (vph)	0	7	0	0	2	0	0	91	0	0	35	0
Lane Group Flow (vph)	45	832	0	23	951	0	0	41	0	0	27	0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			4			8	
Permitted Phases							4			8		
Actuated Green, G (s)	3.6	38.7		2.0	37.1			6.5			6.1	
Effective Green, g (s)	3.6	38.7		2.0	37.1			6.5			6.1	
Actuated g/C Ratio	0.06	0.65		0.03	0.62			0.11			0.10	
Clearance Time (s)	4.0	4.6		4.0	4.6			4.2			4.6	
Vehicle Extension (s)	2.0	3.0		2.0	3.0			2.0			2.0	
Lane Grp Cap (vph)	106	2252		59	2182			144			153	
v/s Ratio Prot	c0.03	0.24		0.01	c0.27							
v/s Ratio Perm								c0.03			0.02	
v/c Ratio	0.42	0.37		0.39	0.44			0.29			0.18	
Uniform Delay, d1	27.2	5.0		28.4	6.0			24.6			24.7	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	1.0	0.5		1.6	0.6			0.4			0.2	
Delay (s)	28.2	5.4		30.0	6.6			25.0			24.9	
Level of Service	C	A		C	A			C			C	
Approach Delay (s)		6.6			7.2			25.0			24.9	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	8.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	13.2
Intersection Capacity Utilization	54.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	290	590	39	0	77
Future Vol, veh/h	0	290	590	39	0	77
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	315	641	42	0	84

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	662
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	0	-	-	-	0	462
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	462
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	14.5
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	462
HCM Lane V/C Ratio	-	-	-	0.181
HCM Control Delay (s)	-	-	-	14.5
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0.7



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	481	109	138	234	67	167
Future Volume (veh/h)	481	109	138	234	67	167
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	523	29	150	254	73	55
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	559	497	180	1126	872	1236
Arrive On Green	0.31	0.31	0.10	0.60	0.47	0.47
Sat Flow, veh/h	1781	1585	1781	1870	1870	1585
Grp Volume(v), veh/h	523	29	150	254	73	55
Grp Sat Flow(s),veh/h/ln	1781	1585	1781	1870	1870	1585
Q Serve(g_s), s	28.5	1.3	8.3	6.3	2.2	0.8
Cycle Q Clear(g_c), s	28.5	1.3	8.3	6.3	2.2	0.8
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	559	497	180	1126	872	1236
V/C Ratio(X)	0.94	0.06	0.83	0.23	0.08	0.04
Avail Cap(c_a), veh/h	905	805	223	1126	872	1236
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.3	24.0	44.1	9.2	14.8	2.5
Incr Delay (d2), s/veh	8.2	0.0	16.3	0.5	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.3	1.4	4.4	2.5	1.0	0.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	41.5	24.0	60.4	9.6	15.0	2.6
LnGrp LOS	D	C	E	A	B	A
Approach Vol, veh/h	552			404	128	
Approach Delay, s/veh	40.6			28.5	9.7	
Approach LOS	D			C	A	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	13.6	50.8		35.6		64.4
Change Period (Y+Rc), s	3.5	* 4.2		* 4.2		* 4.2
Max Green Setting (Gmax), s	12.5	* 25		* 51		* 25
Max Q Clear Time (g_c+I1), s	10.3	4.2		30.5		8.3
Green Ext Time (p_c), s	0.0	0.3		0.9		0.8

Intersection Summary			
HCM 6th Ctrl Delay		32.4	
HCM 6th LOS		C	

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay, s/veh	43.7
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	3	3	205	3	169	8	455	143	244	246	6
Future Vol, veh/h	2	3	3	205	3	169	8	455	143	244	246	6
Peak Hour Factor	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	2	3	3	223	3	184	9	495	155	265	267	7
Number of Lanes	0	1	0	0	1	1	1	1	1	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	2	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	3	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	2	2	1
HCM Control Delay	13.1	19.6	75.2	23.9
HCM LOS	B	C	F	C

Lane	NBLn1	NBLn2	NBLn3	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	25%	99%	0%	100%	0%
Vol Thru, %	0%	100%	0%	38%	1%	0%	0%	98%
Vol Right, %	0%	0%	100%	38%	0%	100%	0%	2%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	8	455	143	8	208	169	244	252
LT Vol	8	0	0	2	205	0	244	0
Through Vol	0	455	0	3	3	0	0	246
RT Vol	0	0	143	3	0	169	0	6
Lane Flow Rate	9	495	155	9	226	184	265	274
Geometry Grp	8	8	8	8	8	8	8	8
Degree of Util (X)	0.02	1.088	0.311	0.024	0.559	0.392	0.627	0.607
Departure Headway (Hd)	8.433	7.92	7.202	10.186	9.139	7.915	8.749	8.217
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	427	460	502	354	398	457	416	441
Service Time	6.133	5.62	4.902	7.886	6.839	5.615	6.449	5.917
HCM Lane V/C Ratio	0.021	1.076	0.309	0.025	0.568	0.403	0.637	0.621
HCM Control Delay	11.3	95.8	13.1	13.1	22.8	15.6	25.1	22.8
HCM Lane LOS	B	F	B	B	C	C	D	C
HCM 95th-tile Q	0.1	16.3	1.3	0.1	3.3	1.8	4.1	3.9



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	655	22	73	510	1074	103
Future Volume (veh/h)	655	22	73	510	1074	103
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	712	24	79	554	1167	112
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1177	40	237	2271	1887	595
Arrive On Green	0.23	0.23	0.13	0.44	0.38	0.38
Sat Flow, veh/h	5242	171	1781	5274	5023	1585
Grp Volume(v), veh/h	477	259	79	554	1167	112
Grp Sat Flow(s),veh/h/ln	1702	1840	1781	1702	1674	1585
Q Serve(g_s), s	6.3	6.3	2.0	3.4	9.5	2.4
Cycle Q Clear(g_c), s	6.3	6.3	2.0	3.4	9.5	2.4
Prop In Lane		0.09	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	790	427	237	2271	1887	595
V/C Ratio(X)	0.60	0.61	0.33	0.24	0.62	0.19
Avail Cap(c_a), veh/h	2316	1251	355	4889	2806	885
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.2	17.2	19.7	8.7	12.7	10.5
Incr Delay (d2), s/veh	0.3	0.5	1.2	0.1	0.5	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	2.4	0.8	1.0	3.0	0.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	17.5	17.7	20.9	8.7	13.2	10.7
LnGrp LOS	B	B	C	A	B	B
Approach Vol, veh/h	736			633	1279	
Approach Delay, s/veh	17.6			10.3	13.0	
Approach LOS	B			B	B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	10.7	16.6		22.8		27.3
Change Period (Y+Rc), s	4.0	* 5		4.0		5.0
Max Green Setting (Gmax), s	10.0	* 34		28.0		48.0
Max Q Clear Time (g_c+I1), s	4.0	8.3		11.5		5.4
Green Ext Time (p_c), s	0.1	3.3		7.4		6.2

Intersection Summary	
HCM 6th Ctrl Delay	13.6
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

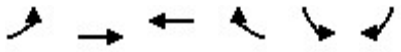
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	944	0	0	829	790	545
Future Volume (veh/h)	944	0	0	829	790	545
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	0	0	1870	1870	1870
Adj Flow Rate, veh/h	1026	0	0	901	859	408
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	0	0	2	2	2
Cap, veh/h	2019	0	0	2019	952	768
Arrive On Green	0.57	0.00	0.00	0.57	0.28	0.28
Sat Flow, veh/h	3741	0	0	3741	3456	2790
Grp Volume(v), veh/h	1026	0	0	901	859	408
Grp Sat Flow(s),veh/h/ln	1777	0	0	1777	1728	1395
Q Serve(g_s), s	10.9	0.0	0.0	9.1	14.9	7.7
Cycle Q Clear(g_c), s	10.9	0.0	0.0	9.1	14.9	7.7
Prop In Lane		0.00	0.00		1.00	1.00
Lane Grp Cap(c), veh/h	2019	0	0	2019	952	768
V/C Ratio(X)	0.51	0.00	0.00	0.45	0.90	0.53
Avail Cap(c_a), veh/h	2019	0	0	2019	1131	913
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	8.1	0.0	0.0	7.7	21.7	19.1
Incr Delay (d2), s/veh	0.9	0.0	0.0	0.7	8.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	0.0	0.0	2.9	6.6	2.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	9.0	0.0	0.0	8.5	29.9	19.3
LnGrp LOS	A	A	A	A	C	B
Approach Vol, veh/h	1026			901	1267	
Approach Delay, s/veh	9.0			8.5	26.5	
Approach LOS	A			A	C	

Timer - Assigned Phs	2				6	8
Phs Duration (G+Y+Rc), s	40.2				40.2	21.8
Change Period (Y+Rc), s	5.0				5.0	4.7
Max Green Setting (Gmax), s	32.0				32.0	20.3
Max Q Clear Time (g_c+I1), s	12.9				11.1	16.9
Green Ext Time (p_c), s	1.6				1.4	0.2

Intersection Summary						
HCM 6th Ctrl Delay			15.8			
HCM 6th LOS			B			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	1013	1144	0	668	343
Future Volume (veh/h)	0	1013	1144	0	668	343
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	0	1870	1870	0	1870	1870
Adj Flow Rate, veh/h	0	1101	1243	0	726	297
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	0	2	2
Cap, veh/h	0	2175	2175	0	825	367
Arrive On Green	0.00	0.61	0.61	0.00	0.23	0.23
Sat Flow, veh/h	0	3741	3741	0	3563	1585
Grp Volume(v), veh/h	0	1101	1243	0	726	297
Grp Sat Flow(s),veh/h/ln	0	1777	1777	0	1781	1585
Q Serve(g_s), s	0.0	10.8	12.9	0.0	12.2	11.0
Cycle Q Clear(g_c), s	0.0	10.8	12.9	0.0	12.2	11.0
Prop In Lane	0.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	2175	2175	0	825	367
V/C Ratio(X)	0.00	0.51	0.57	0.00	0.88	0.81
Avail Cap(c_a), veh/h	0	2175	2175	0	1437	639
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	6.8	7.2	0.0	23.0	22.5
Incr Delay (d2), s/veh	0.0	0.8	1.1	0.0	1.4	1.6
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	3.3	4.0	0.0	4.9	4.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	7.6	8.3	0.0	24.4	24.2
LnGrp LOS	A	A	A	A	C	C
Approach Vol, veh/h		1101	1243		1023	
Approach Delay, s/veh		7.6	8.3		24.3	
Approach LOS		A	A		C	

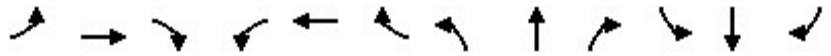
Timer - Assigned Phs	2	4	6
Phs Duration (G+Y+Rc), s	42.9	19.1	42.9
Change Period (Y+Rc), s	5.0	* 4.7	5.0
Max Green Setting (Gmax), s	27.3	* 25	27.3
Max Q Clear Time (g_c+I1), s	12.8	14.2	14.9
Green Ext Time (p_c), s	1.7	0.2	1.9

Intersection Summary	
HCM 6th Ctrl Delay	12.9
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	187	585	62	245	673	361	44	76	193	254	66	182
Future Volume (veh/h)	187	585	62	245	673	361	44	76	193	254	66	182
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	203	636	66	266	732	239	48	83	133	174	215	78
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	229	1590	165	244	1769	789	62	107	363	241	253	214
Arrive On Green	0.13	0.49	0.49	0.14	0.50	0.50	0.09	0.09	0.09	0.14	0.14	0.14
Sat Flow, veh/h	1781	3250	337	1781	3554	1585	673	1164	1585	1781	1870	1585
Grp Volume(v), veh/h	203	347	355	266	732	239	131	0	133	174	215	78
Grp Sat Flow(s),veh/h/ln	1781	1777	1810	1781	1777	1585	1837	0	1585	1781	1870	1585
Q Serve(g_s), s	13.9	15.4	15.4	17.0	16.2	11.1	8.6	0.0	8.8	11.6	13.9	5.6
Cycle Q Clear(g_c), s	13.9	15.4	15.4	17.0	16.2	11.1	8.6	0.0	8.8	11.6	13.9	5.6
Prop In Lane	1.00		0.19	1.00		1.00	0.37		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	229	869	885	244	1769	789	169	0	363	241	253	214
V/C Ratio(X)	0.89	0.40	0.40	1.09	0.41	0.30	0.78	0.00	0.37	0.72	0.85	0.36
Avail Cap(c_a), veh/h	244	869	885	244	1769	789	435	0	593	351	368	312
HCM Platoon Ratio	1.00	1.00	1.00	1.00	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	53.2	20.1	20.1	53.5	19.7	18.4	55.1	0.0	40.2	51.4	52.4	48.8
Incr Delay (d2), s/veh	27.7	1.4	1.4	83.4	0.7	1.0	2.9	0.0	0.2	1.5	8.5	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.0	6.7	6.8	13.3	6.8	4.3	4.1	0.0	3.5	5.3	7.1	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	80.8	21.5	21.5	136.9	20.4	19.4	58.0	0.0	40.5	52.9	60.9	49.2
LnGrp LOS	F	C	C	F	C	B	E	A	D	D	E	D
Approach Vol, veh/h		905			1237			264			467	
Approach Delay, s/veh		34.8			45.3			49.1			55.9	
Approach LOS		C			D			D			E	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	19.9	66.7		16.0	21.0	65.7		21.4
Change Period (Y+Rc), s	4.0	5.0		4.6	4.0	5.0		4.6
Max Green Setting (Gmax), s	17.9	35.0		29.4	17.0	35.0		24.4
Max Q Clear Time (g_c+I1), s	15.9	18.2		10.8	19.0	17.4		15.9
Green Ext Time (p_c), s	0.0	5.6		0.6	0.0	4.2		0.8

Intersection Summary	
HCM 6th Ctrl Delay	44.1
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	278	41	27	799	876	33
Future Volume (veh/h)	278	41	27	799	876	33
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	302	0	29	868	952	34
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	356		396	2339	1981	71
Arrive On Green	0.20	0.00	0.03	0.66	0.57	0.57
Sat Flow, veh/h	1781	1585	1781	3647	3593	125
Grp Volume(v), veh/h	302	0	29	868	483	503
Grp Sat Flow(s),veh/h/ln	1781	1585	1781	1777	1777	1848
Q Serve(g_s), s	9.8	0.0	0.4	6.6	9.7	9.7
Cycle Q Clear(g_c), s	9.8	0.0	0.4	6.6	9.7	9.7
Prop In Lane	1.00	1.00	1.00			0.07
Lane Grp Cap(c), veh/h	356		396	2339	1006	1046
V/C Ratio(X)	0.85		0.07	0.37	0.48	0.48
Avail Cap(c_a), veh/h	564		469	2339	1006	1046
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.1	0.0	5.5	4.6	7.8	7.8
Incr Delay (d2), s/veh	3.9	0.0	0.0	0.5	1.6	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	0.0	0.1	1.8	3.3	3.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	27.0	0.0	5.5	5.1	9.4	9.3
LnGrp LOS	C		A	A	A	A
Approach Vol, veh/h	302	A		897	986	
Approach Delay, s/veh	27.0			5.1	9.4	
Approach LOS	C			A	A	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		44.0		16.0	5.5	38.5
Change Period (Y+Rc), s		4.5		4.0	4.0	4.5
Max Green Setting (Gmax), s		32.5		19.0	4.0	24.5
Max Q Clear Time (g_c+I1), s		8.6		11.8	2.4	11.7
Green Ext Time (p_c), s		6.6		0.3	0.0	5.2

Intersection Summary	
HCM 6th Ctrl Delay	10.1
HCM 6th LOS	B

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.



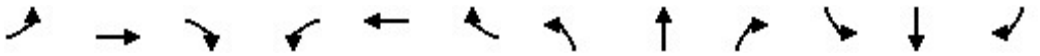
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	34	287	381	404	251	10
Future Volume (veh/h)	34	287	381	404	251	10
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	37	263	414	439	273	11
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	663	304	520	2539	1792	72
Arrive On Green	0.19	0.19	0.15	0.71	0.51	0.51
Sat Flow, veh/h	3456	1585	3456	3647	3576	140
Grp Volume(v), veh/h	37	263	414	439	139	145
Grp Sat Flow(s),veh/h/ln	1728	1585	1728	1777	1777	1845
Q Serve(g_s), s	0.8	15.0	10.8	3.7	3.8	3.9
Cycle Q Clear(g_c), s	0.8	15.0	10.8	3.7	3.8	3.9
Prop In Lane	1.00	1.00	1.00			0.08
Lane Grp Cap(c), veh/h	663	304	520	2539	915	950
V/C Ratio(X)	0.06	0.86	0.80	0.17	0.15	0.15
Avail Cap(c_a), veh/h	1226	562	944	2539	915	950
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.7	36.4	38.1	4.3	11.9	11.9
Incr Delay (d2), s/veh	0.0	7.3	2.8	0.1	0.4	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	6.3	4.7	1.2	1.5	1.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	30.7	43.7	41.0	4.5	12.2	12.2
LnGrp LOS	C	D	D	A	B	B
Approach Vol, veh/h	300			853	284	
Approach Delay, s/veh	42.1			22.2	12.2	
Approach LOS	D			C	B	

Timer - Assigned Phs	2		5	6	8
Phs Duration (G+Y+Rc), s	71.2		18.6	52.6	21.8
Change Period (Y+Rc), s	* 4.7		4.6	* 4.7	4.0
Max Green Setting (Gmax), s	* 51		25.4	* 21	33.0
Max Q Clear Time (g_c+I1), s	5.7		12.8	5.9	17.0
Green Ext Time (p_c), s	4.7		1.2	1.9	0.9

Intersection Summary	
HCM 6th Ctrl Delay	24.4
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	258	335	248	454	1	443	13	46	12	18	6
Future Volume (vph)	0	258	335	248	454	1	443	13	46	12	18	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6	4.6	4.0	4.6		4.6	4.6			4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Frt		1.00	0.85	1.00	1.00		1.00	0.88			0.98	
Flt Protected		1.00	1.00	0.95	1.00		0.95	1.00			0.98	
Satd. Flow (prot)		1863	1583	1770	1862		1770	1644			1790	
Flt Permitted		1.00	1.00	0.35	1.00		0.95	1.00			0.98	
Satd. Flow (perm)		1863	1583	660	1862		1770	1644			1790	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	280	364	270	493	1	482	14	50	13	20	7
RTOR Reduction (vph)	0	0	135	0	0	0	0	33	0	0	7	0
Lane Group Flow (vph)	0	280	229	270	494	0	482	32	0	0	33	0
Turn Type		NA	pm+ov	pm+pt	NA		Split	NA		Split	NA	
Protected Phases		2	8	1	6		8	8		7	7	
Permitted Phases			2	6								
Actuated Green, G (s)		27.9	62.9	46.7	46.7		35.0	35.0			5.1	
Effective Green, g (s)		27.9	62.9	46.7	46.7		35.0	35.0			5.1	
Actuated g/C Ratio		0.28	0.63	0.47	0.47		0.35	0.35			0.05	
Clearance Time (s)		4.6	4.6	4.0	4.6		4.6	4.6			4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)		519	995	472	869		619	575			91	
v/s Ratio Prot		0.15	0.08	0.08	c0.27		c0.27	0.02			c0.02	
v/s Ratio Perm			0.06	c0.18								
v/c Ratio		0.54	0.23	0.57	0.57		0.78	0.05			0.37	
Uniform Delay, d1		30.6	8.0	17.8	19.3		29.0	21.5			45.9	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2		4.0	0.1	1.7	2.7		6.1	0.0			2.5	
Delay (s)		34.6	8.2	19.5	22.0		35.2	21.6			48.4	
Level of Service		C	A	B	C		D	C			D	
Approach Delay (s)		19.7			21.1			33.6			48.4	
Approach LOS		B			C			C			D	

Intersection Summary			
HCM 2000 Control Delay	24.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	17.2
Intersection Capacity Utilization	69.5%	ICU Level of Service	C
Analysis Period (min)	15		

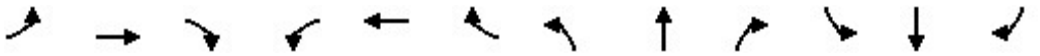
c Critical Lane Group



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	53	297	153	148	395	229
Future Volume (vph)	53	297	153	148	395	229
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.0	4.6	4.6	4.0	4.6
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	1863	1583	1770	1863
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	58	323	166	161	429	249
RTOR Reduction (vph)	0	123	0	109	0	0
Lane Group Flow (vph)	58	200	166	52	429	249
Turn Type	custom	pm+ov	NA	custom	Prot	NA
Protected Phases	3	1	2	3	1	6
Permitted Phases	4	4		2 4		
Actuated Green, G (s)	8.4	62.0	16.4	24.8	62.0	82.4
Effective Green, g (s)	8.4	62.0	16.4	24.8	62.0	82.4
Actuated g/C Ratio	0.08	0.62	0.16	0.25	0.62	0.82
Clearance Time (s)	4.6	4.0	4.6	4.6	4.0	4.6
Vehicle Extension (s)	1.0	2.7	5.5	1.0	2.7	3.5
Lane Grp Cap (vph)	148	981	305	465	1097	1535
v/s Ratio Prot	c0.03	0.13	c0.09	0.01	c0.24	0.13
v/s Ratio Perm				0.02		
v/c Ratio	0.39	0.20	0.54	0.11	0.39	0.16
Uniform Delay, d1	43.4	8.3	38.4	29.1	9.5	1.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	0.0	4.0	0.0	1.0	0.2
Delay (s)	44.0	8.3	42.3	29.1	10.6	2.0
Level of Service	D	A	D	C	B	A
Approach Delay (s)	13.7		35.8			7.4
Approach LOS	B		D			A

Intersection Summary			
HCM 2000 Control Delay	15.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	17.2
Intersection Capacity Utilization	47.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	27	962	78	35	975	24	72	0	41	35	2	56
Future Volume (vph)	27	962	78	35	975	24	72	0	41	35	2	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.6		4.0	4.6			4.2			4.6	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frt	1.00	0.99		1.00	1.00			0.95			0.92	
Flt Protected	0.95	1.00		0.95	1.00			0.97			0.98	
Satd. Flow (prot)	1770	3499		1770	3527			1716			1679	
Flt Permitted	0.95	1.00		0.95	1.00			0.83			0.87	
Satd. Flow (perm)	1770	3499		1770	3527			1466			1485	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	29	1046	85	38	1060	26	78	0	45	38	2	61
RTOR Reduction (vph)	0	7	0	0	2	0	0	91	0	0	55	0
Lane Group Flow (vph)	29	1124	0	38	1084	0	0	32	0	0	46	0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			4			8	
Permitted Phases							4			8		
Actuated Green, G (s)	3.6	36.8		4.0	37.2			6.4			6.0	
Effective Green, g (s)	3.6	36.8		4.0	37.2			6.4			6.0	
Actuated g/C Ratio	0.06	0.61		0.07	0.62			0.11			0.10	
Clearance Time (s)	4.0	4.6		4.0	4.6			4.2			4.6	
Vehicle Extension (s)	2.0	3.0		2.0	3.0			2.0			2.0	
Lane Grp Cap (vph)	106	2146		118	2186			156			148	
v/s Ratio Prot	0.02	c0.32		c0.02	0.31							
v/s Ratio Perm								0.02			c0.03	
v/c Ratio	0.27	0.52		0.32	0.50			0.20			0.31	
Uniform Delay, d1	27.0	6.6		26.7	6.3			24.5			25.1	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.5	0.9		0.6	0.8			0.2			0.4	
Delay (s)	27.5	7.5		27.3	7.1			24.7			25.5	
Level of Service	C	A		C	A			C			C	
Approach Delay (s)		8.0			7.7			24.7			25.5	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	9.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	13.2
Intersection Capacity Utilization	47.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	311	716	63	0	20
Future Vol, veh/h	0	311	716	63	0	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	338	778	68	0	22

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	812
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	0	-	-	-	0	379
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	379
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	15.1
HCM LOS			C

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	379
HCM Lane V/C Ratio	-	-	-	0.057
HCM Control Delay (s)	-	-	-	15.1
HCM Lane LOS	-	-	-	C
HCM 95th %tile Q(veh)	-	-	-	0.2



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	464	85	101	60	24	339
Future Volume (veh/h)	464	85	101	60	24	339
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	504	3	110	65	26	241
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	539	480	170	1147	904	1245
Arrive On Green	0.30	0.30	0.10	0.61	0.48	0.48
Sat Flow, veh/h	1781	1585	1781	1870	1870	1585
Grp Volume(v), veh/h	504	3	110	65	26	241
Grp Sat Flow(s),veh/h/ln	1781	1585	1781	1870	1870	1585
Q Serve(g_s), s	27.5	0.1	6.0	1.4	0.7	3.8
Cycle Q Clear(g_c), s	27.5	0.1	6.0	1.4	0.7	3.8
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	539	480	170	1147	904	1245
V/C Ratio(X)	0.93	0.01	0.65	0.06	0.03	0.19
Avail Cap(c_a), veh/h	816	726	258	1147	904	1245
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.9	24.4	43.6	7.7	13.5	2.7
Incr Delay (d2), s/veh	10.5	0.0	1.5	0.1	0.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.2	0.1	2.7	0.6	0.3	3.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	44.4	24.4	45.2	7.8	13.6	3.1
LnGrp LOS	D	C	D	A	B	A
Approach Vol, veh/h	507			175	267	
Approach Delay, s/veh	44.3			31.3	4.1	
Approach LOS	D			C	A	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	13.0	52.5		34.5		65.5
Change Period (Y+Rc), s	3.5	* 4.2		* 4.2		* 4.2
Max Green Setting (Gmax), s	14.5	* 28		* 46		* 28
Max Q Clear Time (g_c+I1), s	8.0	5.8		29.5		3.4
Green Ext Time (p_c), s	0.0	0.5		0.7		0.2

Intersection Summary		
HCM 6th Ctrl Delay		30.6
HCM 6th LOS		C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay, s/veh	12.2
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	5	3	154	6	105	9	222	177	102	145	1
Future Vol, veh/h	2	5	3	154	6	105	9	222	177	102	145	1
Peak Hour Factor	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	2	5	3	167	7	114	10	241	192	111	158	1
Number of Lanes	0	1	0	0	1	1	1	1	1	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	2	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	3	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	2	2	1
HCM Control Delay	10.3	12.3	12.4	12
HCM LOS	B	B	B	B

Lane	NBLn1	NBLn2	NBLn3	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	20%	96%	0%	100%	0%
Vol Thru, %	0%	100%	0%	50%	4%	0%	0%	99%
Vol Right, %	0%	0%	100%	30%	0%	100%	0%	1%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	9	222	177	10	160	105	102	146
LT Vol	9	0	0	2	154	0	102	0
Through Vol	0	222	0	5	6	0	0	145
RT Vol	0	0	177	3	0	105	0	1
Lane Flow Rate	10	241	192	11	174	114	111	159
Geometry Grp	8	8	8	8	8	8	8	8
Degree of Util (X)	0.019	0.424	0.3	0.022	0.347	0.19	0.219	0.291
Departure Headway (Hd)	6.831	6.325	5.616	7.373	7.176	5.986	7.124	6.611
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	523	567	639	483	501	597	502	541
Service Time	4.586	4.079	3.37	5.16	4.936	3.745	4.889	4.376
HCM Lane V/C Ratio	0.019	0.425	0.3	0.023	0.347	0.191	0.221	0.294
HCM Control Delay	9.7	13.7	10.8	10.3	13.7	10.2	11.9	12.1
HCM Lane LOS	A	B	B	B	B	B	B	B
HCM 95th-tile Q	0.1	2.1	1.3	0.1	1.5	0.7	0.8	1.2



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	151	22	66	62	1142	107
Future Volume (veh/h)	151	22	66	62	1142	107
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	164	24	72	67	1241	116
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	930	131	228	2124	2004	632
Arrive On Green	0.21	0.21	0.13	0.42	0.40	0.40
Sat Flow, veh/h	4689	638	1781	5274	5023	1585
Grp Volume(v), veh/h	122	66	72	67	1241	116
Grp Sat Flow(s),veh/h/ln	1702	1755	1781	1702	1674	1585
Q Serve(g_s), s	1.4	1.5	1.8	0.4	9.6	2.3
Cycle Q Clear(g_c), s	1.4	1.5	1.8	0.4	9.6	2.3
Prop In Lane		0.36	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	700	361	228	2124	2004	632
V/C Ratio(X)	0.17	0.18	0.32	0.03	0.62	0.18
Avail Cap(c_a), veh/h	2388	1231	366	5042	2893	913
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.9	15.9	19.3	8.4	11.7	9.5
Incr Delay (d2), s/veh	0.0	0.1	1.1	0.0	0.4	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.5	0.7	0.1	3.0	0.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	15.9	16.0	20.4	8.4	12.1	9.7
LnGrp LOS	B	B	C	A	B	A
Approach Vol, veh/h	188			139	1357	
Approach Delay, s/veh	16.0			14.6	11.9	
Approach LOS	B			B	B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	10.2	15.0		23.4		25.2
Change Period (Y+Rc), s	4.0	* 5		4.0		5.0
Max Green Setting (Gmax), s	10.0	* 34		28.0		48.0
Max Q Clear Time (g_c+I1), s	3.8	3.5		11.6		2.4
Green Ext Time (p_c), s	0.1	0.8		7.8		0.6

Intersection Summary	
HCM 6th Ctrl Delay	12.6
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

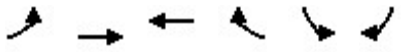
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	932	0	0	705	469	437
Future Volume (veh/h)	932	0	0	705	469	437
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	0	0	1870	1870	1870
Adj Flow Rate, veh/h	1013	0	0	766	510	291
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	0	0	2	2	2
Cap, veh/h	2368	0	0	2368	612	494
Arrive On Green	0.67	0.00	0.00	0.67	0.18	0.18
Sat Flow, veh/h	3741	0	0	3741	3456	2790
Grp Volume(v), veh/h	1013	0	0	766	510	291
Grp Sat Flow(s),veh/h/ln	1777	0	0	1777	1728	1395
Q Serve(g_s), s	8.2	0.0	0.0	5.7	8.8	5.9
Cycle Q Clear(g_c), s	8.2	0.0	0.0	5.7	8.8	5.9
Prop In Lane		0.00	0.00		1.00	1.00
Lane Grp Cap(c), veh/h	2368	0	0	2368	612	494
V/C Ratio(X)	0.43	0.00	0.00	0.32	0.83	0.59
Avail Cap(c_a), veh/h	2368	0	0	2368	909	733
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	4.8	0.0	0.0	4.4	24.6	23.4
Incr Delay (d2), s/veh	0.6	0.0	0.0	0.4	2.7	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	0.0	0.0	1.5	3.6	1.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	5.4	0.0	0.0	4.8	27.4	23.9
LnGrp LOS	A	A	A	A	C	C
Approach Vol, veh/h	1013			766	801	
Approach Delay, s/veh	5.4			4.8	26.1	
Approach LOS	A			A	C	

Timer - Assigned Phs	2				6	8
Phs Duration (G+Y+Rc), s	46.3				46.3	15.7
Change Period (Y+Rc), s	5.0				5.0	4.7
Max Green Setting (Gmax), s	36.0				36.0	16.3
Max Q Clear Time (g_c+I1), s	10.2				7.7	10.8
Green Ext Time (p_c), s	1.6				1.2	0.1

Intersection Summary						
HCM 6th Ctrl Delay			11.6			
HCM 6th LOS			B			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	782	727	0	673	402
Future Volume (veh/h)	0	782	727	0	673	402
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	0	1870	1870	0	1870	1870
Adj Flow Rate, veh/h	0	850	790	0	732	361
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	0	2	2
Cap, veh/h	0	2093	2093	0	907	404
Arrive On Green	0.00	0.59	0.59	0.00	0.25	0.25
Sat Flow, veh/h	0	3741	3741	0	3563	1585
Grp Volume(v), veh/h	0	850	790	0	732	361
Grp Sat Flow(s),veh/h/ln	0	1777	1777	0	1781	1585
Q Serve(g_s), s	0.0	8.0	7.3	0.0	11.9	13.6
Cycle Q Clear(g_c), s	0.0	8.0	7.3	0.0	11.9	13.6
Prop In Lane	0.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	2093	2093	0	907	404
V/C Ratio(X)	0.00	0.41	0.38	0.00	0.81	0.89
Avail Cap(c_a), veh/h	0	2093	2093	0	1511	672
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	6.9	6.7	0.0	21.7	22.3
Incr Delay (d2), s/veh	0.0	0.6	0.5	0.0	0.7	5.0
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	2.5	2.3	0.0	4.7	5.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	7.5	7.3	0.0	22.3	27.3
LnGrp LOS	A	A	A	A	C	C
Approach Vol, veh/h		850	790		1093	
Approach Delay, s/veh		7.5	7.3		24.0	
Approach LOS		A	A		C	

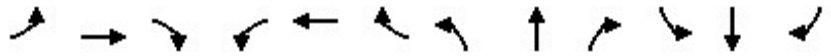
Timer - Assigned Phs	2	4	6
Phs Duration (G+Y+Rc), s	41.5	20.5	41.5
Change Period (Y+Rc), s	5.0	* 4.7	5.0
Max Green Setting (Gmax), s	26.0	* 26	26.0
Max Q Clear Time (g_c+I1), s	10.0	15.6	9.3
Green Ext Time (p_c), s	1.3	0.2	1.2

Intersection Summary	
HCM 6th Ctrl Delay	14.0
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	117	876	22	139	563	194	50	54	173	194	79	119
Future Volume (veh/h)	117	876	22	139	563	194	50	54	173	194	79	119
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	127	952	23	151	612	58	54	59	111	148	173	9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	153	1985	48	177	2038	909	72	78	288	200	210	178
Arrive On Green	0.09	0.56	0.56	0.10	0.57	0.57	0.08	0.08	0.08	0.11	0.11	0.11
Sat Flow, veh/h	1781	3546	86	1781	3554	1585	873	954	1585	1781	1870	1585
Grp Volume(v), veh/h	127	477	498	151	612	58	113	0	111	148	173	9
Grp Sat Flow(s),veh/h/ln	1781	1777	1855	1781	1777	1585	1827	0	1585	1781	1870	1585
Q Serve(g_s), s	8.7	20.0	20.0	10.3	11.0	2.0	7.5	0.0	7.6	10.0	11.2	0.6
Cycle Q Clear(g_c), s	8.7	20.0	20.0	10.3	11.0	2.0	7.5	0.0	7.6	10.0	11.2	0.6
Prop In Lane	1.00		0.05	1.00		1.00	0.48		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	153	994	1038	177	2038	909	150	0	288	200	210	178
V/C Ratio(X)	0.83	0.48	0.48	0.85	0.30	0.06	0.75	0.00	0.39	0.74	0.83	0.05
Avail Cap(c_a), veh/h	230	994	1038	230	2038	909	418	0	521	365	383	325
HCM Platoon Ratio	1.00	1.00	1.00	1.00	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	55.8	16.4	16.4	54.9	13.6	11.7	55.7	0.0	44.7	53.3	53.9	49.2
Incr Delay (d2), s/veh	9.2	1.7	1.6	17.1	0.4	0.1	2.9	0.0	0.3	2.0	3.1	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	4.3	8.5	8.8	5.5	4.5	0.7	3.6	0.0	3.0	4.6	5.5	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	65.0	18.1	18.0	72.1	14.0	11.8	58.6	0.0	45.0	55.4	57.0	49.2
LnGrp LOS	E	B	B	E	B	B	E	A	D	E	E	D
Approach Vol, veh/h		1102			821			224			330	
Approach Delay, s/veh		23.5			24.5			51.8			56.1	
Approach LOS		C			C			D			E	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	14.6	76.1		14.8	16.3	74.4		18.5
Change Period (Y+Rc), s	4.0	5.0		4.6	4.0	5.0		4.6
Max Green Setting (Gmax), s	10.6	36.0		28.4	16.0	36.0		25.4
Max Q Clear Time (g_c+I1), s	10.7	13.0		9.6	12.3	22.0		13.2
Green Ext Time (p_c), s	0.1	4.5		0.5	0.1	5.4		0.7

Intersection Summary	
HCM 6th Ctrl Delay	30.7
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	105	16	22	1126	1037	29
Future Volume (veh/h)	105	16	22	1126	1037	29
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	114	0	24	1224	1127	30
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	177		410	2698	2371	63
Arrive On Green	0.10	0.00	0.02	0.76	0.67	0.67
Sat Flow, veh/h	1781	1585	1781	3647	3630	94
Grp Volume(v), veh/h	114	0	24	1224	566	591
Grp Sat Flow(s),veh/h/ln	1781	1585	1781	1777	1777	1853
Q Serve(g_s), s	3.7	0.0	0.2	7.6	9.2	9.3
Cycle Q Clear(g_c), s	3.7	0.0	0.2	7.6	9.2	9.3
Prop In Lane	1.00	1.00	1.00			0.05
Lane Grp Cap(c), veh/h	177		410	2698	1191	1243
V/C Ratio(X)	0.65		0.06	0.45	0.48	0.48
Avail Cap(c_a), veh/h	564		489	2698	1191	1243
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.0	0.0	3.4	2.7	4.8	4.8
Incr Delay (d2), s/veh	1.5	0.0	0.0	0.6	1.4	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.0	0.0	1.3	2.6	2.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	27.5	0.0	3.4	3.2	6.1	6.1
LnGrp LOS	C		A	A	A	A
Approach Vol, veh/h	114	A		1248	1157	
Approach Delay, s/veh	27.5			3.2	6.1	
Approach LOS	C			A	A	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		50.0		10.0	5.3	44.7
Change Period (Y+Rc), s		4.5		4.0	4.0	4.5
Max Green Setting (Gmax), s		32.5		19.0	4.0	24.5
Max Q Clear Time (g_c+I1), s		9.6		5.7	2.2	11.3
Green Ext Time (p_c), s		9.9		0.1	0.0	6.4

Intersection Summary		
HCM 6th Ctrl Delay		5.6
HCM 6th LOS		A

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.



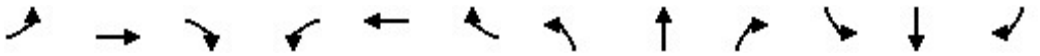
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	2	47	107	187	82	0
Future Volume (veh/h)	2	47	107	187	82	0
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	2	2	116	203	89	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	15	7	353	3206	2667	0
Arrive On Green	0.00	0.00	0.10	0.90	0.75	0.00
Sat Flow, veh/h	3456	1585	3456	3647	3741	0
Grp Volume(v), veh/h	2	2	116	203	89	0
Grp Sat Flow(s),veh/h/ln	1728	1585	1728	1777	1777	0
Q Serve(g_s), s	0.1	0.1	2.9	0.6	0.6	0.0
Cycle Q Clear(g_c), s	0.1	0.1	2.9	0.6	0.6	0.0
Prop In Lane	1.00	1.00	1.00			0.00
Lane Grp Cap(c), veh/h	15	7	353	3206	2667	0
V/C Ratio(X)	0.14	0.30	0.33	0.06	0.03	0.00
Avail Cap(c_a), veh/h	1226	562	944	3206	2667	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	46.1	46.2	38.8	0.5	3.0	0.0
Incr Delay (d2), s/veh	4.2	23.1	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
%ile BackOfQ(50%),veh/ln	0.0	0.1	1.2	0.0	0.2	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	50.3	69.2	39.3	0.5	3.0	0.0
LnGrp LOS	D	E	D	A	A	A
Approach Vol, veh/h	4			319	89	
Approach Delay, s/veh	59.8			14.6	3.0	
Approach LOS	E			B	A	

Timer - Assigned Phs	2		5	6	8
Phs Duration (G+Y+Rc), s	88.6		14.1	74.5	4.4
Change Period (Y+Rc), s	* 4.7		4.6	* 4.7	4.0
Max Green Setting (Gmax), s	* 51		25.4	* 21	33.0
Max Q Clear Time (g_c+I1), s	2.6		4.9	2.6	2.1
Green Ext Time (p_c), s	2.0		0.3	0.5	0.0

Intersection Summary	
HCM 6th Ctrl Delay	12.5
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	293	370	323	294	4	297	16	88	22	29	5
Future Volume (vph)	3	293	370	323	294	4	297	16	88	22	29	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6	4.6	4.0	4.6		4.6	4.6			4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Frt		1.00	0.85	1.00	1.00		1.00	0.87			0.99	
Flt Protected		1.00	1.00	0.95	1.00		0.95	1.00			0.98	
Satd. Flow (prot)		1862	1583	1770	1859		1770	1625			1807	
Flt Permitted		1.00	1.00	0.37	1.00		0.95	1.00			0.98	
Satd. Flow (perm)		1858	1583	695	1859		1770	1625			1807	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	3	318	402	351	320	4	323	17	96	24	32	5
RTOR Reduction (vph)	0	0	166	0	0	0	0	74	0	0	4	0
Lane Group Flow (vph)	0	321	236	351	324	0	323	39	0	0	57	0
Turn Type	Perm	NA	pm+ov	pm+pt	NA		Split	NA		Split	NA	
Protected Phases		2	8	1	6		8	8		7	7	
Permitted Phases	2		2	6								
Actuated Green, G (s)		35.4	58.8	55.9	55.9		23.4	23.4			7.5	
Effective Green, g (s)		35.4	58.8	55.9	55.9		23.4	23.4			7.5	
Actuated g/C Ratio		0.35	0.59	0.56	0.56		0.23	0.23			0.08	
Clearance Time (s)		4.6	4.6	4.0	4.6		4.6	4.6			4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)		657	930	565	1039		414	380			135	
v/s Ratio Prot			0.06	c0.10	0.17		c0.18	0.02			c0.03	
v/s Ratio Perm		0.17	0.09	c0.24								
v/c Ratio		0.49	0.25	0.62	0.31		0.78	0.10			0.42	
Uniform Delay, d1		25.2	10.0	13.5	11.8		35.9	30.1			44.2	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2		2.6	0.1	2.1	0.8		9.2	0.1			2.1	
Delay (s)		27.8	10.1	15.6	12.6		45.1	30.2			46.3	
Level of Service		C	B	B	B		D	C			D	
Approach Delay (s)		18.0			14.1			41.2			46.3	
Approach LOS		B			B			D			D	

Intersection Summary			
HCM 2000 Control Delay	22.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	17.2
Intersection Capacity Utilization	68.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	132	224	242	265	525	279
Future Volume (vph)	132	224	242	265	525	279
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.0	4.6	4.6	4.0	4.6
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	1863	1583	1770	1863
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	143	243	263	288	571	303
RTOR Reduction (vph)	0	112	0	22	0	0
Lane Group Flow (vph)	143	131	263	266	571	303
Turn Type	custom	pm+ov	NA	custom	Prot	NA
Protected Phases	3	1	2	3	1	6
Permitted Phases	4	4		2 4		
Actuated Green, G (s)	11.1	54.1	21.6	32.7	54.1	79.7
Effective Green, g (s)	11.1	54.1	21.6	32.7	54.1	79.7
Actuated g/C Ratio	0.11	0.54	0.22	0.33	0.54	0.80
Clearance Time (s)	4.6	4.0	4.6	4.6	4.0	4.6
Vehicle Extension (s)	1.0	2.7	5.5	1.0	2.7	3.5
Lane Grp Cap (vph)	196	856	402	590	957	1484
v/s Ratio Prot	c0.08	0.08	c0.14	0.05	c0.32	0.16
v/s Ratio Perm				0.12		
v/c Ratio	0.73	0.15	0.65	0.45	0.60	0.20
Uniform Delay, d1	43.0	11.5	35.8	26.6	15.6	2.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	10.9	0.0	5.6	0.2	2.7	0.3
Delay (s)	53.9	11.5	41.4	26.8	18.3	2.8
Level of Service	D	B	D	C	B	A
Approach Delay (s)	27.2		33.7			12.9
Approach LOS	C		C			B

Intersection Summary			
HCM 2000 Control Delay	22.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	17.2
Intersection Capacity Utilization	60.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM 6th Signalized Intersection Summary
6: San Clemente Dr & Tamalpais Dr/Redwood Hwy

06/07/2022



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	549	4	82	446	888	137
Future Volume (veh/h)	549	4	82	446	888	137
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	597	4	89	485	965	149
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1149	8	264	2328	1741	549
Arrive On Green	0.22	0.22	0.15	0.46	0.35	0.35
Sat Flow, veh/h	5401	35	1781	5274	5023	1585
Grp Volume(v), veh/h	388	213	89	485	965	149
Grp Sat Flow(s),veh/h/ln	1702	1864	1781	1702	1674	1585
Q Serve(g_s), s	4.6	4.6	2.0	2.6	7.1	3.1
Cycle Q Clear(g_c), s	4.6	4.6	2.0	2.6	7.1	3.1
Prop In Lane		0.02	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	748	409	264	2328	1741	549
V/C Ratio(X)	0.52	0.52	0.34	0.21	0.55	0.27
Avail Cap(c_a), veh/h	2549	1396	391	5383	3089	975
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.6	15.7	17.4	7.4	12.0	10.7
Incr Delay (d2), s/veh	0.2	0.4	1.1	0.1	0.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	1.7	0.8	0.7	2.2	0.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	15.9	16.0	18.4	7.5	12.4	11.1
LnGrp LOS	B	B	B	A	B	B
Approach Vol, veh/h	601			574	1114	
Approach Delay, s/veh	15.9			9.2	12.3	
Approach LOS	B			A	B	

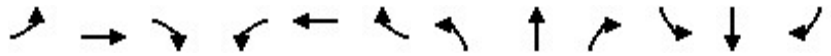
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	10.8	15.0		19.8		25.8
Change Period (Y+Rc), s	4.0	* 5		4.0		5.0
Max Green Setting (Gmax), s	10.0	* 34		28.0		48.0
Max Q Clear Time (g_c+I1), s	4.0	6.6		9.1		4.6
Green Ext Time (p_c), s	0.1	2.6		6.7		5.3

Intersection Summary	
HCM 6th Ctrl Delay	12.5
HCM 6th LOS	B

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.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	149	687	28	172	695	302	57	75	164	224	88	195
Future Volume (veh/h)	149	687	28	172	695	302	57	75	164	224	88	195
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	162	747	29	187	755	175	62	82	101	170	199	92
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	189	1773	69	213	1856	828	77	102	345	226	237	201
Arrive On Green	0.11	0.51	0.51	0.12	0.52	0.52	0.10	0.10	0.10	0.13	0.13	0.13
Sat Flow, veh/h	1781	3487	135	1781	3554	1585	788	1043	1585	1781	1870	1585
Grp Volume(v), veh/h	162	380	396	187	755	175	144	0	101	170	199	92
Grp Sat Flow(s),veh/h/ln	1781	1777	1846	1781	1777	1585	1831	0	1585	1781	1870	1585
Q Serve(g_s), s	11.1	16.6	16.6	12.8	16.0	7.4	9.5	0.0	6.6	11.4	12.9	6.7
Cycle Q Clear(g_c), s	11.1	16.6	16.6	12.8	16.0	7.4	9.5	0.0	6.6	11.4	12.9	6.7
Prop In Lane	1.00		0.07	1.00		1.00	0.43		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	189	903	939	213	1856	828	180	0	345	226	237	201
V/C Ratio(X)	0.86	0.42	0.42	0.88	0.41	0.21	0.80	0.00	0.29	0.75	0.84	0.46
Avail Cap(c_a), veh/h	259	903	939	259	1856	828	434	0	566	351	368	312
HCM Platoon Ratio	1.00	1.00	1.00	1.00	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	54.5	19.1	19.1	53.7	18.0	15.9	54.7	0.0	40.5	52.2	52.9	50.2
Incr Delay (d2), s/veh	14.7	1.4	1.4	21.2	0.7	0.6	3.2	0.0	0.2	1.9	5.7	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	5.7	7.2	7.4	7.0	6.7	2.8	4.6	0.0	2.6	5.2	6.4	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	69.2	20.5	20.5	74.9	18.6	16.5	57.9	0.0	40.7	54.2	58.5	50.8
LnGrp LOS	E	C	C	E	B	B	E	A	D	D	E	D
Approach Vol, veh/h		938			1117			245			461	
Approach Delay, s/veh		28.9			27.7			50.8			55.4	
Approach LOS		C			C			D			E	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	17.1	69.8		16.8	18.9	68.0		20.3
Change Period (Y+Rc), s	4.0	5.0		4.6	4.0	5.0		4.6
Max Green Setting (Gmax), s	13.0	34.0		29.4	18.0	34.0		24.4
Max Q Clear Time (g_c+I1), s	13.1	18.0		11.5	14.8	18.6		14.9
Green Ext Time (p_c), s	0.1	5.4		0.6	0.1	4.4		0.8

Intersection Summary	
HCM 6th Ctrl Delay	34.8
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.



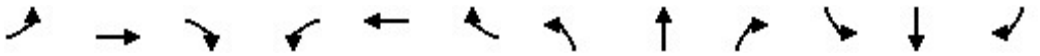
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	27	271	357	420	300	7
Future Volume (veh/h)	27	271	357	420	300	7
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	29	246	388	457	326	8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	625	287	492	2579	1892	46
Arrive On Green	0.18	0.18	0.14	0.73	0.53	0.53
Sat Flow, veh/h	3456	1585	3456	3647	3638	87
Grp Volume(v), veh/h	29	246	388	457	163	171
Grp Sat Flow(s),veh/h/ln	1728	1585	1728	1777	1777	1855
Q Serve(g_s), s	0.6	14.0	10.1	3.8	4.4	4.4
Cycle Q Clear(g_c), s	0.6	14.0	10.1	3.8	4.4	4.4
Prop In Lane	1.00	1.00	1.00			0.05
Lane Grp Cap(c), veh/h	625	287	492	2579	948	990
V/C Ratio(X)	0.05	0.86	0.79	0.18	0.17	0.17
Avail Cap(c_a), veh/h	1226	562	944	2579	948	990
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.5	36.9	38.5	4.0	11.1	11.1
Incr Delay (d2), s/veh	0.0	7.4	2.8	0.2	0.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	5.9	4.4	1.2	1.7	1.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	31.5	44.3	41.4	4.2	11.5	11.5
LnGrp LOS	C	D	D	A	B	B
Approach Vol, veh/h	275			845	334	
Approach Delay, s/veh	43.0			21.2	11.5	
Approach LOS	D			C	B	

Timer - Assigned Phs	2		5	6	8
Phs Duration (G+Y+Rc), s	72.2		17.9	54.3	20.8
Change Period (Y+Rc), s	* 4.7		4.6	* 4.7	4.0
Max Green Setting (Gmax), s	* 51		25.4	* 21	33.0
Max Q Clear Time (g_c+I1), s	5.8		12.1	6.4	16.0
Green Ext Time (p_c), s	5.0		1.2	2.2	0.8

Intersection Summary	
HCM 6th Ctrl Delay	23.1
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	203	249	233	290	5	456	26	86	32	28	10
Future Volume (vph)	1	203	249	233	290	5	456	26	86	32	28	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6	4.6	4.0	4.6		4.6	4.6			4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Frt		1.00	0.85	1.00	1.00		1.00	0.88			0.98	
Flt Protected		1.00	1.00	0.95	1.00		0.95	1.00			0.98	
Satd. Flow (prot)		1862	1583	1770	1858		1770	1648			1785	
Flt Permitted		1.00	1.00	0.43	1.00		0.95	1.00			0.98	
Satd. Flow (perm)		1861	1583	807	1858		1770	1648			1785	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	221	271	253	315	5	496	28	93	35	30	11
RTOR Reduction (vph)	0	0	107	0	1	0	0	63	0	0	6	0
Lane Group Flow (vph)	0	222	164	253	319	0	496	58	0	0	70	0
Turn Type	Perm	NA	pm+ov	pm+pt	NA		Split	NA		Split	NA	
Protected Phases		2	8	1	6		8	8		7	7	
Permitted Phases	2		2	6								
Actuated Green, G (s)		27.8	60.5	46.1	46.1		32.7	32.7			8.0	
Effective Green, g (s)		27.8	60.5	46.1	46.1		32.7	32.7			8.0	
Actuated g/C Ratio		0.28	0.60	0.46	0.46		0.33	0.33			0.08	
Clearance Time (s)		4.6	4.6	4.0	4.6		4.6	4.6			4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)		517	957	509	856		578	538			142	
v/s Ratio Prot			0.06	c0.07	0.17		c0.28	0.04			c0.04	
v/s Ratio Perm		0.12	0.05	c0.16								
v/c Ratio		0.43	0.17	0.50	0.37		0.86	0.11			0.49	
Uniform Delay, d1		29.6	8.7	17.5	17.5		31.5	23.5			44.0	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2		2.6	0.1	0.8	1.2		12.0	0.1			2.6	
Delay (s)		32.2	8.8	18.3	18.8		43.5	23.6			46.7	
Level of Service		C	A	B	B		D	C			D	
Approach Delay (s)		19.3			18.6			39.6			46.7	
Approach LOS		B			B			D			D	

Intersection Summary			
HCM 2000 Control Delay	27.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	17.2
Intersection Capacity Utilization	69.7%	ICU Level of Service	C
Analysis Period (min)	15		

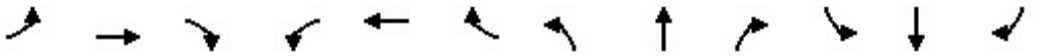
c Critical Lane Group



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	110	175	293	236	489	334
Future Volume (vph)	110	175	293	236	489	334
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.0	4.6	4.6	4.0	4.6
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	1863	1583	1770	1863
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	120	190	318	257	532	363
RTOR Reduction (vph)	0	92	0	56	0	0
Lane Group Flow (vph)	120	98	318	201	532	363
Turn Type	custom	pm+ov	NA	custom	Prot	NA
Protected Phases	3	1	2	3	1	6
Permitted Phases	4	4		2 4		
Actuated Green, G (s)	10.7	51.4	24.7	35.4	51.4	80.1
Effective Green, g (s)	10.7	51.4	24.7	35.4	51.4	80.1
Actuated g/C Ratio	0.11	0.51	0.25	0.35	0.51	0.80
Clearance Time (s)	4.6	4.0	4.6	4.6	4.0	4.6
Vehicle Extension (s)	1.0	2.7	5.5	1.0	2.7	3.5
Lane Grp Cap (vph)	189	813	460	633	909	1492
v/s Ratio Prot	c0.07	0.06	c0.17	0.03	c0.30	0.19
v/s Ratio Perm				0.09		
v/c Ratio	0.63	0.12	0.69	0.32	0.59	0.24
Uniform Delay, d1	42.8	12.6	34.2	23.5	16.9	2.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.0	0.0	6.1	0.1	2.8	0.4
Delay (s)	47.8	12.6	40.3	23.6	19.6	2.8
Level of Service	D	B	D	C	B	A
Approach Delay (s)	26.2		32.8			12.8
Approach LOS	C		C			B

Intersection Summary			
HCM 2000 Control Delay	21.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	17.2
Intersection Capacity Utilization	60.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	42	704	61	22	858	18	82	0	32	21	1	37
Future Volume (vph)	42	704	61	22	858	18	82	0	32	21	1	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.6		4.0	4.6			4.2			4.6	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frt	1.00	0.99		1.00	1.00			0.96			0.92	
Flt Protected	0.95	1.00		0.95	1.00			0.97			0.98	
Satd. Flow (prot)	1770	3497		1770	3528			1730			1675	
Flt Permitted	0.95	1.00		0.95	1.00			0.77			0.88	
Satd. Flow (perm)	1770	3497		1770	3528			1375			1507	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	46	765	66	24	933	20	89	0	35	23	1	40
RTOR Reduction (vph)	0	7	0	0	2	0	0	91	0	0	36	0
Lane Group Flow (vph)	46	824	0	24	951	0	0	33	0	0	28	0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			4			8	
Permitted Phases							4			8		
Actuated Green, G (s)	3.6	38.9		2.0	37.3			6.3			5.9	
Effective Green, g (s)	3.6	38.9		2.0	37.3			6.3			5.9	
Actuated g/C Ratio	0.06	0.65		0.03	0.62			0.10			0.10	
Clearance Time (s)	4.0	4.6		4.0	4.6			4.2			4.6	
Vehicle Extension (s)	2.0	3.0		2.0	3.0			2.0			2.0	
Lane Grp Cap (vph)	106	2267		59	2193			144			148	
v/s Ratio Prot	c0.03	0.24		0.01	c0.27							
v/s Ratio Perm								c0.02			0.02	
v/c Ratio	0.43	0.36		0.41	0.43			0.23			0.19	
Uniform Delay, d1	27.2	4.9		28.4	5.9			24.6			24.9	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	1.0	0.5		1.7	0.6			0.3			0.2	
Delay (s)	28.3	5.3		30.1	6.5			24.9			25.1	
Level of Service	C	A		C	A			C			C	
Approach Delay (s)		6.5			7.1			24.9			25.1	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	8.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	13.2
Intersection Capacity Utilization	54.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	301	588	36	0	73
Future Vol, veh/h	0	301	588	36	0	73
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	327	639	39	0	79

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	659
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	0	-	-	-	0	464
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	464
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	14.4
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	464
HCM Lane V/C Ratio	-	-	-	0.171
HCM Control Delay (s)	-	-	-	14.4
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0.6



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	482	93	104	237	68	166
Future Volume (veh/h)	482	93	104	237	68	166
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	524	12	113	258	74	53
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	559	498	170	1126	881	1245
Arrive On Green	0.31	0.31	0.10	0.60	0.47	0.47
Sat Flow, veh/h	1781	1585	1781	1870	1870	1585
Grp Volume(v), veh/h	524	12	113	258	74	53
Grp Sat Flow(s),veh/h/ln	1781	1585	1781	1870	1870	1585
Q Serve(g_s), s	28.6	0.5	6.1	6.4	2.2	0.7
Cycle Q Clear(g_c), s	28.6	0.5	6.1	6.4	2.2	0.7
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	559	498	170	1126	881	1245
V/C Ratio(X)	0.94	0.02	0.66	0.23	0.08	0.04
Avail Cap(c_a), veh/h	905	805	223	1126	881	1245
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.3	23.7	43.7	9.2	14.6	2.4
Incr Delay (d2), s/veh	8.3	0.0	1.9	0.5	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.3	0.6	2.8	2.6	1.0	0.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	41.6	23.7	45.6	9.7	14.7	2.4
LnGrp LOS	D	C	D	A	B	A
Approach Vol, veh/h	536			371	127	
Approach Delay, s/veh	41.2			20.6	9.6	
Approach LOS	D			C	A	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	13.1	51.3		35.6		64.4
Change Period (Y+Rc), s	3.5	* 4.2		* 4.2		* 4.2
Max Green Setting (Gmax), s	12.5	* 25		* 51		* 25
Max Q Clear Time (g_c+I1), s	8.1	4.2		30.6		8.4
Green Ext Time (p_c), s	0.0	0.3		0.8		0.8

Intersection Summary	
HCM 6th Ctrl Delay	29.9
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay, s/veh	26.1
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	3	3	210	3	170	8	376	148	244	209	6
Future Vol, veh/h	2	3	3	210	3	170	8	376	148	244	209	6
Peak Hour Factor	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	2	3	3	228	3	185	9	409	161	265	227	7
Number of Lanes	0	1	0	0	1	1	1	1	1	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	2	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	3	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	2	2	1
HCM Control Delay	12.6	18.7	35.7	21.5
HCM LOS	B	C	E	C

Lane	NBLn1	NBLn2	NBLn3	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	25%	99%	0%	100%	0%
Vol Thru, %	0%	100%	0%	38%	1%	0%	0%	97%
Vol Right, %	0%	0%	100%	38%	0%	100%	0%	3%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	8	376	148	8	213	170	244	215
LT Vol	8	0	0	2	210	0	244	0
Through Vol	0	376	0	3	3	0	0	209
RT Vol	0	0	148	3	0	170	0	6
Lane Flow Rate	9	409	161	9	232	185	265	234
Geometry Grp	8	8	8	8	8	8	8	8
Degree of Util (X)	0.02	0.879	0.314	0.023	0.558	0.383	0.619	0.511
Departure Headway (Hd)	8.253	7.741	7.023	9.6	8.681	7.463	8.407	7.873
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	433	466	512	371	414	482	430	458
Service Time	6.008	5.496	4.778	7.397	6.438	5.22	6.167	5.633
HCM Lane V/C Ratio	0.021	0.878	0.314	0.024	0.56	0.384	0.616	0.511
HCM Control Delay	11.2	45.1	13	12.6	21.9	14.8	24	18.6
HCM Lane LOS	B	E	B	B	C	B	C	C
HCM 95th-tile Q	0.1	9.3	1.3	0.1	3.3	1.8	4.1	2.8



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	597	7	69	487	1060	95
Future Volume (veh/h)	597	7	69	487	1060	95
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	649	8	75	529	1152	103
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1118	14	235	2200	1912	603
Arrive On Green	0.22	0.22	0.13	0.43	0.38	0.38
Sat Flow, veh/h	5367	64	1781	5274	5023	1585
Grp Volume(v), veh/h	425	232	75	529	1152	103
Grp Sat Flow(s),veh/h/ln	1702	1859	1781	1702	1674	1585
Q Serve(g_s), s	5.3	5.4	1.8	3.1	8.8	2.1
Cycle Q Clear(g_c), s	5.3	5.4	1.8	3.1	8.8	2.1
Prop In Lane		0.03	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	732	400	235	2200	1912	603
V/C Ratio(X)	0.58	0.58	0.32	0.24	0.60	0.17
Avail Cap(c_a), veh/h	2432	1328	373	5134	2946	930
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.8	16.8	18.8	8.6	11.9	9.8
Incr Delay (d2), s/veh	0.3	0.5	1.1	0.1	0.4	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	2.0	0.7	0.9	2.7	0.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	17.1	17.3	19.9	8.7	12.3	10.0
LnGrp LOS	B	B	B	A	B	A
Approach Vol, veh/h	657			604	1255	
Approach Delay, s/veh	17.2			10.1	12.1	
Approach LOS	B			B	B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	10.3	15.3		22.2		25.6
Change Period (Y+Rc), s	4.0	* 5		4.0		5.0
Max Green Setting (Gmax), s	10.3	* 34		28.0		48.0
Max Q Clear Time (g_c+I1), s	3.8	7.4		10.8		5.1
Green Ext Time (p_c), s	0.1	2.9		7.4		5.9

Intersection Summary	
HCM 6th Ctrl Delay	13.0
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

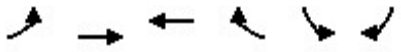
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	908	0	0	788	788	501
Future Volume (veh/h)	908	0	0	788	788	501
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	0	0	1870	1870	1870
Adj Flow Rate, veh/h	987	0	0	857	857	361
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	0	0	2	2	2
Cap, veh/h	2021	0	0	2021	949	766
Arrive On Green	0.57	0.00	0.00	0.57	0.27	0.27
Sat Flow, veh/h	3741	0	0	3741	3456	2790
Grp Volume(v), veh/h	987	0	0	857	857	361
Grp Sat Flow(s),veh/h/ln	1777	0	0	1777	1728	1395
Q Serve(g_s), s	10.3	0.0	0.0	8.5	14.8	6.7
Cycle Q Clear(g_c), s	10.3	0.0	0.0	8.5	14.8	6.7
Prop In Lane		0.00	0.00		1.00	1.00
Lane Grp Cap(c), veh/h	2021	0	0	2021	949	766
V/C Ratio(X)	0.49	0.00	0.00	0.42	0.90	0.47
Avail Cap(c_a), veh/h	2021	0	0	2021	1131	913
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	8.0	0.0	0.0	7.6	21.7	18.7
Incr Delay (d2), s/veh	0.8	0.0	0.0	0.7	8.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	0.0	0.0	2.8	6.6	2.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	8.8	0.0	0.0	8.2	29.9	18.9
LnGrp LOS	A	A	A	A	C	B
Approach Vol, veh/h	987			857	1218	
Approach Delay, s/veh	8.8			8.2	26.6	
Approach LOS	A			A	C	

Timer - Assigned Phs	2				6	8
Phs Duration (G+Y+Rc), s	40.3				40.3	21.7
Change Period (Y+Rc), s	5.0				5.0	4.7
Max Green Setting (Gmax), s	32.0				32.0	20.3
Max Q Clear Time (g_c+I1), s	12.3				10.5	16.8
Green Ext Time (p_c), s	1.5				1.3	0.2

Intersection Summary						
HCM 6th Ctrl Delay			15.7			
HCM 6th LOS			B			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	1008	1113	0	664	353
Future Volume (veh/h)	0	1008	1113	0	664	353
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	0	1870	1870	0	1870	1870
Adj Flow Rate, veh/h	0	1096	1210	0	722	308
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	0	2	2
Cap, veh/h	0	2179	2179	0	821	365
Arrive On Green	0.00	0.61	0.61	0.00	0.23	0.23
Sat Flow, veh/h	0	3741	3741	0	3563	1585
Grp Volume(v), veh/h	0	1096	1210	0	722	308
Grp Sat Flow(s),veh/h/ln	0	1777	1777	0	1781	1585
Q Serve(g_s), s	0.0	10.7	12.4	0.0	12.1	11.5
Cycle Q Clear(g_c), s	0.0	10.7	12.4	0.0	12.1	11.5
Prop In Lane	0.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	2179	2179	0	821	365
V/C Ratio(X)	0.00	0.50	0.56	0.00	0.88	0.84
Avail Cap(c_a), veh/h	0	2179	2179	0	1437	639
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	6.7	7.0	0.0	23.0	22.8
Incr Delay (d2), s/veh	0.0	0.8	1.0	0.0	1.3	2.1
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	3.2	3.8	0.0	4.9	4.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	7.5	8.1	0.0	24.4	24.9
LnGrp LOS	A	A	A	A	C	C
Approach Vol, veh/h		1096	1210		1030	
Approach Delay, s/veh		7.5	8.1		24.5	
Approach LOS		A	A		C	

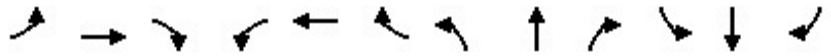
Timer - Assigned Phs	2	4	6
Phs Duration (G+Y+Rc), s	43.0	19.0	43.0
Change Period (Y+Rc), s	5.0	* 4.7	5.0
Max Green Setting (Gmax), s	27.3	* 25	27.3
Max Q Clear Time (g_c+I1), s	12.7	14.1	14.4
Green Ext Time (p_c), s	1.7	0.2	1.9

Intersection Summary	
HCM 6th Ctrl Delay	13.0
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	170	593	61	245	687	316	42	75	193	234	63	176
Future Volume (veh/h)	170	593	61	245	687	316	42	75	193	234	63	176
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			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	645	65	266	747	190	46	82	133	161	198	71
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	211	1625	164	244	1837	819	61	108	363	225	236	200
Arrive On Green	0.12	0.50	0.50	0.14	0.52	0.52	0.09	0.09	0.09	0.13	0.13	0.13
Sat Flow, veh/h	1781	3260	328	1781	3554	1585	660	1177	1585	1781	1870	1585
Grp Volume(v), veh/h	185	351	359	266	747	190	128	0	133	161	198	71
Grp Sat Flow(s),veh/h/ln	1781	1777	1811	1781	1777	1585	1837	0	1585	1781	1870	1585
Q Serve(g_s), s	12.7	15.3	15.4	17.0	15.9	8.2	8.4	0.0	8.8	10.8	12.8	5.1
Cycle Q Clear(g_c), s	12.7	15.3	15.4	17.0	15.9	8.2	8.4	0.0	8.8	10.8	12.8	5.1
Prop In Lane	1.00		0.18	1.00		1.00	0.36		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	211	885	903	244	1837	819	169	0	363	225	236	200
V/C Ratio(X)	0.88	0.40	0.40	1.09	0.41	0.23	0.76	0.00	0.37	0.72	0.84	0.36
Avail Cap(c_a), veh/h	244	885	903	244	1837	819	436	0	593	351	368	312
HCM Platoon Ratio	1.00	1.00	1.00	1.00	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	53.8	19.4	19.5	53.5	18.3	16.4	55.0	0.0	40.2	52.1	53.0	49.6
Incr Delay (d2), s/veh	23.5	1.3	1.3	83.4	0.7	0.7	2.6	0.0	0.2	1.6	5.6	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.0	6.6	6.8	13.3	6.7	3.1	4.0	0.0	3.5	4.9	6.4	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	77.2	20.8	20.8	136.9	19.0	17.1	57.6	0.0	40.5	53.7	58.5	50.0
LnGrp LOS	E	C	C	F	B	B	E	A	D	D	E	D
Approach Vol, veh/h		895			1203			261			430	
Approach Delay, s/veh		32.4			44.8			48.9			55.3	
Approach LOS		C			D			D			E	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	18.7	69.1		16.0	21.0	66.8		20.2
Change Period (Y+Rc), s	4.0	5.0		4.6	4.0	5.0		4.6
Max Green Setting (Gmax), s	17.0	35.0		29.4	17.0	35.0		24.4
Max Q Clear Time (g_c+I1), s	14.7	17.9		10.8	19.0	17.4		14.8
Green Ext Time (p_c), s	0.1	5.5		0.6	0.0	4.2		0.8

Intersection Summary	
HCM 6th Ctrl Delay	42.8
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	261	38	22	790	877	27
Future Volume (veh/h)	261	38	22	790	877	27
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	284	0	24	859	953	27
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	338		403	2375	2046	58
Arrive On Green	0.19	0.00	0.02	0.67	0.58	0.58
Sat Flow, veh/h	1781	1585	1781	3647	3623	100
Grp Volume(v), veh/h	284	0	24	859	480	500
Grp Sat Flow(s),veh/h/ln	1781	1585	1781	1777	1777	1852
Q Serve(g_s), s	9.2	0.0	0.3	6.3	9.3	9.3
Cycle Q Clear(g_c), s	9.2	0.0	0.3	6.3	9.3	9.3
Prop In Lane	1.00	1.00	1.00			0.05
Lane Grp Cap(c), veh/h	338		403	2375	1030	1074
V/C Ratio(X)	0.84		0.06	0.36	0.47	0.47
Avail Cap(c_a), veh/h	564		482	2375	1030	1074
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.4	0.0	5.2	4.3	7.3	7.3
Incr Delay (d2), s/veh	2.3	0.0	0.0	0.4	1.5	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	0.0	0.1	1.6	3.2	3.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	25.8	0.0	5.2	4.8	8.8	8.7
LnGrp LOS	C		A	A	A	A
Approach Vol, veh/h	284	A		883	980	
Approach Delay, s/veh	25.8			4.8	8.7	
Approach LOS	C			A	A	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		44.6		15.4	5.3	39.3
Change Period (Y+Rc), s		4.5		4.0	4.0	4.5
Max Green Setting (Gmax), s		32.5		19.0	4.0	24.5
Max Q Clear Time (g_c+I1), s		8.3		11.2	2.3	11.3
Green Ext Time (p_c), s		6.6		0.3	0.0	5.3

Intersection Summary	
HCM 6th Ctrl Delay	9.4
HCM 6th LOS	A

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.



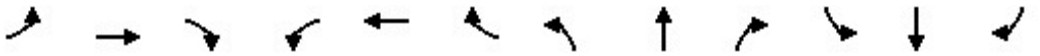
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	25	260	332	389	249	1
Future Volume (veh/h)	25	260	332	389	249	1
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	27	234	361	423	271	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	598	274	464	2606	1996	7
Arrive On Green	0.17	0.17	0.13	0.73	0.55	0.55
Sat Flow, veh/h	3456	1585	3456	3647	3725	13
Grp Volume(v), veh/h	27	234	361	423	133	139
Grp Sat Flow(s),veh/h/ln	1728	1585	1728	1777	1777	1868
Q Serve(g_s), s	0.6	13.3	9.4	3.3	3.4	3.4
Cycle Q Clear(g_c), s	0.6	13.3	9.4	3.3	3.4	3.4
Prop In Lane	1.00	1.00	1.00			0.01
Lane Grp Cap(c), veh/h	598	274	464	2606	977	1027
V/C Ratio(X)	0.05	0.85	0.78	0.16	0.14	0.14
Avail Cap(c_a), veh/h	1226	562	944	2606	977	1027
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.1	37.3	38.9	3.8	10.2	10.2
Incr Delay (d2), s/veh	0.0	7.4	2.9	0.1	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	5.6	4.1	1.0	1.3	1.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	32.1	44.7	41.8	3.9	10.5	10.5
LnGrp LOS	C	D	D	A	B	B
Approach Vol, veh/h	261			784	272	
Approach Delay, s/veh	43.4			21.3	10.5	
Approach LOS	D			C	B	

Timer - Assigned Phs	2		5	6	8
Phs Duration (G+Y+Rc), s	72.9		17.1	55.8	20.1
Change Period (Y+Rc), s	* 4.7		4.6	* 4.7	4.0
Max Green Setting (Gmax), s	* 51		25.4	* 21	33.0
Max Q Clear Time (g_c+I1), s	5.3		11.4	5.4	15.3
Green Ext Time (p_c), s	4.5		1.1	1.8	0.8

Intersection Summary	
HCM 6th Ctrl Delay	23.5
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	258	346	259	456	2	480	17	51	18	26	7
Future Volume (vph)	0	258	346	259	456	2	480	17	51	18	26	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6	4.6	4.0	4.6		4.6	4.6			4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Frt		1.00	0.85	1.00	1.00		1.00	0.89			0.98	
Flt Protected		1.00	1.00	0.95	1.00		0.95	1.00			0.98	
Satd. Flow (prot)		1863	1583	1770	1862		1770	1652			1795	
Flt Permitted		1.00	1.00	0.31	1.00		0.95	1.00			0.98	
Satd. Flow (perm)		1863	1583	571	1862		1770	1652			1795	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	280	376	282	496	2	522	18	55	20	28	8
RTOR Reduction (vph)	0	0	148	0	0	0	0	35	0	0	7	0
Lane Group Flow (vph)	0	280	228	282	498	0	522	38	0	0	49	0
Turn Type		NA	pm+ov	pm+pt	NA		Split	NA		Split	NA	
Protected Phases		2	8	1	6		8	8		7	7	
Permitted Phases			2	6								
Actuated Green, G (s)		24.0	60.7	43.2	43.2		36.7	36.7			6.9	
Effective Green, g (s)		24.0	60.7	43.2	43.2		36.7	36.7			6.9	
Actuated g/C Ratio		0.24	0.61	0.43	0.43		0.37	0.37			0.07	
Clearance Time (s)		4.6	4.6	4.0	4.6		4.6	4.6			4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)		447	960	428	804		649	606			123	
v/s Ratio Prot		0.15	0.09	0.10	c0.27		c0.29	0.02			c0.03	
v/s Ratio Perm			0.06	c0.18								
v/c Ratio		0.63	0.24	0.66	0.62		0.80	0.06			0.40	
Uniform Delay, d1		34.0	9.0	20.4	22.0		28.4	20.5			44.6	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2		6.5	0.1	3.6	3.6		7.2	0.0			2.1	
Delay (s)		40.5	9.2	24.0	25.6		35.6	20.6			46.7	
Level of Service		D	A	C	C		D	C			D	
Approach Delay (s)		22.5			25.0			33.7			46.7	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM 2000 Control Delay	27.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	17.2
Intersection Capacity Utilization	72.2%	ICU Level of Service	C
Analysis Period (min)	15		

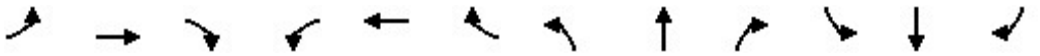
c Critical Lane Group



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	58	297	163	157	428	287
Future Volume (vph)	58	297	163	157	428	287
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.0	4.6	4.6	4.0	4.6
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	1863	1583	1770	1863
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	63	323	177	171	465	312
RTOR Reduction (vph)	0	126	0	90	0	0
Lane Group Flow (vph)	63	197	177	81	465	312
Turn Type	custom	pm+ov	NA	custom	Prot	NA
Protected Phases	3	1	2	3	1	6
Permitted Phases	4	4		2 4		
Actuated Green, G (s)	8.7	61.1	17.0	25.7	61.1	82.1
Effective Green, g (s)	8.7	61.1	17.0	25.7	61.1	82.1
Actuated g/C Ratio	0.09	0.61	0.17	0.26	0.61	0.82
Clearance Time (s)	4.6	4.0	4.6	4.6	4.0	4.6
Vehicle Extension (s)	1.0	2.7	5.5	1.0	2.7	3.5
Lane Grp Cap (vph)	153	967	316	479	1081	1529
v/s Ratio Prot	c0.04	0.12	c0.10	0.01	c0.26	0.17
v/s Ratio Perm				0.04		
v/c Ratio	0.41	0.20	0.56	0.17	0.43	0.20
Uniform Delay, d1	43.2	8.6	38.1	28.9	10.3	1.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	0.0	4.2	0.1	1.3	0.3
Delay (s)	43.9	8.7	42.2	28.9	11.5	2.2
Level of Service	D	A	D	C	B	A
Approach Delay (s)	14.4		35.7			7.8
Approach LOS	B		D			A

Intersection Summary			
HCM 2000 Control Delay	15.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	17.2
Intersection Capacity Utilization	50.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	27	994	82	35	993	24	74	0	41	35	2	56
Future Volume (vph)	27	994	82	35	993	24	74	0	41	35	2	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.6		4.0	4.6			4.2			4.6	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frt	1.00	0.99		1.00	1.00			0.95			0.92	
Flt Protected	0.95	1.00		0.95	1.00			0.97			0.98	
Satd. Flow (prot)	1770	3499		1770	3527			1717			1679	
Flt Permitted	0.95	1.00		0.95	1.00			0.83			0.87	
Satd. Flow (perm)	1770	3499		1770	3527			1465			1484	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	29	1080	89	38	1079	26	80	0	45	38	2	61
RTOR Reduction (vph)	0	7	0	0	2	0	0	91	0	0	55	0
Lane Group Flow (vph)	29	1162	0	38	1103	0	0	34	0	0	46	0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			4			8	
Permitted Phases							4			8		
Actuated Green, G (s)	3.6	36.8		4.0	37.2			6.4			6.0	
Effective Green, g (s)	3.6	36.8		4.0	37.2			6.4			6.0	
Actuated g/C Ratio	0.06	0.61		0.07	0.62			0.11			0.10	
Clearance Time (s)	4.0	4.6		4.0	4.6			4.2			4.6	
Vehicle Extension (s)	2.0	3.0		2.0	3.0			2.0			2.0	
Lane Grp Cap (vph)	106	2146		118	2186			156			148	
v/s Ratio Prot	0.02	c0.33		c0.02	0.31							
v/s Ratio Perm								0.02			c0.03	
v/c Ratio	0.27	0.54		0.32	0.50			0.22			0.31	
Uniform Delay, d1	27.0	6.7		26.7	6.3			24.5			25.1	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.5	1.0		0.6	0.8			0.3			0.4	
Delay (s)	27.5	7.7		27.3	7.1			24.8			25.5	
Level of Service	C	A		C	A			C			C	
Approach Delay (s)		8.2			7.8			24.8			25.5	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	9.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	13.2
Intersection Capacity Utilization	48.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	326	716	64	0	33
Future Vol, veh/h	0	326	716	64	0	33
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	354	778	70	0	36

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	813
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	0	-	-	-	0	378
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	378
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	15.5
HCM LOS			C

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	378
HCM Lane V/C Ratio	-	-	-	0.095
HCM Control Delay (s)	-	-	-	15.5
HCM Lane LOS	-	-	-	C
HCM 95th %tile Q(veh)	-	-	-	0.3



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	492	99	114	65	25	339
Future Volume (veh/h)	492	99	114	65	25	339
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	535	19	124	71	27	241
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	570	507	172	1115	868	1243
Arrive On Green	0.32	0.32	0.10	0.60	0.46	0.46
Sat Flow, veh/h	1781	1585	1781	1870	1870	1585
Grp Volume(v), veh/h	535	19	124	71	27	241
Grp Sat Flow(s),veh/h/ln	1781	1585	1781	1870	1870	1585
Q Serve(g_s), s	29.2	0.8	6.8	1.6	0.8	3.9
Cycle Q Clear(g_c), s	29.2	0.8	6.8	1.6	0.8	3.9
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	570	507	172	1115	868	1243
V/C Ratio(X)	0.94	0.04	0.72	0.06	0.03	0.19
Avail Cap(c_a), veh/h	816	726	258	1115	868	1243
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.0	23.4	43.8	8.5	14.6	2.7
Incr Delay (d2), s/veh	12.2	0.0	2.1	0.1	0.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.2	0.9	3.1	0.6	0.3	3.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	45.3	23.4	45.9	8.6	14.6	3.1
LnGrp LOS	D	C	D	A	B	A
Approach Vol, veh/h	554			195	268	
Approach Delay, s/veh	44.5			32.3	4.3	
Approach LOS	D			C	A	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	13.2	50.6		36.2		63.8
Change Period (Y+Rc), s	3.5	* 4.2		* 4.2		* 4.2
Max Green Setting (Gmax), s	14.5	* 28		* 46		* 28
Max Q Clear Time (g_c+I1), s	8.8	5.9		31.2		3.6
Green Ext Time (p_c), s	0.0	0.5		0.8		0.2

Intersection Summary	
HCM 6th Ctrl Delay	31.6
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay, s/veh	13.5
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	5	3	155	6	107	9	247	177	126	195	1
Future Vol, veh/h	2	5	3	155	6	107	9	247	177	126	195	1
Peak Hour Factor	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	2	5	3	168	7	116	10	268	192	137	212	1
Number of Lanes	0	1	0	0	1	1	1	1	1	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	2	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	3	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	2	2	1
HCM Control Delay	10.8	13.1	13.8	13.6
HCM LOS	B	B	B	B

Lane	NBLn1	NBLn2	NBLn3	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	20%	96%	0%	100%	0%
Vol Thru, %	0%	100%	0%	50%	4%	0%	0%	99%
Vol Right, %	0%	0%	100%	30%	0%	100%	0%	1%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	9	247	177	10	161	107	126	196
LT Vol	9	0	0	2	155	0	126	0
Through Vol	0	247	0	5	6	0	0	195
RT Vol	0	0	177	3	0	107	0	1
Lane Flow Rate	10	268	192	11	175	116	137	213
Geometry Grp	8	8	8	8	8	8	8	8
Degree of Util (X)	0.019	0.491	0.314	0.024	0.366	0.205	0.277	0.4
Departure Headway (Hd)	7.097	6.589	5.879	7.904	7.525	6.331	7.277	6.765
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	502	545	608	456	476	563	492	528
Service Time	4.872	4.365	3.654	5.604	5.304	4.11	5.057	4.545
HCM Lane V/C Ratio	0.02	0.492	0.316	0.024	0.368	0.206	0.278	0.403
HCM Control Delay	10	15.6	11.4	10.8	14.6	10.8	12.9	14
HCM Lane LOS	A	C	B	B	B	B	B	B
HCM 95th-tile Q	0.1	2.7	1.3	0.1	1.7	0.8	1.1	1.9



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	172	33	81	124	1184	111
Future Volume (veh/h)	172	33	81	124	1184	111
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	187	36	88	135	1287	121
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	861	159	251	2138	2021	638
Arrive On Green	0.20	0.20	0.14	0.42	0.40	0.40
Sat Flow, veh/h	4501	798	1781	5274	5023	1585
Grp Volume(v), veh/h	145	78	88	135	1287	121
Grp Sat Flow(s),veh/h/ln	1702	1727	1781	1702	1674	1585
Q Serve(g_s), s	1.8	1.9	2.2	0.8	10.4	2.5
Cycle Q Clear(g_c), s	1.8	1.9	2.2	0.8	10.4	2.5
Prop In Lane		0.46	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	676	343	251	2138	2021	638
V/C Ratio(X)	0.21	0.23	0.35	0.06	0.64	0.19
Avail Cap(c_a), veh/h	2306	1170	354	4870	2795	882
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.9	16.9	19.5	8.7	12.1	9.7
Incr Delay (d2), s/veh	0.1	0.1	1.2	0.0	0.5	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.7	0.9	0.2	3.2	0.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	16.9	17.0	20.7	8.7	12.6	9.9
LnGrp LOS	B	B	C	A	B	A
Approach Vol, veh/h	223			223	1408	
Approach Delay, s/veh	17.0			13.5	12.3	
Approach LOS	B			B	B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	11.1	15.0		24.3		26.1
Change Period (Y+Rc), s	4.0	* 5		4.0		5.0
Max Green Setting (Gmax), s	10.0	* 34		28.0		48.0
Max Q Clear Time (g_c+I1), s	4.2	3.9		12.4		2.8
Green Ext Time (p_c), s	0.1	0.9		7.9		1.3

Intersection Summary	
HCM 6th Ctrl Delay	13.0
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

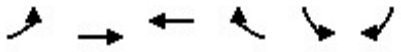
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	968	0	0	782	479	446
Future Volume (veh/h)	968	0	0	782	479	446
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	0	0	1870	1870	1870
Adj Flow Rate, veh/h	1052	0	0	850	521	301
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	0	0	2	2	2
Cap, veh/h	2357	0	0	2357	623	503
Arrive On Green	0.66	0.00	0.00	0.66	0.18	0.18
Sat Flow, veh/h	3741	0	0	3741	3456	2790
Grp Volume(v), veh/h	1052	0	0	850	521	301
Grp Sat Flow(s),veh/h/ln	1777	0	0	1777	1728	1395
Q Serve(g_s), s	8.8	0.0	0.0	6.6	9.0	6.1
Cycle Q Clear(g_c), s	8.8	0.0	0.0	6.6	9.0	6.1
Prop In Lane		0.00	0.00		1.00	1.00
Lane Grp Cap(c), veh/h	2357	0	0	2357	623	503
V/C Ratio(X)	0.45	0.00	0.00	0.36	0.84	0.60
Avail Cap(c_a), veh/h	2357	0	0	2357	909	733
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	5.0	0.0	0.0	4.6	24.5	23.4
Incr Delay (d2), s/veh	0.6	0.0	0.0	0.4	3.1	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	0.0	0.0	1.8	3.7	1.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	5.6	0.0	0.0	5.0	27.6	23.8
LnGrp LOS	A	A	A	A	C	C
Approach Vol, veh/h	1052			850	822	
Approach Delay, s/veh	5.6			5.0	26.2	
Approach LOS	A			A	C	

Timer - Assigned Phs	2				6	8
Phs Duration (G+Y+Rc), s	46.1				46.1	15.9
Change Period (Y+Rc), s	5.0				5.0	4.7
Max Green Setting (Gmax), s	36.0				36.0	16.3
Max Q Clear Time (g_c+I1), s	10.8				8.6	11.0
Green Ext Time (p_c), s	1.7				1.3	0.2

Intersection Summary		
HCM 6th Ctrl Delay	11.6	
HCM 6th LOS	B	



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	810	770	0	681	403
Future Volume (veh/h)	0	810	770	0	681	403
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	0	1870	1870	0	1870	1870
Adj Flow Rate, veh/h	0	880	837	0	740	362
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	0	2	2
Cap, veh/h	0	2090	2090	0	910	405
Arrive On Green	0.00	0.59	0.59	0.00	0.26	0.26
Sat Flow, veh/h	0	3741	3741	0	3563	1585
Grp Volume(v), veh/h	0	880	837	0	740	362
Grp Sat Flow(s),veh/h/ln	0	1777	1777	0	1781	1585
Q Serve(g_s), s	0.0	8.4	7.9	0.0	12.1	13.7
Cycle Q Clear(g_c), s	0.0	8.4	7.9	0.0	12.1	13.7
Prop In Lane	0.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	2090	2090	0	910	405
V/C Ratio(X)	0.00	0.42	0.40	0.00	0.81	0.89
Avail Cap(c_a), veh/h	0	2090	2090	0	1511	672
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	7.0	6.9	0.0	21.7	22.3
Incr Delay (d2), s/veh	0.0	0.6	0.6	0.0	0.7	5.1
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	2.7	2.5	0.0	4.7	5.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	7.6	7.5	0.0	22.4	27.4
LnGrp LOS	A	A	A	A	C	C
Approach Vol, veh/h		880	837		1102	
Approach Delay, s/veh		7.6	7.5		24.0	
Approach LOS		A	A		C	

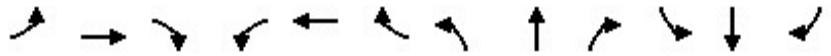
Timer - Assigned Phs	2	4	6
Phs Duration (G+Y+Rc), s	41.5	20.5	41.5
Change Period (Y+Rc), s	5.0	* 4.7	5.0
Max Green Setting (Gmax), s	26.0	* 26	26.0
Max Q Clear Time (g_c+I1), s	10.4	15.7	9.9
Green Ext Time (p_c), s	1.3	0.2	1.2

Intersection Summary	
HCM 6th Ctrl Delay	14.0
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	122	884	23	142	583	214	51	56	177	217	81	142
Future Volume (veh/h)	122	884	23	142	583	214	51	56	177	217	81	142
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	133	961	24	154	634	80	55	61	115	162	192	34
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	159	1931	48	180	1980	883	73	81	294	219	229	194
Arrive On Green	0.09	0.55	0.55	0.10	0.56	0.56	0.08	0.08	0.08	0.12	0.12	0.12
Sat Flow, veh/h	1781	3543	88	1781	3554	1585	866	961	1585	1781	1870	1585
Grp Volume(v), veh/h	133	482	503	154	634	80	116	0	115	162	192	34
Grp Sat Flow(s),veh/h/ln	1781	1777	1854	1781	1777	1585	1827	0	1585	1781	1870	1585
Q Serve(g_s), s	9.1	21.0	21.0	10.5	11.9	2.9	7.7	0.0	7.9	10.9	12.4	2.4
Cycle Q Clear(g_c), s	9.1	21.0	21.0	10.5	11.9	2.9	7.7	0.0	7.9	10.9	12.4	2.4
Prop In Lane	1.00		0.05	1.00		1.00	0.47		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	159	969	1011	180	1980	883	154	0	294	219	229	194
V/C Ratio(X)	0.84	0.50	0.50	0.85	0.32	0.09	0.75	0.00	0.39	0.74	0.84	0.17
Avail Cap(c_a), veh/h	230	969	1011	230	1980	883	418	0	523	365	383	325
HCM Platoon Ratio	1.00	1.00	1.00	1.00	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	55.6	17.6	17.6	54.8	14.8	12.8	55.5	0.0	44.4	52.5	53.2	48.8
Incr Delay (d2), s/veh	11.3	1.8	1.7	18.0	0.4	0.2	2.8	0.0	0.3	1.9	3.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.6	9.0	9.3	5.6	4.9	1.1	3.7	0.0	3.1	5.0	6.0	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	66.9	19.4	19.4	72.9	15.2	13.0	58.3	0.0	44.7	54.4	56.4	48.9
LnGrp LOS	E	B	B	E	B	B	E	A	D	D	E	D
Approach Vol, veh/h		1118			868			231			388	
Approach Delay, s/veh		25.0			25.3			51.5			54.9	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	15.1	74.1		15.0	16.5	72.6		19.8
Change Period (Y+Rc), s	4.0	5.0		4.6	4.0	5.0		4.6
Max Green Setting (Gmax), s	16.6	36.0		28.4	16.0	36.0		25.4
Max Q Clear Time (g_c+I1), s	11.1	13.9		9.9	12.5	23.0		14.4
Green Ext Time (p_c), s	0.1	4.7		0.5	0.1	5.3		0.8

Intersection Summary	
HCM 6th Ctrl Delay	31.9
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	131	20	22	1146	1069	32
Future Volume (veh/h)	131	20	22	1146	1069	32
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	142	0	24	1246	1162	33
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	188		393	2675	2343	67
Arrive On Green	0.11	0.00	0.02	0.75	0.66	0.66
Sat Flow, veh/h	1781	1585	1781	3647	3622	100
Grp Volume(v), veh/h	142	0	24	1246	585	610
Grp Sat Flow(s),veh/h/ln	1781	1585	1781	1777	1777	1852
Q Serve(g_s), s	4.6	0.0	0.2	8.0	9.9	9.9
Cycle Q Clear(g_c), s	4.6	0.0	0.2	8.0	9.9	9.9
Prop In Lane	1.00	1.00	1.00			0.05
Lane Grp Cap(c), veh/h	188		393	2675	1180	1230
V/C Ratio(X)	0.75		0.06	0.47	0.50	0.50
Avail Cap(c_a), veh/h	564		472	2675	1180	1230
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.1	0.0	3.6	2.8	5.1	5.1
Incr Delay (d2), s/veh	2.3	0.0	0.0	0.6	1.5	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	0.0	0.0	1.4	2.9	3.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	28.4	0.0	3.7	3.4	6.5	6.5
LnGrp LOS	C		A	A	A	A
Approach Vol, veh/h	142	A		1270	1195	
Approach Delay, s/veh	28.4			3.4	6.5	
Approach LOS	C			A	A	

Timer - Assigned Phs	2		4	5	6
Phs Duration (G+Y+Rc), s	49.7		10.3	5.3	44.3
Change Period (Y+Rc), s	4.5		4.0	4.0	4.5
Max Green Setting (Gmax), s	32.5		19.0	4.0	24.5
Max Q Clear Time (g_c+I1), s	10.0		6.6	2.2	11.9
Green Ext Time (p_c), s	10.1		0.1	0.0	6.4

Intersection Summary	
HCM 6th Ctrl Delay	6.2
HCM 6th LOS	A

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.



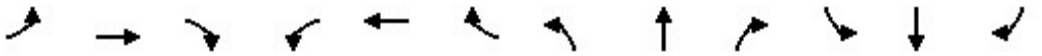
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	18	115	130	189	91	4
Future Volume (veh/h)	18	115	130	189	91	4
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	20	76	141	205	99	4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	226	104	362	2989	2392	96
Arrive On Green	0.07	0.07	0.10	0.84	0.69	0.69
Sat Flow, veh/h	3456	1585	3456	3647	3576	140
Grp Volume(v), veh/h	20	76	141	205	50	53
Grp Sat Flow(s),veh/h/ln	1728	1585	1728	1777	1777	1845
Q Serve(g_s), s	0.5	4.4	3.5	0.9	0.8	0.9
Cycle Q Clear(g_c), s	0.5	4.4	3.5	0.9	0.8	0.9
Prop In Lane	1.00	1.00	1.00			0.08
Lane Grp Cap(c), veh/h	226	104	362	2989	1220	1267
V/C Ratio(X)	0.09	0.73	0.39	0.07	0.04	0.04
Avail Cap(c_a), veh/h	1226	562	944	2989	1220	1267
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.8	42.7	38.9	1.2	4.7	4.7
Incr Delay (d2), s/veh	0.2	9.5	0.7	0.0	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	2.0	1.5	0.1	0.3	0.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	41.0	52.2	39.5	1.3	4.8	4.8
LnGrp LOS	D	D	D	A	A	A
Approach Vol, veh/h	96			346	103	
Approach Delay, s/veh	49.8			16.9	4.8	
Approach LOS	D			B	A	

Timer - Assigned Phs	2		5	6	8
Phs Duration (G+Y+Rc), s	82.9		14.3	68.6	10.1
Change Period (Y+Rc), s	* 4.7		4.6	* 4.7	4.0
Max Green Setting (Gmax), s	* 51		25.4	* 21	33.0
Max Q Clear Time (g_c+I1), s	2.9		5.5	2.9	6.4
Green Ext Time (p_c), s	2.1		0.4	0.6	0.3

Intersection Summary	
HCM 6th Ctrl Delay	20.4
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	293	404	329	294	4	323	24	88	23	29	5
Future Volume (vph)	3	293	404	329	294	4	323	24	88	23	29	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6	4.6	4.0	4.6		4.6	4.6			4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Frt		1.00	0.85	1.00	1.00		1.00	0.88			0.99	
Flt Protected		1.00	1.00	0.95	1.00		0.95	1.00			0.98	
Satd. Flow (prot)		1862	1583	1770	1859		1770	1643			1806	
Flt Permitted		1.00	1.00	0.17	1.00		0.95	1.00			0.98	
Satd. Flow (perm)		1856	1583	317	1859		1770	1643			1806	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	3	318	439	358	320	4	351	26	96	25	32	5
RTOR Reduction (vph)	0	0	198	0	0	0	0	69	0	0	4	0
Lane Group Flow (vph)	0	321	241	358	324	0	351	53	0	0	58	0
Turn Type	Perm	NA	pm+ov	pm+pt	NA		Split	NA		Split	NA	
Protected Phases		2	8	1	6		8	8		7	7	
Permitted Phases	2		2	6								
Actuated Green, G (s)		19.5	48.0	51.2	51.2		28.5	28.5			7.1	
Effective Green, g (s)		19.5	48.0	51.2	51.2		28.5	28.5			7.1	
Actuated g/C Ratio		0.20	0.48	0.51	0.51		0.28	0.28			0.07	
Clearance Time (s)		4.6	4.6	4.0	4.6		4.6	4.6			4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)		361	759	564	951		504	468			128	
v/s Ratio Prot			0.09	c0.18	0.17		c0.20	0.03			c0.03	
v/s Ratio Perm		c0.17	0.06	0.15								
v/c Ratio		0.89	0.32	0.63	0.34		0.70	0.11			0.46	
Uniform Delay, d1		39.2	15.9	18.7	14.4		31.9	26.4			44.6	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2		26.2	0.2	2.3	1.0		4.2	0.1			2.6	
Delay (s)		65.4	16.2	21.0	15.4		36.1	26.5			47.2	
Level of Service		E	B	C	B		D	C			D	
Approach Delay (s)		37.0			18.3			33.6			47.2	
Approach LOS		D			B			C			D	

Intersection Summary			
HCM 2000 Control Delay	30.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	17.2
Intersection Capacity Utilization	69.9%	ICU Level of Service	C
Analysis Period (min)	15		

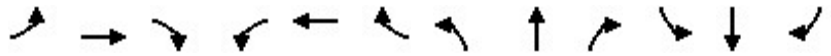
c Critical Lane Group



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	140	237	285	280	538	306
Future Volume (vph)	140	237	285	280	538	306
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.0	4.6	4.6	4.0	4.6
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	1863	1583	1770	1863
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	152	258	310	304	585	333
RTOR Reduction (vph)	0	126	0	43	0	0
Lane Group Flow (vph)	152	132	310	261	585	333
Turn Type	custom	pm+ov	NA	custom	Prot	NA
Protected Phases	3	1	2	3	1	6
Permitted Phases	4	4		2 4		
Actuated Green, G (s)	11.6	51.0	24.2	35.8	51.0	79.2
Effective Green, g (s)	11.6	51.0	24.2	35.8	51.0	79.2
Actuated g/C Ratio	0.12	0.51	0.24	0.36	0.51	0.79
Clearance Time (s)	4.6	4.0	4.6	4.6	4.0	4.6
Vehicle Extension (s)	1.0	2.7	5.5	1.0	2.7	3.5
Lane Grp Cap (vph)	205	807	450	639	902	1475
v/s Ratio Prot	c0.09	0.08	c0.17	0.05	c0.33	0.18
v/s Ratio Perm				0.12		
v/c Ratio	0.74	0.16	0.69	0.41	0.65	0.23
Uniform Delay, d1	42.7	13.1	34.5	24.1	17.9	2.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	11.9	0.0	6.1	0.2	3.6	0.4
Delay (s)	54.6	13.1	40.6	24.3	21.5	3.0
Level of Service	D	B	D	C	C	A
Approach Delay (s)	28.5		32.5			14.8
Approach LOS	C		C			B

Intersection Summary			
HCM 2000 Control Delay	23.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	17.2
Intersection Capacity Utilization	63.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	173	702	31	179	706	343	60	79	170	252	93	212
Future Volume (veh/h)	173	702	31	179	706	343	60	79	170	252	93	212
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	188	763	33	195	767	220	65	86	108	188	222	110
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	214	1693	73	221	1747	779	80	106	358	249	261	221
Arrive On Green	0.12	0.49	0.49	0.12	0.49	0.49	0.10	0.10	0.10	0.14	0.14	0.14
Sat Flow, veh/h	1781	3470	150	1781	3554	1585	788	1043	1585	1781	1870	1585
Grp Volume(v), veh/h	188	391	405	195	767	220	151	0	108	188	222	110
Grp Sat Flow(s),veh/h/ln	1781	1777	1843	1781	1777	1585	1831	0	1585	1781	1870	1585
Q Serve(g_s), s	12.9	17.9	17.9	13.4	17.4	10.2	10.0	0.0	7.0	12.6	14.4	8.0
Cycle Q Clear(g_c), s	12.9	17.9	17.9	13.4	17.4	10.2	10.0	0.0	7.0	12.6	14.4	8.0
Prop In Lane	1.00		0.08	1.00		1.00	0.43		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	214	867	899	221	1747	779	187	0	358	249	261	221
V/C Ratio(X)	0.88	0.45	0.45	0.88	0.44	0.28	0.81	0.00	0.30	0.76	0.85	0.50
Avail Cap(c_a), veh/h	230	867	899	230	1747	779	419	0	559	365	383	325
HCM Platoon Ratio	1.00	1.00	1.00	1.00	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	53.7	20.9	20.9	53.4	20.4	18.6	54.5	0.0	39.9	51.3	52.1	49.3
Incr Delay (d2), s/veh	27.2	1.7	1.6	28.9	0.8	0.9	3.2	0.0	0.2	2.4	7.9	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	7.4	7.8	8.1	7.7	7.4	3.9	4.8	0.0	2.8	5.8	7.3	3.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	80.9	22.5	22.5	82.3	21.2	19.5	57.7	0.0	40.1	53.7	60.0	50.0
LnGrp LOS	F	C	C	F	C	B	E	A	D	D	E	D
Approach Vol, veh/h		984			1182			259			520	
Approach Delay, s/veh		33.7			31.0			50.3			55.6	
Approach LOS		C			C			D			E	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	18.9	66.0		17.2	19.4	65.5		21.9
Change Period (Y+Rc), s	4.0	5.0		4.6	4.0	5.0		4.6
Max Green Setting (Gmax), s	16.9	36.0		28.4	16.0	36.0		25.4
Max Q Clear Time (g_c+I1), s	14.9	19.4		12.0	15.4	19.9		16.4
Green Ext Time (p_c), s	0.0	5.7		0.6	0.0	4.6		1.0

Intersection Summary	
HCM 6th Ctrl Delay	37.9
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.



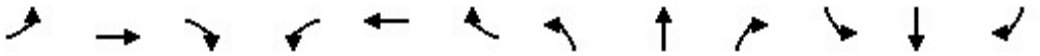
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	33	290	387	434	312	15
Future Volume (veh/h)	33	290	387	434	312	15
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	36	266	421	472	339	16
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	670	307	527	2533	1765	83
Arrive On Green	0.19	0.19	0.15	0.71	0.51	0.51
Sat Flow, veh/h	3456	1585	3456	3647	3549	163
Grp Volume(v), veh/h	36	266	421	472	174	181
Grp Sat Flow(s),veh/h/ln	1728	1585	1728	1777	1777	1841
Q Serve(g_s), s	0.8	15.1	10.9	4.1	4.9	5.0
Cycle Q Clear(g_c), s	0.8	15.1	10.9	4.1	4.9	5.0
Prop In Lane	1.00	1.00	1.00			0.09
Lane Grp Cap(c), veh/h	670	307	527	2533	907	940
V/C Ratio(X)	0.05	0.87	0.80	0.19	0.19	0.19
Avail Cap(c_a), veh/h	1226	562	944	2533	907	940
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.5	36.3	38.0	4.4	12.3	12.3
Incr Delay (d2), s/veh	0.0	7.3	2.8	0.2	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	6.4	4.8	1.3	2.0	2.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	30.6	43.6	40.9	4.6	12.8	12.8
LnGrp LOS	C	D	D	A	B	B
Approach Vol, veh/h	302			893	355	
Approach Delay, s/veh	42.1			21.7	12.8	
Approach LOS	D			C	B	

Timer - Assigned Phs	2		5	6	8
Phs Duration (G+Y+Rc), s	71.0		18.8	52.2	22.0
Change Period (Y+Rc), s	* 4.7		4.6	* 4.7	4.0
Max Green Setting (Gmax), s	* 51		25.4	* 21	33.0
Max Q Clear Time (g_c+I1), s	6.1		12.9	7.0	17.1
Green Ext Time (p_c), s	5.2		1.3	2.4	0.9

Intersection Summary	
HCM 6th Ctrl Delay	23.6
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	203	279	258	290	7	475	41	86	35	28	10
Future Volume (vph)	1	203	279	258	290	7	475	41	86	35	28	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6	4.6	4.0	4.6		4.6	4.6			4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Frt		1.00	0.85	1.00	1.00		1.00	0.90			0.98	
Flt Protected		1.00	1.00	0.95	1.00		0.95	1.00			0.98	
Satd. Flow (prot)		1862	1583	1770	1856		1770	1674			1785	
Flt Permitted		1.00	1.00	0.41	1.00		0.95	1.00			0.98	
Satd. Flow (perm)		1861	1583	766	1856		1770	1674			1785	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	221	303	280	315	8	516	45	93	38	30	11
RTOR Reduction (vph)	0	0	122	0	1	0	0	61	0	0	6	0
Lane Group Flow (vph)	0	222	181	280	322	0	516	77	0	0	73	0
Turn Type	Perm	NA	pm+ov	pm+pt	NA		Split	NA		Split	NA	
Protected Phases		2	8	1	6		8	8		7	7	
Permitted Phases	2		2	6								
Actuated Green, G (s)		25.4	59.7	44.4	44.4		34.3	34.3			8.1	
Effective Green, g (s)		25.4	59.7	44.4	44.4		34.3	34.3			8.1	
Actuated g/C Ratio		0.25	0.60	0.44	0.44		0.34	0.34			0.08	
Clearance Time (s)		4.6	4.6	4.0	4.6		4.6	4.6			4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)		472	945	490	824		607	574			144	
v/s Ratio Prot			0.07	c0.09	0.17		c0.29	0.05			c0.04	
v/s Ratio Perm		0.12	0.05	c0.17								
v/c Ratio		0.47	0.19	0.57	0.39		0.85	0.13			0.50	
Uniform Delay, d1		31.6	9.2	19.0	18.7		30.5	22.6			44.0	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2		3.3	0.1	1.6	1.4		11.0	0.1			2.8	
Delay (s)		34.9	9.3	20.6	20.1		41.5	22.7			46.8	
Level of Service		C	A	C	C		D	C			D	
Approach Delay (s)		20.1			20.3			37.5			46.8	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	27.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	17.2
Intersection Capacity Utilization	71.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	121	209	345	257	503	355
Future Volume (vph)	121	209	345	257	503	355
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.0	4.6	4.6	4.0	4.6
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	1863	1583	1770	1863
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	132	227	375	279	547	386
RTOR Reduction (vph)	0	120	0	49	0	0
Lane Group Flow (vph)	132	107	375	230	547	386
Turn Type	custom	pm+ov	NA	custom	Prot	NA
Protected Phases	3	1	2	3	1	6
Permitted Phases	4	4		2 4		
Actuated Green, G (s)	10.9	47.1	28.8	39.7	47.1	79.9
Effective Green, g (s)	10.9	47.1	28.8	39.7	47.1	79.9
Actuated g/C Ratio	0.11	0.47	0.29	0.40	0.47	0.80
Clearance Time (s)	4.6	4.0	4.6	4.6	4.0	4.6
Vehicle Extension (s)	1.0	2.7	5.5	1.0	2.7	3.5
Lane Grp Cap (vph)	192	745	536	701	833	1488
v/s Ratio Prot	c0.07	0.07	c0.20	0.04	c0.31	0.21
v/s Ratio Perm				0.11		
v/c Ratio	0.69	0.14	0.70	0.33	0.66	0.26
Uniform Delay, d1	42.9	15.0	31.7	20.9	20.3	2.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.9	0.0	5.5	0.1	4.0	0.4
Delay (s)	50.8	15.0	37.2	21.0	24.3	3.0
Level of Service	D	B	D	C	C	A
Approach Delay (s)	28.2		30.3			15.5
Approach LOS	C		C			B

Intersection Summary			
HCM 2000 Control Delay	22.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	17.2
Intersection Capacity Utilization	63.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	42	730	69	22	890	18	93	0	32	21	1	37
Future Volume (vph)	42	730	69	22	890	18	93	0	32	21	1	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.6		4.0	4.6			4.2			4.6	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frt	1.00	0.99		1.00	1.00			0.97			0.92	
Flt Protected	0.95	1.00		0.95	1.00			0.96			0.98	
Satd. Flow (prot)	1770	3493		1770	3528			1734			1675	
Flt Permitted	0.95	1.00		0.95	1.00			0.75			0.88	
Satd. Flow (perm)	1770	3493		1770	3528			1351			1506	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	46	793	75	24	967	20	101	0	35	23	1	40
RTOR Reduction (vph)	0	7	0	0	2	0	0	91	0	0	36	0
Lane Group Flow (vph)	46	861	0	24	985	0	0	45	0	0	28	0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			4			8	
Permitted Phases							4			8		
Actuated Green, G (s)	3.6	38.6		2.0	37.0			6.6			6.2	
Effective Green, g (s)	3.6	38.6		2.0	37.0			6.6			6.2	
Actuated g/C Ratio	0.06	0.64		0.03	0.62			0.11			0.10	
Clearance Time (s)	4.0	4.6		4.0	4.6			4.2			4.6	
Vehicle Extension (s)	2.0	3.0		2.0	3.0			2.0			2.0	
Lane Grp Cap (vph)	106	2247		59	2175			148			155	
v/s Ratio Prot	c0.03	0.25		0.01	c0.28							
v/s Ratio Perm								c0.03			0.02	
v/c Ratio	0.43	0.38		0.41	0.45			0.31			0.18	
Uniform Delay, d1	27.2	5.1		28.4	6.1			24.6			24.6	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	1.0	0.5		1.7	0.7			0.4			0.2	
Delay (s)	28.3	5.6		30.1	6.8			25.0			24.8	
Level of Service	C	A		C	A			C			C	
Approach Delay (s)		6.7			7.4			25.0			24.8	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	8.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	13.2
Intersection Capacity Utilization	55.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	301	611	40	0	80
Future Vol, veh/h	0	301	611	40	0	80
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	327	664	43	0	87

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	686
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	0	-	-	-	0	447
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	447
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	15
HCM LOS			C

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	447
HCM Lane V/C Ratio	-	-	-	0.195
HCM Control Delay (s)	-	-	-	15
HCM Lane LOS	-	-	-	C
HCM 95th %tile Q(veh)	-	-	-	0.7



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	498	112	142	242	69	173
Future Volume (veh/h)	498	112	142	242	69	173
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	541	33	154	263	75	61
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	577	513	184	1108	848	1232
Arrive On Green	0.32	0.32	0.10	0.59	0.45	0.45
Sat Flow, veh/h	1781	1585	1781	1870	1870	1585
Grp Volume(v), veh/h	541	33	154	263	75	61
Grp Sat Flow(s),veh/h/ln	1781	1585	1781	1870	1870	1585
Q Serve(g_s), s	29.5	1.4	8.5	6.7	2.3	0.9
Cycle Q Clear(g_c), s	29.5	1.4	8.5	6.7	2.3	0.9
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	577	513	184	1108	848	1232
V/C Ratio(X)	0.94	0.06	0.84	0.24	0.09	0.05
Avail Cap(c_a), veh/h	905	805	223	1108	848	1232
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.8	23.3	44.0	9.7	15.5	2.6
Incr Delay (d2), s/veh	9.2	0.0	17.3	0.5	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.8	1.5	4.6	2.7	1.0	0.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	42.1	23.4	61.3	10.2	15.8	2.7
LnGrp LOS	D	C	E	B	B	A
Approach Vol, veh/h	574			417	136	
Approach Delay, s/veh	41.0			29.1	9.9	
Approach LOS	D			C	A	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	13.9	49.6		36.6		63.4
Change Period (Y+Rc), s	3.5	* 4.2		* 4.2		* 4.2
Max Green Setting (Gmax), s	12.5	* 25		* 51		* 25
Max Q Clear Time (g_c+I1), s	10.5	4.3		31.5		8.7
Green Ext Time (p_c), s	0.0	0.3		0.9		0.9

Intersection Summary			
HCM 6th Ctrl Delay		32.8	
HCM 6th LOS		C	

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay, s/veh	48.5
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	3	3	212	3	175	8	468	148	253	253	6
Future Vol, veh/h	2	3	3	212	3	175	8	468	148	253	253	6
Peak Hour Factor	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	2	3	3	230	3	190	9	509	161	275	275	7
Number of Lanes	0	1	0	0	1	1	1	1	1	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	2	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	3	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	2	2	1
HCM Control Delay	13.3	20.2	85.9	25
HCM LOS	B	C	F	C

Lane	NBLn1	NBLn2	NBLn3	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	25%	99%	0%	100%	0%
Vol Thru, %	0%	100%	0%	38%	1%	0%	0%	98%
Vol Right, %	0%	0%	100%	38%	0%	100%	0%	2%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	8	468	148	8	215	175	253	259
LT Vol	8	0	0	2	212	0	253	0
Through Vol	0	468	0	3	3	0	0	253
RT Vol	0	0	148	3	0	175	0	6
Lane Flow Rate	9	509	161	9	234	190	275	282
Geometry Grp	8	8	8	8	8	8	8	8
Degree of Util (X)	0.021	1.13	0.325	0.024	0.574	0.404	0.646	0.621
Departure Headway (Hd)	8.507	7.994	7.276	10.349	9.241	8.017	8.854	8.321
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	423	458	497	348	393	453	410	436
Service Time	6.207	5.694	4.976	8.049	6.941	5.717	6.554	6.021
HCM Lane V/C Ratio	0.021	1.111	0.324	0.026	0.595	0.419	0.671	0.647
HCM Control Delay	11.4	110.1	13.4	13.3	23.7	16	26.3	23.7
HCM Lane LOS	B	F	B	B	C	C	D	C
HCM 95th-tile Q	0.1	17.9	1.4	0.1	3.5	1.9	4.4	4.1



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	676	22	75	527	1111	106
Future Volume (veh/h)	676	22	75	527	1111	106
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	735	24	82	573	1208	115
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1194	39	239	2279	1906	601
Arrive On Green	0.23	0.23	0.13	0.45	0.38	0.38
Sat Flow, veh/h	5248	165	1781	5274	5023	1585
Grp Volume(v), veh/h	492	267	82	573	1208	115
Grp Sat Flow(s),veh/h/ln	1702	1841	1781	1702	1674	1585
Q Serve(g_s), s	6.7	6.7	2.2	3.6	10.2	2.5
Cycle Q Clear(g_c), s	6.7	6.7	2.2	3.6	10.2	2.5
Prop In Lane		0.09	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	800	433	239	2279	1906	601
V/C Ratio(X)	0.62	0.62	0.34	0.25	0.63	0.19
Avail Cap(c_a), veh/h	2247	1215	345	4744	2723	859
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.7	17.7	20.3	8.9	13.1	10.7
Incr Delay (d2), s/veh	0.3	0.5	1.2	0.1	0.5	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	2.6	0.9	1.1	3.3	0.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	18.0	18.2	21.5	9.0	13.6	10.9
LnGrp LOS	B	B	C	A	B	B
Approach Vol, veh/h	759			655	1323	
Approach Delay, s/veh	18.0			10.6	13.4	
Approach LOS	B			B	B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	10.9	17.1		23.6		28.1
Change Period (Y+Rc), s	4.0	* 5		4.0		5.0
Max Green Setting (Gmax), s	10.9	* 34		28.0		48.0
Max Q Clear Time (g_c+I1), s	4.2	8.7		12.2		5.6
Green Ext Time (p_c), s	0.1	3.4		7.5		6.5

Intersection Summary	
HCM 6th Ctrl Delay	14.0
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

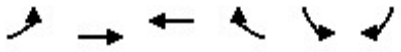
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	976	0	0	857	818	563
Future Volume (veh/h)	976	0	0	857	818	563
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	0	0	1870	1870	1870
Adj Flow Rate, veh/h	1061	0	0	932	889	428
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	0	0	2	2	2
Cap, veh/h	1989	0	0	1989	980	792
Arrive On Green	0.56	0.00	0.00	0.56	0.28	0.28
Sat Flow, veh/h	3741	0	0	3741	3456	2790
Grp Volume(v), veh/h	1061	0	0	932	889	428
Grp Sat Flow(s),veh/h/ln	1777	0	0	1777	1728	1395
Q Serve(g_s), s	11.6	0.0	0.0	9.7	15.4	8.0
Cycle Q Clear(g_c), s	11.6	0.0	0.0	9.7	15.4	8.0
Prop In Lane		0.00	0.00		1.00	1.00
Lane Grp Cap(c), veh/h	1989	0	0	1989	980	792
V/C Ratio(X)	0.53	0.00	0.00	0.47	0.91	0.54
Avail Cap(c_a), veh/h	1989	0	0	1989	1131	913
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	8.6	0.0	0.0	8.1	21.4	18.8
Incr Delay (d2), s/veh	1.0	0.0	0.0	0.8	8.9	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	0.0	0.0	3.2	6.9	2.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	9.6	0.0	0.0	8.9	30.3	19.0
LnGrp LOS	A	A	A	A	C	B
Approach Vol, veh/h	1061			932	1317	
Approach Delay, s/veh	9.6			8.9	26.6	
Approach LOS	A			A	C	

Timer - Assigned Phs	2				6	8
Phs Duration (G+Y+Rc), s	39.7				39.7	22.3
Change Period (Y+Rc), s	5.0				5.0	4.7
Max Green Setting (Gmax), s	32.0				32.0	20.3
Max Q Clear Time (g_c+I1), s	13.6				11.7	17.4
Green Ext Time (p_c), s	1.7				1.4	0.2

Intersection Summary		
HCM 6th Ctrl Delay		16.2
HCM 6th LOS		B



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	1049	1183	0	691	355
Future Volume (veh/h)	0	1049	1183	0	691	355
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	0	1870	1870	0	1870	1870
Adj Flow Rate, veh/h	0	1140	1286	0	751	310
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	0	2	2
Cap, veh/h	0	2151	2151	0	849	378
Arrive On Green	0.00	0.61	0.61	0.00	0.24	0.24
Sat Flow, veh/h	0	3741	3741	0	3563	1585
Grp Volume(v), veh/h	0	1140	1286	0	751	310
Grp Sat Flow(s),veh/h/ln	0	1777	1777	0	1781	1585
Q Serve(g_s), s	0.0	11.6	13.9	0.0	12.6	11.5
Cycle Q Clear(g_c), s	0.0	11.6	13.9	0.0	12.6	11.5
Prop In Lane	0.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	2151	2151	0	849	378
V/C Ratio(X)	0.00	0.53	0.60	0.00	0.88	0.82
Avail Cap(c_a), veh/h	0	2151	2151	0	1437	639
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	7.1	7.6	0.0	22.8	22.4
Incr Delay (d2), s/veh	0.0	0.9	1.2	0.0	1.9	1.7
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	3.6	4.3	0.0	5.1	4.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	8.1	8.8	0.0	24.7	24.1
LnGrp LOS	A	A	A	A	C	C
Approach Vol, veh/h		1140	1286		1061	
Approach Delay, s/veh		8.1	8.8		24.5	
Approach LOS		A	A		C	

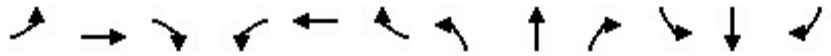
Timer - Assigned Phs	2	4	6
Phs Duration (G+Y+Rc), s	42.5	19.5	42.5
Change Period (Y+Rc), s	5.0	* 4.7	5.0
Max Green Setting (Gmax), s	27.3	* 25	27.3
Max Q Clear Time (g_c+I1), s	13.6	14.6	15.9
Green Ext Time (p_c), s	1.8	0.2	2.0

Intersection Summary	
HCM 6th Ctrl Delay	13.3
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	193	606	64	254	697	372	45	79	200	262	68	188
Future Volume (veh/h)	193	606	64	254	697	372	45	79	200	262	68	188
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	210	659	69	276	758	251	49	86	140	180	222	84
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	235	1563	163	244	1728	771	64	112	369	247	260	220
Arrive On Green	0.13	0.48	0.48	0.14	0.49	0.49	0.10	0.10	0.10	0.14	0.14	0.14
Sat Flow, veh/h	1781	3247	340	1781	3554	1585	667	1170	1585	1781	1870	1585
Grp Volume(v), veh/h	210	360	368	276	758	251	135	0	140	180	222	84
Grp Sat Flow(s),veh/h/ln	1781	1777	1809	1781	1777	1585	1837	0	1585	1781	1870	1585
Q Serve(g_s), s	14.4	16.4	16.4	17.0	17.3	12.0	8.9	0.0	9.2	12.0	14.4	6.0
Cycle Q Clear(g_c), s	14.4	16.4	16.4	17.0	17.3	12.0	8.9	0.0	9.2	12.0	14.4	6.0
Prop In Lane	1.00		0.19	1.00		1.00	0.36		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	235	855	871	244	1728	771	176	0	369	247	260	220
V/C Ratio(X)	0.89	0.42	0.42	1.13	0.44	0.33	0.77	0.00	0.38	0.73	0.85	0.38
Avail Cap(c_a), veh/h	244	855	871	244	1728	771	436	0	593	351	368	312
HCM Platoon Ratio	1.00	1.00	1.00	1.00	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	52.9	20.9	20.9	53.5	20.8	19.4	54.7	0.0	40.0	51.1	52.2	48.5
Incr Delay (d2), s/veh	29.2	1.5	1.5	97.2	0.8	1.1	2.6	0.0	0.2	2.0	9.6	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.3	7.1	7.3	14.2	7.3	4.7	4.2	0.0	3.6	5.5	7.4	2.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	82.2	22.4	22.4	150.7	21.6	20.6	57.4	0.0	40.3	53.1	61.7	48.9
LnGrp LOS	F	C	C	F	C	C	E	A	D	D	E	D
Approach Vol, veh/h		938			1285			275			486	
Approach Delay, s/veh		35.8			49.1			48.7			56.3	
Approach LOS		D			D			D			E	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	20.4	65.3		16.5	21.0	64.7		21.8
Change Period (Y+Rc), s	4.0	5.0		4.6	4.0	5.0		4.6
Max Green Setting (Gmax), s	17.0	35.0		29.4	17.0	35.0		24.4
Max Q Clear Time (g_c+I1), s	16.4	19.3		11.2	19.0	18.4		16.4
Green Ext Time (p_c), s	0.0	5.6		0.7	0.0	4.2		0.8

Intersection Summary	
HCM 6th Ctrl Delay	46.1
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	287	42	28	827	907	34
Future Volume (veh/h)	287	42	28	827	907	34
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	312	0	30	899	986	35
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	366		380	2319	1959	70
Arrive On Green	0.21	0.00	0.03	0.65	0.56	0.56
Sat Flow, veh/h	1781	1585	1781	3647	3594	124
Grp Volume(v), veh/h	312	0	30	899	500	521
Grp Sat Flow(s),veh/h/ln	1781	1585	1781	1777	1777	1848
Q Serve(g_s), s	10.1	0.0	0.4	7.1	10.4	10.4
Cycle Q Clear(g_c), s	10.1	0.0	0.4	7.1	10.4	10.4
Prop In Lane	1.00	1.00	1.00			0.07
Lane Grp Cap(c), veh/h	366		380	2319	995	1034
V/C Ratio(X)	0.85		0.08	0.39	0.50	0.50
Avail Cap(c_a), veh/h	564		453	2319	995	1034
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.9	0.0	5.8	4.8	8.1	8.1
Incr Delay (d2), s/veh	4.7	0.0	0.0	0.5	1.8	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.4	0.0	0.1	1.9	3.6	3.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	27.6	0.0	5.8	5.3	9.9	9.8
LnGrp LOS	C		A	A	A	A
Approach Vol, veh/h	312	A		929	1021	
Approach Delay, s/veh	27.6			5.4	9.9	
Approach LOS	C			A	A	

Timer - Assigned Phs	2		4	5	6
Phs Duration (G+Y+Rc), s	43.7		16.3	5.6	38.1
Change Period (Y+Rc), s	4.5		4.0	4.0	4.5
Max Green Setting (Gmax), s	32.5		19.0	4.0	24.5
Max Q Clear Time (g_c+I1), s	9.1		12.1	2.4	12.4
Green Ext Time (p_c), s	6.9		0.3	0.0	5.3

Intersection Summary	
HCM 6th Ctrl Delay	10.5
HCM 6th LOS	B

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	35	296	393	418	260	10
Future Volume (veh/h)	35	296	393	418	260	10
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	38	273	427	454	283	11
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	685	314	533	2517	1759	68
Arrive On Green	0.20	0.20	0.15	0.71	0.50	0.50
Sat Flow, veh/h	3456	1585	3456	3647	3581	135
Grp Volume(v), veh/h	38	273	427	454	144	150
Grp Sat Flow(s),veh/h/ln	1728	1585	1728	1777	1777	1846
Q Serve(g_s), s	0.8	15.5	11.1	4.0	4.1	4.1
Cycle Q Clear(g_c), s	0.8	15.5	11.1	4.0	4.1	4.1
Prop In Lane	1.00	1.00	1.00			0.07
Lane Grp Cap(c), veh/h	685	314	533	2517	896	931
V/C Ratio(X)	0.06	0.87	0.80	0.18	0.16	0.16
Avail Cap(c_a), veh/h	1226	562	944	2517	896	931
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.2	36.1	37.9	4.5	12.4	12.4
Incr Delay (d2), s/veh	0.0	7.3	2.8	0.2	0.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	6.5	4.8	1.3	1.6	1.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	30.3	43.4	40.8	4.7	12.8	12.8
LnGrp LOS	C	D	D	A	B	B
Approach Vol, veh/h	311			881	294	
Approach Delay, s/veh	41.8			22.2	12.8	
Approach LOS	D			C	B	

Timer - Assigned Phs	2		5	6	8
Phs Duration (G+Y+Rc), s	70.6		19.0	51.6	22.4
Change Period (Y+Rc), s	* 4.7		4.6	* 4.7	4.0
Max Green Setting (Gmax), s	* 51		25.4	* 21	33.0
Max Q Clear Time (g_c+I1), s	6.0		13.1	6.1	17.5
Green Ext Time (p_c), s	4.9		1.3	2.0	0.9

Intersection Summary	
HCM 6th Ctrl Delay	24.4
HCM 6th LOS	C

Notes

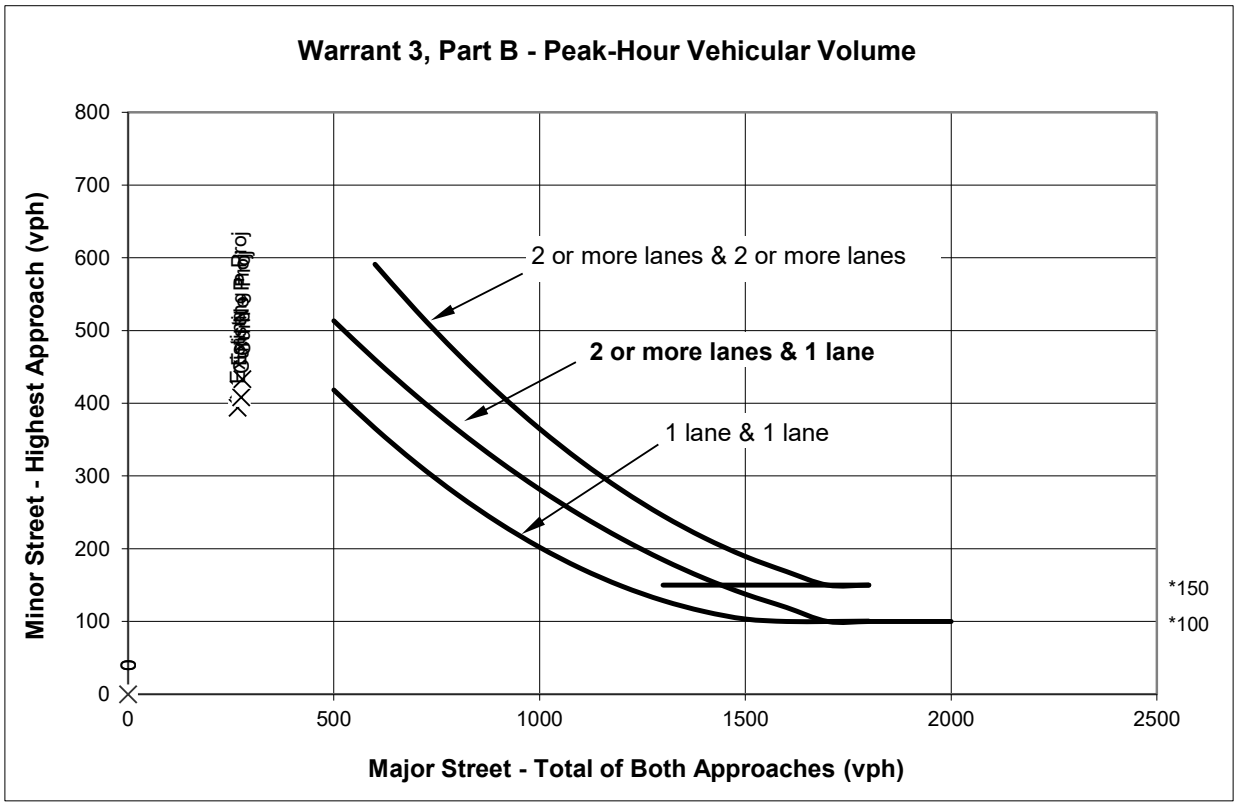
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Appendix E

Signal Warrant

Corte Madera Housing Element Update

Tamal Vista Boulevard And Madera Boulevard **AM PEAK PERIOD**



Source: Figure 4C-3 *California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2010 Edition, as amended for use in California)* .

* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Warrant 3, Part B - Peak-Hour Vehicular Volume

		Approach Lanes		AM PEAK PERIOD							
		One	2 or More	Existing	Existing + Proj	Cum No Proj	Cum + Proj	0	0	0	
Major Street - Both Approaches	Council Crest Dr / Madera	X		266	269	275	278	0	0	0	
Minor Street - Highest Approach	Madera/ Tamal Vista		X	394	419	408	433	0	0	0	
Signal Warranted Based on Part B - Peak-Hour Volumes?				**No**	**No**	**No**	**No**				

*Warrant is satisfied if plotted points fall above the appropriate curve in graph above.

Corte Madera Housing Element Update

TRAFFIC SIGNAL WARRANTS WORKSHEET

Analyst: SJ date: 5/4/22

Major Street: Council Crest Dr / Madera — Critical Approach Speed* (mph) 25

Minor Street: Madera/ Tamal Vista — Critical Approach Speed* (mph) 30

**Posted Speed.*

Critical speed of major street traffic > 50 mph (64 km/h)……..……..……..……. ☑ or ☐ **Rural (R)**

In built up area of isolated community of < 10,000 population……..……..…….. ☐ **Urban (U)**

AM PEAK PERIOD

Warrant 3 - Peak Hour

PART A

(All parts 1, 2, and 3 below must be satisfied)

AM PEAK PERIOD

	Existing	Existing + Proj	Cum No Proj	Cum + Proj	0:00	0:00	0:00	
Minor Street Approach Direction w/ Highest Delay	NB	NB	NB	NB				
Highest Minor Street Average Delay (sec/veh)	11.9	13.3	12.4	13.8				
Corresponding Minor Street Approach Volume (veh/hr)	394	419	408	433				
Minor Street Total Delay (veh-hrs)	1.3	1.5	1.4	1.7				
1. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds 4 vehicle-hours for a 1-lane approach and 5 vehicle-hours for a 2-lane approach; AND	No	No	No	No				
2. The volume on the same minor street approach equals or exceeds 100 vph for 1 moving lane of traffic or 150 vph for 2 moving lanes; AND	Yes	Yes	Yes	Yes				
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with 4 or more approaches or 650 vph for intersections with 3 approaches.	Yes	Yes	Yes	Yes				
Signal Warranted based on Part A?	**No**	**No**	**No**	**No**				

PART B

AM PEAK PERIOD

		Approach Lanes: One	Approach Lanes: 2 or More	Existing	Existing + Proj	Cum No Proj	Cum + Proj	0:00	0:00		
Major Street - Both Approaches	Council Crest Dr / Madera	X		266	269	275	278	0	0		
Minor Street - Highest Approach	Madera/ Tamal Vista		X	394	419	408	433	0	0		
Signal Warranted based on Part B?				**No**	**No**	**No**	**No**	**0**	**No**		

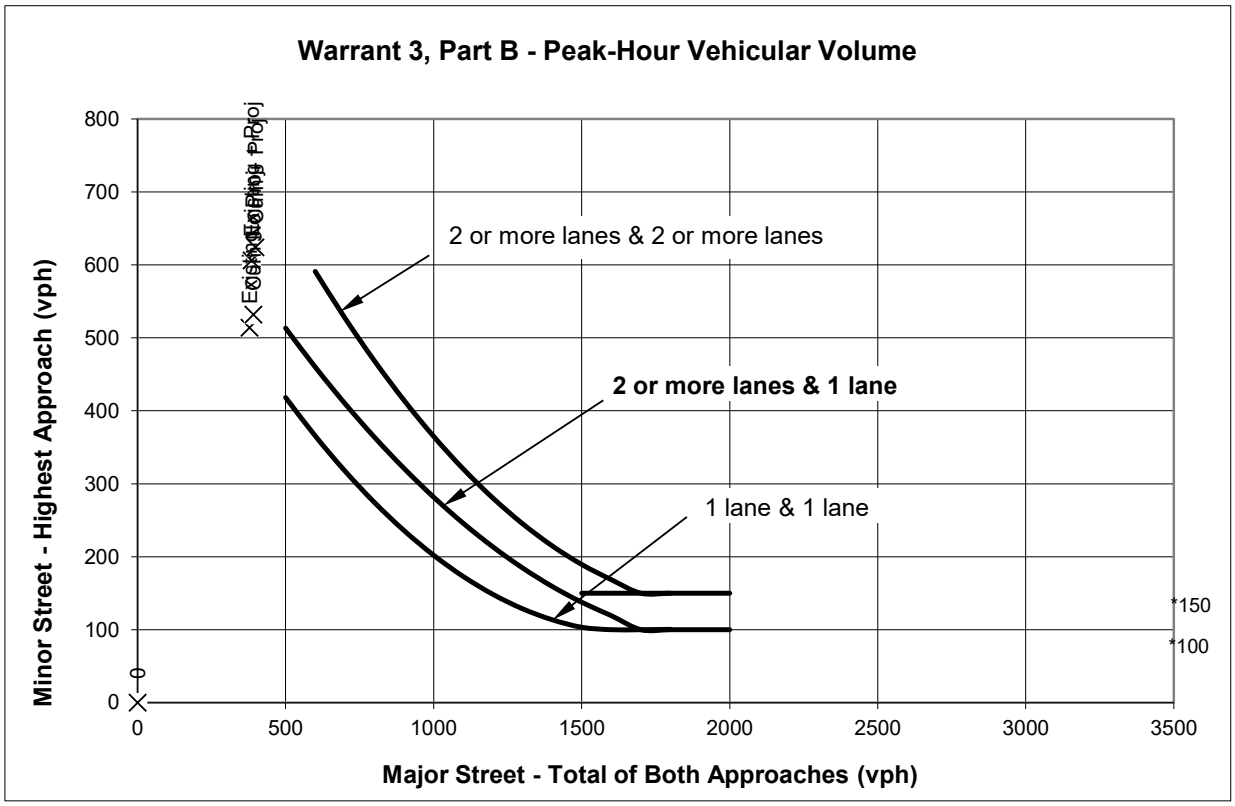
The Warrant is satisfied if the plotted point for vehicles per hour on the major street (both approaches) and the corresponding per hour higher vehicle volume minor street approach (one direction only) for one hour (any four consecutive 15-minute periods) fall above the applicable curves in California MUTCD Figure 4C-3 or 4C-4.

Source: California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2010 Edition, as amended for use in California).

Notes:

Corte Madera Housing Element Update

Tamal Vista Boulevard And Madera Boulevard **PM PEAK HOUR**



Source: Figure 4C-3 *California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2010 Edition, as amended for use in California)* .

* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Warrant 3, Part B - Peak-Hour Vehicular Volume

		Approach Lanes		PM PEAK HOUR							
		One	2 or More	Existing	Existing + Proj	Cum No Proj	Cum + Proj	0	0		
Major Street - Both Approaches	Council Crest Dr / Madera	X		378	385	391	398	0	0		
Minor Street - Highest Approach	Madera/ Tamal Vista		X	514	606	532	624	0	0		
Signal Warranted Based on Part B - Peak-Hour Volumes?				**No**	**Yes**	**Yes**	**Yes**				

*Warrant is satisfied if plotted points fall above the appropriate curve in graph above.

Corte Madera Housing Element Update

TRAFFIC SIGNAL WARRANTS WORKSHEET

Analyst: SJ date: 5/4/22

Major Street: Council Crest Dr / Madera — Critical Approach Speed* (mph) 25

Minor Street: Madera/ Tamal Vista — Critical Approach Speed* (mph) 30

**Posted Speed.*

Critical speed of major street traffic > 50 mph (64 km/h)…….. ☑ or ☐ **Rural (R)**

In built up area of isolated community of < 10,000 population…….. ☐ **Urban (U)**

PM PEAK HOUR

Warrant 3 - Peak Hour

PART A

(All parts 1, 2, and 3 below must be satisfied)

PM PEAK HOUR

	Existing	Existing + Proj	Cum No Proj	Cum + Proj				
Minor Street Approach Direction w/ Highest Delay	NB	NB	NB	NB				
Highest Minor Street Average Delay (sec/veh)	30.7	75.2	35.7	85.9				
Corresponding Minor Street Approach Volume (veh/hr)	514	606	532	624				
Minor Street Total Delay (veh-hrs)	4.4	12.7	5.3	14.9				
1. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds 4 vehicle-hours for a 1-lane approach and 5 vehicle-hours for a 2-lane approach; AND	No	Yes	Yes	Yes				
2. The volume on the same minor street approach equals or exceeds 100 vph for 1 moving lane of traffic or 150 vph for 2 moving lanes; AND	Yes	Yes	Yes	Yes				
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with 4 or more approaches or 650 vph for intersections with 3 approaches.	Yes	Yes	Yes	Yes				
Signal Warranted based on Part A?	**No**	**Yes**	**Yes**	**Yes**				

PART B

PM PEAK HOUR

		Approach Lanes: One	Approach Lanes: 2 or More	Existing	Existing + Proj	Cum No Proj	Cum + Proj	0:00	0:00	0:00	
Major Street - Both Approaches	Council Crest Dr / Madera	X		378	385	391	398	0	0	0	
Minor Street - Highest Approach	Madera/ Tamal Vista		X	514	606	532	624	0	0	0	
Signal Warranted based on Part B?				**No**	**Yes**	**Yes**	**Yes**	**0**	**0**	**0**	

The Warrant is satisfied if the plotted point for vehicles per hour on the major street (both approaches) and the corresponding per hour higher vehicle volume minor street approach (one direction only) for one hour (any four consecutive 15-minute periods) fall above the applicable curves in California MUTCD Figure 4C-3 or 4C-4.

Source: California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2010 Edition, as amended for use in California).

Notes:

General Plan Policies & Implementation Programs and Proposed Housing Element & Safety Element Update Policies

F

APPENDIX

Applicable General Plan, Housing Element Update, and Safety Element Update Policies and Programs

Visual Resources and Aesthetics

General Plan Policies and Programs

Implementation Program LU-1.1.d: Design Guidelines. Prepare and adopt Design Guidelines for the review of residential and non-residential development.

Policy LU-1.2. The development review process shall protect and enhance the character of the built and natural environments in Corte Madera.

Implementation Program LU-1.2.a: Design Guidelines.
(See Implementation Program LU-1.1.d, above).

Policy LU-3.2. Support infill projects where clearly consistent with Town objectives for infill development.

Implementation Program LU-3.2.b: Encourage Infill. Update the Zoning Ordinance to remove impediments to infill development, including allowing flexible and shared parking, and updating building height, yard setback, lot coverage and similar standards to reflect the desire to allow for additional density where appropriate and transit oriented development.

Policy 3.5. Require that infill development include high quality design and site planning techniques.

Implementation Program LU-3.5.a: Infill Compliance. Pending the adoption of Design Guidelines, decision-making bodies for environmental and development review shall include findings determining that infill projects are in substantial compliance with General Plan infill development policies, including:

1. Reduces the perception of visible bulk by minimizing the apparent height and size of buildings when located in a transitional land use area.
2. Incorporates transitions in height and setbacks from adjacent properties to maintain development character and privacy.
3. Incorporates natural and/or designed focal points, emphasized by pedestrian/pathway connections, respecting existing landforms, and physical and use boundary areas of adjoining properties.
4. Minimizes the visual impacts of driveways, parking areas and garages through placement of such features and areas to the sides and rear of infill lots, away from public vantage points.

5. Uses high quality building materials that are durable, non-toxic and resource efficient.

The extent to which infill projects incorporate green building features and sustainability principles shall also be considered in environmental and development review.

Policy RCS-6.1. Protect natural values of open space and habitat areas while promoting recreational and related uses that are compatible with resource protection.

Policy RCS-7.3. Retain and, where feasible, restore sensitive hillside and ridgeline habitat.

PolicyRCS-7.4. Protect woodland and tree resources.

Policy RCS-11.2. Protect historic sites and archaeological resources for their aesthetic, scientific, educational, and cultural values.

Policy CD-1.5. Preserve the value of the community's night sky and avoid unnecessary light and glare from signage, building and landscape illumination, or other sources of outdoor lighting.

Implementation Program CD-1.5.a: Reduce Lighting Levels. Revise the Zoning Ordinance and other appropriate sections of the Municipal Code to limit lighting levels, and to establish acceptable types of lighting, fixtures, and the location of lighting in relation to nearby properties. Include the following in the Design Guidelines to reduce lighting levels:

- a requirement that outdoor lighting of nonresidential uses shall be designed to be turned off when not in use where security and safety are not a concern.
- When streetlights are locate along the perimeter of the community Plan areas, overhead lighting shall be shielded to minimize lighting of adjacent properties.
- Roadway, commercial, and residential lighting shall be limited to the minimum amount needed for public safety and shall be designed to focus light where it is needed.
- Street light fixtures should be designed to block illumination of adjoining properties and to prohibit light emitted from the fixtures above the horizontal plane.

Policy CD-2.6. Consider the impacts to long-range views created by proposed or existing landscaping on and adjoining a project site.

Implementation Program CD-1.2.a: Natural Site Design. Apply the following site planning and design provisions in the Design Guidelines:

- Discourage development that would have detrimental effects on ridgelines.

- Encourage hillside development to follow the natural slope of the landform.
- Require development in the vicinity of creeks, wetlands, or the Bay to respect the natural integrity of those areas.
- Encourage the use of building materials that incorporate natural visual elements of the project's particular environment.

Policy CD-4.4. Discourage the use of corporate architecture that is incompatible with the design character of the project site or area, or which is inconsistent with the Design Guidelines.

Policy CD-4.5. Floor area ratios for non-residential development shall adhere to Town design policy.

Implementation Program CD-4.5.a: Floor Area Ratio. The following criteria will be addressed in the non-residential floor area ratio (FAR) standards in Specific Plans, updates to the Zoning Ordinance and in the Design Guidelines:

- Compliance with the FAR limits prescribed by the underlying General Plan land use designation and standards of any adopted Specific Plan.
- Size and location of the subject property.
- Freeway visibility of the proposed building(s); properties fronting on Highway 101 shall be permitted higher FARs only where visual impacts to the Highway corridor are minimized.
- Building placement on a lot.
- Architectural design (including proposed building heights and amount of visual bulk of buildings).
- View impacts.
- Extent of impervious surface being created.
- Resultant traffic impacts of the proposed use.

Policy CD-4.7. Development standards shall be drafted to encourage flexible interpretation and application of development standards, to promote the use of innovative site planning and design solutions, and to facilitate renovation of existing commercial centers and mixed land use approaches.

Proposed Housing Element Update Policies

Policy H-3.1 Housing Design Principles. The intent in the design of new housing is to provide stable, safe, and attractive neighborhoods through high quality architecture, site planning, and amenities that address the following principals:

a. Reduce the Perception of Building Bulk. In multi-unit buildings, require designs that break up the perceived bulk and minimize the apparent height and size of new buildings, including the use of upper story step backs and landscaping.

b. Recognize Existing Street Patterns. Incorporate transitions in height and setbacks from adjacent properties to ensure development character and privacy. Design new housing so that it relates to the existing street pattern and creates a sense of neighborliness with surrounding buildings.

c. Enhance the "Sense of Place" by Incorporating Focal Areas. Design new housing around natural and/or designed focal points, emphasized through direct pedestrian/pathway connections. Respect existing landforms, paying attention to boundary areas and effects on adjacent properties.

d. Minimize the Visual Impact of Parking and Garages. Discourage designs in which garages dominate the public facade of the home (e.g., encourage driveways and garages to be located to the side of buildings and recessed, or along rear alleyways or below the building in some higher density developments).

e. Use Quality Building Materials. Building materials should be high quality, long lasting, durable and energy efficient.

Implementation Program H-3.1.b: Objective Development and Design Standards. Encourage and require pursuant to the Municipal Code multi-family housing projects to utilize the Objective Development and Design Standards in Title 22 and accompanying architectural standards in developing project designs.

Air Quality

General Plan Policies and Programs

Air Quality

Policy RCS-10.3. Require the incorporation of air quality mitigation measures for development projects.

Implementation Program RCS-10.3.a: **Emission Controls**. Through the development review process and in amendments to the Zoning Ordinance, require new uses that generate significant air emissions or odors include adequate buffer zones, setbacks or other site planning approaches to protect existing or future sensitive receptors.

Implementation Program RCS – 10.3.c: Construction Dust Control. As a condition of approval for discretionary projects, require dust control measures consistent with the "Feasible Control Measures for Construction Emissions of PM10" of the BAAQMD CEQA Guidelines or its successor document.

Policy RCS-10.4. Reduce PM_{10} emissions from fireplaces and wood stoves.

Implementation Program RCS-10.4.a: Natural Gas Fireplaces. Amend [the] Zoning Ordinance [to] prohibit wood burning devices in new construction and encourage conversion to natural gas fireplaces in remodeling projects, and via public (educational) notices in the Town newsletter.

Policy RCS-10.6. Support the Bay Area Air Quality Management District in monitoring air pollutants of concern, the Governor's Office of Planning and Research (OPR) in developing CEQA guidelines related to GHG emissions and energy for all projects, and in meeting federal and State air quality standards.

Implementation Program RCS-10.6.a: **Development Review**. Refer larger development projects, or those with potential to generate substantial dust or air pollution, to the BAAQMD for review. Incorporate appropriate mitigation measures in project conditions.

Implementation Program RCS-10.6.c: **Air Quality Regulations for GHG Emissions**. The Town shall implement any regulations issued by the California Air Resources Board or other regulatory agency regarding greenhouse gas emissions. The Town will enforce CEQA Guidelines developed by the Governor's Office of Planning and Research that seek to analyze and mitigate GHG emissions and energy use (see RCS Policy 3.1.a).

Energy Efficiency

Policy RCS-1.2. Involve Town residents and businesses in sustainability projects.

Implementation Program RCS-1.2.a: Public information. Regularly disseminate information about community sustainability efforts and plans on the Town's web page, newsletter, and other methods.

Policy RCS-2.2. Increase energy conservation and efficiency within Corte Madera.

Implementation Program RCS-2.2f: **Cooperate with Regional Energy Programs**. Cooperate with regional energy programs such as the Marin County Energy Watch Partnership to promote energy efficiency in Town facilities, residences, and commercial buildings.

Implementation Program RCS-2.2h: **Heat Islands**. Minimize heat islands and the resulting increase in energy use for cooling, by avoiding the use of materials such as some types of artificial turf that have excessive heat reflection characteristics, and by using cooling techniques such as landscape shading where reasonably feasible.

Policy RCS-2.3. Develop programs to increase energy conservation within Corte Madera residences.

Policy RCS-2.4. Support the development and utilization of renewable energy.

Implementation Program RCS-2.4.b: Renewable Energy. Provide for use of renewable energy systems to help meet future energy needs of the community. This may include use of photovoltaic solar collection systems to reduce dependency on fossil fuels. Include provisions for use of such systems in the Town's Design Guidelines.

P**olicy RCS-2.5**. Minimize transportation-related energy consumption.

Implementation Program RCS-2.5.b: Road Construction. The Town will ensure that contracts for roadway construction and repair shall utilize recycled and resource efficiency materials, where feasible. (For example, rubberized asphalt concrete).

Implementation Program RCS-2.5.c: **Programs to Reduce Fossil Fuel Based Transportation**. Support municipal and community programs aimed at reducing fossil fuel-based transportation. Programs should include alternatives such as employee carpooling, transit, walking and biking.

Policy RCS-2.6. Reduce energy consumption in buildings by balancing energy efficient design with good planning principles.

Implementation Program RCS-2.6.a: **Energy Efficient Building Design**. Require energy efficient site and building design in all new development projects consistent with the requirements of Title 24 of the California Administrative Code. Measures may include, but are not limited to, building orientation and shading, landscaping, use of active and passive solar heating and hot water system, etc.

Implementation Program RCS-2.6.c: **Green Building**. Provide information to project designers regarding the Marin County Green Building Program.

Policy RCS-2.7. Expand public participation in energy conservation and efficiency measures.

Implementation Program RCS-2.7.a: **Public Conservation Outreach**. Coordinate with local utilities to provide energy conservation information to the public. Periodically include information sources in the Town's newsletter.

Implementation Program RCS-2.7.b: **Energy Conservation and Efficiency Education**. Educate planning and building staff and citizen review bodies on energy conservation and efficiency issues, including the Town's energy conservation policies, and instruct that they work with applicants to achieve energy conservation goals.

Implementation Program RCS-2.7.c: Promotion of Energy Efficient Products. Promote the purchase of Energy Star appliances rated at least "Energy Star" and fuel efficient or alternative fuel vehicles by Town businesses and residents.

Waste Diversion

Policy RCS–4.1. Encourage the expansion of vigorous recycling efforts so that all residents and businesses in Corte Madera recycle.

Implementation Program RCS–4.1.b: Recycling Receptacles. Include provisions in the Zoning Ordinance to allow for placement of recycling receptacles at public, multi-family residential, commercial, office and industrial use locations.

Policy RCS–5.1. Minimize waste through reducing, reusing, and recycling. Encourage reduced consumption of non-renewable resources by expanding choices for using and reusing materials, energy, and water in an efficient manner.

Implementation Program RCS-5.1.a: Public Outreach. Establish a Town outreach program to local businesses and schools that promotes awareness of buying products from green businesses and reducing the locally generated solid waste. Distribute information through the Town's newsletter, website and other means.

Implementation Program RCS-5.1.c: Waste Prevention. Coordinate with the Marin County Office of Waste Management to provide public education programs for waste prevention, composting, and becoming sustainable consumers by making changes that limit contribution to environmental deterioration. Distribute this information through the Town's newsletter, website and other means.

Implementation Program RCS-5.1.d: **Source Reduction and Recycling**. Continue to implement the Source Reduction and Recycling Element for Marin County and its cities.

Implementation Program RCS-5.1.e: **Promote Green Businesses.** Cooperate and partner with local and regional agencies, such as the Chamber of Commerce and Marin County, to promote "green businesses" that incorporate ecologically friendly products into their business operations, conserve natural resources, reduce waste, recycle, promote energy efficiency and renewable energy, and reduce hazardous wastes. Encourage local businesses to become members of the Marin County Green Business Program and other such programs that may evolve during the life of this General plan.

Compact Land Use/Infill Development

Policy LU-2.12. Lands designated Medium Density Residential, High Density Residential or Mixed Use shall be located in proximity to a range of supporting services and activity centers, including transit stops, schools, commercial centers, employment centers and parks.

Implementation Program 2.12a: **Location of High Density Sites**. Designate Medium-Density Residential, High-Density Residential and Mixed Use lands on the Land Use Diagram in accordance with this Policy.

Policy LU-2.14. Support commercial, mixed-use and high density residential uses when consistent with Town objectives for development, including provision of necessary public services and infrastructure.

Implementation Program LU-2.14.a: **Avoidable Impacts**. Where a commercial or mixed-use development proposal is found to result in one or more of the following adverse impacts, the Town may modify the proposal by 1) reducing project intensity or density, and/or 2) ensuring the project developer mitigates the impacts. Where these options still would not adequately reduce such impacts, the Town shall deny the development proposal. Adverse impacts to the Town include:

- Substantial degradation of traffic circulation beyond existing conditions, or inability to provide adequate and safe vehicle, pedestrian and bicycle access.
- Inability to provide critical public services, including fire, police and related safety services.
- Inability to provide necessary water supplies, wastewater treatment or storm water drainage, including insufficient line or pump station capacities.
- Impaired development opportunities for other lands in the Town.
- Significant environmental impacts for which reasonable mitigation measures are unavailable.

Policy LU-2.15. Support mixed-use development proposals.

Implementation Program LU-2.15.a: **Mixed Use Development**. The Town will support mixed-use projects including residential components, such as live-work combinations or ground-floor retail with upper story residential use. Such projects will be encouraged over standard single-use development proposals where the underlying zoning allows mixed-use developments. Encourage opportunities for live/work developments where housing can be provided for workers on-site or caretaker or other types of housing can be provided in appropriate locations.

Policy LU-2.17. Create reasonable opportunities for new light industrial land uses and related activities in the Town's Specific Plans and within the Mixed Use Commercial land use designations.

Policy LU-3.1. Provide for infill development in core Town areas.

Implementation Program LU-3.1.a: Infill Locations. The General Plan Land Use Element includes policies calling for preparation of Community Plans for several key areas, and encourages redevelopment of other lands in and around commercial and office core areas of the Town. In doing so, the General Plan purposefully creates greater potential for more intensive infill development of sites that may be underutilized. Infill development can help create areas that are more compact with a diverse mixture of land uses, improve connectivity between

neighborhoods and uses, reduce traffic congestion and provide a greater range of community amenities. In keeping with stated goals, infill development in core areas should also provide for transit oriented development.

Infill development may occur within the Town's four Community Plan areas, and in the Mixed Use Commercial, Commercial Services, Region-Serving Commercial and Office land use designations. Additionally, redevelopment of older apartment complexes, in areas generally designated for Medium Density or High Density Residential, are acceptable infill developments if retaining or increasing the number of rental units, consistent with density criteria of the General Plan and state density bonus regulations.

Policy LU-3.2. Support infill projects where clearly consistent with Town objectives for infill development.

Implementation Program LU-3.2.a: Infill Objectives. Support infill development if findings can be made that the proposal is consistent with the infill goals and policies outlined herein, would be consistent with applicable provisions of the General Plan and would ensure land use compatibility with established neighborhood character. Approvals for infill development projects shall be based on findings of fact that the proposed projects have the potential to achieve one or more of the following attributes:

- Produce jobs for Town residents.
- Create high density, market-rate and/or affordable housing.
- Provide convenient access to transportation facilities and public transit, as well as schools, shopping and other local destinations, as a means of increasing residential density and commercial intensity.
- Reduce automobile-oriented design.
- Reduce creation of traffic congestion.
- Utilize existing infrastructure systems.
- Provide a desirable built environment, as described in LU-3.5.
- Include community amenities, such as plazas, public art, street furniture, child care centers, appropriate street landscaping and tree planning, and similar uses or improvements.
- Encourage community interaction through use of outdoor gathering and seating areas and inclusion of pedestrian-oriented improvements.
- Embody environmentally sensitive design and construction principles, as described in Policy CD-6.2 in Chapter 5, Community Design.
- Provide for more efficient use of Corte Madera's limited land supply.

Implementation Program LU-3.2.b: **Encourage Infill**. Update the Zoning Ordinance to remove impediments to infill development, including allowing flexible and shared parking, and updating building height, yard setback, lot coverage and similar standards to reflect the desire to allow for additional density where appropriate and transit oriented development.

Policy LU 3.5. Require that infill development include high quality design and site planning techniques… The extent to which infill projects incorporate green building features and sustainability principles shall also be considered in environmental and development review.

Policy LU-4.1. Encourage revitalization of the Town's older commercial and office centers.

Implementation Program LU-4.1.c: Commercial/Office Centers. Revise the Zoning Ordinance to provide for multiple land uses on individual lots that will complement commercial and office center activities. Multiple uses may include: retail, general commercial, restaurants, administrative and medical offices, personal services, and second-story residential units.

Circulation/VMT Reduction

Policy CIR-1.1. Provide safe and convenient linkages between all modes of travel within the planning area, and extending between the Town and adjacent jurisdictions in the region.

Implementation Program CIR1.1.c: **New Development.** Incorporate convenient bicycle and pedestrian access and facilities in new development projects that link to Town and regional bicycle and pedestrian path connections.

Policy CIR-1.8. Support investment in local and regional transit and transportation plans that provide alternatives to automobile-intensive transportation programs through CIP actions.

Implementation Program CIR-1.8.a: **Regional Transit.** Partner with regional transportation agencies and transit providers to create programs aimed at reducing vehicle miles traveled (VMT) in the Town and region. These programs may include the provision of additional transit options, reviving fixed rail service within the County, carpooling programs, partnerships with employers to support variable work hours, transit passes, and programs aimed at altering travel behavior.

Implementation Program CIR-1.8.b: **Reduce Vehicle Miles Traveled (VMT).** Facilitate employment opportunities that minimize the need for automobile trips, such as live/work, telecommuting, satellite work centers, home occupations and mixed use development strategies.

Policy CIR-1.12. Actively encourage public and private schools to implement trip reduction programs and reduce congestion caused by commuting students and staff.

Implementation Program CIR-1.12.a: **Reduction of School Traffic**. Actively support efforts to improve upon and expand transportation options for students and reduce school-related traffic congestion. Examples include supporting increased funding of school buses and crossing guards, construction of safe routes to schools, and staggering school hours.

Implementation Program CIR-1.12.b: **TDM for New Schools**. Work with local school districts in establishing Travel Demand Management (TDM) programs for existing, new or expanded public schools. Private schools shall include TDM proposals with their development applications to the Town.

Policy CIR-3.1. Increase the Town's network of bicycle and pedestrian paths, especially Class I facilities, as viable alternatives to vehicular transportation, especially for access to neighborhoods, commercial centers, schools, parks and other key activity centers.

Implementation Program CIR-3.1.b: Bike Lane Improvements. The Town will prioritize improvements to existing bicycle lanes and construction of new lanes, based on the following criteria:

- Existing needs that are not adequately addressed.
- The number of potential users served.
- The potential for adverse impacts on surrounding areas.
- The need for supporting improvements.
- Costs for constructing and maintaining improvements.
- Environmental or related impacts associated with construction.

Implementation Program CIR-3.1.d: **Development of Bicycle Paths**. Where appropriate, require proposed development projects adjacent to existing or proposed bikeway routes to include bicycle paths or lanes in their street improvement plans and to construct the bicycle paths or lanes as a condition of project approval.

Implementation Program CIR-3.1.f: **Bicycle Circulation Review**. Require bicycle circulation to be considered in the review of development projects and include in the Design Guidelines.

Policy CIR-3.2. Support the improvement of bicycle lanes and pedestrian paths as part of the Safe Routes to School program.

Implementation Program CIR-3.2.a: **Safe Routes to School**. Work with local School Districts to identify those bicycle and pedestrian routes most critical for Safe Routes to School improvements.

Policy CIR-3.3. Explore opportunities to install bicycle and pedestrian paths that Policy provide connections to surrounding communities and regional open spaces.

Policy CIR-3.5. Emphasize use of pedestrian pathways and sidewalks as an integral part of the Town's circulation system.

Policy CIR-4.1. Expand the number of public transit locations within Corte Madera.

Implementation Program CIR-4.1.b: **Regional Transit Plans**. Support regional transit, particularly those plans and programs which improve transit services in the Corte Madera area and which may help reduce through-Town traffic, through CIP and other funding efforts and by offering support to such programs, such as Marin County Transit District's Twin Cities Shuttle.

Policy CIR-6.2. Explore ways to provide commuter parking convenient to bus stops.

Implementation Program CIR-6.2.a: **Improve Transit Parking**. Work with local and regional transit providers to identify needs and fund improvements for public parking and transit shelters.

Policy CIR-6.3. Support Intelligent Transportation Systems (ITS) programs within the Town to reduce vehicle miles traveled (VMT) and associated emissions, and improve transit efficiency, reliability and user experience.

Implementation Program CIR-6.3.a: ITS Program. Determine appropriate ITS intelligent infrastructure strategies that can be implemented to promote efficient mobility and safety within the Town. ITS strategies should seek to monitor and manage traffic, reduce congestion, provide route guidance, among other goals. These strategies can include the following:

- Arterial management.
- Freeway management.
- Traffic management.
- Traveler information.
- Crash prevention and safety.
- Bus schedule and route frequency information.

Biological Resources

General Plan Policies and Programs

Policy RCS-6.2. Protect wetlands (as defined herein), other waters of the United States, and essential habitat for special status species, including, but not limited to, other wetland habitat areas, habitat corridors, and sensitive natural communities.

Implementation Program RCS-6.2a: Resource Protection. Protect sensitive biological resources, including wetlands and other waters of the United States and other wetland habitat areas, and habitat corridors, and sensitive natural

communities through environmental review of development applications in compliance with CEQA provisions, participation in comprehensive habitat management programs with other local and resource agencies, and continued acquisition and management of open space lands that provide for permanent protection of important natural habitats. Protect wetlands and other waters of the United States in accordance with the regulations of the U.S. Army Corps of Engineers and other appropriate agencies as well as consistent with Implementation Program RCS-8.2.a. Protect other habitat areas, habitat corridors, and sensitive natural communities consistent with program RCS-6.3.a

Implementation Program RCS-6.2.b: Restoration Objectives. Where feasible (as defined under State CEQA Guidelines Section 15364), restore lost or damaged habitat. Support restoration objectives for local habitat types identified by the California Department of Fish and Game and in other regional environmental planning documents.

Policy RCS-6.3. Manage the development review process in compliance with CEQA provisions to promote resource conservation and sustainability.

Implementation Program RCS-6.3.a: Environmental Review. Continue to require environmental review of development applications pursuant to CEQA to assess the impact of proposed development on species and habitat diversity, particularly special-status species, sensitive habitat areas, wetlands and other wetland habitats, and habitat connectivity. Require adequate mitigation measures for ensuring the protection of sensitive resources and achieving "no net loss" of sensitive habitat acreage, values and function. Require specific mitigation measures for wetlands and waters of the United States (see Implementation Program RCS-8.2.a for mitigation standards for wetlands and waters of the U.S.).

Implementation Program RCS-6.3.b: Early Agency Consultation. Require early consultation with all trustee agencies and agencies with review authority pursuant to CEQA for projects in areas supporting special-status species, sensitive natural communities or wetlands that may be adversely affected by development.

Policy RCS-6.6. Restore and enhance riparian corridors.

Implementation Program RCS-6.6a: Riparian Corridor Restoration. As a condition of approval for appropriately located development proposals require riparian corridor restoration. Restore riparian corridors as part of flood control and other public infrastructure projects as deemed appropriate.

Implementation Program RCS-6.6.b: Riparian Corridor Plan. Cooperate with responsible agencies to plan and implement an integrated management plan for the long-term conservation and restoration of riparian corridors within Town limits.

Policy RCS-6.7. Protect migratory corridors.

Implementation Program RCS-6.7a: Migratory Corridors. Condition approval of development proposals to assure that movement corridors for migratory fish and wildlife species are maintained. Coordinate with Marin County and adjoining jurisdictions, and federal and state agencies such as CalTrans, to assure regional connectivity of open space and wildlife corridors.

Policy RCS-7.2. Retain sensitive habitat areas and restore to their natural state, where feasible, and protect from inappropriate development and landscaping.

Implementation Program RCS-7.2.a: Environmental Assessment. Require applicants to provide an environmental assessment in compliance with CEQA provisions for development proposed on sites that may contain sensitive biological or wetland resources including jurisdictional wetlands, waters of the United States, and other wetland habitats. Require the assessment to be conducted by a qualified professional to determine the presence of any sensitive resources, to assess the potential impacts, and to identify measures for protecting the resource and surrounding habitat (see Implementation Program RCS-8.2.a for mitigation standards for wetlands and waters of the U.S. See Implementation Program RCS- 6.3.a) for mitigation standards for other wetland habitat areas).

Implementation Program RCS-7.2.c: Limit Impacts. As part of the development review process, restrict or modify proposed development in areas that contain essential habitat for special-status species, sensitive habitat areas or wetlands as necessary to ensure the continued health and survival of these species and sensitive areas. Development projects preferably shall be modified to avoid impacts on sensitive resources, or impacts shall be mitigated by providing on-site or (as a lowest priority) off-site replacement (see Implementation Program RCS-8.2.a for mitigation standards for jurisdictional wetlands and waters of the U.S. See Implementation Program RCS-6.3.a for mitigation standards for other wetland habitat areas).

Policy RCS-7.4. Protect woodland and tree resources.

Implementation Program RCS-7.4.a: Tree Protection. Protect large native trees, trees with historical importance, oak woodlands, and forest habitats, and prevent the untimely removal of trees through implementation of standards in the Town's Municipal Code. Evaluate tree protection standards as part of the project to develop Design Guidelines and update the Tree Ordinance accordingly.

Policy RCS-7.5. Require use of native plant species in landscaping plans and reduce spread of invasive species.

Implementation Program RCS-7.5.a: Landscape Plans. Prepare lists of appropriate native landscape species and inappropriate invasive exotic species for use by property owners in developing landscape plans or enhancing existing landscaping, and include in the Design Guidelines. Prepare the lists with input from the California Department of Fish and Game, Agricultural Commissioner, University of California Cooperative Extension, California Native Plant Society, and other appropriate sources to verify suitability. Provide educational materials with information on how to care for plants included in the lists of appropriate native landscape species.

Implementation Program RCS–7.5.b: Landscaping Requirements As part of the discretionary review of proposed development, prohibit the use of highly invasive species in landscaping and require the removal of invasive exotic species. Require use of native or compatible nonnative plant species indigenous to the site vicinity as part of the discretionary review of project landscaping. Additionally, require that landscaping improvements for community parks, trails, and other public areas include the use of native plant materials and species that recognize and enhance the natural resource setting of the Town.

Implementation Program RCS-7.5.c: Invasive Species Removal. Work with public and private landowners to make attempts to contain and prevent the spread of highly invasive and noxious weeds. Cooperate with Marin Municipal Water District's vegetation control activities along the urban/wildland boundary.

Policy RCS-7.7. Control the use of herbicide, insecticides and similar materials.

Implementation Program RCS-7.7.a: Integrated Pest Management. Encourage the use of integrated pest management and organic practices to control pests with the least possible hazard to the environment. Restrict the use of insecticides, herbicides, or any toxic chemical substance in sensitive habitats, except when an emergency has been declared, the habitat itself is threatened, a substantial risk to public health and safety exists, including maintenance for flood control, or when such use is authorized pursuant to a permit issued by the Agricultural Commissioner. Encourage non-toxic strategies for pest control, such as habitat management using physical and biological controls, as an alternative to chemical treatment.

Policy RCS-8.1. Protect wetlands through careful environmental review of proposed development applications.

Implementation Program RCS 8.1.a: Wetland Data. Pursuant to CEQA, when sites with potential wetlands (as defined herein), other waters of the U.S., or other wetland habitat areas are proposed for development, require detailed assessments to demonstrate compliance with State and Federal regulations. Assessments shall be conducted by a qualified professional retained by the Town to determine wetland boundaries and the presence of sensitive resources including endangered and special status species and their habitat, to assess the potential impacts, and to identify measures for protecting the resource and surrounding buffer habitat. Assessments will delineate and map jurisdictional wetlands, waters of the United States, other wetland habitat areas open-water habitats, and upland habitats and will make recommendations for avoidance. Delineation studies shall be submitted to the U.S. Army Corps of Engineers and other resource agencies to determine the boundaries of wetlands and waters of the United States.

Implementation Program RCS 8.1.b: Wetland Avoidance. Restrict or modify proposed development in areas that contain wetlands as defined herein or waters of the United States, as necessary to ensure the continued health and survival of special status species and sensitive habitat areas. Development projects shall preferably be modified to avoid impacts on sensitive resources, or to adequately mitigate impacts by providing on-site replacement or (as a lowest priority) off-

site replacement at a higher ratio. Modification in project design shall include adequate avoidance measures to ensure that no net loss of wetland acreage, function, water quality protection, and habitat value occurs. This may include the use of setbacks, buffers, and water quality drainage control features, or other measures to maintain existing habitat and hydrologic functions of retained wetlands and waters of the U.S. (see Implementation Program RCS-8.2.a for mitigation standards for wetlands and waters of the U.S. See Implementation Program RCS-6.3.a for mitigation standards for other wetland habitat areas).

Implementation Program RCS 8.1.c: Wetland Permits. The Town shall require the project proponent to obtain all necessary permits pertaining to affected waters of the United States, including wetland habitat and stream channel and pond habitat regulated by the California Department of Fish and Game and/or the San Francisco Bay Regional Water Quality Control Board prior to construction. Grading or other construction activities within streambeds or ponds may require streambed alteration agreements from the California Department of Fish and Game. Discharge of fill into waters of the United States will require a Clean Water Act Section 404 permit from the U.S. Army Corps of Engineers and Clean Water Act Section 401 certification from the San Francisco Bay Regional Water Quality Control Board. The permitting process will also require compensation for construction impacts (see Implementation Program RCS-8.2.a for mitigation standards for wetlands and waters of the U.S.).

Policy RCS-8.2. Establish and implement criteria to mitigate wetland (as defined herein) losses.

Implementation Program RCS-8.2.a: Wetland Mitigation. Where complete avoidance of wetlands and waters of the United States due to filling is not feasible (as defined under State CEQA Guidelines Section 15364), require provision of replacement habitat on-site through restoration and/or habitat creation at a minimum 2:1 ratio that would ensure no net loss of wetland acreage, function, water quality protection, and habitat values occurs. Allow restoration of wetlands off-site only when an applicant has demonstrated that no net loss of wetlands would occur and that on-site restoration is not feasible. Off-site wetland mitigation preferably will consist of the same habitat type as the wetland area that would be lost.

Energy

General Plan Policies and Programs

Policy RCS-2.2 Increase energy conservation and efficiency within Corte Madera.

Implementation Program RCS-2.2.a: Energy Conservation and Efficiency. Identify opportunities for creating energy conservation and efficiency programs for application in all Town facilities, schools and local businesses.

Implementation Program RCS-2.2.d: Energy-Efficient Models. Require energy-efficient models for all new Town equipment purchases.

Implementation Program RCS-2.2.e: Energy Efficient Town Facilities. Manage Town facilities in the most energy efficient manner feasible.

Implementation Program RCS-2.2.f: Cooperate with Regional Energy Programs. Cooperate with regional energy programs such as the Marin County Energy Watch Partnership to promote energy efficiency in Town facilities, residences, and commercial buildings.

Policy RCS-2.4. Support the development and utilization of renewable energy.

Implementation Program RCS-2.4.a: Use Alternative Energy Systems. Increase the use of renewable energy when retrofitting or constructing new Town facilities or when purchasing new equipment, provided they meet all public, safety, health, and design requirements and are proven to be reliable. Use renewable energy systems where they are cost effective. Analysis and consideration of payback time periods and future financial savings shall be included in the review of cost effectiveness.

Implementation Program RCS-2.4.b: Renewable Energy. Provide for use of renewable energy systems to help meet future energy needs of the community. This may include use of photovoltaic solar collection systems to reduce dependency on fossil fuels. Include provisions for use of such systems in the Town's Design Guidelines.

Policy RCS-2.3. Develop programs to increase energy conservation within Corte Madera residences.

Implementation Program RCS-2.3.a: "Savings by Design". Encourage homeowners to utilize programs such as Pacific Gas and Electric's "Savings by Design" program when designing plans for residences as a means of reducing energy demands and costs.

Policy RCS-2.4. Support the development and utilization of renewable energy.

Implementation Program RCS-2.4.a: Use Alternative Energy Systems. Increase the use of renewable energy when retrofitting or constructing new Town facilities or when purchasing new equipment, provided they meet all public, safety, health, and design requirements and are proven to be reliable. Use renewable energy systems where they are cost effective. Analysis and consideration of payback time periods and future financial savings shall be included in the review of cost effectiveness.

Implementation Program RCS-2.4.b: Renewable Energy. Provide for use of renewable energy systems to help meet future energy needs of the community. This may include use of photovoltaic solar collection systems to reduce dependency on fossil fuels. Include provisions for use of such systems in the Town's Design Guidelines.

Policy RCS-2.5. Minimize transportation-related energy consumption.

Implementation Program RCS-2.5.a: Vehicle Program. Create and implement a Town vehicle green fleet program that includes the purchase of fuel-efficient and alternative-fuel vehicles, to be implemented in a timely manner.

Implementation Program RCS-2.5.c: Programs to Reduce Fossil Fuel Based Transportation. Support municipal and community programs aimed at reducing fossil fuel-based transportation. Programs should include alternatives such as employee carpooling, transit, walking and biking.

Policy RCS-2.6. Reduce energy consumption in buildings by balancing energy efficient design with good planning principles.

Implementation Program RCS-2.6.a: Energy Efficient Building Design. Require energy efficient site and building design in all new development projects consistent with the requirements of Title 24 of the California Administrative Code. Measures include building orientation and shading, landscaping, use of active and passive solar heating and hot water system, etc.

Implementation Program RCS-2.6.b: Design Approaches. The Town's Design Guidelines shall include an emphasis on environmentally sensitive design approaches that incorporate resource-conserving construction practices.

Implementation Program RCS-2.6.c: Green Building. Provide information to project designers regarding the Marin County Green Building Program.

Implementation Program RCS-2.6.d: Green Building Guidelines. Adopt Green Building guidelines for new construction, renovations and municipal projects. Integrate green building requirements into the development review and building permit process. Collaborate with local jurisdictions to share resources, and develop green building policies and programs that are optimized for the region.

Policy RCS-10.1. Reduce the potential for air quality impact of new development and redevelopment by requiring pedestrian, bicycle, and transit-oriented features.

Implementation Program RCS-10.1.a: Air Quality Improvement. Require developers to implement strategies to reduce or avoid potential air quality impacts, including: Encouraging or providing incentives for use of public transportation and carpooling, and locating residential or mixed-use development in proximity to public transit, employment centers and shopping.

Policy RCS-10.2. Encourage new development and redevelopment of existing sites that will locate mixed land uses near employment and commercial service centers in order to reduce vehicular air pollution.

Implementation Program RCS-10.2.a: Mixed Use, Infill Development. Amend the Zoning Ordinance to allow infill development, with a focus on mixed uses of residential, commercial and employment. Encourage mixed-use development in the San Clemente/Paradise Drive, Fifer Avenue/Tamal Vista Boulevard, Tamalpais Drive/Casa Buena Drive and Old Corte Madera Square Community Plans.

The Circulation Element contains a range of policies that would directly or indirectly have the effect of reducing vehicle trip volumes and vehicle miles traveled (VMT), thereby reducing transportation fuel demand. Representative applicable policies address supporting investments in local and regional transit and expanding public transit locations within the Town, encouraging schools to implement trip reduction programs, improving and expanding bicycle and pedestrian access, providing commuter parking near bus stops, and supporting intelligent transportation systems.

Noise

General Plan Policies and Programs

> **Policy PSH-4.1.** New commercial, residential, ~~and~~ office development and redevelopment projects along the freeway frontage shall include evaluations of methods to reduce Highway 101-related noise impacts.
>
> **Implementation Program PSH-4.1.a: Noise Studies Along 101.** Require noise studies for new commercial, residential, and office development along Highway 101, and implement noise attenuation measures. These studies shall be based on traffic volumes commensurate with cumulative build-out conditions within the area and compliance with standards prescribed within the Noise section of the Public Safety and Hazards chapter of the General Plan.

The general plan also includes maximum noise levels for traffic noise and non-transportation noise, as shown in Table 10-1, Maximum Noise Levels for New Uses Affected Traffic Noise (General Plan Policy PSH 5.1), and Table 10-2, Maximum Noise Levels for New Uses Affected by Non-Transportation Noise (General Plan Policy PSH-5.2), respectively.

> **Implementation Program PSH-5.1.a: Traffic-Related Noise.** Evaluate new development proposals for compliance with the above-noted standards. Where necessary, the Town may require preparation of a noise study to determine compliance, utilizing the procedures outlined in Policy PSH-5.3.
>
> **Implementation Program PSH-5.2.a: Non-Traffic Related Noise.** Evaluate new development proposals for compliance with the above-noted standards. Where necessary, the Town may require preparation of a noise study to determine compliance, utilizing the procedures outlined in Policy PSH-5.3.
>
> **Policy PSH-5.3.** Any Town-required acoustical analysis shall be prepared according to specific standards and practices.
>
> **Implementation Program PSH–5.3.a: Acoustics Analysis.** An acoustical analysis may be required by the Town for development projects that are deemed to possibly result in violation of the noise standards outlined in Policies PSH-5.1 and 5.2, above, either in terms of a noise impact created by the new development that could affect nearby properties, or if the new development may be impacted by existing noise sources in the community. Additionally, a noise analysis may be required pursuant to Policy PSH 6.1, below, regarding project proximity to noise sensitive receptors.

Table 10-1 Maximum Noise Levels for New Uses Affected by Traffic Noise (General Plan Policy PSH-5.1)

New Land Use	Outdoor Activity Areas (L_{dn})	Interior Spaces (L_{dn})/Peak Hour (L_{eq})[1]
All Residential[2, 3, 4]	60-65	45
Transient Lodging[5]	65	45
Hospitals & Nursing Homes[6]	60	45
Theaters & Auditoriums	--	35
Churches, Meeting Halls, Schools, Libraries, etc.	60	40
Office Buildings[7]	65	45
Commercial Buildings[7]	65	50
Playgrounds, Parks, etc.	70	--
Light Industry[7]	65	50

SOURCE: Corte Madera 2009b (Table 8.1)

NOTES:

1. For traffic noise within Corte Madera, L_{dn} and peak-hour L_{eq} values are estimated to be approximately similar. Interior noise level standards are applied within noise sensitive areas of the various land uses, with windows and doors in the closed positions.
2. Outdoor activity areas for single-family residential uses are defined as backyards. For large parcels or residences with no clearly defined outdoor activity area, the standard shall be applicable within a 100-foot radius of the residence.
3. For multi-family residential uses, and for mixed-use projects that include residential units, the exterior noise level standard shall be applied at the common outdoor recreation area, such as at pools, play areas or tennis courts.
4. Where it is not possible to reduce noise in outdoor activity areas to 60 dB L_{dn} or less using a practical application of the best-available noise reduction measures, an exterior noise level of up to 65 dB L_{dn} may be allowed provided that available exterior noise level reduction measures have been implemented and interior noise levels are in compliance with this table.
5. Outdoor activity areas of transient lodging facilities include swimming pool and picnic areas.
6. Hospitals are often noise-generating uses. The exterior noise level standards for hospitals are applicable only at clearly identified areas designated for outdoor relaxation by either hospital staff or patients.
7. Only the exterior spaces of these uses designated for employee or customer relaxation have any degree of sensitivity to noise.

Table 10-2 Maximum Noise Levels for New Uses Affected by Non-Transportation Noise (General Plan Policy PSH-5.2)

New Land Use	Outdoor Activity Area (L_{eq})		Interior (L_{eq})
	Daytime	Nighttime	Day & Night
All Residential[1, 2, 7]	50	45	35
Transient Lodging[3]	55	--	40
Hospitals & Nursing Homes[4]	50	45	35
Theaters & Auditoriums	--	--	35
Churches, Meeting Halls, Schools, Libraries, etc.	55	--	40
Office Buildings[5, 6]	55	--	45
Commercial Buildings[5, 6]	55	--	45
Playgrounds, Parks, etc.[6]	65	--	--
Light Industry[5]	65	65	50

SOURCE: Corte Madera 2009b (Table 8.2)
NOTE:
1. Outdoor activity areas for single-family residential uses are defined as backyards. For large parcels or residences with no clearly defined outdoor activity area, the standard shall be applicable within a 100-foot radius of the residence.
2. For multi-family residential uses, the exterior noise level standard shall be applied at the common outdoor recreation area, such as at pools, play areas or tennis courts. Where such areas are not provided, the standards shall be applied at individual patios and balconies of the development.
3. Outdoor activity areas of transient lodging facilities include swimming pool and picnic areas, and are not commonly used during nighttime hours.
4. Hospitals are often noise-generating uses. The exterior noise level standards for hospitals are applicable only at clearly identified areas designated for outdoor relaxation by either hospital staff or patients.
5. Only the exterior spaces of these uses designated for employee or customer relaxation have any degree of sensitivity to noise.
6. The outdoor activity areas of office, commercial and park uses are not typically utilized during nighttime hours.
7. It may not be possible to achieve compliance with this standard at residential uses located immediately adjacent to loading dock areas of commercial uses while trucks are unloading. The daytime and nighttime noise level standards applicable to loading docks shall be 55 and 50 dB L_{eq}, respectively.

Where an acoustical analysis is required by the Town, it shall be prepared in accordance with the following provisions:

- Applicant has the financial responsibility (with the study to be administered by the Town).
- Must be prepared by qualified persons experienced in the fields of environmental noise assessment and architectural acoustics.
- Include representative noise-level measurements with sufficient sampling periods and locations to adequately describe local conditions.
- Estimate existing and projected (cumulative) noise levels in terms of Town noise standards.
- Recommend appropriate project-level noise mitigation measures. Where the noise source in question consists of intermittent single events, the report must address the effects of maximum noise levels in sleeping rooms evaluating possible sleep disturbance.
- Estimate interior and exterior noise exposure after the prescribed mitigations are implemented.
- Describe the post-project assessment program which could be used to evaluate the effectiveness of the proposed mitigations.

Policy PSH-5.4. The responsibility for compliance with Town noise standards rests with new development, rather than forcing noise mitigation measures upon existing uses.

Implementation Program PSH – 5.4.a: Implementing Noise Standards. New development shall comply with noise standards in Policies PSH-5.1 and 5.2.

Policy PSH-5.7. Reduce noise impacts from construction activities.

Implementation Program PSH – 5.7.b: Muffler Requirements. All internal combustion engines used in conjunction with construction shall be muffled according to the equipment manufacturer's requirements.

Town Planning and Public Works staff shall ensure construction noise reduction measures are established ~~met~~ prior to issuance of all building permits.

Policy PSH-6.1. Reduce noise impacts to sensitive receptors.

Implementation Program PSH-6.1.a: Perform Noise Analyses. Require site-specific noise analyses where noise sensitive land uses are proposed in proximity to sensitive noise sources (such as residences, schools, nursing homes, hospitals and day care operations), or where similar sources are proposed to be located near noise-sensitive land uses. Noise mitigation shall be included where results of the study warrant such actions.

Public Services

General Plan Policies and Programs

Policy LU-6.2.. Provide high-quality fire protection and paramedic services for residents and businesses in the community.

Policy LU-6.3. Provide high-quality law enforcement services for residents and businesses in the community.

Policy LU-6.4. Provide high-quality primary and secondary educational facilities to accommodate projected student enrollments.

Policy LU-6.5. Reuse of former public-school sites and similar public facilities shall ensure consistency with established neighborhood character.

Policy PSH-1.1. Require fire safe construction practices, such as fire preventative site design, landscaping and building materials, and installation of sprinklers on new development and redevelopment projects.

Policy PSH-1.2. Encourage landscaping maintenance programs to reduce potential fire hazards in the hills, wildland areas and urban interface.

Policy PSH-2.6. Utilize mutual aid agreements that provide public safety personnel in times of emergency.

Policy PR-1.1. Emphasize maintenance and upgrading of existing community parks and facilities.

Policy PR-1.2. Remodel or replace the Town Recreation Center as a multi-purpose community center.

Policy PR-1.3. Pursue opportunities for new parks and recreational facilities.

Policy PR-1.4. Develop and maintain a Town ratio of five acres of park land and one acre of open space for every 1,000 Corte Madera residents.

Policy PR-1.5. Consider acquisition of lands by fee title or lease for expansion of the Town's parks and recreation facilities.

Policy PR-1.6. Continue to coordinate with local, regional and state agencies to ensure the proper protection and enhancement of the Town's park and recreational resources.

Policy PR-1.7. Develop and implement Parks and Recreation Program and Facilities Master Plans.

Policy PR-2.1. Expand the range of recreation programs available to Town residents by providing constructive and creative leisure opportunities.

Policy PR-2.2. Explore opportunities for joint use of existing recreational facilities and programs available through surrounding jurisdictions.

Policy PR-2.3. Seek expanded opportunities for Corte Madera residents to utilize the Redwood High School aquatics center.

Policy PR-2.4. Pursue opportunities for Corte Madera residents to use private recreational facilities through joint-use agreements.

Policy PR-3.1. Preserve the aesthetics, accessibility, and environmental qualities of existing trails and paths within Corte Madera.

Policy PR-3.2. Identify linkages, corridors and other connectors to provide a functional network of parks, open space areas, and bicycle paths through the Town.

Policy PR-4.1. Encourage the provision of access to open space areas in the design of adjacent development projects.

Policy RCS-6.1. Protect natural values of open space and habitat areas while promoting recreational and related uses that are compatible with resource protection.

Policy RCS-5.1. Minimize waste through reducing, reusing, and recycling. Encourage reduced consumption of non-renewable resources by expanding choices for using and reusing materials, energy, and water in an efficient manner.

Proposed Safety Element Update Policies

Policy PSH-1.7. Ensure that public safety facilities, apparatus, and equipment are designed and constructed adequately to efficiently operate paramedic, fire, and police services in times of disaster.

Policy PSH-3.1. Require fire safe construction practices, such as fire preventive site design, landscaping and building materials, and installation of sprinklers on new development and redevelopment projects.

Implementation Program PSH-3.1.a: Non-Combustible Construction. Continue to implement requirements for non-combustible roofs and exterior siding.

Implementation Program PSH-3.1.b: Development Review. Through the project review process, continue to ensure that landscaping, lighting, building siting and design, adequate water pressure and peak load storage capacity, and building construction materials reduce the opportunity for fire hazards.

Implementation Program PSH-3.1.c: Firefighting Access. Continue to require access for emergency vehicles and firefighting equipment on all new development and redevelopment projects. The Town shall also identify the feasibility of constructing additional emergency access improvements, such as:

- Additional vehicle pullouts at key hillside locations.
- Limiting or restricting on-street parking at key hillside locations.
- Potential for construction of new or improved emergency access routes.

Implementation Program PSH-3.2.b: Construction Materials. Continue to require use of construction materials that decrease fire hazards in new developments in hillside areas, including mandatory use of spark arresters on chimneys.

Implementation Program PSH-3.2.c: Landscaping Requirements. Require the use of fire-safe planting materials in landscape plans for new development, including the use of non-prolific species.

Policy PSH-3.3. Reduce fire hazard risks in existing developments by ensuring that private property is maintained to minimize vulnerability.

Implementation Program PSH – 3.3.b: Smoke Detector Requirements. Continue to promote smoke detector installation in existing structures. Require the installation of smoke detectors as a condition for granting a permit on any new development or redevelopment projects.

Policy PSH-3.6. Utilize mutual aid agreements that provide public safety personnel in times of emergency.

Utilities

General Plan Policies and Programs

Water Supply

Policy LU-6.11. Ensure adequate provision of water supply and treatment to Town residents and businesses.

Policy LU-6.12. Encourage conservation of water resources throughout the Town.

Policy RCS-5.1. Minimize waste through reducing, reusing, and recycling. Encourage reduced consumption of non-renewable resources by expanding choices for using and reusing materials, energy, and water in an efficient manner.

Wastewater

Policy LU-6.14. Ensure adequate provision of wastewater conveyance and treatment to Town residents and businesses.

Implementation Program LU-6.14.a: Wastewater Conveyance. In consultation with the Central Marin Sanitation Agency, review plans for new development or redevelopment of existing sites to ensure necessary upgrades are provided to the Town's wastewater conveyance and treatment system.

Solid Waste

Policy RCS-4.1. Encourage the expansion of vigorous recycling efforts so that all residents and businesses in Corte Madera recycle.

Policy RCS-4.2. Ensure that solid waste disposal and recycling services are adequate to meet the needs of current and future residents.

Policy RCS-5.1. Minimize waste through reducing, reusing, and recycling. Encourage reduced consumption of non-renewable resources by expanding choices for using and reusing materials, energy, and water in an efficient manner.

Electric Power, Natural Gas, and Telecommunications Services

Policy RCS-2.1. Ensure that basic energy services are available to all Town residents.

Policy RCS-2.2. Increase energy conservation and efficiency within Corte Madera.

Policy RCS-2.3. Develop programs to increase energy conservation within Corte Madera residences.

Policy RCS-2.4. Support the development and utilization renewable energy.

Policy RCS-2.6. Reduce energy consumption in buildings by balancing energy efficient design with good planning principles.

Policy RCS-2.7. Expand public participation in energy conservation measures.

Policy CD-7.2. Whenever and wherever possible, convert overhead utility lines to underground and require underground utilities in areas of new development.

Policy CD-7.3. Ensure that public utility facilities, including electric power substations, switching and control facilities, are screened, landscaped and/or otherwise obscured and integrated into the surrounding environment.

Tribal Cultural Resources

General Plan Policies and Programs

Policy RCS-11.2. Protect historic sites and archaeological resources for their aesthetic, scientific, educational, and cultural values.

Implementation Program RCS-11.2a: Development Project Review. Cultural resource studies (i.e., archaeological and historical investigations) shall be required for all applicable discretionary projects, in accordance with CEQA regulations, for areas not previously surveyed and/or that are sensitive for

cultural resources. The studies should identify cultural resources, (prehistoric sites, historic sites, and historic buildings/ structures) in the project area, determine their eligibility for inclusion in the California Register of Historical Resources, and provide feasible and appropriate measures for the protection of any historical resources or unique archaeological resources to maximum extent feasible. Cultural resources studies should be completed b a professional archaeologist or architectural historian that meets the Secretary of the Interior's Professional Qualifications standards in archaeology.

Implementation Program RCS-11.2.b: Native American Cultural Resources. When initial review of proposed development projects indicates that known or potential undiscovered Native American cultural resources exist at the project site, consult with California Native American Tribes that have been identified by the Native American Heritage Commission per Government Code 65352.3 Consider recommendations from the Tribes regarding the location of cultural places, appropriate conservation measures, and the qualifications of archaeologists to conduct further investigations when additional research is required.

Where historic and cultural such resources are identified, measures shall be identified to avoid impact to the resource, where feasible. Where avoidance is not practical, mitigation shall identify how the impact may be minimized.

Implementation Program RCS-11.2.c.: Native American human Remains. When an initial study identifies the existence or likelihood or Native American remains within a project, the Town shall consult with the appropriate Native Americans as identified by the Native American Heritage Commission as provided in Public Resources Code 5097.98. The project applicant may develop an agreement with the appropriate Native Americans, as identified by the Native American Heritage Commission, for treating or disposing of, with appropriate dignity, the human remains and any items associated with Native American burials. In the event of the accidental discovery or recognition of human remains in a location other than a dedicated cemetery, procedures described in CEQA Guidelines section 15064.5 (e) shall be followed including, when applicable, assisting the most likely Native American descendent in consultations with the landowner or other responsible person regarding the treatment or disposing of, with appropriate dignity, the human remains and nay associated grave goods as provided in Public resources Code 5097.98

Implementation Program RCS-11.2.f: native American Cultural Awareness. In consultation with the appropriate Native Americans as identified by the Native American Heritage Commission as provided in Public Resources Code 5097.98, prepare a brochure explaining property owners rights and responsibilities regarding Native American historic and cultural resources that may be discovered in the development process. Distribute the brochure to development applicants.

Transportation

General Plan Policies and Programs

Policy CIR-1.1. Provide safe and convenient linkages between all modes of travel within the planning area, and extending between the Town and adjacent jurisdictions in the region.

Implementation Program CIR-1.1.a: Town Circulation

In developing circulation projects, consider all modes of travel, including access to transit stations and stops, and bicycle and pedestrian path connections between work, home, school, and commercial services.

Implementation Program CIR-1.1.c: New Development

Incorporate convenient bicycle and pedestrian access and facilities in new development projects that link to Town and regional bicycle and pedestrian path connections.

Policy CIR-1.2. Ensure that current Levels of Service at intersections are maintained when considering new development within Corte Madera.

Implementation Program CIR-1.2.a: Level of Service Standards

The town shall strive to maintain Level of Service (LOS) D operation during the weekday morning and evening peak periods at intersections of an arterial street with either another arterial or a collector street and intersections of two collector streets. For projected future conditions the LOS is to be calculated using the average traffic demand over the highest 60-minute period. For all types of controls the Level of Service standard is to be applied to the average operation of the intersection, and not that for any single movement or approach. Exceptions to meeting this standard include:

1) Stop-controlled minor street approaches to either collector or arterial streets, where safety shall be the primary consideration;
2) Locations where the Town Engineer deems improvement to be technically, financially, or environmentally infeasible;
3) Conditions where the improvement would result in significant adverse impacts to other travel modes, including walking, bicycling, or transit; or
4) Locations where attainment would ensure the loss of an area's unique character.

Policy CIR-1.5. Emphasize traffic safety and reduce travel-related impacts to residential neighborhoods and the local street system.

Implementation Program CIR-1.5.a: Circulation Studies

Developers shall fund and the Town will administer traffic impact studies to address on- and off-site traffic and circulation impacts, including assessments of project level of service intersection impacts.

Policy CIR-1.6. Assure the adequacy and availability of the circulation system for all persons by implementing the Americans with Disabilities Act.

Policy CIR-1.7. Apply appropriate functional classifications and modern design standards in the construction of new roadways, and reconstruction of existing roadways in the Town.

Policy CIR-1.8. Support investment in local and regional transit and transportation plans that provide alternatives to automobile-intensive transportation programs through CIP actions.

Implementation Program CIR-1.8.b: Reduce Vehicle Miles Traveled (VMT). Facilitate employment opportunities that minimize the need for automobile trips, such as live/work, telecommuting, satellite work centers, home occupations and mixed use development strategies.

Policy CIR-3.1. Increase the Town's network of bicycle and pedestrian paths, especially Class I facilities, as viable alternatives to vehicular transportation, especially for access to neighborhoods, commercial centers, schools, parks and other key activity centers.

Implementation Program CIR-3.1.f: Bicycle Circulation Review. Require bicycle circulation to be considered in the review of development projects and include in the Design Guidelines.

Policy CIR-4.1. Expand the number of public transit locations within Corte Madera.

Implementation Program CIR-4.1.a: Additional Transit Locations. Identify appropriate locations for additional transit routes and bus shelters in Corte Madera. Potential shelter sites for consideration include the intersection of Koch Road and Paradise Drive; along Paradise Drive near the Aegis assisted living center; and in the vicinity of school uses on the east side of Town, including the Marin Montessori School, the Marin Country Day School and Granada School. Bus shelters should utilize advanced global positioning technologies to identify arrival of next scheduled bus.

Policy CIR-6.1. Require parking to meet the needs of existing and planned land uses.

Implementation Program CIR-6.1.a: Off-Street Parking. Through the design review process and appropriate update to the Zoning Ordinance, require all new development to provide sufficient off-street parking. The Zoning Ordinance parking standards shall recognize reduced on-site parking requirements when developments include mixed-uses with offset peak hour parking, and provisions for alternative transportation modes.

Implementation Program CIR-6.1.b: Preferential Employee Parking. The Zoning Ordinance shall require that all new office, commercial and light industrial development that includes 50 or more on-site employees provide preferential employee parking for carpools and vanpools.

Proposed Housing Element Update Policies

Policy H-1.3. Eligibility Priorities for Deed Restricted Housing. In order to meet a portion of the Town's local housing need, consistent with ABAG's Housing Need Allocation, and as a traffic, economic development, and community safety mitigation measure, the Town will provide for targeted marketing and advance notice of deed restricted rental and ownership units in new housing developments, to the extent consistent with applicable fair housing laws, for people living or working in the Town of Corte Madera. The Town will also require developers to affirmatively market deed restricted units to communities of color and protected classes, including those outside of Marin County.

Policy H-3.7. Neighborhood Connections. Ensure that Town amenities and public services, including local and regional transit options, are more easily accessible by all residents and employees working in Town, including existing and future residents with lower incomes, and those who may not have access to a vehicle. Work with Caltrans and other agencies to improve the multi-modal connections between the east and west sides of the Corte Madera community and to public transit facilities. Improved connections should offer safe, accessible, and comfortable bicycle and pedestrian access across Highway 101.

Proposed Safety Element Update Policies

Implementation Program PSH – 2.4.b: Streamline Traffic Flow for Evacuation. Improve transportation infrastructure to optimize traffic flow in case of an emergency evacuation, including updating traffic control centers, solar powered signs, and optimizing merge conditions and signals that can operate reliably during Public Safety Power Shut-off (PSPS) and emergency events.

Wildfire

General Plan Policies and Programs

Policy PSH-1.1 Require fire safe construction practices, such as fire preventive site design, landscaping and building materials, and installation of sprinklers on new development and redevelopment projects.

Implementation Program PSH-1.1.a: Non-Combustible Construction Continue to implement requirements for non-combustible roofs, and expand the Fire Code to include non-combustible exterior siding and/or outside sprinkler systems.

Implementation Program PSH-1.1.b: Development Review. Through the project review process, continue to ensure that landscaping, lighting, building siting and design, adequate water pressure and peak load storage capacity, and building construction materials reduce the opportunity for fire hazards.

Implementation Program PSH-1.1.c: Firefighting Access. Continue to require access for emergency vehicles and firefighting equipment on all new development and redevelopment projects. The Town shall also identify the feasibility of constructing additional emergency access improvements, such as:

- Additional vehicle pullouts at key hillside locations.
- Limiting or restricting on-street parking at key hillside locations.
- Potential for construction of new or improved emergency access routes.

Policy PSH-1.2. Encourage landscaping maintenance programs to reduce potential fire hazards in the hills, wildland areas and urban interface.

Implementation Program PSH-1.2.a: Vegetation Management Continue to aggressively enforce vegetation management as required by the Fire Code. The Town shall also identify the feasibility of other aggressive vegetation management options, including:

- Increased landscaping safety through elimination of use of fire hazardous plants.
- Use of non-prolific landscaping species.
- Improved fire flows and water supplies to hillside areas.
- Fuel reduction programs, including use of the Wildland Interface Code.

Implementation Program PSH-1.2.b: Construction Materials Continue to require use of construction materials that decrease fire hazards in new developments in hillside areas, including mandatory use of spark arresters on chimneys. Include provisions in the Design Guidelines.

Implementation Program PSH-1.2.c: Landscaping Requirements. Require the use of fire-safe planting materials in landscape plans for new development, including the use of non-prolific species. Include provisions in the Design Guidelines.

Implementation Program PSH-1.2.d: Use Website for Fire Awareness. Provide information on methods for reducing fire hazards through the Town's website and newsletter, including clearing of plant debris and using fire-safe landscaping.

Policy PSH-1.3. Reduce fire hazard risks in existing developments by ensuring that private property is maintained to minimize vulnerability.

Implementation Program PSH-1.3.c: Fire Extinguisher Installation. Continue to promote fire extinguisher installation in existing structures through distribution of informational brochures and notices to Town residents and businesses.

Policy PSH-2.1. Establish and maintain an effective emergency response program that anticipates the potential for disasters.

Implementation Program PSH-2.1.a: Implement Town Emergency Plan. Continue to implement consolidated emergency response programs and plans for fire, flooding, seismic and other potential hazard events contained in the Town Emergency Response Plan. The Plan shall be shared among Town departments, emergency response providers and support groups.

Implementation Program PSH-2.1.c: Emergency Response Plan. Regularly update and publicize the Town's Emergency Response Plan to include evacuation routes, emergency connectors, and emergency shelters in conformance with state guidelines through the Library, Town website, local radio and other community outreach sources.

Implementation Program PSH-2.1.e: Natural Hazards Awareness. Promote awareness and caution among residents regarding possible natural hazards, including landslides, earthquakes, flooding, and fire hazards through a publicized disaster plan.

Policy PSH-2.4. Maintain accurate maps of fire hazards.

Implementation Program PSH-2.4.a: Update Fire Hazard Maps. Periodically update maps identifying fire hazard areas in Corte Madera.

Policy PSH-2.5. Continue to coordinate neighborhood disaster response preparedness planning efforts through fire programs and coordination with emergency response agencies.

The following policy provisions are provided in the 2009 general plan to address issues related to the emergency response plan.

Policy PSH-2.1. Establish and maintain an effective emergency response program that anticipates the potential for disasters.

Implementation Program PSH-2.1.a: Implement Town Emergency Plan. Continue to implement consolidated emergency response programs and plans for fire, flooding, seismic and other potential hazard events contained in the Town Emergency Response Plan. The Plan shall be shared among Town departments, emergency response providers and support groups.

Implementation Program PSH-2.1.b: Community-Based Disaster Plan. Continue to involve community-based disaster response planning that involves local businesses and neighborhoods.

Implementation Program PSH-2.1.c: Emergency Response Plan. Regularly update and publicize the Town's Emergency Response Plan to include evacuation routes, emergency connectors, and emergency shelters in conformance with state guidelines through the Library, Town website, local radio and other community outreach sources.

Implementation Program PSH-2.1.d: Emergency Drills. Hold regular (at least one per year) emergency preparedness drills, and include the services of the Community Emergency Response Training (CERT), Marin County Office of Emergency Services (OES) and related emergency services agencies and groups.

Implementation Program PSH-2.1.e: Natural Hazards Awareness. Promote awareness and caution among residents regarding possible natural hazards, including landslides, earthquakes, flooding, and fire hazards through a publicized disaster plan.

Policy PSH-2.2 Provide public safety employee training to ensure team members' skills remain current.

Implementation Program PSH-2.2.a: Training for Town Employees. Continue to train Town and public safety employees in emergency responsiveness. Include the Marin County Office of Emergency Services (OES) in training exercises.

Policy PSH-2.3. Maintain active involvement with Marin Emergency Radio Authority MERA) and pursue installation and activation of the MERA radio system.

Implementation Program PSH-2.3.a: MERA Radio System. Work with MERA to install and activate the MERA radio system in Corte Madera, consistent with Town emergency response plan needs.

Policy PSH-2.5. Continue to coordinate neighborhood disaster response preparedness planning efforts through fire programs and coordination with emergency response agencies.

Implementation Program PSH-2.5.a: Neighborhood Safety Training. Organize neighborhood teams of CERT graduates and continue to support neighborhood training on how to maintain public safety.

Implementation Program PSH-2.5.b: Special Needs Services. Work with the social service community to ensure the safety of special needs populations during times of disaster.

Policy PSH-2.6. Utilize mutual aid agreements that provide public safety personnel in times of emergency.

Implementation Program PSH-2.6.a: Mutual Aid Agreements. Continue to support mutual aid agreements with local agencies and jurisdictions that provide public safety personnel in times of emergency.

Policy PSH-2.7. Explore ways to transport public safety employees from outlying areas when damaged infrastructure prevents them from driving to Corte Madera in emergency situations.

Implementation Program PSH-2.7.a: Ingress/Egress Plans. Include a public safety "ingress" component to the Town's emergency preparedness plans.

Policy PSH-2.8. Ensure that public safety facilities, apparatus and equipment are designed and constructed adequately to efficiently operate paramedic, fire, and police services in times of disaster.

Implementation Program PSH-2.8.a: Public Safety Audits. Conduct performance audits of public safety facilities and identify any needed/corrective measures.

Policy PSH-2.9 Establish or identify facilities and provide equipment that may be used by residents during the first days immediately after a major disaster.

Implementation Program PSH-2.9.a: **Identify Emergency Supplies.** Identify needed emergency supplies to assist Town residents in the first days following an emergency or major disaster.

Implementation Program PSH-2.9.b: CIP Funding for Emergencies. Use Capital Improvement Program or similar funding to establish a readily accessible supply of funds for use by the Town in times of an emergency or major disaster.

Policy PSH-3.1. Utilize hillside paths as alternative escape routes in the event of an emergency.

Implementation Program PSH-3.1.a: Hillside Paths. Continue to utilize Capital Improvement Program funding to maintain hillside paths. Where funding allows, consider Town improvement and maintenance of additional pathways, and include in the Town Trails Plan. Regularly provide escape route information to residents in hazardous hillside areas through the Town newsletter and website.

Policy PSH-3.2. Encourage hillside residents to learn the trails and footpaths in their neighborhoods for use as alternative escape routes.

Implementation Program PSH-3.2.a: Ingress and Egress Routes. Work with the Christmas Tree Hilldweller's Association and similar groups to identify emergency ingress and egress routes, including opportunities for construction of periodic vehicle pullouts.

Policy PSH-3.3. Pursue the development of emergency route connectors to service roads in the hillside areas in a manner that respects the established semi-rural neighborhood character.

Implementation Program PSH-3.3.a: Emergency Vehicle Access. Increase accessibility to emergency vehicles in hillside areas and improve evacuation routes through construction of vehicle pullouts and through exploration of road widening or construction in selected wildland fire hazard areas.

Policy PSH-3.4. Maintain road conditions for improved emergency access.

Implementation Program PSH-3.4.a: CIP Funding for Vehicle Access Use. Capital Improvement Program funding to maintain roadways and to improve vehicle emergency access.

Proposed Safety Element Update Policies

Policy PSH – 3.1. Require fire safe construction practices, such as fire preventive site design, landscaping and building materials, and installation of sprinklers on new development and redevelopment projects**.**

Policy PSH – 3.2. Encourage landscaping maintenance programs to reduce potential fire hazards in the hills, wildland areas and urban interface.

Implementation Program PSH – 3.2.e: WUI Code Update. Update the Town's WUI codes and regulations to include the "0-5' non-combustible zone" or "Zone Zero" rule.

Implementation Program PSH – 3.2.f: Grazing Program: Expand the goat and sheep grazing program as a fuel reduction strategy.

Policy PSH – 3.3. Reduce fire hazard risks in existing developments by ensuring that private property is maintained to minimize vulnerability.

Policy PSH- 3.4. Adopt and regularly update Standards of Coverage for the Town.