THE TOWN OF
CORTE MADERA
MARIN COUNTY CALIFORNIA

Residence Inn – Corte Madera

Initial Study / Proposed MND

Town of Corte Madera

17 November 2021



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1. Project Information

Project Title	Residence Inn - Corte Madera Project
Lead Agency Name & Address	Town of Corte Madera 300 Tamalpais Drive Corte Madera, California 94925
Contact Person & Phone Number	Adam Wolff Director of Planning and Building (415) 927-5064 awolff@tcmmail
Project Location	APN 024-031-15 56 Madera Boulevard, Corte Madera, CA (see **Figure 1**)
General Plan Land Use Designation	Mixed-Use Commercial
Zoning	Tamal Visit Mixed Use Corridor (MX-1); Baylands Risk Zone Overlay

1.1 CEQA Requirements

This project is subject to the requirements of the California Environmental Quality Act (CEQA). The lead agency is the Town of Corte Madera (Town).

The purpose of this Initial Study is to provide a preliminary environmental analysis to be used in determining what form of environmental review is required under CEQA. This Initial Study is intended to satisfy the requirements of CEQA, (Public Resources Code, Div 13, Sec 21000-21177), and the State CEQA Guidelines (California Code of Regulations, Title 14, Sec 15000-15387). Through this process, CEQA encourages lead agencies and applicants to modify their projects to avoid significant adverse impacts.

As part of this review, the *Hotel Floor Area Bonus Ordinance Initial Study/Mitigated Negative Declaration* (Town of Corte Madera 2020) adopted by the Town in June 2020, was reviewed for potential tiering under CEQA Guidelines 15152. A Lead Agency may use the analysis of general matters contained in a broader environmental document with later negative declarations on narrower projects, incorporating by reference the general discussions from the broader document and concentrating the later negative declaration solely on the issues specific to the later project. Agencies are encouraged to tier the environmental analysis which they prepare for general plans and zoning changes.

This review found that some impacts of the Residence Inn – Corte Madera Project (Project) were adequately analyzed in the adopted *Hotel Floor Area Bonus Ordinance Mitigated Negative Declaration* (HFABO IS/MND), while others required site- or project-specific analysis. Where applicable, mitigation measures from the HFABO IS/MND have been applied to the Project. A summary is provided at the beginning of each environmental topic section, indicating which impacts were determined to have been analyzed adequately under the HFABO IS/MND and whether mitigation measures have been brought forward in this environmental review as applicable to the

Project. Mitigation measures brought forward include AQ-1.4b, BIO-1a, and BIO-1b. Also noted in the introduction summaries is whether new project-specific mitigation measures have been included.

The *Hotel Floor Area Bonus Ordinance Initial Study/Mitigated Negative Declaration* is incorporated by reference and can be viewed at: https://www.townofcortemadera.org/DocumentCenter/View/4996/IS-MND_Hotel-FAR-Bonus-Ordinance_PublicReviewDraft.

1.2 Project Background

The Residence Inn – Corte Madera Project (Project) is located along Madera Boulevard, within the Tamal Vista Mixed Use Corridor (MX-1) on a 5.53-acre parcel. The site is currently occupied by a 110-room hotel (Best Western Corte Madera Inn), a stand-alone restaurant building, and ancillary infrastructure (Project Site).

In 2014, Reneson Hotels (Applicant) submitted an application for redevelopment of the Project Site with a 187-unit hotel that would have increased the building square footage to 130,000 square feet. In addition, the 2014 project proposed to fill a portion of the exiting pond. The 2014 project was evaluated pursuant to CEQA including consideration of an Environmental Impact Report (EIR) which was circulated but never certified. In 2017 the Applicant withdrew the application.

In June 2020 the Town adopted the Hotel FAR Ordinance (Ordinance No. 995), which allows hotel projects located within certain designated areas, and on a parcel greater than or equal to one acre, to achieve a greater density. The Ordinance No. 995 increased the FAR from 0.34 to a maximum of 0.70 FAR provided that proposed hotel projects are located within one of the four identified hotel bonus areas and meet the enhanced development standards in four categories:

– Site Planning and Design,
– Environmental Sustainability,
– Community Integration, and
– Public Realm.

Additionally, Ordinance No. 995 increased the allowable height for hotels in the MX-1 District from 40 feet to 47 feet. CEQA documentation for Ordinance No. 995 comprised an Initial Study (*Hotel Floor Area Bonus Ordinance Initial Study*, Town of Corte Madera 2020), with a Mitigated Negative Declaration adopted by the Town in June 2020. In analyzing potential environmental impacts of Ordinance No. 995, the Initial Study assumed at least one qualifying project, with a maximum 0.70 FAR, would be built within each of the four bonus areas. Specific to Hotel Bonus Area Three, 152,460 square feet of building area and 188 hotel rooms, was assumed for the analysis of environmental impacts.

The 5.53-acre Project Site is located within the 18-acre boundary of Hotel Bonus Area Three. The proposed Project would be the first hotel to be considered under Ordinance No. 995, and would have a 0.57 FAR, consisting of 118,000 square feet and 149 units, with a net increase of 39 hotel rooms and 38,000 square feet over existing conditions.

1.3 Existing Setting and Surrounding Land Uses

The Project Site contains a two-story, 25-foot high, 110-room Best Western hotel, a stand-alone restaurant building, a 0.81-acre man-made pond, pool area, landscaping improvements, and surface

parking for 188 vehicles. The property was originally developed in 1956 as a hotel, with subsequent construction in the late 1970's and early 1980's adding newer structures to the site. In total, the Project Site contains four separate hotel buildings, and several smaller structures totaling approximately 80,000 square feet of floor area. The pond is located in the northeast corner of the site and is connected to Shorebird Marsh via a gated culvert beneath Highway 101. The pond receives water from a 30-inch gravity-fed steel pipe (not constrained by gates) that connects the pond to Lagoon #1 to the west. The slide gate is located near the north end of the pond and can be opened to allow water from the pond (and the connected Lagoon #1) to flow to a Caltrans drainage ditch that is connected to Shorebird Marsh, east of Highway 101. Operationally, the slide gate is not regularly opened by the Town due to the potential for tidal backwater from shorebird Marsh to increase the water surfaces levels in the pond and Lagoon #1, which could lead to potential flooding of adjacent streets and properties.

The Project Site is surrounded by a mix of retail, commercial, and residential uses. The existing hotel is accessed from two separate entrances off Madera Boulevard, which is a wide, relatively short (approximately 500 feet) four-lane street with a center turn lane that serves as an exit and entrance to and from southbound Highway 101. Madera Boulevard also provides access to an office building at the northeast corner of Madera Boulevard and Tamal Vista Boulevard, a Chevron gas station and mini-mart near the entrance to Highway 101, and serves as a major entrance to the Corte Madera Town Center. North of the Project Site is a two-story, 32-foot high, office building accessed from Tamal Vista Boulevard. To the east, the Project Site is bordered by Highway 101. To the south/southwest is the previously mentioned office building and Madera Boulevard, with the Chevron gas station and Town Center beyond Madera Boulevard. The Madera Gardens subdivision, a single-family residential neighborhood, is located directly across Tamal Vista Boulevard west of the Project Site.

1.4 Project Description

The Project includes demolition and removal of most of the existing on-site development, construction of a new 149-room hotel including ancillary facilities, and off-site pedestrian improvements (see **Figure 2 Site Plan** and **Appendix A Profile Views and Design Plans**). The existing pond would remain with minor enhancements proposed. Each of these components are discussed in detail below.

Demolition of Existing Hotel

All of the existing buildings associated with the hotel and restaurant would be demolished and removed from the site. In addition, the asphalt parking areas would be removed. The pond would remain intact.

Construction of New Hotel

The new hotel would consist of a single "U" shaped building comprising 149 units, a gym, and meeting space within approximately 118,000 square feet. The building would be a mix of three 3-story and two 4-story segments. The three 3-story segments would be located generally parallel to Madera Boulevard along the southern and southwestern extents of the building, with the third small segment at the far north of the building parallel with Tamal Vista Boulevard. The two, 4-story segments would be located closest to Highway 101 with the first segment parallel to Highway 101 and the second extending from the northern portion of the first segment at a 45-degree angle oriented

in an east-west direction. At its highest point, the building would be 47 feet tall. In the center of the "U" would be a pool and outdoor patio area.

CALGreen Building Standards

The Project would comply with the Tier 1 requirements of the California Green building Standards Code (CALGreen Code). This means that in addition to the mandatory/base building requirements of the CALGreen Code, the Project would implement further standards to exceed the base by 15 percent. Additional green building components would include installation of a solar system and a laundry water reuse system.

Solar System

Based on the preliminary design, approximately 380 solar panels would be installed on available flat roof areas. Batteries would be installed and used to store and regulate the use of the generated power. The solar panels are expected to generate approximately 245,471 kWh annually which represents approximately 20 to 30 percent of the building demand for electricity. In addition, the batteries would serve as emergency back-up power for critical infrastructure including lighting, refrigeration, computer, and building evacuation systems.

Laundry Water Reuse System

The Project would install an AquaRecycle Laundry Wash Water Recycling System. This system would recover water at a rate of 80 percent, saving approximately 625,000 gallons of potable water each year.

Parking and Circulation

The Project would provide 169 parking spaces, of which 6 would be ADA accessible and 14 would be future EV spaces. Of the 30 bicycle parking spaces proposed, 24 would be short term and 6 would be long term.

The site entrance/exit furthest east along Madera Boulevard would be removed, with the west entrance providing a single entrance and exit for the Project Site. The single access point, located further from the Highway 101 south off-ramp, would provide greater line-of-site and a safer vehicular turning area.

Pedestrian improvements would be made along the Tamal Vista Boulevard frontage where the existing sidewalk would be realigned and widened to current standards. Although the frontage would include a six-foot high horizontal composite wood fence, a gated pedestrian access point would be provided to link the exterior sidewalk to the internal pathway and improve connectivity from the community to the Project Site and vice versa. The internal pedestrian pathways would be located throughout the Project Site interconnecting the parking areas, building, pond area, and providing off-site connections. Parallel with Highway 101 would be a decomposed granite walkway meandering along the eastern edge of the pond and Project Site. The portion of the walkway along the pond would include several pop-outs for benches, interpretive signs, and trash receptacles. Public access to this pathway would be provided at the north connection with the neighboring office building parking lot.

To improve pedestrian wayfinding and safety at the driveway entrance along Madera Boulevard, modifications to the sidewalk and landscaping would be used to provide a soft barrier and "funnel"

pedestrians west on Madera Boulevard, to then cross at the existing intersection. These improvements include relocating the Madera Boulevard curb to the south, eliminating the parking lane, creating a landscape buffer (including a potential physical barrier), and adding pedestrian wayfinding signage directing pedestrians to the marked crosswalk at the Madera Boulevard/Tamal Vista Boulevard intersection.

Landscaping

Landscape improvements would occur throughout the property and along both frontages. Tamal Vista Boulevard would include sidewalk and landscaping improvements and widening that would increase the existing landscape buffer to 20 feet. A landscape buffer of 10 feet would occur along the Madera Boulevard frontage and northern property line, while a 15-foot landscape buffer would occur along the Highway 101 frontage.

Of the approximately 125 existing trees on site, 53 would be removed as part of the Project. Of those being removed 20 are subject to the Town of Corte Madera Tree Ordinance, Chapter 15.50 of the Municipal Code, and would require approval by the Planning Director prior to removal. An additional 15 trees along the northern property line of the site may need to be removed during construction (none of which are subject to the Tree Ordinance). As currently proposed, these trees would be saved but during construction it may be that the improvements would encroach too far into the root-system, creating a potentially hazardous condition if the trees were allowed to remain. As part of the landscape improvements, approximately 80 15-gallon and 28 24-inch box (total of 108) trees would be planted.

For shrubs and plants, the landscape plan relies on drought-tolerant species that can be accommodated by low-volume drip or bubbler irrigation.

An existing 10-foot-high earthen berm located between the pond and Highway 101 would be extended south approximately 30 feet. The existing portion of the berm would be re-landscaped with additional screening plants and the new portion would be landscaped with new trees and plantings.

Lighting

Lighting would include approximately 26 light poles located throughout the parking lot. The lighting would be cutoff, directing light downward, in compliance with Title 24 Energy Code requirements. In addition, safety lighting would be installed on the facade of the building and along the pedestrian pathways.

Stormwater Facilities

Stormwater runoff from the new and replaced impervious surfaces would be subject to the waste discharge requirements contained in Provision E.12 of the Phase II Stormwater Permit (Order No. 2013-0001) and the Bay Area Storm Water Management Agencies Post Construction Manual. The Town, as a condition of its Phase II Stormwater Permit, requires permanent stormwater controls for new development that creates and/or replaces approximately 5,000 square feet or more of impervious surface. The Project is considered a “Regulated Project”, and is subject to the site design measures, source controls, and stormwater treatment requirements outlined in the BASMA Post Construction Manual (BASMA 2014). As such, runoff would be directed to bioretention areas before discharging into the existing storm drain system. Numerous bioretention areas are proposed around the perimeter of the parking lot and the hotel building totaling approximately 7,530 square feet. With

implementation of the Project impervious area within the Project Site would increase from approximately 3.02 to 3.07 acres.

Utilities

Existing utilities serving the current hotel would be sufficient to serve the proposed hotel. No off-site improvements would be required. Existing connections for electricity, gas, water, sewer, and cable would be utilized. The Project would underground the existing overhead utilities (including 4 poles) along the approximate 400-foot frontage of Tamal Vista Boulevard, as part of the proposed streetscape improvements.

Signage

The Project would incorporate four main pieces of external signage as follows:

– An existing freestanding sign, approximately 22' tall, at the east edge of the site facing Highway 101, would be retained and refurbished to reflect the Residence Inn brand.
– A new building-mounted sign, located on the facade between the third and fourth floors at the southeast corner of the building.
– A new 'monument' sign, mounted to a stem wall in the drop-off area
– A new plaque, approximately 24" x 18", located adjacent to the pedestrian gate on the new fence facing Tamal Vista Boulevard.

Pond Area Enhancement

The pond is located on the northeastern corner of the Project Site. The pond is approximately eight feet deep with steep sides, very little wetland vegetation, and banks that are dominated by non-native plants. The pond area is approximately 0.81 acre, providing approximately 0.64-acre of open water and wetland edge habitat, and is currently used by a number of bird species. Areas of non-native invasive ground cover, shrubs, and some trees would be removed and replaced with native species in three planting/habitat zones: lower wetland/pond edge planting, upper wetland/pond edge planting, and upland plantings. Limited enhancements are proposed under and adjacent to the five trees on the western side of the pond known to be roosting habitat for black-crowned night herons, to minimize potential disturbance. See **Figure 3 Pond Enhancements** for the three planting/habitat zones and species list.

Construction

As noted above, construction of the Project would involve demolition of the existing buildings and pavement, clearing of the site, and construction of the new hotel and off-site improvements.

Construction Duration and Hours

The Project would be constructed over a 20-month period beginning in summer 2022 and ending in spring 2024. Construction activities would be limited to the hours between 7:00 a.m. and 5:00 p.m. Monday through Friday and 10:00 a.m. and 5:00 p.m. on weekends per Implementation Program PSH-5.7.a of the Noise Section of the Town of Corte Madera General Plan (Corte Madera 2009) and Chapter 9.36 Noise of the Town of Corte Madera Municipal Code. No night-time work is anticipated to occur.

Construction Equipment

A variety of construction equipment would be used to build the Project. This would include, but not necessarily be limited to, excavators, backhoes, front end loaders, scrapers, graders, concrete saws, cranes, jackhammers, winches, chainsaws, forklifts, rollers, asphalt road pavers, compactors, air compressors, generator sets, and pneumatic tools. A variety of trucks including cement mixers, haul trucks, and water trucks would also be required. Site preparation, including demolition, clearing and grading of the Project Site as necessary would require the removal and off-haul of materials. This would include, but not necessarily be limited to, vegetation, building materials, concrete, asphalt, and artificial fill that would be removed and replaced.

Construction materials imported to the site would include, but not necessarily be limited to, concrete, material for bioretention areas, asphalt concrete, utility pipes, building materials, and lighting and landscaping materials. Approximately 79,000 square feet of building material and 1,500 tons of pavement would be hauled away. Trucks would use appropriate haul routes in order to transport material to and from the Project Site. The number of construction-related vehicles traveling to and from the Project Site would vary on a daily basis. For the purposes of this evaluation, it is anticipated that up to 36 haul-truck round trips could occur on a peak day. In addition to haul trucks, it is anticipated that construction crew trips could require up to 30 round trips per day. Therefore, on the busiest of days of construction, up to approximately 64 vehicle round trips could occur.

Construction Staging Areas

Construction staging would occur within the Project Site. No construction workers will be allowed to park on neighboring streets but may utilize adjacent parking facilities if agreed upon with the owner. Access to and from the Project Site would occur via Highway 101 and Madera Boulevard.

General Construction Activities

Construction is anticipated to begin with site preparation, including demolition of existing buildings, and clearing and grading of the Project Site to provide a relatively level surface for the movement of construction equipment.

Prior to demolition of the existing buildings, the buildings would be surveyed for the presence of hazardous materials (e.g. lead and asbestos-containing materials). Hazardous wastes would be required to be separated, stored, and disposed of according to local state, and federal regulations. After hazardous building materials (if any) have been removed, demolition would proceed. Hoses or other watering equipment would be used to control dust.

Site clearing and grubbing would remove select trees, grass, and other vegetation. Temporary protective fencing would be installed to form a continuous barrier around each tree and/or group of trees to be preserved. Vertical construction associated with the hotel would commence after all site preparation has finished.

Construction Recycling

The contractor would be required to develop and implement a waste reduction and recycling plan that would include measures to divert construction waste from landfills by using recycling, reuse, salvage, and other diversion programs. Vegetation removed from the Project Site would be off-hauled for recycling or composting. Materials that could not be reused or composted at local facilities would be disposed of at regional landfills.

Construction Dewatering

If needed, temporary groundwater dewatering would be conducted within excavations to provide a dry work area. Dewatering would generally involve pumping water out of a trench or excavation to Baker tanks (or other similar type of settling tank). Following the settling process, the groundwater would normally be pumped to a bag and cartridge filter system (or similar system) before being discharged to the sanitary sewer system or to a portion of the Project Site sufficient in area to allow for complete infiltration into on-site soils, or for use as dust control.

1.5 Operation and Maintenance

At full occupancy, the Project could support up to 358 guests. However, rooms are rarely at full capacity typically hosting a single traveler at a time. The hotel would be anticipated to create the equivalent of up to 75 full-time employment opportunities. A typical workday would have three shifts with a peak of 20 employees during the AM shift.

Operation of the Project is expected to generate a net increase of 658 daily vehicle trips. Of those, 28 daily trips are anticipated to occur during the a.m. peak commute hour (between 8:00 a.m. and 9:00 a.m.), and 29 daily trips are anticipated to occur during the p.m. peak commute hour (between 4:00 p.m. and 5:00 p.m.). Additionally, the Project would offer complimentary hotel van transportation to and from the airporter, local shopping, and local businesses. This would potentially reduce the number of single-occupancy trips by guests.

Maintenance would be expected to include standard upkeep of such a facility and be similar to existing maintenance activities for the existing hotel and associated infrastructure. This would include upkeep of the landscaping and associated infrastructure such as irrigation, regular building maintenance (e.g., painting, equipment replacement, roof replacement), maintenance of the bioretention facilities, and maintenance of the pond and associated features (walkway, benches, plantings).

1.6 Compliance with Existing Regulations and Standard BMPs

The Project would abide by the following regulations and industry-accepted Best Management Practices to reduce or avoid potential adverse effects that could result from construction or operation of the Project. Mitigation measures are presented in the following analysis sections in **Chapter 3, Environmental Analysis**.

Implementation of Geotechnical Design Recommendations

The Project has been designed to comply with the site-specific recommendations made in the Project's geotechnical report (Miller Pacific Engineering 2013). This would include design to address settlement from new building loads (replacement of fill material or deep foundations), around the pond area, and beneath gravity flow utilities, in accordance with the seismic and foundation design criteria, and design recommendations for site preparation and grading, site drainage, underground utilities, exterior concrete slabs, and asphalt concrete pavements included in the report. The geotechnical recommendations shall be incorporated into the final plans and specifications for the Project and shall be implemented during construction.

Implementation of Air Quality Control Measures during Construction

Consistent with General Plan Implementation Program RCS-10.3.c, the following Bay Area Air Quality Management District (BAAQMD) recommended Basic Construction Measures shall be included in construction contract specifications and required during implementation of the Project:

- All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas and unpaved access roads) shall be watered two times per day;
- All haul trucks transporting soil, sand, or other loose material off-site shall be covered or shall have at least two feet of freeboard;
- All visible mud or dirt tracked-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping shall be prohibited;
- All vehicle speeds on unpaved areas shall be limited to 15 miles per hour;
- All paving shall be completed as soon as possible after trenching work is finished;
- Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations). Clear signage shall be provided for construction workers at all access points;
- All construction equipment shall be maintained and properly tuned and muffled in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation;
- A publicly visible sign shall be posted with the telephone number and person to contact at the Town regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.

Implementation of Stormwater Pollution Prevention Plan (SWPPP)

In compliance with State regulations, the Project will seek coverage under State Water Resources Control Board (Water Board) Order No. 2009-0009-DWQ, Waste Discharge Requirements for Discharges of Storm Water Runoff Associated with Construction and Land Disturbance Activities. The Applicant will submit permit registration documents (notice of intent, risk assessment, site maps, SWPPP, annual fee, and certifications) to the Water Board. The SWPPP will address pollutant sources, best management practices, and other requirements specified in the Order. The SWPPP will include erosion and sediment control measures, and dust control practices to prevent wind erosion, sediment tracking, and dust generation by construction equipment. A Qualified SWPPP Practitioner will oversee implementation of the Project SWPPP, including visual inspections, sampling and analysis, and ensuring overall compliance.

CAL Green and Model Water Efficient Landscape Ordinance (WELO)

The Project will comply with the water efficiency and conservation requirements in CAL Green, which include reduced flow in all indoor water fixtures. For outdoor water use, the Project will comply with the California Department of Water Resources' Model Water Efficient Landscape Ordinance.

1.7 Required Agency Approvals

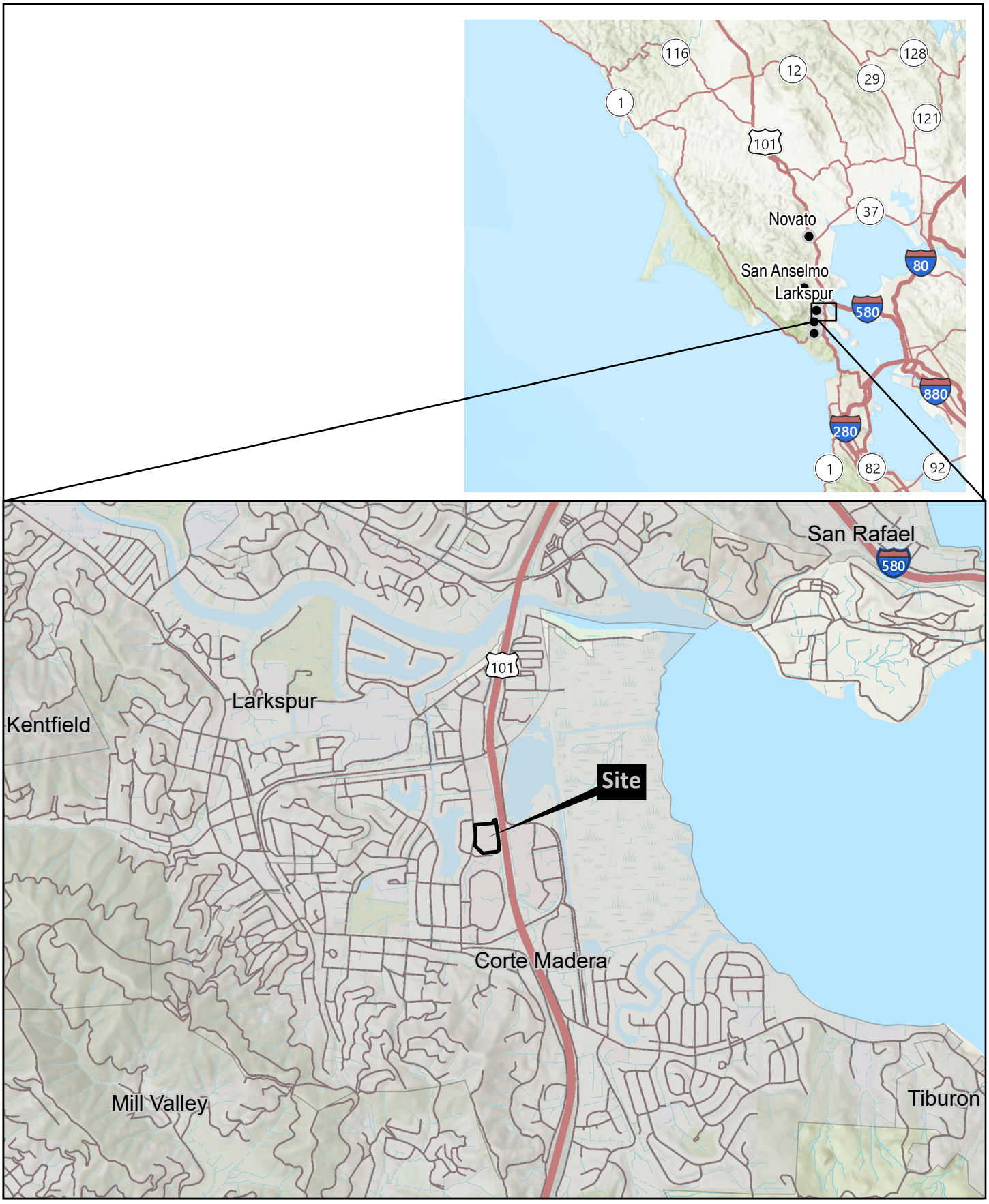
The Project would be required to obtain the following approvals and permits from the Town of Corte Madera:

- Use Permit
- Major Design Review
- Erosion and Sediment Control Permit
- Grading Permit
- Building Permit
- Encroachment Permit (for off-site pedestrian improvements and undergrounding utilities)

In addition, although the site has existing water and sewer connections, the Project would require approval from Marin Municipal Water District and Sanitary District 2 respectively.

1.8 Tribal Consultation

As of August 2021, no Native American tribes have submitted a written request for notification under AB 52 of proposed projects within the Town of Corte Madera. Please refer to **Section 3.17 Tribal Cultural Resources**, for the analysis of the Project's potential impacts to Tribal Cultural Resources.



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Miles

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California II FIPS 0402 Feet

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Town of Corte Madera
Residence Inn Project

Project No. **11230338**
Revision No. **-**
Date **Aug 2021**

Vicinity Map

FIGURE 1

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Figure provided by:

KLA LANDSCAPE ARCHITECTURE PLANNING

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Town of Corte Madera
Residence Inn Project

Project No. **11230338**
Revision No. **-**
Date **Nov 2021**

Site Plan

FIGURE 2

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NOTES:

1. PRESERVE AND PROTECT (E) NATIVE PLANT MATERIAL.
2. (E) TREE CANOPIES ARE APPROXIMATE. VERIFY TREE LOCATIONS IN FIELD.
3. LIMIT DISTURBANCE UNDER PRESERVED TREES DUE TO HERON USE.
4. PLANTING ZONES ARE APPROXIMATE.

PLANT/SEED SCHEDULES

Upland		
	Common Name	**Scientific Name**
Trees	Coast live oak	*Quercus agrifolia*
	California buckeye	*Aesculus californica*
Shrubs	Toyon	*Heteromeles arbutifolia*
	Coyote bush	*Baccharis pilularis*
	Blue elderberry	*Sambucus nigra* ssp. *caerulea*
	Coffeeberry	*Frangula californica*
	Twinberry	*Lonicera involucrata*
	Wild rose	*Rosa californica*
Herbs & Grasses	Creeping wild rye	*Elymus triticoides*
	Meadow barley	*Hordeum brachyantherum*
	Torrey melic	*Melica torreyana*
	California fescue	*Festuca californica*
	Yarrow	*Achillia millifoium*
	Farewell to spring	*Clarkia rubicunda*
	California poppy	*Eschscholzia californica*
	California bedstraw	*Galium californicum*
	Blue-eyed grass	*Sisyrinchium bellum*
	Soap plant	*Chlorogalum pomeridianum*
	Blue dicks	*Dichelostemma capitatum*
	Ithuriel's spear	*Triteleia laxa*

Upper Wetland/Pond Edge		
	Common Name	**Scientific Name**
Shrubs	Marsh gumplant	*Grindelia stricta*
Herbs & Grasses	Salt grass	*Distichlis spicata*
	Field sedge	*Carex praegracilis*
	Jaumea	*Jaumea carnosa*
Lower Wetland/Pond Edge		
	Common Name	**Scientific Name**
Herbs & Grasses	Common cattail	*Typha latifolia*
	Alkali bulrush	*Bolboschoenus maritimus*
	Common threesquare	*Schoenoplectus pungens*

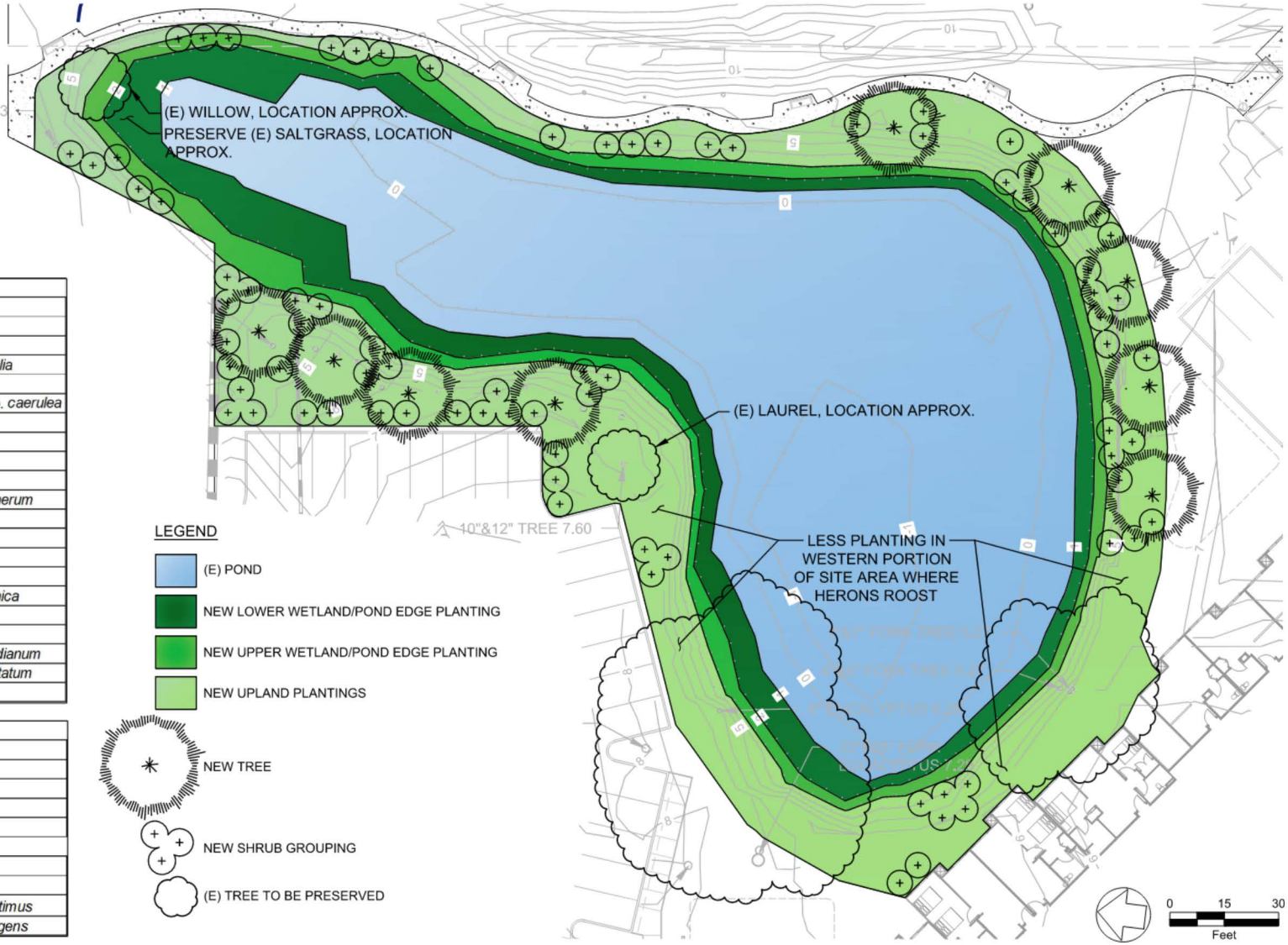


Figure provided by:

ESA

GHD

Town of Corte Madera
Residence Inn Project

Project No. **11230338**
Revision No. **-**
Date **Nov 2021**

Pond Enhancements

FIGURE 3

2. Environmental Factors Potentially Affected

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages:

☐ Aesthetics	☐ Greenhouse Gas Emissions	☐ Public Services
☐ Agricultural & Forestry Resources	☐ Hazards & Hazardous Materials	☐ Recreation
☐ Air Quality	☐ Hydrology/Water Quality	☐ Transportation
☐ Energy	☐ Land Use/Planning	☐ Tribal Cultural Resources
☐ Biological Resources	☐ Mineral Resources	☐ Utilities/Service Systems
☐ Cultural Resources	☐ Noise	☐ Wildfire
☐ Geology/Soils	☐ Population/Housing	☐ Mandatory Findings of Significance

DETERMINATION (To be completed by the Lead Agency)

On the basis of this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION would be prepared.

☒ I find that although the proposed project could have a significant effect on the environment, there would not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION would be prepared.

☐ I find that the proposed MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect: (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect: (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (2) has been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.



Adam Wolff, Planning Director

11.15.21

Date

3. Environmental Analysis

3.1 Aesthetics

	Potentially Significant Impact	Less-than-Significant w/ Mitigation Incorporated	Less-than-Significant Impact	No Impact
Except as provided in Public Resources Code Section 21099, would the project:				
a) Have a substantial adverse effect on a scenic vista?			X	
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?				X
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public view of the site and its surroundings? (Public Views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?				X
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?			X	

In a review of the Aesthetics section of the *Hotel Floor Area Bonus Ordinance Initial Study/MND* (HFABO IS/MND), it was determined that there would be no new environmental effects from implementation of the Project not already analyzed. Therefore, the analysis and findings in the Aesthetics section of the HFABO IS/MND are incorporated here and summarized below.

a) Have a substantial adverse effect on a scenic vista? (Less than Significant)

A scenic vista is generally considered a viewpoint that provides expansive views of a highly valued landscape for the benefit of the general public. The HFABO IS/MND found that the height limit of hotels approved under the Ordinance would have an increased allowable height (35 to 47 feet), and thus would have the potential to affect scenic vistas and/or scenic corridors if new or intensified development blocked views of areas that provide or contribute to such vistas. However, future projects would consist of redevelopment of parcels that would replace existing buildings with new buildings, within the commercial corridors along US 101. In addition, individual projects would be required to adhere to design review principles including building design, massing, and setbacks put forth by the Town's commercial development standards and the consideration of view impacts required through the design review process.

The Project would redevelop an existing developed parcel within a commercial corridor along US 101 and be required to adhere to design review principles put forth by the Town's commercial development standards and the design review process as described above. Accordingly, the Project would have a less than significant impact to scenic vistas.

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway? (No Impact)

As noted in the HFABO IS/MND, the nearest state highway is Highway 101, which is not designated as a state scenic highway by the State of California. As there is none nearby, the Project could not damage scenic resources within a state scenic highway. There would be no impact to scenic resources within a state scenic highway.

c) In an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality? (No Impact)

As noted in the HFABO IS/MND, Bonus Area Three (in which the Project is located) and surrounding locales are urbanized, as is much of the Town. Adherence to the Town's development standards and design review process guidelines will ensure that the Project would comply with all applicable zoning and regulations governing scenic quality. As noted in **Section 1.7 Required Agency Approvals**, the Project would be subject to Design Review approval. Therefore, the Project would not conflict with zoning or other regulations governing scenic quality.

d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area? (Less than Significant)

As described in the HFABO IS/MND, future development under the Ordinance would consist of infill and redevelopment that would replace existing older buildings with new buildings. While development would have the potential to change existing light levels, projects would be required to comply with Sections 18.12.030 and 18.13.030 of the Corte Madera Municipal code which address lighting in Commercial and MX-1 districts, respectively.

The Project is located in the MX-1 District and would therefore be required to comply with Municipal Code 18.13.030, which requires all exterior lighting be dark sky compliant. In addition, the Project Site is currently developed, and already includes ancillary infrastructure such as outdoor lighting. Given that the Project would replace older lighting infrastructure with new outdoor lighting that would be in compliance with Municipal Code 18.13.030, it would not adversely affect day or nighttime views with new sources of substantial light or glare. This impact would be less than significant.

3.2 Agriculture and Forest Resources

	Potentially Significant Impact	Less-than-Significant w/ Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?				**X**
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?				**X**
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?				**X**
d) Result in the loss of forest land or conversion of forest land to non-forest use?				**X**
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?				**X**

In a review of the Agriculture and Forest Resources section of the HFABO IS/MND, it was determined that there would be no new environmental effects from implementation of the Project not already analyzed. Therefore, the analysis and findings in the Agriculture and Forest Resources section of the HFABO IS/MND are incorporated here and summarized below.

a - e) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland)? Conflict with Agricultural Zoning or Williamson Act Contract? Conflict with Forest Land Zoning or result in loss of forest land to non-forest use? Involve other changes that could result in conversion of Farmland to non-agricultural use or forest land to non-forest use? (No Impact)

The Project is located within Bonus Area 3, which is one of four hotel bonus areas analyzed in the HFABO IS/MND. As noted in the HFABO IS/MND, all four hotel bonus areas are urbanized, and the surrounding areas do not contain agricultural resources nor are they used for agricultural purposes. Furthermore, the Town of Corte Madera contains no Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. No designated forest land exists within the hotel bonus areas, and the proposed ordinance amendments would not result in the loss of forest land. The hotel bonus areas are not subject to a Williamson Act contract. Furthermore, the Project is located in the MX-1 Zoning District, which is not intended for agricultural uses. Therefore, the Project would result in no impact to agriculture or forestry resources.

3.3 Air Quality

	Potentially Significant Impact	Less-than-Significant w/ Mitigation Incorporated	Less-than-Significant Impact	No Impact
Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?				X
b) Result in a cumulatively considerable net increase in any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?			X	
c) Expose sensitive receptors to substantial pollutant concentrations?		X		
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?			X	

In a review of the Air Quality section of the HFABO IS/MND, it was determined that there would be no new environmental effects from implementation of the Project not already analyzed under impacts **Section 3.3 a)** and **d)**. The analysis and findings in the Air Quality section of the HFABO IS/MND are incorporated here and summarized below, with additional project-specific analysis provided under impacts **b)** and **c)**. **Mitigation Measure AQ-1.4b** from the HFABO IS/MND was found to be applicable to the Project.

The air quality analysis utilizes the thresholds of significance, screening criteria and levels, and impact assessment methodologies presented in the Bay Area Air Quality Management District (BAAQMD) CEQA Air Quality Guidelines (BAAQMD 2017a). As provided by the BAAQMD's CEQA Air Quality Guidelines, if a project meets the screening criteria for an impact category, and the analysis is consistent with the methodology used to develop the screening criteria, then its air quality impact for that category may be considered less than significant.

a) Conflict with or obstruct implementation of the applicable air quality plan? (No Impact)

As noted in the HFABO IS/MND, the BAAQMD Bay Area 2017 Clean Air Plan is the most recently adopted regional air quality plan that pertains to the Project Site (BAAQMD 2017b). The 2017 Clean Air Plan builds upon and enhances the BAAQMD's efforts to reduce emissions of fine particulate matter (PM2.5) and toxic air contaminants (TACs). Regional growth projections are used by BAAQMD to forecast future emission levels in the San Francisco Bay Area Air Basin (Air Basin). For the Bay Area, these regional growth projections are provided by the Association of Bay Area Governments (ABAG) and transportation projections are provided by the Metropolitan Transportation Commission (MTC) and are partially based on land use designations in city and county general plans.

The 2017 Clean Air Plan contains 85 individual control measures in nine economic sectors: stationary (industrial) sources, transportation, energy, buildings, agriculture, natural and working lands, waste management, water, and super-greenhouse gas pollutants. Many of these control measures require action on the part of the BAAQMD, the California Air Resources Board (CARB), or local communities, and are not directly related to the actions undertaken for an individual

infrastructure project. The Project would not prevent the BAAQMD from implementing these actions and none apply directly to the Project. In addition, the Project would not result in a substantial change in population or jobs in the project area as the existing hotel would be replaced with the same use of similar size; therefore, the Project would not exceed the growth assumptions contained in the 2017 Clean Area Plan. Implementation of the Project would not conflict with or obstruct the Bay Area 2017 Clean Air Plan. As a result, no impact would occur.

b) Result in a cumulatively considerable net increase in any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard? (Less than Significant)

According to California standards, the Air Basin is currently designated as a nonattainment area for PM2.5 and PM10 and ozone (BAAQMD 2021). Under national standards, the Air Basin is currently designated as nonattainment for 8-hour ozone, and nonattainment for PM2.5. The Air Basin is in attainment (or unclassified) for all other air pollutants (BAAQMD 2021). Therefore, the non-attainment pollutants of concern for this impact question are ozone, PM10 and PM2.5.

Exposure to levels of ozone above current State or federal standards can lead to human health effects such as lung inflammation and tissue damage and impaired lung functioning. Ozone exposure is also associated with symptoms such as coughing, chest tightness, shortness of breath, and the worsening of asthma symptoms (BAAQMD 2017a). Ozone is not emitted directly into the air, but is a regional pollutant formed by a photochemical reaction in the atmosphere. Ozone precursors, reactive organic gases (ROG) and oxides of nitrogen (NOx), react in the atmosphere in the presence of sunlight to form ozone. Therefore, the BAAQMD does not have a recommended ozone threshold, but has thresholds of significance for project-emitted NOx and ROG. In developing thresholds of significance for air pollutants, BAAQMD considered the emission levels for which a project's individual emissions would be cumulatively considerable. If a project exceeds the identified significance thresholds, its emissions would be cumulatively considerable, resulting in significant adverse air quality impacts to the region's existing air quality conditions (BAAQMD 2017a).

Construction – Criteria Pollutants

Overall construction activities would occur over approximately 20 months. Construction-generated criteria pollutant impacts include the potential to emit fugitive dust (PM), and exhaust emissions such as nitrogen oxides (NOx) and reactive organic gases (ROG) from gas and diesel-powered construction-equipment. These are temporary emissions that vary considerably from day-to-day and by the type of equipment and weather conditions.

Construction Fugitive Dust

For construction-related dust, the BAAQMD recommends incorporation of best management practices (BMPs) to reduce localized dust impacts to less than significant. As described in **Section 1.6 Compliance with Existing Regulations and Standard BMPS**, Implementation of Air Quality Control Measures during Construction, the Project would comply with General Plan Implementation Program RCS-10.3.c and incorporate the BAAQMD recommended basic construction measures during construction. Therefore, the Project's potential to generate localized pollutant concentrations, such as PM10 or PM2.5, during construction would be less than significant.

Construction Exhaust Emissions

Project construction would result in regional air pollutant and precursor emissions from equipment exhaust and worker trips to the Project Site. The BAAQMD's 2017 Air Quality Guidelines provides screening criteria for determining if a project could potentially result in significant construction-phase impacts from criteria pollutants and precursors. Construction of the Project would result in a less-than-significant impact to air quality if the screening criteria are met. The following are the BAAQMD construction screening criteria:

1. The Project is below the applicable screening level size shown in Table 1 [of the BAAQMD 2017 CEQA Air Quality Guidelines].
2. All Basic Construction Mitigation Measures would be included in the project design and implanted during construction.
3. Construction-related activities would not include any of the following:
   - Demolition activities inconsistent with District Regulation 11, Rule 2: Asbestos Demolition, Renovation and Manufacturing;
   - Simultaneous occurrence of more than two construction phases;
   - Simultaneous construction of more than one land use type;
   - Extensive site preparation; or
   - Extensive material transport (e.g., greater than 10,000 cubic yards of soil import/export) requiring a considerable amount of haul truck activity.

As stated above, the Project would include BAAQMD's recommended Basic Construction Measures. Export of material would include approximately debris from demolition of approximately 79,000 square feet of existing facility and 1,500 tons of demolished pavement. However, the criteria pollutant construction-related screening level for a hotel is 83 rooms. The Project would exceed that screening level, and additional emissions analysis is warranted.

The Project's construction exhaust emissions were estimated using CalEEMod version 2020.4.0 and model-default construction phasing, equipment type, and equipment activity. An additional demolition phase was added to reflect the pavement demolition, and an additional concrete saw was added to the default demolition equipment. The Project's estimated average construction emissions are shown in **Table 4.3-1**. The Project's construction emissions would not exceed the BAAQMD's recommended thresholds of significance. Therefore, the Project would result in a less-than-significant impact.

Table 4.3-1 Construction Exhaust Air Emissions Associated with the Project

Parameter	Pollutant Emissions (lbs/day)			
	ROG	NOx	PM10	PM2.5
Project Average Emissions	8.78	18.50	0.83	0.77
BAAQMD Thresholds	54	54	82	54
Significant Impact?	No	No	No	No

Operation – Criteria Pollutants

Following construction, the Project would not include any stationary sources of air emissions. Vehicle trips associated with operation of a hotel currently occurs under existing conditions. The existing

facility operates 110 rooms. The Project would operate 149 rooms, or an increase of 39 rooms over existing conditions. In comparison, the BAAQMD's recommended operational criteria pollutant screening level for "hotel" is 489 rooms. Both the total number of rooms (149) and the increase over existing (39) are less than the BAAQMD's operational criteria pollutant screening level. Therefore, the Project's contribution to a cumulative nonattainment criteria pollutant impact would be less than significant.

c) Expose sensitive receptors to substantial pollutant concentrations? (Less than Significant with Mitigation)

Sensitive receptors are defined by the BAAQMD as facilities or land uses that include members of the population that are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Sensitive receptors in the vicinity of the Project include residences located directly across Tamal Vista Boulevard west of the Project Site. The nearest residences are approximately 70 feet west of the Project's sidewalk improvements, and approximately 160 feet west of the proposed Project buildings.

Construction – Pollutant Concentrations

Construction Fugitive Dust

For construction-related dust, the BAAQMD recommends incorporation of best management practices (BMPs) to reduce localized dust impacts to less than significant. As described in **Section 1.6 Compliance with Existing Regulations and Standard BMPS**, Implementation of Air Quality Control Measures during Construction, the Project would incorporate the BAAQMD recommended basic construction measures during construction. Therefore, the Project's potential to generate localized pollutant concentrations, such as PM10 or PM2.5, during construction would be less than significant.

Construction Exhaust Emissions

The HFABO IS/MND noted that future development projects may elevate concentrations of Toxic Air Contaminants (TACs) and construction exhaust PM2.5 in the vicinity of sensitive residential land uses.

Construction equipment and associated heavy-duty truck traffic generate diesel particulate matter (DPM) exhaust, which is a known toxic air contaminant. As described in **Section 1.6**, the Project would incorporate the BAAQMD recommended basic construction measures during construction. Such measures include minimizing idling times for trucks and equipment to five minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]), ensuring that construction equipment is maintained in accordance with manufacturer's specifications, watering exposed surfaces twice a day to minimize fugitive dust emissions, and other measures. Project construction activities are anticipated to occur over approximately 20 months and consist of typical construction equipment activity. The Project would not require extensive site preparation, grading, or other onsite activity that would generate a substantial amount of construction equipment exhaust that would adversely affect nearby sensitive receptors.

However, because of the close proximity of potentially-affected sensitive receptors, HFABO IS/MND **Mitigation Measure AQ-1.4b** is applied to the Project to minimize the Project's potential to adversely

impact nearby sensitive receptors during construction. The measure requires construction equipment with 50 horsepower and greater to comply with the strictest emission standards, also known as “Tier 4 Final” standards. With mitigation, exposure of sensitive receptors to substantial pollutant concentrations during Project construction would be less than significant. See **Mitigation Measure AQ-1.4b** below.

Operation – Pollutant Concentrations

The HFABO IS/MND noted that hotel development does not create new major sources of TACs, which are more commonly associated with industrial manufacturing or warehousing. Examples of projects which generate substantial TAC emissions are distribution centers with more than 100 trucks per day or 40 trucks with transport refrigeration units (TRUs) per day, refineries, chrome platers, dry cleaners, gasoline dispensing facilities, and railyards (CARB 2005).

The Project would not include any stationary sources of air emissions or other sources of TACs that would result in substantial long-term operational emissions of air pollutants. Therefore, Project operation would not expose nearby sensitive receptors to substantial levels of pollutants.

Localized high levels of CO (CO hotspot) are associated with traffic congestion and idling or slow-moving vehicles. The BAAQMD recommends a screening analysis to determine if a project has the potential to contribute to a CO hotspot. The screening criteria identify when site-specific CO dispersion modeling is not necessary. The Project would result in a less than significant impact to air quality for local CO if the following screening criteria are met:

– Project is consistent with an applicable congestion management program established by the county congestion management agency for designated roads or highways, regional transportation plan, and local congestion management agency plans; or
– The project traffic would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour; or
– The project traffic would not increase traffic volumes at affected intersections to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g., tunnel, parking garage, bridge underpass, natural or urban street canyon, below-grade roadway).

As stated in the Air Quality section of the HFABO IS/MND, hotel development within the hotel bonus areas, including Bonus Area 3, would not conflict with the Transportation Authority of Marin’s (TAM) Congestion Management Program (CMP) because it would not hinder the capital improvements outlined in the CMP or alter regional travel patterns. TAM’s CMP must be consistent with Plan Bay Area 2040. An overarching goal of the regional Plan Bay Area 2040 is to concentrate development in areas where there are existing services and infrastructure rather than allocate new growth in outlying areas where substantial transportation investments would be necessary to achieve the per capita passenger vehicle, vehicle miles traveled, and associated GHG emissions reductions. The Project Site is in close proximity to existing employment centers, roadways, transit, and bicycle and pedestrian routes, and for these reasons would be consistent with the overall goals of the Plan Bay Area 2040.

Furthermore, operation of the Project is expected to generate a net increase of 28 AM (morning) peak hour trips, and 29 PM (evening) peak hour trips on a weekday and would not increase traffic volumes at affected intersections by more than 44,000 vehicles per hour or 24,000 vehicles per hour

where vertical and/or horizontal mixing is substantially limited. Therefore, the Project's potential to generate a localized CO impact is less than significant.

d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people? (Less than Significant)

The HFABO IS/MND noted that construction and operation of hotel developments would not generate odors that would affect a substantial number of people. The type of facilities that are considered to have objectionable odors include wastewater treatment plants, compost facilities, landfills, solid waste transfer stations, fiberglass manufacturing facilities, paint/coating operations (e.g., auto body shops), dairy farms, petroleum refineries, asphalt batch plants, chemical manufacturing, and food manufacturing facilities.

Minor odors from the use of equipment during construction activities would be intermittent and temporary and dissipate rapidly from the source with an increase in distance. Impacts from construction-related odors would be less than significant.

As described in the HFABO IS/MND, on-site restaurants could generate odors during operation. However, odors from cooking are not substantial enough to be considered nuisance odors that would affect a substantial number of people.

The Project would include an on-site kitchen for continental breakfast and snacks but would not feature a full-serve restaurant or cooking facility. The Project's onsite kitchen would generate limited, localized, and short-duration food-cooking odors; therefore, the Project's operational impact would be less than significant.

Mitigation Measure

Implementation of **Mitigation Measure AQ-1.4b**, of the HFABO IS/MND, would reduce impacts to sensitive receptors during Project construction by requiring construction equipment to conform with the strictest level of exhaust controls, also known as "Tier 4 Final Emissions Standards."

Mitigation Measure AQ-1.4b

The Project applicant shall be required to specify in the construction bid that the project construction contractor(s) and subcontractor(s) comply with the following requirements for all off-road equipment greater than 50 hp that will be operating for more than 20 hours over the entire duration of the construction activities at the site:

- Have engines that meet either US EPA or California Air Resources Board (CARB) Tier 4 Final emission standards. Ensure that all construction plans submitted to the Town of Corte Madera clearly show the selected emission reduction strategy for construction equipment over 50 horsepower.
- Maintain a list of all operating equipment in use on the project site for verification by Town official or his/her designee. The construction equipment list shall state the makes, models, and number of construction equipment on-site. Ensure that all equipment shall be properly serviced and maintained in accordance with the manufacturer's recommendations.
- Communicate with all sub-contractors in contracts and construction documents that all non-essential idling of construction equipment is restricted to 5 minutes or less in

compliance with California Air Resources Board Rule 2449 and is responsible for ensuring that this requirement is met.

3.4 Biological Resources

	Potentially Significant Impact	Less-than-Significant w/ Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?		**X**		
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?				**X**
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?				**X**
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?			**X**	
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?				**X**
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?				**X**

In a review of the Biological Resources section of the HFABO IS/MND, it was determined that there would be no new environmental effects from implementation of the Project not already analyzed under impacts **Section 3.4 b), c), d),** and **f)**. The HFABO IS/MND identified certain resources that would need to be evaluated on a site-specific basis (i.e., special-status plants and animals). The analysis and findings in the Biological Resources section of the HFABO IS/MND are incorporated here and summarized below, with additional site-specific analysis provided under impacts **a), c),** and **e)**. **Mitigation Measure BIO-1a** and **Mitigation Measure BIO-1b** from the HFABO IS/MND were found to be applicable to the Project and one new mitigation measure has been introduced under impact **Section 3.4 a)**.

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or

regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service? (Less than Significant after Mitigation)

Nesting Birds

The HFABO IS/MND noted that while all four hotel bonus areas were fully developed parcels surrounded by urbanization, there was still a possibility that protected birds could nest in trees and other landscaping within individual project sites.

The Project Site includes approximately 126 trees, as well as shrubs and grasses surrounding the pond area that could provide bird nesting habitat. In addition, several trees along the west side of the pond are known to be used as roosting habitat for black-crowned night herons.

Therefore, if nesting birds were present during tree removal or initial ground disturbing activities, destruction or disturbance to an active nest could occur. This would result in a significant impact. See **Mitigation Measure BIO-1a** and **Mitigation Measure BIO-1b** below.

Bats

Several large trees are scattered around the Project Site that could provide crevices or hollows suitable for roosting bats. Although unlikely given the highly disturbed nature of the Project Site and intense human activity, bats - such as pallid bat *(Antrozoas pallida)* which has been recorded within 2 miles of the Project Site - could potentially roost in cavities of the mature trees. As no bat habitat assessment has been conducted, the potential for bats to be present on site could not be ruled out. Therefore, if roosting bats were present, construction noise and/or tree removal during construction would result in a potentially significant impact without mitigation. See **Mitigation Measure BIO-2** below.

Special-status Plant and Wildlife Species

Other than the pond area, the Project Site consists of hardscape and landscaping and is bounded on all sides by hardscape. No special-status plant or wildlife species are known to occur at the Project Site due to lack of suitable habitat (Zentner and Zentner 2013 and CNDDB 2021). The proposed improvements would be limited to existing developed portions of the site. The pond area would be avoided with the exception of habitat enhancement proposed around the edge of the pond and along the slopes. Refer to impact c), below, for a more detailed discussion of potential impacts to the pond, which has been determined to be a jurisdictional aquatic feature. As the Project Site lacks suitable habitat, there would be no impact to special-status plant or wildlife species.

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service? (No Impact)

The Project Site does not contain any riparian habitat or sensitive natural community. Therefore, no impact would occur to either of these types of biological resources. With regard to the jurisdictional pond, please refer to the analysis under impact c), below.

c) Have a substantial adverse effect on state or federally protected wetlands through direct removal, filling, hydrological interruption, or other means (No Impact)?

As described in the HFABO IS/MND, approximately 0.64 acre of the pond area was determined jurisdictional by the US Army Corps of Engineers. No Project improvements are proposed within the delineated federal water.

Habitat enhancement is proposed around the edge of the pond, slopes, and upland area, but no temporary or permanent disturbance would occur below the low water line. Around the pond non-native invasive ground cover, shrubs, and some trees would be removed and replaced with native species in three planting/habitat zones. The lower wetland/pond edge would be planted with wetland grasses (common cattail, alkaili bulrush, and common threesquare). The upper wetland/pond edge would be planted with shrubs and grasses (marsh gumplant, salt grass, field sedge, and jaumea). The upland would be planted with a variety of native trees, shrubs, and grasses. Removal of the invasive species and planting wetland grasses along the edge of the pond, as well as the proposed upland bushes and trees, would provide habitat value including nesting, foraging, and cover. Limited enhancements are proposed under and adjacent to the roosting trees to minimize potential disturbance.

As no improvements are proposed within the federally jurisdictional water, and the proposed wetland plantings along the edge would provide increased habitat value, no substantial adverse effect would occur to the jurisdictional portion of the pond.

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites? (Less than Significant)

As described in the HFABO IS/MND, wildlife movement throughout the vicinity of each of the hotel bonus areas within the Town is limited due to the urban nature of the areas. The nearest wildlife corridor consists of the riparian corridor of Corte Madera Creek, located north of Hotel Bonus Area Four. No wildlife corridors were identified adjacent to Hotel Bonus Area Three in the HFABO IS/MND.

The Project Site is located in Hotel Bonus Area Three. There is no wildlife corridor in, or adjacent to, the Project Site. With the exception of the pond, the site is developed with buildings, ornamental landscaping, and hardscape. While some migratory bird species may use the pond for feeding, resting, and roosting when flying through the area, there is expansive natural marsh and open water habitat on the east side of the freeway and adjoining the San Francisco Bay, that migratory birds would be more inclined to utilize with less human disturbance. As noted under impact c above, there would be no permanent impacts to the pond. Pond enhancements would temporarily disturb the upland portions of the pond area but increase the habitat value after implementation.

The potential Project impacts to migratory species, wildlife corridors, and wildlife nursery sites would be less than significant.

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance? (No Impact)

General Plan Policies

The following are the applicable Town of Corte Madera General Plan policies and programs related to the protection of biological resources identified in the HFABO IS/MND, and that are applicable to

the Project Site. Following each policy is a brief discussion of applicable implements programs for that for that policy and the Project's compliance with the program:

> **POLICY RCS-6.2**: *Protect wetlands, 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 calls for protecting biological resources through environmental review of development applications in compliance with CEQA. This Initial Study constitutes that review. In addition, RCS-6.2.a calls for the protection of wetlands and other waters of the United States in accordance with the regulations of the US Army Corps of Engineers and other appropriate agencies. As noted above under impact c, the US Army Corps of Engineers has verified the wetland delineation for the pond and the Project, as designed, would avoid both temporary and permanent impacts to this aquatic feature. The proposed pond enhancements would increase the habitat value along the edge and upland areas of the pond. The Project would not conflict with Policy RCS-6.2.

> **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 requires environmental review of development applications pursuant to CEQA to assess the impact of proposed development on special-status species and habitat diversity, including wetlands. This Initial Study constitutes that review. The Project would not conflict with Policy RCS-6.3.

> **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 requires an assessment of sensitive biological resources pursuant to CEQA. Implementation Program RCS-7.2.c requires the restriction or modification of development in areas that contain wetlands or other essential habitat for special-status species. This Initial Study constitutes the assessment pursuant to CEQA. As noted above, the Project has been designed to avoid both temporary and permanent impacts to this jurisdictional water feature with the pond area. The proposed pond enhancements would increase the habitat value along the edge and upland areas of the pond. No other sensitive habitat areas are on site. The Project would not conflict with Policy RCS-7.2.

> **POLICY RCS-7.4**: *Protect woodland and tree resources*.

Implementation Program RCS-7.4a requires large native trees, trees with historical importance, oak woodlands, and forest habitats be protected. There are no oak woodlands or forest habitats within the Project Site. Many of the trees are landscape trees and considered undesirable under the Town of Corte Madera Tree Ordinance (see discussion below). Of the 125 trees inventoried, four qualify as heritage due to their size (greater than 100" in circumference) and species. Of the four, three would be preserved (one coast redwood and two London plane) and one (a silver maple) would be removed. Removal of the silver maple would require a Tree Removal Permit and only be taken down with approval by the Town, in accordance with the Tree Ordinance. Approximately 108 new trees would be planted on-site with implementation of the Project. The Project would not conflict with Policy RCS-7.4.

> **POLICY RCS-7.5**: *Require use of native plant species in landscaping plans and reduce spread of invasive species*.

Implementation Program RCS-7.5b requires use of native plant species in landscaping plans and to reduce the spread of invasive species. Review of the Project's landscape plans (Sheets LO.5 and LO.6) found that no invasive species, as listed by California Invasive Plant Council, were included on the landscape plans. The Project would not conflict with Policy RCS-7.5.

> **POLICY RCS-8.1**: *Protect wetlands through careful environmental review of proposed development applications*.

Implementation Program RCS-8.1.a requires sites with potential wetlands be assessed following State and Federal regulations. RCS-8.1.b calls for the avoidance of jurisdictional wetlands, or mitigation where avoidance is not feasible. As noted above, the US Army Corps has reviewed and verified the wetland delineation for the pond. The Project improvements would avoid this jurisdictional feature. The Project would not conflict with Policy RCS-8.1.

Municipal Code Chapter 18.13.040

One of the conditions listed in the special floor area ratio provisions for hotels in MX districts is to incorporate one or more bird-safe design measures related to the use of non-reflective glass, no exterior uplighting of buildings, tree screening of lower floors, and reduction of interior lighting.

As noted in **Section 1.4 Project Description**, outside lighting would be cutoff and directed downward, in compliance with Title 24 Energy Code requirements. Also in compliance with Title 24, the guest rooms would have a captive card key control, occupancy sensing controls, or automatic controls such that no longer than 20 minutes after the guest room is vacated, lighting power is switched off. In addition, as can be seen in **Appendix A, Sheet L0.5** and **Sheet L0.6**, trees would be planted around the circumference of the buildings, screening some windows. As the Project would incorporate 3 of 5 bird-safe design options, there would be no conflict with this section of Municipal Code Chapter 18.13.040.

Tree Ordinance

The Town of Corte Madera Tree Ordinance, Chapter 15.50 of the Municipal Code, was put in place to protect mature trees and would be applicable to the Project. The Project would remove approximately 53 trees within the Project Site. The Tree Ordinance requires that a permit be applied for and approved before removing, destroying, or altering any tree on private property that is covered under the ordinance. Trees that require approval include any tree, excluding undesirable species, with a single trunk circumference of at least 50 inches (or multi-stemmed trees having an aggregate circumference of less than one-hundred twenty inches), measured four and one-half feet above grade. There are 20 trees that qualify for needing approval for removal under the Tree Ordinance. As part of the development review and approval process, the Project would be conditioned to submit a tree removal plan that would include information required in Municipal Code 15.50.040 and be reviewed and approved by the Planning Director. The Project would therefore comply with this ordinance.

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan? (No Impact)

As noted in the HFABO IS/MND, the Town of Corte Madera is not located within the boundaries of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved

local, regional, or State habitat conservation plan. Therefore, the Project would not conflict with the provisions of an adopted conservation plan. No impact would occur.

Mitigation Measures

Mitigation Measure BIO-1a and **Mitigation Measure BIO-1b** of the HFABO IS/MND was found to be applicable to the Project, with **Mitigation Measure BIO-2** added specific to this environmental review process. Implementation of the following mitigation measures would reduce impacts to nesting birds and bats by limiting construction and tree removal to specified work windows, and if that is not feasible providing a procedure to follow to identify nests and/or roosts and establish buffers and other avoidance measures until nesting and/or roosting is complete.

Mitigation Measure BIO-1a

Nests of raptors and other birds shall be protected when in active use, as required by the federal Migratory Bird Treaty Act and the California Fish and Game Code. If construction activities and any required tree removal are proposed to occur during the breeding season (February 1 and August 31), the Applicant shall indicate, on all construction plans, that preconstruction surveys shall:

- Be conducted by a qualified biologist prior to tree removal or grading, demolition, or construction activities. Note that preconstruction surveys are not required for tree removal or construction, grading, or demolition activities outside the nesting period.
- Be conducted no more than 14 days prior to the start of tree removal or construction.
- Be repeated at 14-day intervals until construction has been initiated in the area after which surveys can be stopped.
- Document locations of active nests containing viable eggs or young birds.

Mitigation Measure BIO-1b

Protective measures for active nests containing viable eggs or young birds shall be implemented under the direction of a qualified biologist until the nests no longer contain eggs or young birds. Protective measures shall include:

- Establishment of clearly delineated exclusion zones (i.e., demarcated by identifiable fencing, such as orange construction fencing or equivalent) around each nest location as determined by the qualified biologist, taking into account the species of birds nesting, their tolerance for disturbance and proximity to existing development. In general, exclusion zones shall be a minimum of 300 feet for raptors and 75 feet for passerines and other birds.
- Monitoring active nests within an exclusion zone on a weekly basis throughout the nesting season to identify signs of disturbance and confirm nesting status.
- An increase in the radius of an exclusion zone by the qualified biologist if Project activities are determined to be adversely affecting the nesting birds. Exclusion zones may be reduced by the qualified biologist only in consultation with California Department of Fish and Wildlife.

- Protection measures shall remain in effect until the young have left the nest and are foraging independently or the nest is no longer active.

Mitigation Measure BIO-2: Prevent Disturbance to Roosting Bats

The Applicant shall implement the following measures to prevent impacts to roosting bats during construction.

Removal of trees that potentially support a bat maternity roost should only occur between September 1 and October 15, after the young have learned to be self-sufficient but before hibernation. Trees supporting bats should not be removed while bats are hibernating between October 15 and March 15 or otherwise while bats are present.

Prior to construction, the Applicant shall have a Bat Habitat Assessment conducted, and submitted to the Town, for the trees to be removed. The Habitat Assessment shall be completed by a qualified biologist who is approved by the Town. The Habitat Assessment shall evaluate the trees for suitable entry points and roost features and shall provide focused daytime surveys for day-roosting bats. If a special-status bat species is found, or if suspected day roosts for special-status bats are identified, then the Habitat Assessment shall identify suitable performance measures for avoiding impacts to roosts, which may include, but would not be limited to:

- Consultation with the California Department of Fish and Wildlife to determine appropriate measures for protecting bats with young if present, and for implementing measures to exclude non-breeding bat colonies during construction process.
- Phased removal of trees where selected limbs and branches not containing cavities are removed using chainsaws on the first day, with the remainder of the tree removed using chainsaws or other equipment on the second day.

If no bats are present during the day, construction shall proceed. If bats are present during the day, additional exclusion and eviction efforts will be required based on specific recommendations of a qualified bat biologist in consultation with the California Department of Fish and Wildlife.

3.5 Cultural Resources

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?				X
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?		X		
c) Disturb any human remains, including those interred outside of formal cemeteries?		X		

In a review of the Cultural Resources section of the HFABO IS/MND, it was determined that there would be no new environmental effects from implementation of the Project not already analyzed under impacts **Section 3.5 a)** and **c)**. The analysis and findings in the Cultural Resources section of the HFABO IS/MND are incorporated here and summarized below, with additional site-specific analysis and mitigation provided under impact **b)**.

a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5? (No Impact)

As described in the HFABO IS/MND, the four hotel bonus areas do not contain any identified historic resources.

A Northwest Information Center (NWIC) Records Search was conducted for the Project Site, which included review of the California Register of Historical Resources, California State Historical Landmarks, California State Historical Landmarks, California State Points of Historical Interest, and the National Register of Historic Places. No recorded buildings or structures within or adjacent to the proposed Project were recorded. In addition to these inventories, the NWIC base maps show no recorded buildings or structures within the Project Site (NWIC 2021). Review of historical literature and maps gave no indication of the possibility of historic-period activity within the Project area. Therefore, the Project would not cause a substantial adverse change on historical resources.

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5? (Less than Significant with Mitigation)

As described in the HFABO IS/MND, archaeological resource investigations have been performed for approximately 20% of the Town and each investigation has unearthed archaeological resources. Due to Corte Madera's rich prehistory and archaeological resources identified through past investigations, it is possible that the four hotel bonus areas may contain yet undiscovered resources. Although the four areas have been disturbed previously, including the underlying subsurface area, there remains a potential presence of buried cultural resources that may be unearthed during future construction activities. Therefore, future development within the boundaries of the four hotel bonus areas would be subject to General Plan Program RCS 11.2.a requiring that applicable discretionary projects prepare a cultural resource evaluation to identify the presence of any archaeological or historic resource and provide feasible and appropriate measures for their protection.

A NWIC Records Search was conducted for the Project. Review of available information indicates that there has been one cultural resource study that covers approximately 10% of the Project Site. The Records Search did not reveal any recorded archaeological resources at the Project Site. Based on an evaluation of the environmental setting and features associated with known sites, Native American resources in this part of Marin County have been found in areas marginal to the San Francisco Bay shore and inland in valleys, near intermittent and perennial watercourses and near areas populated by oak, buckeye, manzanita, and pine, as well as near a variety of plant and animal resources. The Project Site is located in the Corte Madera area west of the Corte Madera Marsh State Ecological Reserve, adjacent to the west side of Highway 101. Historic Bayshore margins indicates the Project Site was within marshlands and bisected by a creek. Given the similarity of these environmental factors, there is a moderate to high potential for unrecorded buried Native American resources to be within the proposed Project area.

Additionally, the 2014 Draft EIR prepared for a different project on the Project Site referenced a geoarchaeological investigation conducted near the Project Site which indicated that there is a potential for buried prehistoric archaeological resources in eastern Marin County beneath bay mud that were deposited as a result of sea-level rise during the Holocene period. Subsurface conditions at the Project Site consist of approximately 5 to 10 feet of fill material over 20 to 30 feet of bay mud. Deep ground-disturbing excavations below fill and bay mud may be required to construct the Project. Therefore, the Project may result in an adverse change to unknown buried archaeological resources that may be located at the Project Site. The Federated Indians of Graton Rancheria provided input during the preparation of the 2014 EIR and expressed concerns that the Project Site has the potential to affect buried archaeological deposits that are of tribal importance.

Based on these findings, the Project has the potential to encounter as-of-yet unknown archaeological resources, if they exist, below the existing fill and bay mud. If such resources are disturbed a significant impact would occur. See **Mitigation Measure CR-1** and **Mitigation Measure CR-2** below.

c) Disturb any human remains, including those interred outside of formal cemeteries? (Less than Significant with Mitigation)

As described in the HFABO IS/MND, prehistoric archaeological sites recorded in the Corte Madera and Larkspur region are known to contain Native American human remains. These remains may occur in conjunction with habitation debris associated with shell mounds, which may include midden containing faunal shell and bone, and culturally flaked stone and groundstone. While the four hotel bonus areas have been subject to previous disturbance, and there is no indication of human remains within the Project Site, they still have the potential to contain yet undiscovered remains during construction. Therefore, the impact related to the potential disturbance or damage of previously undiscovered human remains, if present, is considered potentially significant. See **Mitigation Measure CR-3** below.

Mitigation Measures

Implementation of **Mitigation Measure CR-1** and **Mitigation Measure CR-2** would reduce impacts to unknown archaeological resources by conducting further site-specific investigation to determine the presence of archaeological resources prior to site disturbance and ensuring appropriate protocols are followed if archaeological resources are encountered during construction. Implementation of **Mitigation Measure CR-3** would ensure compliance with the General Plan Policy

RCS-11.2.c regarding protection of Native American Human Remains and CEQA Guidelines Section 15064.5(e).

Mitigation Measure CR-1: Protect Unknown Archaeological Resources Prior to Construction

The Applicant shall have a qualified archaeologist complete a geoarchaeological testing program, or other on-site investigation that achieves the intent and outcome of the testing program, prior to issuance of a grading permit by the Town. The testing program, or other investigation, shall be designed to:

1. characterize the subsurface conditions of the Project Site, including the age and composition of stratigraphic units;
2. assess the presence/or absence of archaeological deposits underlying the Project Site; and
3. produce a report of findings that includes recommendations for further study of archaeological resources, as appropriate.

These recommendations may include archaeological monitoring of areas where there is a potential to encounter buried archaeological deposits during construction, additional excavation to recover and study buried archaeological deposits, or avoidance of the area altogether. A monitor designated by the Federated Indians of Graton Rancheria shall be on-site during the geoarchaeological excavations, if conducted, in the event that archaeological deposits are unearthed. The Town shall ensure that the recommendations of the report of findings are followed as a condition of the Project's grading permit.

Mitigation Measure CR-2: Protect Unknown Archaeological Resources During Construction

If potential archaeological resources are uncovered, the Town shall halt work within 50 feet of the discovery. Construction workers shall avoid altering the materials and their context. Project personnel shall not collect cultural materials. Prehistoric materials might include obsidian and/or chert flaked-stone tools such as projectile points, knives, or scraping implements; the debris from making, sharpening, and using them ("debitage"); culturally darkened soil containing shell, dietary bone, heat-altered rock, and carbonized plant material ("midden"); or stone milling equipment such as mortars, pestles, handstones, or milling slabs. A qualified professional archaeologist shall evaluate the find and provide appropriate recommendations. If the archaeologist determines that the find potentially qualifies as a historic resource or unique archaeological resource for purposes of CEQA (per CEQA Guidelines Section 15064.5), all work must remain stopped in the immediate vicinity to allow the archaeologist to evaluate any materials and recommend appropriate treatment. A Native American monitor shall be present for the investigation, if the local Native American tribe requests. Avoidance of impacts to the resource are preferable. In considering any suggested measures proposed by the consulting archaeologist in order to mitigate impacts to historical resources or unique archaeological resources, the Town shall determine whether avoidance is feasible in light of factors such as the nature of the find, Project design, costs, and other considerations. If avoidance is infeasible, other appropriate measures as recommended by the archaeologist (e.g., data recovery) shall be instituted.

Work may proceed on other parts of the Project while mitigation for the historic resources or unique archaeological resources is being carried out.

Mitigation Measure CR-3: Protect Human Remains If Encountered during Construction

If human remains, associated grave goods, or items of cultural patrimony are encountered during construction, the Town shall halt work in the vicinity of the find and notify the County Coroner immediately. The Town shall follow the procedures in Public Resources Code § 5097.9 and Health and Safety Code § 7050.5. If the human remains are determined to be of Native American origin, the Coroner shall notify the Native American Heritage Commission within 24 hours of the determination. The Native American Heritage Commission shall then notify the Most Likely Descendant (MLD), who has 48 hours to make recommendations to the landowner for the disposition of the remains. A qualified archaeologist, the Town and the MLD shall make all reasonable efforts to develop an agreement for the treatment, with appropriate dignity, of any human remains and associated or unassociated funerary objects. The agreement would take into consideration the appropriate excavation, removal, recordation, analysis, custodianship, and final disposition of the human remains and associated or unassociated funerary objects.

3.6 Energy Resources

	Potentially Significant Impact	Less-than-Significant w/ Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Result in potentially significant environmental impacts due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?			X	
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?				X

In a review of the Energy Resources section of the HFABO IS/MND, it was determined that Project-specific analysis would be needed under impacts **Section 3.6 a)** and **b)**.

a) Result in potentially significant environmental impacts due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation? (Less than Significant)

Construction

Construction of the Project would involve grading and use of heavy machinery as discussed under **Section 3.3 (Air Quality).** Construction would require the use of fuels, primarily gas, diesel, and motor oil. The precise amount of construction-related energy consumption that would occur is uncertain. However, construction would not require a large amount of fuel or energy usage because of the moderate number of construction vehicles and equipment, worker trips, and truck trips that would be required for a project of this scale. Trips associated with construction of the Project are estimated to be approximately 64 trips per day or less, and construction equipment would remain staged in the Project Area once mobilized. Use of these fuels would not be wasteful or unnecessary because their use is needed to complete the Project.

Excessive idling and other inefficient site operations would be prohibited. Equipment idling times would be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes or less (as required by the California airborne toxics control measure (Title 13, Section 2485 of the CCR) and Implementation of Air Quality Control Measures during Construction (see **Section 1.6 Compliance with Existing Regulations and Standard BMPS**.) Because construction would not result in the use of large amounts of fuel and energy in a wasteful manner, impacts related to the inefficient use of construction-related energy impacts would be less than significant.

Operation

The Project would replace an older, less energy efficient building with a modern, energy efficient building. The Project would be required to comply with current 2019 Title 24 Energy Code requirements, also known as the California Green Building Standards, thus improving energy efficiency. The State estimated that under the 2019 Title 24 Energy code, nonresidential buildings will use about 30 percent less energy than existing buildings due mainly to lighting upgrades. In addition, the Project would comply with Tier 1 of the 2019 Title 24 Energy Code. This means that in

addition to the mandatory/base building requirements of the CALGreen Code, the Project would implement further standards that would exceed the base requirements by 15 percent. Additional green building components would include installation of a solar system and a laundry water reuse system.

In addition, the Project would not result in a substantial change in population or jobs in the area as the existing hotel would be replaced with the same use of similar size. As described in **Section 3.17 Transportation,** the Project would not generate significant operational vehicle miles travelled (VMT) from hotel employees or hotel visitors. The Project Site, which currently has an operating hotel, is located in an area in which the rate of VMT per Employee is more than 15 percent below the County average, and VMT attributable to hotel employees would not be substantial. Additionally, the Project is unlikely to result in an increase in the number of visitors to Marin County. The Project would offer complimentary hotel van transportation to and from the airporter and local businesses. VMT attributable to hotel guests would not be substantial. Therefore, the Project would not result in a substantial increase of VMT, and related energy use, over existing operational activities.

Because the Project would improve the energy efficiency of buildings on the Project Site and would not result in new substantial VMT, operationally-related energy impacts would also be less than significant.

b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency? (No Impact)

In 2003, the California Energy Commission (CEC), the California Power Authority (CPA), and the California Public Utilities Commission (CPUC) jointly adopted an Energy Action Plan (EAP) that listed goals for California's energy future and set forth a commitment to achieve these goals through specific actions (CEC 2003). In 2005, the CPUC and the CEC jointly prepared the EAP II to identify the further actions necessary to meet California's future energy needs. Additionally, the CEC prepared the State Alternative Fuels Plan in partnership with the California Air Resources Board and in consultation with the other state, federal, and local agencies. The alternative fuels plan presents strategies and actions California must take to increase the use of alternative non-petroleum fuels in a manner that minimizes costs to California and maximizes the economic benefits of in-state production (CEC 2005).

Locally, the Town of Corte Madera General Plan includes goals and policies to promote energy conservation in the Town (Policies RCS-2.2, RCS-2.3, and RCS-2.6), increase development and use of renewable energy (Policy RCS-2.4), and minimize transportation-related energy consumption (Policy RCS-2.5). Additionally, the Town adopted a Climate Action Plan (CAP) in 2016 and updated the CAP in December 2020. Measures within the Town's CAP include actions to reduce greenhouse gas emissions, as well as actions to reduce energy consumption.

Construction and operation of the Project would not conflict with or obstruct implementation of either the EAP, EAP II, the State Alternative Fuels Plan or local Town General Plan goals. As detailed in **Section 3.8 Greenhouse Gas Emissions**, the Project would not conflict with the Town's adopted CAP. Project construction would not require a large amount of fuel or energy usage because of the limited extent and nature of the proposed improvements and the minimal number of construction vehicles and equipment, worker trips, and truck trips that would be required for a project of this scale. Project operation would not require substantial additional energy use beyond existing conditions. No

conflicts with a state or local plan for renewable energy or energy efficiency have been identified. Therefore, no impact would result.

3.7 Geology and Soils

	Potentially Significant Impact	Less-than-Significant w/ Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42?				**X**
ii. Strong seismic ground shaking?			**X**	
iii. Seismic related ground failure, including liquefaction?			**X**	
iv. Landslides?			**X**	
b) Result in substantial soil erosion or the loss of topsoil?			**X**	
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on, or off, site landslide, lateral spreading, subsidence, liquefaction or collapse?			**X**	
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?			**X**	
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?				**X**
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?		**X**		

In a review of the Geology and Soils section of the HFABO IS/MND, it was determined that there would be no new environmental effects not already analyzed under impacts **Section 3.7 ai), f),** and **e)**. The analysis and findings in the Geology and Soils section of the HFABO IS/MND are incorporated here and summarized below, with additional site-specific analysis provided under impacts **aii), aiii), aiv), b), c),** and **d)**, and a site-specific mitigation measure provided under impact **f)**.

a.i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on

other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42. (No Impact)

As described in the HFABO IS/MND, no known active faults or Alquist-Priolo earthquake hazard zones occur in the Town of Corte Madera Planning Area. Therefore, there would be no direct impacts from fault rupture and the proposed Project would have no impact due to fault related ground rupture.

a.ii) Strong seismic ground shaking? (Less than Significant)

As described in the HFABO IS/MND, Corte Madera is approximately eight miles northeast of the San Andreas Fault zone and eleven miles southwest of the Hayward Fault zone. Therefore, the potential for intense ground shaking poses a significant threat to life and property.

As stated in **Section 1.6**, the proposed Project has been designed to comply with the site-specific recommendations made in the Project's geotechnical report. This would include design in accordance with the seismic and foundation design criteria. Additionally, the proposed Project would conform with the Town's building code as well as the California Building Code to ensure the new buildings are built to withstand strong seismic ground shaking. Therefore, with implementation of site-specific geotechnical recommendations and compliance with applicable building codes, impacts related to strong seismic ground shaking would be less than significant.

a.iii, aiv, c, and d) Liquefaction, landslides, expansive soils, or otherwise unstable soils? (Less than Significant)

As described in the HFABO IS/MND, all four hotel bonus areas are located within a relatively flat area of Corte Madera characterized by surficial deposits and surrounded by areas with few landslides. Most of Corte Madera is located within an area of high to very high liquefaction, including Bonus Area 3. Soil types found within Corte Madera include lowland areas containing alluvium and by mud consisting of rich clay soils with a moderate potential for expansion under changing conditions.

As stated in **Section 1.6**, the proposed Project has been designed to comply with the site-specific recommendations made in the Project's geotechnical report. This would include design in accordance with the seismic and foundation design criteria, site preparation and grading recommendations, and practices for addressing expansive and liquifiable soils included in the report. Additionally, the proposed Project would conform with the Town's building code as well as the California Building Code to ensure the new buildings are built to offset impacts associated with unstable soils. Impacts related to liquefaction, landslides, and expansive soils would be less than significant.

b) Result in substantial soil erosion or the loss of topsoil? (Less than Significant)

As described in the HFABO IS/MND, the Town Municipal Code has established standards and procedures for controlling erosion and runoff caused by grading, excavation, and land clearing on a construction site (Municipal Zoning Code Section 15.20.285). Examples of these control measures include best management practices (BMPs) such as hydroseeding or short-term biodegradable erosion control blankets; silt fences, vegetated swales, or other forms of protection at storm drain inlets; post-construction clearing of debris and sediment; and post-construction inspection of drainage structures for accumulated sediment.

Based on the geotechnical report prepared for the site, sandy soils on moderate slopes and clayey soils on steep slopes are susceptible to erosion, particularly when subjected to concentrated water flow. These conditions do not exist at the Project Site, which is relatively flat with surficial soils, and therefore the likelihood of erosion to occur on-site is low (Miller Pacific 2013).

During construction, the proposed Project would adhere to all applicable BMPs associated with the Town's Municipal Code. In addition, as stated in **Section 1.6**, the Project would prepare and implement a Storm Water Pollution Prevention Plan which would include best management practices designed to prevent soil and debris from leaving the site during construction. Impacts related to substation soil erosion or loss of topsoil would be less than significant.

e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater? (No Impact)

As noted in the HFABO IS/MND, any redevelopment activity within the hotel bonus areas would be required to connect to existing sewer facilities. The Project Site is currently connected to the existing wastewater collection system and would continue to be connected with implementation of the Project. There would be no impact in relation to inadequate soils for septic tanks and alternative wastewater disposal systems.

f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? (Less than Significant with Mitigation)

As described in the HFABO IS/MND, the Town's General Plan EIR indicates the Town does not contain any identified paleontological resources or exhibit geologic conditions that would contain paleontological resources. However, paleontological resources have been identified in Marin County in Pleistocene and Pliocene sediments. The HFABO IS/MND found that the potential remains to uncover previously undiscovered resources when sites are redeveloped, even in areas which have been subjected to previous disturbance. If paleontological resources were uncovered during construction, the impact could be significant without mitigation.

Mitigation Measure

Mitigation Measure GEO-1 would reduce the impact of construction activities on potentially unknown paleontological resources to a less-than-significant level by addressing discovery of unanticipated buried resources and preserving and/or recording those resources consistent with appropriate laws and requirements.

> **Mitigation Measure GEO-1: Protect Paleontological Resources during Construction Activities**
>
> In the event that fossils are encountered during construction (i.e., bones, teeth, or unusually abundant and well-preserved invertebrates or plants), the Town shall divert construction activities away from the discovery within 50 feet of the find and notify a professional paleontologist to document the discovery as needed, to evaluate the potential resource, and to assess the nature and importance of the find. Based on the scientific value or uniqueness of the find, the paleontologist may record the find and allow work to continue, or recommend salvage and recovery of the material, if it is determined that the find cannot be avoided. The paleontologist shall make recommendations for any necessary treatment

that is consistent with currently accepted scientific practices. Any fossils collected from the area shall then be deposited in an accredited and permanent scientific institution where they will be properly curated and preserved.

3.8 Greenhouse Gas Emissions

	Potentially Significant Impact	Less-than-Significant w/ Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?			**X**	
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?				**X**

In a review of the Greenhouse Gas Emissions section of the HFABO IS/MND, it was determined that project-specific analysis would be needed under impacts **Section 3.8 a)** and **b)**.

In 2005, the Governor of California signed Executive Order (EO) S-3-05, which established greenhouse gas emission reduction targets to reduce emissions as follows:

– By 2010, reduce GHG emissions to 2000 levels,
– By 2020, reduce GHG emissions to 1990 levels, and
– By 2050, reduce GHG emissions to 80 percent below 1990 levels.

Assembly Bill 32 (AB 32), the California Global Warming Solutions Act of 2006, requires California to reduce its GHG emissions to 1990 levels by 2020. In 2015, the Governor of California signed EO B-30-15, establishing an interim GHG reduction goal of 40 percent below 1990 levels by 2030, and requiring state agencies to factor climate change into all planning and investment decisions. SB 32, passed in 2016, codifies the GHG reduction targets established in EO B-30-15 to achieve a mid-range goal of 40 percent below 1990 levels by 2030.

In December 2008, pursuant to AB 32, the CARB adopted the Climate Change Scoping Plan (Scoping Plan), which outlined measures to attain the 2020 GHG emissions limit. California achieved its 2020 GHG emissions reductions target of returning to 1990 levels 4 years earlier than mandated by AB 32. The Scoping Plan has been updated twice; the current version is the 2017 Scoping Plan Update. The state is currently implementing strategies in the 2017 Scoping Plan Update to further reduce its GHG emissions by 40% below 1990 levels by 2030.

The 2017 Scoping Plan provides California's climate policy portfolio and recommended strategies to put the state on a path to achieve the 2030 target set by EO B-30-15 and SB 32. The scenario includes ongoing and statutorily required programs, continuing the Cap-and-Trade Program, and high-level objectives and goals to reduce GHGs across multiple economic sectors. Existing programs, also known as "known commitments," identified by the 2017 Scoping Plan include: SB 350, the Low Carbon Fuel Standard Program, CARB's Mobile Source Strategy, Senate Bill 1383 for short-lived climate pollutants, California's Sustainable Freight Action Plan. The high-level objective and goals recommendations cover the energy, transportation, industry, water, waste management, agriculture, and natural and working lands, and are to be implemented by a variety of state agencies.

The Town of Corte Madera adopted a Climate Action Plan (CAP) in 2016 and updated the CAP in December 2020. The CAP establishes targets similar to the State's goals to reduce emissions 40 percent below 1990 levels by 2030 and 80 percent below 1990 levels by 2050.

The greenhouse gas analysis utilizes the thresholds of significance, screening criteria and levels, and impact assessment methodologies presented in the BAAQMD CEQA Air Quality Guidelines (BAAQMD 2017a). As provided by the BAAQMD's CEQA Air Quality Guidelines, if a project meets the screening criteria for an impact category, and the analysis is consistent with the methodology used to develop the screening criteria, then its air quality impact for that category may be considered less than significant.

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? (Less than Significant)

The HFABO IS/MND noted that future development projects may result in greenhouse gas emissions that exceed the adjusted BAAQMD bright-line screening threshold of 660 metric tons of carbon dioxide equivalent ($MTCO_2e$). The BAAQMD recommends a bright-line threshold of 1,100 $MTCO_2e$ for operations in 2020 but does not have a recommended post-2020 threshold. Therefore, the BAAQMD's recommended 2020 threshold is reduced by 40 percent based on the GHG reduction goals of EO B-30-15, resulting in a post-2020 threshold of 660 $MTCO_2e$.

Project construction activities would result in a temporary increase in greenhouse gas emissions, primarily in the form of carbon dioxide from exhaust emissions associated with haul trucks, construction worker commute vehicles, and construction equipment. There is currently no applicable federal, State, or local standard or significance threshold pertaining to construction-related greenhouse gas emissions, and the BAAQMD CEQA Guidelines do not include screening criteria or significance thresholds for construction-related greenhouse gas emissions. However, the BAAQMD advises that the lead agency should quantify and disclose GHG emissions that would occur during construction and make a determination on the significance of these emissions in relation to meeting SB 32 reduction goals. Construction-generated emissions are assessed with the Project's operational emissions, as provided below.

The applicable BAAQMD-recommended operational greenhouse gas screening level is 83 rooms for a hotel. The existing facility operates 110 rooms. The Project would operate 149 rooms, or an increase of 39 rooms over existing conditions. The increase above existing would be less than the BAAQMD's operational greenhouse gas screening level for a hotel. In addition, Project operation does not include any new energy use. Therefore, Project operation would result in a less than significant impact on greenhouse gas emissions. However, the Project's construction and operational emissions were estimated using CalEEMod version 2020.4.0. In order to determine the Project's increase in emissions above existing conditions, operation of a 110-room hotel with 'historic' Title 24 energy efficiency standards was also modeled. Consistent with current practice and the HFABO IS/MND, construction emissions were quantified for the Project and annualized over an assumed 30-year operational lifespan. The Project's annualized construction emissions are included with the Project's operational emissions and assessed against the bright-line threshold of 660 $MTCO_2e$. The Project's greenhouse gas emissions are provided in **Table 4.8-1**. As shown in the table, the Project's emissions would be less than the bright-line threshold of 660 $MTCO_2e$; therefore, the Project's impact would be less than significant.

Table 4.8-1 Operational Greenhouse Gas Pollutant Emissions (Year 2024)

Parameter	Metric Tons of Carbon Dioxide Equivalents ($MTCO_2e$)
Project Operations (149-Room Hotel)	1,152
Project Construction (Annualized)	21
Existing Site Emissions (110-Room Hotel)	915
Project-Related Increase above Existing	**258**
Threshold of Significance	660
Significant Impact	No

b) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases? (No Impact)

Applicable plans adopted for the purpose of reducing GHG emissions include the CARB Scoping Plan, ABAG's Plan Bay Area 2040, and the Town's CAP. A consistency analysis with these plans is presented below to illustrate that the proposed Project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions, and impacts would be less than significant.

CARB 2017 Scoping Plan

The CARB 2017 Scoping Plan provides California's climate policy portfolio and recommended strategies to put the State on a pathway to achieve the 2030 target. The scenario includes ongoing and statutorily required programs, continuing the Cap-and-Trade Program, and high-level objectives and goals to reduce GHGs across multiple economic sectors. Existing programs, also known as "known commitments," identified by the 2017 Climate Change Scoping Plan include: SB 350, the LCFS, CARB's Mobile Source Strategy, SB 1383 for short-lived climate pollutants and California's Sustainable Freight Action Plan. The high-level objective and goals recommendations cover the energy, transportation, industry, water, waste management, agriculture, and natural and working lands, and are to be implemented by a variety of State agencies. The recommended measures in the 2017 Scoping Plan are broad policy and regulatory initiatives that will be implemented at the State level and do not relate to the construction and operation of individual projects.

As the HFABO IS/MND noted, development within the hotel bonus areas would be consistent with statewide strategies to reduce greenhouse gases which include the low carbon fuel standards, California Appliance energy Efficiency regulations, California Renewable Energy Portfolio standards, et al. Development would be consistent with these measures, as these programs require no local actions. The Project would not impede the State developing or implementing the greenhouse gas reduction measures identified in the 2017 Scoping Plan. Therefore, the Project would not conflict with AB 32 or the 2017 Climate Change Scoping Plan. No impact would result.

Plan Bay Area 2040

Plan Bay Area 2040 is the Bay Area's Regional Transportation Plan/Sustainable Community Strategy. As the HFABO IS/MND noted, Plan Bay Area 2040 lays out a development scenario for the region, which, when integrated with the transportation network and other transportation

measures and policies, would reduce GHG emissions from transportation (excluding goods movement) beyond the per capita reduction targets identified by the CARB.

Although the Project would generate new trips associated with the addition of 39 hotel rooms to the Project Site, the Project is located in an area of existing infrastructure and would not be a growth inducing project. Therefore, the Project would be consistent with the overall goals of the Plan Bay Area 2040, and no impact would result.

Town of Corte Madera CAP

The Town's adopted CAP demonstrates a community-wide emission reductions of 49 percent below 1990 emissions in 2030, which exceeds the State's 2030 goal, and puts the Town on a trajectory to meet the 2050 goal consistent with State emission reduction goals. The Project's consistency with applicable Town CAP quantified community action measures is provided in **Table 4.8-2**. In general, measures to be implemented by the Town are excluded from the table, except where the Project includes a greenhouse gas reduction component related to the respective Town CAP Reduction Measure. As shown, the Project is consistent with applicable CAP measures.

Table 4.8-2 Consistency Analysis Between Project and Applicable Town CAP Measures

Town CAP Reduction Measures	Consistency/Applicability Determination
CAP 1-4 Energy Efficiency. Promote and expand participation in residential and commercial energy efficiency programs.	**Not Applicable.** Reduction measures under CAP 1-4 would be implemented by the Town. However, it is noted, the Project would replace an older, less-efficient hotel with a new hotel compliant with Tier 1 requirements of the 2019 California Green Building Standards. The State estimated that under the 2019 Title 24 Energy code, nonresidential buildings will use about 30 percent less energy than existing buildings, and Tier 1 further exceed the 2019 base requirements by an additional 15 percent.
CAP 2-1 Bicycle and Pedestrian Transportation. Encourage bicycling and walking as a safe and efficient means to travel around Corte Madera.	**Consistent.** Project includes on-site and off-site pedestrian improvements. Pedestrian improvements and connections would be made along the Tamal Vista Boulevard frontage where the site is currently fenced and inaccessible and sidewalk does not meet current standards. Madera frontage would include pedestrian safety modifications to funnel guests to the intersection crosswalk. Internal pedestrian pathways would be located throughout the site interconnecting the parking areas, building, pond area, and providing off-site connections. Thirty bicycle parking spaces would be provided: 24 short-term and 6 long-term.
CAP 2-2 Employee Trip Reduction. Encourage employees to walk, bike, carpool or take transit to work. CAP 2-2.b Require new commercial development to implement transportation demand management programs, such as shuttle service to transit stops, vanpool services, preferred parking for carpool vehicles, and teleworking and flexible work schedule policies.	**Not Applicable**. Chapter 5.26, Trip Reduction Requirements, of the Town's zoning ordinance require TDM programs for employers with 100 or more employees. The Project would have approximately 75 employees. However, it is noted complimentary hotel van transportation to and from the airporter, local shopping, and local businesses will be provided.
CAP 2-5 Electric Vehicles. Encourage the use of electric vehicles, including electric bicycles, scooters and other personal transportation devices	**Consistent.** Project would provide 14 future EV parking spaces.

Town CAP Reduction Measures	Consistency/Applicability Determination
CAP 4-1 Indoor Water Efficiency and Conservation. Reduce indoor water use in residential and commercial buildings. CAP 4-1.a Ensure all projects requiring building permits, plan check, or design review comply with State and MMWD regulations.	**Consistent**. Project would install an AquaRecycle Laundry Wash Water Recycling System that would recover and reuse water at a rate of 80 percent. Project would comply with water efficiency and conservation requirements in CALGreen, which include reduced flow in all water fixtures. Indoor water use would be less than existing conditions. Project would receive Town review prior to issuance of building permits.
CAP 4-2 Outdoor Water Efficiency and Conservation. Reduce outdoor water use. CAP 4-2.b Support additional water-efficient landscape requirements as needed to meet water conservation targets. Provide information to the public on water-efficient landscape requirements for new and remodeled landscape projects.	**Consistent**. Project would comply with the California Department of Water Resources' Model Water Efficient Landscape Ordinance for outdoor water use. For shrubs and plants, the landscape plan relies on drought-tolerant species that can be accommodated by low-volume drip or bubbler irrigation. Outdoor water use is anticipated to be less than existing conditions.
CAP 4-4 Greywater Systems. Recycle wastewater and reduce potable water use for landscape irrigation.	**Consistent**. Although not re-used for irrigation, the Project would install an AquaRecycle Laundry Wash Water Recycling System that would recover and reuse greywater at a rate of 80 percent.
CAP 5-1 Tree Planting on Private Land. Increase carbon sequestration and improve air quality and natural cooling by increasing Corte Madera's tree cover.	**Consistent.** Approximately 80 15-gallon and 28 24-inch box (total of 108) trees would be planted, a 44% increase over existing trees at the site (calculation accounts for trees being removed).

3.9 Hazards and Hazardous Materials

	Potentially Significant Impact	Less-than-Significant w/ Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			**X**	
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?		**X**		
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?		**X**		
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?				**X**
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?				**X**
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?				**X**
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?			**X**	

In a review of the Hazards and Hazardous Materials section of the HFABO IS/MND, it was determined that there would be no new environmental effects from implementation of the Project not already analyzed under impacts **Section 3.9 e), f),** and **g)**. The analysis and findings in the Hazards and Hazardous Materials section of the HFABO IS/MND are incorporated here and summarized below, with additional site-specific analysis provided under impacts **a), b), c),** and **d)**, and a project-specific mitigation provided under impacts **b)** and **c)**.

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? (Less than Significant)

As described in the HFABO IS/MND, development with the hotel bonus areas may include the temporary or permanent use of potentially hazardous materials for cleaning and maintenance purposes, such as cleansers, pesticides, degreasers, and fertilizers. However, these potentially hazardous materials would not be of a type or be present in sufficient quantities to pose a hazard to public health and safety or the environment.

Construction of the Project would involve the use of hazardous materials, such as fuels, lubricants, paints and solvents. These materials are commonly used during construction, are not acutely hazardous, and would be used in small quantities. Regular transport of such materials to and from the Project Site during construction could result in an incremental increase in the potential for accidents. However, numerous laws and regulations ensure the safe transportation, use, storage and disposal of hazardous materials. For example, Caltrans and the California Highway Patrol regulate the transportation of hazardous materials and wastes, including container types and packaging requirements, as well as licensing and training for truck operators, chemical handlers, and hazardous waste haulers.

Worker safety regulations cover hazards related to the prevention of exposure to hazardous materials and a release to the environment from hazardous materials use. The California Division of Occupational Safety and Health (Cal-OSHA) also enforces hazard communication program regulations, which contain worker safety training and hazard information requirements, such as procedures for identifying and labelling hazardous substances, communicating hazard information related to hazardous substances and their handling, and preparation of health and safety plans to protect workers and employees. Because contractors would be required to comply with existing and future hazardous materials laws and regulations covering the transport, use and disposal of hazardous materials, the impacts related to hazardous materials used during Project construction and operation would be less than significant.

b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment? (Less than Significant with Mitigation)

As described in the HFABO IS/MND, the four hotel bonus areas are located in close proximity to Highway 101, with Hotel Bonus Area Three immediately adjacent to Highway 101. Therefore, there is the potential for nearby hazardous spills on the highway to affect future development within the hotel bonus areas. However, local, state, and federal standards include protectionary regulations which would protect public health and ensure that hazardous material exposure is avoided. Any potential use or generation of hazardous waste would be regulated through State and federal regulations, as well as through the Certified Unified Program Agencies (CUPA) and would abide by the provisions found within the Hazardous Material Area Plan.

The Project Site contains buildings of an age that may contain lead, asbestos, and other hazardous materials. If the lead is not abated prior to building construction, lead dust, asbestos fibers, and other hazardous materials could be released. This has the potential to pose a potential health threat to construction workers and the nearby public. The potential for release of hazardous materials into the environment would be significant without mitigation. See **Mitigation Measure HAZ-1** below.

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school? (Less than Significant with Mitigation)

As described in the HFABO IS/MND, Neil Cummins Elementary School is located 0.25 mile west of Hotel Bonus Area Three. The HFABO IS/MND further stated that any future development within the bonus areas would be in conformity with existing local, state, and federal regulations, including the BAAQMD Regulation 11, Rule 2.

As mentioned above under Impact b, based on the date of past construction on the Project Site, buildings that would be demolished may contain lead, asbestos, and other hazardous materials. Given the proximity to the Neil Cummins Elementary School, if the lead is not abated prior to building construction a potentially significant impact could occur. See **Mitigation Measure HAZ-1** below.

d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment? (No Impact)

As described in the HFABO IS/MND, the Cortese List discloses information related to the location of hazardous waste sites. A search of the Cortese List on Geotracker and Envirostor, performed in March of 2020, did not indicate the presence of any open or active hazardous material sites which have not yet been remediated within or adjacent to the four hotel bonus areas, including Hotel Bonus Area Three. Therefore, because the sites are not included on a list of hazardous material sites, it would not create a significant hazard to the public or the environment, and there would be no impact.

A follow-up search of the Cortese List was conducted for the Project Site on September 14, 2021. No hazardous waste sites were identified on the Project Site. There are two Leaking Underground Storage Tanks in the immediate vicinity of the Project Site; however, both are designated as “case closed” meaning no further action is required (SWRCB 2021). Therefore, it is not anticipated that the Project would create a significant hazard to the public or environment. No impact would occur.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area? (No Impact)

As described in the HFABO IS/MND, the Town of Corte Madera is located roughly six miles from San Rafael Airport, which is the nearest airport to the hotel bonus area locations. The Town does not support any air related facilities within the Town limits and the Town is not located within close proximity to a private airstrip or within the boundaries of an airport land use plan. Therefore, there will be no impacts from airport related hazards.

f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? (No Impact)

As described in the HFABO IS/MND, the Marin Operational Area (OA) Emergency Operations Plan (EOP) mandates the planned response to emergency situations pertaining to large-scale disasters affecting cities, towns, special districts, and unincorporated areas within Marin County. The EOP is based on the principles and functions of the California Standardized Emergency Management System (SEMS), the National Incident Management System (NIMS), and the California Incident Command System (ICS). The plan identifies the how the emergency operational system coincides with the overall Californian and National risk-based, all hazard emergency response and recovery operations plan. The EOP includes guidance on critical activities such as care and shelter, post-disaster housing, spontaneous volunteers, bioterrorism, and medical health and addresses supporting plans such as the Local Hazard Mitigation Plan and the Hazardous Material Response Plan.

The EOP does not list specific emergency response or evacuation routes with which the Project could interfere (Corte Madera 2009). In addition, the Project does not change the land use at the site, only slightly increases the density, and does not result in any changes to the capacity of the existing roadway system surround the Project Site. Therefore, the Project is not anticipated to interfere with an emergency response plan or emergency evacuation plan. No impact would occur.

g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires? (Less than Significant)

As described in the HFABO IS/MND, residential neighborhoods in hillside areas within the Town of Corte Madera are at risk from wildland fires due to the close proximity to open space land with large quantities of vegetation as potential fire fuel. Because the hotel bonus areas are located within urban, developed areas within commercial footprints, the likelihood of risk from wildland fires is considerably diminished.

The Project Site is not located within a designated wildland-urban interface area (Corte Madera 2008). Given the Project Site is located within an urbanized area, lacks dense vegetated areas, and nature of the proposed Project as a redevelopment site, it is unlikely the Project would expose people or structures to a significant risk associated with wildland fires. The impact from such risks would be less than significant.

Mitigation Measure

Mitigation Measure HAZ-1 would reduce the impact of encountering asbestos contaminated materials to a less-than-significant level by handling and disposing the hazardous material consistent with appropriate laws and requirements.

> **Mitigation Measure HAZ-1: Assess and Manage Hazardous Materials**
>
> Prior to building demolition, the Applicant shall ensure that a registered environmental assessor or a professional engineer perform a hazardous building materials survey of the Project Site. The survey shall be designed to identify any asbestos-containing materials, lead-based paint, electrical equipment containing Polychlorinated Biphenyls (PCBs), fluorescent lights containing mercury, or fluorescent light ballasts containing PCBs or di(2-ethylhexyl)phthalate (DEHP). If any friable asbestos-containing materials, lead-containing materials, or other hazardous components of building materials are identified, adequate abatement practices, such as containment and/or removal, in accordance with applicable regulations for the handling and removal of these materials, shall be implemented prior to demolition. Any PCB-containing equipment or fluorescent lights containing mercury vapors shall also be removed and disposed of in accordance with applicable regulations.
>
> A written plan or notification of intent to demolish buildings shall be provided to the BAAQMD at least ten working days prior to commencement of demolition, even if no ACMs are present. If asbestos is detected, the demolition and removal of asbestos-containing building materials shall be subject to applicable California Occupational Safety and Health Administration (Cal/OSHA) and BAAQMD regulations (Regulation 11, Rule 2). If lead-based paint is identified, then federal and State construction worker health and safety regulations shall be followed during demolition activities, including Title 17 of the CCR, Sections 35001 through 36000. If loose or peeling lead-based paint is identified, it

shall be removed by a qualified lead abatement contractor and disposed of in accordance with existing hazardous waste regulations.

3.10 Hydrology and Water Quality

	Potentially Significant Impact	Less-than-Significant w/ Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?			**X**	
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?			**X**	
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
i. Result in substantial erosion or siltation on- or off-site?			**X**	
ii. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?			**X**	
iii. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?			**X**	
iv. Impede or redirect flood flows?			**X**	
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?			**X**	
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?				**X**

In a review of the Hydrology and Water Quality section of the HFABO IS/MND, it was determined that there would be no new environmental effects not already analyzed under impacts **Section 3.10 b)** and **d)**. The analysis and findings in the Hydrology and Water Quality section of the HFABO IS/MND are incorporated here and summarized below, with additional site-specific analysis provided under impacts **a), c),** and **e)**.

a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality? (Less than Significant)

Water quality standards and objectives are achieved primarily through the establishment of NPDES permits and waste discharge requirements. Therefore, to evaluate whether construction or operation of the Project would result in a violation of water quality standards or waste discharge requirements, project compliance with potentially applicable NPDES permits or waste discharge requirements is evaluated.

State Water Resources Control Board NPDES Order No. 2009-0009, as amended by Order No. 2012-0006, applies to public and private construction projects that include one or more acres of soil disturbance. Construction of the Project would disturb more than one acre of land and has the potential to degrade water quality as a result of erosion caused by earthmoving activities during construction, or the accidental release of hazardous construction chemicals. As stated in **Section 1.6**, a Storm Water Pollution Prevention Plan (SWPPP) would be developed as part of the Project. The SWPPP would identify the best management practices necessary to prevent adverse impact to water quality including violation of water quality standards and waste discharge requirements. The treatment provided by the storm water management measures would reduce the potential for degradation of water quality in surface waters to a less than significant level.

Following construction, storm water runoff from the new and replaced impervious surfaces would be subject to the waste discharge requirements contained in Provision E.12 of the Phase II Stormwater Permit (Order No. 2013-0001) and the Bay Area Storm Water Management Agencies Post Construction Manual. The Town, as a condition of its Phase II Stormwater Permit, requires permanent stormwater controls for new development that creates and/or replaces approximately 5,000 square feet or more of impervious surface. The Project is considered a “Regulated Project,” and is subject to the site design measures, source controls, and stormwater treatment requirements outlined in the BASMA Post Construction Manual (BASMA 2014). The Project would be designed in compliance with the necessary regulations and would incorporate stormwater controls on-site. Numerous bioretention areas are proposed around the perimeter of the parking lot and the hotel building totaling approximately 7,530 square feet. With implementation of the Project, impervious area within the Project Site would increase from approximately 3.02 to 3.07 acres. However, runoff would be directed to the bioretention areas before discharging into the existing storm drain system. Therefore, it is not anticipated that the Project would violate water quality standards or degrade water quality. A less-than-significant impact would occur.

b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin? (Less than Significant)

As described in the HFABO IS/MND, the four hotel bonus areas are already substantially developed and are serviced through municipal water; anticipated changes to future water use and changes of impervious surfaces quantities are expected to be negligible. The Project Site would continue to be served by Marin Municipal Water District (MMWD), which does not rely on groundwater reserves to supply customers, instead the water supply is made up of seven reservoirs in Marin County with imported water from the Russian River (via the Sonoma County Water Agency), and recycled water from the Las Gallinas Valley Sanitary District. Although the Project would result in approximately 0.05 acre of new impervious surfaces on-site, it is not located in an identified groundwater recharge area. Therefore, it is not anticipated that the Project would deplete groundwater supplies or interfere substantially with groundwater recharge. The impact to groundwater would be less than significant.

c.i) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious

surfaces, in a manner which would result in substantial erosion or siltation on- or off-site? (Less than Significant)

As described in the HFABO IS/MND, current stormwater flows are directed towards the streets and into the Town's storm drainage system. Chapter 9.33 of the Town's Municipal Code would require retention of stormwater runoff to reduce runoff for any future development on the project sites. Given that the project sites are characterized by urban development, alterations to the existing drainage pattern from future development would be minimal or nonexistent, and therefore erosion, siltation, or flooding on- or off-site is not expected.

The proposed Project would not alter the course of a stream or a river. The existing developed Project Site is in a relatively flat urban area and would not be expected to result in any erosion or siltation. A negligible increase in impervious surfaces would result once the Project is constructed, increasing the area of impervious surface by approximately 0.05 acre. The magnitude of the impact would be further reduced through installation of bioretention features to adequately capture and treat runoff prior to discharge to the storm drain system. This would ensure that no erosion or siltation would occur on- or off-site. A less than significant impact would occur.

c.ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site? (Less than Significant)

As described in the HFABO IS/MND, current stormwater flows are directed towards the streets and into the Town's storm drainage system. Chapter 9.33 of the Town's Municipal Code would require retention of stormwater runoff to reduce runoff for any future development on the project sites. Numerous bioretention facilities would be installed to capture and treat the surface runoff generated on-site. Given the bioretention features would capture post-construction stormwater runoff, flooding on- or off- site is not anticipated to occur. A less than significant impact would result.

c.iii) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff? (Less than Significant)

As described in the HFABO IS/MND, current stormwater flows are directed towards the streets and into the Town's storm drainage system. Chapter 9.33 of the Town's Municipal Code would require retention of stormwater runoff to reduce runoff for any future development on the hotel bonus area sites.

Following construction, storm water runoff from the new and replaced impervious surfaces would be subject to the waste discharge requirements contained in Provision E.12 of the Phase II Stormwater Permit (Order No. 2013-0001) and the Bay Area Storm Water Management Agencies Post Construction Manual. Although the Project would result in the addition of 0.05 acre of impervious surfaces, bioretention facilities would capture the post-construction volume of runoff, and meter flows entering the existing stormwater system such that they would not be greater than existing conditions. Therefore, the existing stormwater drainage system has ample capacity to serve the proposed Project. Additionally, the proposed bioretention facilities would treat the runoff prior to discharge to the stormwater drainage system. Therefore, it is not anticipated that the Project would contribute additional sources of polluted runoff to the existing stormwater drainage system. Impacts related to exceedance of capacity or polluted runoff would be less than significant.

c, iv) Impede or redirect flood flows? (Less than Significant)

As described in the HFABO IS/MND, the Town of Corte Madera is mostly located within Flood Zone AE. Zone AE indicates a one percent vulnerability to a 100-year annual flood event. Development within the four hotel bonus areas could be subject to inundation in the event of a 100-year flood event and could impede or redirect flood flows affecting adjacent properties. However, the Town Municipal Code requires that all new structures and "substantial improvements" built within a FEMA designated Special Flood Hazard Area meet requirements set forth under the Flood Damage Prevention Ordinance found within Chapter 16.10, Flood Damage Prevention of the Municipal Code.

The Project Site is located within a 100-year flood zone with a base flood elevation of 10 feet North American Vertical Datum (NAVD), as mapped by FEMA (FEMA 2021). Therefore, the Project is subject to the Town's Flood Damage Prevention Regulations and will require a Floodplain Development Permit in accordance with Municipal Code Chapter 16.10, Flood Damage Prevention. The Project would elevate the first level of the proposed buildings at least one foot above the FEMA-designated base flood elevation, in accordance with the Municipal Code Chapter 16.10.

Although the Project Site is located within a FEMA mapped 100-year flood hazard zone, the overall footprint of the proposed hotel compared to the existing hotel would be similar. Given the modest increase in size of the footprint, the Project would have a very small potential to displace floodwaters, raise flood elevations, or create new flooding impacts over existing conditions. Therefore, the potential for the Project to impede or redirect flood flows would be less than significant.

d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation? (Less than Significant)

As described in the HFABO IS/MND, due to the site's proximity to San Francisco Bay and its majority location in a FEMA flood zone, future development could potentially expose people and or/structures to hazards generated by sea level rise, including inundation and increased flooding.

Although the Project Site is located within a flood hazard area, and while there may be small quantities of pollutants stored on-site, such as cleaning supplies or oil for equipment maintenance, they would be stored properly and in accordance with all state and federal regulations. Given the small volume and adherence to appropriate regulations, it is not anticipated that - in the event of a flood hazard - the Project would risk release of pollutants.

The HFBAO IS/MND also states that the hotel bonus area sites are not located in a mapped tsunami hazard area, with exception of area four. As the Project is located in Hotel Bonus Area Three, the proposed Project Site would not risk release of pollutants as a result of a tsunami. Furthermore, the geotechnical report for the Project Site concluded that no impacts related to seiches exist at or near the Project Site (Miller Pacific 2013). No impact would occur as the Project Site is not located within a tsunami or seiche zone.

e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan? (No Impact)

As described in the HFABO IS/MND, the Town of Corte Madera does not have an existing overarching water quality control plan or sustainable groundwater management plan dedicated within its limits. However, the Marin County Stormwater Management Plan – Action Plan 2010, as part of the Marin County Stormwater Pollution Prevention Program, provides coverage under State

Water Resources Control Board's General Permit for Storm Water Discharges from Small MS4s, (commonly referred to as the Phase II General Permit). As described above under impact a, the Project would implement a SWPPP during construction in order to ensure construction discharges do not enter the storm drain system. Pursuant to provision E.12 of the Phase II Stormwater Permit (Order No. 2013-0001) and the Bay Area Storm Water Management Agencies Post Construction Manual, the Project would install bioretention features throughout the Project Site to capture and treat stormwater runoff. Implementation of both would ensure the Project would not impact water quality. No impact would occur in relation to obstructing a water quality control plan or sustainable groundwater management plan, as none apply to the Project Site.

3.11 Land Use and Planning

	Potentially Significant Impact	Less-than-Significant w/ Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Physically divide an established community?				X
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?				X

In a review of the Land Use and Planning section of the HFABO IS/MND, it was determined that there would be no new environmental effects from implementation of the Project not already analyzed under impact **Section 3.11 a)**. Therefore, the analysis and findings in the Land Use and Planning section of the HFABO IS/MND are incorporated here and summarized below, with site-specific analysis provided under impact **b)**.

a) Physically divide an established community? (No Impact)

As noted in the HFABO IS/MND, physical division of an established community typically refers to the construction of a physical feature (such as a wall, interstate highway, or railroad tracks) or the removal of a means of access (such as a local road or bridge) that would impair mobility within an existing community, or between a community and outlying areas. Future hotel development allowed under the ordinance is restricted to existing in-fill parcels within a built environment.

The Project Site is currently developed with a hotel facility, the replacement of which would not physically divide the community. Therefore, no impact would occur.

b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect? (No Impact)

As described in the HFABO IS/MND, the Town of Corte Madera General Plan is the primary planning document for the Town of Corte Madera. Applicable General Plan policies that have been adopted for the purpose of avoiding or mitigating impacts, have been addressed throughout this Initial Study in their respective resource categories including Biological Resources, Cultural Resources, Hazardous Materials, Noise, and Transportation. In addition, Ordinance No. 995, the Hotel FAR Ordinance, would regulate the site and proposed Project. As described in **Section 1.2 Project Background**, Ordinance No. 995 allows hotel projects located within certain designated areas to achieve a greater density. The ordinance increased the FAR from 0.34 to a maximum of 0.70 FAR provided that proposed hotel projects meet the enhanced development standards in four categories: Site Planning and Design, Environmental Sustainability, Community Integration, and Public Realm. As part of the Town's application review process, the Planning Commission would review the Project against the enhanced development standards and make a determination as to the Project's compliance. If the Planning Commission determines compliance, and decides to approve the Project, findings would be made documenting compliance with the Ordinance No. 995, in the approving resolution. The Project would not be approved without the determination.

As the Project cannot be approved without a determination that the Project is in compliance with Ordinance No. 995, and associated findings made, the Project would not cause a significant environmental impact due to a conflict with Ordinance No. 995.

3.12 Mineral Resources

	Potentially Significant Impact	Less-than-Significant w/ Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?				**X**
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?				**X**

In a review of the Mineral Resources section of the HFABO IS/MND, it was determined that there would be no new environmental effects from implementation of the Project not already analyzed. Therefore, the analysis and findings in the Mineral Resources section of the HFABO IS/MND are incorporated here and summarized below.

a, b) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state, or a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan? (No Impact)

As described in the HFABO IS/MND, none of the eight "designated" sites for which significant mineral resources have been identified are located within the Town of Corte Madera. The four hotel bonus areas consist of fully developed urban environment and utilizing any of these sites would not result in a loss of resources or an important mineral resource recovery site. The proposed Project would be located within a portion of Hotel Bonus Area Three, therefore, implementation of the Project would have no impact on mineral resources.

3.13 Noise

Would the project:	Potentially Significant Impact	Less-than-Significant w/ Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?			X	
b) Result in generation of excessive groundborne vibration or noise levels?			X	
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?				X

In a review of the Noise section of the HFABO IS/MND, it was determined that there would be no new environmental effects from implementation of the Project not already analyzed under impact **Section 3.13 c)**. Therefore, the analysis and findings in the Noise section of the HFABO IS/MND are incorporated here and summarized below, with additional site-specific information provided under impacts **a)** and **b)**.

a) Result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies? (Less than Significant)

As described in the HFABO IS/MND, the hotel bonus areas are located within urban, commercial areas, most of which are within the 65 dBA noise contour for Highway 101. Existing noise conditions include automotive traffic, intermittent construction, and commercial activities. General Plan Policy PSH-5.1 establishes maximum noise levels for new lodging affected by traffic noise is 65 Ldn for outdoor activity and 45 Ldn/Peak hour for interior. General Plan Policy PSH-5.2 establishes maximum noise levels for new lodging affected by non-transportation noise as 55 Leq in the daytime and 40 Leq at night. The Noise Ordinance within Chapter 9.36 of the Town's Municipal Code sets specific maximum noise levels for mechanical devices within certain zoning districts outside of the allowable construction hours, requires all powered construction equipment is equipped with intake and exhaust mufflers, and that all jackhammers and pavement breakers are equipped with acoustical attenuating shields or shrouds.

The Project Site is located within the 65 dBA noise contour for Highway 101. As the use will not change with implementation of the Project, exposure of the Project inhabitants to existing noise and operational noise produced by the Project would be similar to existing conditions and include use of outdoor areas, traffic, rooftop mechanical equipment, and regular maintenance activities.

Construction (Temporary)

The Town does not establish maximum noise levels for construction. To reduce temporary noise during construction, the Municipal Code Chapter 9.36 and *Town of Corte Madera General Plan* (Implementation Programs PSH-5.7a and PSH-5.7b) limits construction hours and requires mufflers and acoustical shielding for construction equipment. As noted in the Construction Duration and Hours description of **Section 1.4** , the Project would abide by the construction hour limits established by the Town. As noted in the Compliance with Existing Regulations section, the Project would follow Bay Area Air Quality Management District (BAAQMD) recommended Basic Construction Measures which includes keeping equipment tuned and muffled in accordance with manufacturers specifications, thus also complying with this Town requirement.

Because the Project would abide by standards set in the Town's general plan, the Project would not generate substantial temporary noise during construction in excess of established standards. Impacts to ambient noise conditions during construction would be less than significant.

Operation (Permanent)

As noted in the HFABO IS/MND, noise from sources such as people talking, employees using outdoor common areas, or property maintenance may contribute to the noise environment within the direct vicinity of the Project Site. However, this would be no different than existing conditions. Additionally, exterior mechanical and HVAC equipment associated with the new hotel would be similar or better to existing conditions, as well as similar to the equipment at surrounding commercial uses. Although daily vehicle trips are expected to conservatively increase by 658 as a result of the increased number of rooms over existing conditions, the increase would be expected to increase traffic noise levels by less than 1dBA L_{dn}. Therefore, no substantial permanent change in the existing ambient conditions is expected. Impacts to ambient noise conditions during operation would be less than significant.

b) Result in generation of excessive groundborne vibration or noise levels? (Less than Significant)

The HFABO IS/MND described how construction activities generate varying degrees of ground vibration, depending on the construction procedures, construction equipment used, and proximity to vibration-sensitive uses. The generation of vibration, and related noise, can range from no perceptible effects at the lowest vibration levels, to low rumbling sounds and perceptible vibrations at moderate levels, to slight damage at the highest levels.

The Town of Corte Madera does not specify a vibration limit for construction activities. Based on the thresholds provided by Caltrans, a construction vibration limit of 0.3 in/sec PPV would minimize damage at buildings of normal conventional construction. A significant impact would occur if buildings adjacent to the proposed construction site were exposed to vibration levels in excess of 0.3 in/sec PPV.

Table 3.13-1 presents typical vibration levels that could be expected from construction equipment at a distance of 25 feet and 75 feet. Impact pile driving, which is typically associated with higher levels of vibration, is not anticipated for this Project. Construction activities, such excavators, scrapers and other high-power or vibratory tools, and rolling stock equipment (tracked vehicles, compactors, etc.) may generate vibration in the immediate vicinity but would be below the Caltrans construction vibration limit.

Table 3.13-1 Vibration Source Levels for Construction Equipment

Equipment	PPV at 25 ft (in/Sec)	PPV at 75 ft. (in/sec)
Clam shovel drop	0.202	0.060
Vibratory Roller	0.210	0.063
Hoe Ram	0.089	0.027
Large bulldozer	0.089	0.027
Caisson drilling	0.089	0.027
Loaded trucks	0.076	0.023
Jackhammer	0.035	0.010
Small bulldozer	0.003	0.001

The nearest residential structures, from property edge to property edge, are approximately 50 feet to the west, while the commercial structure to the north is approximately 25 feet from the Project Site. Vibration levels may be perceptible to occupants at times but would be below the 0.3 in/sec PPV vibration limit used to minimize the potential for cosmetic damage. As construction moves away from the property line, vibration levels would be even lower. Construction along the edges of the property is expected to be limited to grading, paving, and trenching, with the bulk of construction occurring more centralized withing the site at the location of the proposed building. The potential for exposure to excessive groundborne vibration during construction would be less than significant.

The HFABO IS/MND found that operation of future hotels within the hotel bonus areas would not generate substantial levels of groundbourne vibration, and related noise, because there are no notable sources of vibrational energy associated with such development, such as industrial machinery or railroad operations. In addition, the Project replaces the existing land use with the same land use. Thus, operation of the Project would result in a less than significant impact to groundborne vibration.

c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels? (No Impact)

As noted in the HFABO IS/MND, the Town of Corte Madera is located roughly six miles from San Rafael Airport. The Town does not support any airport or airstrip related facilities within the Town limits and the Town is not located within close proximity to a private airstrip or within the boundaries of an airport land use plan. Therefore, the Project would not expose people to noise in the vicinity of a private airstrip, and no impact would occur.

3.14 Population and Housing

	Potentially Significant Impact	Less-than-Significant w/ Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?			X	
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?				X

In a review of the Population and Housing section of the HFABO IS/MND, it was determined that there would be no new environmental effects from implementation of the Project not already analyzed. Therefore, the analysis and findings in the Population and Housing section of the HFABO IS/MND are incorporated here and summarized below.

a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)? (Less than Significant)

As stated in the HFABO IS/MND, buildout of potential future development facilitated by the increased FAR could result in an estimated addition of employees, which would most likely include residents of Corte Madera or the surrounding Bay Area. However, the available employment opportunities and subsequent potential increase in population to fill these new employment opportunities is anticipated to be within projected increased population and job growth for the Town. Changes to existing FAR through the proposed amendment is therefore not expected to substantially alter the number of people visiting the four project areas compared to the existing conditions.

The proposed Project does not include new residential uses that could provide permanent housing for new residents. The proposed Project would provide approximately 75 employment opportunities in order to operate the hotel. However, the Project would not result in a substantial change in population or jobs in the Project area as the existing hotel would be replaced with the same use of similar size. A less than significant impact would occur.

b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere? (No Impact)

As stated in the HFABO IS/MND, no housing units are located in Hotel Bonus Area Three. The proposed Project would merely replace an existing hotel with another hotel. No people or housing would be displaced and no replacement housing would be necessary. No impact would occur.

3.15 Public Services

	Potentially Significant Impact	Less-than-Significant w/ Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
Fire Protection?			X	
Police protection?			X	
Schools?			X	
Parks?			X	
Other public facilities?			X	

In a review of the Public Services section of the HFABO IS/MND, it was determined that there would be no new environmental effects from implementation of the Project not already analyzed. Therefore, the analysis and findings in the Public Services section of the HFABO IS/MND are incorporated here and summarized below.

a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for public services? (Less than Significant)

As stated in the HFBAO IS/MND, all four hotel bonus areas are all well served by existing public services. Fire protection would be provided by the Corte Madera Fire Department and Police protection would be provided by the Central Marin Police Authority. Any potential increase in demand would be offset by contribution of fair-share funding toward fire and police services in accordance with General Plan Implementation Programs LU-6.2 b and LU-6.4 b.

The Project would replace the existing hotel with a slightly larger hotel. Although the Project would slightly increase employment opportunities over existing conditions, it is not anticipated that it would result in an increase in population that would have a substantial impact on emergency services, schools, or parks. It is anticipated that a majority of the employees would be existing residents of Corte Madera and the surrounding communities. For those employees that may move to Corte Madera to work at the new hotel, they would live in existing housing that is already serviced by existing fire, police, school and park facilities.

As the Project would replace an existing hotel with a slightly larger hotel, it is anticipated that service ratios would continue to be met with implementation of the Project, and the Project would not result in a substantial increase in population. Potential impacts to public services would be less than significant.

3.16 Recreation

	Potentially Significant Impact	Less-than-Significant w/ Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?			**X**	
b) Include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?			**X**	

In a review of the Recreation section of the HFABO IS/MND, it was determined that there would be no new environmental effects from implementation of the Project not already analyzed. Therefore, the analysis and findings in the Recreation section of the HFABO IS/MND are incorporated here and summarized below.

a, b) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated? Or include or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment? (Less than Significant)

As stated in the HFBAO IS/MND, recreational facilities could be used by guests of future potential projects; however, these would be limited in duration based on visitors' length of stay within Corte Madera and would not be anticipated to result in substantial physical deterioration of parks and recreational facilities. The Project would create a minimal demand on the existing neighborhood and regional parks for the new employees and guests of the hotel. However, the increase in the number of employees would be small, and the number of guests that would utilize the adjacent recreational facilities is anticipated to be minor. Therefore, use by the guests and employees of the recreational facilities in close proximity to the hotel is not expected to contribute noticeably to the deterioration of those facilities. The minor increased use of existing facilities would be a less-than-significant impact.

3.17 Transportation

	Potentially Significant Impact	Less-than-Significant w/ Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?				X
b) Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?			X	
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?		X		
d) Result in inadequate emergency access?			X	

The HFABO IS/MND evaluated the impacts of implementing a larger-unit hotel than the Project, within Bonus Area Three, and found no transportation impacts would result. However, this Initial Study conservatively provides a project-specific analysis of the potential impacts to transportation.

The following analysis is based on *Transportation Impact & LOS Study for Corte Madera Residence Inn* (GHD 2021) and included as **Appendix C**.

a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities? (No Impact)

Consistent with Corte Madera General Plan policies CIR-1.3, CIR-1.6, CIR-3.1, and CIR-3.5 the Project would provide pedestrian paths, and improved sidewalks and pedestrian connection points along the frontage of the Project Site. These improvements would emphasize the use of pedestrian pathways and sidewalks and improve the adequacy and availability of the circulation system for all persons by implementing the Americans with Disabilities Act (ADA).

General Plan Policy CIR-1.2 requires the Town to ensure current Levels of Service at intersections are maintained when considering new development within Corte Madera, with a specific implementation program to "strive to maintain Level of Service D operation" during the a.m. and p.m. peak periods. As detailed in **Appendix C** and summarized below in **Table 4.17-1**, LOS would remain unchanged with implementation of the Project with each intersection operating acceptably based on the General Plan adopted target.

Table 4.17-1 Existing Plus Project Conditions Intersection LOS

#	Intersection	Target LOS	AM Peak Hour		PM Peak Hour	
			Delay	LOS	Delay	LOS
1	Tamal Vista Blvd / Wornum Dr	D	14.8	B	16.4	B
2	Tamal Vista Blvd / Madera Blvd / Council Crest Dr	D	12.6	B	24.6	C
3	Tamalpais Dr / Madera Blvd	D	48.4	D	49.5	D
4	Tamalpais Dr / Hwy 101 SB Off-ramp	D	18.1	B	20.4	C
5	Tamalpais Dr / Hwy 101 NB Off-ramp	D	16.1	B	20.4	C

The Project is not anticipated to conflict with planned transportation improvements identified in the Corte Madera General Plan and applicable regional transportation plans. Therefore, there would be no impact.

b) Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)? (Less than Significant)

This section provides an analysis of potential impacts due to vehicle miles travelled (VMT) attributable to the project. The Town of Corte Madera has not yet adopted criteria and impact thresholds for evaluating VMT impacts. The analysis of VMT impacts described below meets the requirements stipulated by the current statewide CEQA guidelines as updated effective July 2020, and incorporate relevant advice contained in the Technical Advisory on Evaluating Transportation Impacts in CEQA published by the Governor's Office of Planning & Research (OPR) in December 2018.

VMT impacts attributable to the proposal hotel may be considered potentially significant if:

– VMT attributable to hotel employees exceeds 85 percent of the average rate of VMT per Employee for Marin County; or
– VMT attributable to hotel guests results in a significant net increase in total regional VMT.

VMT Attributable to Hotel Employees

VMT attributable to hotel employees is anticipated to be less than significant based on the Transportation Agency of Marin (TAM) VMT Web Map, which provides VMT data for work trips within the area based on the TAM Travel Demand Model. The applicable VMT rates from the TAM model are summarized on **Table 4.17-2**. The Project Site, which currently has an operating hotel, is located in an area in which the rate of VMT per Employee is more than 15 percent below the County average, and VMT attributable to hotel employees are therefore anticipated to be less than significant:

– The TAM model indicates that the current rate of VMT per Employee for work-related trips in Marin County is 20.7 miles per Employee. Therefore, employee VMT associated with the Project would be considered significant if it exceeded 17.6 miles per employee (based on 85 percent of the County average).
– The Project Site is located within an area identified as Transportation Analysis Zone (TAZ) 800,117 within the TAM model, an area that also includes the Corte Madera Town Center and Corte Madera Village shopping centers. The current rate of VMT per Employee for work-related trips to/from jobs in TAZ 800,117 is 15.9 miles per Employee (based on the Year 2015 TAM model data).

Table 4.17-2 VMT per Employee

	Average Weekday VMT per Employee
Marin County	20.7
Project Location (TAZ 800,117)	15.9

Source: Transportation Authority of Marin (TAM) Travel Demand Model, TAM VMT Web Map: www.tam.ca.gov/planning/travel-demand-model-traffic-monitoring/#

VMT Attributable to Hotel Guests

VMT attributable to hotel guests would be considered significant if it resulted in a significant net increase in total regional VMT, consistent with the recommended method of evaluating VMT for customer-serving retail uses. The proposed hotel would serve to provide regionally desirable lodging in order to accommodate tourists that visit locations in the area. Hotels attract guests already visiting Marin County and surrounding region that would otherwise stay at another hotel, vacation rental, or Air B&B, as well as "day trippers" already visiting the area that would otherwise not stay in the area overnight.

As described in the *Technical Advisory on Evaluating Transportation Impacts in CEQA* (OPR December 2018), VMT re-routed from other origins or destinations as the result of a project would not be attributable to a project except to the extent that the re-routing results in a net increase in VMT. For example, OPR guidelines note that retail projects typically re-route travel from other retail destinations, and therefore a retail project may lead to increases or decreases in VMT, depending on previously existing travel patterns.

Similarly, hotel projects typically re-route travel from other hotels and/or other lodging option locations. Marin County has over 2,400 hotel rooms (not including an additional 450 short-term lodging options such as Bed & Breakfasts and Air B&B rentals), with a typical occupancy of about 80 percent[1] (excluding the drop in occupancy that occurred in 2020 and 2021 due to the COVID-19 pandemic). Other lodging options near the Project Site include various hotels and motels along Highway 101 throughout Marin County, as well as lodging options including hotels and Air B&B within Corte Madera and adjacent towns and cities.

The proposed hotel is unlikely to result in an increase in the number of visitors to Marin County. Additionally, the Project would offer complimentary hotel van transportation to and from the airporter, local shopping, and local businesses. VMT attributable to hotel guests would not generate a significant net increase in total regional VMT. Therefore, VMT impacts attributable to hotel guests are anticipated to be less than significant.

c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? (Less than Significant with Mitigation)

Construction

At its peak, the Project construction would generate up to 64 round trips, including haul trucks and employees, to the Town of Corte Madera and other jurisdictional roadways, creating potential temporary traffic hazards along Madera Boulevard. If trucks were to begin to queue up on the Highway 101 off-ramp or if multiple large construction vehicles were to enter and exit the site at the same time, this could increase hazards along Madera Boulevard. Hazard impacts during construction would be significant without mitigation. See **Mitigation Measure TR-1** below.

[1] Marin County Visitor's Bureau, State of the Visitor Industry in Marin County, Economic Report, November 2019

Operation

Hazards to Pedestrians

Existing constraints to walking to and from the Project Site include:

– Effective sidewalk width on Tamal Vista Boulevard bordering the Project Site does not meet ADA standards. Utility poles exist within the sidewalk bordering the Project Site, reducing the walkway width to just over 3 feet in multiple places.
– No direct pedestrian access to the Project Site from Tamal Vista Boulevard. An existing fence and locked gates along the western boundary of the Project Site, bordering Tamal Vista Boulevard restricts access to/from the Project Site.
– Pedestrian path to the Project Site via Madera Boulevard terminates at the existing western driveway, with no provisions for pedestrians traveling within the site.
– Pedestrians sometimes attempt to cross Madera Boulevard from the existing driveway to directly south crossing multiple lanes of traffic.

The Project would include the following pedestrian improvements to improve walking circulation to and from the Project Site:

– Replace the narrow sidewalk along the Tamal Vista Boulevard frontage with a wider sidewalk that provides adequate width and cross-slope to meet ADA standards, including removal of an obsolete curb-cut.
– Modify the curb ramp adjacent to the west side of the site's driveway on Madera Boulevard to bring it into compliance with ADA standards.
– Immediately west of the Project Site driveway along the north side of Madera Boulevard, modifications to the sidewalk and landscaping would be used to provide a soft barrier and "funnel" pedestrians west on Madera Boulevard, to then cross at the existing intersection/crosswalk.

These pedestrian improvements would improve pedestrian circulation and reduce hazards to people walking to and from the Project Site. Therefore, the Project would not increase hazards to pedestrian travel

Hazards to Motor Vehicles and Bicyclists

Access to the Project would occur via a segment of Madera Boulevard between Tamal Vista Boulevard and Highway 101 that has two motor vehicle lanes in each direction, and a two-way center left-turn lane, that serves a total of five driveways:

– Three driveways on the north side of Madera Boulevard, including one driveway to the west that provides access to an office building at the northeast corner of Madera Boulevard and Tamal Vista Boulevard, and the two existing driveways serving the Project Site.
– Two driveways on the south side of Madera Boulevard, including the Corte Madera Town Center driveway (roughly 60 feet west of the westernmost driveway serving the Project Site on the north side of Madera Boulevard) and a Chevron driveway close to Highway 101 (across from the existing easternmost driveway serving the Project Site that would be removed from the Project).

Due to the off-set placement of the Corte Madera Town Center and Project driveways, conflicting movements can occur within the two-way center turn-lane when vehicles attempt to make left-turns

into the Town Center and Project Site, which could lead to potential collisions within the turn-lane if such movements occur simultaneously. Under existing conditions, such conflicting movements are rare given the low volume of traffic entering the existing hotel site via the westernmost driveway. According to the Statewide Integrated Traffic Records System, there were just two reported collisions on this segment of Madera Boulevard, between Tamal Vista Avenue and Highway 101 during the five-year period from January 2015 thru December 2019. At a rate of less than 0.08 collisions per million vehicle miles, this is well below applicable statewide and national averages.

Based on the review of the proposed Project access, the Project would reduce potential hazards by removing the easternmost driveway on Madera Boulevard, to provide greater line-of-site and a safer vehicular turning area for those exiting Highway 101. Although the total number of driveways on Madera Boulevard would be reduced, the Project design would not substantially increase existing hazards.

Based on the review of the proposed Project access, the Project would reduce potential hazards by removing the easternmost driveway on Madera Boulevard, to provide greater line-of-site and a safer vehicular turning area with greater separation from the Highway 101 off-ramp. The Project design would not substantially increase a hazard due to a geometric design feature. The impact would be less than significant.

d) Result in inadequate emergency access? (Less than Significant)

Although the site would lose one of the existing access points, the Project would not result in inadequate emergency access. In addition to emergency access via the main entrance at the south end of the Project Site on Madera Boulevard, existing emergency access at the north end of the Project Site is provided by an existing 12-foot-wide secondary emergency access driveway that connects with the adjacent office building property to the north. The north emergency access driveway would remain under the proposed Project, providing convenient secondary access by emergency vehicles when needed. The impact to emergency access would be less than significant.

Mitigation Measure

Mitigation Measure TR-1 would reduce traffic hazards during construction by preparing a traffic management plan and implementing safe hours of operation, truck routes and access provisions, and designated worker parking.

> **Mitigation Measure TR-1: Reduce Traffic Hazards during Construction**
>
> The Applicant shall prepare a construction traffic management plan (CTMP), defining hours of operation, specified truck routes, ingress/egress into the site, and construction parking provisions during demolition and construction associated with the Project. The CTMP shall be subject to review and approval by the Town of Corte Madera Public Works Department prior to the issuance of grading or building permits.

3.18 Tribal Cultural Resources

	Potentially Significant Impact	Less-than-Significant w/ Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Cause a substantial adverse change in the significance of a tribal cultural resource listed or eligible for listing in the California Register of Historic Resources, or in a local register of historic resources as defined in Public Resources Code section 5020.1(k)?				**X**
b) Cause a substantial adverse change in the significance of a tribal cultural resource that is a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to the criteria set forth in subdivision (c) of the Public Resources Code section 5024.1? In applying the criteria set forth in subdivision (c) of the Public Resources Code section 5024.1, the lead agency shall consider the significance of the resource to a California Native American Tribe.		**X**		

In a review of the Tribal Cultural Resources section of the HFABO IS/MND, it was determined that there would be no new environmental effects from implementation of the Project not already analyzed under impact **Section 3.18 a)**. The analysis and findings in the Tribal Cultural Resources section of the HFABO IS/MND are incorporated here and summarized below, with additional site-specific analysis provided under impact **b)**.

The CEQA Guidelines define tribal cultural resources as: (1) a site, feature, place, cultural landscape, sacred place, or object with cultural value to a California Native American Tribe that is listed or eligible for listing on the California Register of Historical Resources, or on a local register of historical resources as defined in Public Resources Code Section 5020.1(k); or (2) a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant according to the historical register criteria in Public Resources Code Section 5024.1(c), and considering the significance of the resource to a California Native American tribe.

a) Cause a substantial adverse change in the significance of a tribal cultural resource listed or eligible for listing in the California Register of Historic Resources, or in a local register of historic resources. (No Impact)

As described in the HFABO IS, a search of the California Historical Resources through the Office of Historic Preservation revealed there are no listed resources or potential resources eligible for listing in the California Register of Historical Resources within the hotel bonus areas. A 2021 Northwest Information Center record confirmed similar results. The record search indicated the State Office of Historic Preservation Built Environmental Resources Directory lists no recorded resources on or adjacent to the Project Site. The Project would therefore not result in a substantial adverse change to a listed or eligible resource.

b) Cause a substantial adverse change in the significance of a tribal cultural resource that is a resource determined by the lead agency? (Less than Significant with Mitigation)

No tribes have requested notification under AB 52 regarding proposed projects within the Town of Corte Madera. As described in **Section 3.5 Cultural Resources**, a NWIC Records Search was conducted for the Project. The Records Search did not reveal any recorded archaeological resources at the Project Site but indicated there is a moderate to high potential for unrecorded buried Native American resources to be within the Project area.

Although no evidence of known tribal cultural resources has been found, the discovery of unknow tribal cultural resources cannot be entirely discounted. If the Project encountered unknown tribal cultural resources a potentially significant impact would occur.

Mitigation Measure

Mitigation Measure TCR-1 would mitigate this impact to a less-than-significant level by providing a process for unknown tribal cultural resources to be evaluated and then determine the appropriate avoidance and protection measures.

> **Mitigation Measure TCR-1: Protect Unknown Tribal Cultural Resources**
>
> If previously unknown tribal cultural resources are uncovered, the Applicant shall halt work, and workers shall avoid altering the materials and their context. Project personnel shall not collect cultural materials. The Applicant shall notify the Town and the California Native American tribes culturally affiliated with the Project area. The Applicant, in coordination with Native American tribes, shall determine if the resource qualifies as a tribal cultural resource under CEQA. If it does, then all work must remain stopped in the immediate vicinity to allow evaluation of any materials. The Applicant shall ensure that qualified resources are avoided, protected in place, or moved to an appropriate location in accordance with the requests of Native American tribes, to the extent feasible. Work may proceed on other parts of the Project while mitigation for tribal cultural resources is being carried out.

3.19 Utilities and Service Systems

	Potentially Significant Impact	Less-than-Significant w/ Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electrical power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?			**X**	
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?			**X**	
c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?			**X**	
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?			**X**	
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?				**X**

In a review of the Utilities and Service section of the HFABO IS/MND, it was determined that there would be no new environmental effects from implementation of the Project not already analyzed under impacts **Section 3.19 a), c), d),** and **e)**. The analysis and findings in the Utilities and Services section of the HFABO IS/MND are incorporated here and summarized below, with project-specific analysis provided under impact **b)**.

a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electrical power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects? (Less than Significant)

The HFABO IS/MND noted that the hotel bonus areas are fully built out with commercial uses and are well served by wastewater treatment facilities, storm water drainage, and utilities including electric power, natural gas, and telecommunication facilities. This characterization is applicable to the Project Site which is adequately served and does not require the construction of new or expanded utilities.

Although electrical power lines will be relocated underground, this is being done as part of the frontage improvements as a way to improve the "public realm" in accordance with Ordinance No. 995, not to serve the Project Site. The Project does not include new or expanded utilities, and impacts related to the relocation of utilities would be less than significant.

b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years? (Less than Significant)

The Project would replace an older, inefficient hotel complex with a new efficient building that would be required to meet California Green building Standards Code (CALGreen Code). Current average annual water usage of the existing hotel is 5.27 million gallons per year. The proposed Project, under CALGreen standards, is expected to use approximately 4.12 million gallons per year (CalEEMod version 2020.4.0). This is a 22% reduction in water use over existing conditions.

In addition, as noted in **Section 1.6**, the Project has been designed to exceed the basic CALGreen requirements by complying with the Tier 1 requirements. This means that in addition to the mandatory/base building requirements of the CALGreen Code, the Project would implement further water reduction measures to exceed the base by 12 percent. Finally, the Project also would install an AquaRecycle Laundry Wash Water Recycling System that would recover and reuse water at a rate of 80 percent. With these additional water reduction components of the Project, a further reduction in water usage could be achieved.

With regard to outdoor water use, the Project would comply with the California Department of Water Resources' Model Water Efficient Landscape Ordinance. For shrubs and plants, the landscape plan relies on drought-tolerant species that can be accommodated by low-volume drip or bubbler irrigation.

Because the Project would use less water than is used under existing conditions, the Project's impact to water supplies would be less than significant.

c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments? (Less than Significant)

As noted in the HFABO IS/MND, the Town is well served by existing wastewater facilities that provide conveyance and treatment. In addition, the hotel bonus areas are currently built out with commercial uses and served adequately by existing wastewater facilities. Therefore, the Project's impact to wastewater facilities would be less than significant.

d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals and comply with federal, state, and local management and reduction statutes and regulations related to solid waste? (Less than Significant)

As detailed in the HFABO IS/MND, all future development facilitated by Ordinance No. 955 would be subject to applicable solid waste reduction laws as well as local policies and programs regarding waste reduction. Future development within the hotel bonus areas could result in a slight increase in solid waste generation due to the increase in employees and visitors on-site. However, the increase was expected to result in less than significant impacts related to landfill capacity and solid waste disposal.

Construction of the Project would result in a temporary increase in solid waste disposal needs associated with demolition and construction wastes. Following construction, the proposed Project

would be expected to produce similar, or slightly increased, volumes of solid waste as compared to existing conditions.

Because the Project would meet Tier 1 requirements under CALGreen, it would be required to recycle at least 65% of its construction waste. Demolition debris, such as pavement and sod, would be off-hauled for recycling or composting. Materials with no practical potential for reuse would be disposed of at a regional landfill.

The solid waste generated during construction and operation of the Project would represent a small fraction of the daily permitted tonnage at local disposal facilities. Solid waste from operation of the Project would not be expected to exceed the capacity of or otherwise adversely affect the local landfills. Therefore, the impact related to increased demand for solid waste and landfill space would be less than significant.

e) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals and comply with federal, state, and local management and reduction statutes and regulations related to solid waste? (No Impact)

As noted in the HFABO IS/MND, all future development within the hotel bonus areas would be subject to applicable solid waste reduction laws and local policies and programs.

No applicable federal solid waste regulations would apply to the Project. At the State level, the Integrated Waste Management Act mandates a reduction of waste being disposed and establishes an integrated framework for program implementation, solid waste planning, and solid waste facility and landfill compliance. Project construction and demolition activities would comply with applicable solid waste regulations, and solid waste generated on-site would be disposed of in accordance with all applicable federal and state regulations related to solid waste. As noted under Impact d, the Project would comply with the Tier 1 CALGreen requirements regarding the disposal of construction waste. No impact would occur related to non-compliance with applicable statues and regulations.

3.20 Wildfire

	Potentially Significant Impact	Less-than-Significant w/ Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?				X
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?			X	
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?				X
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides as a result of runoff, post-fire slop instability, or drainage changes?			X	

In a review of the Wildfire section of the HFABO IS/MND, it was determined that there would be no new environmental effects, but that site-specific analysis would be needed. The analysis and findings in the Wildfire section of the HFABO IS/MND are incorporated here and summarized below, with additional site-specific analysis provided under all impact questions.

a) Substantially impair an adopted emergency response plan or emergency evacuation plan? (No Impact)

As described in the HFBAO IS/MND, all development within the hotel bonus areas would be subject to local fire related emergency response plans or emergency evacuation plans as well as local policies and programs regarding fire protection and prevention. As mentioned previously under **Section 3.9**, **Hazards and Hazardous Materials**, the Marin Operational Area (OA) Emergency Operations Plan (EOP) mandates the planned response to emergency situations pertaining to large-scale disasters affecting cities, towns, special districts, and unincorporated areas within Marin County. The EOP does not list specific emergency response or evacuation routes with which the Project could interfere (Corte Madera 2009).

The Project would redevelop an existing hotel facility with a similar facility. There would be no change in the land use and little change in the density. The Project would not result in any change over existing conditions that would substantially impair an adopted emergency response plan. No impact would occur.

b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire? (Less than Significant)

As described in the HFBAO IS/MND, the Town is within the “local-responsibility zones” and is classified as Non Very High Fire Hazard Severity Zone (Non-VHFHSZ). In addition, all hotel bonus

areas are within developed urban areas which lack wildland habitat typically contributing as fuel for wildfires.

Hotel Bonus Area 3 is located within a fairly flat topographical area. As the Project would replace an existing hotel with a slightly larger new hotel and is located within an area designated as a Non Very High Fire Hazard Severity Zone, it is it is unlikely the Project would greatly increase exposure of Project occupants to pollutant concentrations should a wildfire occur. Impacts related to exacerbated wildfire risks or exposer to pollutant concentrations would be less than significant.

c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment? (No Impact)

The Project would redevelop an existing hotel facility with a new hotel. The improvements do not require the installation of any infrastructure that would exacerbate fire risk or result in impacts to the in impacts to the environment. Therefore, no impact would occur.

d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides as a result of runoff, post-fire slop instability, or drainage changes? (Less than Significant)

The Project Site is currently developed and located within an urban setting. The site itself is fairly flat and does not abut any hillsides or steep slopes. Therefore, it is unlikely that should a wildfire occur, a landslide or post-fire slope instability would occur at the Project Site. Exposure of people or structures to such risks would be less than significant.

3.21 Mandatory Findings of Significance

	Potentially Significant Impact	Less-than-Significant w/ Mitigation Incorporated	Less-than-Significant Impact	No Impact
Does the project:				
a) Have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?		X		
b) Have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?			X	
c) Have environmental effects which would cause substantial adverse effects on human beings, either directly or indirectly?		X		

a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory? (Less than Significant with Mitigation)

As evaluated in this IS/Proposed MND, the Project would not substantially degrade the quality of the environment; substantially reduce the habitat of a fish or wildlife species; cause a fish or wildlife population to drop below self-sustaining levels; threaten to eliminate a plant or animal community; reduce the number or restrict the range of an endangered, rare, or threatened species; or eliminate important examples of the major periods of California history or prehistory.

Compliance with existing regulations (see **Section 1.6 Compliance with Existing Regulations and Standard BMPs**) to reduce impacts related to air quality, geologic hazards, stormwater run-off, and water usage. Additionally, mitigation measures are listed herein to reduce impacts related to air quality, biological resources, cultural resources, hazards and hazardous materials, transportation, and tribal cultural resources. With implementation of the required mitigation measures, impacts would be less than significant.

b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects,

the effects of other current projects, and the effects of probable future projects)? (Less than Significant)

Cumulative impacts are defined as “two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts” (CEQA Guidelines Section 15355). Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

The cumulative impact analysis in this Initial Study uses the list approach. A search was undertaken for reasonably foreseeable projects in the vicinity of the Project area that may have overlapping or cumulative impacts with the proposed Project, using the Town’s Active Projects and Approved Projects lists. The website does not identify specific nearby projects with potentially overlapping impacts in the Project area including Madera Boulevard and Tamal Vista Boulevard. Therefore, implementation of the Project would not contribute to potential cumulative impacts.

c) Does the project have environmental effects which would cause substantial adverse effects on human beings, either directly or indirectly? (Less than Significant with Mitigation)

As discussed in the analysis throughout **Chapter 3** of this Initial Study, the Project would not have environmental effects that would cause substantial adverse direct or indirect effects on human beings after compliance with existing regulations and with implementation of mitigation measures.

4. References

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5. Report Preparers

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5.2 GHD

Kristine Gaspar, Project Manager

Charles Smith, Quality Control Review

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Haley Cahill, Environmental Planner

Kelsey McDonald, Plant Ecologist

Chryss Meier, Environmental Scientist

Genevieve Rozhon, Wildlife Biologist

Appendices

Appendix A

Profile Views and Design Plans



PERSPECTIVE VIEW FROM CHEVRON STATION ACROSS MADERA BLVD.
SCALE: N/A

1



SOUTHEAST CORNER PERSPECTIVE
SCALE: N/A

2



PERSPECTIVE VIEW FROM 101 SOUTH
SCALE: N/A

3

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PROJECT NAME
RESIDENCE INN CORTE MADERA

56 MADERA BLVD
CORTE MADERA, CA 94925

NO.	DATE	ISSUES AND REVISIONS	BY
1.	03/01/2021	DESIGN REVIEW SUBMITTAL	
2a.	05/19/2021	REVISED SUBMITTAL	

DATE

SCALE

PROJECT NUMBER 19.055

COMPUTER FILE

PROJECT NAME --

DESCRIPTION
PERSPECTIVE VIEWS

SHEET NUMBER
G1.01

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PERSPECTIVE VIEW FROM TAMAL VISTA BLVD LOOKING SOUTH
SCALE: N/A

1



PERSPECTIVE VIEW OF COURTYARD
SCALE: N/A

2



PERSPECTIVE VIEW LOOKING TOWARDS MEETING ROOMS
SCALE: N/A

3

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SCALE

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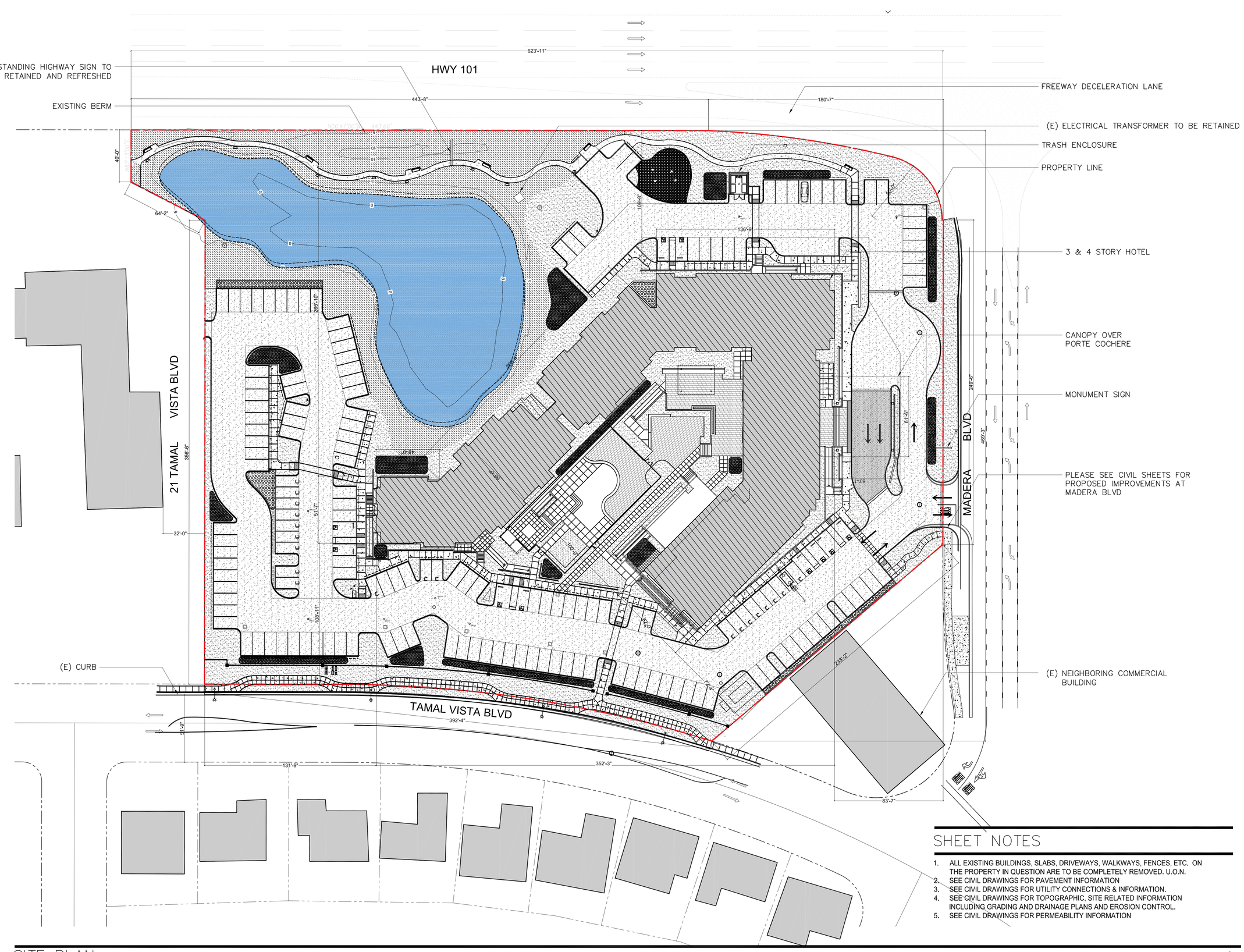
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PROJECT NAME --

DESCRIPTION
PERSPECTIVE VIEWS

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SHEET NOTES

1. ALL EXISTING BUILDINGS, SLABS, DRIVEWAYS, WALKWAYS, FENCES, ETC. ON THE PROPERTY IN QUESTION ARE TO BE COMPLETELY REMOVED. U.O.N.
2. SEE CIVIL DRAWINGS FOR PAVEMENT INFORMATION
3. SEE CIVIL DRAWINGS FOR UTILITY CONNECTIONS & INFORMATION.
4. SEE CIVIL DRAWINGS FOR TOPOGRAPHIC, SITE RELATED INFORMATION INCLUDING GRADING AND DRAINAGE PLANS AND EROSION CONTROL.
5. SEE CIVIL DRAWINGS FOR PERMEABILITY INFORMATION

SITE PLAN
SCALE: 1/32" = 1'-0"

1

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NO.	DATE	ISSUES AND REVISIONS	BY
1.	03/01/2021	DESIGN REVIEW SUBMITTAL	
2a.	05/19/2021	REVISED SUBMITTAL	
2b.	10/29/2021	MADERA BLVD REVISION	

DATE

SCALE

PROJECT NUMBER

COMPUTER FILE

PROJECT NAME

DESCRIPTION

SITE PLAN PROPOSED

SHEET NUMBER

A1.01

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SCALE: 1/32" = 1'-0"

1

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2a.	05/19/2021	REVISED SUBMITTAL	

DATE

SCALE

PROJECT NUMBER

COMPUTER FILE

PROJECT NAME

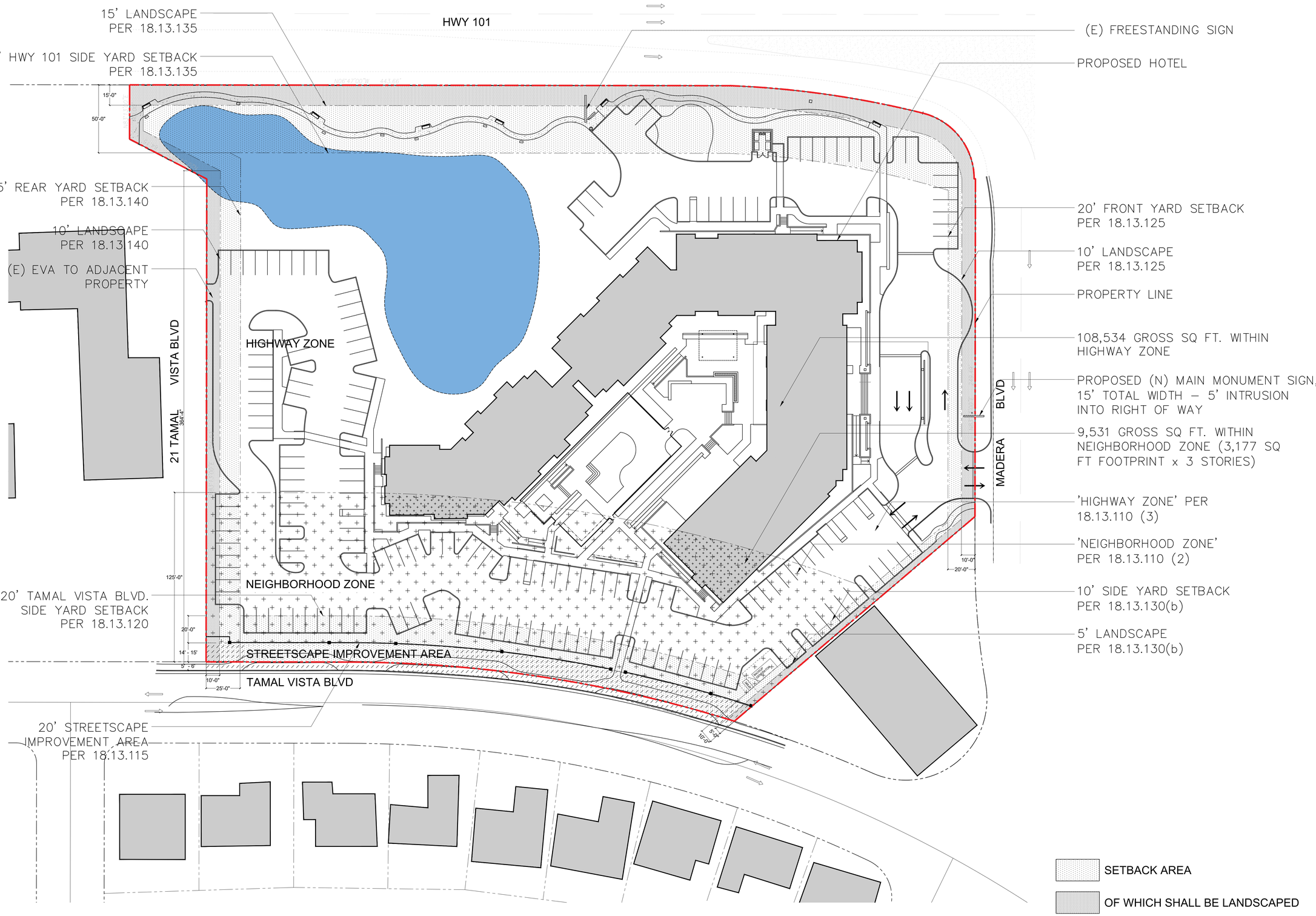
DESCRIPTION

EXISTING & PROPOSED FOOTPRINT COMPARISON PLAN

SHEET NUMBER

A1.02

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SITE PLAN
SCALE: 1/32" = 1'-0"

1

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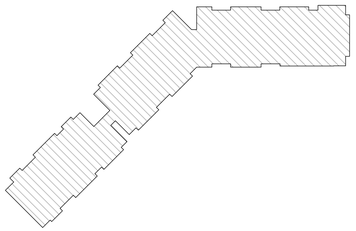
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2a.	05/19/2021	REVISED SUBMITTAL	

DATE
SCALE
PROJECT NUMBER
COMPUTER FILE
PROJECT NAME

DESCRIPTION
SITE SETBACK PLAN

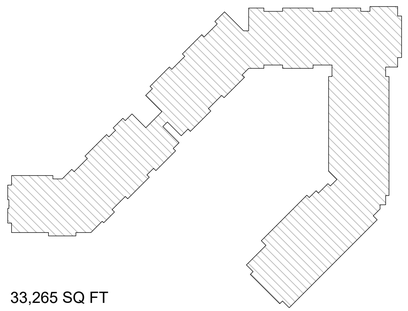
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A1.03

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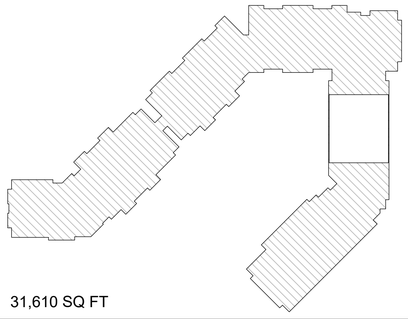
17,600 SQ FT

4TH FLOOR PLAN
SCALE: 1/64" = 1'-0" 4



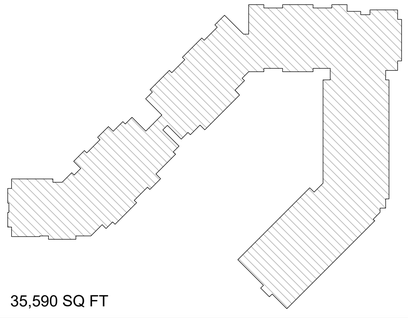
33,265 SQ FT

3RD FLOOR PLAN
SCALE: 1/64" = 1'-0" 3



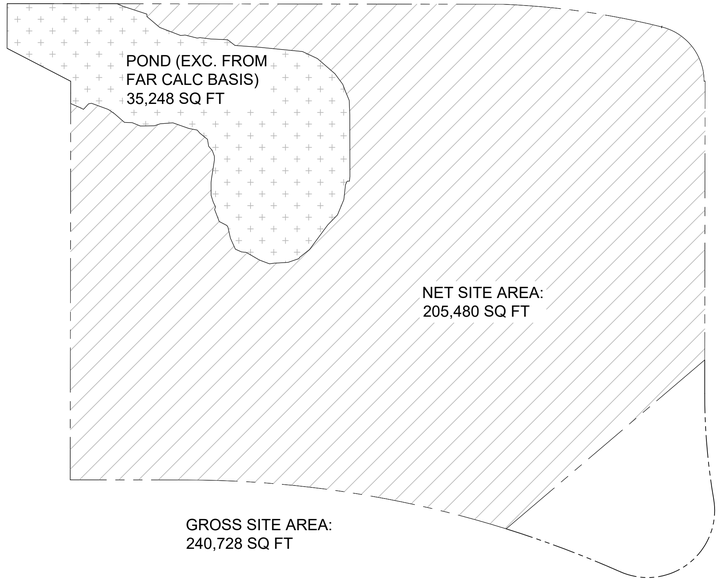
31,610 SQ FT

2ND FLOOR PLAN
SCALE: 1/64" = 1'-0" 2



35,590 SQ FT

1ST FLOOR PLAN
SCALE: 1/64" = 1'-0" 1



SITE PLAN
SCALE: 1/64" = 1'-0" 5

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PROJECT NAME
RESIDENCE INN CORTE MADERA

56 MADERA BLVD
CORTE MADERA, CA 94925

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DATE

SCALE

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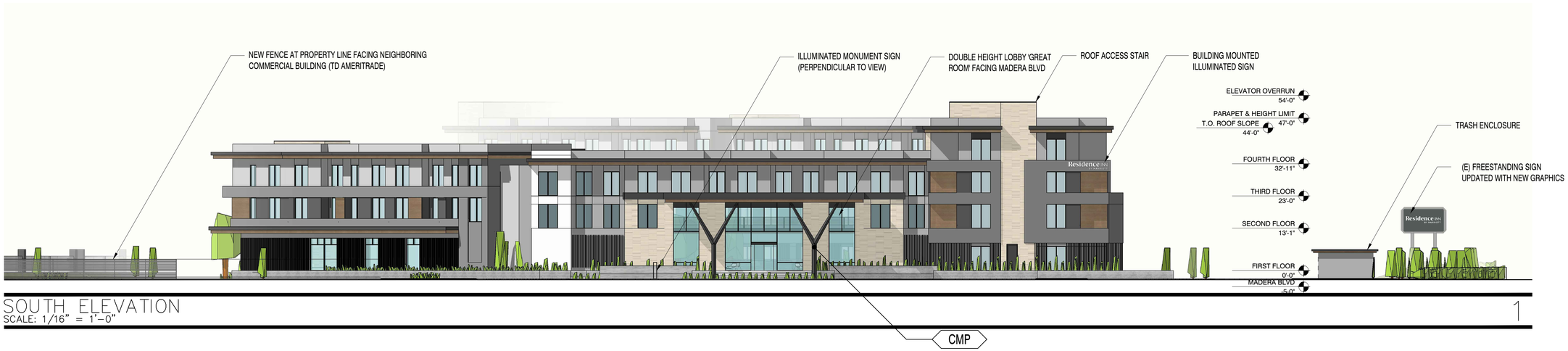
DESCRIPTION

FAR PLANS

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A2.09

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SOUTH ELEVATION
SCALE: 1/16" = 1'-0"

1

KEYNOTES

EIFS	EIFS (COLOR VARIES)
WD	COMPOSITE WOOD PANEL
FC	FIBER CEMENT PANEL OR PLANK
MF	CHARCOAL METAL FASCIA OR FRAME
CMP	COMPOSITE METAL PANEL
CIP	IN SITU CONCRETE
SCRN	TIMBER OR FIBER CEMENT SCREEN
BLOK	BLOCK / TERRACOTTA / ENGINEERED STONE



EAST ELEVATION
SCALE: 1/16" = 1'-0"

2

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PROJECT NAME
RESIDENCE INN CORTE MADERA

56 MADERA BLVD
CORTE MADERA, CA 94925

NO.	DATE	ISSUES AND REVISIONS	BY
1.	03/01/2021	DESIGN REVIEW SUBMITTAL	
2a.	05/19/2021	REVISED SUBMITTAL	

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SCALE
PROJECT NUMBER
COMPUTER FILE
PROJECT NAME

DESCRIPTION
BUILDING ELEVATIONS

SHEET NUMBER
A4.01

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SOUTHWEST ELEVATION
SCALE: 1/16" = 1'-0"

1

KEYNOTES

EIFS	EIFS (COLOR VARIES)
WD	COMPOSITE WOOD PANEL
FC	FIBER CEMENT PANEL OR PLANK
MF	CHARCOAL METAL FASCIA OR FRAME
CMP	COMPOSITE METAL PANEL
CIP	IN SITU CONCRETE
SCRN	TIMBER OR FIBER CEMENT SCREEN
BLOK	BLOCK / TERRACOTTA / ENGINEERED STONE



EAST ELEVATION
SCALE: 1/16" = 1'-0"

2

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F 415.371.1401
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PROJECT NAME
RESIDENCE INN CORTE MADERA

56 MADERA BLVD
CORTE MADERA, CA 94925

NO.	DATE	ISSUES AND REVISIONS	BY
1.	03/01/2021	DESIGN REVIEW SUBMITTAL	
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DATE
SCALE
PROJECT NUMBER
COMPUTER FILE
PROJECT NAME

DESCRIPTION
BUILDING ELEVATIONS

SHEET NUMBER
A4.02

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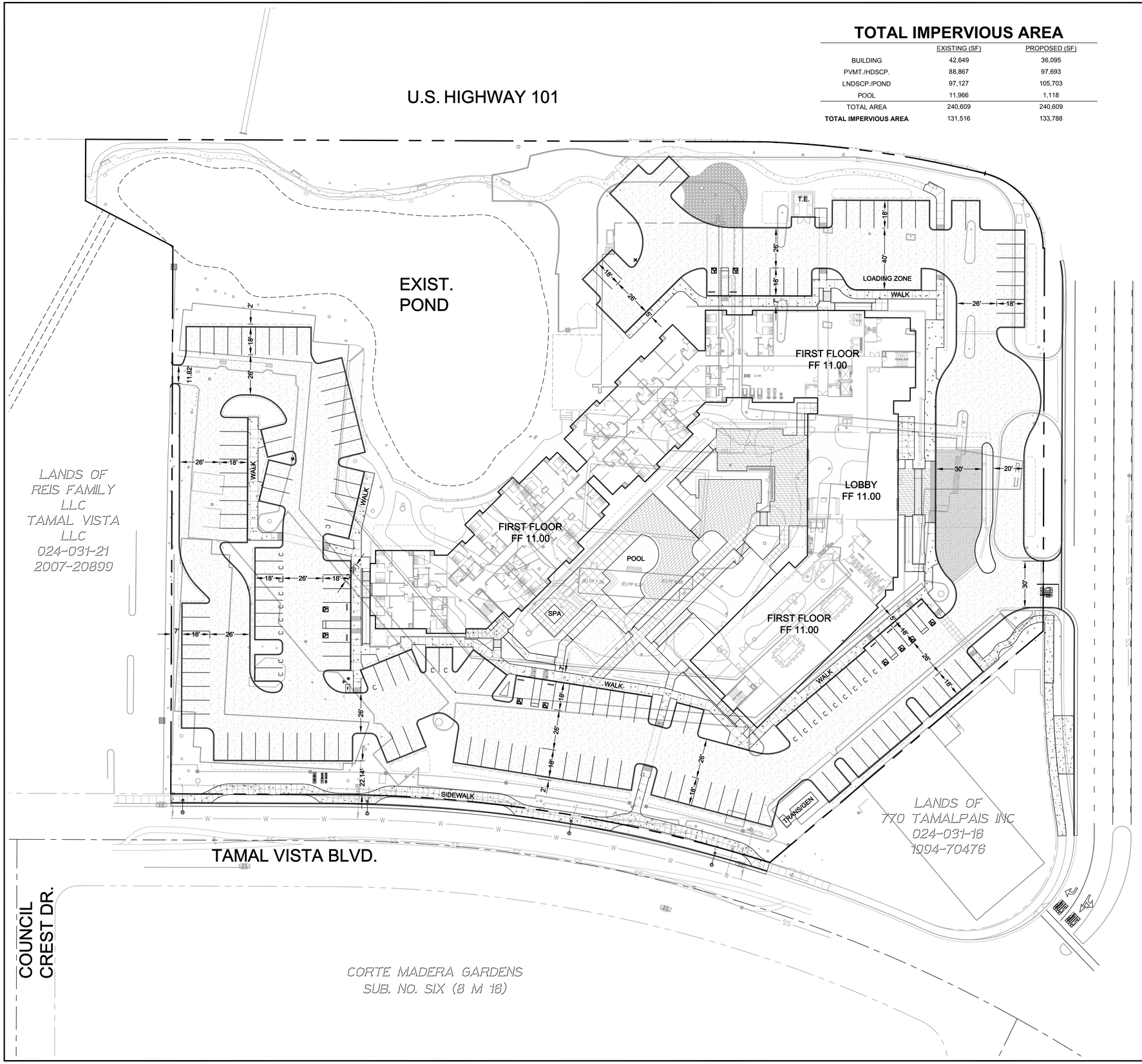
TOTAL IMPERVIOUS AREA

	EXISTING (SF)	PROPOSED (SF)
BUILDING	42,649	36,095
PVMT./HDSCP.	88,867	97,693
LNDSCP./POND	97,127	105,703
POOL	11,966	1,118
TOTAL AREA	240,609	240,609
TOTAL IMPERVIOUS AREA	131,516	133,788

Graphic Scale (in feet)

30 0 30 60

1 inch = 30 ft.



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Rev	Date	Description
	10/19/2021	MADERA FRONTAGE
	09/01/2021	REVISED SWT
-	05/14/2021	REVISED SUBMITTAL
-	02/26/2021	INITIAL SUBMITTAL

Designed
Drawn
Checked

RESIDENCE INN - CORTE MADERA
CIVIL SITE PLAN
RENESON HOTEL GROUP

City Of
CORTE MADERA

County Of
MARIN

State Of
California

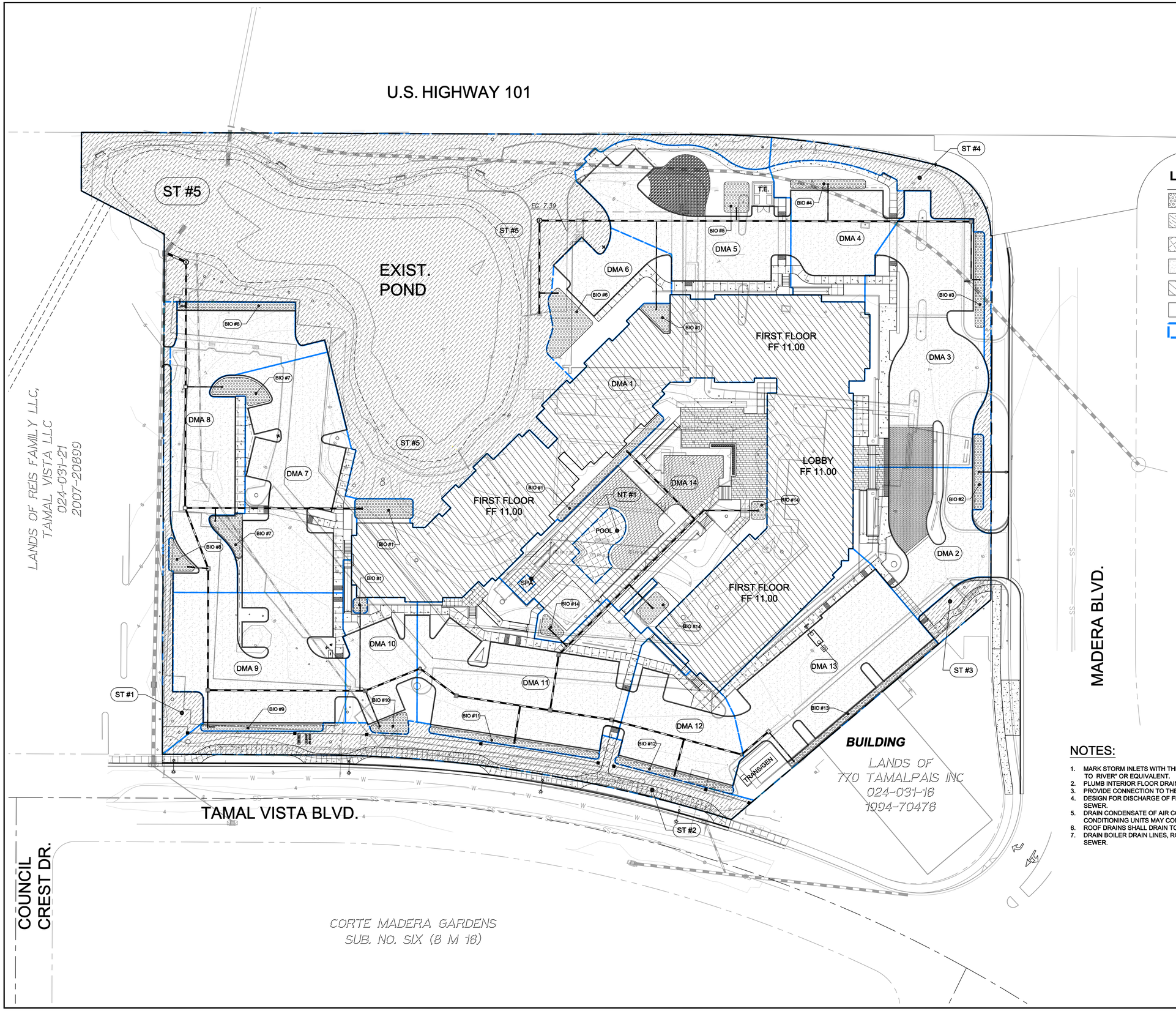
Prepared Under the Direction of:

REGISTERED PROFESSIONAL ENGINEER
WAYNE F. LEACH
No. 54309
CIVIL
STATE OF CALIFORNIA

Sheet
C2.0

Scale:	1" = 30'
Date:	02/26/2021
Project Number:	20.10.127
Plan File:	.

P:\Projects\20\10127 Corte Madera Hotel Development\DWG\Sheets\C2.0 Civil Site Plan.dwg 10/19/2021 - 08:43 PM leonf 1:3.9802



Graphic Scale (in feet)

30 0 30 60

1 inch = 30 ft.

LEGEND

	BIORETENTION AREA
	SELF-TREATING AREA
	NOT TREATED AREA
	IMPERVIOUS AREA (PAVEMENT / HARDSCAPE)
	IMPERVIOUS AREA (ROOF)
	PERVIOUS AREA (LANDSCAPE)
	DRAINAGE MANAGEMENT AREA
BIO #	BMP IDENTIFICATION
DMA #	WATER SHED IDENTIFICATION
BMP	BEST MANAGEMENT PRACTICES

NOTES:

1. MARK STORM INLETS WITH THE WORDS "NO DUMPING! FLOWS TO RIVER" OR EQUIVALENT.
2. PLUMB INTERIOR FLOOR DRAINS TO SANITARY SEWER.
3. PROVIDE CONNECTION TO THE SANITARY SEWER TO FACILITATE DRAINING POOL/SPA.
4. DESIGN FOR DISCHARGE OF FIRE SPRINKLER TEST WATER TO LANDSCAPE OR SANITARY SEWER.
5. DRAIN CONDENSATE OF AIR CONDITIONING UNITS TO LANDSCAPING. LARGE AIR CONDITIONING UNITS MAY CONNECT TO THE SANITARY SEWER.
6. ROOF DRAINS SHALL DRAIN TO UNPAVED AREA WHERE PRACTICABLE.
7. DRAIN BOILER DRAIN LINES, ROOF TOP EQUIPMENT, ALL WASHWATER TO SANITARY SEWER.

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-	09/01/2021	REVISED SWT			
-	05/14/2021	REVISED SUBMITTAL			
-	02/26/2021	INITIAL SUBMITTAL			

RESIDENCE INN - CORTE MADERA
PRELIMINARY
STORMWATER CONTROL PLAN
RENESON HOTEL GROUP

City Of
CORTE MADERA

County Of
MARIN

State Of
California

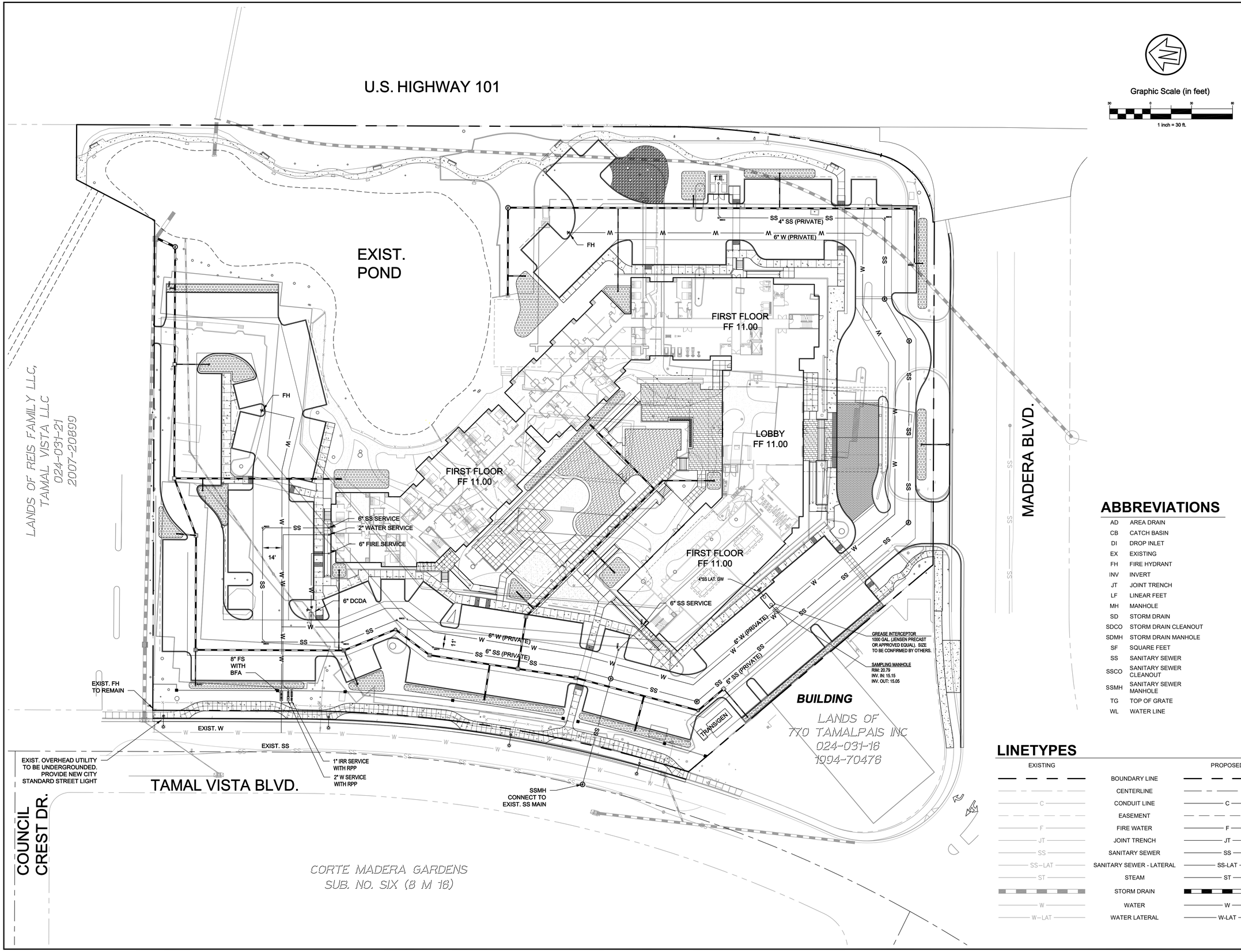
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REGISTERED PROFESSIONAL ENGINEER
WAYNE F. LEACH
No. 54309
CIVIL
STATE OF CALIFORNIA

Sheet
C4.0

Scale:	1" = 30'
Date:	02/26/2021
Project Number:	20.10.127
Plan File:	.

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Graphic Scale (in feet)

30 0 30 60

1 inch = 30 ft.

ABBREVIATIONS

AD	AREA DRAIN
CB	CATCH BASIN
DI	DROP INLET
EX	EXISTING
FH	FIRE HYDRANT
INV	INVERT
JT	JOINT TRENCH
LF	LINEAR FEET
MH	MANHOLE
SD	STORM DRAIN
SDCO	STORM DRAIN CLEANOUT
SDMH	STORM DRAIN MANHOLE
SF	SQUARE FEET
SS	SANITARY SEWER
SSCO	SANITARY SEWER CLEANOUT
SSMH	SANITARY SEWER MANHOLE
TG	TOP OF GRATE
WL	WATER LINE

LINETYPES

EXISTING		PROPOSED
	BOUNDARY LINE	
	CENTERLINE	
C	CONDUIT LINE	C
	EASEMENT	
F	FIRE WATER	F
JT	JOINT TRENCH	JT
SS	SANITARY SEWER	SS
SS–LAT	SANITARY SEWER - LATERAL	SS-LAT
ST	STEAM	ST
	STORM DRAIN	
W	WATER	W
W–LAT	WATER LATERAL	W-LAT

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-	05/14/2021	REVISED SUBMITTAL			
-	02/26/2021	INITIAL SUBMITTAL			

RESIDENCE INN - CORTE MADERA
PRELIMINARY UTILITY PLAN
RENESON HOTEL GROUP

City Of
CORTE MADERA

County Of
MARIN

State Of
California

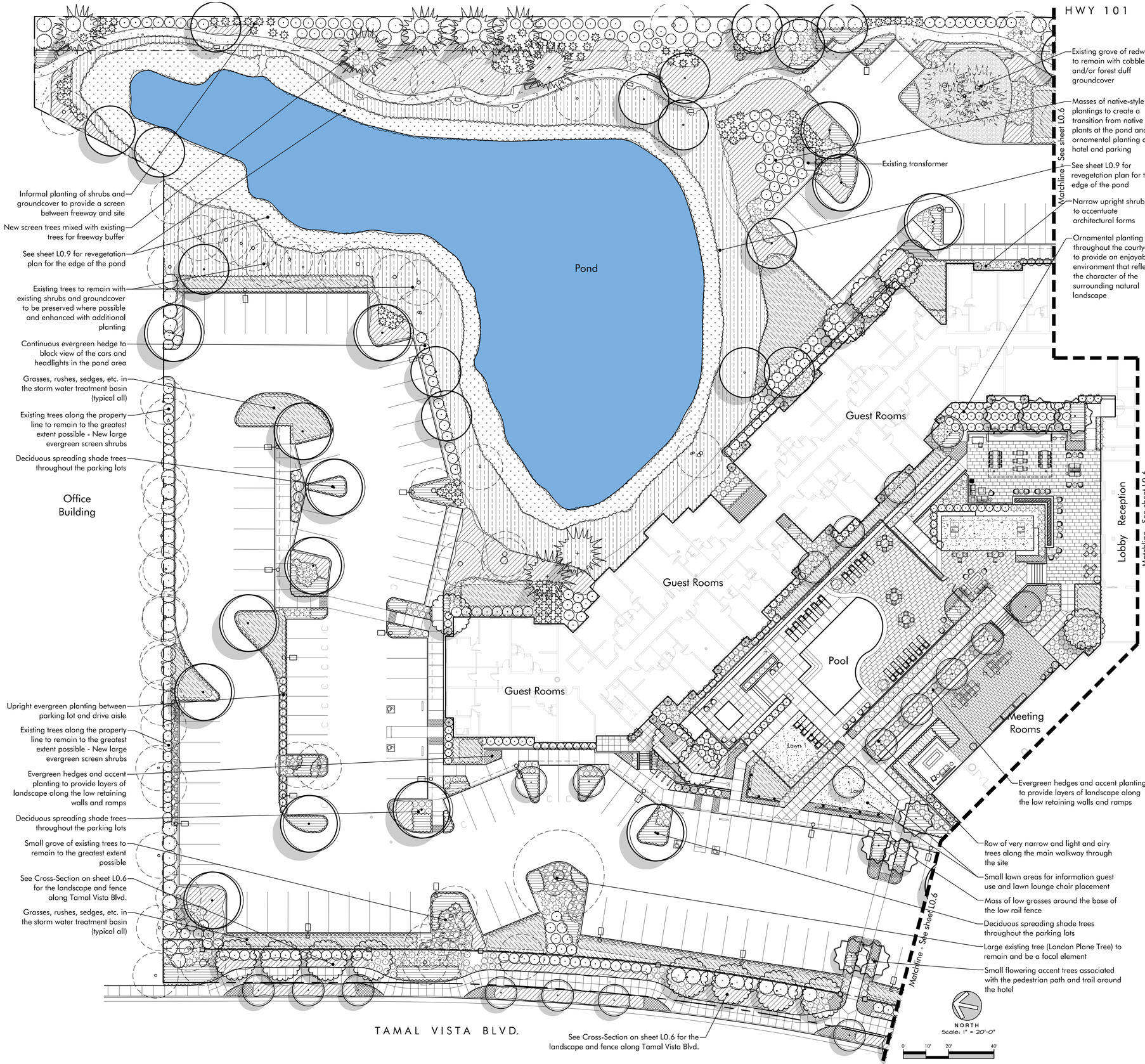
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C5.0

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Project Number:	20.10.127
Plan File:	.

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Preliminary Planting Palette

Trees

Small Flowering Trees - 15-gallon/24" box - qty. 13

Cercis canadensis	Eastern Redbud
Cercis occidentalis	Western Redbud
Chilopsis linearis	Desert Willow
Cornus florida	Dogwood
Magnolia grandiflora 'Little Gem'	Little Gem Magnolia
Prunus serrulata 'Kwanzan'	Flowering Cherry

Small Evergreen Screen Trees - 15-gallon/24" box - qty. 21

Arbutus 'marina'	Strawberry Tree
Maytenus boaria	Mayten Tree
Geijera parviflora	Geijera parviflora
Magnolia grandiflora 'Little Gem'	Little Gem Magnolia
Rhus lancea	African Sumac

Formal Narrow Upright Trees - 24" box - qty. 28

Acer rubrum 'Armstrong'	Armstrong Red Maple
Brachychiton populneus	Bottle Tree
Carpinus betulus 'Fastigiata'	European Hornbeam
Ginkgo biloba 'Princeton Sentry'	Princeton Sentry Ginkgo
Quercus robur x alba 'Skinny Genes'	Skinny Genes English Oak

Parking Lot Shade Trees - 15-gallon/24" box - qty. 21

Celtis sinensis	Chinese Hackberry
Nyssa sylvatica 'Wildfire'	Wildfire Sour Gum
Pistacia chinensis 'Keith Davey'	Chinese Pistache
Quercus coccinea	Scarlet Oak
Tilia cordata 'Greenspire'	Little-leaf Linden
Zelkova serrata	Japanese Zelkova

Screen Trees - Perimeter - 15-gallon/24" box - qty. 25

Laurus nobilis 'Saratoga'	Saratoga Laurel
Podocarpus gracilior	Yew Pine
Quercus agrifolia	Coast Live Oak
Sequoia Sempervirens	Coast Redwood
Thuja plicata	Western Red Cedar

Shrubs

Dense, Full, Screen Shrubs - Screening (8'-12') - 5-gallon - qty. 91

Ceanothus 'Dark Star'	Wild Lilac
Feijoa sellowiana	Pineapple Guava
Rhamnus californica 'Eve Case'	Coffeeberry
Rhamnus frangula 'Columnaris'	Alder Buckthorn
Pittosporum tenuifolium	Shiny Pittosporum
Prunus caroliniana 'Compacta'	Compact Carolina Cherry Laurel

Narrow Upright Architectural Shrubs - 5-gallon/15-gallon - qty. 41

Cupressus sempervirens 'Tiny Towers'	Dwarf Italian Cypress
Podocarpus macrophyllus 'Maki'	Shrubby Yew Podocarpus
Rhamnus frangula 'Columnaris'	Alder Buckthorn
Thuja occidentalis 'Emerald'	American Arborvitae

Medium Informal Hedges - 5-gallon - qty. 296

Arctostaphyllos dens. 'Howard McMinn'	Howard McMinn Manzanita
Carpenteria californica 'Elizabeth'	Bush Anemone
Cistus purpureus	Rockrose
Mahonia aquifolium 'Compacta'	Compact Oregon Grape
Olea europaea 'Little Ollie'	Dwarf Olive
Rhaphiolepis umbellata 'Minor'	Dwarf Yeddo Hawthorn

Formal Evergreen Hedge - 5-gallon - qty. 136

Euonymus japonicus 'Microphyllus'	Box Leaf Euonymus
Ligustrum japonicum 'Texanum'	Texas Privet
Myrtus communis 'Compacta'	Myrtle
Rosmarinus off. 'Miss Jessop's Upright'	Upright Rosemary

Grasses and Grasslike (Native Style) - 1-gallon/5-gallon - qty. 138

Chondropetalum tectorum	Cape Rush
Deschampsia cespitosa	Tufted hair grass
Festuca mairei	Atlas Fescue
Helictotrichon sempervirens	Blue Oat Grass
Muhlenbergia dubia	Dwarf Deer Grass
Muhlenbergia rigens	Deer Grass

Medium Height (36"-42") Grasses and Grass-like Plants - 1-gallon/5-gallon - qty. 508

Calamagrostis acutiflora 'Karl Foerster'	Feather Reed Grass
Dianella revoluta 'Tasred'	Flax Lily
Dianella variegata	Flax Lily
Chondropetalum tectorum	Cape Rush
Lomandra Longifolia 'Breeze'	Dwarf Mat Rush
Phormium spp.	New Zealand Flax

Medium Height (30"-42") Accent Plants - 1-gallon/5-gallon - qty. 291

Anigozanthos 'Bush Ranger'	Kangaroo Paw
Correa 'Ivory Bells'	White Australian Fuchsia
Perovskia atriplicifolia 'Little Spire'	Russian Sage
Polystichum munitum	Western Sword Fern
Salvia spp.	Sage
Woodwardia fimbriata	Giant Chain Fern

Medium Height Infill Shrubs (36" high, 48" wide) - 1-gallon/5-gallon - qty. 141

Acacia cognata 'Cousin Itt'	Cousin Itt Acacia
Grevillea rosmarinifolia	Rosemary Grevillea
Leonotis leonurus	Lion's Mane
Mahonia eurybracteata 'Soft caress'	Soft Caress Mahonia
Pittosporum crassifolium 'Nana'	Dwarf Karo
Pittosporum tobira 'Wheeler's Dwarf'	Dwarf Pittosporum

Vines - 1-gallon/5-gallon - qty. 35

Clematis armandii	Evergreen Clematis
Ficus pumila	Creeping Fig
Hardenbergia violacea	Purple lilac fine
Vitus californica	California Grape

Groundcovers

Low Grasses, Grass-like Plants - 36" o.c. - qty. 4,400 sf (450 1-gallon)

Bouteloua gracilis	Blue Gramma Grass
Carex tumulicola	Berkeley Sedge
Festuca 'Siskiyou Blue'	Blue Fescue
Liriope muscari	Lily Turf
Sesleria autumnalis	Autumn Moor Grass

Low Spreading Groundcover - 54" o.c. - qty. 15,000 sf (680 1-gallon)

Acacia redolens 'Low Boys'	Prostrate Acacia
Arctostaphylos uva ursi	Kinnikinnick
Baccharis pilularis 'Twin Peaks II'	Dwarf Coyote Brush
Grevillea lanigera 'Coastal Gem'	Woolly Grevillea
Mahonia repens	Creeping Mahonia

Small Accent Plants - 30" o.c. - qty. 1,780 sf (280 1-gallon/4" pots)

Armeria maritima	Common Sea Thrift
Bulbine frutecens	Bulbine
Heuchera hybrids	Coral Bells
Lavandula angustifolia	English Lavender
Sisyrinchium bellum 'E.K. Balls'	Blue Eyed Grass
Teucrium chamaedrys	Germander

Storm Water Treatment - 36" o.c. - qty. 10,500 sf (1,100 1-gallon/4" pots)

Carex tumulicola	Berkely Sedge
Elymus arenarius 'Glaucus'	Blue Lyme Grass
Juncus patens	California Rush
Iris douglasiana	Purple Douglas Iris
Chondropetalum tectorum	Cape Rush
No Mow Fescue Blend	(sod)

Lawn - Sodded Dwarf Fescue Lawn for recreation use - 971 sf of Sod

Upland Wetland/Pond Edge - Per ESA - See sheet L0.9 - 733 sf

Upland Revegetaion - Per ESA - See sheet L0.9 - 10,650 sf

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PROJECT NAME
RESIDENCE INN CORTE MADERA

56 MADERA BLVD
CORTE MADERA, CA 94925

KLA LANDSCAPE ARCHITECTURE PLANNING
KLA, Inc.
151 N. Norlin St.,
Sonora Ca, 95370
(209)532-2856
www.kla-ca.com

NO.	DATE	ISSUES AND REVISIONS	BY
1.	03/01/2021	DESIGN REVIEW SUBMITTAL	
2.	05/14/2021	REVISED SUBMITTAL	

DATE

SCALE

PROJECT NUMBER

COMPUTER FILE

PROJECT NAME

DESCRIPTION
Preliminary Planting Plan

SHEET NUMBER
L0.5

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Horizontal composite wood fence



Cercis occidentalis



Rhamnus alaternus 'John Edwards'

Tamal Vista Streetscape Cross-Section

Planting Design Concept Statement

The landscape design concept for the proposed Residence Inn in Corte Madera is to provide an enjoyable and aesthetic space for guests and employees that fits within the landscape framework of the existing neighborhood and the surrounding area, as well as the requirements of the Town. Plant material has been selected that performs well in the special conditions of Corte Madera (Sunset Zone #17).

High water use areas are limited to special use landscape areas. Low and medium water use hardy trees, shrubs and groundcover are proposed in water-use landscape zones around the site with medium and more ornamental planting located at the front entry and the courtyard; low water use and transitional/adaptive plantings at the parking lot and perimeter, and native and naturalized shrubs and revegetation around the pond (per the environmental consultant). The landscape (and associated irrigation) has been designed to be compliant with the Town of Corte Madera's Water Efficient Landscape Ordinance (WELO), CalGreen, and MMWD's requirements.

Special considerations have been provided in selection of plant material that respect the needs of the facility as well as the customers. Clear and secure view corridors have been provided to ensure safety of the guests entering and moving around the site.

Tree Root Barriers

All trees within 8' of curb or sidewalk are to have a linear DeepRoot Model #UB 18-2 root barriers installed during tree installation along the inside edge of the adjacent curb or sidewalk. The following minimum number of panels are to be installed with each tree on each side of the tree that has sidewalk or curb as denoted on the plans:

15 gallon trees	5 panels
24" box trees	6 panels
36" box trees	8 panels

Tree sizes not listed above are to be installed with the quantity of panels as specified by the manufacturer.

Plant Selections

This plan and the Preliminary Plant Palette represents the design style and theme of the landscape design and planting. These plans are preliminary and may change through the design process. The final planting plan may not contain all of the above plants in the sizes as shown. Additionally some new plant species may be used in the final design. This plan does however indicate the quantity of trees and the overall level of landscape development that will be carried through with the final design.

Final landscape design shall meet the Town of Corte Madera codes and requirements as well as Project Specific Conditions of Approval. Final design is subject to approval through the building permit review process.

Preliminary Planting Palette

Trees

Small Flowering Trees - 15-gallon/24" box - qty. 13

Cercis canadensis	Eastern Redbud
Cercis occidentalis	Western Redbud
Chilopsis linearis	Desert Willow
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Quercus agrifolia	Coast Live Oak
Sequoia Sempervirens	Coast Redwood
Thuja plicata	Western Red Cedar

Shrubs

Dense, Full, Screen Shrubs - Screening (8'-12') - 5-gallon - qty. 91

Ceanothus 'Dark Star'	Wild Lilac
Feijoa sellowiana	Pineapple Guava
Rhamnus californica 'Eve Case'	Coffeeberry
Rhamnus frangula 'Columnaris'	Alder Buckthorn
Pittosporum tenuifolium	Shiny Pittosporum
Prunus caroliniana 'Compacta'	Compact Carolina Cherry Laurel

Narrow Upright Architectural Shrubs - 5-gallon/15-gallon - qty. 41

Cupressus sempervirens 'Tiny Towers'	Dwarf Italian Cypress
Podocarpus macrophyllus 'Maki'	Shrubby Yew Podocarpus
Rhamnus frangula 'Columnaris'	Alder Buckthorn
Thuja occidentalis 'Emerald'	American Arborvitae

Medium Informal Hedges - 5-gallon - qty. 296

Arctostaphyllos dens. 'Howard McMinn'	Howard McMinn Manzanita
Carpenteria californica 'Elizabeth'	Bush Anemone
Cistus purpureus	Rockrose
Mahonia aquifolium 'Compacta'	Compact Oregon Grape
Olea europaea 'Little Ollie'	Dwarf Olive
Rhaphiolepis umbellata 'Minor'	Dwarf Yeddo Hawthorn

Formal Evergreen Hedge - 5-gallon - qty. 136

Euonymus japonicus 'Microphyllus'	Box Leaf Euonymus
Ligustrum japonicum 'Texanum'	Texas Privet
Myrtus communis 'Compacta'	Myrtle
Rosmarinus off. 'Miss Jessop's Upright'	Upright Rosemary

Grasses and Grasslike (Native Style) - 1-gallon/5-gallon - qty. 138

Chondropetalum tectorum	Cape Rush
Deschampsia cespitosa	Tufted hair grass
Festuca mairei	Atlas Fescue
Helictotrichon sempervirens	Blue Oat Grass
Muhlenbergia dubia	Dwarf Deer Grass
Muhlenbergia rigens	Deer Grass

Medium Height (36"-42") Grasses and Grass-like Plants - 1-gallon/5-gallon - qty. 508

Calamagrostis acutiflora 'Karl Foerster'	Feather Reed Grass
Dianella revoluta 'Tasred'	Flax Lily
Dianella variegata	Flax Lily
Chondropetalum tectorum	Cape Rush
Lomandra Longifolia 'Breeze'	Dwarf Mat Rush
Phormium spp.	New Zealand Flax

Medium Height (30"-42") Accent Plants - 1-gallon/5-gallon - qty. 291

Anigozanthos 'Bush Ranger'	Kangaroo Paw
Correa 'Ivory Bells'	White Australian Fuchsia
Perovskia atriplicifolia 'Little Spire'	Russian Sage
Polystichum munitum	Western Sword Fern
Salvia spp.	Sage
Woodwardia fimbriata	Giant Chain Fern

Medium Height Infill Shrubs (36" high, 48" wide) - 1-gallon/5-gallon - qty. 141

Acacia cognata 'Cousin Itt'	Cousin Itt Acacia
Grevillea rosmarinifolia	Rosemary Grevillea
Leonotis leonurus	Lion's Mane
Mahonia eurybracteata 'Soft caress'	Soft Caress Mahonia
Pittosporum crassifolium 'Nana'	Dwarf Karo
Pittosporum tobira 'Wheeler's Dwarf'	Dwarf Pittosporum

Vines - 1-gallon/5-gallon - qty. 35

Clematis armandii	Evergreen Clematis
Ficus pumila	Creeping Fig
Hardenbergia violacea	Purple lilac fine
Vitus californica	California Grape

Groundcovers

Low Grasses, Grass-like Plants - 36" o.c. - qty. 4,400 sf (450 1-gallon)

Bouteloua gracilis	Blue Gramma Grass
Carex tumulicola	Berkeley Sedge
Festuca 'Siskiyou Blue'	Blue Fescue
Liriope muscari	Lily Turf
Sesleria autumnalis	Autumn Moor Grass

Low Spreading Groundcover - 54" o.c. - qty. 15,000 sf (680 1-gallon)

Acacia redolens 'Low Boys'	Prostrate Acacia
Arctostaphylos uva ursi	Kinnikinnick
Baccharis pilularis 'Twin Peaks II'	Dwarf Coyote Brush
Grevillea lanigera 'Coastal Gem'	Woolly Grevillea
Mahonia repens	Creeping Mahonia

Small Accent Plants - 30" o.c. - qty. 1,780 sf (280 1-gallon/4" pots)

Armeria maritima	Common Sea Thrift
Bulbine frutecens	Bulbine
Heuchera hybrids	Coral Bells
Lavandula angustifolia	English Lavender
Sisyrinchium bellum 'E.K. Balls'	Blue Eyed Grass
Teucrium chamaedrys	Germander

Storm Water Treatment - 36" o.c. - qty. 10,500 sf (1,100 1-gallon/4" pots)

Carex tumulicola	Berkely Sedge
Elymus arenarius 'Glaucus'	Blue Lyme Grass
Juncus patens	California Rush
Iris douglasiana	Purple Douglas Iris
Chondropetalum tectorum	Cape Rush
No Mow Fescue Blend	(sod)

Lawn - Sodded Dwarf Fescue Lawn for recreation use - 971 sf of Sod

Upland Wetland/Pond Edge - Per ESA - See sheet L0.9 - 733 sf

Upland Revegetaion - Per ESA - See sheet L0.9 - 10,650 sf

AXIS GFA
1000 BRANNAN STREET
SUITE 404
SAN FRANCISCO, CA 94103
T 415.371.1400
F 415.371.1401
www.axisgfa.com

PROJECT NAME
RESIDENCE INN CORTE MADERA

56 MADERA BLVD
CORTE MADERA, CA 94925

KLA LANDSCAPE ARCHITECTURE PLANNING
KLA, Inc.
151 N. Norlin St.,
Sonora Ca, 95370
(209)532-2856
www.kla-ca.com

NO.	DATE	ISSUES AND REVISIONS	BY
1.	03/01/2021	DESIGN REVIEW SUBMITTAL	
2.	05/14/2021	REVISED SUBMITTAL	

DATE

SCALE

PROJECT NUMBER

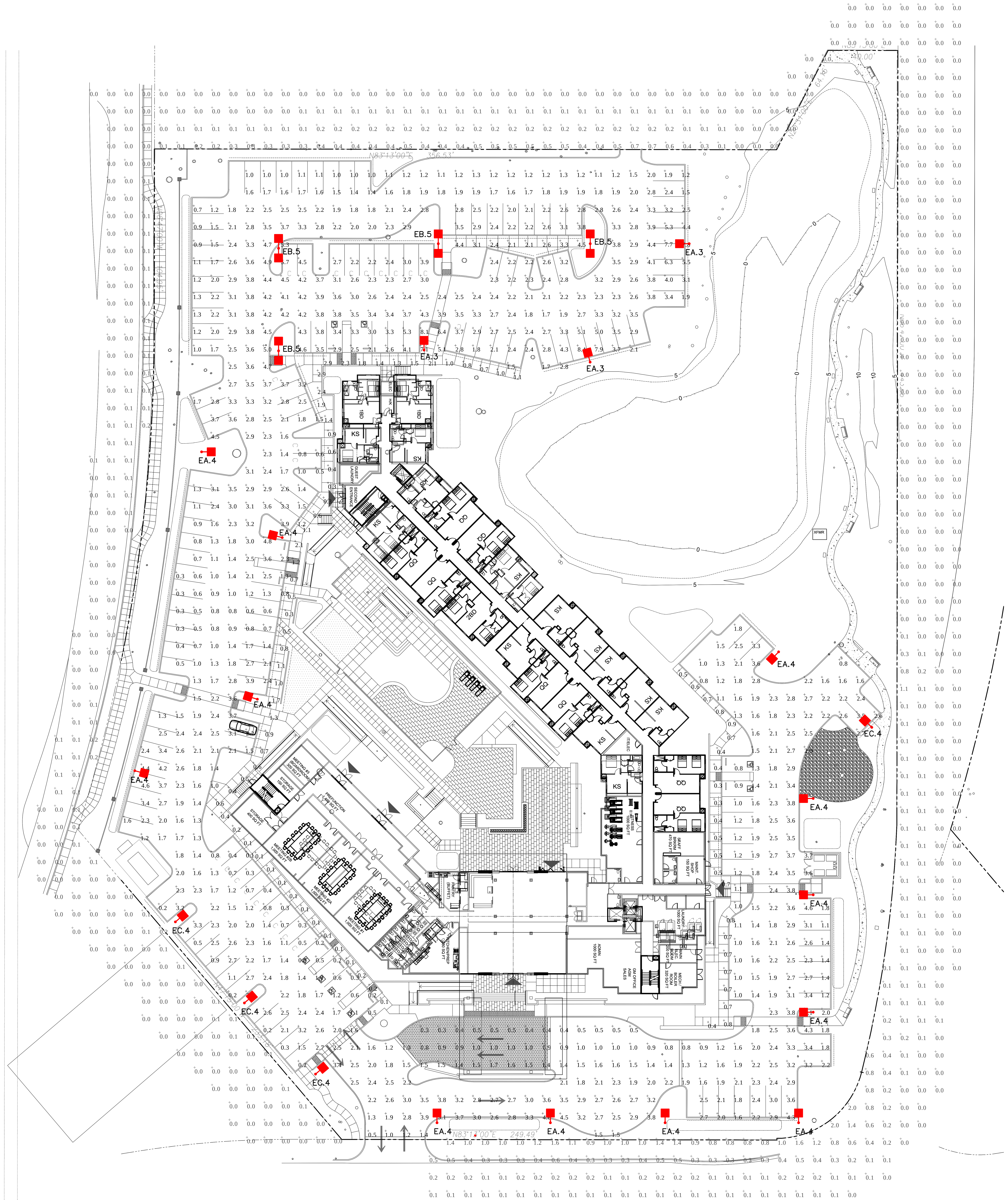
COMPUTER FILE

PROJECT NAME

DESCRIPTION
Preliminary Planting Plan

SHEET NUMBER
L0.6

ALL DRAWINGS AND WRITTEN MATERIAL APPEARING HEREIN CONSTITUTE ORIGINAL AND UNPUBLISHED WORK OF THE ARCHITECT AND MAY NOT BE DUPLICATED, USED OR DISCLOSED WITHOUT WRITTEN CONSENT OF THE ARCHITECT



LIGHTING FIXTURE LEGEND

Fixture Type	Fixture Description	Product Registration ID	Input Voltage	Fixture Wattage
EA.3	Single Pole	CLI-00RIEA3	UNV-VAC	71
EA.4	Single Pole	CLI-00RIEA4	UNV-VAC	71
EB.5	Double Pole	CLI-00RIEB5	UNV-VAC	142
EC.4	Single Pole	CLI-00RIEC4	UNV-VAC	71

Calculation Summary

Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
Parking	Illuminance	Fc	2.27	8.4	0.1	22.70	84.00
Pedestrian	Illuminance	Fc	0.87	2.9	0.1	8.70	29.00
Pedestrian B	Illuminance	Fc	0.63	1.1	0.3	2.10	3.67
Trespass	Illuminance	Fc	0.07	0.7	0.0	N.A.	N.A.
Trespass B	Illuminance	Fc	0.16	2.0	0.0	N.A.	N.A.

1 SITE LIGHTING PLAN & PHOTOMETRIC DRAWING

1/32" = 1'-0"

Commercial Lighting Industries
81161 Indio Boulevard, Indio, CA 92201
Tel: 800-755-0155 | Fax: 760-262-3940

No.	Issue	Date
0.		5.11.2021

RESIDENCE INN CORTE MADERA

56 MADERA BLVD
CORTE MADERA, CA 94925

ALL PLANS AND SPECIFICATIONS ARE THE PROPERTY OF COMMERCIAL LIGHTING IND. DO NOT SCALE DRAWINGS. ALL MEASUREMENTS MUST BE CHECKED ON SITE BY THE CONTRACTORS AND ANY DISCREPANCIES BROUGHT TO THE ATTENTION OF THE DESIGNER OR ARCHITECT.

Title
SITE LIGHTING PLAN & PHOTOMETRIC DRAWING

Scale: AS SHOWN
Date: 5.11.2021
Drawn By: M.S.
Checked By: I.D.
Job No.
Sheet No.
LDE-2

Appendix B

Air Quality Model Outputs

CM Residence Inn - Construction Only - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

CM Residence Inn - Construction Only

Marin County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Hotel	149.00	Room	4.97	216,348.00	0
Parking Lot	169.00	Space	1.52	67,600.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	69
Climate Zone	5			**Operational Year**	2024
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 - Construction-Only Run

Land Use - 149-Room Hotel with 169 Parking Spaces

Construction Phase - Default Phasing and Durations. 2nd Demo Added for Pavement

Off-road Equipment - Default Equipment and Activity

Grading -

Demolition - 79,000 sf Building, 1,500 tons of Pavement

Off-road Equipment - 1 Add'l Concrete/Industrial Saw Added for Pavement Demo

Table Name	Column Name	Default Value	New Value
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00

CM Residence Inn - Construction Only - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.0366	0.3611	0.2609	5.1000e-004	0.0187	0.0175	0.0362	3.1500e-003	0.0163	0.0195	0.0000	45.5740	45.5740	0.0102	8.3000e-004	46.0787
2022	0.1453	1.3637	1.2292	2.7300e-003	0.2608	0.0617	0.3225	0.1050	0.0576	0.1626	0.0000	245.0245	245.0245	0.0475	8.2400e-003	248.6666
2023	1.3102	1.4203	1.6963	3.7700e-003	0.0996	0.0614	0.1609	0.0270	0.0577	0.0848	0.0000	338.6426	338.6426	0.0541	0.0124	343.7008
Maximum	**1.3102**	**1.4203**	**1.6963**	**3.7700e-003**	**0.2608**	**0.0617**	**0.3225**	**0.1050**	**0.0577**	**0.1626**	**0.0000**	**338.6426**	**338.6426**	**0.0541**	**0.0124**	**343.7008**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	1. Demolition Building	Demolition	7/11/2022	8/5/2022	5	20	
2	2. Demolition Pavement	Demolition	8/1/2021	8/27/2021	5	20	
3	3. Site Preparation	Site Preparation	8/6/2022	8/19/2022	5	10	
4	4. Grading	Grading	8/20/2022	9/16/2022	5	20	
5	5. Building Construction	Building Construction	9/17/2022	8/4/2023	5	230	
6	6. Paving	Paving	8/5/2023	9/1/2023	5	20	
7	7. Architectural Coating	Architectural Coating	9/2/2023	9/29/2023	5	20	

Acres of Grading (Site Preparation Phase): 15

Acres of Grading (Grading Phase): 20

Acres of Paving: 1.52

Date: 9/9/2021 1:58 PM

CM Residence Inn - Construction Only - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 324,522; Non-Residential Outdoor: 108,174; Striped Parking Area: 4,056

OffRoad Equipment

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

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
1. Demolition Building	6	15.00	0.00	359.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
3. Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
4. Grading	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
5. Building Construction	9	119.00	47.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
6. Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
7. Architectural Coating	1	24.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
2. Demolition Pavement	7	18.00	0.00	148.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

CM Residence Inn - Construction Only - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 1. Demolition Building - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0389	0.0000	0.0389	5.8900e-003	0.0000	5.8900e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0264	0.2572	0.2059	3.9000e-004		0.0124	0.0124		0.0116	0.0116	0.0000	33.9902	33.9902	9.5500e-003	0.0000	34.2289
Total	**0.0264**	**0.2572**	**0.2059**	**3.9000e-004**	**0.0389**	**0.0124**	**0.0513**	**5.8900e-003**	**0.0116**	**0.0174**	**0.0000**	**33.9902**	**33.9902**	**9.5500e-003**	**0.0000**	**34.2289**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	8.4000e-004	0.0335	8.4300e-003	1.2000e-004	3.0300e-003	2.7000e-004	3.3000e-003	8.3000e-004	2.6000e-004	1.0900e-003	0.0000	11.8267	11.8267	7.5000e-004	1.8800e-003	12.4070
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.5000e-004	3.1000e-004	3.5100e-003	1.0000e-005	1.1800e-003	1.0000e-005	1.1900e-003	3.1000e-004	1.0000e-005	3.2000e-004	0.0000	0.9641	0.9641	3.0000e-005	3.0000e-005	0.9733
Total	**1.2900e-003**	**0.0338**	**0.0119**	**1.3000e-004**	**4.2100e-003**	**2.8000e-004**	**4.4900e-003**	**1.1400e-003**	**2.7000e-004**	**1.4100e-003**	**0.0000**	**12.7907**	**12.7907**	**7.8000e-004**	**1.9100e-003**	**13.3803**

CM Residence Inn - Construction Only - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 2. Demolition Pavement - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0161	0.0000	0.0161	2.4300e-003	0.0000	2.4300e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0355	0.3448	0.2524	4.5000e-004		0.0172	0.0172		0.0161	0.0161	0.0000	39.3774	39.3774	9.8800e-003	0.0000	39.6244
Total	**0.0355**	**0.3448**	**0.2524**	**4.5000e-004**	**0.0161**	**0.0172**	**0.0333**	**2.4300e-003**	**0.0161**	**0.0186**	**0.0000**	**39.3774**	**39.3774**	**9.8800e-003**	**0.0000**	**39.6244**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.2000e-004	0.0159	3.9200e-003	5.0000e-005	1.2500e-003	1.9000e-004	1.4400e-003	3.4000e-004	1.9000e-004	5.3000e-004	0.0000	5.0092	5.0092	3.2000e-004	8.0000e-004	5.2549
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.8000e-004	4.2000e-004	4.5700e-003	1.0000e-005	1.4200e-003	1.0000e-005	1.4300e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.1875	1.1875	4.0000e-005	4.0000e-005	1.1995
Total	**1.1000e-003**	**0.0163**	**8.4900e-003**	**6.0000e-005**	**2.6700e-003**	**2.0000e-004**	**2.8700e-003**	**7.2000e-004**	**2.0000e-004**	**9.2000e-004**	**0.0000**	**6.1966**	**6.1966**	**3.6000e-004**	**8.4000e-004**	**6.4543**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 3. Site Preparation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0983	0.0000	0.0983	0.0505	0.0000	0.0505	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0159	0.1654	0.0985	1.9000e-004		8.0600e-003	8.0600e-003		7.4200e-003	7.4200e-003	0.0000	16.7197	16.7197	5.4100e-003	0.0000	16.8549
Total	**0.0159**	**0.1654**	**0.0985**	**1.9000e-004**	**0.0983**	**8.0600e-003**	**0.1064**	**0.0505**	**7.4200e-003**	**0.0579**	**0.0000**	**16.7197**	**16.7197**	**5.4100e-003**	**0.0000**	**16.8549**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.7000e-004	1.9000e-004	2.1000e-003	1.0000e-005	7.1000e-004	0.0000	7.1000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.5784	0.5784	2.0000e-005	2.0000e-005	0.5840
Total	**2.7000e-004**	**1.9000e-004**	**2.1000e-003**	**1.0000e-005**	**7.1000e-004**	**0.0000**	**7.1000e-004**	**1.9000e-004**	**0.0000**	**1.9000e-004**	**0.0000**	**0.5784**	**0.5784**	**2.0000e-005**	**2.0000e-005**	**0.5840**

CM Residence Inn - Construction Only - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 4. Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0708	0.0000	0.0708	0.0343	0.0000	0.0343	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0195	0.2086	0.1527	3.0000e-004		9.4100e-003	9.4100e-003		8.6600e-003	8.6600e-003	0.0000	26.0548	26.0548	8.4300e-003	0.0000	26.2654
Total	**0.0195**	**0.2086**	**0.1527**	**3.0000e-004**	**0.0708**	**9.4100e-003**	**0.0802**	**0.0343**	**8.6600e-003**	**0.0429**	**0.0000**	**26.0548**	**26.0548**	**8.4300e-003**	**0.0000**	**26.2654**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.5000e-004	3.1000e-004	3.5100e-003	1.0000e-005	1.1800e-003	1.0000e-005	1.1900e-003	3.1000e-004	1.0000e-005	3.2000e-004	0.0000	0.9641	0.9641	3.0000e-005	3.0000e-005	0.9733
Total	**4.5000e-004**	**3.1000e-004**	**3.5100e-003**	**1.0000e-005**	**1.1800e-003**	**1.0000e-005**	**1.1900e-003**	**3.1000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**0.9641**	**0.9641**	**3.0000e-005**	**3.0000e-005**	**0.9733**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 5. Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0640	0.5856	0.6136	1.0100e-003		0.0303	0.0303		0.0285	0.0285	0.0000	86.8970	86.8970	0.0208	0.0000	87.4174
Total	**0.0640**	**0.5856**	**0.6136**	**1.0100e-003**		**0.0303**	**0.0303**		**0.0285**	**0.0285**	**0.0000**	**86.8970**	**86.8970**	**0.0208**	**0.0000**	**87.4174**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.3100e-003	0.1035	0.0365	3.9000e-004	0.0115	1.0000e-003	0.0125	3.3400e-003	9.6000e-004	4.3000e-003	0.0000	38.3486	38.3486	1.5200e-003	5.4400e-003	40.0078
Worker	0.0133	9.2100e-003	0.1043	3.1000e-004	0.0352	2.0000e-004	0.0354	9.3500e-003	1.8000e-004	9.5400e-003	0.0000	28.6810	28.6810	9.0000e-004	8.4000e-004	28.9547
Total	**0.0176**	**0.1127**	**0.1408**	**7.0000e-004**	**0.0467**	**1.2000e-003**	**0.0479**	**0.0127**	**1.1400e-003**	**0.0138**	**0.0000**	**67.0296**	**67.0296**	**2.4200e-003**	**6.2800e-003**	**68.9625**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 5. Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1219	1.1148	1.2589	2.0900e-003		0.0542	0.0542		0.0510	0.0510	0.0000	179.6487	179.6487	0.0427	0.0000	180.7171
Total	**0.1219**	**1.1148**	**1.2589**	**2.0900e-003**		**0.0542**	**0.0542**		**0.0510**	**0.0510**	**0.0000**	**179.6487**	**179.6487**	**0.0427**	**0.0000**	**180.7171**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.0000e-003	0.1729	0.0653	7.7000e-004	0.0238	9.5000e-004	0.0248	6.9000e-003	9.1000e-004	7.8000e-003	0.0000	76.1905	76.1905	2.9400e-003	0.0108	79.4696
Worker	0.0257	0.0169	0.1997	6.2000e-004	0.0727	3.9000e-004	0.0730	0.0193	3.6000e-004	0.0197	0.0000	57.7799	57.7799	1.6900e-003	1.6100e-003	58.3028
Total	**0.0307**	**0.1898**	**0.2650**	**1.3900e-003**	**0.0965**	**1.3400e-003**	**0.0978**	**0.0262**	**1.2700e-003**	**0.0275**	**0.0000**	**133.9704**	**133.9704**	**4.6300e-003**	**0.0124**	**137.7723**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.7 6. Paving - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0103	0.1019	0.1458	2.3000e-004		5.1000e-003	5.1000e-003		4.6900e-003	4.6900e-003	0.0000	20.0269	20.0269	6.4800e-003	0.0000	20.1888
Paving	1.9900e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0123**	**0.1019**	**0.1458**	**2.3000e-004**		**5.1000e-003**	**5.1000e-003**		**4.6900e-003**	**4.6900e-003**	**0.0000**	**20.0269**	**20.0269**	**6.4800e-003**	**0.0000**	**20.1888**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.2000e-004	2.7000e-004	3.2500e-003	1.0000e-005	1.1800e-003	1.0000e-005	1.1900e-003	3.1000e-004	1.0000e-005	3.2000e-004	0.0000	0.9398	0.9398	3.0000e-005	3.0000e-005	0.9483
Total	**4.2000e-004**	**2.7000e-004**	**3.2500e-003**	**1.0000e-005**	**1.1800e-003**	**1.0000e-005**	**1.1900e-003**	**3.1000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**0.9398**	**0.9398**	**3.0000e-005**	**3.0000e-005**	**0.9483**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.8 7. Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.1422					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.9200e-003	0.0130	0.0181	3.0000e-005		7.1000e-004	7.1000e-004		7.1000e-004	7.1000e-004	0.0000	2.5533	2.5533	1.5000e-004	0.0000	2.5571
Total	**1.1441**	**0.0130**	**0.0181**	**3.0000e-005**		**7.1000e-004**	**7.1000e-004**		**7.1000e-004**	**7.1000e-004**	**0.0000**	**2.5533**	**2.5533**	**1.5000e-004**	**0.0000**	**2.5571**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.7000e-004	4.4000e-004	5.2000e-003	2.0000e-005	1.8900e-003	1.0000e-005	1.9000e-003	5.0000e-004	1.0000e-005	5.1000e-004	0.0000	1.5036	1.5036	4.0000e-005	4.0000e-005	1.5172
Total	**6.7000e-004**	**4.4000e-004**	**5.2000e-003**	**2.0000e-005**	**1.8900e-003**	**1.0000e-005**	**1.9000e-003**	**5.0000e-004**	**1.0000e-005**	**5.1000e-004**	**0.0000**	**1.5036**	**1.5036**	**4.0000e-005**	**4.0000e-005**	**1.5172**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

CM Residence Inn - Existing

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1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Hotel	110.00	Room	3.67	159,720.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	69
Climate Zone	5			**Operational Year**	2024
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	2.68	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Existing Development, PG&E 2019 Carbon Intensity factor

Land Use - Existing 110-Room Hotel

Construction Phase - Operation Only

Energy Use - Historic (Older) Energy Consumption/Title 24 Standards

Table Name	Column Name	Default Value	New Value
tblProjectCharacteristics	CO2IntensityFactor	0	2.68

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.0 Emissions Summary

2.1 Overall Construction

Not Applicable

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.7072	1.0000e-005	1.0100e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.9700e-003	1.9700e-003	1.0000e-005	0.0000	2.0900e-003
Energy	0.0335	0.3048	0.2560	1.8300e-003		0.0232	0.0232		0.0232	0.0232	0.0000	333.6786	333.6786	6.3600e-003	6.0800e-003	335.6504
Mobile	0.3574	0.3305	3.0270	5.7200e-003	0.6124	4.3400e-003	0.6168	0.1635	4.0300e-003	0.1675	0.0000	536.3022	536.3022	0.0397	0.0256	544.9300
Waste						0.0000	0.0000		0.0000	0.0000	12.2262	0.0000	12.2262	0.7225	0.0000	30.2898
Water						0.0000	0.0000		0.0000	0.0000	0.8853	0.0197	0.9049	0.0909	2.1500e-003	3.8178
Total	**1.0981**	**0.6353**	**3.2841**	**7.5500e-003**	**0.6124**	**0.0275**	**0.6399**	**0.1635**	**0.0272**	**0.1907**	**13.1114**	**870.0025**	**883.1139**	**0.8595**	**0.0339**	**914.6901**

3.0 Construction Detail

Not Applicable

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.3574	0.3305	3.0270	5.7200e-003	0.6124	4.3400e-003	0.6168	0.1635	4.0300e-003	0.1675	0.0000	536.3022	536.3022	0.0397	0.0256	544.9300
Unmitigated	0.3574	0.3305	3.0270	5.7200e-003	0.6124	4.3400e-003	0.6168	0.1635	4.0300e-003	0.1675	0.0000	536.3022	536.3022	0.0397	0.0256	544.9300

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Hotel	919.60	900.90	654.50	1,670,148	1,670,148
Total	919.60	900.90	654.50	1,670,148	1,670,148

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
Hotel	9.50	7.30	7.30	19.40	61.60	19.00	58	38	4

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Hotel	0.540731	0.061602	0.202834	0.122898	0.023958	0.005433	0.006645	0.003685	0.000662	0.000406	0.027616	0.000722	0.002809

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.0 Energy Detail

Historical Energy Use: Y

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1.8678	1.8678	0.0000	0.0000	1.8678
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1.8678	1.8678	0.0000	0.0000	1.8678
NaturalGas Mitigated	0.0335	0.3048	0.2560	1.8300e-003		0.0232	0.0232		0.0232	0.0232	0.0000	331.8108	331.8108	6.3600e-003	6.0800e-003	333.7826
NaturalGas Unmitigated	0.0335	0.3048	0.2560	1.8300e-003		0.0232	0.0232		0.0232	0.0232	0.0000	331.8108	331.8108	6.3600e-003	6.0800e-003	333.7826

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					
Hotel	6.2179e+006	0.0335	0.3048	0.2560	1.8300e-003		0.0232	0.0232		0.0232	0.0232	0.0000	331.8108	331.8108	6.3600e-003	6.0800e-003	333.7826
Total		**0.0335**	**0.3048**	**0.2560**	**1.8300e-003**		**0.0232**	**0.0232**		**0.0232**	**0.0232**	**0.0000**	**331.8108**	**331.8108**	**6.3600e-003**	**6.0800e-003**	**333.7826**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Hotel	6.2179e+006	0.0335	0.3048	0.2560	1.8300e-003		0.0232	0.0232		0.0232	0.0232	0.0000	331.8108	331.8108	6.3600e-003	6.0800e-003	333.7826
Total		**0.0335**	**0.3048**	**0.2560**	**1.8300e-003**		**0.0232**	**0.0232**		**0.0232**	**0.0232**	**0.0000**	**331.8108**	**331.8108**	**6.3600e-003**	**6.0800e-003**	**333.7826**

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5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Hotel	1.53651e+006	1.8678	0.0000	0.0000	1.8678
Total		**1.8678**	**0.0000**	**0.0000**	**1.8678**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Hotel	1.53651e+006	1.8678	0.0000	0.0000	1.8678
Total		**1.8678**	**0.0000**	**0.0000**	**1.8678**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.7072	1.0000e-005	1.0100e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.9700e-003	1.9700e-003	1.0000e-005	0.0000	2.0900e-003
Unmitigated	0.7072	1.0000e-005	1.0100e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.9700e-003	1.9700e-003	1.0000e-005	0.0000	2.0900e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0833					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.6238					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	9.0000e-005	1.0000e-005	1.0100e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.9700e-003	1.9700e-003	1.0000e-005	0.0000	2.0900e-003
Total	**0.7072**	**1.0000e-005**	**1.0100e-003**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.9700e-003**	**1.9700e-003**	**1.0000e-005**	**0.0000**	**2.0900e-003**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0833					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.6238					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	9.0000e-005	1.0000e-005	1.0100e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.9700e-003	1.9700e-003	1.0000e-005	0.0000	2.0900e-003
Total	**0.7072**	**1.0000e-005**	**1.0100e-003**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.9700e-003**	**1.9700e-003**	**1.0000e-005**	**0.0000**	**2.0900e-003**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.9049	0.0909	2.1500e-003	3.8178
Unmitigated	0.9049	0.0909	2.1500e-003	3.8178

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Hotel	2.79034 / 0.310038	0.9049	0.0909	2.1500e-003	3.8178
Total		**0.9049**	**0.0909**	**2.1500e-003**	**3.8178**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Hotel	2.79034 / 0.310038	0.9049	0.0909	2.1500e-003	3.8178
Total		**0.9049**	**0.0909**	**2.1500e-003**	**3.8178**

CM Residence Inn - Existing - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	12.2262	0.7225	0.0000	30.2898
Unmitigated	12.2262	0.7225	0.0000	30.2898

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Hotel	60.23	12.2262	0.7225	0.0000	30.2898
Total		**12.2262**	**0.7225**	**0.0000**	**30.2898**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Hotel	60.23	12.2262	0.7225	0.0000	30.2898
Total		**12.2262**	**0.7225**	**0.0000**	**30.2898**

9.0 Operational Offroad

CM Residence Inn - Existing - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

CM Residence Inn - Project Operations - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

CM Residence Inn - Project Operations

Marin County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Hotel	149.00	Room	4.97	216,348.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	69
Climate Zone	5			**Operational Year**	2024
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	2.68	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Existing Development, PG&E 2019 Carbon Intensity factor

Land Use - Proposed 149-Room Hotel

Construction Phase - Operation Only

Off-road Equipment - 1 Add'l Concrete/Industrial Saw Added for Pavement Demo

Energy Mitigation - Comply with Tier 1 of CalGreen Code (15% improvement) and Onsite Solar of 245,471 kWh

Water Mitigation - 80% Water Recovery Rate

Table Name	Column Name	Default Value	New Value
tblFleetMix	HHD	0.00	3.6850e-003
tblFleetMix	LDA	0.00	0.54
tblFleetMix	LDT1	0.00	0.06
tblFleetMix	LDT2	0.00	0.20
tblFleetMix	LHD1	0.00	0.02
tblFleetMix	LHD2	0.00	5.4330e-003

CM Residence Inn - Project Operations - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblFleetMix	MCY	0.00	0.03
tblFleetMix	MDV	0.00	0.12
tblFleetMix	MH	0.00	2.8090e-003
tblFleetMix	MHD	0.00	6.6450e-003
tblFleetMix	OBUS	0.00	6.6200e-004
tblFleetMix	SBUS	0.00	7.2200e-004
tblFleetMix	UBUS	0.00	4.0600e-004

CM Residence Inn - Project Operations - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.0 Emissions Summary

2.1 Overall Construction

Not Applicable

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.9579	1.0000e-005	1.3700e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.6600e-003	2.6600e-003	1.0000e-005	0.0000	2.8400e-003
Energy	0.0423	0.3841	0.3227	2.3000e-003		0.0292	0.0292		0.0292	0.0292	0.0000	420.2510	420.2510	8.0100e-003	7.6700e-003	422.7360
Mobile	0.4841	0.4476	4.1003	7.7500e-003	0.8296	5.8700e-003	0.8354	0.2215	5.4700e-003	0.2269	0.0000	726.4457	726.4457	0.0538	0.0347	738.1325
Waste						0.0000	0.0000		0.0000	0.0000	16.5600	0.0000	16.5600	0.9787	0.0000	41.0267
Water						0.0000	0.0000		0.0000	0.0000	1.1991	0.0267	1.2258	0.1232	2.9100e-003	5.1714
Total	**1.4842**	**0.8318**	**4.4243**	**0.0101**	**0.8296**	**0.0351**	**0.8646**	**0.2215**	**0.0347**	**0.2561**	**17.7591**	**1,146.7261**	**1,164.4852**	**1.1636**	**0.0453**	**1,207.0694**

CM Residence Inn - Project Operations - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.9579	1.0000e-005	1.3700e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.6600e-003	2.6600e-003	1.0000e-005	0.0000	2.8400e-003
Energy	0.0372	0.3379	0.2838	2.0300e-003		0.0257	0.0257		0.0257	0.0257	0.0000	369.4984	369.4984	7.0500e-003	6.7400e-003	371.6840
Mobile	0.4841	0.4476	4.1003	7.7500e-003	0.8296	5.8700e-003	0.8354	0.2215	5.4700e-003	0.2269	0.0000	726.4457	726.4457	0.0538	0.0347	738.1325
Waste						0.0000	0.0000		0.0000	0.0000	16.5600	0.0000	16.5600	0.9787	0.0000	41.0267
Water						0.0000	0.0000		0.0000	0.0000	0.2398	6.7600e-003	0.2466	0.0246	5.8000e-004	1.0357
Total	**1.4791**	**0.7855**	**4.3854**	**9.7800e-003**	**0.8296**	**0.0316**	**0.8611**	**0.2215**	**0.0312**	**0.2526**	**16.7998**	**1,095.9536**	**1,112.7534**	**1.0641**	**0.0420**	**1,151.8818**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.34**	**5.56**	**0.88**	**2.69**	**0.00**	**10.01**	**0.41**	**0.00**	**10.13**	**1.37**	**5.40**	**4.43**	**4.44**	**8.55**	**7.20**	**4.57**

3.0 Construction Detail

Not Applicable

CM Residence Inn - Project Operations - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.4841	0.4476	4.1003	7.7500e-003	0.8296	5.8700e-003	0.8354	0.2215	5.4700e-003	0.2269	0.0000	726.4457	726.4457	0.0538	0.0347	738.1325
Unmitigated	0.4841	0.4476	4.1003	7.7500e-003	0.8296	5.8700e-003	0.8354	0.2215	5.4700e-003	0.2269	0.0000	726.4457	726.4457	0.0538	0.0347	738.1325

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Hotel	1,245.64	1,220.31	886.55	2,262,291	2,262,291
Total	1,245.64	1,220.31	886.55	2,262,291	2,262,291

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
Hotel	9.50	7.30	7.30	19.40	61.60	19.00	58	38	4

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Hotel	0.540731	0.061602	0.202834	0.122898	0.023958	0.005433	0.006645	0.003685	0.000662	0.000406	0.027616	0.000722	0.002809

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Kilowatt Hours of Renewable Electricity Generated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1.7103	1.7103	0.0000	0.0000	1.7103
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	2.0856	2.0856	0.0000	0.0000	2.0856
NaturalGas Mitigated	0.0372	0.3379	0.2838	2.0300e-003		0.0257	0.0257		0.0257	0.0257	0.0000	367.7882	367.7882	7.0500e-003	6.7400e-003	369.9738
NaturalGas Unmitigated	0.0423	0.3841	0.3227	2.3000e-003		0.0292	0.0292		0.0292	0.0292	0.0000	418.1655	418.1655	8.0100e-003	7.6700e-003	420.6504

CM Residence Inn - Project Operations - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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					
Hotel	7.83612e+006	0.0423	0.3841	0.3227	2.3000e-003		0.0292	0.0292		0.0292	0.0292	0.0000	418.1655	418.1655	8.0100e-003	7.6700e-003	420.6504
Total		**0.0423**	**0.3841**	**0.3227**	**2.3000e-003**		**0.0292**	**0.0292**		**0.0292**	**0.0292**	**0.0000**	**418.1655**	**418.1655**	**8.0100e-003**	**7.6700e-003**	**420.6504**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Hotel	6.89209e+006	0.0372	0.3379	0.2838	2.0300e-003		0.0257	0.0257		0.0257	0.0257	0.0000	367.7882	367.7882	7.0500e-003	6.7400e-003	369.9738
Total		**0.0372**	**0.3379**	**0.2838**	**2.0300e-003**		**0.0257**	**0.0257**		**0.0257**	**0.0257**	**0.0000**	**367.7882**	**367.7882**	**7.0500e-003**	**6.7400e-003**	**369.9738**

CM Residence Inn - Project Operations - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Hotel	1.71564e+006	2.0856	0.0000	0.0000	2.0856
Total		**2.0856**	**0.0000**	**0.0000**	**2.0856**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Hotel	1.40689e+006	1.7103	0.0000	0.0000	1.7103
Total		**1.7103**	**0.0000**	**0.0000**	**1.7103**

CM Residence Inn - Project Operations - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.9579	1.0000e-005	1.3700e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.6600e-003	2.6600e-003	1.0000e-005	0.0000	2.8400e-003
Unmitigated	0.9579	1.0000e-005	1.3700e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.6600e-003	2.6600e-003	1.0000e-005	0.0000	2.8400e-003

CM Residence Inn - Project Operations - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule 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	0.1128					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.8450					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.3000e-004	1.0000e-005	1.3700e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.6600e-003	2.6600e-003	1.0000e-005	0.0000	2.8400e-003
Total	**0.9579**	**1.0000e-005**	**1.3700e-003**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.6600e-003**	**2.6600e-003**	**1.0000e-005**	**0.0000**	**2.8400e-003**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1128					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.8450					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.3000e-004	1.0000e-005	1.3700e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.6600e-003	2.6600e-003	1.0000e-005	0.0000	2.8400e-003
Total	**0.9579**	**1.0000e-005**	**1.3700e-003**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.6600e-003**	**2.6600e-003**	**1.0000e-005**	**0.0000**	**2.8400e-003**

7.0 Water Detail

CM Residence Inn - Project Operations - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.2466	0.0246	5.8000e-004	1.0357
Unmitigated	1.2258	0.1232	2.9100e-003	5.1714

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Hotel	3.77965 / 0.419961	1.2258	0.1232	2.9100e-003	5.1714
Total		**1.2258**	**0.1232**	**2.9100e-003**	**5.1714**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Hotel	0.75593 / 0.419961	0.2466	0.0246	5.8000e-004	1.0357
Total		**0.2466**	**0.0246**	**5.8000e-004**	**1.0357**

8.0 Waste Detail

CM Residence Inn - Project Operations - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	16.5600	0.9787	0.0000	41.0267
Unmitigated	16.5600	0.9787	0.0000	41.0267

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Hotel	81.58	16.5600	0.9787	0.0000	41.0267
Total		**16.5600**	**0.9787**	**0.0000**	**41.0267**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Hotel	81.58	16.5600	0.9787	0.0000	41.0267
Total		**16.5600**	**0.9787**	**0.0000**	**41.0267**

9.0 Operational Offroad

CM Residence Inn - Project Operations - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Appendix C

Transportation Study

Transportation Impact & LOS Study for Corte Madera Residence Inn











Town of Corte Madera

October 2021

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Appendix A Traffic Counts
Appendix B Synchro Reports

1. Introduction

This report has been prepared to present the results of the study performed by GHD, Inc., to evaluate potential transportation impacts and changes to traffic level of service (LOS) resulting from the proposed Corte Madera Residence Inn hotel development (the "Project") in Corte Madera, California.

1.1 Report Overview

This report is divided into the following sections:

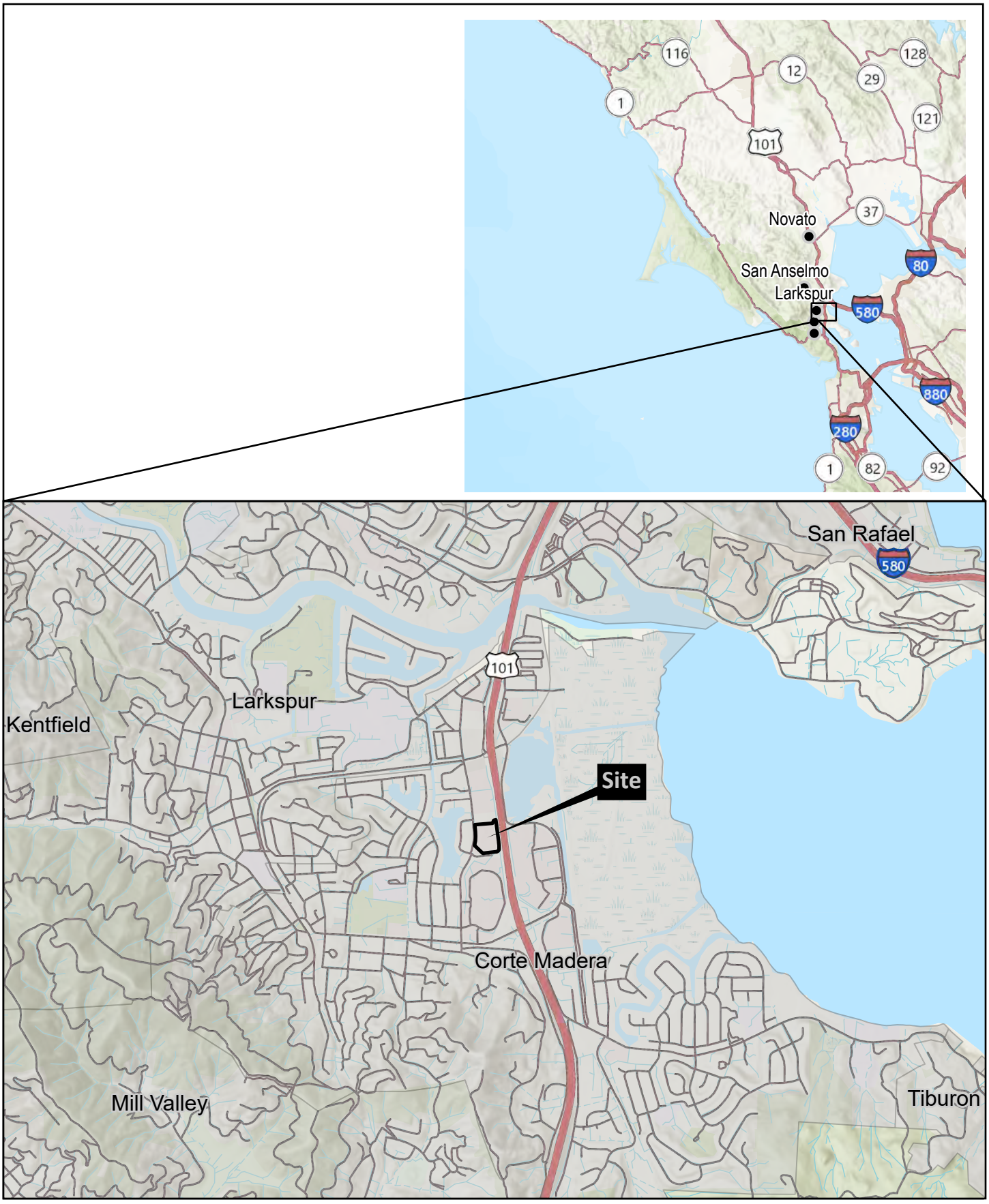
- **Chapter 1 Introduction** provides a description of the project and proposed site plan, including site access provisions
- **Chapter 2 Transportation Impacts** provides an assessment of potential transportation impacts resulting from the project based on California Environmental Quality Act (CEQA) impact criteria
- **Chapter 3 Traffic Level of Service** provides an assessment of the effect of project-generated motor vehicle traffic on level of service (LOS) at key intersections near the project site

1.2 Project Location

The Project Site is located at 56 Madera Boulevard, bordering the U.S. 101 freeway ("Highway 101") to the east and Tamal Vista Boulevard to the west. The Project Site contains a two-story, 110-room Best Western hotel, a stand-alone restaurant building, a 0.81-acre man-made pond, pool area, landscaping improvements, and surface parking for 188 motor vehicles. The Project Site is surrounded by a mix of retail, commercial, and residential uses. The project location is shown on Figure 1.1.

There is no direct access to the existing hotel from Tamal Vista Boulevard. An existing fence separates the surface parking lot on the Project Site from the adjacent sidewalk along Tamal Vista Boulevard.

The existing hotel and restaurant is accessed via two separate driveways on the north side of Madera Boulevard, located west of the Highway 101 southbound on/off ramps. This segment of Madera Boulevard has two motor vehicle lanes in each direction and a two-way center left-turn lane. A sidewalk is provided west of the westernmost driveway on the north side of Madera Boulevard, and along the south side of Madera Boulevard. There are no bicycle lanes on this segment of Madera Boulevard, which also provides access to an office building at the northeast corner of Madera Boulevard and Tamal Vista Boulevard, a Chevron gas station and convenience market near the freeway entrance, and a major entrance to the Corte Madera Town Center on the south side of Madera Boulevard, off-set to the west of the proposed single access to the Project Site.



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Town of Corte Madera
Residence Inn Project

Project No. **11230338**
Revision No. **-**
Date **Aug 2021**

Vicinity Map

FIGURE 1

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Data source: World Topographic Map - labelless: County of Marin, Esri, HERE, Garmin, SafeGraph, INCREMENT P, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, US Census Bureau, USDA; transportation: USGS The National Map: National Transportation Dataset; U.S. Census Bureau – TIGER/Line; U.S. Forest Service. Data Refreshed July, 2021.; World Hillshade: Esri, NASA, NGA, USGS, FEMA; World Topographic Map - labelless: County of Marin, Esri, HERE, Garmin, FAO, NOAA, USGS, Bureau of Land Management, EPA, NPS; World Hillshade: Esri, CGIAR, USGS. Created by: ethompson3

1.3 Project Description

The Project would replace the existing hotel and restaurant with a new 149-room hotel. The new hotel would consist of a single "U" shaped building with guest rooms, a gym and meeting space within approximately 118,000 square feet. The building would be a mix of three-story and four-story segments. The pond would remain intact. The project site plan is illustrated on Figure 1.2.

1.3.1 Proposed Site Access & Circulation

The site entrance/exit furthest east along Madera Boulevard would be removed, with the west entrance providing a single entrance and exit for the Project Site, including a pedestrian path between Madera Boulevard and the lobby entrance. The single access point would be approximately 180 feet from the Highway 101 southbound off-ramp, further than the existing easternmost entrance, and is intended to provide greater line-of-site and a safer vehicular turning area.



Looking east from the Highway 101 southbound off-ramp at Madera Boulevard: the Project Site is visible on the right, including the existing easternmost driveway that would be removed with the Project.

The Project would provide 169 automobile parking spaces, of which six spaces would be ADA accessible and 14 would provide future electric vehicle (EV) charging spaces. The Project would provide 30 bicycle parking spaces, to consist of 24 short-term spaces and 6 long-term spaces.

Pedestrian improvements would be made along the Tamal Vista Boulevard frontage where the existing sidewalk would be realigned and widened. The frontage would include a six-foot high horizontal composite wood fence, with a gated pedestrian access point to link the exterior sidewalk to an internal pathway that is intended to improve connectivity between the community and Project Site.

Adjacent to the existing sidewalk on the north side of Madera Boulevard: on-street parking to the west of the proposed single access driveway would be removed, and a widened landscape buffer would be installed between the westbound motor vehicle lanes and sidewalk.

Internal pedestrian pathways would be located throughout the Project site interconnecting the parking areas, building, pond area, and providing off-site connections. Parallel with Highway 101 would be a decomposed granite walkway meandering along the eastern edge of the pond and Project Site. The portion of the walkway along the pond would include several pop-outs for benches, interpretive signs,

and trash receptacles. Public access to this pathway would be provided at the north connection with the neighboring office building parking lot.

Additionally, the Project would offer complimentary hotel van transportation to and from Marin Airporter shuttle bus stop(s), local shopping, and local businesses.

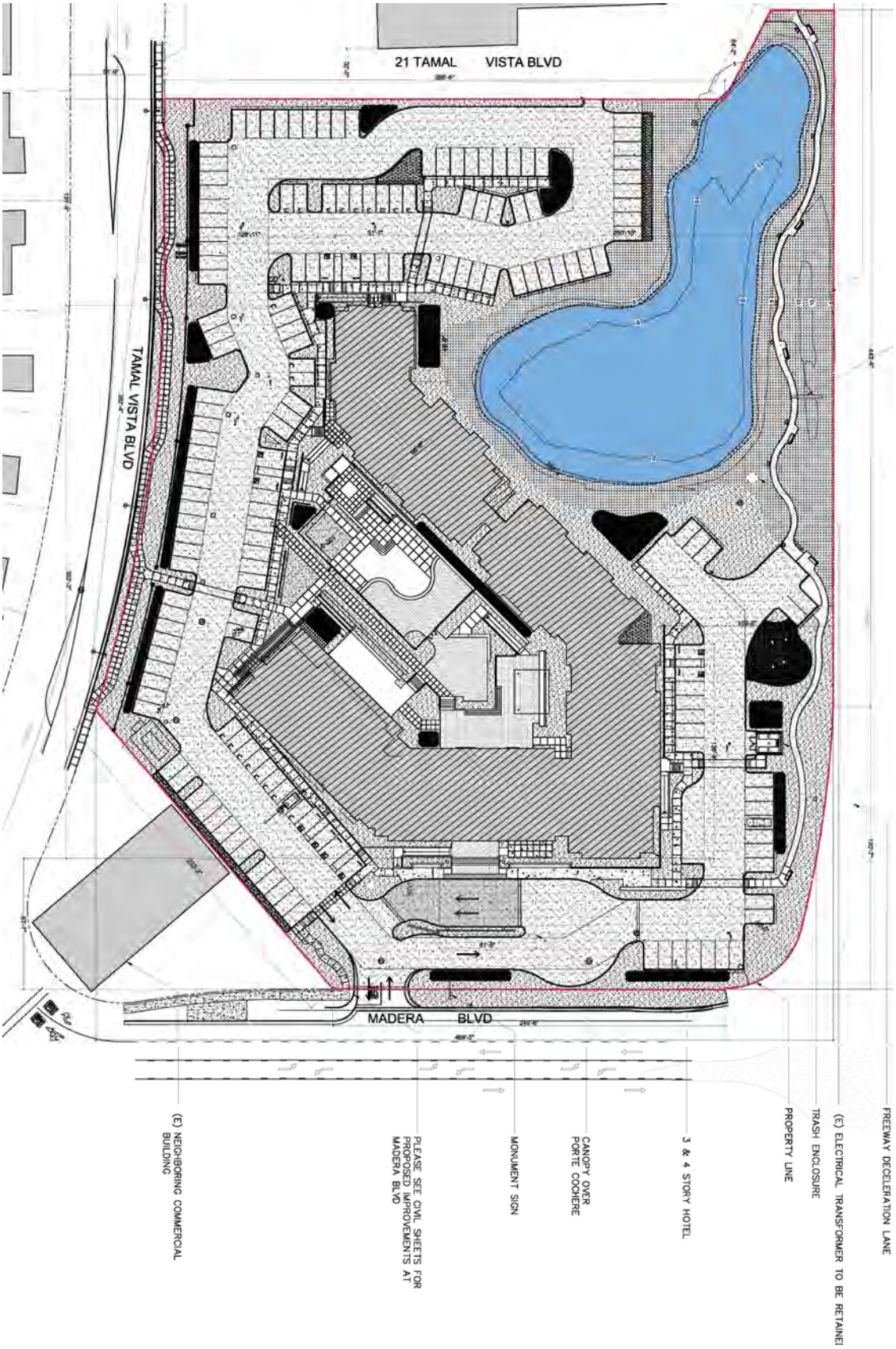
1.3.2 Construction Activity

Construction staging would occur within the Project Site. No construction workers would be allowed to park on neighboring streets but may utilize adjacent parking facilities if agreed upon with the owner. Access to and from the Project Site would occur via Highway 101 and Madera Boulevard.

Construction materials imported to the site would include, but not necessarily be limited to, concrete, material for bioretention areas, asphalt concrete, utility pipes, building materials, and lighting and landscaping materials. Approximately 79,000 square feet of building material and 1,500 tons of pavement would be hauled away. Trucks would use appropriate haul routes in order to transport material to the Project Site.

The number of construction-related vehicles traveling to and from the Project Site would vary on a daily basis. It is anticipated that up to 36 haul-truck round trips could occur on a peak day, which would occur during demolition. In addition to haul trucks, it is anticipated that construction crew trips could require up to 30 round trips per day (thus 60 trips, 30 inbound and 30 outbound). Therefore, on the busiest of days of construction, up to approximately 66 round trips could occur (thus 132 total trips, 66 inbound and 66 outbound).

Figure 1.2 Project Site Plan



2. Transportation Impacts

This chapter describes the assessment of transportation impacts under the California Environmental Quality Act (CEQA), findings of significance and any recommended mitigations.

2.1 Setting

Several key transportation facilities provide access to the site:

- ***Madera Boulevard*** is a collector street that connects Tamalpais Drive to Tamal Vista Boulevard/Council Crest Drive via a north-south alignment, and connects Tamal Vista/Council Crest Drive to the Highway 101 southbound ramps via an east-west alignment. The north-south segment has two through travel lanes for motor vehicles (one per direction), Class II bike lanes in both directions, and sidewalks on both sides. The east-west segment, adjacent to the project site, has four through travel lanes for motor vehicles and a continuous two-way left-turn lane that provides access to three driveways on the north side, and two driveways on the south side. The east-west segment includes a continuous sidewalk on the south side, and sidewalk along the westernmost portion of the north side that terminates at the Project Site's western driveway.
- ***Tamal Vista Boulevard*** is a north-south two-lane collector street that extends north from Madera Boulevard/Council Crest Drive. Tamal Vista Boulevard is adjacent to the project site. Sidewalks are present on both sides of the street, roughly 5 to 6 feet in width. However, utility poles are located within the sidewalk adjacent to the project site, limiting the walkway width to just over 3 feet in places.
- ***Highway 101*** is an eight-lane freeway that bisects the Town of Corte Madera on a north-south axis. Several interchanges with Highway 101 provide access to the Town, including a full interchange at Tamalpais Drive. Partial interchanges include southbound on/off ramps to and from Madera Boulevard, adjacent to the Project Site, and northbound on/off ramps to and from Redwood Highway, north of Wornum Drive. Bus routes providing regional service are served by bus stops adjacent to the northbound on/off ramps at Redwood Highway, southbound on/off ramps at Lucky Drive, and both northbound and southbound on/off ramps at Tamalpais Drive.
- ***Tamalpais Drive*** is an east-west four-lane arterial street that connects with Madera Boulevard, south of the Project Site, and extends from Corte Madera Avenue to Redwood Highway. It has a full access interchange at Highway 101. Sidewalks are present on both sides of most segments, except across Highway 101 where the sidewalk is limited to the south side only. Tamalpais Drive lacks bicycle lanes but nonetheless serves as the primary route that bicyclists use for access to the bus stops adjacent to the Highway 101 on- and off-ramps at Tamalpais Drive, and a popular travel route to and from Paradise Drive.
- ***Wornum Drive*** is an east-west two-lane collector street from Tamal Vista Boulevard to Redwood Highway on the east side of Highway 101. A multi-use bicycle and pedestrian path is provided on the south side of Wornum Drive that connects with the Corte Madera-Larkspur Path to the west.

- ***Corte Madera-Larkspur Path*** is a multi-use bicycle and pedestrian path that extends west from Tamal Vista Avenue at the intersection of Wornum Drive in an east-west alignment to Holcomb Avenue, extending south of Tamalpais Drive in a north-south alignment.
- ***Larkspur Landing*** (also known as the Larkspur Ferry Terminal) is a reginal transit hub for ferry, bus and rail service located near Sir Frances Drake Boulevard, roughly 1.8 miles northeast of the Project Site via driving, bicycling or walking. Golden Gate Ferry service is provided to/from downtown San Francisco. Connecting bus service is provided by Golden Gate Transit and Marin Transit. Sonoma-Marin Area Rail Transit (SMART) provides passenger rail service between Larkspur and Santa Rosa, with a planned future extension to Windsor and proposed future extensions to Healdsburg and Cloverdale.
- ***Regional & Local Bus Stops:*** Marin Transit and Golden Gate Transit operates 10 bus stops serving nine bus routes that operate near the Project Site. Regional north-south bus routes are served by Highway 101 bus stops (described above), located adjacent to the northbound on/off ramps at Redwood Highway, southbound on/off ramps at Lucky Drive, and both northbound and southbound on/off ramps at Tamalpais Drive. Marin Transit's local and intra-city routes operate on Tamalpais Drive, Madera Boulevard, and Tamal Vista Boulevard. Route 619 operates on Tamal Vista Boulevard and provides school service between Tiburon and Redwood Highway, with stops near Wornum Boulevard to the north (roughly 2,200-foot walking distance from the Project Site), and one block south of the intersection with Madera Boulevard (roughly 1,000-foot walking distance from the Project Site).

2.2 Regulatory Framework

This section summarizes the adopted regulations relevant to the analysis of transportation impacts.

2.2.1 State Regulations

Vehicle Miles Traveled & Automobile Delay

As amended in December 2018 and effective statewide beginning on July 1, 2020, CEQA Guidelines section 15064.3 (Determining the Significance of Transportation Impacts) now specifies that vehicle miles traveled (VMT) is the primary metric or measure of effectiveness (MOE) for determining the significance of transportation impacts across California. Section 15064.3(a) also specifies that a projects' effect on automobile delay shall not constitute a significant environmental impact, except as provided in subdivision (b) (2) which is applicable only to roadway capacity projects. As described in Section 15064.3(a) of the amended CEQA Guidelines:

> *Generally, vehicle miles traveled is the most appropriate measure of transportation impacts. For the purposes of this section, "vehicle miles traveled" refers to the amount and*

distance of automobile travel attributable to a project.[1] Other relevant considerations may include the effects of the project on transit and non-motorized travel.

The updated CEQA guidelines specify that lead agencies have discretion to choose the most appropriate methodology to evaluate a project's vehicle miles traveled, and to develop thresholds of significance. Lead agencies have discretion to choose the most appropriate methodology to evaluate a project's vehicles miles traveled, including whether to express the change in absolute terms, per capita, per household or any other measure. A lead agency may use models to estimate a project's vehicle miles traveled and may revise those estimates to reflect professional judgment based on substantial evidence. If existing models or methods are not available to estimate the vehicle miles traveled for the particular project being considered: a lead agency may evaluate the project's vehicle miles travelled qualitatively.

In December 2018, OPR circulated its most recent Technical Advisory on Evaluating Transportation Impacts in CEQA (OPR) that provides recommendations and describes various options for assessing VMT for transportation analysis purposes. The VMT analysis options described by OPR are primarily tailored towards single-use development residential, office or office projects, not hotel projects. OPR recommends the following methodology and criteria for specific land uses:

- For residential projects, OPR recommends that VMT impacts be considered potentially significant if a residential project is expected to generate VMT per Capita (i.e., VMT per resident) at a rate that exceeds 85 percent of a regional average.
- For office projects, OPR recommends that VMT impacts be considered potentially significant if an office project is expected to generate VMT per Employee at a rate that exceeds 85 percent of a regional average.
- For retail projects, OPR recommends that VMT impacts be considered potentially significant if a project results in a net increase in total VMT. This approach takes into account the likelihood that retail developments may lead to increases or decreases in VMT, depending on previously existing retail travel patterns. This approach may also be used for other types of projects with customer components.
- OPR does not provide specific guidance on evaluating other land use types, such as hotels, except to say that other land uses could choose to use the method applicable to the land use with the most similarity to the proposed project.
- OPR also recommends exempting some project types from VMT analysis based on the likelihood that such projects will generate low rates of VMT. OPR recommends that projects generating less than 110 trips per day generally may be assumed to cause a less than significant transportation impact.

[1] As described separately in the *Technical Advisory on Evaluating Transportation Impacts in CEQA* (OPR, December 2018), VMT re-routed from other origins or destinations as the result of a project would not be attributable to a project except to the extent that the re-routing results in a net increase in VMT. For example, OPR guidelines note that retail projects typically re-route travel from other retail destinations, and therefore a retail project may lead to increases or decreases in VMT, depending on previously existing travel patterns.

California Department of Transportation

The California Department of Transportation (Caltrans) is responsible for planning, designing, constructing, operating, and maintaining the State Highway System (SHS). Any improvements or modifications to the SHS would need to be approved by Caltrans. In May 2020, the California Department of Transportation (Caltrans) published the Vehicle Miles Traveled-Focused Transportation Impact Study Guide (TISG), which replaced its Guide for the Preparation of Traffic Impact Studies (2002). The TISG generally endorses the policies, technical approaches, and recommendations from OPR's Technical Advisory. It also indicates that Caltrans intends to "transition away from requesting LOS or other vehicle operations analyses of land use projects", instead placing the focus on VMT and safety.

2.2.2 Regional Regulations

Plan Bay Area

Plan Bay Area is the Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) that describes the long-range plan for transportation improvements within the nine county Bay Area region that includes Corte Madera and Main County. *Plan Bay Area,* is currently being updated for year 2050.

Marin County Congestion Management Plan

The Transportation Authority of Marin (TAM) is a Joint Powers Agency established between the County and all cities with the County, including Corte Madera, to address Marin's unique transportation issues. TAM is the Congestion Management Agency (CMA) for Marin County, which includes maintaining a Congestion Management Plan (CMP).

2.2.3 Local Regulations

Corte Madera General Plan

The Circulation Element of the *Town of Corte Madera General Plan* contains a range of policies and implementation programs designed to maintain or improve transportation circulation within the Town. Some of the relevant policies and implementation measures within the Circulation Element of the General Plan that could apply to the analysis of impacts resulting from the proposed project are as follows:

> ***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.***

Implementation Program CIR-1.6.a: Barrier Removal. Remove barriers on sidewalks and at street crossings as identified and prioritized in the Town of Corte Madera ADA Transition Plan.

Implementation Program CIR-1.6.b: Barrier Free Design. Continue to design roadway, intersection and sidewalk projects to assure accessibility for all persons, consistent with the Americans with Disabilities Act.

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.

Policy CIR-2.1

Prioritize options for improving bicycle and pedestrian access across Highway 101.

Implementation Program CIR-2.1.a: Priority Projects. Upgrades to the Tamalpais/Paradise Drive – Highway 101 interchange and completion of a Class I bicycle lane along Paradise Drive to the Tiburon City limit (Consistent with planned improvements for the Bay Trail) are recognized as top priorities. This priority may also be implemented by construction of a free-standing pedestrian/bicycle bridge to the north or south of the existing interchange.

Policy CIR-2.2

Prioritize the reconstruction of the Tamalpais/Paradise Drive – Highway 101 interchange to improve use by vehicles, bicycles, and pedestrians.

Implementation Program CIR-2.2b: Tamalpais/Highway 101 Interchange. The Town designates upgrades to the Tamalpais/Paradise Drive – Highway 101 interchange as its top priority for major roadway improvements. Accordingly, the Town shall work with Caltrans, TAM, and related agencies to ensure the interchange improvements are recognized through regional transportation construction and funding programs.

Policy CIR-3.5

Emphasize use of pedestrian pathways and sidewalks as an integral part of the Town's circulation system.

Implementation Program CIR-3.5.a: Sidewalk Design. Design new and replacement sidewalks to increase pedestrian safety, use, and aesthetics.

Implementation Program CIR-3.5.c: Sidewalk Repairs. Require property owners to pay their fair share of costs for repairing existing sidewalks.

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 development 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.

Corte Madera Traffic Impact Fee & Street Impact Fee

The Town of Corte Madera uses a Traffic Mitigation Improvement Fund program adopted in 1984. The Corte Madera Code of Ordinances Section 3.32.040 (b) states: *The amount of said fees shall be fixed by resolution of the town council and amended from time to time for the purpose of reflecting changes in construction costs and expected build-out. The amount of the fees shall be in proportion to the traffic generated in the thirtieth highest peak hour of the year by each project at streets and intersections where improvements are required, as shown in the circulation element of the general plan. A list of needed traffic improvements conforming to the circulation element shall be adopted from time to time by resolution of the town council.*

The Town of Corte Madera also uses a Street Impact Fee program adopted in 2003. Corte Madera Town Council Resolution 3314 was established to compensate the Town for the disproportionate roadway damage caused by construction-related traffic based on the project's valuation.

2.3 CEQA Significance Criteria

According to the current State CEQA Guidelines being utilized for this study, a Project results in a significant impact if the Project were to:

a. Conflict with a program plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities; or

b. Conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b), which pertains to vehicle miles traveled (VMT); or

c. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment); or

d. Result in inadequate emergency access.

2.4 Impact & Mitigation Findings

2.4.1 Transportation Programs, Plans, Ordinances & Policies

IMPACT T-1	Would the Project conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities? *Finding: No impact and no mitigation is required.*

This section assesses whether the proposed project is consistent with applicable regional and local transportation programs, plans, ordinances and policies that were summarized in the Regulatory Framework section of this report. Conflicts with adopted level of service (LOS) standards would not be considered significant. Conformance with LOS standards is evaluated in Chapter 3 of this report, relevant to the Town's adopted LOS standard.

Consistent with Corte Madera General Plan policies, the Project will provide pedestrian paths, and upgraded sidewalks bordering the Project Site, to emphasize use of pedestrian pathways and sidewalks, and improve adequacy and availability of the circulation system for all persons by implementing the Americans with Disabilities Act (ADA).

The Project is not anticipated to conflict with planned transportation improvements identified in the Corte Madera General Plan and applicable regional transportation plans. There would be no impact and no mitigation is required.

2.4.2 Vehicle Miles Traveled (VMT)

IMPACT T-2	Would the Project conflict or be inconsistent with CEQA Guidelines Section 15064.3 (b) due to VMT attributable to the Project? *Finding: this impact is less than significant and no mitigation is required.*

This section provides an analysis of potential impacts due to vehicle miles travelled (VMT) attributable to the project. The Town of Corte Madera has not yet adopted criteria and impact thresholds for evaluating VMT impacts. The analysis of VMT impacts described below meets the requirements stipulated by the current statewide CEQA guidelines as updated effective July 2020, and incorporate relevant advice contained in the *Technical Advisory on Evaluating Transportation Impacts in CEQA* published by the Governor's Office of Planning & Research (OPR) in December 2018.

VMT impacts attributable to the proposal hotel may be considered potentially significant if:

- VMT attributable to hotel employees exceeds 85 percent of the average rate of VMT per Employee for Marin County; or
- VMT attributable to hotel guests results in a significant net increase in total regional VMT.

VMT Attributable to Hotel Employees

VMT attributable to hotel employees is anticipated to be less than significant based on the Transportation Agency of Marin (TAM) VMT Web Map, which provides VMT data for work trips within the area based on the TAM Travel Demand Model. The applicable VMT rates from the TAM model are summarized on Table 2.1. The Project Site, which currently has an operating hotel, is located in an area in which the rate of VMT per Employee is more than 15 percent below the County average, and VMT attributable to hotel employees are therefore anticipated to be less than significant:

- The TAM model indicates that the current rate of VMT per Employee for work-related trips in Marin County is 20.7 miles per Employee. Therefore, employee VMT associated with the Project would be considered significant if it exceeded 17.6 miles per employee (based on 85 percent of the County average).
- The Project Site is located within an area identified as Transportation Analysis Zone (TAZ) 800,117 within the TAM model, an area that also includes the Corte Madera Town Center and Corte Madera Village shopping centers. The current rate of VMT per Employee for work-related trips to/from jobs in TAZ 800,117 is 15.9 miles per Employee (based on the Year 2015 TAM model data).

Table 2.1 VMT per Employee

	Average Weekday VMT per Employee
Marin County	20.7
Project Location (TAZ 800,117)	15.9

Source: Transportation Authority of Marin (TAM) Travel Demand Model, TAM VMT Web Map: www.tam.ca.gov/planning/travel-demand-model-traffic-monitoring/#

VMT Attributable to Hotel Guests

VMT attributable to hotel guests would be considered significant if it resulted in a significant net increase in total regional VMT, consistent with the recommended method of evaluating VMT for customer-serving retail uses. The proposed hotel would serve to provide regionally desirable lodging in order to accommodate tourists that visit locations in the area. Hotels attract guests already visiting Marin County and surrounding region that would otherwise stay at another hotel, vacation rental, or Air B&B, as well as “day trippers” already visiting the area that would otherwise not stay in the area overnight.

As described in the *Technical Advisory on Evaluating Transportation Impacts in CEQA* (OPR, December 2018), VMT re-routed from other origins or destinations as the result of a project would not be attributable to a project except to the extent that the re-routing results in a net increase in VMT. For example, OPR guidelines note that retail projects typically re-route travel from other retail destinations, and therefore a retail project may lead to increases or decreases in VMT, depending on previously existing travel patterns.

Similarly, hotel projects typically re-route travel from other hotels and/or other lodging option locations. Marin County has over 2,400 hotel rooms (not including an additional 450 short-term lodging options

such as Bed & Breakfasts and Air B&B rentals), with a typical occupancy of about 80 percent[2] (excluding the drop in occupancy that occurred in 2020 and 2021 due to the COVID-19 pandemic). Other lodging options near the Project site include various hotels and motels along Highway 101 throughout Marin County, as well as lodging options including hotels and Air B&B within Corte Madera and adjacent towns and cities.

The proposed hotel is unlikely to result in an increase in the number of visitors to Marin County. Additionally, the Project would offer complimentary hotel van transportation to and from the airporter, local shopping, and local businesses. VMT attributable to hotel guests is unlikely to generate a significant net increase in total regional VMT. Therefore, VMT impacts attributable to hotel guests are anticipated to be less than significant.

2.4.3 Hazards

IMPACT T-3	Would the Project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous *intersections) or incompatible uses (e.g., farm equipment)? Finding: this impact would be less than significant with mitigation T-3*

Collision Data Review

Table 2.2 summarizes reported collision data for the 5-year period from January 1, 2015 to December 31, 2019 at the following intersections and segments:

1. Tamal Vista Boulevard / Wornum Drive (signalized intersection)
2. Tamal Vista Boulevard / Madera Boulevard (all-way stop-sign controlled intersection)
3. Tamalpais Drive / Madera Boulevard (signalized intersection)
4. Tamalpais Drive / Highway 101 Southbound Off-ramp (signalized intersection)
5. Tamalpais Drive / Highway 101 Northbound Off-ramp (signalized intersection)
6. Madera Boulevard (segment between Tamal Vista Boulevard and Highway 101)

As shown: the rate of collisions at each study location is less than 0.20 collisions per million vehicle miles, lower than applicable statewide and national averages.

[2] Marin County Visitor's Bureau, State of the Visitor Industry in Marin County, Economic Report, November 2019

Table 2.2 Reported Collisions (2015-2019)

#	Intersection or Segment	Total Reported Collisions	Estimated Daily Vehicles Entering Intersection or Segment	Rate of Collisions per Million Entering Vehicles	Injury Collisions, Automobile with:			
					Automobile	Bicycle	Pedestrian	Total
1	Wornum Dr / Tamal Vista Blvd	**5**	21,000	0.13	2			**2**
2	Madera Blvd / Tamal Vista Blvd	**2**	18,000	0.06	1		1	**1**
3	Tamalpais Dr / Madera Blvd	**12**	34,000	0.19	8		2	**8**
4	Tamalpais Dr / Highway 101 Southbound Off-ramp	**1**	37,000	0.01	1			**1**
5	Tamalpais Dr / Highway 101 Northbound Off-ramp	**8**	35,000	0.13	4			**4**
6	Madera Blvd (segment) between Tamal Vista Blvd and Highway 101	**2**	14,000	0.08	1			**1**

Source: Statewide Integrated Traffic Records System (SWTTRS), January 1, 2015 to December 31, 2019

Hazards to Pedestrians

Existing constraints to walking to/from the project site include:

- Effective sidewalk width on Tamal Vista Boulevard bordering the Project Site does not meet ADA standards. Utility poles exist within the sidewalk bordering the Project site, reducing the walkway width to just over 3 feet in multiple places.
- There is no direct pedestrian access to the Project Site from Tamal Vista Boulevard under existing conditions. An existing fence and locked gates along the western boundary of the Project Site, bordering Tamal Vista Boulevard restricts access to/from the Project Site.
- Existing pedestrian path to the Project Site via Madera Boulevard terminates at the existing western driveway, with no provisions for pedestrians traveling within the site.



Looking north on Tamal Vista Boulevard adjacent to the Project Site: the width of the existing walkway is reduced to just over 3 feet in multiple locations, due to utility poles placed within the walkway.

The Project will include the following pedestrian improvements to improve walking circulation to and from the project site:

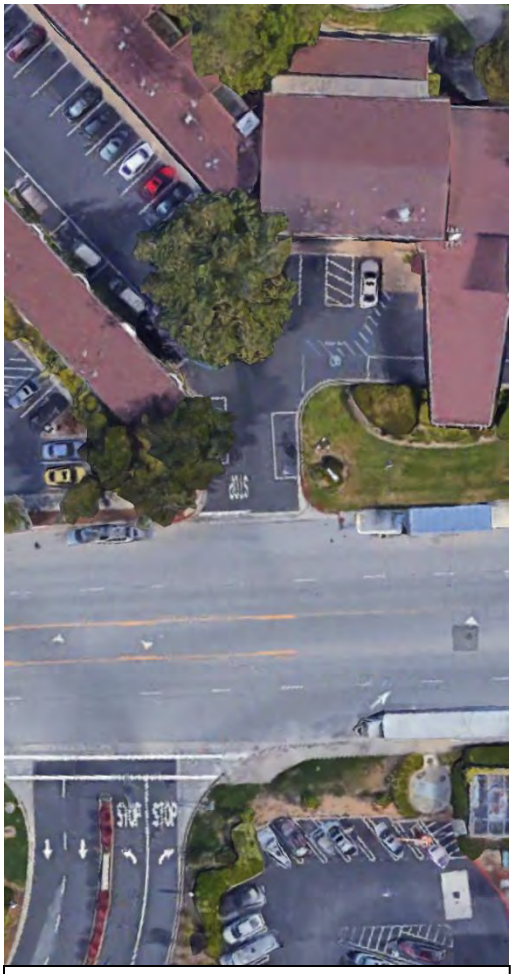
- The narrow sidewalk on Tamal Vista Boulevard bordering the Project site will be replaced with a wider sidewalk that provides adequate width and cross-slope to meet ADA standards, including removal of an obsolete curb-cut.
- Immediately west of the Project site driveway along the north side of Madera Boulevard, modifications to the sidewalk and landscaping would be used to provide a soft barrier and “funnel” pedestrians west on Madera Boulevard, to then cross at the intersection.

The pedestrian improvements would improve pedestrian circulation and reduce hazards to people walking to and from the project site. Therefore, the Project is not anticipated to substantially increase hazards to pedestrian travel.

Hazards to Motor Vehicles & Bicyclists

Access to the Project would occur via a segment of Madera Boulevard between Tamal Vista Boulevard and Highway 101 that has two motor vehicle lanes in each direction, and a two-way center left-turn lane, that serves a total of five driveways:

- Three driveways on the north side of Madera Boulevard, including one driveway to the west that provides access to an office building at the northeast corner of Madera Boulevard and Tamal Vista Boulevard, and the two existing driveways serving the Project Site
- Two driveways on the south side of Madera Boulevard, including the Corte Madera Town Center driveway (roughly 60 feet west of the westernmost driveway serving the Project Site on the north side of Madera Boulevard) and a Chevron driveway close to Highway 101 (across from the existing easternmost driveway serving the Project Site that would be removed from the Project)



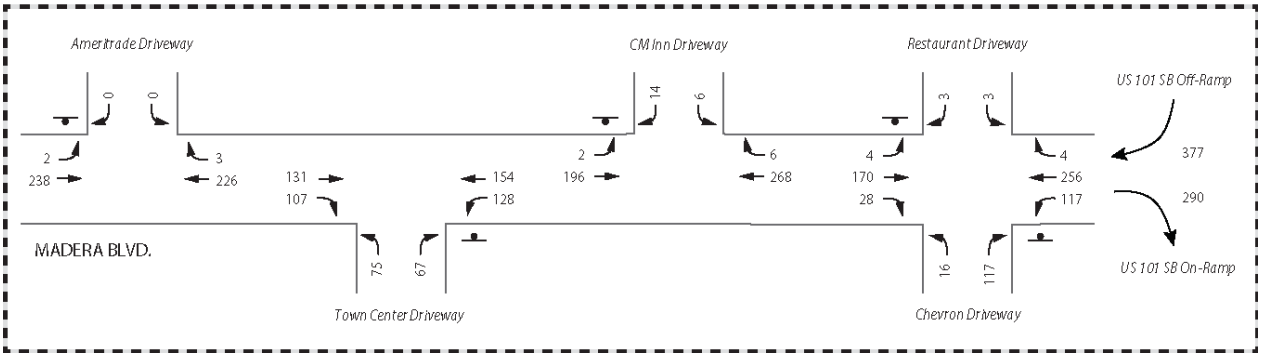
Aerial view looking down on Madera Boulevard, showing the single Project driveway to remain (top) on the north side of the street, and the Corte Madera Town Center driveway (bottom left) that is offset approximately 60 feet west of the Project driveway.

Due to the off-set placement of the Corte Madera Town Center and Project driveways, conflicting movements can occur within the two-way center turn-lane when vehicles attempt to make left-turns into the Town Center and Project site, which could lead to potential collisions within the turn-lane if such movements occur simultaneously. Under existing conditions, such conflicting movements are rare given the low volume of traffic entering the existing hotel site via the westernmost driveway. As shown on Table 2.2, there were just two reported collisions on this segment of Madera Boulevard, between Tamal Vista Avenue and the US 101 freeway, during the five-year period from January 1, 2015 to December 31, 2019, a rate of less than 0.10 collisions per million vehicle miles, well below applicable statewide and national averages.

Prior to the COVID-19 pandemic that reduced travel volumes in 2020 and 2021, the volume of existing turning movements in and out of the Madera Boulevard during typical conditions was determined by counts conducted in April 2014. The existing turning movements during the weekday AM peak hour that occurs between 7:00 and 9:00 AM are shown on Figure 2.1, and the weekday PM peak hour that occurs between 4:00 and 6:00 PM is shown on Figure 2.2. As shown:

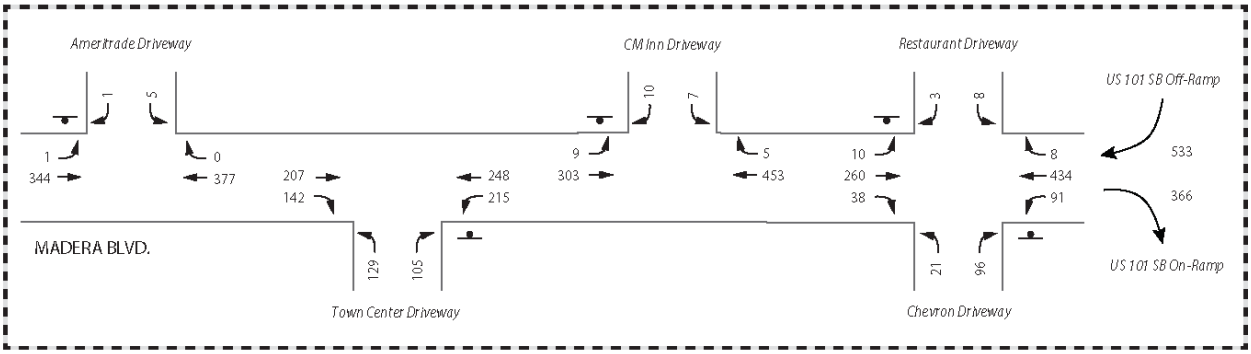
- Most vehicles exiting Highway 101 southbound and traveling west on Madera Boulevard precede to make a left-turn before reaching the intersection with Tamal Vista Boulevard, either into the Chevron driveway or Corte Madera Village driveway.
- Under existing conditions: the volume of vehicles entering the Town Center driveway via a westbound left-turn from the two-way left-turn lane is 128 vehicles during the AM peak hour, and 215 vehicles during the PM peak hour. The conflicting volume of left-turning vehicles entering the westernmost hotel driveway under existing conditions is limited to just 2 vehicles during the AM peak hour, and 9 vehicles during the PM peak hour. Left-turn conflicts are reduced in part because most eastbound vehicles under existing conditions bypass the westernmost driveway and enter the Project site via the easternmost driveway (a total of 4 AM and 10 PM vehicles) that would be removed with the Project.

Figure 2.1 Existing Turning Movements on Madera Blvd – AM Peak Hour



Source: *Corte Madera Inn Rebuild DEIR* Transportation/Traffic section, Parisi & Associates, July 2015.

Figure 2.2 Existing Turning Movements on Madera Blvd – PM Peak Hour



Source: *Corte Madera Inn Rebuild DEIR* Transportation/Traffic section, Parisi & Associates, July 2015.

The Project will include the following modifications to reduce hazards to motor vehicles:

- The site entrance/exit furthest east along Madera Boulevard near the Highway 101 southbound off-ramp would be removed, with the west entrance to provide a single entrance and exit for motor vehicles, located approximately 180 feet from the Highway 101 southbound off-ramp, further than the existing easternmost entrance, to provide greater line-of-site and a safer vehicular turning area.
- With the Proposed Project: the volume of left-turning vehicles entering the west entrance would increase to 14 vehicles during the AM peak hour and 28 vehicles during the PM peak hour. This

includes vehicles that enter via the easternmost driveway under existing conditions, as well as increased volumes under proposed conditions (8 AM, 9 PM based on net project trips as shown on Figure 3.3).

Based on the review of the proposed Project access, the Project would reduce potential hazards by removing the easternmost driveway on Madera Boulevard, to provide greater line-of-site and a safer vehicular turning area with greater separation from the Highway 101 off-ramp. The proposed project design would not substantially increase existing hazards due to a geometric design feature. Therefore, the Project is not anticipated to substantially increase hazards to automobile and bicycle travel.

Construction Traffic

Construction staging would occur within the Project Site. No construction workers would be allowed to park on neighboring streets but may utilize adjacent parking facilities if agreed upon with the owner. Access to and from the Project Site would occur via Highway 101 and Madera Boulevard. The number of construction-related vehicles traveling to and from the Project Site would vary on a daily basis, with approximately 36 round-trip truck-haul trips and 30 to 64 roundtrips by construction crews.

The Project is required to abide by the Town of Corte Madera's provisions regarding transportation and parking management during demolition and construction activities.

Impact T-3 (Construction Traffic): The Project would add construction-related vehicle trips, including truck trips, to Town of Corte Madera and other jurisdictional roadways, creating potential temporary traffic hazards along Madera Boulevard.

Mitigation T-3 (Construction Traffic Management Plan): The project applicant shall develop a construction traffic management plan (CTMP), defining hours of operation, specified truck routes, and construction parking provisions during demolition and construction associated with the Project. The CTMP shall be subject to review and approval by the Town of Corte Madera Public Works Department prior to the issuance of grading or building permits. ***This impact would be less than significant with mitigation.***

2.4.4 Emergency Access

IMPACT T-4	Would the Project result in inadequate emergency access? *Finding: this impact is less than significant and no mitigation is required.*

The Project would not result in inadequate emergency access. In addition to emergency access via the main entrance at the south end of the Project Site on Madera Boulevard, emergency access at the north end of the Project Site is provided by an existing 12-foot-wide secondary emergency access driveway that connects with the adjacent office building property to the north. The secondary emergency access driveway would remain under the proposed project, providing convenient secondary access by emergency vehicles when needed. This impact is less than significant and no mitigation is required.

3. Traffic Level of Service

This section describes the assessment of traffic level of service (LOS) that evaluated the effect of the Project on automobile delay at five intersections near the project site.

3.1 LOS Methodologies

Motor vehicle traffic operations have been quantified through the determination of "Level of Service" (LOS). LOS is a qualitative measure of traffic operating conditions, whereby a letter grade "A" through "F" is assigned to an intersection, or roadway segment, representing progressively worsening traffic conditions. LOS "A" represents free-flow operating conditions and LOS "F" represents over-capacity conditions. Levels of Service will be calculated for all intersection control types, roadway segments, and freeway ramp merge, diverge, and weave sections using the methods documented in the Transportation Research Board Publication *Highway Capacity Manual, Sixth Edition, A Guide for Multimodal Mobility Analysis, 2016* (HCM 6).

The Synchro 10 (Trafficware) software program was used to implement the LOS methodologies. Synchro 10 considers intersection signal timing and queuing constraints when calculating delay and the corresponding LOS. Intersection LOS will be calculated for all control types using the methods documented in HCM 6. For signalized or all-way stop-controlled (AWSC) intersections, an LOS determination is based on the calculated averaged delay for all approaches and movements. For two-way or side-street stop controlled (TWSC) intersections, an LOS determination is based upon the calculated average delay for all movements of the worst performing approach. The vehicular-based LOS criteria for different types of intersection controls are presented in Table 3.1.

Table 3.1 Intersection Level of Service (LOS) Criteria

LOS	Type of Flow	Delay	Maneuverability	Stopped Delay/Vehicle	
				Signalized	Un-signalized
A	Stable Flow	Very slight delay. Progression is very favorable, with most vehicles arriving during the green phase not stopping at all.	Turning movements are easily made, and nearly all drivers find freedom of operation.	≤10.0	≤10.0
B	Stable Flow	Good progression and/or short cycle lengths. More vehicles stop than for LOS A, causing higher levels of average delay.	Vehicle platoons are formed. Many drivers begin to feel somewhat restricted within groups of vehicles.	>10.0 and ≤20.0	>10.0 and ≤15.0
C	Stable Flow	Higher delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant, although many still pass through the intersection without stopping.	Back-ups may develop behind turning vehicles. Most drivers feel somewhat restricted	>20.0 and ≤35.0	>15.0 and ≤25.0
D	Approaching Unstable Flow	The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high volume-to-capacity ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.	Maneuverability is severely limited during short periods due to temporary back-ups.	>35.0 and ≤55.0	>25.0 and ≤35.0
E	Unstable Flow	Generally considered to be the limit of acceptable delay. Indicative of poor progression, long cycle lengths, and high volume-to-capacity ratios. Individual cycle failures are frequent occurrences.	There are typically long queues of vehicles waiting upstream of the intersection.	>55.0 and ≤80.0	>35.0 and ≤50.0
F	Forced Flow	Generally considered to be unacceptable to most drivers. Often occurs with over saturation. May also occur at high volume-to-capacity ratios. There are many individual cycle failures. Poor progression and long cycle lengths may also be major contributing factors.	Jammed conditions. Back-ups from other locations restrict or prevent movement. Volumes may vary widely, depending principally on the downstream back-up conditions.	>80.0	>50.0

Source: *Highway Capacity Manual Sixth Edition, A Guide for Multimodal Mobility Analysis*, 2016 (HCM 6)

3.2 Corte Madera LOS Standards

The Corte Madera General Plan Circulation Element specifies that LOS D or better is considered acceptable during the weekday AM and PM peak hours, as described below for intersections within the Town's jurisdiction:

> ***Policy CIR-1.2***
> ***Ensure that current Levels of Service at intersections are maintained when considering new development within Corte Madera.***
>
> *Implementation Program CIR-1.1a: 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 intersection of two collector streets.*
>
> *For projected future conditions the LOS is to be calculated using 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.*

The Corte Madera General Plan Circulation Element also specifies that signalization of the Madera Boulevard intersection with Tamal Vista Boulevard intersection is not anticipated to be required based on anticipated future traffic growth.

> ***Policy CIR-1.3***
> ***Maintain and upgrade existing streets to meet the needs of Town residents.***
>
> *Implementation Program CIR-1.3.c: Madera Blvd./Council Crest Dr./Tamal Vista Blvd. Signalize the intersection of Madera Boulevard, Council Crest Drive and Tamal Vista Boulevard to meet the Town traffic level of service standard.* **Note: a prior study[3] indicated that in 2012 the Town determined that this intersection should not require signalization in the future to meet the Town's level of service standard, and that the Town planned to remove Implementation Program CIR-1.3c from the Circulation Element.**

[3] *Corte Madera Inn Rebuild DEIR* Transportation/Traffic section, Parisi & Associates, July 2015.

3.3 Study Intersections

For this study, LOS was evaluated at the following five intersections:

1. Tamal Vista Boulevard / Wornum Drive
2. Tamal Vista Boulevard / Madera Boulevard / Council Crest Drive
3. Tamalpais Drive / Madera Boulevard
4. Tamalpais Drive / Highway 101 Southbound Off-ramp
5. Tamalpais Drive / Highway 101 Northbound Off-ramp

Figure 3.1 shows the location and existing lane geometrics and intersection control types that are currently in place at each of the study intersections. For this study, LOS was evaluated under the following scenarios, described in further detail in the following sections:

- Existing Conditions
- Existing Plus Project Conditions
- Cumulative No Project Conditions
- Cumulative Plus Project Conditions

3.4 Existing Conditions

Existing weekday AM and PM peak hour LOS was determined based on existing traffic volumes, lane geometrics, and intersection controls. Given the reduction in traffic volumes during 2020-21 due to the COVID-19 pandemic, existing intersection volumes were determined based on traffic counts conducted prior to 2020. Table 3.2 describes the count date for each of the intersection volume data sources. Figure 3.2 illustrates the existing motor vehicle turning movements at each study intersection.

Table 3.2 Study Intersection Volumes: Data Sources

#	Intersection	Motor Vehicle Volumes	Bicycle & Pedestrian Volumes
1	Wornum Dr / Tamal Vista Blvd	January 24, 2019 [1]	April 2014 [4]
2	Madera Blvd / Tamal Vista Blvd / Council Crest Drive	April 2014 [2]	April 2014 [4]
3	Tamalpais Dr / Madera Blvd	May 25, 2017 [3]	April 2014 [4]
4	Tamalpais Dr / Highway 101 SB Off-ramp	May 25, 2017 [3]	April 2014 [4]
5	Tamalpais Dr / Highway 101 NB Off-ramp	May 25, 2017 [3]	April 2014 [4]

Notes:
Source: Town of Corte Madera
2. PM Peak Hour volumes increased by 7 percent based on comparison of April 2014 and January 2019 counts at Wornum Dr/ Tamal Vista Blvd intersection. 2014 counts obtained from *Corte Madera Reuse Draft EIR* Transportation/Traffic section, Parisi & Associates, July 2015.
3. Source: *Amy's Drive-thru Transportation Impact Study*, Fehr & Peers, April 2018.
4. Source: *Corte Madera Inn Rebuild DEIR* Transportation/Traffic section, Parisi & Associates, July 2015.

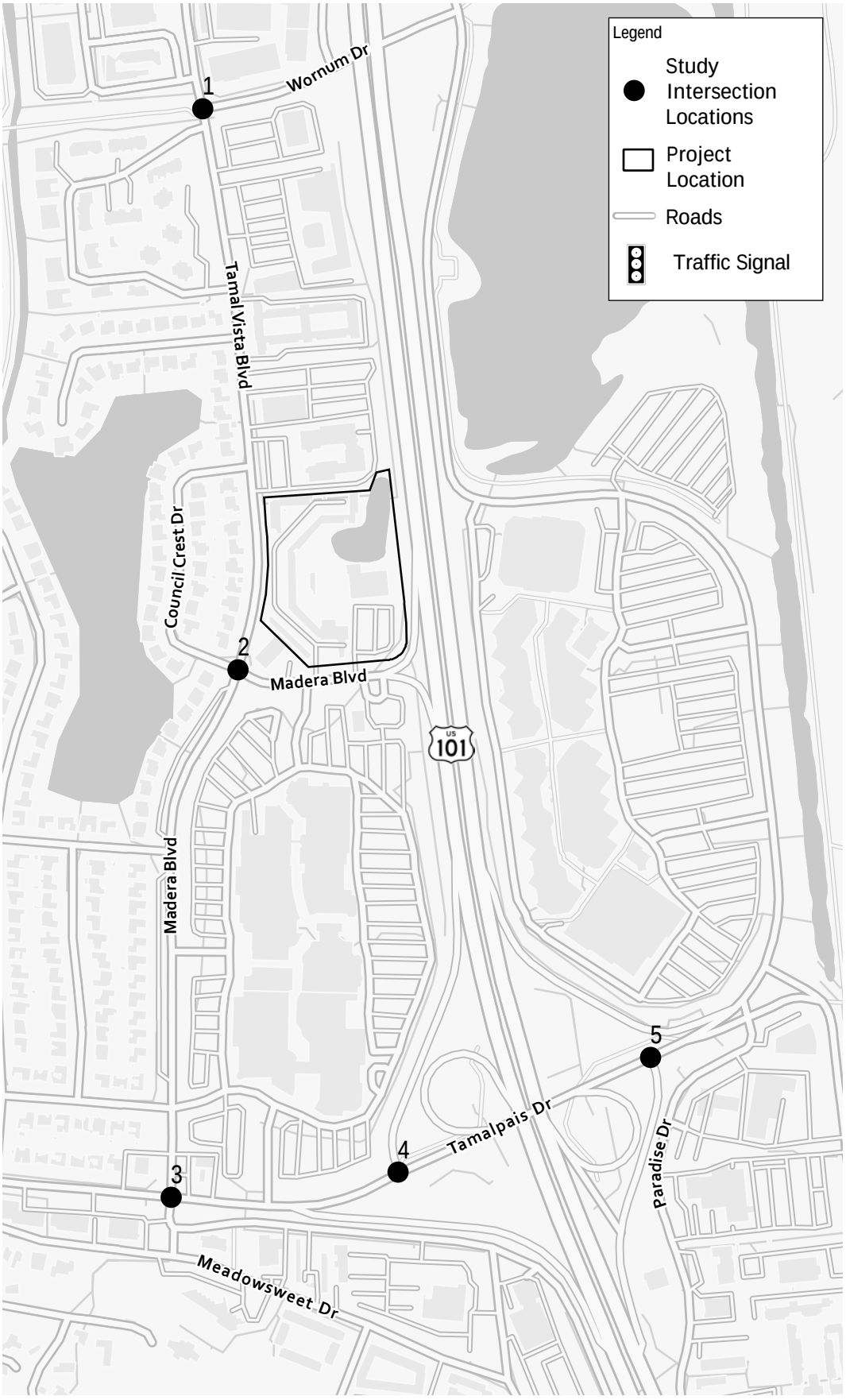
The Existing LOS scenario was utilized as the baseline scenario for assessing the effect of project traffic on existing levels of intersection delay. As presented in **Error! Reference source not found.** all study

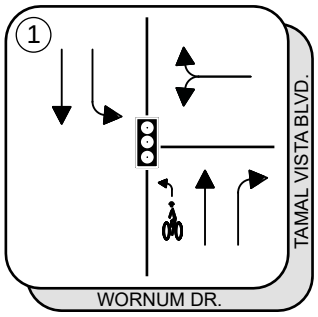
intersections operate at acceptable LOS under Existing conditions during both the AM and PM peak hours.

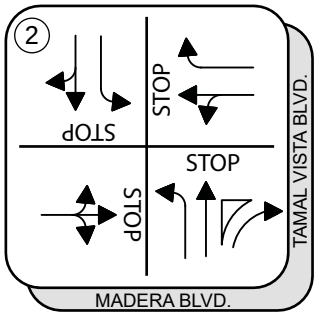
Table 3.3 Existing Conditions Intersection LOS

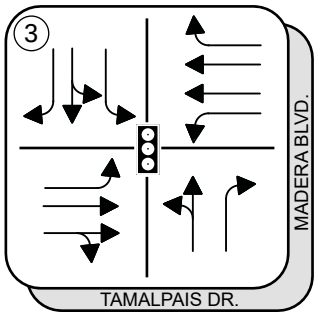
#	Intersection	Control Type[1,2]	Target LOS	AM Peak Hour		PM Peak Hour	
				Delay	LOS	Delay	LOS
1	Wornum Dr / Tamal Vista Blvd	Signal	D	14.7	B	16.4	B
2	Madera Blvd / Tamal Vista Blvd / Council Crest Dr	AWSC	D	12.5	B	24.4	C
3	Tamalpais Dr / Madera Blvd	Signal	D	48.5	D	49.5	D
4	Tamalpais Dr / Hwy 101 SB Off-ramp	Signal	D	18.1	B	20.5	C
5	Tamalpais Dr / Hwy 101 NB Off-ramp	Signal	D	16.1	B	20.4	C

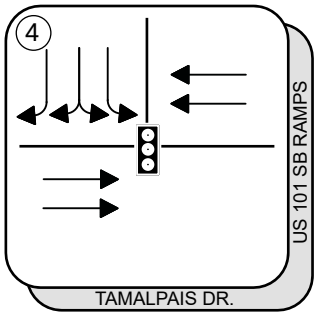
Notes:
1. AWSC = All Way Stop Control
2. LOS = Delay based on average of all approaches.
3. Bold = Unacceptable Conditions

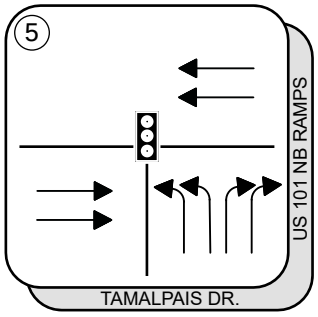












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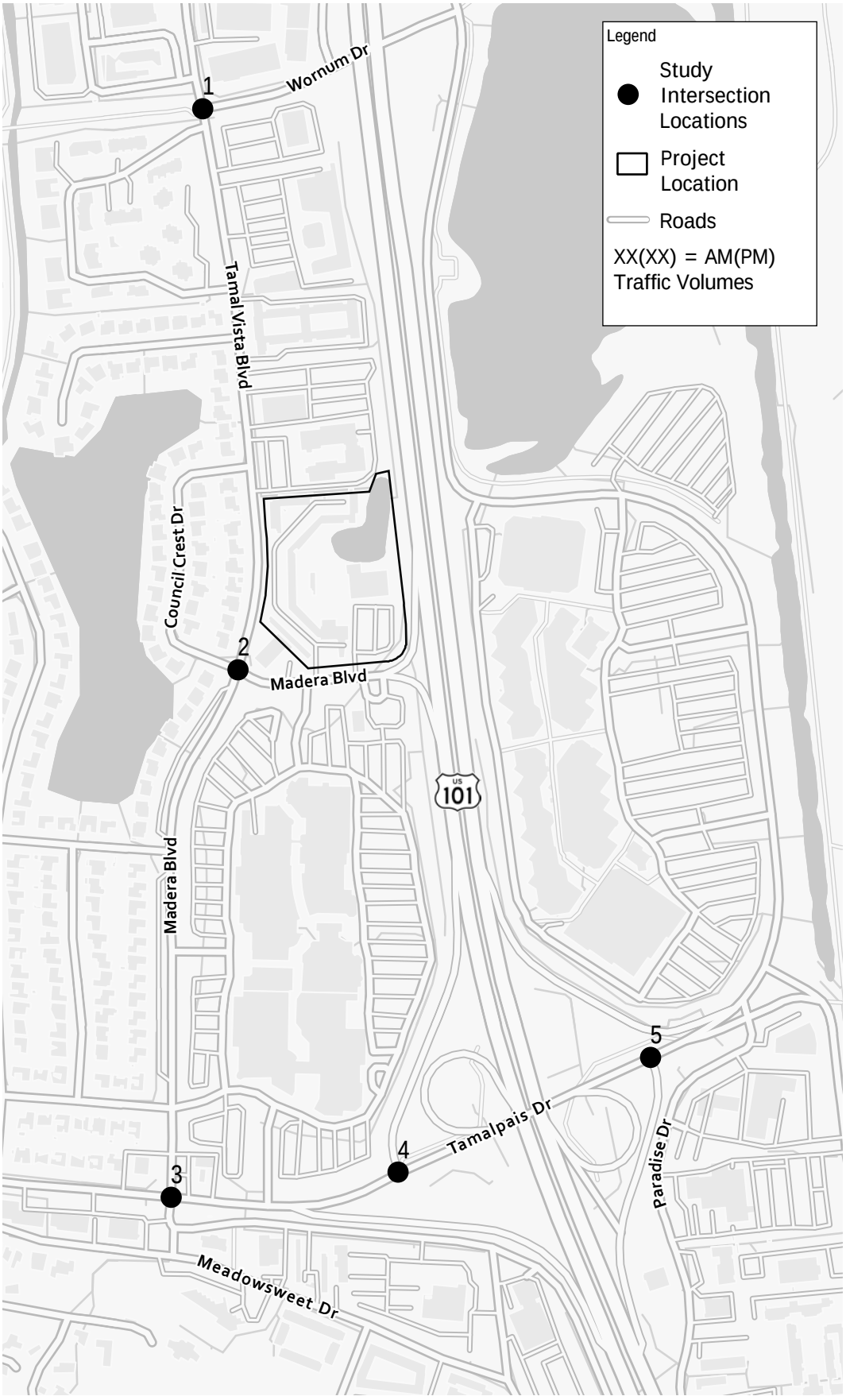
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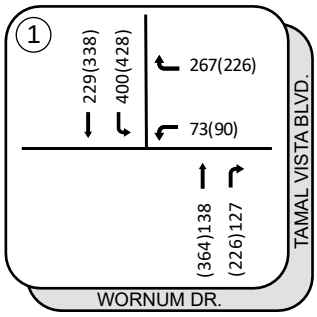
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Revision No. -
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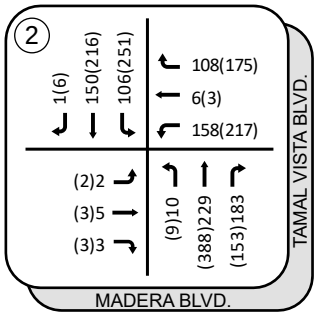
FIGURE 3.1

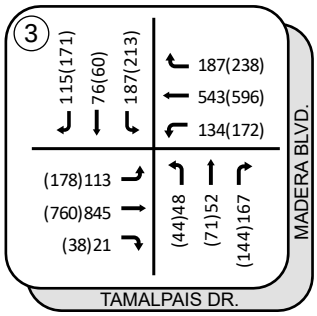
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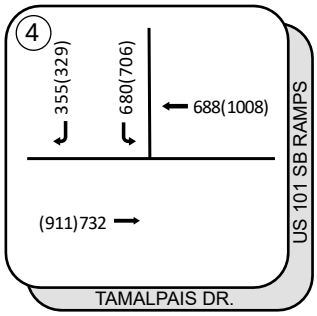
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Created by: pthornton

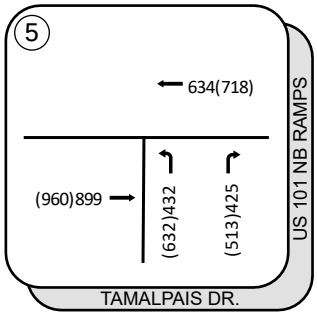












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TOWN OF CORTE MADERA
RESIDENCE INN
CEQA STUDY

EXISTING
PEAK HOUR
TRAFFIC VOLUMES

Project No. 11230338
Revision No. -
Date AUGUST 2021

FIGURE 3.2

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Created by: pthornton

3.5 Existing plus Project Conditions

Existing Plus Project conditions refers to the analysis scenario in which project trips at each study intersection are added to the existing traffic volumes.

3.5.1 Project Trip Generation

The project trip generation forecast describes the anticipated net increase in motor vehicle trips that would result from the Project, considering trips generated by the existing hotel and restaurant. This includes a forecast of daily vehicle trips, as well as vehicle trips that would be generated during the typical a.m. peak commute hour (weekdays between 7:00 a.m. and 9:00 a.m.), and typical p.m. peak commute hour (weekdays between 4:00 p.m. and 6:00 p.m.).

The volume of motor vehicle trips that would be generated by the proposed 149-room hotel was forecasted based on the Institute of Transportation Engineers (ITE) Publication *Trip Generation Manual (10th Ed.).* Table 3.4 presents the project trip generation rates for standard hotels that typically include on-site amenities such as restaurants, fitness facilities and meeting space.

Table 3.4 Vehicle Trip Generation Rates - Hotel

Land Use Category (ITE Code)	Unit1	Daily Trip Rate per Hotel Room	AM Peak Hour Trip Rate per Hotel Room			PM Peak Hour Trip Rate per Hotel Room		
			Total	In %	Out %	Total	In %	Out %
Hotel (310)	Hotel Rooms	8.36	0.47	59%	41%	0.60	51%	49%

Source: Institute of Transportation Engineers (ITE) Trip Generation Manual, 10th Edition

The typical volume of vehicle trips generated by the existing hotel and restaurant was determined based on driveway counts conducted when the site was in full operation, prior to the COVID-19 travel restrictions that limited activity in 2020 and 2021. The driveway counts were conducted in April 2014, as described in the *Corte Madera Inn Rebuild Draft EIR* (July 2015). The driveway counts indicated that the existing hotel and restaurant generated 42 vehicle trips during the a.m. peak hour (16 inbound and 26 outbound) and 60 vehicle trips during the p.m. peak hour (32 inbound and 28 outbound).

Table 3.5 presents the net trip generation forecast for the Project. As shown, the Project is expected to generate a net increase of 658 daily motor vehicle trips. This includes a net increase of 28 vehicle trips during the a.m. peak commute hour and a net increase of 29 vehicle trips during the p.m. peak commute hour.

Table 3.5 Vehicle Trip Generation Forecast – Proposed Project

Use	Rooms	Daily Vehicle Trips	AM Peak Hour Vehicle Trips			PM Peak Hour Vehicle Trips		
			Total	In	Out	Total	In	Out
Proposed Hotel	149	1,246	70	41	29	89	45	44
Existing Hotel & Restaurant	*110*	*588*	*42*	*16*	*26*	*60*	*32*	*28*
Net Vehicle Trips with Project		**658**	**28**	25	3	**29**	13	16

Notes:
1. Trip generation for proposed use is based on the ITE Trip Generation rates for hotels (ITE land use code 310) as shown on Table 1.1
2. Trip generation for existing hotel and restaurant is based on driveway counts conducted in April 2014, as described in the *Corte Madera Inn Rebuild DEIR* Transportation/Traffic section, Parisi & Associates, July 2015.

3.5.2 Project Trip Distribution & Assignment

The project-generated trips were assigned to study intersections based on the anticipated trip distribution as summarized on Table 3.4. The anticipated distribution of trips to/from Highway 101 north and south of Madera Boulevard is based on April 2014 driveway counts which found that:

- The portion of inbound trips arriving from Highway 101 North of Madera Boulevard (thus traveling southbound and exiting Highway 101 at Madera Boulevard) was 63 percent during the AM peak hour, and 41 percent during the PM peak hour
- The portion of outbound trips traveling to Highway 101 South of Madera Boulevard (entering southbound Highway 101 at Madera Boulevard) was 32 percent during the AM Peak Hour, and 54 percent during the PM peak hour.

The project-generated trips was assigned to the study intersections based on the anticipated trip distribution as summarized on Table 3.4. The project-generated trips were then assigned to the study locations based on the trip distribution.

Figure 3.3 presents the trip assignment for the Project-generated trips at each study intersection during the AM and PM peak hours. Project distribution and assignment is the same under Existing and Cumulative conditions. Figure 3.4 presents the Existing Plus Project peak hour traffic volumes.

Table 3.6 Project Trip Distribution

To/From	AM Peak Hour		PM Peak Hour	
	Inbound	Outbound	Inbound	Outbound
Highway 101 South of Madera Blvd	32%	32%	50%	54%
Highway 101 North of Madera Blvd	63%	63%	41%	41%
Tamal Vista north of Wornum Dr	1%	1%	1%	1%
Warnum Drive east of US 101	1%	1%	1%	1%
Tamalpais Dr west of Madera Blvd	2%	1%	1%	1%
Tamalpais Dr east of Highway 101	1%	2%	6%	2%
Total	**100%**	**100%**	**100%**	**100%**

3.5.3 Existing plus Project LOS

Table 3.7 presents a summary of the LOS and delay (in sec/veh) at each study intersection with the addition of Project trips under Existing plus Project Conditions:

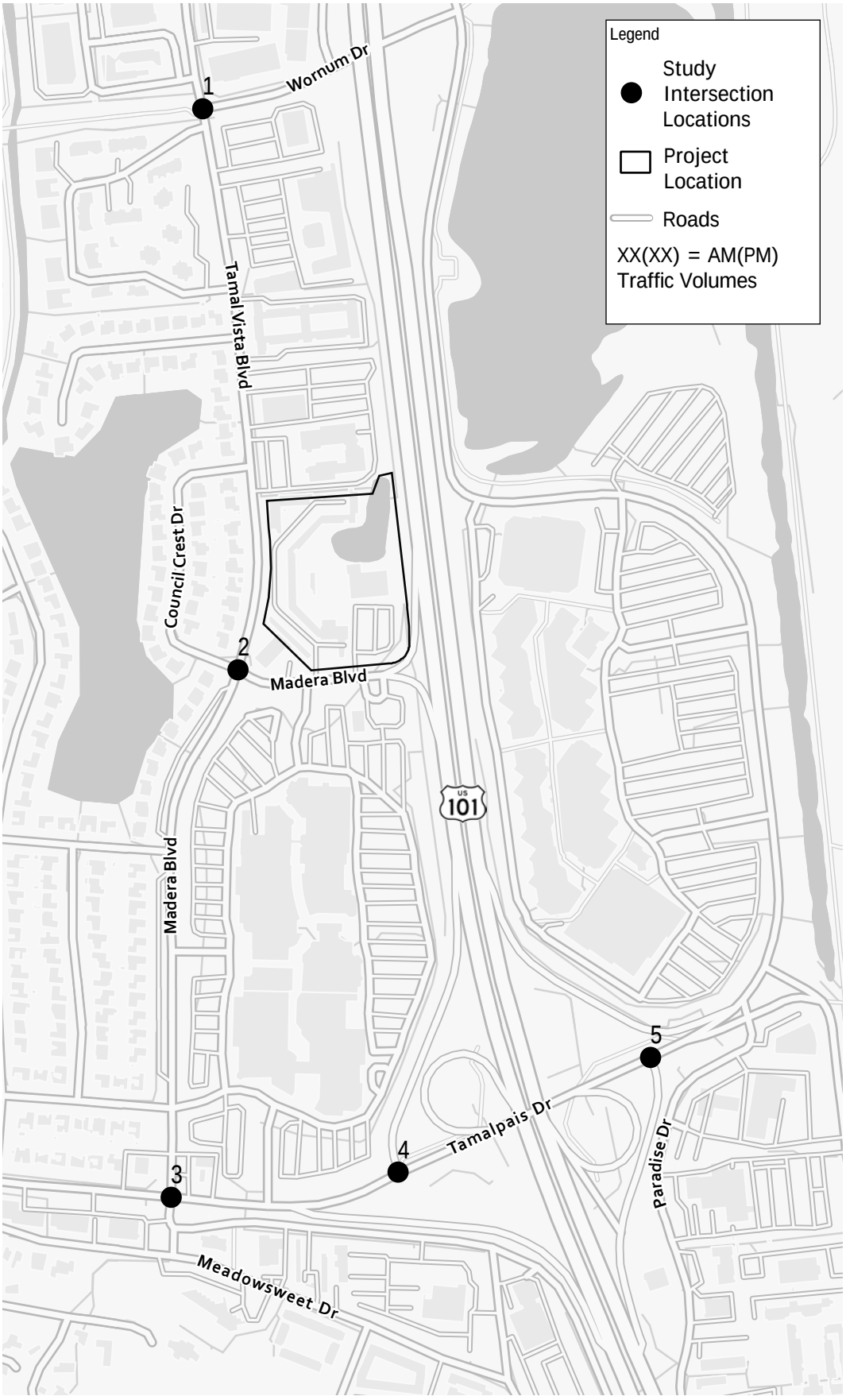
- Average delay at each of the signalized intersections would increase by less than half of a second and LOS would remain unchanged from Existing Conditions
- Each intersection would continue to operate acceptably based on the Town's adopted LOS targets

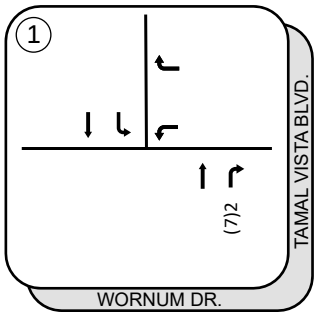
Based on this study: added traffic generated by the Project will have very little effect on intersection LOS.

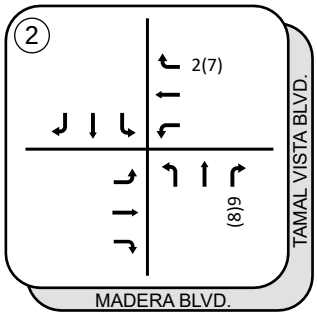
Table 3.7 Existing Plus Project Conditions Intersection LOS

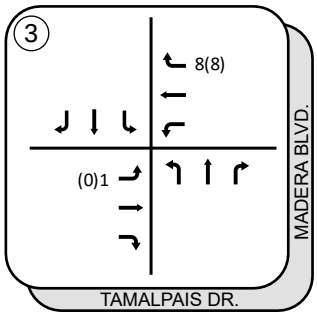
#	Intersection	Control Type[1,2]	Target LOS	AM Peak Hour		PM Peak Hour	
				Delay	LOS	Delay	LOS
1	Tamal Vista Blvd / Wornum Dr	Signal	D	14.8	B	16.4	B
2	Tamal Vista Blvd / Madera Blvd / Council Crest Dr	AWSC	D	12.6	B	24.6	C
3	Tamalpais Dr / Madera Blvd	Signal	D	48.4	D	49.5	D
4	Tamalpais Dr / Hwy 101 SB Off-ramp	Signal	D	18.1	B	20.4	C
5	Tamalpais Dr / Hwy 101 NB Off-ramp	Signal	D	16.1	B	20.4	C

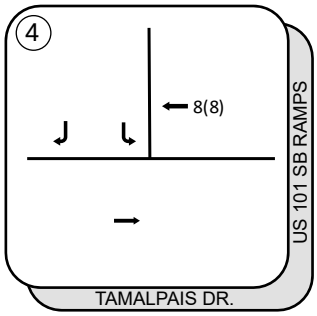
Notes:
1. AWSC = All Way Stop Control
2. LOS = Delay based on average of all approaches.
3. **Bold** = Unacceptable Conditions

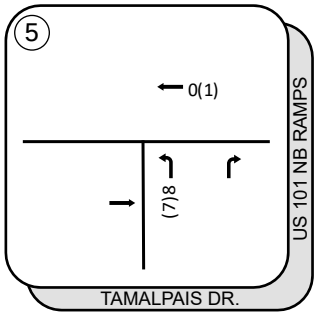












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Miles

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California III FIPS 0403 Feet

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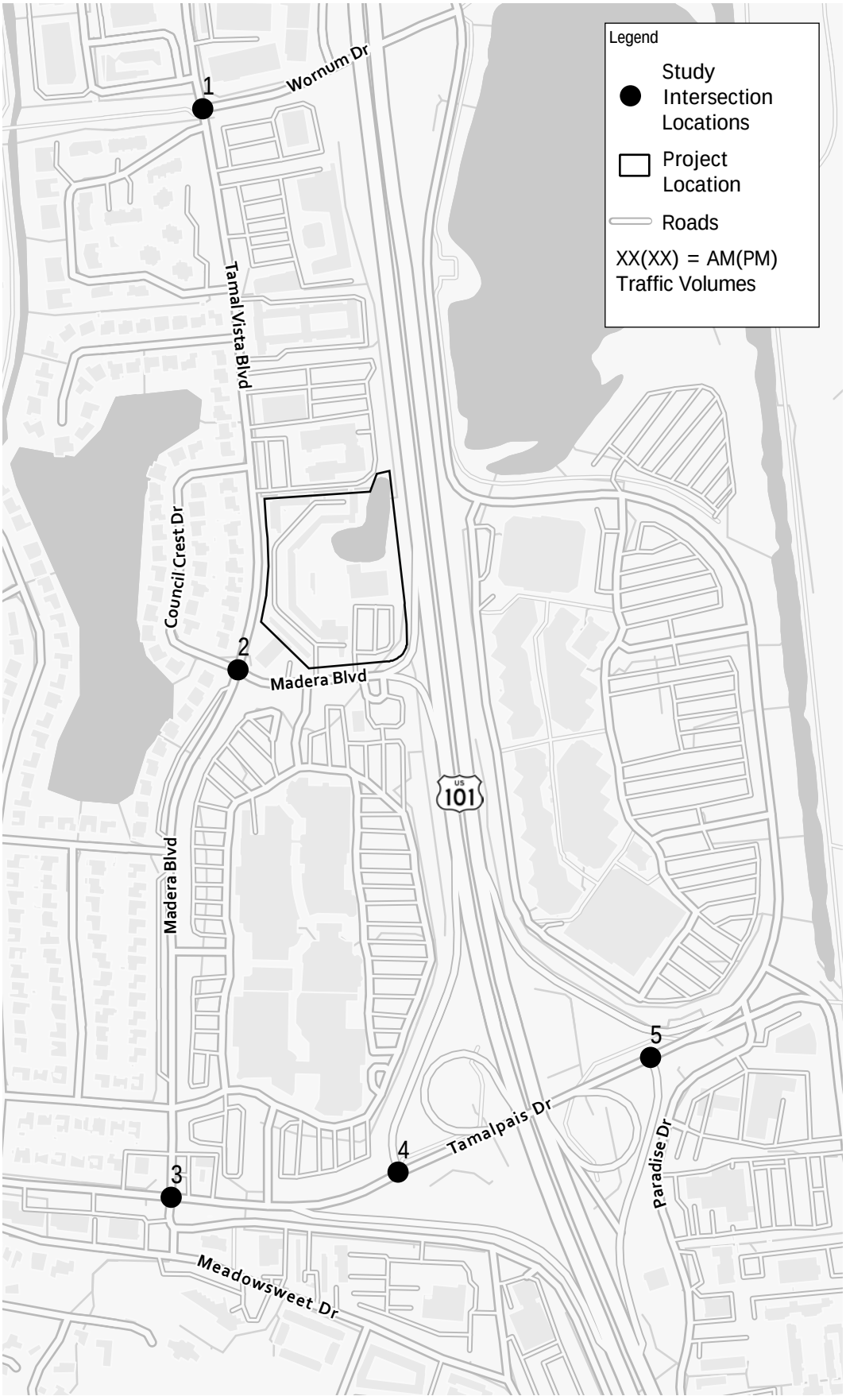
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TRIP ASSIGNMENT

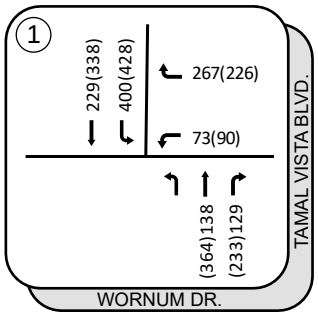
Project No. 11230338
Revision No. -
Date AUGUST 2021

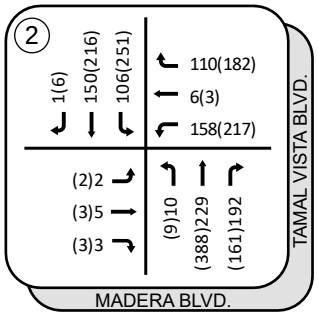
FIGURE 3.3

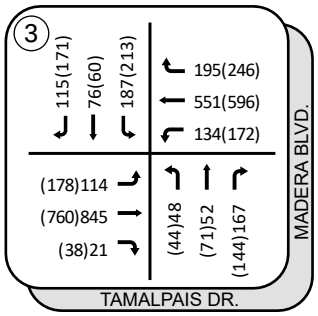
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Print date: 25 Aug 2021 - 17:31

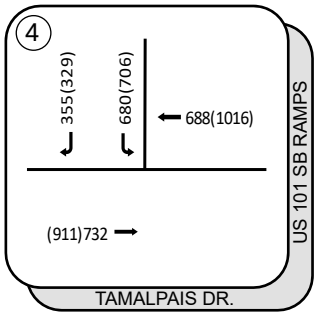
Data source: Human Geography Base and Detail: Esri Community Maps Contributors, County of Marin, Esri, HERE, Garmin, SafeGraph, INCREMENT P, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, US Census Bureau, USDA
Created by: pthornton

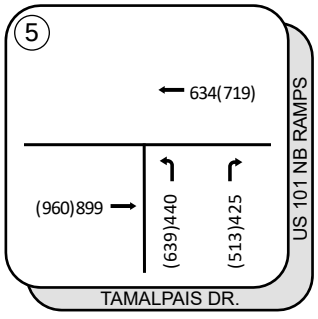












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Miles

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California III FIPS 0403 Feet

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TOWN OF CORTE MADERA
RESIDENCE INN
CEQA STUDY

EXISTING PLUS PROJECT
PEAK HOUR
TRAFFIC VOLUMES

Project No. 11230338
Revision No. -
Date AUGUST 2021

FIGURE 3.4

Data source: Human Geography Base and Detail: Esri Community Maps Contributors, County of Marin, Esri, HERE, Garmin, SafeGraph, INCREMENT P, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, US Census Bureau, USDA
Created by: pthornton

3.6 Cumulative Conditions

Cumulative conditions refer to the analysis scenario which reflects future conditions represented by local and regional growth.

3.6.1 Cumulative No Project LOS

The Cumulative No Project volumes at each study intersection during the a.m. and p.m. peak hour were derived from the *Corte Madera Inn Rebuild Draft EIR* (July 2015). Cumulative No Project volumes represent conditions without the addition of project trips.

Table 3.8 presents a summary of the LOS and delay (in sec/veh) at each study intersection during the Cumulative No Project conditions. As shown, most study intersections would continue to operate at acceptable LOS under Cumulative No Project conditions in the AM and PM peak hours, except that the intersection of Tamalpais Drive with Madera Boulevard would operate at LOS E during the AM peak hour based on this analysis, and the all-way stop-controlled intersection of Tamal Vista Boulevard with Madera Boulevard and Council Crest Drive would operate at LOS E during the PM peak hour.

Table 3.8 Cumulative No Project Conditions Intersection LOS

#	Intersection	Control Type[1,2]	Target LOS	AM Peak Hour		PM Peak Hour	
				Delay	LOS	Delay	LOS
1	Tamal Vista Blvd / Wornum Dr	Signal	D	38.1	D	21.6	C
2	Tamal Vista Blvd / Madera Blvd / Council Crest Dr	AWSC	D	31.5	D	**46.5**	**E**
3	Tamalpais Dr / Madera Blvd	Signal	D	**66.0**	**E**	49.0	D
4	Tamalpais Dr / Hwy 101 SB Off-ramp	Signal	D	17.1	B	23.1	C
5	Tamalpais Dr / Hwy 101 NB Off-ramp	Signal	D	23.0	C	20.2	C

Notes:
1. AWSC = All Way Stop Control
2. LOS = Delay based on average of all approaches.
3. **Bold** = Unacceptable Conditions

3.6.2 Cumulative Plus Project LOS

Table 3.9 presents a summary of the LOS and delay (in sec/veh) at each study intersection under Cumulative Plus Project conditions, with the addition of Project trips:

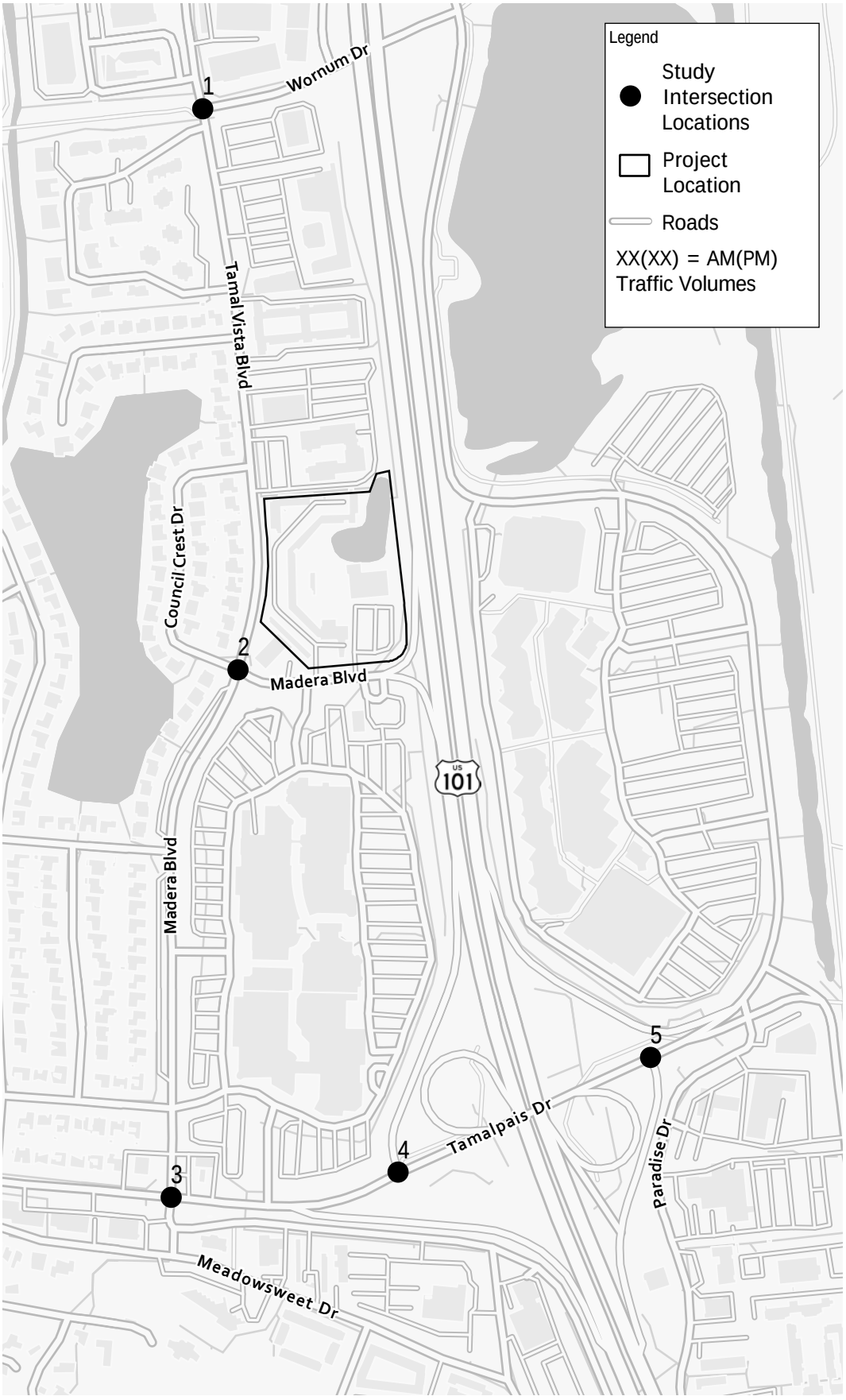
- Average delay at each of the signalized intersections would increase by less than half of a second and LOS would remain unchanged from Cumulative No Project Conditions.

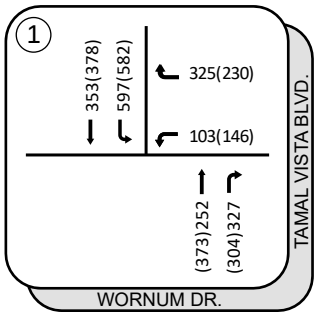
Based on this study: added traffic generated by the Project will have very little effect on intersection LOS.

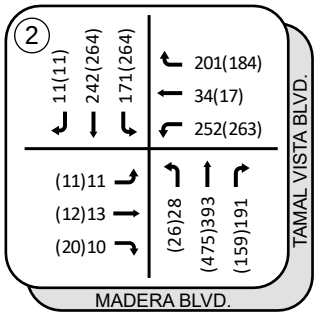
Table 3.9 Cumulative Plus Project Conditions Intersection LOS

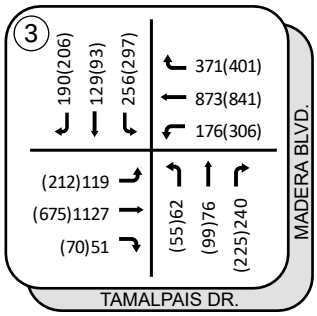
#	Intersection	Control Type[1,2]	Target LOS	AM Peak Hour		PM Peak Hour	
				Delay	LOS	Delay	LOS
1	Tamal Vista Blvd / Wornum Dr	Signal	D	38.4	D	21.9	C
2	Tamal Vista Blvd / Madera Blvd / Council Crest Dr	AWSC	D	31.8	**D**	**46.7**	**E**
3	Tamalpais Dr / Madera Blvd	Signal	D	**66.0**	**E**	49.0	D
4	Tamalpais Dr / Hwy 101 SB Off-ramp	Signal	D	17.0	B	23.3	C
5	Tamalpais Dr / Hwy 101 NB Off-ramp	Signal	D	23.0	C	20.2	C

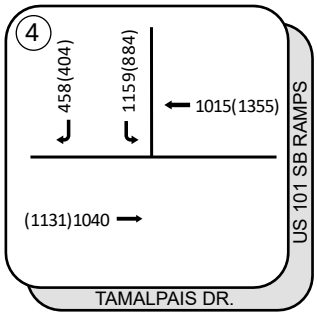
Notes:
1. AWSC = All Way Stop Control
2. LOS = Delay based on average of all approaches.
3. **Bold** = Unacceptable Conditions

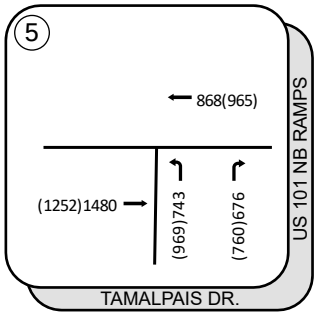












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Map Projection: Lambert Conformal Conic
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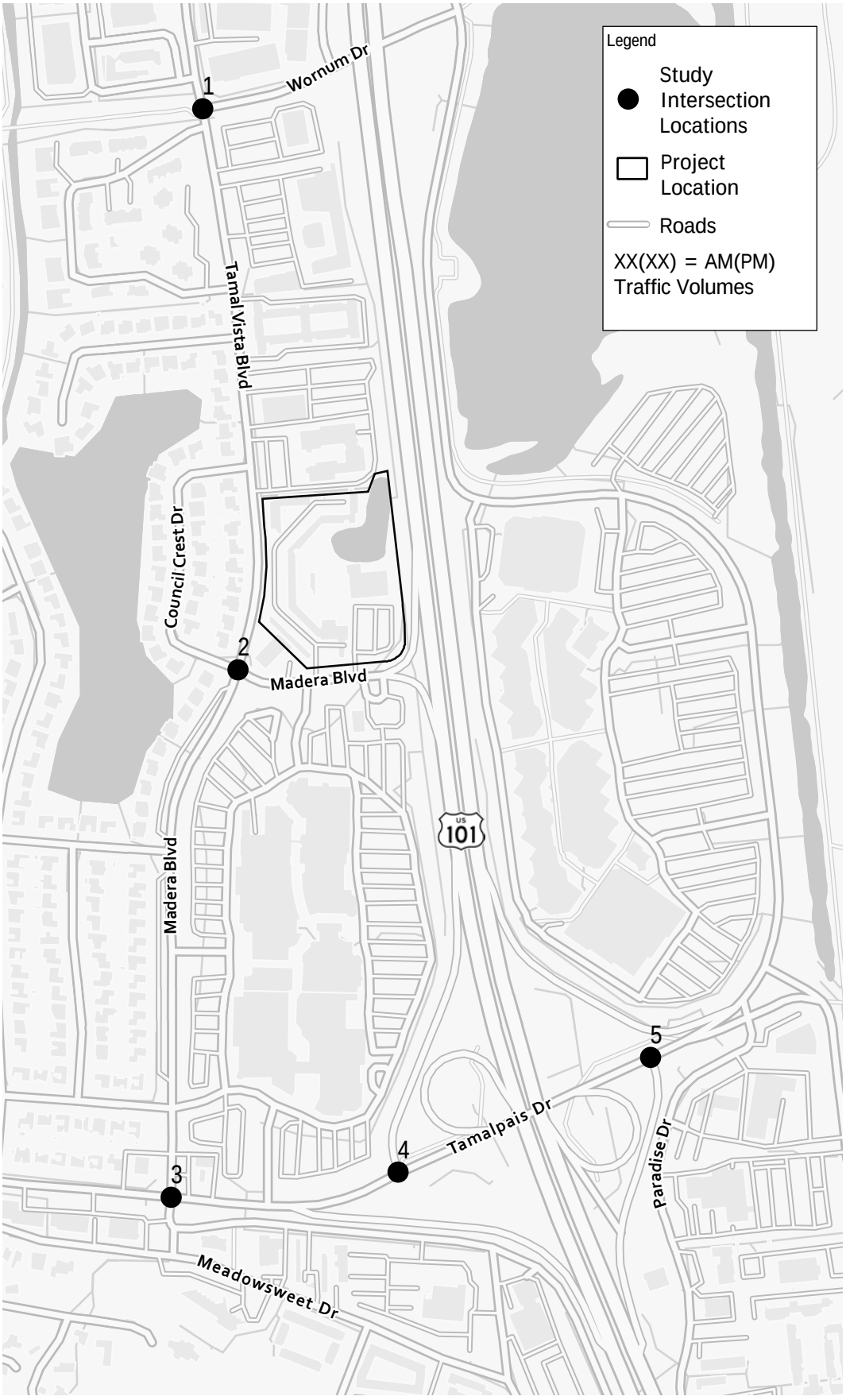
CUMULATIVE
NO PROJECT
TRAFFIC VOLUMES

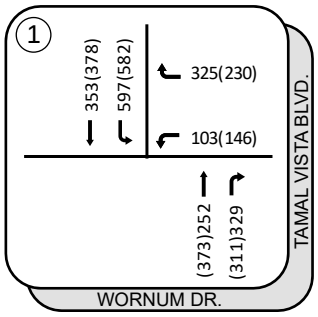
Project No. 11230338
Revision No. -
Date AUGUST 2021

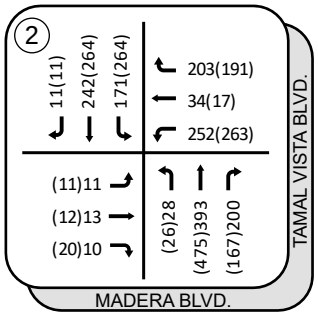
FIGURE 3.5

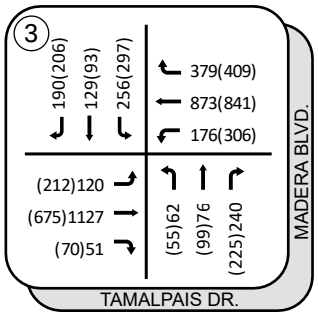
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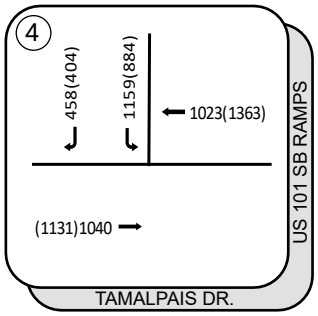
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Created by: pthornton

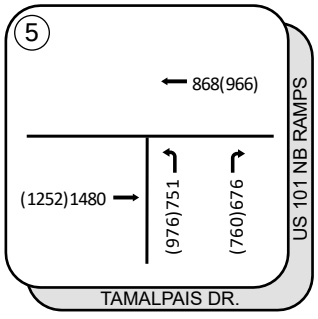












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Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
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TOWN OF CORTE MADERA
RESIDENCE INN
CEQA STUDY

CUMULATIVE PLUS PROJECT TRAFFIC VOLUMES

Project No. 11230338
Revision No. -
Date AUGUST 2021

FIGURE 3.6

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Print date: 25 Aug 2021 - 17:31

Data source: Human Geography Base and Detail: Esri Community Maps Contributors, County of Marin, Esri, HERE, Garmin, SafeGraph, INCREMENT P, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, US Census Bureau, USDA
Created by: pthornton

Appendices

Appendix A
Traffic Counts

Prepared by National Data & Surveying Services

Tamal Vista Blvd & Wornum Dr

Peak Hour Turning Movement Count

ID: 19-08034-001
City: Corte Madera

Day: Thursday
Date: 01/24/2019

	PEAK HOURS	COUNT PERIODS
AM	07:30 AM - 08:30 AM	07:00 AM - 09:00 AM
NOON	NONE	NONE
PM	04:30 PM - 05:30 PM	03:00 PM - 06:00 PM

Tamal Vista Blvd — SOUTHBOUND

	↲	↓	↳	U-turn	Departing ⇧
AM	0	229	400	0	405
NOON	0	0	0	0	0
PM	0	338	428	0	590
	0	0	0	0	

Wornum Dr — EASTBOUND

	AM	NOON	PM	
Departing ⇦	0	0	0	
U-turn	0	0	0	0
Left	0	0	0	0
Through	0	0	0	0
Right	0	0	0	0

Wornum Dr — WESTBOUND

		PM	NOON	AM
Right	0	226	0	267
Through	0	0	0	0
Left	0	90	0	73
U-turn	0	0	0	0
Departing ⇨		654	0	527

CONTROL

CONTROL			
	0		
TEV	1234 AM	0 NOON	1672 PM
PHF	0.91		0.97

Tamal Vista Blvd — NORTHBOUND

	Departing ⇩	U-turn	Left	Through	Right
		0	0	0	0
PM	428	0	0	364	226
NOON	0	0	0	0	0
AM	302	0	0	138	127

Total Vehicles (AM)

Approach				
Southbound	0	229	400	
Eastbound	0	0	0	
Westbound	267	0	73	
Northbound	0	138	127	

Total Vehicles (Noon)

Approach			
Southbound	N/A	N/A	N/A
Eastbound	N/A	N/A	N/A
Westbound	N/A	N/A	N/A
Northbound	N/A	N/A	N/A

Total Vehicles (PM)

Approach			
Southbound	0	338	428
Eastbound	0	0	0
Westbound	226	0	90
Northbound	0	364	226

Bikes (AM)

Approach			
Southbound	6	3	0
Eastbound	0	11	0
Westbound	1	27	3
Northbound	1	0	3

Bikes (NOON)

Approach			
Southbound	N/A	N/A	N/A
Eastbound	N/A	N/A	N/A
Westbound	N/A	N/A	N/A
Northbound	N/A	N/A	N/A

Bikes (PM)

Approach			
Southbound	2	2	1
Eastbound	2	9	2
Westbound	2	5	5
Northbound	1	4	5

Pedestrians (Crosswalks)

Crosswalk		PM	NOON	AM
North leg	West side	7	0	5
North leg	East side	7	0	16
West leg	Upper	0	0	0
West leg	Lower	0	0	0
East leg	Upper	0	0	6
East leg	Lower	2	0	5
South leg	West side	10	0	3
South leg	East side	11	0	14
Northwest corner		0	0	0
Northeast corner		0	0	0
Southwest corner		0	0	0
Southeast corner		0	0	0

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 : 17-7456-003 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 : 17-7456-002 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

Appendix B
Synchro Reports



Movement	WBL	WBR	NBT	NBR	SBL	SBT	
Lane Configurations							
Traffic Volume (veh/h)	73	267	138	127	400	229	
Future Volume (veh/h)	73	267	138	127	400	229	
Initial Q (Qb), veh	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00	1.00		0.95	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	80	293	152	140	440	252	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	
Percent Heavy Veh, %	2	2	2	2	2	2	
Cap, veh/h	429	382	322	260	545	1070	
Arrive On Green	0.24	0.24	0.17	0.17	0.31	0.57	
Sat Flow, veh/h	1781	1585	1870	1507	1781	1870	
Grp Volume(v), veh/h	80	293	152	140	440	252	
Grp Sat Flow(s),veh/h/ln	1781	1585	1870	1507	1781	1870	
Q Serve(g_s), s	1.5	7.4	3.1	3.6	9.7	2.8	
Cycle Q Clear(g_c), s	1.5	7.4	3.1	3.6	9.7	2.8	
Prop In Lane	1.00	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	429	382	322	260	545	1070	
V/C Ratio(X)	0.19	0.77	0.47	0.54	0.81	0.24	
Avail Cap(c_a), veh/h	959	853	1182	952	1584	3021	
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	12.9	15.1	15.9	16.1	13.7	4.5	
Incr Delay (d2), s/veh	0.2	3.3	1.1	1.7	2.9	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	0.5	2.5	1.2	1.2	3.6	0.7	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	13.1	18.4	17.0	17.9	16.6	4.6	
LnGrp LOS	B	B	B	B	B	A	
Approach Vol, veh/h	373		292			692	
Approach Delay, s/veh	17.2		17.4			12.2	
Approach LOS	B		B			B	

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	17.1	11.4			28.4	14.3
Change Period (Y+Rc), s	4.0	4.0			4.0	4.0
Max Green Setting (Gmax), s	38.0	27.0			69.0	23.0
Max Q Clear Time (g_c+I1), s	11.7	5.6			4.8	9.4
Green Ext Time (p_c), s	1.4	1.3			1.6	1.1

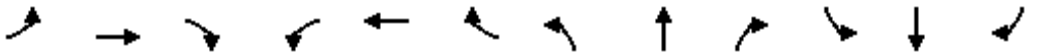
Intersection Summary		
HCM 6th Ctrl Delay	14.7	
HCM 6th LOS	B	

Intersection	
Intersection Delay, s/veh	12.5
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	5	3	158	6	108	10	229	173	100	150	1
Future Vol, veh/h	2	5	3	158	6	108	10	229	173	100	150	1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	5	3	174	7	119	11	252	190	110	165	1
Number of Lanes	0	1	0	0	2	0	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	10.4	12.5	12.8	12.2
HCM LOS	B	B	B	B

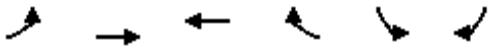
Lane	NBLn1	NBLn2	NBLn3	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	20%	98%	0%	100%	0%
Vol Thru, %	0%	100%	0%	50%	2%	3%	0%	99%
Vol Right, %	0%	0%	100%	30%	0%	97%	0%	1%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	10	229	173	10	161	111	100	151
LT Vol	10	0	0	2	158	0	100	0
Through Vol	0	229	0	5	3	3	0	150
RT Vol	0	0	173	3	0	108	0	1
Lane Flow Rate	11	252	190	11	177	122	110	166
Geometry Grp	8	8	8	8	8	8	8	8
Degree of Util (X)	0.021	0.447	0.3	0.023	0.356	0.205	0.22	0.308
Departure Headway (Hd)	6.895	6.388	5.679	7.466	7.242	6.061	7.197	6.684
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	518	561	631	476	495	589	497	536
Service Time	4.655	4.148	3.438	5.264	5.012	3.83	4.966	4.453
HCM Lane V/C Ratio	0.021	0.449	0.301	0.023	0.358	0.207	0.221	0.31
HCM Control Delay	9.8	14.3	10.9	10.4	14	10.4	12	12.4
HCM Lane LOS	A	B	B	B	B	B	B	B
HCM 95th-tile Q	0.1	2.3	1.3	0.1	1.6	0.8	0.8	1.3



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		0.99	1.00		0.99	1.00		0.94	1.00		0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			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	23	146	590	203	52	57	182	203	83	125
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	151	968	24	428	1524	674	152	167	260	325	341	272
Arrive On Green	0.08	0.27	0.27	0.24	0.43	0.43	0.17	0.17	0.17	0.18	0.18	0.18
Sat Flow, veh/h	1781	3541	89	1781	3554	1572	871	955	1487	1781	1870	1491
Grp Volume(v), veh/h	123	461	480	146	590	203	109	0	182	203	83	125
Grp Sat Flow(s),veh/h/ln	1781	1777	1853	1781	1777	1572	1827	0	1487	1781	1870	1491
Q Serve(g_s), s	8.1	30.5	30.5	8.1	13.6	10.2	6.3	0.0	13.8	12.6	4.6	9.0
Cycle Q Clear(g_c), s	8.1	30.5	30.5	8.1	13.6	10.2	6.3	0.0	13.8	12.6	4.6	9.0
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	151	486	507	428	1524	674	319	0	260	325	341	272
V/C Ratio(X)	0.81	0.95	0.95	0.34	0.39	0.30	0.34	0.00	0.70	0.62	0.24	0.46
Avail Cap(c_a), veh/h	304	489	510	428	1524	674	396	0	322	430	452	360
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.0	42.8	42.8	37.7	23.5	22.5	43.5	0.0	46.6	45.2	42.0	43.8
Incr Delay (d2), s/veh	10.1	28.0	27.3	0.5	0.2	0.2	0.6	0.0	5.0	2.0	0.4	1.2
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	4.1	17.0	17.7	3.6	5.7	3.8	2.9	0.0	5.5	5.8	2.1	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.1	70.8	70.0	38.2	23.6	22.7	44.1	0.0	51.6	47.2	42.3	45.0
LnGrp LOS	E	E	E	D	C	C	D	A	D	D	D	D
Approach Vol, veh/h		1064			939			291			411	
Approach Delay, s/veh		69.7			25.7			48.8			45.5	
Approach LOS		E			C			D			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		25.0	32.3	36.8		25.9	13.7	55.5				
Change Period (Y+Rc), s		4.0	3.5	4.0		4.0	3.5	4.0				
Max Green Setting (Gmax), s		26.0	16.5	33.0		29.0	20.5	29.0				
Max Q Clear Time (g_c+I1), s		15.8	10.1	32.5		14.6	10.1	15.6				
Green Ext Time (p_c), s		0.9	0.2	0.3		1.3	0.2	4.0				

Intersection Summary												
HCM 6th Ctrl Delay			48.5									
HCM 6th LOS			D									



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↰↑	↱
Traffic Volume (veh/h)	0	732	688	0	680	355
Future Volume (veh/h)	0	732	688	0	680	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	822	773	0	775	388
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	0	2	2	0	2	2
Cap, veh/h	0	1114	1114	0	1514	674
Arrive On Green	0.00	0.31	0.31	0.00	0.43	0.43
Sat Flow, veh/h	0	3741	3741	0	3563	1585
Grp Volume(v), veh/h	0	822	773	0	775	388
Grp Sat Flow(s),veh/h/ln	0	1777	1777	0	1781	1585
Q Serve(g_s), s	0.0	12.4	11.5	0.0	9.6	11.2
Cycle Q Clear(g_c), s	0.0	12.4	11.5	0.0	9.6	11.2
Prop In Lane	0.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	1114	1114	0	1514	674
V/C Ratio(X)	0.00	0.74	0.69	0.00	0.51	0.58
Avail Cap(c_a), veh/h	0	1540	1540	0	1514	674
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.90	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	18.4	18.1	0.0	12.7	13.1
Incr Delay (d2), s/veh	0.0	1.2	3.2	0.0	1.2	3.6
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	4.8	4.7	0.0	3.6	4.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	19.6	21.3	0.0	13.9	16.7
LnGrp LOS	A	B	C	A	B	B
Approach Vol, veh/h		822	773		1163	
Approach Delay, s/veh		19.6	21.3		14.8	
Approach LOS		B	C		B	

Timer - Assigned Phs	4	6	8
Phs Duration (G+Y+Rc), s	22.8	30.0	22.8
Change Period (Y+Rc), s	4.0	4.5	4.0
Max Green Setting (Gmax), s	26.0	25.5	26.0
Max Q Clear Time (g_c+I1), s	14.4	13.2	13.5
Green Ext Time (p_c), s	4.4	3.8	4.3

Intersection Summary	
HCM 6th Ctrl Delay	18.1
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	899	0	0	634	432	425
Future Volume (veh/h)	899	0	0	634	432	425
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	988	0	0	697	475	467
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	0	0	2	2	2
Cap, veh/h	1268	0	0	1268	1469	1186
Arrive On Green	0.36	0.00	0.00	0.36	0.43	0.43
Sat Flow, veh/h	3741	0	0	3741	3456	2790
Grp Volume(v), veh/h	988	0	0	697	475	467
Grp Sat Flow(s),veh/h/ln	1777	0	0	1777	1728	1395
Q Serve(g_s), s	14.9	0.0	0.0	9.4	5.5	6.9
Cycle Q Clear(g_c), s	14.9	0.0	0.0	9.4	5.5	6.9
Prop In Lane		0.00	0.00		1.00	1.00
Lane Grp Cap(c), veh/h	1268	0	0	1268	1469	1186
V/C Ratio(X)	0.78	0.00	0.00	0.55	0.32	0.39
Avail Cap(c_a), veh/h	1540	0	0	1510	1469	1186
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.79	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.2	0.0	0.0	15.4	11.5	11.9
Incr Delay (d2), s/veh	1.7	0.0	0.0	1.7	0.6	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.7	0.0	0.0	3.7	2.0	2.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	18.9	0.0	0.0	17.2	12.1	12.9
LnGrp LOS	B	A	A	B	B	B
Approach Vol, veh/h	988			697	942	
Approach Delay, s/veh	18.9			17.2	12.5	
Approach LOS	B			B	B	

Timer - Assigned Phs	2	4	8
Phs Duration (G+Y+Rc), s	30.0	25.9	25.9
Change Period (Y+Rc), s	4.5	* 4.5	4.5
Max Green Setting (Gmax), s	25.5	* 26	25.5
Max Q Clear Time (g_c+I1), s	8.9	16.9	11.4
Green Ext Time (p_c), s	3.6	4.5	4.1

Intersection Summary	
HCM 6th Ctrl Delay	16.1
HCM 6th LOS	B

Notes

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



Movement	WBL	WBR	NBT	NBR	SBL	SBT	
Lane Configurations							
Traffic Volume (veh/h)	90	226	364	226	428	338	
Future Volume (veh/h)	90	226	364	226	428	338	
Initial Q (Qb), veh	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00	1.00		0.96	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	93	233	375	233	441	348	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	
Percent Heavy Veh, %	2	2	2	2	2	2	
Cap, veh/h	344	306	538	436	528	1219	
Arrive On Green	0.19	0.19	0.29	0.29	0.30	0.65	
Sat Flow, veh/h	1781	1585	1870	1514	1781	1870	
Grp Volume(v), veh/h	93	233	375	233	441	348	
Grp Sat Flow(s),veh/h/ln	1781	1585	1870	1514	1781	1870	
Q Serve(g_s), s	2.3	7.2	9.2	6.7	12.0	4.1	
Cycle Q Clear(g_c), s	2.3	7.2	9.2	6.7	12.0	4.1	
Prop In Lane	1.00	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	344	306	538	436	528	1219	
V/C Ratio(X)	0.27	0.76	0.70	0.53	0.84	0.29	
Avail Cap(c_a), veh/h	793	706	1087	880	1225	2499	
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	19.7	16.4	15.5	17.0	3.8	
Incr Delay (d2), s/veh	0.4	3.9	1.6	1.0	3.6	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	0.9	2.7	3.7	2.1	4.7	0.9	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	18.1	23.6	18.0	16.5	20.6	4.0	
LnGrp LOS	B	C	B	B	C	A	
Approach Vol, veh/h	326		608			789	
Approach Delay, s/veh	22.0		17.4			13.2	
Approach LOS	C		B			B	

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	18.8	18.9			37.7	14.0
Change Period (Y+Rc), s	3.5	4.0			4.0	4.0
Max Green Setting (Gmax), s	35.5	30.0			69.0	23.0
Max Q Clear Time (g_c+I1), s	14.0	11.2			6.1	9.2
Green Ext Time (p_c), s	1.4	3.0			2.4	0.9

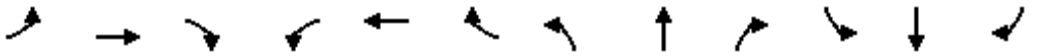
Intersection Summary		
HCM 6th Ctrl Delay	16.4	
HCM 6th LOS	B	

Intersection	
Intersection Delay, s/veh	24.4
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	217	3	175	9	388	153	251	216	6
Future Vol, veh/h	2	3	3	217	3	175	9	388	153	251	216	6
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	3	3	224	3	180	9	400	158	259	223	6
Number of Lanes	0	1	0	0	2	0	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	12.5	18	32.4	20.5
HCM LOS	B	C	D	C

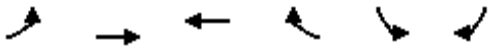
Lane	NBLn1	NBLn2	NBLn3	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	25%	99%	0%	100%	0%
Vol Thru, %	0%	100%	0%	38%	1%	1%	0%	97%
Vol Right, %	0%	0%	100%	38%	0%	99%	0%	3%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	9	388	153	8	219	177	251	222
LT Vol	9	0	0	2	217	0	251	0
Through Vol	0	388	0	3	2	2	0	216
RT Vol	0	0	153	3	0	175	0	6
Lane Flow Rate	9	400	158	8	225	182	259	229
Geometry Grp	8	8	8	8	8	8	8	8
Degree of Util (X)	0.021	0.85	0.304	0.022	0.537	0.373	0.598	0.495
Departure Headway (Hd)	8.162	7.65	6.934	9.451	8.59	7.376	8.313	7.78
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	438	472	517	377	419	488	435	462
Service Time	5.917	5.405	4.688	7.244	6.349	5.135	6.071	5.538
HCM Lane V/C Ratio	0.021	0.847	0.306	0.021	0.537	0.373	0.595	0.496
HCM Control Delay	11.1	40.6	12.7	12.5	20.9	14.5	22.8	18
HCM Lane LOS	B	E	B	B	C	B	C	C
HCM 95th-tile Q	0.1	8.6	1.3	0.1	3.1	1.7	3.8	2.7



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	178	760	38	172	596	238	44	71	144	213	60	171
Future Volume (veh/h)	178	760	38	172	596	238	44	71	144	213	60	171
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.93	1.00		0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	205	874	44	198	685	274	51	82	166	245	69	197
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	232	942	47	474	1455	631	109	174	228	322	338	269
Arrive On Green	0.13	0.27	0.27	0.27	0.41	0.41	0.15	0.15	0.15	0.18	0.18	0.18
Sat Flow, veh/h	1781	3437	173	1781	3554	1542	704	1131	1480	1781	1870	1491
Grp Volume(v), veh/h	205	452	466	198	685	274	133	0	166	245	69	197
Grp Sat Flow(s),veh/h/ln	1781	1777	1833	1781	1777	1542	1835	0	1480	1781	1870	1491
Q Serve(g_s), s	14.0	30.7	30.7	11.4	17.5	15.8	8.2	0.0	13.3	16.2	3.9	15.5
Cycle Q Clear(g_c), s	14.0	30.7	30.7	11.4	17.5	15.8	8.2	0.0	13.3	16.2	3.9	15.5
Prop In Lane	1.00		0.09	1.00		1.00	0.38		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	232	487	502	474	1455	631	283	0	228	322	338	269
V/C Ratio(X)	0.88	0.93	0.93	0.42	0.47	0.43	0.47	0.00	0.73	0.76	0.20	0.73
Avail Cap(c_a), veh/h	277	502	517	474	1455	631	385	0	310	417	437	349
HCM Platoon Ratio	1.00	1.00	1.00	1.00	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	53.0	43.8	43.8	37.6	26.8	26.3	47.8	0.0	50.0	48.2	43.2	47.9
Incr Delay (d2), s/veh	23.7	23.4	22.9	0.6	0.2	0.5	1.2	0.0	5.5	6.0	0.3	5.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.8	16.6	17.0	5.1	7.5	5.9	3.9	0.0	5.3	7.7	1.8	6.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	76.6	67.2	66.7	38.2	27.0	26.8	49.0	0.0	55.4	54.2	43.5	53.5
LnGrp LOS	E	E	E	D	C	C	D	A	E	D	D	D
Approach Vol, veh/h		1123			1157			299			511	
Approach Delay, s/veh		68.7			28.9			52.6			52.5	
Approach LOS		E			C			D			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		23.1	36.5	38.0		26.4	19.7	54.8				
Change Period (Y+Rc), s		4.0	3.5	4.0		4.0	3.5	4.0				
Max Green Setting (Gmax), s		26.0	18.5	35.0		29.0	19.3	34.2				
Max Q Clear Time (g_c+I1), s		15.3	13.4	32.7		18.2	16.0	19.5				
Green Ext Time (p_c), s		1.0	0.2	1.3		1.5	0.2	5.1				

Intersection Summary	
HCM 6th Ctrl Delay	49.5
HCM 6th LOS	D



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	911	1008	0	706	329
Future Volume (veh/h)	0	911	1008	0	706	329
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	949	1050	0	735	343
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	2	2	0	2	2
Cap, veh/h	0	1261	1261	0	1024	456
Arrive On Green	0.00	0.35	0.47	0.00	0.29	0.29
Sat Flow, veh/h	0	3741	3741	0	3563	1585
Grp Volume(v), veh/h	0	949	1050	0	735	343
Grp Sat Flow(s),veh/h/ln	0	1777	1777	0	1781	1585
Q Serve(g_s), s	0.0	14.6	15.9	0.0	11.5	12.2
Cycle Q Clear(g_c), s	0.0	14.6	15.9	0.0	11.5	12.2
Prop In Lane	0.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	1261	1261	0	1024	456
V/C Ratio(X)	0.00	0.75	0.83	0.00	0.72	0.75
Avail Cap(c_a), veh/h	0	1433	1433	0	1569	698
HCM Platoon Ratio	1.00	1.00	1.33	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.85	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	17.6	14.8	0.0	19.8	20.1
Incr Delay (d2), s/veh	0.0	2.0	5.6	0.0	1.0	2.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	5.8	5.8	0.0	4.5	4.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	19.6	20.4	0.0	20.8	22.6
LnGrp LOS	A	B	C	A	C	C
Approach Vol, veh/h		949	1050		1078	
Approach Delay, s/veh		19.6	20.4		21.4	
Approach LOS		B	C		C	

Timer - Assigned Phs		4		6	8
Phs Duration (G+Y+Rc), s		27.0		22.5	27.0
Change Period (Y+Rc), s		5.0		4.7	5.0
Max Green Setting (Gmax), s		25.0		27.3	25.0
Max Q Clear Time (g_c+I1), s		16.6		14.2	17.9
Green Ext Time (p_c), s		4.3		3.6	4.1

Intersection Summary	
HCM 6th Ctrl Delay	20.5
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	960	0	0	718	632	513
Future Volume (veh/h)	960	0	0	718	632	513
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	990	0	0	740	652	529
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	0	0	2	2	2
Cap, veh/h	1233	0	0	1233	944	762
Arrive On Green	0.35	0.00	0.00	0.35	0.27	0.27
Sat Flow, veh/h	3741	0	0	3741	3456	2790
Grp Volume(v), veh/h	990	0	0	740	652	529
Grp Sat Flow(s),veh/h/ln	1777	0	0	1777	1728	1395
Q Serve(g_s), s	15.6	0.0	0.0	10.6	10.5	10.5
Cycle Q Clear(g_c), s	15.6	0.0	0.0	10.6	10.5	10.5
Prop In Lane		0.00	0.00		1.00	1.00
Lane Grp Cap(c), veh/h	1233	0	0	1233	944	762
V/C Ratio(X)	0.80	0.00	0.00	0.60	0.69	0.69
Avail Cap(c_a), veh/h	1433	0	0	1433	1522	1228
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.76	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.3	0.0	0.0	16.7	20.2	20.2
Incr Delay (d2), s/veh	2.3	0.0	0.0	2.2	0.9	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.1	0.0	0.0	4.3	4.0	3.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	20.6	0.0	0.0	18.9	21.1	21.4
LnGrp LOS	C	A	A	B	C	C
Approach Vol, veh/h	990			740	1181	
Approach Delay, s/veh	20.6			18.9	21.2	
Approach LOS	C			B	C	

Timer - Assigned Phs	2	4	8
Phs Duration (G+Y+Rc), s	21.6	26.5	26.5
Change Period (Y+Rc), s	* 4.7	5.0	5.0
Max Green Setting (Gmax), s	* 27	25.0	25.0
Max Q Clear Time (g_c+I1), s	12.5	17.6	12.6
Green Ext Time (p_c), s	4.4	3.9	4.1

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	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	73	267	138	129	400	229
Future Volume (veh/h)	73	267	138	129	400	229
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		0.95	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	80	293	152	142	440	252
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	429	382	324	261	545	1071
Arrive On Green	0.24	0.24	0.17	0.17	0.31	0.57
Sat Flow, veh/h	1781	1585	1870	1507	1781	1870
Grp Volume(v), veh/h	80	293	152	142	440	252
Grp Sat Flow(s),veh/h/ln	1781	1585	1870	1507	1781	1870
Q Serve(g_s), s	1.5	7.4	3.1	3.7	9.8	2.9
Cycle Q Clear(g_c), s	1.5	7.4	3.1	3.7	9.8	2.9
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	429	382	324	261	545	1071
V/C Ratio(X)	0.19	0.77	0.47	0.54	0.81	0.24
Avail Cap(c_a), veh/h	956	851	1179	950	1580	3012
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	12.9	15.2	15.9	16.2	13.7	4.5
Incr Delay (d2), s/veh	0.2	3.3	1.1	1.8	2.9	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	0.5	2.6	1.2	1.2	3.6	0.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	13.1	18.4	17.0	17.9	16.6	4.6
LnGrp LOS	B	B	B	B	B	A
Approach Vol, veh/h	373		294			692
Approach Delay, s/veh	17.3		17.4			12.3
Approach LOS	B		B			B

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	17.1	11.4			28.5	14.3
Change Period (Y+Rc), s	4.0	4.0			4.0	4.0
Max Green Setting (Gmax), s	38.0	27.0			69.0	23.0
Max Q Clear Time (g_c+I1), s	11.8	5.7			4.9	9.4
Green Ext Time (p_c), s	1.4	1.3			1.6	1.1

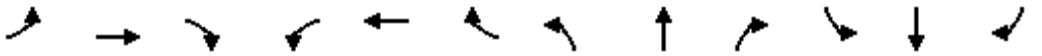
Intersection Summary	
HCM 6th Ctrl Delay	14.8
HCM 6th LOS	B

Intersection	
Intersection Delay, s/veh	12.6
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	158	6	110	10	229	182	100	150	1
Future Vol, veh/h	2	5	3	158	6	110	10	229	182	100	150	1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	5	3	174	7	121	11	252	200	110	165	1
Number of Lanes	0	1	0	0	2	0	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	10.5	12.6	12.8	12.3
HCM LOS	B	B	B	B

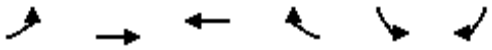
Lane	NBLn1	NBLn2	NBLn3	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	20%	98%	0%	100%	0%
Vol Thru, %	0%	100%	0%	50%	2%	3%	0%	99%
Vol Right, %	0%	0%	100%	30%	0%	97%	0%	1%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	10	229	182	10	161	113	100	151
LT Vol	10	0	0	2	158	0	100	0
Through Vol	0	229	0	5	3	3	0	150
RT Vol	0	0	182	3	0	110	0	1
Lane Flow Rate	11	252	200	11	177	124	110	166
Geometry Grp	8	8	8	8	8	8	8	8
Degree of Util (X)	0.021	0.447	0.316	0.023	0.357	0.21	0.221	0.309
Departure Headway (Hd)	6.906	6.399	5.69	7.5	7.269	6.087	7.226	6.713
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	517	561	628	474	494	587	496	533
Service Time	4.667	4.16	3.451	5.298	5.036	3.854	4.995	4.481
HCM Lane V/C Ratio	0.021	0.449	0.318	0.023	0.358	0.211	0.222	0.311
HCM Control Delay	9.8	14.3	11.1	10.5	14.1	10.5	12.1	12.5
HCM Lane LOS	A	B	B	B	B	B	B	B
HCM 95th-tile Q	0.1	2.3	1.4	0.1	1.6	0.8	0.8	1.3



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	114	845	21	134	543	195	48	52	167	187	76	115
Future Volume (veh/h)	114	845	21	134	543	195	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		0.99	1.00		0.99	1.00		0.94	1.00		0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	124	918	23	146	590	212	52	57	182	203	83	125
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	152	968	24	428	1522	673	152	167	260	325	341	272
Arrive On Green	0.09	0.27	0.27	0.24	0.43	0.43	0.17	0.17	0.17	0.18	0.18	0.18
Sat Flow, veh/h	1781	3541	89	1781	3554	1572	871	955	1487	1781	1870	1491
Grp Volume(v), veh/h	124	461	480	146	590	212	109	0	182	203	83	125
Grp Sat Flow(s),veh/h/ln	1781	1777	1853	1781	1777	1572	1827	0	1487	1781	1870	1491
Q Serve(g_s), s	8.2	30.5	30.5	8.1	13.7	10.7	6.3	0.0	13.8	12.6	4.6	9.0
Cycle Q Clear(g_c), s	8.2	30.5	30.5	8.1	13.7	10.7	6.3	0.0	13.8	12.6	4.6	9.0
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	152	486	507	428	1522	673	319	0	260	325	341	272
V/C Ratio(X)	0.82	0.95	0.95	0.34	0.39	0.31	0.34	0.00	0.70	0.62	0.24	0.46
Avail Cap(c_a), veh/h	304	489	510	428	1522	673	396	0	322	430	452	360
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.9	42.8	42.8	37.7	23.5	22.7	43.5	0.0	46.6	45.2	42.0	43.8
Incr Delay (d2), s/veh	10.1	28.0	27.3	0.5	0.2	0.3	0.6	0.0	5.0	2.0	0.4	1.2
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	4.1	17.0	17.7	3.6	5.8	4.0	2.9	0.0	5.5	5.8	2.1	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.0	70.8	70.0	38.2	23.7	22.9	44.1	0.0	51.6	47.2	42.3	45.0
LnGrp LOS	E	E	E	D	C	C	D	A	D	D	D	D
Approach Vol, veh/h		1065			948			291			411	
Approach Delay, s/veh		69.6			25.7			48.8			45.5	
Approach LOS		E			C			D			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		25.0	32.3	36.8		25.9	13.7	55.4				
Change Period (Y+Rc), s		4.0	3.5	4.0		4.0	3.5	4.0				
Max Green Setting (Gmax), s		26.0	16.5	33.0		29.0	20.5	29.0				
Max Q Clear Time (g_c+I1), s		15.8	10.1	32.5		14.6	10.2	15.7				
Green Ext Time (p_c), s		0.9	0.2	0.3		1.3	0.2	4.0				

Intersection Summary												
HCM 6th Ctrl Delay			48.4									
HCM 6th LOS			D									



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	732	696	0	680	355
Future Volume (veh/h)	0	732	696	0	680	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	822	782	0	775	388
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	0	2	2	0	2	2
Cap, veh/h	0	1114	1114	0	1514	674
Arrive On Green	0.00	0.31	0.31	0.00	0.43	0.43
Sat Flow, veh/h	0	3741	3741	0	3563	1585
Grp Volume(v), veh/h	0	822	782	0	775	388
Grp Sat Flow(s),veh/h/ln	0	1777	1777	0	1781	1585
Q Serve(g_s), s	0.0	12.4	11.6	0.0	9.6	11.2
Cycle Q Clear(g_c), s	0.0	12.4	11.6	0.0	9.6	11.2
Prop In Lane	0.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	1114	1114	0	1514	674
V/C Ratio(X)	0.00	0.74	0.70	0.00	0.51	0.58
Avail Cap(c_a), veh/h	0	1540	1540	0	1514	674
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.90	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	18.4	18.1	0.0	12.7	13.1
Incr Delay (d2), s/veh	0.0	1.2	3.3	0.0	1.2	3.6
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	4.8	4.8	0.0	3.6	4.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	19.6	21.5	0.0	13.9	16.7
LnGrp LOS	A	B	C	A	B	B
Approach Vol, veh/h		822	782		1163	
Approach Delay, s/veh		19.6	21.5		14.8	
Approach LOS		B	C		B	

Timer - Assigned Phs	4	6	8
Phs Duration (G+Y+Rc), s	22.8	30.0	22.8
Change Period (Y+Rc), s	4.0	4.5	4.0
Max Green Setting (Gmax), s	26.0	25.5	26.0
Max Q Clear Time (g_c+I1), s	14.4	13.2	13.6
Green Ext Time (p_c), s	4.4	3.8	4.3

Intersection Summary	
HCM 6th Ctrl Delay	18.1
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	899	0	0	634	440	425
Future Volume (veh/h)	899	0	0	634	440	425
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	988	0	0	697	484	467
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	0	0	2	2	2
Cap, veh/h	1268	0	0	1268	1469	1186
Arrive On Green	0.36	0.00	0.00	0.36	0.43	0.43
Sat Flow, veh/h	3741	0	0	3741	3456	2790
Grp Volume(v), veh/h	988	0	0	697	484	467
Grp Sat Flow(s),veh/h/ln	1777	0	0	1777	1728	1395
Q Serve(g_s), s	14.9	0.0	0.0	9.4	5.6	6.9
Cycle Q Clear(g_c), s	14.9	0.0	0.0	9.4	5.6	6.9
Prop In Lane		0.00	0.00		1.00	1.00
Lane Grp Cap(c), veh/h	1268	0	0	1268	1469	1186
V/C Ratio(X)	0.78	0.00	0.00	0.55	0.33	0.39
Avail Cap(c_a), veh/h	1540	0	0	1510	1469	1186
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.79	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.2	0.0	0.0	15.4	11.5	11.9
Incr Delay (d2), s/veh	1.7	0.0	0.0	1.7	0.6	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.7	0.0	0.0	3.7	2.0	2.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	18.9	0.0	0.0	17.2	12.1	12.9
LnGrp LOS	B	A	A	B	B	B
Approach Vol, veh/h	988			697	951	
Approach Delay, s/veh	18.9			17.2	12.5	
Approach LOS	B			B	B	

Timer - Assigned Phs		2		4		8
Phs Duration (G+Y+Rc), s		30.0		25.9		25.9
Change Period (Y+Rc), s		4.5		* 4.5		4.5
Max Green Setting (Gmax), s		25.5		* 26		25.5
Max Q Clear Time (g_c+I1), s		8.9		16.9		11.4
Green Ext Time (p_c), s		3.6		4.5		4.1

Intersection Summary		
HCM 6th Ctrl Delay		16.1
HCM 6th LOS		B

Notes

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



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	90	226	364	233	428	338
Future Volume (veh/h)	90	226	364	233	428	338
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		0.96	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	93	233	375	240	441	348
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	344	306	539	436	528	1220
Arrive On Green	0.19	0.19	0.29	0.29	0.30	0.65
Sat Flow, veh/h	1781	1585	1870	1514	1781	1870
Grp Volume(v), veh/h	93	233	375	240	441	348
Grp Sat Flow(s),veh/h/ln	1781	1585	1870	1514	1781	1870
Q Serve(g_s), s	2.3	7.2	9.2	6.9	12.0	4.1
Cycle Q Clear(g_c), s	2.3	7.2	9.2	6.9	12.0	4.1
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	344	306	539	436	528	1220
V/C Ratio(X)	0.27	0.76	0.70	0.55	0.84	0.29
Avail Cap(c_a), veh/h	793	705	1086	879	1223	2497
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	17.8	19.7	16.4	15.6	17.0	3.8
Incr Delay (d2), s/veh	0.4	3.9	1.6	1.1	3.6	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	0.9	2.7	3.7	2.2	4.7	0.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	18.2	23.6	18.0	16.7	20.6	4.0
LnGrp LOS	B	C	B	B	C	A
Approach Vol, veh/h	326		615			789
Approach Delay, s/veh	22.1		17.5			13.3
Approach LOS	C		B			B

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	18.8	18.9			37.7	14.0
Change Period (Y+Rc), s	3.5	4.0			4.0	4.0
Max Green Setting (Gmax), s	35.5	30.0			69.0	23.0
Max Q Clear Time (g_c+I1), s	14.0	11.2			6.1	9.2
Green Ext Time (p_c), s	1.4	3.1			2.4	0.9

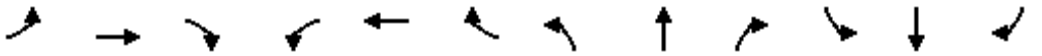
Intersection Summary	
HCM 6th Ctrl Delay	16.4
HCM 6th LOS	B

Intersection	
Intersection Delay, s/veh	24.6
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	217	3	182	9	388	161	251	216	6
Future Vol, veh/h	2	3	3	217	3	182	9	388	161	251	216	6
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	3	3	224	3	188	9	400	166	259	223	6
Number of Lanes	0	1	0	0	2	0	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	12.5	18.2	32.6	20.7
HCM LOS	B	C	D	C

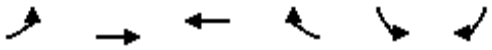
Lane	NBLn1	NBLn2	NBLn3	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	25%	99%	0%	100%	0%
Vol Thru, %	0%	100%	0%	38%	1%	1%	0%	97%
Vol Right, %	0%	0%	100%	38%	0%	99%	0%	3%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	9	388	161	8	219	184	251	222
LT Vol	9	0	0	2	217	0	251	0
Through Vol	0	388	0	3	2	2	0	216
RT Vol	0	0	161	3	0	182	0	6
Lane Flow Rate	9	400	166	8	225	189	259	229
Geometry Grp	8	8	8	8	8	8	8	8
Degree of Util (X)	0.021	0.854	0.321	0.022	0.539	0.389	0.601	0.498
Departure Headway (Hd)	8.194	7.682	6.966	9.508	8.618	7.404	8.359	7.826
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	437	472	515	375	419	486	432	460
Service Time	5.949	5.437	4.72	7.3	6.376	5.161	6.117	5.583
HCM Lane V/C Ratio	0.021	0.847	0.322	0.021	0.537	0.389	0.6	0.498
HCM Control Delay	11.1	41.2	13	12.5	21.1	14.8	23	18.1
HCM Lane LOS	B	E	B	B	C	B	C	C
HCM 95th-tile Q	0.1	8.7	1.4	0.1	3.1	1.8	3.8	2.7



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	178	760	38	172	596	246	44	71	144	213	60	171
Future Volume (veh/h)	178	760	38	172	596	246	44	71	144	213	60	171
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.93	1.00		0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	205	874	44	198	685	283	51	82	166	245	69	197
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	232	942	47	474	1455	631	109	174	228	322	338	269
Arrive On Green	0.13	0.27	0.27	0.27	0.41	0.41	0.15	0.15	0.15	0.18	0.18	0.18
Sat Flow, veh/h	1781	3437	173	1781	3554	1542	704	1131	1480	1781	1870	1491
Grp Volume(v), veh/h	205	452	466	198	685	283	133	0	166	245	69	197
Grp Sat Flow(s),veh/h/ln	1781	1777	1833	1781	1777	1542	1835	0	1480	1781	1870	1491
Q Serve(g_s), s	14.0	30.7	30.7	11.4	17.5	16.5	8.2	0.0	13.3	16.2	3.9	15.5
Cycle Q Clear(g_c), s	14.0	30.7	30.7	11.4	17.5	16.5	8.2	0.0	13.3	16.2	3.9	15.5
Prop In Lane	1.00		0.09	1.00		1.00	0.38		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	232	487	502	474	1455	631	283	0	228	322	338	269
V/C Ratio(X)	0.88	0.93	0.93	0.42	0.47	0.45	0.47	0.00	0.73	0.76	0.20	0.73
Avail Cap(c_a), veh/h	277	502	517	474	1455	631	385	0	310	417	437	349
HCM Platoon Ratio	1.00	1.00	1.00	1.00	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	53.0	43.8	43.8	37.6	26.8	26.5	47.8	0.0	50.0	48.2	43.2	47.9
Incr Delay (d2), s/veh	23.7	23.4	22.9	0.6	0.2	0.5	1.2	0.0	5.5	6.0	0.3	5.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.8	16.6	17.0	5.1	7.5	6.1	3.9	0.0	5.3	7.7	1.8	6.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	76.6	67.2	66.7	38.2	27.0	27.0	49.0	0.0	55.4	54.2	43.5	53.5
LnGrp LOS	E	E	E	D	C	C	D	A	E	D	D	D
Approach Vol, veh/h		1123			1166			299			511	
Approach Delay, s/veh		68.7			28.9			52.6			52.5	
Approach LOS		E			C			D			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		23.1	36.5	38.0		26.4	19.7	54.8				
Change Period (Y+Rc), s		4.0	3.5	4.0		4.0	3.5	4.0				
Max Green Setting (Gmax), s		26.0	18.5	35.0		29.0	19.3	34.2				
Max Q Clear Time (g_c+I1), s		15.3	13.4	32.7		18.2	16.0	19.5				
Green Ext Time (p_c), s		1.0	0.2	1.3		1.5	0.2	5.1				

Intersection Summary												
HCM 6th Ctrl Delay			49.5									
HCM 6th LOS			D									



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	911	1016	0	706	329
Future Volume (veh/h)	0	911	1016	0	706	329
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	949	1058	0	735	343
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	2	2	0	2	2
Cap, veh/h	0	1267	1267	0	1024	456
Arrive On Green	0.00	0.36	0.47	0.00	0.29	0.29
Sat Flow, veh/h	0	3741	3741	0	3563	1585
Grp Volume(v), veh/h	0	949	1058	0	735	343
Grp Sat Flow(s),veh/h/ln	0	1777	1777	0	1781	1585
Q Serve(g_s), s	0.0	14.5	16.1	0.0	11.5	12.2
Cycle Q Clear(g_c), s	0.0	14.5	16.1	0.0	11.5	12.2
Prop In Lane	0.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	1267	1267	0	1024	456
V/C Ratio(X)	0.00	0.75	0.83	0.00	0.72	0.75
Avail Cap(c_a), veh/h	0	1433	1433	0	1569	698
HCM Platoon Ratio	1.00	1.00	1.33	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.85	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	17.5	14.7	0.0	19.8	20.1
Incr Delay (d2), s/veh	0.0	2.0	5.7	0.0	1.0	2.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	5.8	5.8	0.0	4.5	4.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	19.5	20.4	0.0	20.8	22.6
LnGrp LOS	A	B	C	A	C	C
Approach Vol, veh/h		949	1058		1078	
Approach Delay, s/veh		19.5	20.4		21.4	
Approach LOS		B	C		C	

Timer - Assigned Phs	4	6	8
Phs Duration (G+Y+Rc), s	27.1	22.5	27.1
Change Period (Y+Rc), s	5.0	4.7	5.0
Max Green Setting (Gmax), s	25.0	27.3	25.0
Max Q Clear Time (g_c+I1), s	16.5	14.2	18.1
Green Ext Time (p_c), s	4.3	3.6	4.0

Intersection Summary	
HCM 6th Ctrl Delay	20.4
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	960	0	0	719	639	513
Future Volume (veh/h)	960	0	0	719	639	513
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	990	0	0	741	659	529
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	0	0	2	2	2
Cap, veh/h	1233	0	0	1233	948	765
Arrive On Green	0.35	0.00	0.00	0.35	0.27	0.27
Sat Flow, veh/h	3741	0	0	3741	3456	2790
Grp Volume(v), veh/h	990	0	0	741	659	529
Grp Sat Flow(s),veh/h/ln	1777	0	0	1777	1728	1395
Q Serve(g_s), s	15.6	0.0	0.0	10.7	10.6	10.5
Cycle Q Clear(g_c), s	15.6	0.0	0.0	10.7	10.6	10.5
Prop In Lane		0.00	0.00		1.00	1.00
Lane Grp Cap(c), veh/h	1233	0	0	1233	948	765
V/C Ratio(X)	0.80	0.00	0.00	0.60	0.70	0.69
Avail Cap(c_a), veh/h	1433	0	0	1433	1522	1228
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.76	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.3	0.0	0.0	16.7	20.2	20.1
Incr Delay (d2), s/veh	2.3	0.0	0.0	2.2	0.9	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.1	0.0	0.0	4.3	4.0	3.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	20.6	0.0	0.0	18.9	21.1	21.3
LnGrp LOS	C	A	A	B	C	C
Approach Vol, veh/h	990			741	1188	
Approach Delay, s/veh	20.6			18.9	21.2	
Approach LOS	C			B	C	

Timer - Assigned Phs	2	4	8
Phs Duration (G+Y+Rc), s	21.7	26.5	26.5
Change Period (Y+Rc), s	* 4.7	5.0	5.0
Max Green Setting (Gmax), s	* 27	25.0	25.0
Max Q Clear Time (g_c+I1), s	12.6	17.6	12.7
Green Ext Time (p_c), s	4.4	3.9	4.1

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	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	103	325	252	327	597	353
Future Volume (veh/h)	103	325	252	327	597	353
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		0.96	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	108	342	265	344	628	372
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	421	374	477	388	670	1263
Arrive On Green	0.24	0.24	0.25	0.25	0.38	0.68
Sat Flow, veh/h	1781	1585	1870	1522	1781	1870
Grp Volume(v), veh/h	108	342	265	344	628	372
Grp Sat Flow(s),veh/h/ln	1781	1585	1870	1522	1781	1870
Q Serve(g_s), s	4.5	19.0	11.1	19.7	30.7	7.3
Cycle Q Clear(g_c), s	4.5	19.0	11.1	19.7	30.7	7.3
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	421	374	477	388	670	1263
V/C Ratio(X)	0.26	0.91	0.56	0.89	0.94	0.29
Avail Cap(c_a), veh/h	453	403	538	437	768	1427
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.1	33.6	29.3	32.4	27.2	6.0
Incr Delay (d2), s/veh	0.3	23.9	1.0	17.9	17.6	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	1.9	9.6	5.0	9.0	15.7	2.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	28.4	57.6	30.3	50.3	44.8	6.1
LnGrp LOS	C	E	C	D	D	A
Approach Vol, veh/h	450		609			1000
Approach Delay, s/veh	50.6		41.6			30.4
Approach LOS	D		D			C

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	38.0	27.1			65.1	25.4
Change Period (Y+Rc), s	4.0	4.0			4.0	4.0
Max Green Setting (Gmax), s	39.0	26.0			69.0	23.0
Max Q Clear Time (g_c+I1), s	32.7	21.7			9.3	21.0
Green Ext Time (p_c), s	1.3	1.2			2.6	0.4

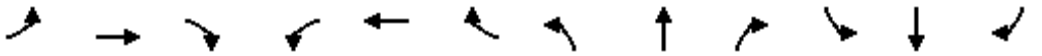
Intersection Summary	
HCM 6th Ctrl Delay	38.1
HCM 6th LOS	D

Intersection	
Intersection Delay, s/veh	31.5
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	13	10	252	34	201	28	393	191	171	242	11
Future Vol, veh/h	11	13	10	252	34	201	28	393	191	171	242	11
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	14	11	265	36	212	29	414	201	180	255	12
Number of Lanes	0	1	0	0	2	0	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	14.3	25.2	43.4	23.1
HCM LOS	B	D	E	C

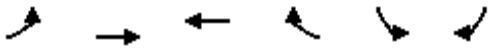
Lane	NBLn1	NBLn2	NBLn3	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	32%	94%	0%	100%	0%
Vol Thru, %	0%	100%	0%	38%	6%	8%	0%	96%
Vol Right, %	0%	0%	100%	29%	0%	92%	0%	4%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	28	393	191	34	269	218	171	253
LT Vol	28	0	0	11	252	0	171	0
Through Vol	0	393	0	13	17	17	0	242
RT Vol	0	0	191	10	0	201	0	11
Lane Flow Rate	29	414	201	36	283	229	180	266
Geometry Grp	8	8	8	8	8	8	8	8
Degree of Util (X)	0.071	0.944	0.419	0.103	0.706	0.5	0.458	0.637
Departure Headway (Hd)	8.731	8.216	7.496	10.377	8.98	7.84	9.155	8.606
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	409	439	479	348	402	457	392	418
Service Time	6.517	6.002	5.281	8.077	6.772	5.631	6.952	6.402
HCM Lane V/C Ratio	0.071	0.943	0.42	0.103	0.704	0.501	0.459	0.636
HCM Control Delay	12.2	59.1	15.6	14.3	30.8	18.3	19.5	25.5
HCM Lane LOS	B	F	C	B	D	C	C	D
HCM 95th-tile Q	0.2	11	2	0.3	5.3	2.7	2.3	4.3



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	119	1127	51	176	873	371	62	76	240	256	129	190
Future Volume (veh/h)	119	1127	51	176	873	371	62	76	240	256	129	190
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.95	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	125	1186	54	185	919	391	65	80	253	269	136	200
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	151	1067	49	282	1358	600	164	202	299	364	382	307
Arrive On Green	0.08	0.31	0.31	0.16	0.38	0.38	0.20	0.20	0.20	0.20	0.20	0.20
Sat Flow, veh/h	1781	3459	157	1781	3554	1571	820	1009	1499	1781	1870	1501
Grp Volume(v), veh/h	125	609	631	185	919	391	145	0	253	269	136	200
Grp Sat Flow(s),veh/h/ln	1781	1777	1840	1781	1777	1571	1829	0	1499	1781	1870	1501
Q Serve(g_s), s	8.3	37.0	37.0	11.7	25.9	24.6	8.3	0.0	19.5	17.0	7.5	14.7
Cycle Q Clear(g_c), s	8.3	37.0	37.0	11.7	25.9	24.6	8.3	0.0	19.5	17.0	7.5	14.7
Prop In Lane	1.00		0.09	1.00		1.00	0.45		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	151	548	567	282	1358	600	365	0	299	364	382	307
V/C Ratio(X)	0.83	1.11	1.11	0.66	0.68	0.65	0.40	0.00	0.85	0.74	0.36	0.65
Avail Cap(c_a), veh/h	162	548	567	282	1358	600	396	0	325	430	452	363
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.1	41.5	41.5	47.4	30.9	30.5	41.7	0.0	46.2	44.7	41.0	43.8
Incr Delay (d2), s/veh	27.6	72.7	72.6	5.4	1.4	2.5	0.7	0.0	17.2	5.5	0.6	3.2
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	4.9	27.0	28.0	5.6	11.2	9.6	3.8	0.0	8.7	8.0	3.5	5.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	81.6	114.2	114.1	52.8	32.2	33.0	42.4	0.0	63.4	50.2	41.5	47.0
LnGrp LOS	F	F	F	D	C	C	D	A	E	D	D	D
Approach Vol, veh/h		1365			1495			398			605	
Approach Delay, s/veh		111.1			35.0			55.8			47.2	
Approach LOS		F			C			E			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		28.0	22.5	41.0		28.5	13.6	49.9				
Change Period (Y+Rc), s		4.0	3.5	4.0		4.0	3.5	4.0				
Max Green Setting (Gmax), s		26.0	12.5	37.0		29.0	10.9	38.6				
Max Q Clear Time (g_c+I1), s		21.5	13.7	39.0		19.0	10.3	27.9				
Green Ext Time (p_c), s		0.7	0.0	0.0		1.8	0.0	5.7				

Intersection Summary												
HCM 6th Ctrl Delay			66.0									
HCM 6th LOS			E									



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↰↰↑	↱
Traffic Volume (veh/h)	0	1040	688	0	1159	458
Future Volume (veh/h)	0	1040	688	0	1159	458
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	1095	724	0	1220	482
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	2	2	0	2	2
Cap, veh/h	0	1353	1353	0	1514	674
Arrive On Green	0.00	0.38	0.76	0.00	0.43	0.43
Sat Flow, veh/h	0	3741	3741	0	3563	1585
Grp Volume(v), veh/h	0	1095	724	0	1220	482
Grp Sat Flow(s),veh/h/ln	0	1777	1777	0	1781	1585
Q Serve(g_s), s	0.0	16.6	4.9	0.0	18.0	15.1
Cycle Q Clear(g_c), s	0.0	16.6	4.9	0.0	18.0	15.1
Prop In Lane	0.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	1353	1353	0	1514	674
V/C Ratio(X)	0.00	0.81	0.54	0.00	0.81	0.72
Avail Cap(c_a), veh/h	0	1540	1540	0	1514	674
HCM Platoon Ratio	1.00	1.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.77	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	16.6	5.0	0.0	15.1	14.3
Incr Delay (d2), s/veh	0.0	3.0	1.2	0.0	4.7	6.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	6.4	1.3	0.0	7.2	5.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	19.6	6.2	0.0	19.8	20.7
LnGrp LOS	A	B	A	A	B	C
Approach Vol, veh/h		1095	724		1702	
Approach Delay, s/veh		19.6	6.2		20.0	
Approach LOS		B	A		C	

Timer - Assigned Phs	4	6	8
Phs Duration (G+Y+Rc), s	26.8	30.0	26.8
Change Period (Y+Rc), s	4.0	4.5	4.0
Max Green Setting (Gmax), s	26.0	25.5	26.0
Max Q Clear Time (g_c+I1), s	18.6	20.0	6.9
Green Ext Time (p_c), s	4.3	3.4	4.9

Intersection Summary	
HCM 6th Ctrl Delay	17.1
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1480	0	0	868	743	676
Future Volume (veh/h)	1480	0	0	868	743	676
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	1558	0	0	914	782	712
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	0	0	2	2	2
Cap, veh/h	1540	0	0	1540	1469	1186
Arrive On Green	0.43	0.00	0.00	0.43	0.43	0.43
Sat Flow, veh/h	3741	0	0	3741	3456	2790
Grp Volume(v), veh/h	1558	0	0	914	782	712
Grp Sat Flow(s),veh/h/ln	1777	0	0	1777	1728	1395
Q Serve(g_s), s	26.0	0.0	0.0	11.8	10.1	11.8
Cycle Q Clear(g_c), s	26.0	0.0	0.0	11.8	10.1	11.8
Prop In Lane		0.00	0.00		1.00	1.00
Lane Grp Cap(c), veh/h	1540	0	0	1540	1469	1186
V/C Ratio(X)	1.01	0.00	0.00	0.59	0.53	0.60
Avail Cap(c_a), veh/h	1540	0	0	1540	1469	1186
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.47	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.0	0.0	0.0	13.0	12.8	13.3
Incr Delay (d2), s/veh	18.7	0.0	0.0	1.7	1.4	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.9	0.0	0.0	4.4	3.7	3.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	35.7	0.0	0.0	14.7	14.2	15.6
LnGrp LOS	F	A	A	B	B	B
Approach Vol, veh/h	1558			914	1494	
Approach Delay, s/veh	35.7			14.7	14.9	
Approach LOS	D			B	B	

Timer - Assigned Phs		2		4		8
Phs Duration (G+Y+Rc), s		30.0		30.5		30.5
Change Period (Y+Rc), s		4.5		* 4.5		4.5
Max Green Setting (Gmax), s		25.5		* 26		25.5
Max Q Clear Time (g_c+I1), s		13.8		28.0		13.8
Green Ext Time (p_c), s		5.1		0.0		5.0

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.



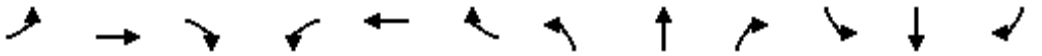
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations								
Traffic Volume (veh/h)	146	230	373	304	582	378		
Future Volume (veh/h)	146	230	373	304	582	378		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00		0.95	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Work Zone On Approach	No		No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870		
Adj Flow Rate, veh/h	146	230	373	304	582	378		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	328	292	509	411	651	1294		
Arrive On Green	0.18	0.18	0.27	0.27	0.37	0.69		
Sat Flow, veh/h	1781	1585	1870	1512	1781	1870		
Grp Volume(v), veh/h	146	230	373	304	582	378		
Grp Sat Flow(s),veh/h/ln	1781	1585	1870	1512	1781	1870		
Q Serve(g_s), s	4.7	8.9	11.7	11.8	19.9	5.0		
Cycle Q Clear(g_c), s	4.7	8.9	11.7	11.8	19.9	5.0		
Prop In Lane	1.00	1.00		1.00	1.00			
Lane Grp Cap(c), veh/h	328	292	509	411	651	1294		
V/C Ratio(X)	0.44	0.79	0.73	0.74	0.89	0.29		
Avail Cap(c_a), veh/h	634	564	869	702	979	1998		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	23.4	25.1	21.4	21.4	19.3	3.8		
Incr Delay (d2), s/veh	0.9	4.7	2.1	2.6	7.3	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	2.0	3.5	5.0	4.2	8.7	1.3		
Unsig. Movement Delay, s/veh								
LnGrp Delay(d),s/veh	24.4	29.8	23.5	24.1	26.6	4.0		
LnGrp LOS	C	C	C	C	C	A		
Approach Vol, veh/h	376		677			960		
Approach Delay, s/veh	27.7		23.7			17.7		
Approach LOS	C		C			B		
Timer - Assigned Phs	1	2				6	8	
Phs Duration (G+Y+Rc), s	27.1	21.6				48.7	15.9	
Change Period (Y+Rc), s	3.5	4.0				4.0	4.0	
Max Green Setting (Gmax), s	35.5	30.0				69.0	23.0	
Max Q Clear Time (g_c+I1), s	21.9	13.8				7.0	10.9	
Green Ext Time (p_c), s	1.7	3.2				2.6	1.0	
Intersection Summary								
HCM 6th Ctrl Delay			21.6					
HCM 6th LOS			C					

Intersection	
Intersection Delay, s/veh	46.5
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	12	20	263	17	184	26	475	159	264	264	6
Future Vol, veh/h	11	12	20	263	17	184	26	475	159	264	264	6
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	12	20	263	17	184	26	475	159	264	264	6
Number of Lanes	0	1	0	0	2	0	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	14.7	25.2	79.3	26.9
HCM LOS	B	D	F	D

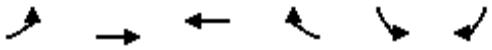
Lane	NBLn1	NBLn2	NBLn3	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	26%	97%	0%	100%	0%
Vol Thru, %	0%	100%	0%	28%	3%	4%	0%	98%
Vol Right, %	0%	0%	100%	47%	0%	96%	0%	2%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	26	475	159	43	272	193	264	270
LT Vol	26	0	0	11	263	0	264	0
Through Vol	0	475	0	12	9	9	0	264
RT Vol	0	0	159	20	0	184	0	6
Lane Flow Rate	26	475	159	43	272	192	264	270
Geometry Grp	8	8	8	8	8	8	8	8
Degree of Util (X)	0.064	1.108	0.339	0.121	0.692	0.429	0.659	0.635
Departure Headway (Hd)	8.909	8.394	7.673	10.557	9.501	8.314	9.324	8.789
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	402	432	469	342	383	435	391	413
Service Time	6.663	6.147	5.426	8.257	7.201	6.014	7.024	6.489
HCM Lane V/C Ratio	0.065	1.1	0.339	0.126	0.71	0.441	0.675	0.654
HCM Control Delay	12.3	104.7	14.3	14.7	31	17.1	28.3	25.6
HCM Lane LOS	B	F	B	B	D	C	D	D
HCM 95th-tile Q	0.2	16.5	1.5	0.4	5	2.1	4.5	4.3



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	212	675	70	306	841	401	55	99	225	297	93	206
Future Volume (veh/h)	212	675	70	306	841	401	55	99	225	297	93	206
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.94	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	212	675	70	306	841	401	55	99	225	297	93	206
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	239	804	83	436	1275	553	119	214	270	358	376	301
Arrive On Green	0.13	0.25	0.25	0.24	0.36	0.36	0.18	0.18	0.18	0.20	0.20	0.20
Sat Flow, veh/h	1781	3238	335	1781	3554	1540	656	1181	1492	1781	1870	1498
Grp Volume(v), veh/h	212	370	375	306	841	401	154	0	225	297	93	206
Grp Sat Flow(s),veh/h/ln	1781	1777	1797	1781	1777	1540	1838	0	1492	1781	1870	1498
Q Serve(g_s), s	14.5	24.5	24.6	19.4	24.6	28.0	9.3	0.0	18.0	19.8	5.2	15.8
Cycle Q Clear(g_c), s	14.5	24.5	24.6	19.4	24.6	28.0	9.3	0.0	18.0	19.8	5.2	15.8
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	239	441	446	436	1275	553	332	0	270	358	376	301
V/C Ratio(X)	0.89	0.84	0.84	0.70	0.66	0.73	0.46	0.00	0.83	0.83	0.25	0.68
Avail Cap(c_a), veh/h	277	502	507	436	1275	553	385	0	313	417	437	350
HCM Platoon Ratio	1.00	1.00	1.00	1.00	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	52.7	44.3	44.3	42.7	33.4	34.5	45.4	0.0	49.0	47.5	41.6	45.9
Incr Delay (d2), s/veh	24.9	10.9	10.9	5.0	1.3	4.7	1.0	0.0	15.5	11.6	0.3	4.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.1	12.1	12.3	9.1	10.8	11.1	4.3	0.0	7.9	9.9	2.4	6.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	77.6	55.2	55.2	47.6	34.7	39.2	46.4	0.0	64.5	59.1	42.0	50.3
LnGrp LOS	E	E	E	D	C	D	D	A	E	E	D	D
Approach Vol, veh/h		957			1548			379			596	
Approach Delay, s/veh		60.2			38.4			57.2			53.4	
Approach LOS		E			D			E			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		26.4	33.9	34.8		28.9	20.2	48.5				
Change Period (Y+Rc), s		4.0	3.5	4.0		4.0	3.5	4.0				
Max Green Setting (Gmax), s		26.0	18.5	35.0		29.0	19.3	34.2				
Max Q Clear Time (g_c+I1), s		20.0	21.4	26.6		21.8	16.5	30.0				
Green Ext Time (p_c), s		0.9	0.0	3.0		1.4	0.2	2.6				

Intersection Summary												
HCM 6th Ctrl Delay			49.0									
HCM 6th LOS			D									



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	1131	1355	0	884	404
Future Volume (veh/h)	0	1131	1355	0	884	404
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	1131	1355	0	884	404
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	2	2	0	2	2
Cap, veh/h	0	1431	1431	0	1169	520
Arrive On Green	0.00	0.40	0.40	0.00	0.33	0.33
Sat Flow, veh/h	0	3741	3741	0	3563	1585
Grp Volume(v), veh/h	0	1131	1355	0	884	404
Grp Sat Flow(s),veh/h/ln	0	1777	1777	0	1781	1585
Q Serve(g_s), s	0.0	17.3	22.8	0.0	13.7	14.3
Cycle Q Clear(g_c), s	0.0	17.3	22.8	0.0	13.7	14.3
Prop In Lane	0.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	1431	1431	0	1169	520
V/C Ratio(X)	0.00	0.79	0.95	0.00	0.76	0.78
Avail Cap(c_a), veh/h	0	1433	1433	0	1569	698
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.67	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	16.2	17.9	0.0	18.6	18.8
Incr Delay (d2), s/veh	0.0	3.1	10.4	0.0	1.5	3.9
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	6.9	10.4	0.0	5.3	5.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	19.3	28.3	0.0	20.1	22.7
LnGrp LOS	A	B	C	A	C	C
Approach Vol, veh/h		1131	1355		1288	
Approach Delay, s/veh		19.3	28.3		20.9	
Approach LOS		B	C		C	

Timer - Assigned Phs		4		6	8
Phs Duration (G+Y+Rc), s		30.0		25.0	30.0
Change Period (Y+Rc), s		5.0		4.7	5.0
Max Green Setting (Gmax), s		25.0		27.3	25.0
Max Q Clear Time (g_c+I1), s		19.3		16.3	24.8
Green Ext Time (p_c), s		3.6		4.1	0.1

Intersection Summary	
HCM 6th Ctrl Delay	23.1
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1252	0	0	965	969	760
Future Volume (veh/h)	1252	0	0	965	969	760
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	1252	0	0	965	969	760
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	0	0	2	2	2
Cap, veh/h	1395	0	0	1395	1264	1021
Arrive On Green	0.39	0.00	0.00	0.39	0.37	0.37
Sat Flow, veh/h	3741	0	0	3741	3456	2790
Grp Volume(v), veh/h	1252	0	0	965	969	760
Grp Sat Flow(s),veh/h/ln	1777	0	0	1777	1728	1395
Q Serve(g_s), s	20.5	0.0	0.0	14.0	15.3	14.7
Cycle Q Clear(g_c), s	20.5	0.0	0.0	14.0	15.3	14.7
Prop In Lane		0.00	0.00		1.00	1.00
Lane Grp Cap(c), veh/h	1395	0	0	1395	1264	1021
V/C Ratio(X)	0.90	0.00	0.00	0.69	0.77	0.74
Avail Cap(c_a), veh/h	1433	0	0	1433	1522	1228
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.62	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.7	0.0	0.0	15.7	17.3	17.1
Incr Delay (d2), s/veh	5.1	0.0	0.0	2.8	2.0	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	8.3	0.0	0.0	5.6	5.8	4.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	22.7	0.0	0.0	18.5	19.3	19.2
LnGrp LOS	C	A	A	B	B	B
Approach Vol, veh/h	1252			965	1729	
Approach Delay, s/veh	22.7			18.5	19.2	
Approach LOS	C			B	B	

Timer - Assigned Phs	2	4	8
Phs Duration (G+Y+Rc), s	27.4	29.3	29.3
Change Period (Y+Rc), s	* 4.7	5.0	5.0
Max Green Setting (Gmax), s	* 27	25.0	25.0
Max Q Clear Time (g_c+I1), s	17.3	22.5	16.0
Green Ext Time (p_c), s	5.4	1.8	4.4

Intersection Summary	
HCM 6th Ctrl Delay	20.2
HCM 6th LOS	C

Notes

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



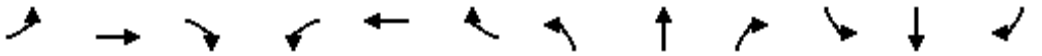
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations								
Traffic Volume (veh/h)	103	325	252	329	597	353		
Future Volume (veh/h)	103	325	252	329	597	353		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00		0.96	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Work Zone On Approach	No		No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870		
Adj Flow Rate, veh/h	108	342	265	346	628	372		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	421	374	478	389	670	1264		
Arrive On Green	0.24	0.24	0.26	0.26	0.38	0.68		
Sat Flow, veh/h	1781	1585	1870	1522	1781	1870		
Grp Volume(v), veh/h	108	342	265	346	628	372		
Grp Sat Flow(s),veh/h/ln	1781	1585	1870	1522	1781	1870		
Q Serve(g_s), s	4.5	19.1	11.2	19.9	30.8	7.3		
Cycle Q Clear(g_c), s	4.5	19.1	11.2	19.9	30.8	7.3		
Prop In Lane	1.00	1.00		1.00	1.00			
Lane Grp Cap(c), veh/h	421	374	478	389	670	1264		
V/C Ratio(X)	0.26	0.91	0.55	0.89	0.94	0.29		
Avail Cap(c_a), veh/h	451	402	536	436	766	1422		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	28.2	33.8	29.3	32.5	27.3	6.0		
Incr Delay (d2), s/veh	0.3	24.1	1.0	18.3	17.8	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	1.9	9.6	5.0	9.1	15.8	2.5		
Unsig. Movement Delay, s/veh								
LnGrp Delay(d),s/veh	28.5	57.9	30.3	50.9	45.0	6.1		
LnGrp LOS	C	E	C	D	D	A		
Approach Vol, veh/h	450		611			1000		
Approach Delay, s/veh	50.9		42.0			30.5		
Approach LOS	D		D			C		
Timer - Assigned Phs	1	2				6	8	
Phs Duration (G+Y+Rc), s	38.1	27.2				65.3	25.4	
Change Period (Y+Rc), s	4.0	4.0				4.0	4.0	
Max Green Setting (Gmax), s	39.0	26.0				69.0	23.0	
Max Q Clear Time (g_c+I1), s	32.8	21.9				9.3	21.1	
Green Ext Time (p_c), s	1.3	1.2				2.6	0.3	
Intersection Summary								
HCM 6th Ctrl Delay			38.4					
HCM 6th LOS			D					

Intersection	
Intersection Delay, s/veh	31.8
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	13	10	252	34	203	28	393	200	171	242	11
Future Vol, veh/h	11	13	10	252	34	203	28	393	200	171	242	11
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	14	11	265	36	214	29	414	211	180	255	12
Number of Lanes	0	1	0	0	2	0	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	14.3	25.5	43.5	23.5
HCM LOS	B	D	E	C

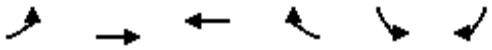
Lane	NBLn1	NBLn2	NBLn3	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	32%	94%	0%	100%	0%
Vol Thru, %	0%	100%	0%	38%	6%	8%	0%	96%
Vol Right, %	0%	0%	100%	29%	0%	92%	0%	4%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	28	393	200	34	269	220	171	253
LT Vol	28	0	0	11	252	0	171	0
Through Vol	0	393	0	13	17	17	0	242
RT Vol	0	0	200	10	0	203	0	11
Lane Flow Rate	29	414	211	36	283	232	180	266
Geometry Grp	8	8	8	8	8	8	8	8
Degree of Util (X)	0.072	0.946	0.439	0.104	0.708	0.506	0.464	0.646
Departure Headway (Hd)	8.846	8.331	7.61	10.414	9.112	7.97	9.285	8.735
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	407	439	476	346	399	456	391	415
Service Time	6.546	6.031	5.31	8.131	6.812	5.67	6.985	6.435
HCM Lane V/C Ratio	0.071	0.943	0.443	0.104	0.709	0.509	0.46	0.641
HCM Control Delay	12.2	59.7	16.1	14.3	31.1	18.6	19.8	26
HCM Lane LOS	B	F	C	B	D	C	C	D
HCM 95th-tile Q	0.2	11	2.2	0.3	5.3	2.8	2.4	4.4



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	120	1127	51	176	873	379	62	76	240	256	129	190
Future Volume (veh/h)	120	1127	51	176	873	379	62	76	240	256	129	190
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.95	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	126	1186	54	185	919	399	65	80	253	269	136	200
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	152	1067	49	282	1356	599	164	202	299	364	382	307
Arrive On Green	0.09	0.31	0.31	0.16	0.38	0.38	0.20	0.20	0.20	0.20	0.20	0.20
Sat Flow, veh/h	1781	3459	157	1781	3554	1571	820	1009	1499	1781	1870	1501
Grp Volume(v), veh/h	126	609	631	185	919	399	145	0	253	269	136	200
Grp Sat Flow(s),veh/h/ln	1781	1777	1840	1781	1777	1571	1829	0	1499	1781	1870	1501
Q Serve(g_s), s	8.4	37.0	37.0	11.7	25.9	25.3	8.3	0.0	19.5	17.0	7.5	14.7
Cycle Q Clear(g_c), s	8.4	37.0	37.0	11.7	25.9	25.3	8.3	0.0	19.5	17.0	7.5	14.7
Prop In Lane	1.00		0.09	1.00		1.00	0.45		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	152	548	567	282	1356	599	365	0	299	364	382	307
V/C Ratio(X)	0.83	1.11	1.11	0.66	0.68	0.67	0.40	0.00	0.85	0.74	0.36	0.65
Avail Cap(c_a), veh/h	162	548	567	282	1356	599	396	0	325	430	452	363
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.0	41.5	41.5	47.4	30.9	30.8	41.7	0.0	46.2	44.7	41.0	43.8
Incr Delay (d2), s/veh	27.9	72.7	72.6	5.4	1.4	2.8	0.7	0.0	17.2	5.5	0.6	3.2
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	4.9	27.0	28.0	5.6	11.2	10.0	3.8	0.0	8.7	8.0	3.5	5.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	81.9	114.2	114.1	52.8	32.3	33.6	42.4	0.0	63.4	50.2	41.5	47.0
LnGrp LOS	F	F	F	D	C	C	D	A	E	D	D	D
Approach Vol, veh/h		1366			1503			398			605	
Approach Delay, s/veh		111.1			35.2			55.8			47.2	
Approach LOS		F			D			E			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		28.0	22.5	41.0		28.5	13.7	49.8				
Change Period (Y+Rc), s		4.0	3.5	4.0		4.0	3.5	4.0				
Max Green Setting (Gmax), s		26.0	12.5	37.0		29.0	10.9	38.6				
Max Q Clear Time (g_c+I1), s		21.5	13.7	39.0		19.0	10.4	27.9				
Green Ext Time (p_c), s		0.7	0.0	0.0		1.8	0.0	5.8				

Intersection Summary												
HCM 6th Ctrl Delay			66.0									
HCM 6th LOS			E									



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↰↰	↱
Traffic Volume (veh/h)	0	1040	696	0	1159	458
Future Volume (veh/h)	0	1040	696	0	1159	458
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	1095	733	0	1220	482
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	2	2	0	2	2
Cap, veh/h	0	1353	1353	0	1514	674
Arrive On Green	0.00	0.38	0.76	0.00	0.43	0.43
Sat Flow, veh/h	0	3741	3741	0	3563	1585
Grp Volume(v), veh/h	0	1095	733	0	1220	482
Grp Sat Flow(s),veh/h/ln	0	1777	1777	0	1781	1585
Q Serve(g_s), s	0.0	16.6	5.0	0.0	18.0	15.1
Cycle Q Clear(g_c), s	0.0	16.6	5.0	0.0	18.0	15.1
Prop In Lane	0.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	1353	1353	0	1514	674
V/C Ratio(X)	0.00	0.81	0.54	0.00	0.81	0.72
Avail Cap(c_a), veh/h	0	1540	1540	0	1514	674
HCM Platoon Ratio	1.00	1.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.77	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	16.6	5.0	0.0	15.1	14.3
Incr Delay (d2), s/veh	0.0	3.0	1.2	0.0	4.7	6.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	6.4	1.4	0.0	7.2	5.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	19.6	6.2	0.0	19.8	20.7
LnGrp LOS	A	B	A	A	B	C
Approach Vol, veh/h		1095	733		1702	
Approach Delay, s/veh		19.6	6.2		20.0	
Approach LOS		B	A		C	

Timer - Assigned Phs	4	6	8
Phs Duration (G+Y+Rc), s	26.8	30.0	26.8
Change Period (Y+Rc), s	4.0	4.5	4.0
Max Green Setting (Gmax), s	26.0	25.5	26.0
Max Q Clear Time (g_c+I1), s	18.6	20.0	7.0
Green Ext Time (p_c), s	4.3	3.4	5.0

Intersection Summary	
HCM 6th Ctrl Delay	17.0
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1480	0	0	868	751	676
Future Volume (veh/h)	1480	0	0	868	751	676
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	1558	0	0	914	791	712
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	0	0	2	2	2
Cap, veh/h	1540	0	0	1540	1469	1186
Arrive On Green	0.43	0.00	0.00	0.43	0.43	0.43
Sat Flow, veh/h	3741	0	0	3741	3456	2790
Grp Volume(v), veh/h	1558	0	0	914	791	712
Grp Sat Flow(s),veh/h/ln	1777	0	0	1777	1728	1395
Q Serve(g_s), s	26.0	0.0	0.0	11.8	10.2	11.8
Cycle Q Clear(g_c), s	26.0	0.0	0.0	11.8	10.2	11.8
Prop In Lane		0.00	0.00		1.00	1.00
Lane Grp Cap(c), veh/h	1540	0	0	1540	1469	1186
V/C Ratio(X)	1.01	0.00	0.00	0.59	0.54	0.60
Avail Cap(c_a), veh/h	1540	0	0	1540	1469	1186
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.47	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.0	0.0	0.0	13.0	12.9	13.3
Incr Delay (d2), s/veh	18.7	0.0	0.0	1.7	1.4	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.9	0.0	0.0	4.4	3.7	3.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	35.7	0.0	0.0	14.7	14.3	15.6
LnGrp LOS	F	A	A	B	B	B
Approach Vol, veh/h	1558			914	1503	
Approach Delay, s/veh	35.7			14.7	14.9	
Approach LOS	D			B	B	

Timer - Assigned Phs	2	4	8
Phs Duration (G+Y+Rc), s	30.0	30.5	30.5
Change Period (Y+Rc), s	4.5	* 4.5	4.5
Max Green Setting (Gmax), s	25.5	* 26	25.5
Max Q Clear Time (g_c+I1), s	13.8	28.0	13.8
Green Ext Time (p_c), s	5.1	0.0	5.0

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	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	146	230	373	311	582	378
Future Volume (veh/h)	146	230	373	311	582	378
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		0.95	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	146	230	373	311	582	378
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	328	291	514	416	650	1298
Arrive On Green	0.18	0.18	0.27	0.27	0.37	0.69
Sat Flow, veh/h	1781	1585	1870	1513	1781	1870
Grp Volume(v), veh/h	146	230	373	311	582	378
Grp Sat Flow(s),veh/h/ln	1781	1585	1870	1513	1781	1870
Q Serve(g_s), s	4.8	9.1	11.8	12.3	20.1	5.1
Cycle Q Clear(g_c), s	4.8	9.1	11.8	12.3	20.1	5.1
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	328	291	514	416	650	1298
V/C Ratio(X)	0.45	0.79	0.73	0.75	0.89	0.29
Avail Cap(c_a), veh/h	627	558	859	694	968	1975
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.7	25.5	21.5	21.6	19.6	3.8
Incr Delay (d2), s/veh	1.0	4.8	2.0	2.7	7.6	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	2.0	3.6	5.1	4.3	8.8	1.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	24.7	30.2	23.4	24.3	27.2	4.0
LnGrp LOS	C	C	C	C	C	A
Approach Vol, veh/h	376		684			960
Approach Delay, s/veh	28.1		23.8			18.0
Approach LOS	C		C			B

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	27.4	22.0			49.3	16.0
Change Period (Y+Rc), s	3.5	4.0			4.0	4.0
Max Green Setting (Gmax), s	35.5	30.0			69.0	23.0
Max Q Clear Time (g_c+I1), s	22.1	14.3			7.1	11.1
Green Ext Time (p_c), s	1.7	3.2			2.6	1.0

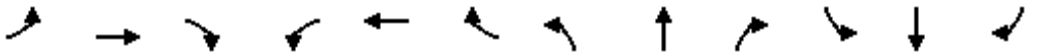
Intersection Summary	
HCM 6th Ctrl Delay	21.9
HCM 6th LOS	C

Intersection	
Intersection Delay, s/veh	46.7
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	12	20	263	17	191	26	475	167	264	264	6
Future Vol, veh/h	11	12	20	263	17	191	26	475	167	264	264	6
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	12	20	263	17	191	26	475	167	264	264	6
Number of Lanes	0	1	0	0	2	0	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	14.8	25.4	79.5	27.1
HCM LOS	B	D	F	D

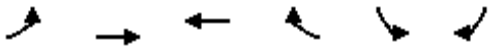
Lane	NBLn1	NBLn2	NBLn3	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	26%	97%	0%	100%	0%
Vol Thru, %	0%	100%	0%	28%	3%	4%	0%	98%
Vol Right, %	0%	0%	100%	47%	0%	96%	0%	2%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	26	475	167	43	272	200	264	270
LT Vol	26	0	0	11	263	0	264	0
Through Vol	0	475	0	12	9	9	0	264
RT Vol	0	0	167	20	0	191	0	6
Lane Flow Rate	26	475	167	43	272	200	264	270
Geometry Grp	8	8	8	8	8	8	8	8
Degree of Util (X)	0.065	1.111	0.357	0.121	0.693	0.446	0.661	0.638
Departure Headway (Hd)	8.938	8.423	7.702	10.605	9.524	8.336	9.364	8.829
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	401	432	468	340	383	435	388	413
Service Time	6.689	6.174	5.452	8.305	7.224	6.036	7.064	6.529
HCM Lane V/C Ratio	0.065	1.1	0.357	0.126	0.71	0.46	0.68	0.654
HCM Control Delay	12.3	105.9	14.7	14.8	31.1	17.6	28.5	25.8
HCM Lane LOS	B	F	B	B	D	C	D	D
HCM 95th-tile Q	0.2	16.6	1.6	0.4	5	2.2	4.6	4.3



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	212	675	70	306	841	401	55	99	225	297	93	206
Future Volume (veh/h)	212	675	70	306	841	401	55	99	225	297	93	206
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.94	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	212	675	70	306	841	401	55	99	225	297	93	206
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	239	804	83	436	1275	553	119	214	270	358	376	301
Arrive On Green	0.13	0.25	0.25	0.24	0.36	0.36	0.18	0.18	0.18	0.20	0.20	0.20
Sat Flow, veh/h	1781	3238	335	1781	3554	1540	656	1181	1492	1781	1870	1498
Grp Volume(v), veh/h	212	370	375	306	841	401	154	0	225	297	93	206
Grp Sat Flow(s),veh/h/ln	1781	1777	1797	1781	1777	1540	1838	0	1492	1781	1870	1498
Q Serve(g_s), s	14.5	24.5	24.6	19.4	24.6	28.0	9.3	0.0	18.0	19.8	5.2	15.8
Cycle Q Clear(g_c), s	14.5	24.5	24.6	19.4	24.6	28.0	9.3	0.0	18.0	19.8	5.2	15.8
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	239	441	446	436	1275	553	332	0	270	358	376	301
V/C Ratio(X)	0.89	0.84	0.84	0.70	0.66	0.73	0.46	0.00	0.83	0.83	0.25	0.68
Avail Cap(c_a), veh/h	277	502	507	436	1275	553	385	0	313	417	437	350
HCM Platoon Ratio	1.00	1.00	1.00	1.00	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	52.7	44.3	44.3	42.7	33.4	34.5	45.4	0.0	49.0	47.5	41.6	45.9
Incr Delay (d2), s/veh	24.9	10.9	10.9	5.0	1.3	4.7	1.0	0.0	15.5	11.6	0.3	4.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.1	12.1	12.3	9.1	10.8	11.1	4.3	0.0	7.9	9.9	2.4	6.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	77.6	55.2	55.2	47.6	34.7	39.2	46.4	0.0	64.5	59.1	42.0	50.3
LnGrp LOS	E	E	E	D	C	D	D	A	E	E	D	D
Approach Vol, veh/h		957			1548			379			596	
Approach Delay, s/veh		60.2			38.4			57.2			53.4	
Approach LOS		E			D			E			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		26.4	33.9	34.8		28.9	20.2	48.5				
Change Period (Y+Rc), s		4.0	3.5	4.0		4.0	3.5	4.0				
Max Green Setting (Gmax), s		26.0	18.5	35.0		29.0	19.3	34.2				
Max Q Clear Time (g_c+I1), s		20.0	21.4	26.6		21.8	16.5	30.0				
Green Ext Time (p_c), s		0.9	0.0	3.0		1.4	0.2	2.6				

Intersection Summary												
HCM 6th Ctrl Delay			49.0									
HCM 6th LOS			D									



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	1131	1363	0	884	404
Future Volume (veh/h)	0	1131	1363	0	884	404
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	1131	1363	0	884	404
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	2	2	0	2	2
Cap, veh/h	0	1433	1433	0	1169	520
Arrive On Green	0.00	0.40	0.40	0.00	0.33	0.33
Sat Flow, veh/h	0	3741	3741	0	3563	1585
Grp Volume(v), veh/h	0	1131	1363	0	884	404
Grp Sat Flow(s),veh/h/ln	0	1777	1777	0	1781	1585
Q Serve(g_s), s	0.0	17.3	23.0	0.0	13.7	14.3
Cycle Q Clear(g_c), s	0.0	17.3	23.0	0.0	13.7	14.3
Prop In Lane	0.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	1433	1433	0	1169	520
V/C Ratio(X)	0.00	0.79	0.95	0.00	0.76	0.78
Avail Cap(c_a), veh/h	0	1433	1433	0	1569	698
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.67	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	16.2	17.9	0.0	18.6	18.8
Incr Delay (d2), s/veh	0.0	3.1	10.9	0.0	1.5	3.9
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	6.9	10.6	0.0	5.3	5.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	19.2	28.9	0.0	20.1	22.7
LnGrp LOS	A	B	C	A	C	C
Approach Vol, veh/h		1131	1363		1288	
Approach Delay, s/veh		19.2	28.9		20.9	
Approach LOS		B	C		C	

Timer - Assigned Phs		4		6	8
Phs Duration (G+Y+Rc), s		30.0		25.0	30.0
Change Period (Y+Rc), s		5.0		4.7	5.0
Max Green Setting (Gmax), s		25.0		27.3	25.0
Max Q Clear Time (g_c+I1), s		19.3		16.3	25.0
Green Ext Time (p_c), s		3.7		4.1	0.0

Intersection Summary	
HCM 6th Ctrl Delay	23.3
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1252	0	0	966	976	760
Future Volume (veh/h)	1252	0	0	966	976	760
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	1252	0	0	966	976	760
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	0	0	2	2	2
Cap, veh/h	1395	0	0	1395	1270	1025
Arrive On Green	0.39	0.00	0.00	0.39	0.37	0.37
Sat Flow, veh/h	3741	0	0	3741	3456	2790
Grp Volume(v), veh/h	1252	0	0	966	976	760
Grp Sat Flow(s),veh/h/ln	1777	0	0	1777	1728	1395
Q Serve(g_s), s	20.5	0.0	0.0	14.1	15.4	14.7
Cycle Q Clear(g_c), s	20.5	0.0	0.0	14.1	15.4	14.7
Prop In Lane		0.00	0.00		1.00	1.00
Lane Grp Cap(c), veh/h	1395	0	0	1395	1270	1025
V/C Ratio(X)	0.90	0.00	0.00	0.69	0.77	0.74
Avail Cap(c_a), veh/h	1433	0	0	1433	1522	1228
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.62	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.7	0.0	0.0	15.7	17.3	17.1
Incr Delay (d2), s/veh	5.1	0.0	0.0	2.8	2.0	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	8.3	0.0	0.0	5.6	5.8	4.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	22.7	0.0	0.0	18.6	19.3	19.0
LnGrp LOS	C	A	A	B	B	B
Approach Vol, veh/h	1252			966	1736	
Approach Delay, s/veh	22.7			18.6	19.2	
Approach LOS	C			B	B	

Timer - Assigned Phs	2	4	8
Phs Duration (G+Y+Rc), s	27.5	29.3	29.3
Change Period (Y+Rc), s	* 4.7	5.0	5.0
Max Green Setting (Gmax), s	* 27	25.0	25.0
Max Q Clear Time (g_c+I1), s	17.4	22.5	16.1
Green Ext Time (p_c), s	5.3	1.8	4.4

Intersection Summary	
HCM 6th Ctrl Delay	20.2
HCM 6th LOS	C

Notes

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

