City of Marina Affordable Housing Overlay

Final Initial Study – Mitigated Negative Declaration

prepared by

City of Marina
Community Development Department
211 Hillcrest Avenue
Marina, California 93933
Contact: Guido Persicone, Community Development Director

prepared with the assistance of

Rincon Consultants, Inc.
2511 Garden Road, Suite C-250
Monterey, California 93940

November 2022

RINCON CONSULTANTS, INC.
Environmental Scientists | Planners | Engineers
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Initial Study

1. Project Title

City of Marina Affordable Housing Overlay

2. Lead Agency/Sponsor Name and Address

City of Marina
Community Development Department
209 Cypress Avenue
Marina, California 93933
831-884-1220

3. Contact Person and Phone Number

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4. Introduction

The City of Marina Affordable Housing Overlay (AHO) Project, herein referred to as project or proposed project, serves to implement Housing Element programs and meet the City's Regional Housing Need Allocation (RHNA) by encouraging the development of very low income and low-income affordable housing and new multi-family residential development. Overlay zoning is a regulatory tool that creates a special zoning district, placed over an existing base zone(s), to establish special land use regulations, standards, or procedures in areas with unique land use, site planning, building design, or environmental resource issues. An AHO provides a clear list of development standards and incentives for developers who include affordable homes in their multi-family residential development. Additionally, an AHO encourages production of affordable homes rather than requiring it. The overlay is layered on top of established base zoning regulations, leaving in place opportunities for property owners to develop within these existing rules. Rather than imposing restrictions, an AHO presents property owners with more choices by offering benefits to projects that increase the supply of affordable housing.

In the City of Marina, specific sites are designated as housing opportunity sites (referred to as "AHO sites" herein). Project features and development standards are further described in Section 8, *Description of Project.*

5. Project Location

The AHO sites are located within the City of Marina in Monterey County, adjacent to Monterey Bay and along State Route 1, approximately nine miles north of the City of Monterey and 18 miles south

of the City of Watsonville. Incorporated as a charter city in 1975, Marina has grown in population from 8,343 to an estimated 22,507 people (US Census Bureau 2021). The city encompasses approximately 9.8 square miles and extends for five miles along the Pacific Ocean, from former Fort Ord land and the California State University Monterey Bay (CSUMB) campus on the south, to the Salinas River on the north, and inland for four miles to the Marina Municipal Airport. The former Fort Ord Army Base, which was closed in 1994, is located in the southern portion of the city. The AHO areas do not include any former Fort Ord lands.

The AHO sites include 23 parcels located within the Downtown Marina area. The regional site location is shown on Figure 1. The AHO sites and the downtown parcel boundary, which includes all the parcels in the Downtown Vitalization Specific Plan (DVSP) area, are shown below in Figure 2 below. The AHO sites would range in size from 0.17 acre and 2 acres.

6. Surrounding Land Uses

Surrounding Land Use

Surrounding land uses include single-family residential uses, multi-family residential uses, commercial uses, public facilities, and light industrial uses. Some of the sites are currently developed with single-family residences or commercial uses, while other sites are vacant (refer to Section 8, *Description of Project*, for more information pertaining to each parcel existing land use and proposed future designation and zoning). Photographs of surrounding uses are shown in Figure 3.

Existing Land Use Designation

Existing General Plan land use designations for the AHO sites include:

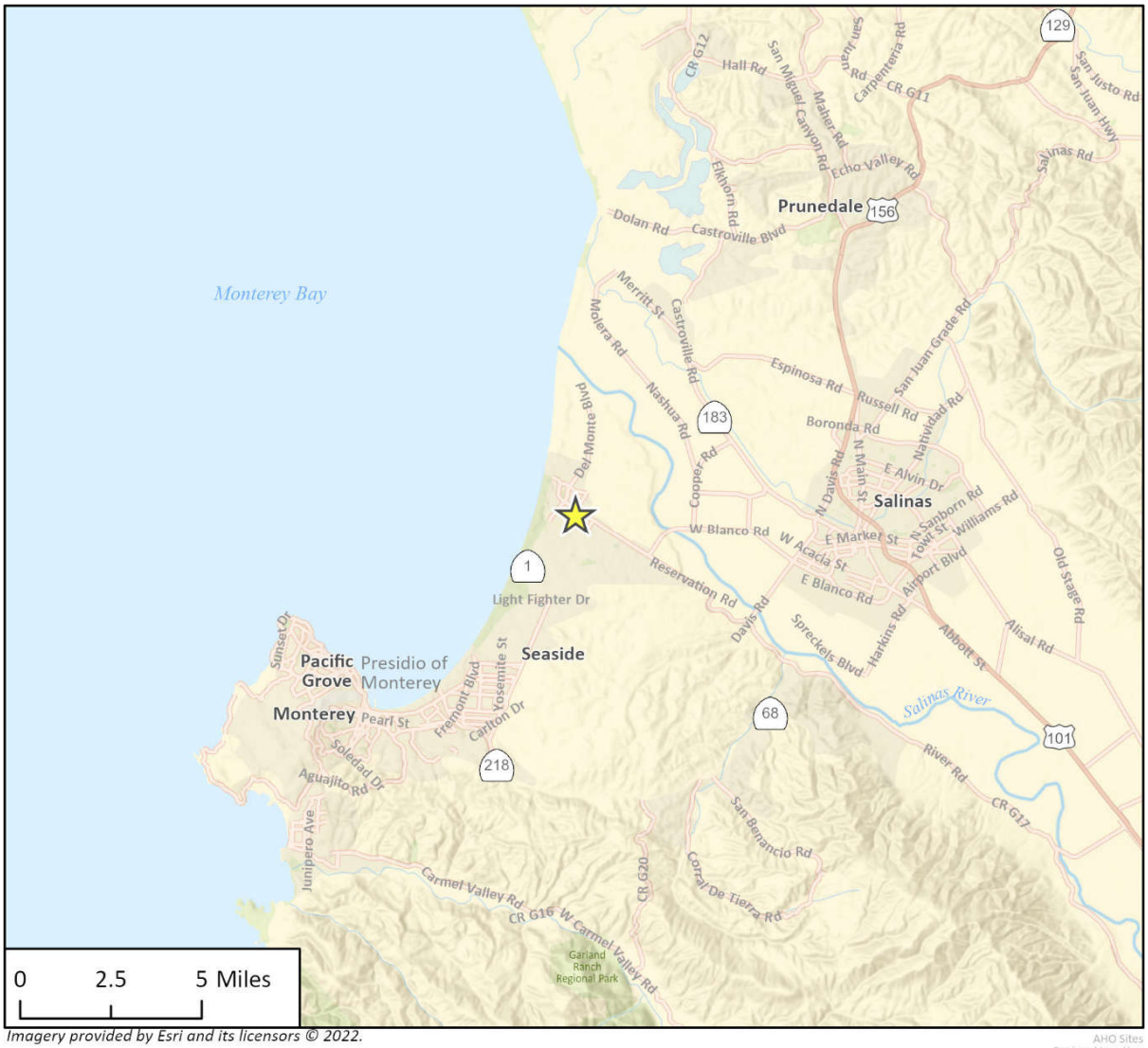
- Commercial – Multiple Use (CI-MU)
- Commercial – Office Research (CI-OR)
- Commercial – Retail/Service (CI-RPS)
- Commercial – Visitor-Serving (CI-VS)
- Industrial – Light (I-LISC)
- Residential – Multi-family (R-MF)

Existing Zoning District

The AHO sites include the following existing zoning districts:

- C-R, Commercial/Multiple-Family Residential District
- C-1, Retail Business District
- C-2, General Commercial District
- R-1, Single-Family Residential District
- R-4, Multiple-Family Residential District

Figure 1 Regional Location



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AHO Sites
Regional Location

Project Location

N

Figure 2 Project Location – AHO Sites

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Additional data provided by City of Marina Downtown Vitalization Specific Plan 2019.

AHO Sites
Fig 2 AHO Sites and Adjacant Land Uses

Figure 3 Site Photographs

Image 1. View of AHO Site 8 on Carmel Avenue

Image 2. View of AHO Site 12 on Crescent Avenue

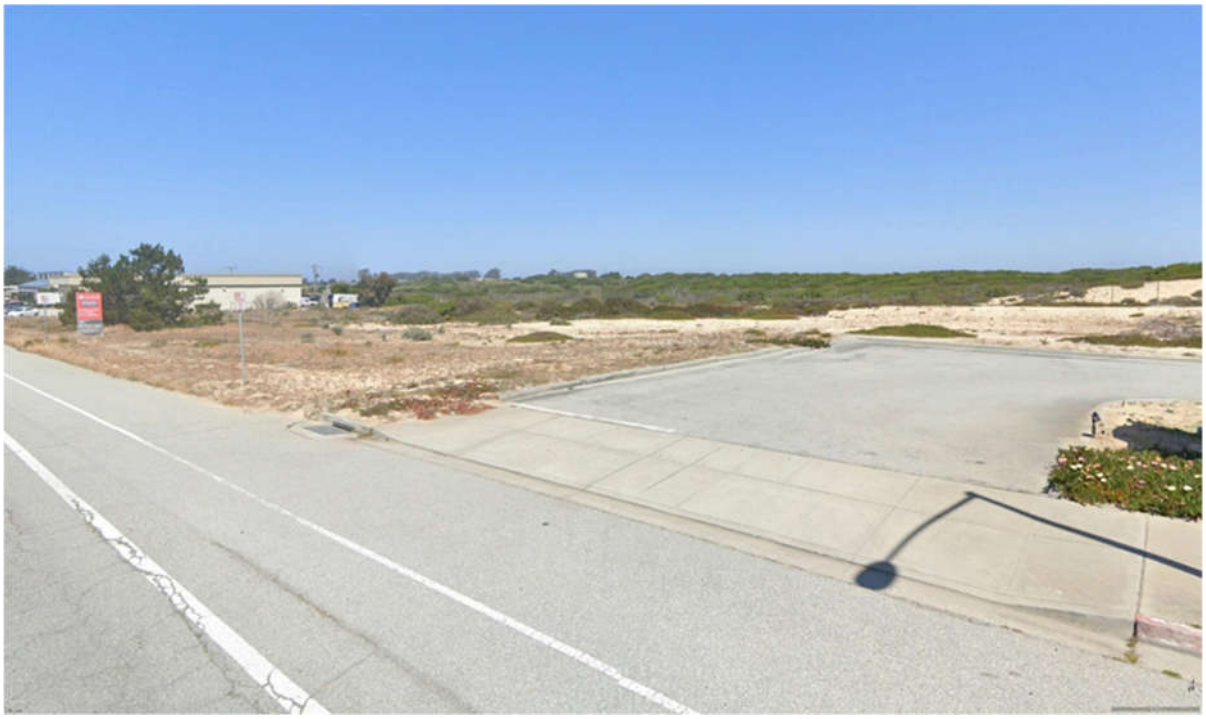

Image 3. View of AHO Site 4 on Reservation Road

7. Project Background

Relationship to Housing Element

The Housing Element within the General Plan provides a framework for the City to accommodate future housing needs, including planning for housing that is suitable for all residents. The Housing Element includes a strategy for the City to meet its share of the RHNA. Through land use and zoning regulations, local jurisdictions must plan for their share of the RHNA, including housing that is affordable to households at all income levels. The Housing Element presents an eight-year plan and is certified by the California Department of Housing and Community Development (HCD). The City of Marina has not been able to certify its eight-year plan (Fifth Cycle (5th) Housing Element) by HCD because the city agreed to increase the zoning within the Downtown Vitalization Specific Plan (DVSP) to accommodate the Fifth Cycle RHNA. However, the City has not adopted the DVSP. Select sites located within the downtown plan area have been identified to accommodate capacity for some of the City's affordable housing needs, and the AHO is proposed to meet the housing need in order to receive credit from HCD for the 5th cycle planning period. Although the AHO sites are located within the DVSP area, the AHO is separate from the DVSP as it has independent utility. Accordingly, the AHO has been analyzed as such in this IS-MND.

Figure 4 displays the AHO sites in relationship to the DVSP area.

Figure 4 Downtown Vitalization Specific Plan Area with AHO Sites

Imagery provided by Microsoft Bing and its licensors © 2022.
Additional data provided by City of Marina Downtown Vitalization Specific Plan 2019.

AHO Sites
Fig 4 AHO Sites and DVSP Boundary

8. Description of Project

The project involves the application of an AHO to specific sites that are most feasible for densities needed to accommodate the RHNA to receive credit from HCD for the 5th Cycle Housing Element planning period. The AHO would establish a development framework, consistent with the City of Marina General Plan and Municipal Code, that establishes development standards and regulations for the selected sites to encourage the development of affordable housing.

The AHO would be applied to 23 parcels located in the Downtown Marina area with parcel sizes ranging between 0.17 acre and 2 acres. Properties were selected by the City for inclusion in the AHO and identified on the City of Marina Zoning Map by an AHO label. The AHO does not re-zone the land, it creates an additional set of development options that property owners can choose to exercise at their discretion. As a result, the AHO would also allow for the continued ability to develop land uses permitted by the existing base (underlying) zoning. If a property is proposed for residential development on an AHO parcel and the property owner elects to use the site consistent with the AHO, the regulations in the AHO would supersede the requirements of the underlying base zone district. A property owner may also elect to use the site consistent with the underlying district, in which case the applicable underlying district standards would apply. Table 1 provides additional details regarding each site.

Project Components

The AHO generally includes the following components:

- **Allowable Uses**. These are stated in the proposed zoning code and include multi-family dwellings and dwelling groups, condominiums, accessory dwellings, and home occupations.
- **Additional Density as Compared to Base Zone District** – Current base zone districts range in density allowance from one unit per 5,000 square feet (sf) to 43 dwelling units per acre. The overlay affords a minimum residential density of 30 dwelling units per acre and a maximum density of 35 dwelling units per acre, except for projects proposed along Reservation Road and Del Monte Boulevard, which would be allowed a maximum of 50 dwelling units per acre.
- **Affordable Housing Requirement.** In order to meet housing needs for a range of incomes, either 12 percent of the development must be dedicated to very low income households or 15 percent of the development must be dedicated to low income households.
- **Reduced Parking Standards.** Parking standards would be modified for qualifying housing overlay developments. For example, a one to three bedroom development would require 1.5 spaces/dwelling unit instead of 2 spaces/dwelling unit.
- **Additional Development Standards.** Development standards such as setbacks, building height, minimum building site area, open space, and site coverage are more flexible than existing zoning that allows multi-family development and aims to further encourage multi-family residential development on these select sites in the downtown area.
- **Design Standards.** Design standard focus on creating an attractive downtown area. They include design guidelines such as heigh transitions, building orientation, entry features, façade composition, windows, building articulation, parking location, concealing mechanical and utility equipment, primary pedestrian access, and privacy.

Table 1 Summary of AHO Site Characteristics

Site ID	APN	Parcel Location	Acreage	Existing Use	General Plan Zoning District	General Plan Designation
1	032121018000	355 Reservation Rd	1.00	Vacant	C-2	CI-OR
2	032121020000	383 Reservation Rd	1.00	Vacant	C-2	CI-OR
3	032121024000	Reservation Rd	1.00	Vacant	C-1	CI-RPS
4	032121042000	435 Reservation Rd	1.60	Vacant	C-2	CI-OR
5	032141029000	432 Reservation Rd	0.70	Vacant	C-1	CI-VS
6	032141030000	432 Reservation Rd	0.20	Vacant	C-1	CI-VS
7	032192051000	205 Mortimer Ln	1.20	Vacant	R-1	CI-RPS
8	032201003000	271 Carmel Ave	1.00	Vacant	C-R	CI-MU
9	032201004000	273 Carmel Ave	2.00	Single Family Residential (2 units)	C-R	CI-MU
10	032201005000	283 Carmel Ave	1.90	Single Family Residential (2 units)	C-R	CI-MU
11	032201031000	271 Carmel Ave.	0.17	Vacant	C-R	CI-MU
12	032212016000	3102 Crescent Ave	0.22	Vacant	R-4	R-MF
13	032291053000	3080 Sunset Ave	0.28	Single Family Residential (1 unit)	R-4	R-MF
14	032291054000	3078 Sunset Ave	0.27	Single Family Residential (1 unit)	R-4	R-MF
15	032303015000	3070 Del Monte Blvd	0.35	Single Family Residential (1 unit)	C-1	CI-RPS
16	032303039000	3074 Del Monte Blvd	0.52	Three Unit Retail Strip	C-1	CI-RPS
17	032312014000	3038 Del Monte Blvd	0.60	Restaurant	C-2	CI-RPS
18	032312019000	219 Reindollar Ave	0.40	Vacant	C-2	I-LISC
19	032312032000	213 Reindollar Ave	0.40	Vacant	C-2	I-LISC
20	032421014000	3006 Hwy 1	4.80	Vacant	C-2	I-LISC
21	032121025000	327 Reservation Rd	0.69	Single Family Residential	C-1	CI-RPS
22	032121006000	337 Reservation Rd	0.52	Single Family Residential	C-2	CI-OR
23	032121019000	365 Reservation Rd	1.03	Suburban Propane	C-2	CI-OR

Du = dwelling unit, Ac = acre, APN = accessors parcel number

General Plan Designations: CI-OR = Commercial – Office Research, CI-RPS = Commercial – Retail\Service, CI-VS = Commercial – Visitor-Serving, CI-MU = Commercial – Multiple Use, R-MF = Residential – Multi-family, I-LISC = Industrial – Light, C-R = Commercial/Multiple-Family Residential District,

General Plan Zoning District: C-1 = Retail Business District, C-2 = General Commercial District, R-1 = Single-Family Residential District, R-4 = Multiple-Family Residential District

- **Financial Incentives.** This may include waived, reduced, or deferred planning, plan check or construction permit fees; deferment of city generated construction and impact fees until project completion or occupancy; or payment of construction and impact fee over a twelve (12) month or longer period after project completion.

The proposed AHO regulations are included in Appendix A.

Capacity for Housing Development

If all of the overlay sites were to be fully built out, this could result in an additional 898 new housing units. Table 2 below shows the allowable densities, zoned capacities, and number of realistic potential units that could be accommodated by the AHO at each identified site.

The analysis in this document considers the potential impacts of development facilitated by the AHO compared to existing conditions, rather than potential impacts in addition to development that could be facilitated by the sites' existing zoning, to provide a conservative analysis.

Table 2 Proposed AHO Site Densities

Site ID	Minimum Permitted Density (du/ac)	Maximum Permitted Density (du/ac)	Acreage	Maximum Zoned Capacity (du)
1	30	50	1.00	50
2	30	50	1.00	50
3	30	50	1.00	50
4	30	50	1.60	80
5	30	50	0.70	35
6	30	50	0.20	10
7	30	35	1.20	42
8	30	35	1.00	35
9	30	35	2.00	70
10	30	35	1.90	66
11	30	35	0.17	5
12	30	35	0.22	7
13	30	35	0.28	9
14	30	35	0.27	9
15	30	50	0.35	17
16	30	50	0.52	26
17	30	50	0.60	30
18	30	35	0.40	14
19	30	35	0.40	14
20	30	35	4.80	168
21	30	50	0.69	34
22	30	50	0.52	26
23	30	50	1.03	51
Total				**898**
RHNA Requirement				**526**

Du = dwelling unit, Ac = acre

Relationship to General Plan

Currently the AHO sites are proposed where existing General Plan land use designations and zoning districts are in place. While the AHO specifies that a property owner may continue to adhere to the provisions in the base zone district, the following General Plan amendment is proposed to remedy inconsistencies with the underlying General Plan land use designation and the new overlay designation. To create consistency between the AHO and the General Plan, a provision would be added under *Accommodating Future Housing Needs* in Section 2.28 of the General Plan Community Land Use Element. This section currently addresses the requirement by HCD to assign the Association of Monterey Bay Area Governments (AMBAG) an allocation of regional housing needs through its Regional Housing Needs Plan. The overlay is proposed as a mechanism to meet the regional housing needs as specified in the 4th and 5th Cycle Housing Elements and is therefore reasonably referenced in this section. The addition would read as follows:

> The City of Marina may meet its Regional Housing Needs Allocation through the development of Housing Opportunity Sites as shown in Table 2.3. These sites may be the recipient of an Affordable Housing Overlay as defined in the City of Marina Municipal Code.

Table 2.3 Housing Opportunity Site Designations

Site Address or Street	APN	Gross Acres	General Plan Land Use	Additional Designation
355 Reservation Rd	032121018000	1.00	CI-OR	Housing Opportunity Site
383 Reservation Rd	032121020000	1.00	CI-OR	Housing Opportunity Site
Reservation Rd	032121024000	1.00	CI-RPS	Housing Opportunity Site
435 Reservation Rd	032121042000	1.60	CI-OR	Housing Opportunity Site
432 Reservation Rd	032141029000	0.70	CI-VS	Housing Opportunity Site
432 Reservation Rd	032141030000	0.20	CI-VS	Housing Opportunity Site
205 Mortimer Ln	032192051000	1.20	CI-RPS	Housing Opportunity Site
271 Carmel Ave	032201003000	1.00	CI-MU	Housing Opportunity Site
273 Carmel Ave	032201004000	2.00	CI-MU	Housing Opportunity Site
283 Carmel Ave	032201005000	1.90	CI-MU	Housing Opportunity Site
271 Carmel Ave.	032201031000	0.17	CI-MU	Housing Opportunity Site
3102 Crescent Ave	032212016000	0.22	R-MF	Housing Opportunity Site
3080 Sunset Ave	032291053000	0.28	R-MF	Housing Opportunity Site
3078 Sunset Ave	032291054000	0.27	R-MF	Housing Opportunity Site
3070 Del Monte Blvd	032303015000	0.35	CI-RPS	Housing Opportunity Site
3074 Del Monte Blvd	032303039000	0.52	CI-RPS	Housing Opportunity Site
3038 Del Monte Blvd	032312014000	0.60	CI-RPS	Housing Opportunity Site
219 Reindollar Ave	032312019000	0.40	I-LISC	Housing Opportunity Site
213 Reindollar Ave	032312032000	0.40	I-LISC	Housing Opportunity Site
3006 Hwy 1	032421014000	4.80	I-LISC	Housing Opportunity Site
327 Reservation Rd	032121025000	0.69	CI-RPS	Housing Opportunity Site
337 Reservation Rd	032121006000	0.52	CI-OR	Housing Opportunity Site

9. Other Public Agencies Whose Approval is Required

During the decision-making process, the Marina City Council would utilize the information contained in this Initial Study for potential approval of the proposed AHO sites. No permits would be required from other agencies to approve the project. It is anticipated that future redevelopment projects pursuant to the AHO would require administrative-level (ministerial) approval, presuming that projects that comply with all the requirements of Title 17 of the City's Municipal Code. However, subsequent ministerial approvals and permits by the City for redevelopment of the project sites may be required, such as approval of grading and building permits.

10. Native American Tribal Consultation

On June 6, 2019, as part of a previous study conducted in the DVSP Area, Rincon contacted the Native American Heritage Commission (NAHC) and requested a search of the Sacred Lands File (SLF). As stated above, all the AHO sites are located within the DVSP area. As such, the previous SLF search covered all the AHO sites. The NAHC emailed a response on June 11, 2019 stating that the SLF search was negative. An updated SLF search was sent to NAHC on August 23, 2022, and the search results are pending.

In accordance with AB 52 and SB 18 of 2004, the City sent letters to the following Native American groups on June 26, 2019: Esselen Tribe of Monterey County, Costanoan Rumsen Carmel Tribe, Ohlone Costanoan Esselen Nation, Amah Mutsun Tribal Band, Amah Mutsun Tribal Band of Mission San Juan Bautista, and the Indian Canyon Mutsun Band of Costanoan (Appendix TRIBAL). A representative from the Amah Mutsun Tribal Band responded to the letter to state that the City of Marina falls just south of the Tribal Boundary and the Tribe is therefore unable to respond to consultation letters relating to the proposed Specific Plan. A representative with the Ohlone/Costanoan-Esselen Nation requested consultation with the City. Staff made several documented attempts to contact the Tribe via email, phone, and mail to arrange a time for consultation, however such attempts were unanswered. No other requests for tribal consultation were received, and consultation ended on December 20, 2019.

Environmental Factors Potentially Affected

This project would potentially affect the environmental factors checked below, involving at least one impact that is "Potentially Significant" or "Less than Significant with Mitigation Incorporated" as indicated by the checklist on the following pages.

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

Determination

Based on this initial evaluation:

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

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

☐ I find that the proposed project 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 "less than significant with mitigation incorporated" 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 although the proposed project could have a significant effect on the environment, because all potential significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have 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.

Guido Persicone

Signature

9/21/22

Date

Guido F. Persicone

Printed Name

Community Development Director

Title

Environmental Checklist

1 Aesthetics

	Potentially Significant Impact	Less than Significant with 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?	☐	☐	■	☐
b. Substantially damage scenic resources, including but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	■	☐
c. Substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from a 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?	☐	☐	■	☐
d. Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area?	☐	☐	■	☐

a. Would the project have a substantial adverse effect on a scenic vista?

A scenic vista is a viewpoint that provides expansive views of a highly valued landscape for the public benefit. The Community Design and Development Element of the Marina General Plan identifies views of the Pacific Ocean from State Route (SR) 1 and views of inland hills from SR 1, Reservation Road, and Blanco Road as scenic resources within the city. Further, the Community Design and Development Element discourages development along the primary ridgeline of the dunes located on the western edge of the city along SR 1 to protect views of the dunes (City of Marina 2010).

The Pacific Ocean is approximately 0.5 mile from the nearest AHO site and is located west of SR 1. The AHO sites would be located east of SR 1. Therefore, development facilitated by the project would not affect views of the Pacific Ocean from SR 1. Further, SR 1 is elevated as it passes Marina, and development within AHO sites would not be permitted to exceed a height of 42 feet, or a height of 35 feet if proximate to an R-1, R-2, or R-3 zoning district. The average elevation of the roadway of SR 1 as it passes Marina is 52 feet above mean sea level, and the average elevation along Del Monte

Boulevard and Reservation Road, where most of the AHO sites would be concentrated, is 31 feet above mean sea level. Therefore, the height of development facilitated by the project would not affect views of inland hills from SR 1. Impacts to scenic vistas along SR 1 would be less than significant.

Views of inland hills are intermittently visible from Reservation Road and Blanco Road. From within the AHO sites, views of inland hills from Reservation Road are minimal due to intervening structures, vegetation, and distance. Development facilitated by the project would not be permitted to exceed a height of 42 feet, or a height of 35 feet if proximate to an R-1, R-2, or R-3 zoning district. The maximum height of development facilitated by the AHO would be similar to those of existing structures along Reservation Road, and would not substantially affect views of inland hills from Reservation Road. Blanco Road is southeast of the AHO area, and development within AHO sites would not affect views of inland hills from Blanco Road. Impacts to scenic vistas from Reservation Road and Blanco Road would be less than significant.

The dunes along SR 1 on the western edge of the city would be minimally and intermittently visible from AHO sites located in the western portion of Marina, such as AHO sites 15 through 20 located along Del Monte Boulevard. However, none of the AHO sites provide an expansive view of the dunes, as most views of the dunes would be obscured by distance and intervening development. Therefore, the project would result in less than significant impacts to potential scenic vistas viewing the dunes.

Implementation of the AHO would slightly alter views within the downtown area by allowing dense residential development, resulting in a more urbanized viewshed. However, the project would not result in substantial adverse effects to scenic vistas accessible from SR 1, Reservation Road, or Blanco Road. Impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

b. Would the project substantially damage scenic resources, including but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

SR 1 is eligible to be a state scenic highway, as designated by the California Department of Transportation (Caltrans) (Caltrans 2018). SR 1 runs north-south between the city and the ocean, offering views of the dunes and the sea at various points looking west. The AHO sites would be located in an area east of SR 1 and at a lower elevation than the highway, such that the rooftops of the single-story structures and planted trees in the distance do not silhouette into the sky. In the far distance to the east, the ridgelines of the mountains are visible.

Implementation of the AHO would allow for development of multi-storied, dense residential housing that could be visible from SR 1. However, the AHO sites would be located within the downtown area, an urbanized area of Marina, and development within the AHO sites would not affect scenic resources, such as trees, rock outcroppings, historic buildings, dunes, or other scenic resources. Valued views from SR 1 are generally the coastal views to the west. Development facilitated by the AHO would intensify development to the east of SR 1, but development would be limited to an area that is already developed as Marina's downtown. The overall scenic quality of views from SR 1 would not be substantially altered by the project. Impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

c. Would the project, in non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from a 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?

The AHO sites would be located in an urbanized area with an aesthetic typical of a small city downtown, with a mixture of one-and two-story, single-family homes, mobile home parks, one- and two-story multi-family uses, one- to two-story commercial uses (including office and retail), and hotels and motels. Of the 23 AHO sites, 10 are developed and 13 are undeveloped. The currently developed sites are located primarily along Del Monte Boulevard, Sunset Avenue, and Carmel Avenue, and contain single-story commercial uses along roadway frontages and one to two-story residential uses. The undeveloped sites are located along Reservation Road in the eastern portion of the city or along Reindollar Avenue in the southwestern portion of the city and are typically adjacent to existing single-story commercial buildings.

Primary access to and through the City is provided by two major arterials, Reservation Road and Del Monte Boulevard. Reservation Road is a four-lane roadway running east-west. It has a median landscape strip, signalized intersections, sidewalks, and bus transit stops. Commercial, retail, and medium-density residential uses are located along both sides of Reservation Road. Commercial uses are set back from the roadway by large surface parking lots and vegetated landscape strips. Del Monte Boulevard is a four-lane arterial with two lanes running north and south, a planted median landscape strip separating the roadway, wide shoulders, and bus transit stops. Commercial uses are located along the eastern frontage of Del Monte Boulevard with driveway access. An inactive railway right-of-way is located along the western boundary of Del Monte Boulevard, setback by approximately 25 feet from the roadway.

Public views from roadways in the downtown area are of adjacent structures, parking lots, and minimal landscaping. Existing development represents a variety of modern architectural styles. Roadways are oriented on a grid system with roadway signage and on-street lighting. Mature street trees are located throughout the area and power lines are located aboveground throughout the downtown area. Secondary roadways within the area have stop-sign controlled intersections with curbs, gutters, and sidewalks.

The proposed AHO would include design standards for building height, building orientation, entry features, and façade composition. As previously discussed, development facilitated by the project would not be permitted to exceed a height of 42 feet, or a height of 35 feet if proximate to an R-1, R-2, or R-3 zoning district. Development facilitated by the AHO would be required to orient its primary façade to the primary street near the AHO site, and buildings located on a corner would be required to have primary façade on both streets. Building façades would be defined by vertically aligned openings, alternating horizontally with solid walls or columns. For shared residential entrances, a stoop, terrace, forecourt, or similar entry feature would be required and must be 18 inches above grade.

The AHO would be applied to 23 parcels located in the downtown area. The AHO would not involve re-zoning the parcels; rather, it would create an additional set of development options that property owners can choose to exercise at their discretion. Future development within the AHO sites would be subject to the AHO design standards if seeking approval pursuant to the AHO. Therefore, the

project would not conflict with applicable zoning and other regulations governing scenic quality, and impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

d. Would the project create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area?

10 of the AHO sites are developed and would thus include existing sources of light or glare; 13 of the AHO sites are undeveloped, but are located adjacent to existing residential or commercial uses. Therefore, numerous sources of daytime glare and nighttime light exist on and near the AHO sites. Glare sources include the reflection of the sun on different surfaces:

- Building windows
- Parked car windows
- Walls with light-colored paint or other pale or reflective architectural coatings
- Glass and other shiny reflective surfaces on signs, amenities, and public artworks

Nighttime illumination and associated glare come from stationary and mobile sources. Stationary sources include buildings and structure lighting, parking lot illumination, lighted signs, and streetlights in commercial corridors and mixed-use developments. Mobile nighttime light comes from the headlights of motor vehicles, for the most part. Temporary lighting sources could come from outdoor light shows, spotlights, and other event-related lighting.

The City of Marina Design Guidelines (City of Marina 2002) offers design criteria for lighting standards that include: stipulations to use a subdued, uniform pattern of lights, install diffusers on pole-mounted fixtures, and use energy-efficient, warm color spectrum lights. It also encourages that exterior lights be considered as part of the landscape design to integrate well with the overall character of the site. Finally, the criteria indicate plantings and fencing should mediate between commercial sites and sensitive, residential and open space uses (City of Marina 2002). Development facilitated by the AHO would be required to adhere to the design standards within the City of Marina Design Guidelines and the AHO. During the approval process, lighting design plans may be required. Lighting design plans must include a site plan with detailed proposals and descriptions of the type of light source for each fixture. The City may require a photometric study if there are concerns about the impacts to surrounding neighborhoods or open space areas.

Development that would be facilitated by the AHO would create a greater density than what is currently in the downtown area. New sources of nighttime light and daytime glare would be introduced and could intensify the effects of illumination and glare over existing levels. Potential sources of new and increased nighttime illumination would include indoor and outdoor lighting at residential development and street and parking lot lighting. Potential new and increased sources of glare would include increased vehicular traffic and new and increased reflective building surfaces. New residential development would also result in a corresponding increase in vehicular traffic. Augmented public transportation capacity and active transportation facilities would partially alleviate transportation lighting, but some increase in light and glare from motor vehicles would occur. However, because the AHO sites are concentrated in a developed downtown area, conditions would not be substantially altered from existing conditions. New development facilitated by the AHO would be subject to the lighting regulations described above. Therefore, effects on daytime or nighttime views due to new sources of light and glare would be less than significant.

LESS THAN SIGNIFICANT IMPACT

2 Agriculture and Forestry Resources

	Potentially Significant Impact	Less than Significant with 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 maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	■
b. Conflict with existing zoning for agricultural use or a Williamson Act contract?	☐	☐	☐	■
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))?	☐	☐	☐	■
d. Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	■
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?	☐	☐	☐	■

a. Would the project convert Prime Farmland, Unique Farmland, Farmland of Statewide Importance (Farmland), as shown on maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

b. Would the project conflict with existing zoning for agricultural use or a Williamson Act contract?

e. Would the project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use?

The AHO sites are within a fully developed urban area in the downtown portion of the City of Marina. According to the California Department of Conservation (DOC) Farmland Mapping and Monitoring Program, there is no existing important farmland within the Downtown area. The vast

majority of the City is designated as "Urban and Built-Up Land." In addition, none of the AHO parcels are designated for agriculture, used for agricultural production, or under Williamson Act contract (DOC 2016 and Monterey County 2010). As a result, future development pursuant to the AHO sites would not convert farmland, conflict with agricultural zoning or have the potential to result in the loss or conversion of farmland to non-agricultural use. There would be no impact.

NO IMPACT

c. *Would the project 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))?*

d. *Would the project result in the loss of forest land or conversion of forest land to non-forest use?*

e. *Would the project involve other changes in the existing environment which, due to their location or nature, could result in conversion of forest land to non-forest use?*

The AHO sites are located within a developed and urbanized area and there is no forest land on or adjacent to the sites. The sites and neighboring properties are not designated or zoned for forest preservation or timber harvesting. Therefore, future development pursuant to the AHO would not conflict with zoning or cause rezoning of forest land or result in conversion of forest land. There would be no impact.

NO IMPACT

3 Air Quality

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	■	☐
b. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	☐	■	☐	☐
c. Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	■	☐
d. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	■	☐

Air Quality Standards and Attainment

The AHO sites lie within the North Central Coast Air Basin (NCCAB), which is comprised of Monterey, Santa Cruz, and San Benito counties and is under the jurisdiction of the Monterey Bay Air Resources District (MBARD).[1] As the local air quality management agency, MBARD is required to monitor air pollutant levels to ensure that state and federal air quality standards are met and, if they are not met, to develop strategies to meet the standards. Depending on whether the standards are met or exceeded, the NCCAB is classified as being in "attainment" or "nonattainment." The NCCAB is designated as nonattainment for the state PM_{10} (particulate matter measuring 10 microns in diameter or less) standard and nonattainment-transitional for the state one-hour and eight-hour ozone standards (California Air Resources Board [CARB] 2017).[2] The NCCAB is in attainment or unclassified for all other federal and state standards.

Air Quality Management

Because the NCCAB is designated as nonattainment for the state ozone and PM_{10} standards, MBARD is required to implement strategies to reduce pollutant levels to recognized acceptable standards. In March 2017, MBARD adopted the *2012-2015 Air Quality Management Plan* (2015 AQMP) as an update to the 2012 AQMP. The 2015 AQMP is based on growth forecasts provided by the AMBAG and assesses and updates elements of the 2012 AQMP, including the air quality trends analysis, emissions inventory, and mobile source programs. The 2015 AQMP only addresses attainment of

[1] MBARD was formerly called the Monterey Bay Unified Air Pollution District (MBUAPCD); accordingly, documents authored by the MBUAPCD are cited as authored by MBARD in this document.

[2] The nonattainment-transitional area designation for ozone is defined by California Health and Safety Code Section 40925.5 as a nonattainment area in which air quality data show three or fewer exceedances of the state standard at each monitoring site in the area during the most recent calendar year.

the state eight-hour ozone standard because in 2012, the United States Environmental Protection Agency (USEPA) designated the NCCAB as in attainment for the current national eight-hour ozone standard of 0.075 parts per million (ppm). In October 2015, the national standard was reduced to 0.070 ppm. However, the NCCAB continues to be in attainment with the federal ozone standard (MBARD 2017).

The following MBARD rules would limit emissions of air pollutants during project construction:

- **Rule 400 (Visible Emissions).** Discharge of visible air pollutant emissions into the atmosphere from any emission source for a period or periods aggregating more than three minutes in any one hour, as observed using an appropriate test method, is prohibited.
- **Rule 402 (Nuisances).** No person shall discharge from any source whatsoever such quantities of air contaminants or other materials which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public; or which endanger the comfort, repose, health, or safety of any such persons or the public; or which cause, or have a natural tendency to cause, injury or damage to business or property.
- **Rule 425 (Use of Cutback Asphalt).** The use of cutback asphalt (asphalt cement that has been blended with petroleum solvents) and emulsified asphalt (an emulsion of asphalt cement and water with a small amount of emulsifying agent) is restricted in order to limit volatile organic compound (VOC) emissions. Rule 425 prohibits the use of rapid cure asphalt, restricts the use of medium cure asphalt to November through March, and limits the content of total distillate in slow cure asphalt and petroleum solvents in emulsified asphalt.
- **Rule 426 (Architectural Coatings).** This rule limits the emissions of volatile organic compounds (VOC) from the use of architectural coatings and sets VOC content limits for a variety of coating categories, including flat, nonflat, nonflat – high gloss, and specialty coatings. Specifically, Rule 426 limits the VOC content of flat coatings to 50 grams per liter and nonflat coatings to 100 grams per liter. Persons are prohibited from manufacturing, blending, repackaging for use, supplying, selling, soliciting, or applying architectural coatings that exceed these limits.
- **Rule 439 (Building Removals).** This rule limits particulate emissions from the removal of buildings by prohibiting all visible emissions from building removal. To achieve compliance with this standard, Rule 439 requires work practice standards, including wetting the structure prior to removal, demolishing the structure inward toward the building pad, and prohibiting the commencement of removal activities when peak wind speeds exceed 15 miles per hour.
- **Rule 1000 (Permit Guidelines and Requirements for Sources Emitting Toxic Air Contaminants)**: This rule regulates toxic air contaminants (TACs) from new or modified stationary sources that have the potential to emit carcinogenic or noncarcinogenic TACs. Rule 1000 requires sources of carcinogenic TACs to install best control technology and reduce cancer risk to less than one incident per 100,000 persons. Sources of noncarcinogenic TACs must apply reasonable control technology (MBARD 2008).

Methodology

The analysis of air quality impacts conforms to the methodologies recommended in MBARD's *CEQA Air Quality Guidelines* (2008). Construction and operational emissions associated with development facilitated by the AHO were calculated using the California Emissions Estimator Model (CalEEMod) version 2020.4.0. CalEEMod was developed for use throughout the state in estimating construction and operational emissions from land use development.

Construction activities associated with development facilitated by the AHO would include demolition of existing structures on 10 of the 23 AHO sites, site preparation and grading, building construction, installation of wet and dry utilities as needed, construction of roadway improvements, and architectural coating. These activities would generate diesel emissions and dust. Construction equipment that would generate criteria pollutants would include, but would not be limited to, excavators, graders, haul trucks, and loaders. It is assumed that development at half of the AHO sites would require demolition, as slightly less than half of the sites are currently developed. It is also assumed that all construction equipment used would be diesel-powered. Construction equipment and duration of each phase were based on CalEEMod defaults, which are shown in Section 3, Construction Detail, of the modeling outputs in Appendix B. The default start dates of construction at each project site were adjusted so that all construction would begin simultaneously to estimate conservative, maximum-emissions impacts. Because construction was modeled to occur simultaneously, the model shows that development facilitated by the AHO would be constructed by 2024. However, in reality, development facilitated by the AHO would occur over several years.

Given that development facilitated by the AHO would primarily result in redevelopment activities and would not include subterranean parking structures, it is assumed that soil material import and export would be minimal. Therefore, construction emissions modeling does not account for haul truck trips for soil material import and export. This analysis assumes that development facilitated by the AHO would be required to comply with all applicable regulatory standards, including the operative version of CALGreen (Title 24 of the Building Standards Code), MBARD Rule 426 (Architectural Coatings), and all other applicable MBARD rules. The requirements of Rule 426 were added as "mitigation"[3] in CalEEMod by including the use of low-VOC flat paint (50 grams per liter [g/L]).

Operational emissions were estimated for the net increase in development facilitated by the AHO. Operational emissions would be comprised of mobile source emissions, energy emissions, and area source emissions. Area source emissions are generated by landscape maintenance equipment, consumer products, and architectural coating. Emissions attributed to energy use include natural gas consumption for space and water heating. Mobile source emissions are generated by motor vehicle trips to and from the AHO sites associated with operation of on-site development.

Significance Thresholds

Criteria for determining consistency with MBARD's AQMP are defined in Section 5.5 of the MBARD's *CEQA Air Quality Guidelines* (MBARD Guidelines; 2008). The AHO would be inconsistent with the MBARD AQMP, and would therefore have a cumulatively considerable (significant) contribution to significant cumulative air quality impacts, if it would result in either of the following (MBARD 2008):

- Population growth facilitated by the AHO would cause the population of Monterey County to exceed the population forecast for the appropriate five-year increment utilized in the 2015 AQMP; or[4]
- Construction and operational emissions of ozone precursors would exceed the significance thresholds established by MBARD, which are intended to set the allowable limit that a project

[3] CalEEMod is a model for the entire state, and not all air basins or municipalities have the same mandatory regulatory requirements. For the purposes of CalEEMod, "mitigation" is a term of art for the modeling input and is not equivalent to mitigation measures that may apply to the CEQA analysis. While CalEEMod labels compliance with existing regulations as mitigation measures in this context, these are not truly mitigation measures as the term is used in CEQA.

[4] In Monterey County, consistency with population forecasts is based on comparing a project's population with countywide forecasts to avoid confusion related to declining population forecasts for cities on the Monterey Peninsula (MBARD 2008).

can emit without impeding or conflicting with the AQMP's goal of attainment ambient air quality standards.

MBARD has issued criteria for determining the level of significance for project-specific impacts within its jurisdiction. Based on criteria set forth in MBARD Guidelines (2008), the project's impacts on criteria air pollution would be significant if the project would result in air pollutant emissions during construction or operation that exceed the thresholds in Table 3.

Table 3 Air Quality Thresholds of Significance

Pollutant	Source	Threshold of Significance
Construction Impacts		
PM_{10}	Direct	82 lbs./day[1]
Operational Impacts		
VOC	Direct and Indirect	137 lbs./day
NO_X	Direct and Indirect	137 lbs./day
PM_{10}	On-site	82 lbs./day2
CO	N/A	LOS at intersection/road segment degrades from D or better to E or F or V/C ratio at intersection/road segment at LOS E or F increases by 0.05 or more or delay at intersection at LOS E or F increases by 10 seconds or more or reserve capacity at unsignalized intersection at LOS E or F decreases by 50 or more.
	Direct	550 lbs./day3
SO_X, as SO_2	Direct	150 lbs./day

Notes: lbs./day = pounds per day; PM_{10} = particulate matter with a diameter of 10 micrometers or less; VOC = volatile organic compounds (also referred to as ROG, or reactive organic gases); NO_X = oxides of nitrogen; CO = carbon monoxide; SO_X = oxides of sulfur; SO_2 = sulfur dioxide

[1] This threshold only applies if construction is located nearby or upwind of sensitive receptors. In addition, a significant air quality impact related to PM_{10} emissions may occur if a project uses equipment that is not "typical construction equipment" as specified in Section 5.3 of the MBARD CEQA Guidelines.

[2] The District's operational PM_{10} threshold of significance applies only to on-site emissions, such as project-related exceedances along unpaved roads. These impacts are generally less than significant. For large development projects, almost all travel is on paved roads, and entrained road dust from vehicular travel can exceed the significance threshold.

[3] Modeling should be undertaken to determine if the DVSP would cause or substantially contribute (550 lbs./day) to exceedance of CO ambient air quality standards (AAQS). If not, the DVSP would not have a significant impact.

Source: MBARD 2008

The carbon monoxide (CO) thresholds provided by MBARD are designed to screen out projects from further analysis that would have a less than significant impact to CO; however, projects that exceed these screening thresholds would not necessarily result in a hotspot. Localized CO concentrations are primarily the result of the volume of cars along a road and the level of emissions generated by vehicles; restricted vehicular traffic flows can contribute to higher volumes of vehicles on a given roadway in a period of time, but are not the cause of high CO concentrations. Stringent vehicle emission standards in California have reduced the level of CO emissions generated by vehicles over time such that CO hotspots are rarely a concern, except for roadways with very high traffic volumes. Because MBARD only provides screening thresholds for CO hotspot impacts but does not have a standard for assessing whether a project's CO hotspot impacts would be significant, the CO threshold from the Bay Area Air Quality Management District (BAAQMD), which is the air district immediately adjacent to MBARD to the north, is utilized in this analysis. The BAAQMD has established a volume of 44,000 vehicles per hour as the level above which traffic volumes may

contribute to a violation of CO standards (BAAQMD 2017). The NCCAB and the San Francisco Bay Area Air Basin (the jurisdiction of the BAAQMD, which is the air district immediately adjacent to MBARD to the north) are both in attainment for the California Ambient Air Quality Standard (CAAQS) and National Ambient Air Quality Standard (NAAQS) for CO and have not reported exceedances of the CO standard at local monitoring stations for the last two decades (BAAQMD 2017). Therefore, given the similar ambient air quality conditions for CO in both air basins, it is appropriate to use the BAAQMD threshold in this analysis. The BAAQMD threshold is applied in the following impact analysis if the proposed project exceeds the MBARD screening thresholds presented above to determine whether the proposed project would result in an exceedance of CO standards.

a. Would the project conflict with or obstruct implementation of the applicable air quality plan?

The most recently adopted air quality plan in the MBARD region is the 2015 AQMP. The 2015 AQMP only addresses attainment of the state eight-hour ozone standard because in 2012, the USEPA designated the NCCAB as in attainment for the current federal eight-hour ozone standard of 0.075 ppm. The control measures outlined in the 2015 AQMP focus on MBARD continuing to use grant funding to reduce both volatile organic compounds (VOC) and oxides of nitrogen (NO_X) emissions, primarily from mobile sources.

A significant impact to air quality would occur if development facilitated by the AHO would conflict with or obstruct implementation of the 2015 AQMP. Although any development project would represent an incremental adverse impact on air quality in the NCCAB due to increased air pollutant emissions, the primary concern is whether project-related impacts have been properly anticipated in the regional air quality planning process and reduced whenever feasible. MBARD uses growth forecasts provided by AMBAG to project population-related emissions for the AQMP. When population growth exceeds these forecasts, emission inventories could be surpassed, affecting attainment status.

As discussed fully in Section 14, *Population and Housing*, the AHO would accommodate approximately 2,380 new residents. The current population of Monterey County is estimated at 433,716 (California Department of Finance 2022). Therefore, the AHO would increase the population of Monterey County to 436,096 people, in a conservative scenario in which all residents relocate to Monterey County.

The population growth projections used in the 2015 AQMP forecast that the population of Monterey County will reach 495,086 residents by 2035 (MBARD 2017). Therefore, the residential population increase facilitated by the AHO would not exceed the 2015 AQMP population growth forecast for Monterey County, and is within the applicable assumptions of the air pollutant emissions forecast contained in the 2015 AQMP. Furthermore, as discussed under item (b) below, operational emissions generated by development facilitated by the AHO would not exceed MBARD thresholds for VOC or NO_X, which are ozone precursors. Therefore, the project would not generate air pollutant emissions that would impede or conflict with the 2015 AQMP's goal of achieving attainment of the state ozone standard. Impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

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

As discussed under *Air Quality Standards and Attainment*, the NCCAB is designated as nonattainment for the state PM_{10} standard and nonattainment-transitional for the state one-hour and eight-hour ozone standards, but is in attainment/unclassified for all other federal and state standards (CARB 2017).[5] Therefore, this analysis focuses on air quality impacts related to those criteria pollutants for which the AHO sites are in nonattainment, which are ozone and PM_{10}.

Construction Emissions

Development facilitated by the AHO would be built out intermittently over several years. Construction activity and associated emissions of ozone precursors (VOC and NO_X) and dust (PM_{10}) would occur periodically during construction over the planning period.

The MBARD Guidelines (2008) do not provide plan-level significance thresholds for construction air pollutant emissions; however, the guidelines include project-level thresholds for construction emissions that are utilized for this analysis. If a project's construction emissions fall below the project-level thresholds, the project's impacts to regional air quality are considered individually and cumulatively less than significant. According to MBARD guidelines, temporary ozone precursor emissions (i.e., VOC and NO_X) from demolition and construction projects using typical equipment are accommodated in the emission inventories of state- and federally-required air plans and would not have a significant impact on the attainment and maintenance of state or federal ozone ambient air quality standards (AAQS). Demolition and construction activities facilitated by the AHO are anticipated to use typical construction equipment; therefore, ozone precursor emissions from demolition and construction activities facilitated by the AHO were accounted for the emission inventories and would not have a significant impact on the attainment and maintenance of state or federal ozone AAQS (MBARD 2008).

As further outlined in the MBARD Guidelines (2008), PM_{10} is the greatest pollutant of concern during construction; therefore, MBARD has established a significance threshold of 82 pounds of PM_{10} emissions per day for construction activities. The exact timing and intensity of construction activities facilitated by the AHO is unknown at this time given that the pace of future development would largely be determined by market forces. Therefore, construction emissions were calculated using CalEEMod defaults to estimate a reasonable, worst-case scenario.[6] Table 4 summarizes estimated maximum daily construction emissions. As shown therein, maximum daily construction emissions of PM_{10} would not exceed the MBARD threshold of 82 pounds per day.

[5] The nonattainment-transitional area designation for ozone is defined by California Health and Safety Code Section 40925.5 as a nonattainment area in which air quality data show three or fewer exceedances of the state standard at each monitoring site in the area during the most recent calendar year.

[6] As mentioned under *Methodology*, the default start dates for each construction phase were adjusted so that all phases (i.e., demolition, site preparation, grading, building construction, paving, and architectural coating) would occur simultaneously in order to estimate conservative, worst-case impacts.

Table 4 Estimated Maximum Daily Construction Emissions

	Emissions (pounds per day)					
Year	**VOC**	**NO_X**	**CO**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
2023	4.0	34.6	36.7	< 1	21.0	11.3
2024	281.5	20.0	35.1	< 1	6.6	2.2
Maximum Daily Emissions (pounds per day)[1]	**281.5**	**34.6**	**36.7**	**< 1**	**21.0**	**11.3**
MBARD Thresholds	n/a	n/a	n/a	n/a	82[1]	n/a
Threshold Exceeded?	n/a	n/a	n/a	n/a	**No**	n/a

n/a = not applicable

Notes: All numbers have been rounded to the nearest tenth. Emissions presented are the highest of the winter and summer modeled emissions.

[1] This threshold only applies if construction is located nearby or upwind of sensitive receptors. In addition, a significant air quality impact related to PM_{10} emissions may occur if a project uses equipment that is not "typical construction equipment" as specified in Section 5.3 of the MBARD CEQA Guidelines.

Source: See Appendix B for CalEEMod calculations and assumptions.

As discussed under *Methodology*, the construction emission modeling assumes that there would be no soil material import or export. However, there is the potential that construction activities facilitated by the AHO may require substantial grading and excavation that would generate PM_{10} emissions. The MBARD Guidelines state that construction projects with minimal earthmoving that disturb less than 8.1 acres per day and construction projects with substantial earthmoving that disturb less than 2.2 acres per day would not exceed the threshold of 82 pounds of PM_{10} emissions per day. Therefore, if construction activities facilitated by the AHO exceed these parameters, then there would be the potential to generate high levels of PM_{10} emissions that may exceed MBARD's threshold of 82 pounds per day. Only one AHO site, No. 20, has an area exceeding 2.2 acres. However, because the exact timing and intensity of construction activities facilitated by the AHO is unknown at this time, and because simultaneous development across multiple AHO sites could include minimal earthmoving that disturbs more than 8.1 acres per day or construction projects with substantial earthmoving that disturbs more than 2.2 acres per day, construction-related air quality impacts could be potentially significant. Implementation of Mitigation Measure AQ-1 would be required to reduce impacts to a less than significant level.

Operational Emissions

Table 5 summarizes estimated emissions associated with operation of projects facilitated by the AHO. The air emissions modelling only accounts for new development beyond that existing within the AHO sites and therefore only considers air pollutant emissions beyond those currently occurring in the NCCAB.

As shown in Table 5, project operational emissions would not exceed MBARD thresholds for VOC and NO_X (ozone precursors), CO, SO_2, or PM_{10}. Therefore, project operation would not result in a cumulatively considerable net increase of ozone and PM_{10}, which are pollutants for which the project region is nonattainment under state ambient air quality standards. Impacts would be less than significant.

Table 5 Estimated Maximum Operational Emissions

Source	Emissions (pounds per day)					
	VOC	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Area Emissions	112	3	239	< 1	1	1
Energy Emissions	1	10	6	< 1	1	1
Mobile Emissions	20	37	184	1	11	5
Project Emissions	**133**	**50**	**429**	**1**	**14**	**7**
MBARD Threshold	**137**	**137**	**550**	**150**	**82**	N/A
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**	N/A[1]

N/A = not applicable

Notes: All numbers have been rounded to the nearest tenth. Emissions presented are the highest of the winter and summer modeled emissions. Numbers may not add up due to rounding.

[1] The MBARD does not have a significance threshold for operational $PM_{2.5}$ emissions.

Source: See Appendix B for CalEEMod calculations and assumptions.

Mitigation Measures

AQ-1 Construction Dust Control Measures

Construction/demolition activities within AHO sites shall be limited to 8.1 acres per day with minimal earthmoving, or 2.2 acres per day with demolition or grading/excavation, consistent with the screening-level thresholds in the MBARD's 2008 *CEQA Air Quality Guidelines*, or consistent with any updated air quality guidelines approved by the MBARD. Any individual construction project that would require grading, excavation, and/or soil material import or export within the AHO sites shall implement the following construction dust control measures:

- Water all active construction areas at least twice daily.
- Prohibit all grading activities during periods of high wind (over 15 miles per hour).
- Apply chemical soil stabilizers on inactive construction areas (disturbed lands within construction projects that are unused for at least four consecutive days).
- Apply non-toxic binders (e.g., latex acrylic copolymer) to exposed areas after cut and fill operations and hydroseed area.
- Haul trucks shall maintain at least 2 feet of freeboard.
- Cover all trucks hauling dirt, sand, or loose materials.
- Plant tree windbreaks on the windward perimeter of construction projects if adjacent to open land.
- Plant vegetative ground cover in disturbed areas as soon as possible.
- Cover inactive storage piles.
- Install wheel washers at the entrance to construction sites for all exiting trucks.
- Pave all roads on construction sites.
- Sweep streets if visible soil material is carried out from the construction site.

- Post a publicly visible sign which specifies the telephone number and person to contact regarding dust complaints. This person shall respond to complaints and take corrective action within 48 hours. The phone number of the Monterey Bay Air Resources District shall be visible to ensure compliance with Rule 402 (Nuisance).
- Limit the area under construction at any one time.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

c. Would the project expose sensitive receptors to substantial pollutant concentrations?

Sensitive receptors are members of the population that are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. The sensitive receptors closest to the AHO sites are existing residential neighborhoods and the Marina Child Development Center located along Lake Drive west of Del Monte Boulevard. There are also several schools located within 0.5 mile of the AHO sites, including Los Arboles Middle School, Marina Vista Elementary School, Marina La Via Continuation High School, Crumpton Elementary School, Pegasus Montessori School, Marina High School, George Patton Senior Elementary School, and Ione Olson Elementary School.

Carbon Monoxide Hotspots

Development facilitated by the AHO would result in new development or redevelopment that would generate additional vehicle trips on area roadways. Areas with high vehicle density, such as congested intersections, have the potential to create concentrations of CO ("CO hotspots") and could potentially expose sensitive receptors to harmful levels of pollution. The NAAQS for CO is 35.0 ppm and the CAAQS for CO is 20.0 ppm.

As discussed above under *Significance Thresholds*, localized CO concentrations are the result of the volume of cars along a road and the level of emissions generated by vehicles, rather than the flow of traffic, and vehicle CO emissions have declined over time due to stringent state standards for vehicle emissions and would continue to decline as more stringent standards are put in place. As discussed under *Methodology*, the CO threshold from BAAQMD is utilized in this analysis because MBARD only provides screening thresholds for CO hotspot impacts. BAAQMD has determined that a volume of 44,000 vehicles per hour is the level above which traffic volumes may contribute to a violation of CO standards (BAAQMD 2017). As discussed under *Significance Thresholds*, the NCCAB and the San Francisco Bay Area Air Basin (the jurisdiction of the BAAQMD, which is the air district immediately adjacent to MBARD to the north) are both in attainment for the CAAQS and NAAQS for CO and have not reported exceedances of the CO standard at local monitoring stations for the last two decades (BAAQMD 2017). Therefore, given the similar ambient air quality conditions for CO in both air basins, it is appropriate to use the BAAQMD threshold in this analysis.

Kimley-Horn prepared the Marina Downtown Traffic Study to evaluate potential traffic impacts of redevelopment in Marina's Downtown area facilitated by the proposed Downtown Vitalization Specific Plan. Because the AHO sites are located within the Downtown Vitalization Specific Plan area, roadway segments applicable to the AHO sites were studied in this report. The study is included in Appendix C. As shown therein, all of the studied roadway segments would have daily traffic volumes well below 44,000 vehicles per hour. Del Monte Boulevard and Reservation Road, the intersection with the greatest vehicles per hour, experiences 2,388 vehicles per hour in the evening peak hour. Additional development facilitated by the AHO would generate approximately 4,885 trips per day, which would not result in more than 44,000 vehicles per hour at the studied roadway segments. Therefore, development facilitated by the AHO would not result in volumes of

traffic that would create, or substantially contribute to, the exceedance of state and federal AAQS for CO. As a result, the AHO would not expose sensitive receptors to substantial concentrations of CO. Impacts related to CO hotspots would be less than significant.

Toxic Air Contaminants

The greatest potential for TAC emissions during demolition and construction activities facilitated by the AHO would be from diesel particulate emissions associated with heavy equipment operations. According to CARB methodology, health effects from carcinogenic air toxics are usually described in terms of individual cancer risk, which is expressed as an estimate of the increased changes of developing cancer due to facility emissions over a 70-year lifetime. Given the short-term construction schedule, the AHO would not result in a long-term (i.e., 70-year) source of TAC emissions. In addition, there would be no residual emissions or corresponding individual cancer risk after buildout is complete. Therefore, it is not necessary to evaluate long-term cancer impacts from construction activities that occur over a relatively short duration. As such, demolition and construction activities facilitated by the AHO, including generation of TACs, would not expose sensitive receptors to substantial pollutant concentrations.

CARB's *Air Quality and Land Use Handbook: A Community Health Perspective* (2005) provides recommendations regarding the siting of new sensitive land uses near potential sources of air toxic emissions. Typical sources of acutely and chronically hazardous TACs identified by CARB include distribution centers, rail yards, ports, refineries, chrome plating facilities, dry cleaners, and gasoline dispensing facilities. MBARD also identifies additional common sources of TACs including diesel-fueled internal combustion engines and parking areas for diesel-fueled heavy-duty trucks and buses. CARB recommends siting distances both for the development of sensitive land uses in proximity to TAC sources and for the addition of new TAC sources in proximity to existing sensitive land uses.

The AHO would not facilitate development of land uses that generate substantial TAC emissions based on review of the air toxic sources listed in MBARD's and CARB's guidelines. It is expected that quantities of hazardous TACs generated on-site by future residents and tenants (e.g., cleaning solvents, paints, landscape pesticides) for the types of proposed land uses would be below thresholds warranting further study under the California Accidental Release Program, which regulates stationary sources of hazardous substances used annually in quantities ranging from 500 to 20,000 pounds. Therefore, the AHO would not result in the exposure of sensitive receptors to significant amounts of carcinogenic or toxic air contaminants. Impacts related to TAC emissions would be less than significant.

LESS THAN SIGNIFICANT IMPACT

d. Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

During construction activities, temporary odors from vehicle exhaust and construction equipment engines would occur. Construction-related odors would be short-term and would cease upon completion. Land uses typically producing objectionable odors include landfills, rendering plants, chemical plants, agricultural uses, wastewater treatment plants, and refineries (MBARD 2008). The AHO would not facilitate development of these land uses. In addition, MBARD Rule 402 prohibits the discharge of air contaminants or other materials which would cause a nuisance or detriment to a considerable number of persons or to the public, with the exception of odors from agricultural activities. Therefore, given the nature of residential land uses that would be facilitated by the AHO, and required compliance with MBARD Rule 402, the AHO would not result in other emissions (such

as those leading to odors) adversely affecting a substantial number of people during construction and operation. Impacts related to odor would be less than significant.

LESS THAN SIGNIFICANT IMPACT

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4 Biological Resources

	Potentially Significant Impact	Less than Significant with 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 Wildlife or U.S. Fish and Wildlife Service?	☐	■	☐	☐
b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☐	■	☐
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?	☐	■	☐	☐
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?	☐	☐	☐	■
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or 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?	☐	☐	☐	■

On June 17, 2019, a Rincon Biologist conducted a field reconnaissance survey of the proposed Marina DVSP area, which is a proposed plan to guide development in the Central Marina downtown area, which encompasses the proposed project sites. The DVSP is separate and distinct from the proposed project, and the field survey for the DVSP does not specifically identify the proposed project; however, by assessing biological resources for the larger DVSP proposal, which incorporates the AHO sites, the proposed AHO sites are reasonably accounted for in the field survey. Therefore, since the biological resources of the proposed project are reasonably captured within the field survey for the DVSP area, the data collected during this field survey is used to inform this analysis of biological resources for the proposed project. The purpose of the survey was to document the existing biological conditions within the DVSP area, including plant and wildlife species, vegetation communities, the potential for occurrence of sensitive species and/or habitats, and jurisdictional waters. A Biological Resources Assessment (BRA) was completed by Rincon Consultants, Inc. in July 2019, and is included as Appendix D. The results of the survey subsequent biological resources assessment are presented in the BRA report and summarized below. The following analysis is based on the findings of the BRA.

A total of 10 AHO sites are developed while 13 of the sites are vacant. Since most of the areas surrounding the AHO sites are largely developed, they contain very little natural habitat. What natural or semi-natural habitat is present is limited to the AHO sites located along the eastern edge of the Downtown area along reservation Road and south of development at Reindollar Avenue between SR 1 and George Patton Senior Elementary School.

Vegetation Communities and Land Cover Types

The City is predominantly developed, with small, isolated areas of vegetation. Vegetation composition and structure within the City and AHO sites is generally limited to landscape and ruderal vegetation types, with minor areas of natural vegetation and water features (Figure 5). Four land cover types are mapped within the vicinity of the AHO sites: 1) developed; 2) bare ground; 3) demonstration garden; and 4) ruderal. Four vegetation communities were identified in the vicinity of the AHO sites : 1) ice plant mat; 2) annual grassland; 3) sandmat manzanita; and 4) willow riparian.

The majority of the area surrounding the AHO sites is developed, including paved roads, sidewalks, parking lots, buildings, and basketball courts. Vegetation in this land cover type consists of primarily non-native ornamental plantings in lawns, park strips, parking lots, commercial parks, baseball fields, etc. Furthermore, 10 of the AHO sites are developed and 13 of the sites are vacant. Tree species found in this community are highly variable and typically non-native or not occurring as part of a natural woodland. The remainder of open space is generally comprised of ruderal weedy vegetation communities and annual grasslands containing non-native grasses and forbs. A large component of invasive ice plant mat also occurs within the area. Small patches of natural habitat occur containing sandmat manzanita (*Arctostaphylos pumila*) and riparian arroyo willow (*Salix lasiolepis*), but these occur only as a minor component of the area surrounding the AHO sites.

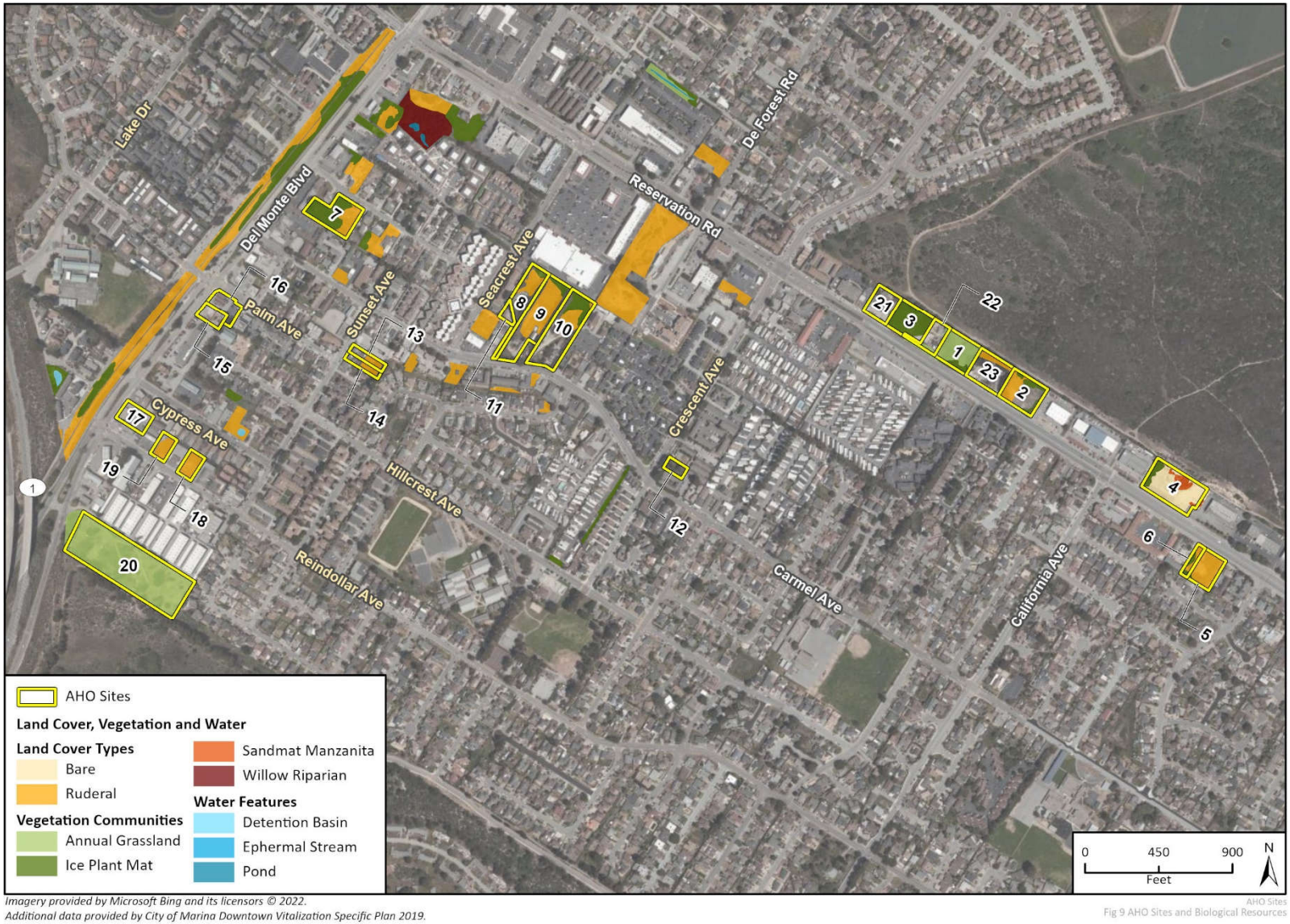
Potentially Jurisdictional Features

Two small, maintained stormwater retention basins are located approximately 290 feet northeast of AHO site 18, along Cypress Avenue and southwest of San Pablo Court. The stormwater retention basins are not likely to be United States Army Corps of Engineers (USACE) or CDFW jurisdictional, but would potentially be considered a RWQCB jurisdictional stormwater feature under the Porter-

Cologne Water Quality Control Act, which regulates discharge to waters of the State, including discharge of stormwater.

A “pond” observed on aerial imagery on private property located approximately 600 feet northeast of AHO site 7, may be USACE, RWQCB, or CDFW jurisdictional. Additionally, a stormwater drainage runs above ground for approximately 325 feet south of Viking Lane, this feature is potentially USACE, RWQCB, and CDFW jurisdictional.

Figure 5 Vegetation Communities and Land Cover Types at AHO Sites and Surrounding Area



Special Status Species

Special Status Plants

Three special status plants were observed within the Downtown area near the AHO sites during the reconnaissance survey. Sandmat manzanita (*Arctostaphylos pumila*) – California Rare Plant Rank (CRPR) 1B.2, was observed in the Downtown area and is considered present. Monterey cypress (*Hesperocyparis macrocarpa*) 1B.2, and Monterey Pine (*Pinus radiata*) 1B.1 were also observed in landscaping; however, both the Monterey cypress and Monterey pine have special status only when they occur as part of a natural stand or woodland. The trees are protected by the City of Marina's municipal code, however, which requires a permit for the removal of any tree with a diameter at breast height (DBH) of ten inches or more. No Federal or State listed plants were observed within the AHO sites.

The BRA identified an additional eleven (11) special status plant species that are known to occur, or have at least a moderate potential to occur within the vicinity of the Downtown area and AHO sites, including:

- Monterey spineflower (*Chorizanthe pungens* var. *pungens*) – Federally Threatened
- Monterey gilia (*Gilia tenuiflora* ssp. *arenaria*) – Federally Endangered, State Threatened
- Robust spineflower (*Chorizanthe robusta* var. *robusta*) – Federally Endangered
- Seaside bird's-beak (*Cordylanthus rigidus* ssp. *littoralis*) – State Endangered
- Yadon's rein orchid (*Piperia yadonii*) – Federally Endangered
- Fort Ord spineflower (*Chorizanthe minutiflora*) – 1B.2
- Eastwood's goldenbush (*Ericameria fasciculata*) – 1B. 1
- Sand-loving wallflower (*Erysimum ammophilum*) – 1B.2
- Kellogg's horkelia (*Horkelia cuneata* var. *sericea*) – 1B.1
- Point Reyes horkelia (*Horkelia marinensis*) – 1B.2
- Northern curly-leaved monardella (*Monardella sinuata* ssp. *Nigrescens*) – 1B.2

Special Status Animals

The BRA identified seven (7) special status species with potential to occur in the vicinity of the AHO sites, including:

- Smith's blue butterfly (*Euphilotes enoptes smithi*) – Federally Endangered
- Tricolored blackbird (*Agelaius tricolor*) – State Threatened
- Northern California legless lizard (*Anniella pulchra*) – SSC
- Coast horned lizard (*Phrynosoma blainvillii*) – SSC
- Burrowing owl (*Athene cunicularia*) – SSC
- White-tailed kite (*Elanus leucurus*) – FP
- Monterey shrew (*Sorex ornatus salarius*) – SSC

Sensitive Communities and Critical Habitat

Sandmat manzanita (G1 S1) is considered a sensitive natural community by CDFW; however, the sandmat manzanita observed in AHO site 4 is largely isolated from adjacent higher quality habitats and is highly disturbed. There are no critical habitats within the AHO sites.

Regulatory Setting

Regulatory authority over biological resources is shared by federal, state, and local authorities under a variety of statutes and guidelines. Primary authority for general biological resources lies with the land use control and planning authority of local jurisdictions. The CDFW is a trustee agency for biological resources throughout the state under CEQA and also has direct jurisdiction under the Fish and Game Code of California. Under the State and Federal Endangered Species Acts, the CDFW and the U.S. Fish and Wildlife Service (USFWS) also have direct regulatory authority over species formally listed as Threatened or Endangered. The U.S. Department of Army Corps of Engineers (Corps) has regulatory authority over specific biological resources, namely wetlands and waters of the United States, under Section 404 of the Federal Clean Water Act.

Plants or animals may be considered "special-status" due to declining populations, vulnerability to habitat change, or restricted distributions. Special-status species are classified in a variety of ways, both formally (e.g., State or Federally Threatened and Endangered Species) and informally ("Special Animals"). Species may be formally listed and protected as Threatened or Endangered by the CDFW or USFWS or as California Fully Protected (CFP). Informal listings by agencies include California Species of Special Concern (CSC) a broad database category applied to species, roost sites, or nests, or as USFWS Candidate taxa. CDFW and local governmental agencies may also recognize special listings developed by focal groups (i.e., Audubon Society Blue List, California Native Plant Society (CNPS) Rare and Endangered Plants, U.S. Forest Service regional lists). Section 3503.5 of the Fish and Game Code of California specifically protects birds of prey, and their nests and eggs against take, possession, or destruction. Section 3503 of the Fish and Game Code also incorporates restrictions imposed by the federal Migratory Bird Treaty Act (MBTA) with respect to migratory birds (which consists of most native bird species).

Impact Analysis

a. Would the project 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 Wildlife or U.S. Fish and Wildlife Service?

Special status plant species are those plants and animals listed, proposed for listing, or candidates for listing as threatened or endangered by the United States Fish and Wildlife Service (USFWS) under the federal Endangered Species Act (FESA) (7 U.S.C. § 136, 16 U.S.C. § 1531 *et seq*.); those listed or proposed for listing, or candidates for listing as rare, threatened, or endangered by the CDFW under the California Endangered Species Act (CESA); and/or species on the *Special Vascular Plants, Bryophytes, and Lichens List* (CDFW 2022). This latter document includes the *California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants of California* (CNPS 2022) as updated online. Those plants contained on the CNPS CRPR Lists 1, 2, 3, and 4 are considered special status species, in accordance with the CNPS code definitions:

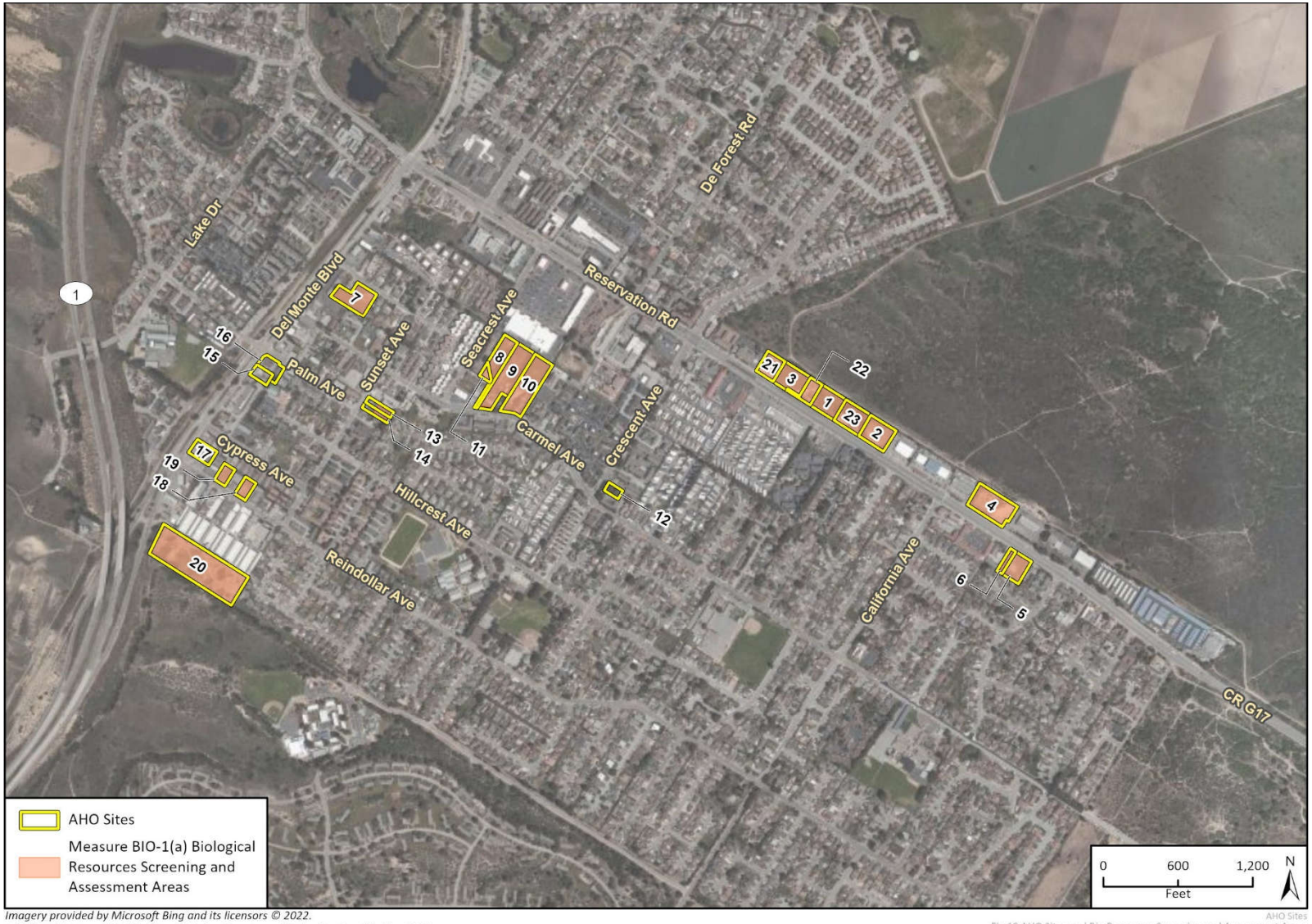
- List 1A = Plants presumed extinct in California;
- List 1B.1 = Rare or endangered in California and elsewhere; seriously endangered in California (over 80% of occurrences threatened/high degree and immediacy of threat);
- List 1B.2 = Rare or endangered in California and elsewhere; fairly endangered in California (20-80% occurrences threatened);
- List 1B.3 = Rare or endangered in California and elsewhere, not very endangered in California (<20% of occurrences threatened or no current threats known);
- List 2 = Rare, threatened or endangered in California, but more common elsewhere;
- List 3 = Plants needing more information (most are species that are taxonomically unresolved; some species on this list meet the definitions of rarity under CNPS and CESA);
- List 4.2 = Plants of limited distribution (watch list), fairly endangered in California (20-80% occurrences threatened); and
- List 4.4= Plants of limited distribution (watch list), not very endangered in California (<20% occurrences threatened or no current threats known).

State and/or federally listed plant species with the potential to occur in areas of species-specific, suitable natural habitat near the AHO sites include seaside bird's-beak, Monterey gilia, robust spineflower, Yadon's rein orchid, and Monterey spineflower. Additionally, non-listed special status plants, have the potential to occur in areas of natural habitat and ruderal areas near the AHO sites. Special status species are most likely to occur in undeveloped or ruderal areas, however Monterey spineflower and Monterey gilia may occur in sandy openings within landscaped areas.

Construction activity associated with individual projects developed under the AHO could include demolition, grading, vegetation removal, equipment and vehicle staging, parking. Most of the AHO sites are comprised of developed or other modified land cover types that do not provide suitable habitat for rare plants; however, at the individual project level the above described activities have the potential to directly impact special status plant species for any projects situated in areas of suitable natural habitat as displayed in Figure 6. Impacts may also occur if the quality of habitat would be degraded by development in adjacent areas through the introduction of invasive weeds, human disturbance, and altered hydrology. Impacts to CRPR 1B and 2B plants are generally considered significant under CEQA if the loss of individuals represented a population-level impact that resulted in a loss of, or risk to an entire local or regional population. The impacts to the sensitive biological resources listed above and resulting from projects developed under the AHO would potentially be significant under CEQA without mitigation.

State and/or federally listed animal species with the potential to occur in areas of species-specific, suitable natural habitat within the vicinity of the AHO sites include tricolored blackbird and Smith's blue butterfly. Non-listed special status species that may also occur in the AHO sites include; 1) northern California legless lizard; 2) coast horned lizard; 3) burrowing owl; 4) white-tailed kite; 5) Monterey shrew; and 6) birds protected by CFGC. In addition to the construction activities described above, construction noise and human presence may also cause impacts to special status species if present. Implementation of Mitigation Measures BIO-1(a) through BIO-1(g) would reduce these impacts to less than significant level.

Figure 6 Biological Screening and Assessment Areas at AHO Sites



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Additional data provided by City of Marina Downtown Vitalization Specific Plan 2019.

AHO Sites
Fig 10 AHO Sites and Bio Resources Screening and Assessment Areas

Mitigation Measures

BIO-1(a) Biological Resources Screening and Assessment

For projects proposed for development within undeveloped or partially developed areas containing natural or ruderal areas (as depicted in Figure 5), prior to the issuance of building or grading permits, the City shall engage a qualified biologist to perform a preliminary biological resource screening. The purpose of the screening and assessment is to determine whether the project has any potential to impact special status biological resources, inclusive of special status plants and animals, sensitive vegetation communities, jurisdictional waters (including creeks, drainages, streams, ponds, vernal pools, riparian areas and other wetlands), or biological resources protected under local or regional ordinances. If it is determined that the project has no potential to impact biological resources, no further action is required.

If the project would have the potential to impact biological resources, prior to construction, a qualified biologist shall conduct a project-specific biological analysis to document the existing biological resources within a project footprint plus a minimum buffer of 100 feet around the project footprint, as is feasible, and to determine the potential impacts to those resources. If the project would have the potential to impact biological resources, the following mitigation measures [BIO-1(b) through BIO-1(g)] shall be incorporated, as determined to be applicable by the qualified biologist, to reduce impacts to a less than significant. Pending the results of the project-specific biological analysis, design alterations, further technical studies (e.g., protocol surveys) and consultations with the USFWS, NMFS, CDFW, and/or other local, State, and federal agencies may be required. Note that specific surveys described in the mitigation measures below may be completed as part of the project-specific biological analysis where suitable habitat is present. All projects developed within AHO sites, regardless of site conditions, are required to implement measures BIO-1(f) and BIO-1(g)

BIO-1(b) Special Status Plant Pre-Construction Survey

Projects identified as having potential to impact special status plant species during the biological screening and assessment under Mitigation Measure BIO-1(a) shall implement Mitigation Measure BIO-1(b). Surveys for special status plants shall be completed by the project proponent prior to any vegetation removal, grubbing, or other construction activity (including staging and mobilization). The surveys shall be floristic in nature, that is, every plant observed shall be identified to species subspecies, or variety, sufficient to identify listed plants. The surveys shall be seasonally timed to coincide with the target Federal and State listed species and rare plants identified above. All plant surveys shall be conducted by a City-approved biologist during the appropriate blooming period during the year prior to initial ground disturbance. All special status plant species identified on-site shall be mapped onto a site-specific aerial photograph or topographic map with the use of Global Positioning System (GPS) unit. Surveys shall be conducted in accordance with the most current protocols established by the CDFW, USFWS, and the local jurisdictions if said protocols exist. A report of the survey results shall be submitted to the ~~implementing agency~~ City. If impacts to federal or state-listed species are identified for an individual project, consultation with CDFW and/or USFWS, as appropriate, shall be undertaken by the project applicant.

BIO-1(c) Special Status Plant Species Avoidance, Minimization, and Mitigation

If Federal and/or State listed or CRPR List 1B or 2 species are found during special status plant pre-construction surveys [required under Mitigation Measure BIO-1(b)], avoidance of, or mitigation for impacts to, occupied habitat shall be required. If populations of CRPR List 1B or 2 species are found during special status plant pre-construction surveys, the City-approved biologist shall evaluate whether the loss of occupied areas would result in a local or regional population-level impact (i.e., jeopardize the continued existence of a local or regional population). Mitigation for regional population level impacts to rare plants shall be required by the City. If feasible, individual development projects shall be re-designed to avoid development in locations of Federal and/or State listed or CRPR List 1B or 2 species. Federal and/or State listed or CRPR List 1B or 2 species occurrences that are not within the immediate disturbance footprint and would be avoided, but which are located within 50 feet of disturbance limits, shall have bright orange protective fencing installed at an appropriate distance (as determined by a qualified biologist) to ensure they are protected during construction activities.

If development cannot avoid Federally or State listed plants species, then a qualified biologist shall either salvage or conserve any relocated individual plants, or the project applicant shall provide compensation (minimum compensation ratio of 1:1 for individuals and impact areas, with a conservation area of a similar density of individuals) for the loss of these individuals or their habitat either in an on-site or off-site preserve, through payments to an appropriate mitigation bank, or as otherwise may be determined in coordination with USFWS and CDFW permitting.

Restoration areas shall be of a similar density of individuals as areas impacted project activities. A restoration plan shall be prepared by the project applicant and submitted to the City for review and approval. Documentation demonstrating consultation with CDFW and USFWS regarding impacts to federal or state listed species shall be submitted to the City. Population level impacts to CRPR List 1B or 2 species shall also be mitigated at a 1:1 ratio for occupied areas, and shall also require a restoration plan in coordination with the City. The restoration plan(s) shall include, at a minimum, the following components:

- Description of the project/affected species location(s) (i.e., location, responsible parties, areas to be impacted by habitat type)
- Compensatory mitigation [type(s) and area(s) species to be established, restored, enhanced, and/or preserved; specific functions and values of species type(s) to be established, restored, enhanced, and/or preserved]
- Description of the proposed compensatory mitigation site (location and size, ownership status, existing functions and values)
- Implementation plan for the compensatory mitigation site (rationale for expecting implementation success, responsible parties, schedule, site preparation, planting plan)
- Maintenance activities during the monitoring period, including weed removal as appropriate (activities, responsible parties, schedule)
- Monitoring plan for the compensatory mitigation site, including no less than quarterly monitoring for the first year (performance standards, target functions and values, target acreages to be established, restored, enhanced, and/or preserved, annual monitoring reports)
- Success criteria based on the goals and measurable objectives; said criteria to be, at a minimum, at least 80 percent survival of container plants and 30 percent relative cover by vegetation type

- An adaptive management program and remedial measures to address any shortcomings in meeting success criteria
- Notification of completion of compensatory mitigation and agency confirmation
- Contingency measures (initiating procedures, alternative locations for contingency compensatory mitigation, funding mechanism)

BIO-1(d) Special Status Wildlife Pre-Construction Surveys

Projects that identify potential impacts to special status wildlife species during the biological screening and assessment under Mitigation Measure BIO-1(a) shall implement the following.

CALIFORNIA LEGLESS LIZARD AND COAST HORNED LIZARD SURVEYS

Pre-construction clearance surveys for northern California legless lizard and coast horned lizard shall be conducted by a qualified biologist within 14 days prior to the start of construction (including staging and mobilization) in areas of suitable habitat. The surveys shall cover the entire disturbance footprint plus a minimum 200-foot buffer within suitable habitat, where permissible, and shall identify all special status animal species that may occur on-site. California legless lizard and coast horned lizard shall be relocated from the site to a safe location within suitable habitat as near to the project area as possible by a qualified biologist.

BURROWING OWL SURVEYS

A qualified biologist shall conduct pre-construction clearance surveys prior to ground disturbance activities within suitable natural habitats and ruderal areas to confirm the presence/absence of burrowing owls. The surveys shall be consistent with the recommended survey methodology provided by CDFW (2012). Clearance surveys shall be conducted within 14 days prior to construction and ground disturbance activities. If no burrowing owls are observed, no further actions are required. If burrowing owls are detected during the pre-construction clearance surveys, the following measures shall apply:

- Avoidance buffers during the breeding and non-breeding season shall be implemented in accordance with the CDFW (2012) and Burrowing Owl Consortium (1993) minimization mitigation measures.
- If avoidance of burrowing owls is not feasible, then additional measures such as passive relocation during the nonbreeding season and construction buffers of 200 feet during the breeding season shall be implemented, in consultation with CDFW. In addition, a Burrowing Owl Exclusion Plan and Mitigation and Monitoring Plan shall be developed by a qualified biologist in accordance with the CDFW (2012) and Burrowing Owl Consortium (1993).

SMITH'S BLUE BUTTERFLY HOST PLANT SURVEYS

Prior to grading and construction in undeveloped areas, an approved biologist shall conduct surveys for seacliff buckwheat (*Eriogonum parvifolium*) and seaside buckwheat (*Eriogonum latifolium*), host plants of Smith's blue butterfly in areas of suitable habitat.

If Smith's blue butterfly host plants are not located, no further action is required. If host plants are located within proposed disturbance areas, they shall be avoided if feasible. If avoidance is not feasible, focused surveys shall be conducted to determine presence or absence of the butterfly species. This shall include surveys during the adult flight period (mid-June through early September), and/or inspection of host plants for all life forms (egg, larva, pupa, and adult). Relocation of smith's

blue butterfly and occupied host plants can only be legally authorized by the USFWS, and only a USFWS permitted biologist is legally allowed to relocate host plants and individuals.

REPORTING

A report of all pre-construction and pre-demolition survey results shall be submitted to the City for its review prior to the start of demolition. The report shall include a description of the survey methodology for each species, the environmental conditions at the time of the survey(s), the results of the survey, any requirements for addressing special status species identified during surveys, and the biological qualifications of the surveyors. The report shall be accompanied by maps and figures showing the location of any special status species occurrences and associated avoidance buffers.

BIO-1(e) Biological Resources Avoidance and Minimization

Projects that identify potential impacts to special status species during the biological screening and assessment under Mitigation Measure BIO-1(a) shall implement the following measures to avoid impacts to sensitive species and biological resources. The project applicant shall be responsible for implementing selected measures.

- Ground disturbance shall be limited to the minimum necessary to complete the project. The limits of disturbance for each construction phase shall be flagged. Areas of special biological concern within or adjacent to the limits of disturbance shall have highly visible orange construction fencing installed between said area and the limits of disturbance.
- All construction occurring within or adjacent to natural habitats that may support Federally and/or State listed endangered/threatened species, State fully protected species, and/or special status species shall have a qualified biological monitor present during all initial ground disturbing/vegetation clearing activities.
- No endangered/threatened species shall be captured and relocated without express permission from the CDFW and/or USFWS.
- If at any time during construction an endangered, threatened, or fully protected species enters the construction site or otherwise may be impacted, all construction activities shall cease. A CDFW/USFWS-approved biologist shall document the occurrence and consult with the CDFW and USFWS, as appropriate, to determine whether it was safe for project activities to resume.
- At the end of each workday, excavations shall be secured with cover or a ramp provided to prevent wildlife entrapment.
- All trenches, pipes, culverts or similar structures shall be inspected for animals prior to burying, capping, moving, or filling.
- If night work is required, all construction lighting shall be pointed down and directed only on the work area.
- The City shall approve one or more qualified biologists to oversee and monitor biological compliance for the project. At least one qualified biologist shall be present during all initial ground disturbing activities, including vegetation removal to recover special status animal species unearthed by construction activities.

BIO-1(f) Pre-Construction Nesting Birds Surveys

All projects developed under the AHO shall implement the following. Project activity shall restrict ground disturbance, building demolition, and vegetation removal activities to the non-breeding season (September 16 to January 31) when feasible. For ground disturbance, building demolition, and vegetation removal activities that must be conducted during the bird nesting season (February 1 to September 15), general pre-construction nesting bird surveys shall be conducted by a qualified biologist, including for, but not limited to, the tricolored blackbird and White-tailed kite, not more than 14 days prior to construction activities involving ground clearing, vegetation removal/trimming, or building demolition. The surveys shall include the disturbance area plus a 200-foot buffer around the site if feasible, and a 500-foot buffer for tricolored blackbird and White-tailed kite. If active nests are located, an appropriate avoidance buffer shall be established within which no work activity shall be allowed which would impact these nests. The avoidance buffer would be established by the qualified biologist on a case-by-case basis based on the species and site conditions. In no cases shall the buffer be smaller than 50 feet for non-raptor bird species, 200 feet for raptor species, or a 500-foot buffer for White-tailed kite. Larger buffers may be required depending upon the status of the nest and the construction activities occurring in the vicinity of the nest. If fully protected White-tailed kites are documented nesting within 500 feet of construction activities, CDFW shall be consulted on appropriate avoidance and minimization methods. The buffer area(s) shall be closed to all construction personnel and equipment until juveniles have fledged and the nest is inactive. City-approved Biologist shall confirm that breeding/nesting is completed and young have fledged the nest prior to removal of the buffer.

BIO-1(g) Worker Environmental Awareness Program (WEAP)

All projects developed under the AHO shall implement the following. Prior to initiation of construction activities (including staging and mobilization), the project proponent shall arrange for all personnel associated with project construction for the applicable phase to attend WEAP training, conducted by a City-approved biologist, to aid workers in recognizing special status resources that may occur in the construction area. The specifics of this program shall include identification of the sensitive species and habitats, a description of the regulatory status and general ecological characteristics of sensitive resources, and review of the limits of construction and mitigation measures required to reduce impacts to biological resources within the work area. A fact sheet conveying this information shall also be prepared for distribution to all contractors, their employers, and other personnel involved with construction. All employees shall sign a form provided by the trainer indicating they have attended the WEAP and understand the information presented to them. The form shall be submitted to the City to document compliance.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

b. Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

A small patch of sandmat manzanita occurs on AHO site 4, adjacent to open space as shown on Figure 5. This patch of manzanita is isolated and highly degraded by the surrounding development and incursion of ice plant. This vegetation community has a limited distribution, largely restricted to coastal areas of Monterey County. It is locally common in the vicinity of the City, including the AHO sites; however, given the higher quality chaparral habitat to the north of Reservation Road and

within the Fort Ord National Monument, removal of a small patch of sandmat manzanita would not represent a significant impact to this vegetation community. Impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

c. Would the project 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?

The AHO sites are located within the Salinas River watershed, which covers approximately 4,600 square miles from San Luis Obispo to Monterey County. No CDFW or USACE jurisdictional wetlands or waters are present on or near the AHO sites. Two small, isolated stormwater retention basins were observed north of Cypress Avenue and southwest of San Pablo Court, which appear to be properly maintained (see Figure 5). These stormwater features drain water from the street and surrounding development, no "bed," "Bank," "channel," or riparian vegetation was observed at either basin. They are therefore not likely to be USACE or CDFW jurisdictional but would potentially be considered a RWQCB jurisdictional stormwater feature under the Porter-Cologne Water Quality Control Act, which regulates discharge to waters of the State, including discharge of stormwater.

A "pond" near AHO site 7 (see Figure 5) may be USACE, RWQCB, or CDFW jurisdictional. However, development of AHO site 7 would not impact the pond since the site is located approximately 528 feet south of the pond on a separate parcel. Additionally, a stormwater drainage runs above ground for approximately 325 feet south of Viking Lane. Alteration of the two stormwater basins and the drainage would require authorization from the City of Marina and evaluation under the City's NPDES permit. The AHO may include storm drainage improvements, which would likely be implemented under the City's NPDES permit. Impacts to these features that resulted from development under the AHO would therefore be less than significant with compliance with permit requirements. If alteration of the "pond" is proposed, a jurisdictional delineation would be required to fully assess the extent of impacts to waters of the state and/or Waters of the U.S. Impacts to waters of the state or waters of the U.S. would potentially require regulatory permitting. Impacts to this feature may be significant but would be reduced to less than significant with mitigation.

Mitigation Measures

BIO-2 Jurisdictional Delineation

If a proposed project under the AHO would impact any of the ephemeral drainages and/or the ponds (as shown Figure 5), a qualified biologist shall complete a jurisdictional delineation. The jurisdictional delineation will determine the extent of the jurisdiction for CDFW, USACE, and/or RWQCB, and shall be conducted in accordance with the requirement set forth by each agency. The result will be a preliminary jurisdictional delineation report that shall be submitted to the ~~implementing agency~~ City, USACE, RWQCB, and CDFW, as appropriate, for review and approval. Jurisdictional areas shall be avoided to the maximum extent possible. If jurisdictional areas are expected to be impacted, then the RWQCB would require a Waste Discharge Requirements (WDRs) permit and/or Section 401 Water Quality Certification (depending upon whether or not the feature falls under federal jurisdiction). If CDFW asserts its jurisdictional authority, then a Streambed Alteration Agreement pursuant to Section 1600 et seq. of the CFGC would also be required prior to construction within the areas of CDFW jurisdiction. If the USACE asserts its authority, then a permit pursuant to Section 404 of the CWA would be required. Furthermore, a compensatory mitigation program, and the measures set forth by the regulatory agencies during the permitting process, shall

be implemented. Compensatory mitigation for all permanent impacts to waters of the U.S. and waters of the state shall be completed at a ratio as required in applicable permits, but shall not be less than a minimum ratio of 1:1. All temporary impacts to waters of the U.S. and waters of the state shall be fully restored to natural condition.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

d. Would the project 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?

The area surrounding the AHO sites is effectively a fully developed area, containing no significant wildlife movement corridors. As such, the AHO sites do not provide for locally or regionally important wildlife movement or genetic flow. There would be no impacts to wildlife movement from development under the AHO.

NO IMPACT

e. Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

Projects implemented under the AHO would be consistent with the Marina Municipal Code regarding tree removal and tree protection. Tree removal associated with proposed projects under the AHO would be required to obtain approval from the City of Marina, pursuant to compliance with Chapter 17.62 (Tree Removal, Preservation and Protection) of the Marina Municipal Code. As a result of the required permitting under Marina Municipal Code, development of the AHO sites would not conflict with the local tree policy. Impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

f. Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

There are no habitat conservation plans or natural community conservation plans that have been adopted in the Downtown area, including the AHO sites. Therefore, development facilitated by the AHO would not conflict with any such plans and no impact would occur.

NO IMPACT

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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?	☐	■	☐	☐
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	■	☐	☐
c. Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	■	☐

CEQA requires a lead agency determine whether a project may have a significant effect on historical resources (Public Resources Code [PRC], Section 21084.1) and tribal cultural resources (PRC Section 21074 [a][1][A]-[B]). A historical resource is a resource listed in, or determined to be eligible for listing, in the California Register of Historical Resources (CRHR), a resource included in a local register of historical resources, or any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant (State CEQA Guidelines, Section 15064.5[a][1-3]).

A resource shall be considered historically significant if it:

1. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
2. Is associated with the lives of persons important in our past;
3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
4. Has yielded, or may be likely to yield, information important in prehistory or history.

In addition, if it can be demonstrated that a project would cause damage to a unique archaeological resource, the lead agency may require reasonable efforts be made to permit any or all of these resources to be preserved in place or left in an undisturbed state. To the extent that resources cannot be left undisturbed, mitigation measures are required (PRC, Section 21083.2[a], [b]).

PRC, Section 21083.2(g) defines a unique archaeological resource as an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it:

1. Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information;
2. Has a special and particular quality such as being the oldest of its type or the best available example of its type; or

3. Is directly associated with a scientifically recognized important prehistoric or historic event or person.

Background Research

Rincon conducted a records search of the California Historical Resources Information System (CHRIS) at the Northwest Information Center (NWIC), located at Sonoma State University, on April 8, 2019, and received the results of an updated records search of the NWIC on August 10, 2022. Both records searches were completed within the DVSP Area and a 0.5-mile radius surrounding it. Because the DVSP Area contains the entirety of all the AHO sites, the records search results reflect studies and resource records relevant to all the AHO sites and at minimum a 0.5-mile radius surrounding each. The searches were reviewed to identify previously recorded cultural resources (archaeological and historic-era resources), as well as previously conducted cultural resources studies on and within 0.5 miles of the AHO sites. The CHRIS searches included a review of available records at the NWIC, as well as the National Register of Historic Places (NRHP), the CRHR, the Office of Historic Preservation Historic Properties Directory (BERD), the California Inventory of Historic Resources, the Archaeological Determinations of Eligibility list, and historic maps.

The NWIC CHRIS searches identified 29 cultural resources studies conducted within a 0.5-mile radius of the AHO sites (Table 6). Of these 29 reports, nine included all or portions of the AHO sites. Of these, four studies consist of general overviews of the region or large inter-regional projects and do not identify specific cultural resources on or adjacent to AHO sites (S-022657, S-032596, S-045010, and S-048927) and three consist of negative survey reports (S-033677, S-035072, and S-028506).

The remaining two reports conducted within AHO sites were positive for cultural resources. Report S-003345 consisted of a survey of the Monterey Wastewater Treatment System Expansion Project which included improvements to existing treatment systems throughout the Monterey Peninsula. The study identified a single cultural resource approximately five miles southwest of the current records search area. Report S-028253 consisted of a Historic Property Survey Report that identified seven properties of historic age; none of the evaluated properties are located on a current AHO site.

Table 6 Previous Cultural Resource Studies within 0.5-Miles of the DVSP Area

Report Number	Author	Year	Title	Relationship to AHO Sites
S-003345	T. Weber and A. Peak	1976	*Monterey Peninsula Regional Wastewater Treatment System Expansion Project*	**Within**
S-003345a	A. Peak	1976	*Appendix I: Cultural Resource Assessment of the Interceptor Line -- East of Blanco Road and West of Davis Road (Augmentation of Monterey Peninsula Regional Wastewater Treatment System)*	**Within**
S-003345b	A. Peak and M. Peak	1978	Cultural Resource Assessment of the Selected Alternative of the Monterey Regional Wastewater Treatment System, Monterey County, California	Outside
S-003345c	M. Peak	1980	*Test drilling for cultural resources, Monterey Regional Wastewater Treatment Project: Interceptor line from the Salinas Sewage Treatment Plant to the Blanco Road crossing of the Salinas River*	Outside

Report Number	Author	Year	Title	Relationship to AHO Sites
S-003418	Unknown	1978	*Cultural Resource Assessment of the Proposed Effluent Disposal System, Fort Ord, Monterey County, California*	Outside
S-014001	A. Runnings and G. Breschini	1992	*Preliminary Cultural Resources Reconnaissance for the MPWMD Desalinization Pipeline, Monterey County, California*	Outside
S-022657	I. Sawyer, L. Pfeiffer, K. Rasmussen, and J. Berryman	2000	*Phase 1 Archaeological Survey Along Onshore Portions of the Global West Fiber Optic Cable Project*	**Within**
S-028253	A. Kirk	2004	*Crescent Avenue Widening Project, City of Marina, Monterey County, California*	**Within**
S-028506	M. Doane	2004	*Negative Archaeological Survey Report for the Crescent Avenue Widening Project Between Reservation Road and Carmel Avenue in Marina, Monterey County, California*	**Within**
S-032596	R. Milliken, J. King, and P. Mikkelsen	2006	*The Central California Ethnographic Community Distribution Model, Version 2.0, with Special Attention to the San Francisco Bay Area, Cultural Resources Inventory of Caltrans District 4 Rural Conventional Highways*	**Within**
S-033285[1]	T. Van Buren	2007	*Archaeological Survey of the Reynen Property at 45100 Brest Road near Mendocino, California, AP# 118-240-08*	Outside
S-033677	M. Doane and T. Haversat	1999	*Preliminary Archaeological Reconnaissance of the Marina Coast Water District Recycled Water Pipeline Project, Monterey County, California*	Outside
S-033677a	M. Doane and T. Haversat	2006	*Phase 1 Archaeological Reconnaissance for the Marina Coast Water District Regional Urban Water Augmentation Project, Recycled Water Component, Northern Segment, In Marina and Seaside, Monterey County, California*	Outside
S-033677b	M. Doane and G. Breshini	2007	*Phase I Archaeological Reconnaissance for the Marina Coast Water District Regional Urban Water Augmentation Project, Recycled Water Component, in Marina, Ord Community, Seaside and Monterey, Monterey County, California (Revised May 22, 2007)*	Outside
S-033677c	M. Doane and G. Breshini	2006	*Phase 1 Archaeological Reconnaissance for the Marina Coast Water District Regional Urban Water Augmentation Project, Recycled Water Component, in Marina, Ord Community, Seaside and Monterey, Monterey County, California*	**Within**
S-033677d	M. Doane and G. Breshini	2007	*Phase 1 Archaeological Reconnaissance for Two Additional Alignments for the Marina Coast Water District Regional Urban Water Augmentation Project, Recycled Water Component, In Marina, Monterey County, California*	Outside

Report Number	Author	Year	Title	Relationship to AHO Sites
S-033677e	M. Doane and G. Breshini	2007	*Preliminary Archaeological Reconnaissance for the Marina Coast Water District Well 34 Project, In Marina, Monterey County, California*	Outside
S-035072	M. Doane and G. Breshini	2008	*Preliminary Archaeological Reconnaissance for APN 032-201-004, Marina, Monterey County, California*	**Within**
S-037725	A. Ruby	2010	*Archaeological Survey Report for the Monterey Light Rail Transit Project*	Outside
S-040329	H. Haas, K. Hunt, and R. Ramirez	2012	*Phase I Cultural Resources Survey for the Reservation Road Bikeways and Pathways Reconstruction Project Marina, Monterey County, California*	Outside
S-045010	A. Pilling	1949	*Tulare Indians at Monterey: Ethnographic notes collected by A.R. Pilling*	**Within**
S-045823	M. Doane and G. Breshini	2014	*Phase I Archaeology Survey for the Proposed Monterey Peninsula Groundwater Replenishment Project, Northern Monterey County, California*	Outside
S-047264	Michael A. Way	2011	*Cultural Resources Analysis, Marina Post Office Property, Crescent Avenue, Marina, Monterey County, California 93933, EBI Project No. 61114596*	Outside
S-047264a	C. Roland-Nawi	2015	*OHP PRN HUD 2015_0403_001: Multifamily Housing Project Located at 3098 De Forest Road, Marina; OHP PRN HUD 2015_0403_001:HUD-Funded HOME Project; Section 106 Consultation Junsay Oaks Apartments 3098 De Forest Road, Monterey County, California*	Outside
S-047264b	T. Szymanis	2015	*RE: HUD-Funded HOME Project; Section 106 Consultation*	Outside
S-048927	D. Crull	1997	*The Economy and Archaeology of Europeanmade Glass Beads and Manufactured Goods Used in First Contact Situations in Oregon, California and Washington*	**Within**
S-049322	H. Koenig	2017	*Cultural Resources Survey Report, Monterey Peninsula Water Supply Project, Monterey County, California*	Outside
S-049322a	P. Michel and J. Polanco	2017	*NOAA_2017_0403_001, Section 106 Consultation for the Monterey Peninsula Water Supply Project, Monterey County, California*	Outside
S-049762	G. Breshini	2017	*Preliminary Archaeological Assessment of Assessor's Parcel 032-171-018, Marina, Monterey County, California*	Outside
S-053052	H. Koenig	2018	*Cultural Resources Survey and Assessment, Monterey Bay Opportunistic Beach Nourishment Program*	Outside

[1]The has NWIC has voided S number S-032385 and refers researchers to study S-033677, which is detailed above.

Sources: NWIC 2019, 2022

The NWIC records searches conducted for this effort also identified 10 previously recorded cultural resources within a 0.5-mile radius of the AHO sites; these are listed in Table 7. One prehistoric archaeological site (P-27-000385/CA-MNT-280) has been documented within the records search area but is outside the AHO sites. Very little information is provided in the site record as it was recorded based on anecdotal information obtained ten years after the site was identified. The resource is described in the site record as a prehistoric occupation site located somewhere on the Fort Ord base that was destroyed by bulldozer in the early 1940s. The records search also identified nine historic-period resources, including an archaeological site, railroad alignment, and seven buildings. None of the historic-period resources are located on an AHO site.

Table 7 Previously Recorded Resources within 0.5-Miles of the DVSP Area

Primary Number	Trinomial	Resource Type	Description	Year(s) and Recorder(s)	NRHP/ CRHR Status	Relationship to AHO Sites
P-27-000385	CA-MNT-280	Prehistoric Site	Prehistoric Occupation Site	1950 (A.R. Pilling, UCAS)	Unknown	Outside
P-27-001325	CA-MNT-001288H	Historic-period Site	Marina Beach #2	1984 (Lynn Furnis and Carlys Gilbert); 2016 (Brittney Biasi and Rae Schwaderer)	Unknown	Outside
P-27-002417	CA-MNT-002080H	Historic-Period Site	"Old Railroad Grade"	1998 (Chris Morgan, Graham Dalldorf, Lori Wear); 2008 (Kari Jones & F. Arellano); 2019 (Dustin Merrick, Mary Pfeiffer)	Unknown	Outside
P-27-003088	–	Historic Building	3100 Crescent Avenue	2003 (Anthony Kirk)	Recommended Ineligible for NRHP and CRHR	Outside
P-27-003089	–	Historic Building	3109 Crescent Avenue	2003 (Anthony Kirk)	Recommended Ineligible for National Register	Outside
P-27-003090	–	Historic Building	3115 Crescent Avenue	2003 (Anthony Kirk)	Recommended Ineligible for NRHP and CRHR	Outside
P-27-003091	–	Historic Building	3117 Crescent Avenue	2003 (Anthony Kirk)	Recommended Ineligible for NRHP and CRHR	Outside
P-27-003092	–	Historic Building	3128 Crescent Avenue	2003 (Anthony Kirk)	Recommended Ineligible for NRHP and CRHR	Outside

Primary Number	Trinomial	Resource Type	Description	Year(s) and Recorder(s)	NRHP/ CRHR Status	Relationship to AHO Sites
P-27-003093	–	Historic Building	3137 Crescent Avenue	2003 (Anthony Kirk)	Recommended Ineligible for NRHP and CRHR	Outside
P-27-003094	–	Historic Building	3146 Crescent Avenue	2003 (Anthony Kirk)	Recommended Ineligible for NRHP and CRHR	Outside

Source: NWIC 2019, 2022

On ~~June 6, 2019~~, August 23, 2022, ~~as part of a previous study conducted in the DVSP Area,~~ Rincon contacted the Native American Heritage Commission (NAHC) and requested a search of the Sacred Lands File (SLF). ~~As stated above, all the AHO sites are located within the DVSP area. As such, the previous SLF search covered all the AHO sites.~~ The NAHC emailed a response on ~~June 11, 2019~~ October 4, 2022 stating that the SLF search was negative. ~~An updated SLF search was sent to NAHC on August 23, 2022, and the search results are pending.~~

USGS geologic maps indicate that the project is underlain by stabilized dunes and drift sands that date between the terminal Pleistocene and early Holocene (Dibblee and Minch 2007). Humans were known to be present in California as early as the Terminal Pleistocene, thus buried archaeological sites are possible in this area. Soils dating to as far back as the terminal Pleistocene have the potential to contain subsurface archaeological resources, especially in near coastal environments; however, sites dating to this period are generally rare and ephemeral.

Developmental History of the Project Sites

The AHO sites are located along and near the Reservation Road and Del Monte Boulevard corridors in downtown Marina. United States Geological Survey maps indicate the areas comprising and surrounding the sites remained largely undeveloped until around the early 1940s (USGS 1913-1941). An aerial photograph taken in 1941 depicts the area as sparsely developed and generally characterized by moderate-sized residential and/or agricultural properties. However, east of Del Monte Boulevard, a cluster of single-family residential properties was developed along Carmel Avenue and in the vicinity of what is now Palm Avenue. This residential development augmented a handful of what are presumed to have been commercial properties along the east side of Del Monte Boulevard. By 1956, a few properties west of Marina Drive were subdivided for residential use (UCSB Map & Imagery Lab 1941, 1956).

Historical aerial photographs show that, between the late 1950s and 1971, extensive residential and commercial development took place in Marina. New construction was limited on and near the AHO sites but included several residential properties on the south side of Carmel Avenue (west of Busby Lane) and a pair of mobile home parks on the south side of Reservation Road. Sparse commercial development also occurred along Reservation Road (Netronline 1968; UCSB Map & Imagery Lab 1971). In the 1970s and 1980s the area was built out approximately to its current extent. New construction in these years included a substantial expansion of commercial properties along Reservation Road and additional commercial construction southeast of the intersection of Del Monte Boulevard and Reindollar Avenue. In addition, new single- and multi-family residential

properties appeared west of Del Monte Boulevard and along Cypress Avenue (UCSB Map & Imagery Lab 1989). Since the late 1980s, there has been scattered construction in the vicinity of the AHO sites. However, new construction did not substantially change the area's established pattern of development (UCSB Map & Imagery Lab 1989; Netronline 1998, 2005, 2014).

This overall development history is reflected in the DVSP Area dates of construction. Ten of the 23 AHO sites developed with buildings, while the remaining 13 are undeveloped. According to assessor parcel data and historic aerial photographs, all the developed AHO sites contain buildings constructed between 1930 and 1976 (Parcel Quest 2022; NETROnline 2022). Below, Table 8 details the location and construction dates of these properties.

Table 8 Inventory of Developed Affordable Housing Overlay Sites

Address	APN	Construction Date
273 Carmel Avenue	032201004000	1930
283 Carmel Avenue	032201005000	1933
3038 Del Monte Boulevard	032312014000	1963
3070 Del Monte Boulevard	032303015000	1967
3074 Del Monte Boulevard	032303039000	Circa 1956
327 Reservation Road	032121025000	1952
337 Reservation Road	032121006000	1956
365 Reservation Road	032121019000	1976
3078 Sunset Avenue	032291054000	1948
3080 Sunset Avenue	032291053000	1948

Sources: Monterey County Assessor 2022; NETROnline 2022

a. Would the project cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?

Future development activities that could be facilitated by adoption of the proposed project would have a significant impact on historical resources if such activities would cause a substantial adverse change in the significance of a historical resource. Historical resources include properties eligible for listing on the NRHP, CRHR, or for a local register. In addition, as explained in Section 15064.5, "[s]ubstantial adverse change in the significance of an historical resource means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired."

Although there are no specific development projects associated with the proposed project, its implementation would guide development AHO sites. Areas planned for future development under the AHO could potentially contain historical resources. As the AHO sites have not been subject to historical resources surveys, they may contain resources which have not yet been identified. Assessor data and historical aerial photographs indicate that, among the 23 AHO sites, there are 10 properties containing buildings or structures that are 45 or more years of age and therefore have the potential to qualify as a historical resource as defined by CEQA. None of these properties have been subject previously to a historical resources evaluation.

Development under the proposed project could impact presently unknown historical resources through construction activities associated with buildout. Pursuant to §15064.5, impacts to historical resources would be significant if a future project demolished or physically altered in a negative

manner the physical characteristics that justify a resource's eligibility in the CRHR. Under §15064.5(b)(3) however, a project which is found to comply with the Secretary of the Interior's Standards for the Treatment of Historic Properties (Weeks and Grimmer 1995), is generally considered to be mitigated to a level of less than significant. Application of the mitigation measures provided below would ensure impacts to historical resources are less than significant by identifying historical resources during the project planning process and avoiding or minimizing potential impacts as needed.

Mitigation Measures

CR-1 Site-Specific Historical Resources Assessment Report

Any project involving partial or full demolition of a property 45 years of age and older that has not been subject to a previous evaluation or survey at the time of project review shall require preparation of a Site-Specific Historical Resources Assessment. The Site-Specific Historical Resources Assessment Reports shall:

- Follow the practices established by the California Office of Historic Preservation for intensive-level evaluation and be carried out by a preservation professional meeting the Secretary of the Interior's Professional Qualifications Standards for Architectural History or History as defined by the National Park Service and codified in 36 Code of Federal Regulations 61;
- Include a construction chronology of each property and brief discussion of any known design professionals/architects associated with the property's design and construction;
- Consider all applicable aspects of architectural, historic, and sociocultural history, through a thematic historic context section, and apply federal, state, and local criteria of significance to ascertain and confirm historical resource status; and
- Identify and document character-defining features, including of the site and setting, for those properties qualifying as historical resources pursuant to CEQA (i.e., designated or eligible federal, state, or local landmarks or districts).

If the property is found ineligible for the CRHR or NRHP it shall be considered non-historical for the purposes of CEQA and no additional review or mitigation is required. If the property is identified as historical, Mitigation Measure CR-2 shall apply.

CR-2 Treatment of Historical Resources

If historical resources are identified through the survey and evaluation performed pursuant to Mitigation Measure CR-1, the relocation, rehabilitation, or alteration of the resource under the proposed project shall be consistent with the Secretary of the Interior's Standards for the Treatments of Historic Properties (Standards). A report identifying and specifying the treatment of character-defining features and construction activities shall be provided, demonstrating how the project complies with the Standards and avoids the substantial adverse change in the significance of the historical resource as defined by CEQA Guidelines Section 15064.5(b). The report shall be prepared by an architectural historian or historical architect meeting the PQS as defined by 36 CF Part 61 and provided to the City for review and concurrence prior to project approval.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

b. Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?

The cultural resources records search and Native American scoping did not result in the identification of known archaeological resources on any of the AHO sites. However, the project area has not been fully surveyed for archaeological resources and their presence cannot be ruled out. The project area is underlain by soils that date to periods of potential human occupation, thus archaeological sites have the potential to be present both on the surface and subsurface of the AHO sites. In addition, previous work has noted buried cultural resources within the region.

Effects on archaeological resources can only be determined once a specific project has been proposed because the effects are highly dependent on both the individual project site conditions and the characteristics of the proposed ground-disturbing activity. Ground-disturbing activities associated with development facilitated by the AHO, particularly in areas that have not previously been developed with urban uses, have not been studied through a cultural resources investigation, or when excavation depths exceed those previously attained, have the potential to damage or destroy previously-unknown historic or prehistoric archaeological resources that may be present on or below the ground surface. Consequently, damage to or destruction of previously unknown sub-surface cultural resources could occur as a result of development under the proposed AHO. Thus impacts to archaeological resources are potentially significant. The following mitigation measures are required to bring potential impacts to less than significant levels.

Mitigation Measures

CR-4 Archaeological Resources Investigation

At the time of application for land use permits that involve grading, trenching, or other ground disturbance in native soil with the potential for encountering unknown archaeological resources, the project applicant shall retain a qualified archaeologist meeting the Secretary of the Interior standards in archaeology to complete a Phase 1 cultural resources assessment of the development site. A Phase 1 cultural resources assessment shall include an archaeological pedestrian survey of the development site, if possible, and sufficient background archival research and field sampling to determine whether subsurface prehistoric or historic remains may be present. Archival research shall include a current (no more than one-year old) records search from the NWIC and a SLF search conducted with the NAHC.

Identified prehistoric or historic archaeological remains shall be avoided and preserved in place where feasible. Where preservation is not feasible, the significance of each resource shall be evaluated for significance and eligibility for listing in the CRHR through a Phase 2 evaluation. A Phase 2 evaluation shall include any necessary archival research to identify significant historical associations as well as mapping of surface artifacts, collection of functionally or temporally diagnostic tools and debris, and excavation of a sample of the cultural deposit to characterize the nature of the sites, define the artifact and feature contents, determine horizontal boundaries and depth below surface, and retrieve representative samples of artifacts and other remains.

Cultural materials collected from the sites shall be processed and analyzed in the laboratory according to standard archaeological procedures. The age of the materials shall be determined using radiocarbon dating and/or other appropriate procedures; lithic artifacts, faunal remains, and other cultural materials shall be identified and analyzed according to current professional standards. The significance of the sites shall be evaluated according to the criteria of the CRHR. The results of the investigations shall be presented in a technical report following the standards of the California

Office of Historic Preservation publication "Archaeological Resource Management Reports: Recommended Content and Format (1990 or latest edition)" (http://ohp.parks.ca.gov/pages/1054/files/armr.pdf). Upon completion of the work, all artifacts, other cultural remains, records, photographs, and other documentation shall be curated an appropriate curation facility. All fieldwork, analysis, report production, and curation shall be fully funded by the applicant.

If the resources meet CRHR significance standards, the City shall ensure that all feasible recommendations for reduction of archaeological impacts are incorporated into the final design and permits issued for development. If necessary, Phase 3 data recovery excavation, conducted to exhaust the data potential of significant archaeological sites, shall be carried out by a qualified archaeologist meeting the Secretary of the Interior's standards for archaeology according to a research design reviewed and approved by the City prepared in advance of fieldwork and using appropriate archaeological field and laboratory methods consistent with the California Office of Historic Preservation Planning Bulletin 5 (1991), Guidelines for Archaeological Research Design, or the latest edition thereof.

As applicable, the final Phase 1 Inventory, Phase 2 Testing and Evaluation, and/or Phase 3 Data Recovery reports shall be submitted to the City prior to issuance of construction permit. Recommendations contained therein shall be implemented throughout all ground disturbance activities.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

c. Would the project disturb any human remains, including those interred outside of formal cemeteries?

The discovery of human remains is always a possibility during ground disturbing activities. If human remains are found, existing regulations outlined in the State of California Health and Safety Code Section 7050.5 state no further disturbance may occur until the County Coroner has made a determination of origin and disposition pursuant to PRC Section 5097.98. In the event of an unanticipated discovery of human remains, the County Coroner must be notified immediately. If the human remains are determined to be prehistoric, the coroner will notify the Native American Heritage Commission, which will determine and notify a most likely descendant (MLD). The MLD must complete the inspection of the site within 48 hours of being granted access and provide recommendations as to the treatment of the remains to the landowner. With adherence to existing regulations, impacts to human remains would be less than significant.

LESS THAN SIGNIFICANT IMPACT

6 Energy

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

California is one of the lowest per capita energy users in the United States, ranked 48th in the nation, due to its energy efficiency programs and mild climate (United States Energy Information Administration [EIA] 2020. According to the California Energy Commission (CEC), California consumed 279,510 gigawatt-hours (GWh) of electricity and 12,331 million U.S. therms of natural gas in 2020 (CEC 2020a; 2020b). In addition, Californians consume approximately 18.8 billion gallons of motor vehicle fuels per year (Federal Highway Administration 2019). The single largest end-use sector for energy consumption in California is transportation (34.0 percent), followed by industry (24.6 percent), residential (21.8 percent), and commercial (19.6 percent)(17.9 percent) (EIA 2020).

Most of California's electricity is generated in-state with approximately 34 percent imported from the northwest and southwest regions of the country in 20210 In addition, approximately 30 percent of California's electricity supply comes from renewable energy sources, such as wind, solar photovoltaic, geothermal, and biomass (CEC 2021). Adopted on September 10, 2018, Senate Bill (SB) 100 accelerates the state's Renewables Portfolio Standards (RPS) Program by requiring electricity providers to increase procurement from eligible renewable energy resources to 33 percent of total retail sales by 2020, 60 percent by 2030, and 100 percent by 2045.

The City of Marina has not adopted a local plan for renewable energy or energy efficiency nor a climate action plan. However, the Marina General Plan (2010) contains a measure that addresses energy resources, which outlined under item (b) below.

a. Would the project result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

Construction

Demolition and construction activities facilitated by the AHO would require energy resources primarily in the form of fuel consumption to operate heavy equipment, light-duty vehicles, machinery, and generators. Temporary power may also be provided to construction trailers or electric construction equipment. Future construction would also use building materials that would

require energy use during the manufacturing and/or procurement of those materials; however, as Section 15126.2(b) of the *CEQA Guidelines* states, "This [energy] analysis is subject to the rule of reason and shall focus on energy use that is caused by the project." In addition, it is reasonable to assume that manufacturers of building materials such as concrete, steel, lumber, or other building materials would employ energy conservation practices in the interest of minimizing the cost of doing business. Therefore, the consumption of energy required for the manufacturing and/or procurement of building and construction materials is not within the scope of this analysis.

Table 9 summarizes the anticipated energy consumption from construction equipment and vehicles, including construction worker trips to and from the AHO sites. As shown therein, construction of the project would require approximately 109,098 gallons of gasoline and 104,999 gallons of diesel fuel, or Energy use during demolition and construction would be temporary in nature, and construction equipment used would be typical of similar-sized construction projects in the region. In addition, construction contractors would be required to comply with applicable CARB regulations, as well as the provisions of 13 California Code of Regulations Sections 2449 and 2485, which restrict the idling of heavy-duty diesel motor vehicles and govern the accelerated retrofitting, repowering, or replacement of heavy-duty diesel on- and off-road equipment. Construction equipment would also be subject to the USEPA Construction Equipment Fuel Efficiency Standard, which would minimize inefficient fuel consumption. Electrical power consumed during demolition and construction activities would be supplied from existing electrical infrastructure in the area.

Table 9 Fuel Consumption During Construction

	Fuel Consumption (gallons)	
Source	**Gasoline**	**Diesel**
Construction Equipment & Hauling Trips	–	104,999
Construction Worker Vehicle Trips	109,098	–

Source: Appendix E

Overall, demolition and construction activities would not be expected to have any adverse impact on available electricity supplies or infrastructure. Demolition and construction activities would utilize fuel-efficient equipment consistent with state and federal regulations and would comply with state measures to reduce the inefficient, wasteful, or unnecessary consumption of energy. In addition, per applicable regulatory requirements such as 2019 CalGreen or subsequently adopted versions, construction contractors would be required to comply with construction waste management practices to divert a minimum of 65 percent of construction and demolition debris. These practices would result in efficient use of energy necessary to construct development facilitated by the AHO. Furthermore, in the interest of cost efficiency, construction contractors would not be anticipated to utilize fuel in a manner that is wasteful or unnecessary. Therefore, demolition and construction activities associated with the AHO would not result in potentially significant environmental effects due to the wasteful, inefficient, or unnecessary consumption of energy, and impacts would be less than significant.

Operation

Energy demand from operation of development facilitated by the AHO would include fuel consumed by passenger vehicles; natural gas consumed for heating and cooking in residential buildings, and electricity consumed by residential buildings including but not limited to lighting, water conveyance, and air conditioning.

Net new vehicle miles traveled (VMT) related to the AHO would require approximately 517,930 gallons of gasoline and 95,783 gallons of diesel fuel (see Appendix E for energy calculation sheets). The siting of the AHO sites within the Downtown area would be intended to increase use of transit, which would decrease personal vehicle use of future residents. Vehicles driven by future residents would also be subject to increasingly stringent federal and state fuel efficiency standards, further minimizing the potential for the inefficient consumption of vehicle fuels. As a result, vehicle fuel consumption resulting from development facilitated by the AHO would not be wasteful, inefficient, or unnecessary.

In addition to transportation energy use, development facilitated by the AHO would require permanent grid connections for electricity and natural gas. Development facilitated by the AHO would consume approximately 3,472,050 kWh, or 11,846 million British thermal units (MMBtu) of electricity per year, and approximately 7,527 MMBtu of natural gas per year (see Appendix B for CalEEMod results). Operational energy consumption is summarized in Table 10.

Table 10 Estimated Project Annual Transportation Energy Consumption

Source [1]	Energy Consumption[2]	
Gasoline	517,930 gallons	56,862 MMBtu
Diesel	95,783 gallons	12,209 MMBtu
Electricity	3,472,050 kWh	11,847 MMBtu
Natural Gas Usage	7,527 MMBtu	7,527 MMBtu
Total Project Energy Consumption		**88,445 MMBtu**

MMBtu = million metric British thermal units; GWh = gigawatt hours

[1] The estimated number of average daily trips associated with the project is used to determine the energy consumption associated with fuel use from operation of the project. According to CalEEMod calculations (see Appendix A), the project would result in approximately 6,155,781 annual VMT.

[2] Energy consumption is converted to MMBtu for each source.

See Appendix E for transportation energy calculation sheets and Appendix B for CalEEMod output results for electricity and natural gas usage.

Construction of the proposed residential buildings would comply with the 2019 California Building Energy Efficiency Standards for Residential and Non-residential Buildings and CALGreen (California Code of Regulations Title 24, Parts 6 and 11), or later versions as they are published. These standards require the provision of electric vehicle supply equipment, water-efficient plumbing fixtures and fittings, recycling services, solar panels on low-rise residential development, solar-readiness on commercial development, and other energy-efficient measures that would reduce the potential for the inefficient use of energy. Furthermore, Central Coast Community Energy (3CE), which would be the default electricity provider for the AHO sites, provides carbon-free electricity to all of its customers. As a result, operation of development facilitated by the AHO would not result in potentially significant environmental effects due to the wasteful, inefficient, or unnecessary consumption of energy, and impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

b. Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

As discussed above, 3CE would be the default electricity provider for the AHO sites, and provides carbon-free electricity to all of its customers. In addition, SB 100 mandates 100 percent clean electricity for California by 2045. Because development facilities by the AHO would be powered by the existing electricity grid, the project would be powered by renewable energy provided by 3CE and mandated by SB 100 and would not conflict with this regulation. Furthermore, the project would be required to comply with California Building Energy Efficiency Standards for Residential and Non-residential Buildings and CALGreen (California Code of Regulations Title 24, Parts 6 and 11), which contain energy efficiency requirements. Table 11 summarizes the project consistency with the goals and policies of the Marina General Plan related to energy consumption. As discussed therein, the AHO would be consistent with the applicable goals and policies related to renewable energy and energy efficiency and would not conflict with or obstruct state or local plans for renewable energy and energy efficiency. Therefore, no impact would occur.

Table 11 Consistency with Marina General Plan Energy-Related Goals and Policies

Marina General Plan Goal/Policy	Discussion
Community Goal 1.18 During the preparation of this General Plan the following goals, phrased in the form of planning principles, provided the basis for developing appropriate land use, infrastructure, and community design proposals for specific areas of the city, and for judging among several citywide General Plan alternatives and providing direction for selecting the preferred alternative. As incorporated into the General Plan, these framework goals provide the overall direction necessary to ensure that, as it grows, the city will be well functioning and attractive; that it will balance the needs of residents and business; and that appropriate use will be made of its natural, human and economic resources: 6. Community development which avoids or minimizes to the greatest extent possible the consumption or degradation of non-renewable natural resources including natural habitats, water, energy, and prime agricultural land.	**Consistent** As discussed above, development facilitated by the AHO would be required to comply with California Building Energy Efficiency Standards for Residential and Non-residential Buildings and CALGreen (California Code of Regulations Title 24, Parts 6 and 11), or later versions as they are published. These standards require the provision of electric vehicle supply equipment, water-efficient plumbing fixtures and fittings, recycling services, solar panels on low-rise residential development, and other energy-efficient measures that would reduce the potential for the inefficient use of energy. Development within the AHO sites would also be served by 3CE, which provides carbon-free electricity to all of its customers. As a result, development facilitated by the AHO would not consume a substantial amount of energy. The project would be consistent with this policy.
Housing Policy 5.2.2 The policies for the 2015 – 2023 are carried forward and modified from the 2008-2014 Housing Element: 6. Support and initiate, where feasible, public and private energy conservation programs that would reduce the energy needs and costs of housing in Marina.	**Consistent** Construction of the residential buildings facilitated by the AHO would comply with the applicable 2019 California Building Energy Efficiency Standards and CALGreen (California Code of Regulations Title 24, Parts 6 and 11), or later versions as they are published. Therefore, construction of new housing facilitated by the AHO would be environmentally responsible and built to development and construction standards that conserve water and energy. The project would be consistent with this policy.

Source: City of Marina 2010

NO IMPACT

7 Geology and Soils

	Potentially Significant Impact	Less than Significant with 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:				
1. 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?	☐	☐	☐	■
2. Strong seismic ground shaking?	☐	☐	■	☐
3. Seismic-related ground failure, including liquefaction?	☐	☐	■	☐
4. Landslides?	☐	☐	■	☐
b. Result in substantial soil erosion or the loss of topsoil?	☐	☐	■	☐
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?	☐	☐	■	☐
d. Be located on expansive soil, as defined in Table 1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	☐	■	☐
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?	☐	☐	☐	■
f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	■	☐	☐

Topography and Geologic Conditions

Marina encompasses a roughly triangular-shaped area of land along the southeastern shore of a broad, crescent-shaped embayment in the California shoreline that forms Monterey Bay. Topography in the City consists of coastal dunes and low, rolling hills that step up gradually from the coastline to maximum elevations of about 250 feet. A 60 to 120-foot high bluff that forms the southern border of the Salinas River flood plain marks the eastern boundary of the City. To the north, the city extends to the mouth of the Salinas River and incorporates a broad, low-lying flood plain along the southwestern bank of the river. The project area is located roughly in the center of Marina, where topography is gently sloped. One soil type occurs at the AHO sites: baywood sand at 2 to 15 percent slopes (Figure 7).

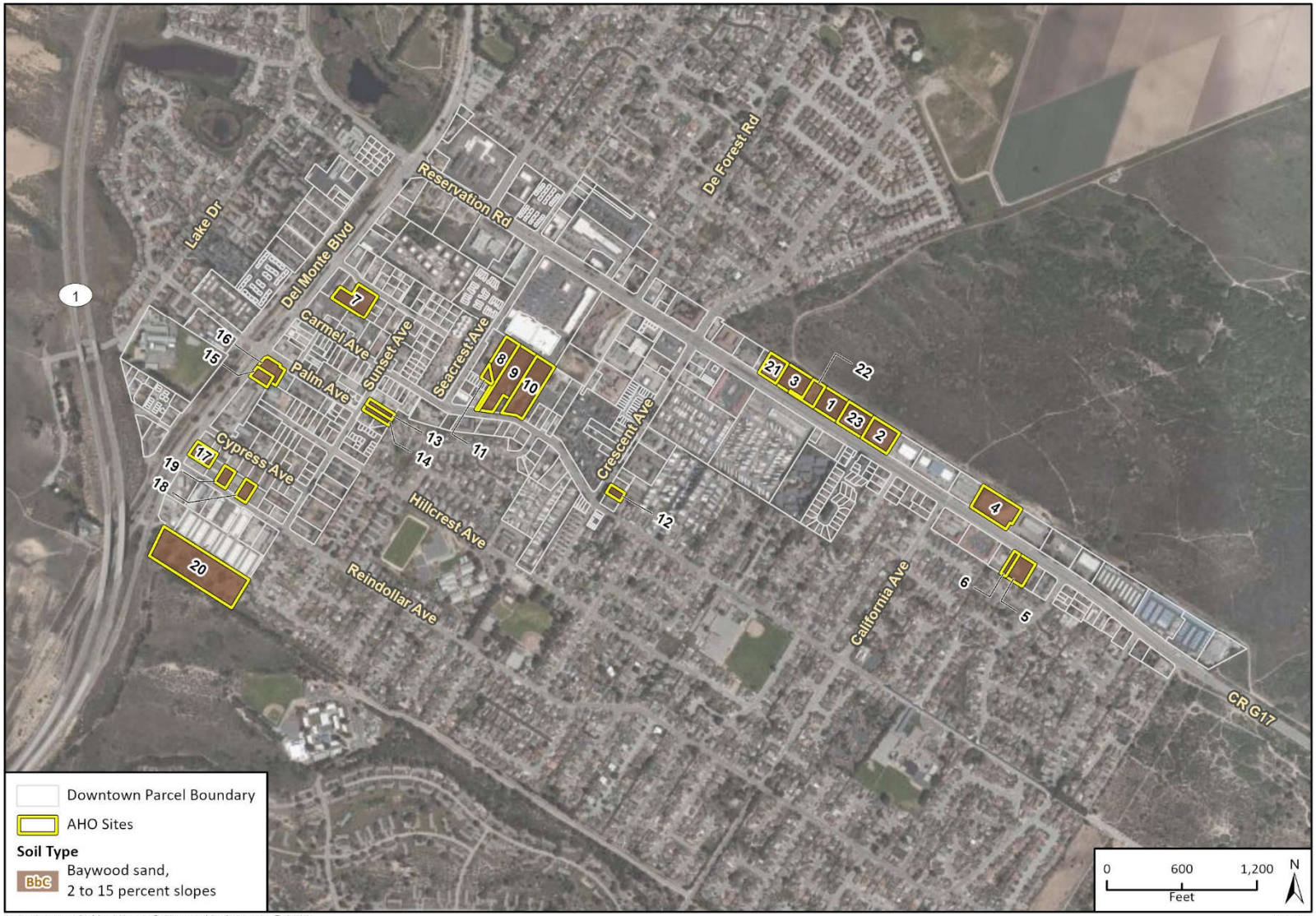
Marina is situated in the central portion of the California Coast Ranges. A large, northwest trending, fault-bounded elongate of prism of granitic and metamorphic basement rocks underlie the City and are known collectively as the Salinian Block. Overlying the granitic and metamorphic basement rocks is a sequence of dominantly marine sediments of Cretaceous to Pliocene age and non-marine sediments of Pliocene to Pleistocene age. All but the youngest of these rocks show evidence of deformation, a result of the active tectonic environment of coastal California.

The Salinian Block is itself cut internally by many smaller faults that divide it into several sub-blocks. Some of the sub-blocks, such as the Santa Lucia Mountains, south of the city, have been uplifted and form young, rugged mountain ranges. Other portions of the Salinian Block are down-dropped and form sedimentary basins. The project are rests in the down-dropped basement block that that forms the Monterey embayment. Granitic and metamorphic basement rocks that crop out at elevations of more than 2,000 feet above sea level some ten miles south of the city occur at depths of a few thousand feet or more beneath the planning area. Overlying the granitic basement are Miocene- to Pleistocene-age sedimentary rocks a few thousand feet thick, including the following in ascending order:

- Monterey Foundation (a sequence of marine shale of Miocene age resting on granitic basement)
- Purisima Formation (consisting of Pliocene-age sandstone and siltstone of marine origin)
- Plio-Pleistocene Paso Robles Formation (a sequence of alluvial fan and river deposits)
- Pleistocene-age Aromas Sands (made up of eolian [wind-blown] sand and river deposits)
- Late Pleistocene to Modern fluvial sediment deposited by the Salinas River
- Sand dunes that formed in approximately the last 100,000 years that form the primary, surficial geology in Marina

The U.S. Geological Survey (USGS) defines active faults as those that have had surface displacement within Holocene time (about the last 11,000 years). Surface displacement can be recognized by the existence of cliffs in alluvium, terraces, offset stream courses, fault troughs and saddles, the alignment of depressions, sag ponds, and the existence of steep mountain fronts. Potentially active faults are those that have had surface displacement during the last 1.6 million years. Inactive faults have not had surface displacement within the last 1.6 million years. The only fault in the immediate vicinity of the AHO sites is the Reliz fault (Figure 8). The Reliz fault lies approximately 1,200 feet to the northeast of the closest AHO sites (including AHO sites 3 and 21). The potential for surface rupture from either of these faults is therefore present. Fault rupture and/or seismic shaking could be harmful as it could cause failure and collapse of poorly built structures or cause non-structural building elements to fall.

Figure 7 AHO Site Soil Type



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Soils data provided by Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Soil Survey Geographic (SSURGO) Database 2019.

AHO Sites
Fig 11 AHO Sites and Soil Types

Figure 8 Faults near AHO sites

Imagery provided by Microsoft Bing and its licensors © 2022.
Fault data provided by Bryant, W. A. (compiler), 2005, Digital Database of Quaternary and Younger Faults from the Fault Activity Map of California, version 2.0: CGS.

AHO Sites
Fig 12 AHO Sites and Fault Zones

For example, utility lines (electrical and natural gas) could break and present a hazard to occupants of buildings, vehicles, and pedestrians.

Regulatory Setting

Local

CITY OF MARINA GENERAL PLAN

The Community Land Use element of the Marina General Plan prohibits development on land where a significant potential threat to life or property from very high seismic shaking or seismically induced ground failure, flooding, or landslides (City of Marina 2010). The policies of that element incorporate provisions and policies of the City's certified Local Coastal Program (1982), which is being updated (City of Marina 2019). The Public Health and Safety section of the General Plan further indicates that "new development shall be permitted in areas of high seismic risk only when adequate engineering and design measures can be implemented in accordance with a geotechnical investigation and report" (City of Marina 2010). Finally, the General Plan mandates specific safeguards to address design and engineering to mitigate geologic and seismic hazards in specific locations that include zones in or adjacent to the Specific Plan Area.

MARINA MUNICIPAL CODE

Chapter 15 of the Marina Municipal Code adopts the California Building Code (CBC) by reference to cover requirements for seismic safety. As part of the project approval process, the project proponent must prepare a tentative project map that includes, among other items, a soils report prepared by a registered geotechnical engineer that includes test borings upon which the report is based and recommended corrective actions, where necessary. Finally, erosion control and improvements to be constructed are also part of the construction permit application process.

Impact Analysis

a.1. Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving 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?

Faults generally produce damage in two ways: ground shaking and surface rupture. Fault displacement generates seismic ground shaking, the greatest cause of widespread damage during an earthquake. Surface rupture affects a narrow area above an active fault, and ground shaking covers a wide area and is influenced, to a large extent, by the distance of the site to the seismic source, soil conditions, and depth to groundwater. Ground shaking is discussed below under threshold a.2. As shown in Figure 8, the AHO sites are near, but not overlapping, the Reliz Fault Zone. Because there are no active faults within the AHO sites, there is no potential for risk of loss injury, or death involving rupture of a known earthquake fault. There would be no impact.

NO IMPACT

a.2. Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking?

The AHO sites are located in seismically active region of California but are not located in an Alquist-Priolo Earthquake Fault Zone (California Geologic Survey 2019). As shown in Figure 8, the downtown area is located approximately 1,000 feet south and west of the Reliz Fault Zone. Other major active faults capable of producing large magnitude events with a high seismic activity rate in the region include the San Andreas Fault, the Palo Colorado-San Gregorio Fault, and the Monterey Bay Offshore Fault Zone. The Reliz, Chupines, and the Monterey Bay-Tularcitos faults are in Marina's immediate vicinity.

Despite the potential for ground shaking, individual projects facilitated by the AHO would be required meet the current CBC seismic-resistance standards that ensure new structures are engineered to withstand the expected ground acceleration at a given location. The City of Marina also has policies and standards in place that regulate construction in areas subject to ground shaking. In accordance with General Plan Policy 4.102, new development may be approved only if it can be demonstrated that the project site is physically suitable and the development would neither create nor significantly contribute to geologic instability or geologic hazards in accordance with a geotechnical investigation and report (City of Marina 2010).

Marina Municipal Code requires that building applications include a preliminary soils report prepared by a geotechnical engineer. The City of Marina also adopted the CBC; Section 1803.1.1.3 of the CBC states that the building department of each locality (in this case the Marina Building Department) shall approve a soils report if it determines that the recommended action is likely to prevent structural damage in each dwelling.

Compliance with all applicable provisions of state and local construction and designs standards, General Plan Policy 4.102, and implementation of the recommendations of the preliminary soils report prepared for each project facilitated by the AHO would ensure that potential impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

a.3. Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction?

The AHO sites are located in a seismically active area and strong seismic shaking is expected to occur within the implementation horizon of the project. Seismic shaking can result in geologic hazards, including liquefaction. Non-saturated dry sands may settle and densify when subjected to earthquake shaking. Liquefaction is a phenomenon in which the strength and stiffness of saturated soil is rapidly reduced, either by seismic shaking or other sudden loading. Severe shaking of the soil can increase the water pressure in the soil, allowing the soil particles to move independently of one another. The soil consequently behaves more like a fluid than a solid, which could result in damage to building foundations and structures. According to the Relative Liquefaction Potential map in the Monterey County General Plan EIR, the entire city of Marina is characterized as having a low relative liquefaction susceptibility (Monterey County 2008).

As described above, the Marina Building Department shall approve a soils report if it determines that the recommendation action is likely to prevent structural damage. Therefore, pursuant to Marina Municipal Code and the CBC, recommendations included in future soils reports prepared for development within AHO sites would be incorporated into the design of the project and each residence, and verified by the City prior to issuance of a building permit. Compliance with Marina

Municipal Code and the CBC, combined with the low relative liquefaction susceptibility, would result in less than significant impacts related to seismic-related ground failure and liquefaction.

LESS THAN SIGNIFICANT IMPACT

a.4. Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving landslides?

Topography at the AHO sites are relatively flat. Based on the topography and according to the Marina General Plan EIR, landslide risk is low in the AHO area (City of Marina 2000). The 2019 CBC includes specific requirements to address landslide hazards. New development facilitated by the AHO would conform to the CBC, as amended at the time of permit approval and as required by law. Compliance with the CBC combined with the area's low relative landslide susceptibility would result in less than significant impacts related to landslides.

LESS THAN SIGNIFICANT IMPACT

b. Would the project result in substantial soil erosion or the loss of topsoil?

The coastal areas of Marina are subject to severe erosion problems from highly erosive, windblown sand (County of Monterey 2008). The coastline is low relief and much of the erosion is due to movement of unstable, wind-blown sand, especially where vegetation is not in place. This erosion can affect beachfront property, particularly during winter storms when high surf and wave action are concentrated and redistribute the sand via littoral drift with no new sand to reform the beach.

The AHO site closest to the Pacific Ocean, Site No. 20, is approximately 0.5 mile from the coastline. Most AHO sites are 0.75 mile or further from the ocean. Projects implemented under the AHO would not substantially contribute to coastal soil erosion. Individual projects could have localized soil erosion effects, but such projects would be permitted individually and subject to all applicable erosion control regulations of the Marina Municipal Code. These include Section 8.46.080, which requires erosion prevention and construction site management practices. Therefore, compliance with applicable regulations would reduce soil erosion and topsoil loss impacts to a less than significant level.

LESS THAN SIGNIFICANT IMPACT

c. Would the project 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?

d. Would the project be located on expansive soil, as defined in Table 1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?

Expansive soils shrink and swell based on moisture level in the clay minerals that make these soils expand and contract. Soils with moderate or high expansion potential are susceptible to shrinking and swelling due to fluctuations in moisture content and are a common cause of foundation deterioration, pavement damage, cracking of concrete slabs, and shifting of underground utilities. According to the CBC, soils with an expansion index exceeding 91 are considered highly expansive; such soils would typically have a liquid limit of 40 or more and a plasticity index exceeding 15. These soils are undesirable for use as engineered fill or subgrade directly underneath foundations or pavement, and must be replaced with non-expansive engineered fill or require treatment to mitigate their expansion potential. Soil liquefaction occurs when ground shaking from an earthquake causes a sediment layer saturated with groundwater to lose strength and become fluid,

similar to quicksand. Lateral spreading can occur when a liquefied soil moves toward a free slope face during the cyclic earthquake loading. Liquefaction-induced lateral spreading can also occur on mild slopes (flatter than 5 percent) underlain by loose sands and a shallow water table. If liquefaction occurs, the unsaturated overburden soil can slide as intact blocks over the lower, liquefied deposit, creating fissures and scarps.

Development facilitated by the AHO would result in more dense development, thereby exposing more persons and structures to geological hazards. Landslides resulting in earth and debris flow could result in structural damage or complete loss of structures, as well as injuries or death to persons. The AHO sites are relatively flat, however, and development would be located in areas where there is little or no risk of slope instability.

The expansion potential (shrink-swell potential), liquefaction, and lateral spreading risk for the AHO sites is low. The only soil type at the AHO sites is Baywood Series, with 2 to 15 percent slopes (Figure 7). This soil has a slight to moderate water erosion hazard and when vegetation or other ground cover is removed, is subject to soil blowing and water erosion (Natural Resources Conservation Service 2014).

The CBC includes requirements to address soil stability-related hazards. Typical measures involve removing, replacing soil with the proper fill selection, and compacting the soil. For individual projects involving substantial ground disturbance, soil reports prepared by a geotechnical engineer would be required by the CBC and Marina Municipal Code to ensure conformance with City standards. Therefore, compliance with existing regulations would reduce impacts to a less than significant level with regard to landslide, lateral spreading, subsidence, liquefaction, or collapse.

LESS THAN SIGNIFICANT IMPACT

e. Would the project 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?

Development facilitated by the AHO would not use on-site septic systems for wastewater treatment. Section 19, *Utilities and Service Systems*, discusses the conveyance and treatment of wastewater in the City of Marina. There would be no impact regarding the use of septic tanks or alternative wastewater disposal systems.

NO IMPACT

f. Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

The paleontological sensitivity of the geologic units that underlie the AHO sites was evaluated using the results of the paleontological locality search and review of existing information in the scientific literature concerning known fossils within those geologic units. Rincon examined fossil collections records from the University of California Museum of Paleontology (UCMP) online database, which contains known fossil localities in Monterey County.

Following the literature review and museum record search, a paleontological sensitivity classification was assigned to the geologic units underlaying the AHO sites. The potential for impacts to significant paleontological resources is based on the potential for ground disturbance to directly impact paleontologically sensitive geologic units. The Society of Vertebrate Paleontology (SVP) (2010) has developed a system for assessing paleontological sensitivity and describes sedimentary

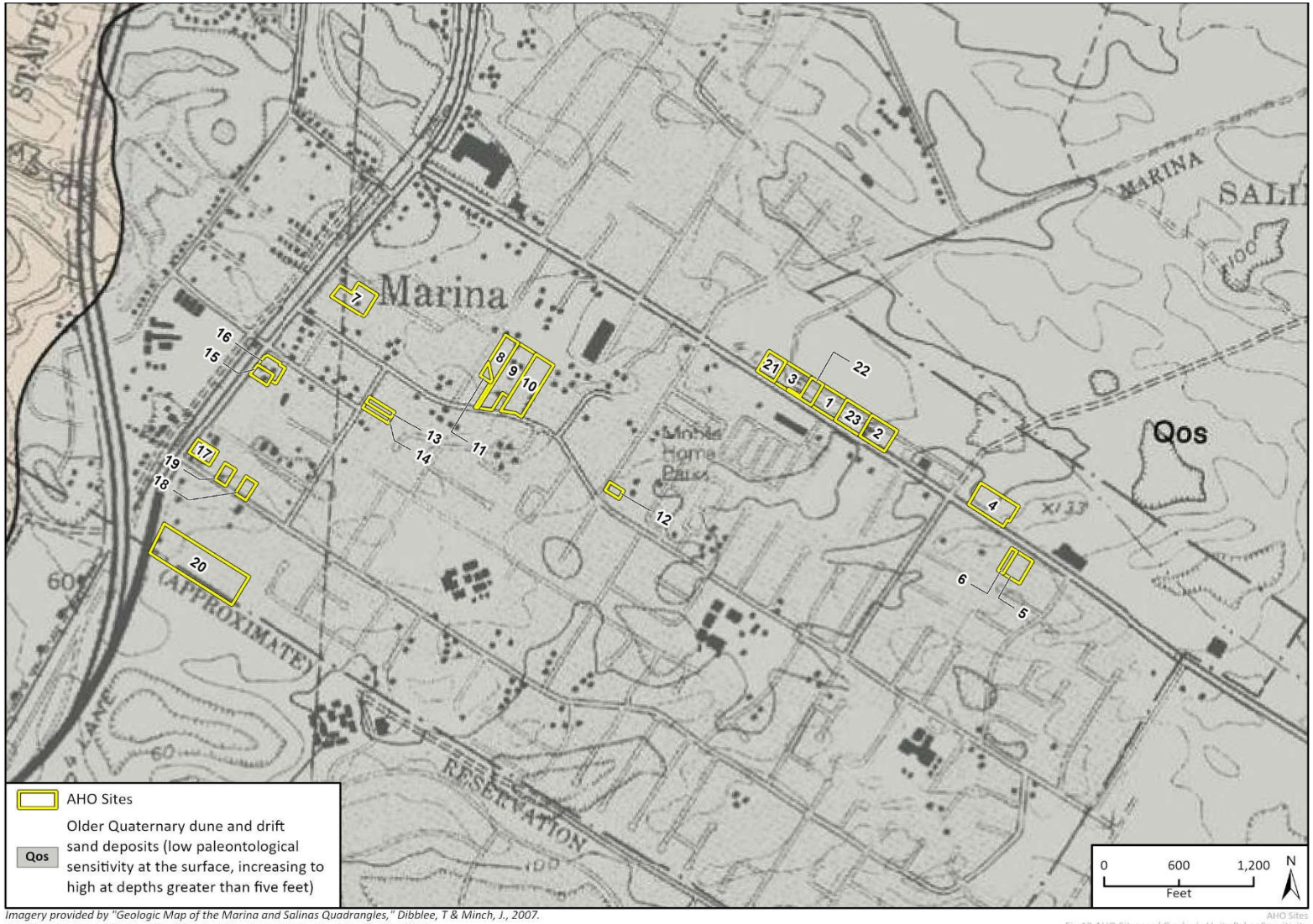
rock units as having high, low, undetermined, or no potential for containing scientifically significant nonrenewable paleontological resources. This criterion is based on rock units within which vertebrate or significant invertebrate fossils have been determined by previous studies to be present or likely to be present.

The AHO sites are situated in the Coast Ranges Geomorphic Province, one of eleven major provinces in the California (California Geological Survey 2002). A geomorphic province is a region of unique topography and geology that is distinguished from other regions based on its landforms and geologic history. The Coast Ranges province is bounded to the east by the Great Valley, to the northeast by the Klamath Mountains, to the south by the Transverse Ranges, and to the west by the Pacific Ocean. According to geologic mapping by Dibblee and Minch (2007), the AHO sites are entirely underlain by older Quaternary dune and drift sand deposits (Qos). Characterized by poorly or medially-developed soils, older stabilized dune sands comprise the majority of the surficial geology of the City of Marina. These sediments date to the late Holocene or early Pleistocene, and consist of weakly-consolidated, well-sorted sand that has been stabilized through erosional action and soil formation (Dupre and Tinsley 1980).

Older Quaternary sedimentary deposits have a well-documented record of abundant and diverse vertebrate fauna throughout California, including Monterey County. A search of the paleontological locality records at the UCMP resulted in no previously recorded fossil localities at the AHO sites however, several vertebrate localities have been recorded nearby in similar deposits. The UCMP has records of seventeen fossil specimens from Pleistocene-aged sediments in Monterey County. The closest of these include a camel (*Camelops*) recovered from Moss Landing and oysters (*Osteria*) from Elkhorn Slough, just north of Marina (UCMP 2019). Other Pleistocene-aged fossils recovered from Monterey County are horses (*Equus*), ground sloth (*Glossotherium*), and bison (*Bison*), among others (Hoppe et al. 2003; UCMP 2019). Depth of recovery is unreported for any of these localities. Older Quaternary dune and drift sand deposits (Qos) have the potential to contain buried intact paleontological resources at moderate depths because the unit has proven to yield significant vertebrate fossils near the AHO sites (UCMP 2019). The depths at which these units become conducive for fossil preservation is highly variable, but generally does not occur at depths of less than five feet. Consequently, aeolian sediments within the project sites (Qos) are assigned a low paleontological sensitivity at the surface, increasing to a high paleontological sensitivity at depths greater than five feet (SVP 2010). Figure 9 depicts the surficial geologic unit within the AHO sites and their immediate vicinity, as well as the paleontological sensitivity within the bounds of the project. As shown therein, all the AHO sites are underlain by Qos.

Ground disturbance to intact geologic units within AHO sites is mapped as Older Quaternary sedimentary deposits (Qos) have the potential to impact paleontological resources at depths greater than five feet. Because all the AHO sites are underlain by Qos, construction activities associated with any future project facilitated by the AHO may result in the destruction, damage, or loss of undiscovered scientifically-important paleontological resources. The implementation of Mitigation Measure GEO-1 would reduce impacts to paleontological resources to a less than significant level by including an implementation program requiring paleontological resource studies for projects that would require excavation greater than five feet and implementation of further requirements to avoid or reduce impacts to such resources on a project-by-project basis.

Figure 9 Geologic Unit and Paleontological Sensitivity of the AHO Sites



Imagery provided by "Geologic Map of the Marina and Salinas Quadrangles," Dibblee, T & Minch, J., 2007.
Additional data provided by City of Marina Downtown Vitalization Specific Plan 2019.

AHO Sites
Fig 13 AHO Sites and Geologic Units Paleo Sensitivity

Mitigation Measures

GEO-1 Paleontological Resources Monitoring and Mitigation

The City of Marina shall require the following specific requirements for individual AHO projects that would require excavation exceeding five feet:

1. Prior to excavations exceeding five feet, a qualified professional paleontologist shall be retained to direct all mitigation measures related to paleontological resources. A qualified professional paleontologist is defined by the SVP standards as an individual preferably with an M.S. or Ph.D. in paleontology or geology who is experienced with paleontological procedures and techniques, who is knowledgeable in the geology of California, and who has worked as a paleontological mitigation project supervisor for a least two years (SVP 2010).
2. The qualified professional paleontologist shall design a Paleontological Resources Mitigation and Monitoring Program (PRMMP) for the project, which outlines the procedures and protocol for conducting paleontological monitoring and mitigation. Monitoring shall be conducted by a qualified paleontological monitor who meets the minimum qualifications per standards set forth by the SVP. The PRMMP shall address the following procedures and protocols:
   - Timing and duration of monitoring
   - Procedures for work stoppage and fossil collection
   - The type and extent of data that should be collected with any recovered fossils
   - Identify an appropriate curatorial institution
   - Identify the minimum qualifications for qualified paleontologists and paleontological monitors
   - Identify the conditions under which modifications to the monitoring schedule can be implemented
   - Details to be included in the final monitoring report.
3. Prior to the start of construction, the qualified paleontologist or his or her designee shall conduct a paleontological Worker Environmental Awareness Program (WEAP) training for construction personnel regarding the appearance of fossils and the procedures for notifying paleontological staff should fossils be discovered by construction staff.
4. Full-time paleontological monitoring shall be conducted during ground disturbing construction activities (i.e., grading, trenching, foundation work) exceeding five feet, pursuant to the PRMMP. Paleontological monitoring is not required for any construction activities that do not exceed depths of less than five feet. If the qualified paleontologist determines that full-time monitoring is no longer warranted, based on the specific geologic conditions at the surface or at depth, he/she may recommend that monitoring be reduced to periodic spot-checking or cease entirely.
5. In the event of a fossil discovery by the paleontological monitor or construction personnel, all work in the immediate vicinity of the find shall cease. The qualified paleontologist shall evaluate the find before restarting construction activity in the area. If it is determined that the fossil(s) is (are) scientifically significant, the qualified paleontologist shall complete the following conditions to mitigate impacts to significant fossil resources:
   a. The paleontological monitor shall evaluate the discovery and determine if the fossil may be considered significant. If the fossils are determined to be potentially significant, the

qualified paleontologist shall recover them following standard field procedures for collecting paleontological as outlined in the PRMMP. If fossils are discovered, the qualified paleontologist shall recover them as specified in the project's PRMMP.

b. Once salvaged, significant fossils shall be prepared to a curation-ready condition, and curated in a scientific institution with a permanent paleontological collection.

c. Upon completion of ground disturbing activity (and curation of fossils if necessary) the qualified paleontologist should prepare a final mitigation and monitoring report outlining the results of the mitigation and monitoring program. The report shall be submitted to the City of Marina.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

8 Greenhouse Gas Emissions

	Potentially Significant Impact	Less than Significant with 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?	☐	☐	■	☐
b. Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	■	☐

Climate Change and Greenhouse Gases

Climate change is the observed increase in the average temperature of the earth's atmosphere and oceans along with other substantial changes in climate (such as wind patterns, precipitation, and storms) over an extended period of time. The baseline against which these changes are measured originates in historical records identifying temperature changes that have occurred in the past, such as during previous ice ages. The global climate is continuously changing, as evidenced by repeated episodes of substantial warming and cooling documented in the geologic record. The rate of change has typically been incremental, with warming or cooling trends occurring over the course of thousands of years. The past 10,000 years have been marked by a period of incremental warming as glaciers have steadily retreated across the globe. However, scientists have observed acceleration in the rate of warming during the past 150 years. According to the United Nations Intergovernmental Panel on Climate Change, the understanding of anthropogenic warming and cooling influences on climate has led to a high confidence (95 percent or greater chance) that the global average net effect of human activities has been the dominant cause of warming since the mid-twentieth century (Intergovernmental Panel on Climate Change 2007).

GHGs are gases that absorb and re-emit infrared radiation in the atmosphere. The gases widely seen as the principal contributors to human-induced climate change include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), fluorinated gases such as hydrofluorocarbons and perfluorocarbons, and sulfur hexafluoride. Water vapor is excluded from the list of GHGs because it is short-lived in the atmosphere and its atmospheric concentrations are largely determined by natural processes, such as oceanic evaporation.

GHGs are emitted by both natural processes and human activities. Of these gases, CO_2 and CH_4 are emitted in the greatest quantities from human activities. Emissions of CO_2 are largely by-products of fossil fuel combustion, whereas CH_4 results from off-gassing associated with agricultural practices and landfills. Anthropogenic GHGs, many of which have greater heat-absorption potential than CO_2, include fluorinated gases and SF_6 (USEPA 2020).

The accumulation of GHGs in the atmosphere regulates Earth's temperature. Without the natural heat-trapping effect of GHGs, Earth's surface would be about 34 degrees Celsius cooler (USEPA 2020). However, emissions from human activities, particularly the consumption of fossil fuels for electricity production and transportation, have elevated the concentration of GHGs in the atmosphere beyond the level of naturally occurring concentrations. Scientific modeling predicts that continued GHG emissions at or above current rates would induce more extreme climate changes during the 21st century than were observed during the 20th century. Some of the potential impacts of climate change in California may include loss of snowpack, sea level rise, more extreme heat days per year, more high ozone days, more large forest fires, and more drought years. While these potential impacts identify the possible effects of climate change at a statewide level, in general, scientific modeling tools are currently unable to predict what impacts would occur locally.

Methodology

Construction and operational GHG emissions associated with development facilitated by the AHO were calculated using CalEEMod version 2020.4.0. Calculations of CO_2, CH_4, and N_2O emissions are provided to identify the magnitude of potential project effects. The analysis focuses on CO_2, CH_4, and N_2O because these make up 98.9 percent of all GHG emissions by volume and are the GHG emissions that the AHO would result in the largest emissions of (Intergovernmental Panel on Climate Change 2007). Fluorinated gases, such as HFCs, PFCs, and SF_6, were also considered for the analysis. However, because the AHO would facilitate development of residential uses, the quantity of fluorinated gases would not be substantial since fluorinated gases are primarily associated with heavy industrial processes. Emissions of all GHGs are converted into their equivalent global warming potential (GWP) in terms of CO_2 (i.e., CO_2e). Minimal amounts of other GHGs (such as chlorofluorocarbons [CFCs]) would be emitted; however, these other GHG emissions would not substantially add to the total calculated CO_2e amounts. Calculations are based on the methodologies discussed in the California Air Pollution Control Officers Association (CAPCOA) *CEQA and Climate Change* white paper (CAPCOA 2008).

Significance Thresholds

According to *CEQA Guidelines* Section 15183.5, project analysis can tier from a qualified GHG reduction plan, which allows for project-level evaluation of GHG emissions through the comparison of the project's consistency with the GHG reduction policies included in a qualified GHG reduction plan. This approach is considered by the Association of Environmental Professionals (AEP) in their white paper, *Best Practices in Implementing Climate Action Plans*, to be the most defensible approach presently available under CEQA to determine the significance of a project's GHG emissions (AEP 2018). To date, the County of Monterey, the City of Marina, and MBARD have not adopted a qualified CAP to address significance.

In the absence of a qualified CAP or any adopted numeric threshold, the significance of the project's GHG emissions is evaluated consistent with *CEQA Guidelines* Section 15064.4(b) by considering whether the project complies with applicable plans, policies, regulations, and requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions. Neither has the MBARD, the California Office of Planning and Research, CARB, the CAPCOA, or any other state or applicable regional agency adopted a numerical significance threshold for assessing GHG emissions that is applicable to the project. Therefore, the regional GHG reduction policies and regulations most applicable to the project are those found in CARB's 2017 Scoping Plan. Construction and operation of the project would generate GHG emissions. This analysis considers

the combined impact of GHG emissions from both construction and operation. Calculations of CO2, CH4, and N2O emissions are provided for informational purposes to identify the magnitude of project's emissions.

Impacts Assessment

a. Would the project generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?

As discussed in the 2017 Scoping Plan goals (CARB 2017), local jurisdictions may demonstrate consistency with Scoping Plan goals (i.e., SB 32's emission reduction target) by establishing communitywide emissions targets tied to the statewide per capita goals of 6.0 MT of CO_2e per capita by 2030. Based on AMBAG Regional Growth Forecasts, the City of Marina is anticipated to have a population of approximately 26,713 people and 6,765 jobs by 2030 (AMBAG 2022a) As shown in Table 12, the communitywide emissions target of 6.0 MT of CO_2e may be equated to approximately 4.8 MT of CO_2e per service population (SP) in 2030.

Table 12 GHG Performance Threshold Determination

Metric	Quantity
Service Population Calculation	
2030 Population	26,713 people[1]
2030 Employment	6,765 jobs[1]
2030 Service Population	33,478 SP
2030 Communitywide Target Derivation	
Per Capita Target	6.0 MT of CO_2e per capita[2]
Mass Emissions Target[3]	160,278 MT of CO_2e
Service Population Target[4]	4.8 MT of CO_2e per SP

MT of CO_2e = metric tons of carbon dioxide equivalent; SP = service population

[1] Source: AMBAG 2022a

[2] Source: CARB 2017

[3] 6.0 MT of CO_2e per capita * 467,068 persons = 160,278 MT of CO_2e

[4] 160,278 MT of CO_2e / 33,478 SP =4.8 MT of CO_2e per SP

Project construction would generate temporary short-term GHG emissions through travel to and from the AHO sites and from the operation of construction equipment such as graders, backhoes, and loaders. Excavation, grading, and trenching typically generate the most emissions due to the use of grading equipment and soil hauling. Construction of the project would generate approximately 1,805 MT CO_2e over the entire construction period (Appendix B), as shown in Table 13.

Operation of the proposed project would generate GHG emissions associated with energy and water usage, vehicle trips, and solid waste generation. Table 13 presents the GHG emissions for development facilitated by the AHO, including construction. As shown in the table, there would be an increase in GHG emissions. The greatest increase in emissions is due to the higher vehicle trips associated with residential land uses.

Table 13 Combined Annual GHG Emissions

Emission Source	Annual Emissions (MT of CO_2e per year)
Construction	
2023	1,024
2024	781
Total	**1,805**
Operational	
Area	15.4
Energy[2]	728.5
Mobile	4,736
Waste	207.7
Water	64.4
Total	**5,753**
Total Emissions	**7,558**
Project Service Population (residents)	**2,380**
Total Emissions per Service Person[1]	**3.2**
Threshold	**4.8**
Threshold Exceeded?	**No**

MT = metric tons; CO_2e = carbon dioxide equivalents

[1] Emissions per SP rounded up to the nearest tenth.

Notes: Emissions modeling was completed using CalEEMod. See Appendix B for modeling results.

The project's contribution to GHG emissions impacts and climate change would be considered significant if the project's per service population emissions would exceed the efficiency threshold of 4.8 MT CO_2e per SP per year. As shown in Table 13, the project's emissions of would be 3.2 MT CO_2e per SP per year, below the 4.8 MT CO_2e per SP per year threshold. Therefore, impacts would be less than significant.

b. Would the project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

The project's consistency with the 2017 Scoping Plan, AMBAG 2045 Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS), and Marina General Plan are discussed in the subsections below.

2017 Scoping Plan and Executive Order B-55-18

The 2017 Scoping Plan outlines a pathway to achieve the reduction targets set under SB 32, which is considered an interim target toward meeting the state's long-term 2045 goal established by Executive Order (EO) B-55-18. As discussed under *Methodology*, the AHO would impede "substantial progress" toward meeting the SB 32 and EO B-55-18 targets if per service population GHG emissions exceeded the locally-appropriate 2030 efficiency threshold of 4.8 MT of CO_2e per service population per year. As discussed under Impact GHG-1, the AHO would result in approximately 2.4 MT of CO_2e per service population per year, which would not exceed the threshold of 4.8 MT of CO_2e per service population per year threshold. As a result, the AHO would be consistent with the 2017 Scoping Plan and EO B-55-18 because consistency with the locally-applicable, project-specific SB 32

efficiency threshold represents substantial progress toward climate-stabilizing targets set forth by EOs S-3-05 and B-55-18, as discussed earlier under *Significance Thresholds*.

AMBAG MTP/SCS and Marina General Plan

In June 2022, AMBAG adopted the 2045 MTP/SCS. The key goal of the 2045 MTP/SCS is to achieve GHG emission reduction targets through integrated land use and transportation strategies. The AHO would facilitate a reduction in VMT and associated mobile source GHG emissions as the AHO would facilities higher density housing in the downtown area, an area served by existing transit and the Monterey Salinas Transit Center. Further detail on the AHO's consistency with goals contained in the AMBAG MTP/SCS is shown in Table 14, while consistency with goals contained in the Marina General Plan are shown in Table 15. As shown in the tables, the AHO would be consistent with goals and policies of the AMBAG 2045 MTP/SCS and Marina General Plan that are relevant to reducing GHG emissions. Therefore, the project would be consistent applicable plans and policies related to reducing GHG emissions; this impact would be less than significant.

Table 14 AMBAG 2045 MTP/SCS Consistency for GHG Emissions

Policy	Consistency
Environment Promote environmental sustainability and protect the natural environment.	**Consistent** Construction of residential buildings facilitated by the AHO would be required to comply with the 2019 California Building Energy Efficiency Standards for Residential and Non-Residential Buildings and CALGreen (California Code of Regulations Title 24, Parts 6 and 11), or later versions as they are published. Therefore, the AHO would promote environmental sustainability and protect the natural environment and would be consistent with the Environment policy.
Healthy Communities Protect the health of our residents; foster efficient development patterns that optimize travel, housing, and employment choices and encourage active transportation.	**Consistent** The AHO would facilitate residential development and redevelopment in downtown area, thereby contributing to a compact, efficient development pattern and avoiding the dispersal of future growth to outlying areas. The siting of AHO sites within downtown area, an area served by existing transit and services, would also contribute to a development pattern that optimizes travel, housing, and employment choices by encouraging residents to actively commute between destinations due to the close proximity of different uses. Therefore, the AHO would encourage healthy communities and would be consistent with the Healthy Communities policy.

Source: AMBAG 2022b

Table 15 Marina General Plan Policy Consistency for GHG Emissions

Marina General Plan Policy	Discussion
Community Goal 1.18 During the preparation of this General Plan the following goals, phrased in the form of planning principles, provided the basis for developing appropriate land use, infrastructure, and community design proposals for specific areas of the city, and for judging among several citywide General Plan alternatives and providing direction for selecting the preferred alternative. As incorporated into the General Plan, these framework goals provide the overall direction necessary to ensure that, as it grows, the city will be well functioning and attractive; that it will balance the needs of residents and business; and that appropriate use will be made of its natural, human and economic resources: 6. A balanced land use/transportation system which minimizes traffic congestion, noise, excessive energy consumption, and air pollution.	**Consistent** Construction of development facilitated by the AHO would be required to comply with the 2019 California Building Energy Efficiency Standards for Residential and Non-Residential Buildings and CALGreen (California Code of Regulations Title 24, Parts 6 and 11), or later versions as they are published. These standards require the provision of electric vehicle supply equipment, water-efficient plumbing fixtures and fittings, recycling services, solar panels on low-rise residential development, other energy-efficient measures that would reduce the potential for excessive energy use. Development within the AHO sites would also be served by 3CE, which provides carbon-free electricity to all of its customers. As a result, development facilitated by the AHO would not consume energy excessively and would not result in substantial contributions to air pollution. Therefore, the project would be consistent with this policy.
Community Land Use Policy 2.4(2) The City shall prevent under-utilization of land within its Urban Growth Boundary (UGB) that is appropriate for community development, in order to ensure that development proceeds in an orderly and consistent manner and to minimize the dispersal of future growth in Monterey County to outlying areas with potentially higher natural resource value. With respect to phasing and timing, whenever feasible, the City shall encourage new development to locate within the existing developed portion of Marina and Marina's former Fort Ord in preference to the development of currently vacant, undeveloped lands located within the City's UGB.	**Consistent** The AHO would facilitate development and redevelopment of very-low- and low-income housing within the UGB, thereby avoiding the dispersal of future growth to outlying areas that could result in high VMT per person. Therefore, the AHO would be consistent with Community Land Use Policy 2.4(2).
Housing Policy 5.2.2 The policies for the 2015 – 2023 are carried forward and modified from the 2008-2014 Housing Element: 6. Support and initiate, where feasible, public and private energy conservation programs that would reduce the energy needs and costs of housing in Marina.	**Consistent** Construction of development facilitated by the AHO would be required to comply with the 2019 California Building Energy Efficiency Standards for Residential and Non-Residential Buildings and CALGreen (California Code of Regulations Title 24, Parts 6 and 11), or later versions as they are published. These standards require the provision of electric vehicle supply equipment, water-efficient plumbing fixtures and fittings, recycling services, solar panels on low-rise residential development, other energy-efficient measures that would conserve water and energy. Therefore, the AHO would be consistent with this policy.

Marina General Plan Policy	Discussion
Community Infrastructure 3.3.1 Develop future areas of the City, and redevelop existing developed areas, in patterns and to densities that make the provision of frequent regional and local transit economically feasible. **Transportation Policy 3.23 (Design for Transit)** All future development and redevelopment shall be designed to promote cost-effective local and regional transit service and minimize dependency on the private automobile for work, shopping, recreation, and other trip purposes by requiring bus stops and/or bays in appropriate locations where there are direct transit access routes for pedestrians and bicyclists.	**Consistent** The AHO would facilitate residential development and redevelopment in the downtown area. Development facilitated by the AHO would therefore be located near existing services and within existing transit corridors, which would make the provision of frequent regional and local transit economically feasible. Further, the siting of AHO sites within the downtown area would encourage future residents to actively commute between destinations due to the close proximity of different uses, reducing dependency on individual vehicle trips. Therefore, the AHO would be consistent with these community infrastructure and transportation policies.
Transportation Policy 3.32 To ensure the feasibility of future transit service, 80 percent or more of the City's residential growth shall be located within the transit-served corridors designated in Figure 3.2. Furthermore, all future residential development within 1,500 feet (approximately 1/4 mile) of designated transit routes shall be governed by minimum density requirements. For new development within already-developed portions this minimum density shall be 6.5 units per net acre (i.e., the area of platted lots, exclusive of all streets and public facilities). The minimum density for newly developing or redeveloping areas of the City shall be 7 units per gross acre (i.e., total development area excluding major roads, public facilities and open space, but including local streets and local open space features and amenities). See the Community Land Use and Development Element (Chapter 2) for other related policies and guidelines.	**Consistent** The AHO sites are focused on two transit-served corridors, Reservation Road and Del Monte Boulevard. The AHO would allow for residential densities of up to 50 units per acre at sites with the largest maximum zoned capacity; therefore, the AHO would be consistent with the requirements of this policy and would ensure feasibility of future transit service.
Community Infrastructure Policy 3.3.12 Minimize the consumption of water for urban purposes and make maximum possible use of recycled water. **Water Supply and Management Policy 3.53** The City of Marina, in conjunction with MCWD, shall continue to promote and require water-saving devices. Specifically, the following measures shall be required: 1. All new multi-family units shall be required to install water meters for each unit. 2. A study shall be undertaken to determine the feasibility of requiring separate metering of spaces within new commercial and industrial buildings and existing duplexes, triplexes, and other multifamily structures. Metering shall be required if found to be physically and economically feasible. 3. All new construction shall use low-flow water fixtures and ultralow-flush toilets. The MCWD and the City should continue to require that all existing residential units and commercial properties be retrofitted with low-flow fixtures upon resale. 4. The City shall support MCWD rebate programs to replace older, more water-consumptive fixtures.	**Consistent** Construction of development facilitated by the AHO would be required to comply with the 2019 California Building Energy Efficiency Standards for Residential and Non-Residential Buildings and CALGreen (California Code of Regulations Title 24, Parts 6 and 11), or later versions as they are published. These standards require the provision of electric vehicle supply equipment, water-efficient plumbing fixtures and fittings, recycling services, solar panels on low-rise residential development, other energy-efficient measures that would conserve water and energy. Therefore, the AHO would minimize the consumption of water for urban purposes and make maximum possible use of recycled water, consistent with this policy.

Source: City of Marina 2010

LESS THAN SIGNIFICANT IMPACT

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9 Hazards and Hazardous Materials

	Potentially Significant Impact	Less than Significant with 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?	☐	☐	■	☐
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?	☐	☐	■	☐
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school?	☐	■	☐	☐
d. Be located on a site that is included on a list of hazardous material 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?	☐	■	☐	☐
e. For a project located in 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?	☐	☐	■	☐
f. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	■	☐
g. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?	☐	☐	■	☐

a. Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

b. Would the project 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?

The AHO would facilitate the construction of new residential land uses that could involve the use, storage, disposal, or transportation of hazardous materials. Use of hazardous materials would generally consist of solvents, paints, chemicals used for cleaning and building maintenance, and landscaping supplies. Use of such materials would be similar to existing conditions in the Downtown area, which is currently developed.

Projects facilitated by the AHO would be subject to applicable local, State, and federal hazardous material regulations that minimize impacts related to hazardous materials. Hazardous materials would be required to be transported under Department of Transportation regulations. Development facilitated by the AHO would be subject to regulatory programs such as those overseen by the County of Monterey Health Department, RWQCB, and the Department of Toxic Substances Control (DTSC). These agencies require applicants for development of potentially contaminated properties to perform investigation and cleanup under their oversight if the properties are found to be contaminated with hazardous substances. Therefore, compliance with existing laws and regulations governing the transport, use, storage, disposal, or release of hazardous materials and wastes would reduce impacts to a less than significant level.

LESS THAN SIGNIFICANT IMPACT

c. Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school?

d. Would the project be located on a site that is included on a list of hazardous material 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?

Los Arboles Middle School, Marina Vista Elementary School, Marina La Via Continuation High School, Crumpton Elementary School, Pegasus Montessori School, Marina High School, George Patton Senior Elementary School, and Ione Olson Elementary School are located in the vicinity of the AHO sites.

The following databases compiled pursuant to Government Code Section 65962.5 were checked for known hazardous materials contamination in the vicinity of the AHO sites:

- EnviroStor Database, DTSC
- GeoTracker Database, California State Water Resources Control Board (SWRCB)
- USEPA Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) Superfund Site database (2019)

The EnviroStor database indicated two open DTSC cleanup sites near the AHO sites. The Central Coast High School Expansion Site, located at 2995 Rendova Road (case 60000346), is approximately 2,000 feet southeast of AHO Site No. 20. Reservation Road High School, located at the southwest corner of the intersection of Reservation Road and Salinas Avenue (case 60000344), is located approximately 1,600 feet east of AHO sites No. 4, 5, and 6.

- Central Coast High School Expansion site is listed as inactive and in need of evaluation associated with subsurface anomalies encountered during a geophysical survey to identify potential munitions and explosives of concern from historical military use of the property.
- Reservation Road High School site is listed as inactive and in need of evaluation. The site is located on the former Fort Ord and may have been utilized as a firing range. The site is undeveloped but was being considered for development as a public high school. DTSC identifies explosives, metals, pesticides, and polychlorinated biphenyls in soil and soil vapor as potential contaminants of concern. The site was inactivated by DTSC when the school district was no longer considering the site for development as a school.

According to the GeoTracker database there are multiple hazardous materials cleanup sites in the vicinity of the AHO sites that have been addressed. Resolved leaking underground storage tank cleanup (LUST) sites in the vicinity of the AHO sites include the Shell Service Station at 3030 Del Monte Boulevard (case T0605300245), Tommy's Gas & Foodmart at 3044 Del Monte Boulevard (case T0605300218), Beacon Station No. 730 at 3144 Del Monte Boulevard (case T0605300330), Arco Station #2141 at 3184 Del Monte Boulevard (case T0605300366), 7-Eleven #17488 at 320 Reservation Road (case T10000005318), and Monterey Peninsula Garbage & Refuse at 3114 Crescent Avenue (case T0605300322). There is one completed military underground storage tank cleanup site at 4493 8th Avenue, Fort Ord Building 4493-4 (case T0605300108), and one completed groundwater cleanup site at 215 C Reservation Road of Don's One Hour Dry Cleaners (case SLT3S2061339). Although the sites are classified as closed, residual soil, groundwater, and/or soil vapor contamination may remain on site that may be encountered during redevelopment activities. In addition, the closure of the site may be based upon a condition of the site use at the time of closure and/or deed restrictions may have been placed that limit the type of future development without additional assessment or cleanup activities.

The USEPA CERCLIS database did not identify a superfund site within the AHO sites; however, the former Fort Ord, located adjacent to the City, is listed as a National Priorities List (NPL) site. The SWRCB GeoTracker databases depicts two open military cleanup sites associated with the former Fort Ord that are adjacent to the City: Fort Ord OU1 (Fritzche Army Airfield Fire Drill Area, On-Site Plume DOD100220500) and Ford Ord – OUCTP (DOD100196800).

- The Fort Ord OU1 site is associated with flammable solvents that leached into soil and groundwater from a former fire drill area. The site is approximately 0.6 mile northeast of AHO sites 4, 5, and 6. The soil and groundwater cleanups were completed, the remedial objectives were achieved, and the site was closed.
- The Ford Ord – OUCTP is associated with carbon tetrachloride contamination in groundwater from a surface release. The carbon tetrachloride groundwater plume extends from within the former Ford Ord site boundary to the area north of Reservation Road and west until approximately Eucalyptus Street (Ahtna Environmental 2019). In addition, the groundwater plume is present 0.25 mile east of AHO sites 4, 5, and 6, south of Reservation Road and east of Salinas Avenue. The groundwater flow direction is to the northwest, toward the AHO sites.

Redevelopment of AHO sites with known or potential contamination of soil, groundwater, and/or soil vapor (subsurface contamination) may result in the disturbance of hazardous materials, presenting a risk of human exposure. New development could also present potential risk of exposure to contamination associated with commercial and/or industrial land use. Hence, development and redevelopment facilitated by the AHO would increase the potential for exposure

to subsurface contamination hazards. To reduce health risks to a less than significant level, Mitigation Measure HAZ-1 is required to reduce impacts to a less than significant level.

HAZ-1 Project-Level Hazardous Materials Assessment

Prior to the obtaining grading permits or starting other ground disturbing work for individual projects, the City shall hire a qualified environmental professional to conduct a Phase I environmental assessment (ESA), consistent with the American Society for Testing Materials standards (ASTM E1527). The Phase I ESA shall evaluate the likelihood that hazardous chemicals are present and whether soil sampling is necessary. If the Phase I ESA indicates that contamination is unlikely, no further mitigation is necessary other than any recommendations identified in the Phase I ESA (such as stopping work if stained soil is encountered).

If the Phase I ESA indicates that additional soil sampling or other further evaluation is necessary, the City shall hire a qualified environmental professional to conduct a Phase II ESA to determine the presence and extent of contamination. If the results indicate that contamination exists at levels above regulatory action standards, then the site shall be remediated in accordance with recommendations made by applicable regulatory agencies, including RWQCB and DTSC. The agencies involved shall depend on the type and extent of contamination. If remediation is necessary, the City shall hire a qualified environmental professional prior to obtaining grading permits or ground disturbance to prepare a work plan that identifies necessary remediation activities, including excavation and removal of on-site contaminated soils, appropriate dust control measures, and redistribution of clean fill material on the project sites. The plan shall include measures that ensure the safe transport, use, and disposal of contaminated soil removed from the site. The plan shall also identify when and where soil disturbing construction activities may safely commence.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

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?

The Marina Municipal Airport is located northeast of the City's downtown area, approximately 0.75 mile east of AHO sites No. 4, 5, and 6 and 2 miles east of AHO Site 20. The Marina Municipal Airport Land Use Compatibility Plan (ALUCP) contains standards and policies including allowable land uses and development within the airport and in designated approach and traffic pattern zones. The 2019 ACLUP (Monterey County Airport Land Use Commission 2019) indicates that the AHO site are located within safety zone seven, Airport Influence Area (AIA), but is outside all other safety zones. The AIA zone (zone 7) includes all other portions of regular aircraft traffic patterns based upon the Section 14 of the Code of Federal Regulations Part 77 conical surface from the 2018 airport layout plan. The aircraft accident risk level is considered to be low within the AIA zone.

Implementation of the AHO would intensify development near the Marina Municipal Airport, but the land use types and proximity of development to the airport would be similar to existing conditions. The AHO sites are located within the City's Downtown area. Development facilitated by the AHO would not introduce prohibited uses for the AIA zone, such as hazards to flight or outdoor stadiums (Monterey County Airport Land Use Commission 2019). Other development conditions would be reviewed and disclosed as part of certain real estate transactions, as required by state law.

With compliance with existing requirements, the project would not result in a safety hazard or excessive noise for future residents. Impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

f. Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

The proposed project would intensify residential development within the City's Downtown area, which could result in an increase in traffic that could interfere with emergency response. However, as described in Section 14, *Population and Housing*, the project would not result in unplanned population growth. The City may require public improvements as part of the permitting process for individual projects in order to prevent compromise of emergency response access. Therefore, the project would result in a less than significant impact regarding emergency response and evacuation.

LESS THAN SIGNIFICANT IMPACT

g. Would the project expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?

A wildfire is an uncontrolled fire in an area of combustible vegetation. Wildfires differ from other fires in that they take place outdoors in grassland, woodlands, brushland, scrubland, peatland, and other wooded areas that act as a source of fuel, or combustible material. Topography, slope, vegetation type and condition, and weather and atmospheric conditions are the primary factors in determining an area's susceptibility to wildfire.

As discussed in Section 20, *Wildfire*, the AHO sites are not within an area associated with a high degree of wildfire hazards. The facilitation of development projects within Marina would not exacerbate the existing degree of wildfire hazards in Marina, nor would the project add new development in areas that are highly susceptible to wildfires. The AHO sites are located in the currently developed area of Marina's downtown. Therefore, impacts associated with exposure of people or structures to wildfires would be less than significant.

LESS THAN SIGNIFICANT IMPACT

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10 Hydrology and Water Quality

	Potentially Significant Impact	Less than Significant with 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?	☐	☐	■	☐
b. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	■	☐
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;	☐	☐	■	☐
(ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;	☐	☐	■	☐
(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; or	☐	☐	■	☐
(iv) Impede or redirect flood flows?	☐	☐	■	☐
d. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	■	☐
e. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	■	☐

a. Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

Excavation, grading, and other activities associated with construction facilitated by the proposed project would result in soil disturbance that could cause water quality violations through potential erosion and subsequent sedimentation of receiving water bodies. Construction activities could also cause water quality violations in the event of an accidental fuel or hazardous materials leak or spill. If precautions are not taken to contain contaminants, construction activities could result in contaminated stormwater runoff that could enter nearby waterbodies. Construction activities resulting in ground disturbance of one acre or more are subject to the permitting requirements of the NPDES General Permit for Stormwater Discharges associated with Construction and Land Disturbance Activities (Construction General Permit Order No. 2009-0009-DWQ). The Construction General Permit requires the preparation and implementation of a SWPPP, which must be prepared before construction begins. The SWPPP includes specifications for BMPs implemented during project construction to minimize or prevent sediment or pollutants in stormwater runoff.

The downtown area surrounding the AHO sites is currently developed. Implementation of the proposed project would facilitate redevelopment but would not substantially alter the amount of impervious surface area. Stormwater runoff would continue to connect to the City's stormwater drainage system at similar volumes to existing conditions. In addition, construction facilitated by the project would comply with the requirements of the Construction General Permit. Thus, the contractor would be required to implement BMPs identified in the SWPPP to prevent construction pollution via stormwater and minimize erosion and sedimentation into waterways as a result of construction. Furthermore, individual projects would be required to comply with Chapter 8.46, Urban Storm Water Quality Management and Discharge Control. Chapter 8.46 requires elimination of illegal discharges, protection of watercourses, and includes BMP guidance for construction sites and permitted activities (City of Marina 2022). Therefore, compliance with existing regulations would reduce impacts to a less than significant level.

LESS THAN SIGNIFICANT IMPACT

b. Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

Development under the proposed project would receive water supply from Marina Coast Water District (MCWD) from existing sources. MCWD does not purchase wholesale water supply or imported surface water, and instead relies entirely upon the water supply in the Salinas Valley Groundwater Basin, which underlies the project area. The Salinas Valley Groundwater Basin has generally been separated into five hydrologically linked subareas, defined based on their respective sources of groundwater recharge and the nature of the stratigraphy (MCWRA 2006). MCWD owns and operates its own groundwater production wells within its service areas, and has redundant well pumping capacity to accommodate maintenance shutdowns during peak days (MCWD 2020). MCWD has two groundwater production wells in the Central Marina Service Area, which produce groundwater from the Deep Aquifer of the Monterey Subbasin. MCWD is the only substantial water user that produces from the Deep Aquifer (MCWD 2020).

In April of 2020, MCWD prepared a Water Supply Assessment (WSA) for the proposed Marina DVSP, which is a proposed plan to guide development in the Central Marina downtown area, which encompasses the proposed project sites. The WSA is included as Appendix F. The DVSP is separate and distinct from the proposed project, and the WSA for the DVSP does not specifically identify the

proposed project; however, by assessing water supply availability and reliability for the larger DVSP proposal, which would have a larger water demand than the proposed project because it would encompass a larger area which includes the proposed project area, then water demands associated with the proposed AHO are reasonably accounted for in the 2020 WSA. Therefore, since water demands of the proposed project are reasonably captured within the 2020 WSA, that WSA is used to inform this analysis of water supply availability for the proposed project.

The 2020 WSA determined that MCWD's total water demands accounted for less than one percent of the total groundwater pumped from the Salinas Groundwater Basin, and the Deep Aquifer does not experience substantial seasonal variations due to climatic conditions; in other words, water supply in the Deep Aquifer remains relatively stable year-round. Therefore, MCWD's supply is considered reliable on a quantity basis. The existing pumping capacity of MCWD's Deep Aquifer wells is approximately 5,618 AFY; however, MCWD may only withdraw up to 3,020 AFY for use in the Central Marina service area, based upon previous settlement agreements (MCWD 2020). The 2020 WSA determined that water demand for the entire Central Marina service area, including the proposed DVSP, which encompasses a larger area and has a commensurately higher water demand than the proposed project, would be 2,784,5 AFY over the next 20 years, which remains below the available supply and pumping limit of 3,020 AFY (MCWD 2020).

Based on the above water demands and assumptions, the 2020 WSA determined that sufficient water supply would be available to the project area over a 20-year projection and with consideration to climatic (drought) variables, as well as assuming implementation of the proposed DVSP, which has a higher water demand than the proposed project and has not been implemented. Therefore, because the proposed project would have a lower water demand than the previously assessed DVSP, which is separate from the proposed project and has not been implemented, then sufficient water supply is available for the proposed project, as assessed herein.

However, the 2020 WSA was informed by growth and demand projections included in MCWD's 2015 Urban Water Management Plan (UWMP). Since development of the 2020 WSA, the UWMP has been updated (as required every five years, by the Urban Water Management Act), and the updated 2020 UWMP was published in 2021. This analysis therefore included review of the 2020 UWMP projections in comparison to the 2015 UWMP projections, to determine whether any changes occurred that could influence the determination of water supply reliability in the 2020 WSA.

The 2015 UWMP projected a substantial increase in water demand within the Central Marina Service Area (in comparison to projections in the 2010 UWMP) due to anticipated in-fill development, based upon the City's General Plan, Zoning Ordinance, and planned specific plans and subdivisions proposed at that time. Water demand for Central Marina was projected to increase from 1,823 AFY in 2012 to 3,905 AFY in 2035, and the increased demand was projected to be met with existing groundwater resources (MCWD 2016). The 2015 UWMP further determined that existing water supplies would be sufficient to meet the demands of the projected growth (MCWD 2016).

The 2015 UWMP also projected the service area population would be 40,464 persons by 2020 (MCWD 2016); however, as determined in the 2020 UWMP, the actual population in 2020 was 10 percent lower than projected in the 2015 UWMP (MCWD 2021). This suggests that the 2015 UWMP, which was used to inform the 2020 WSA, over-projected water demands by approximately 10 percent. In addition, the 2020 UWMP determined that a drought of record occurred in the last five-year reporting period, and the resulting increased water conservation awareness is still reflected in current and ongoing demands (MCWD 2021). Furthermore, the 2020 UWMP identified actual water delivery amounts from 2015 and 2020, which indicate that total water demands actually decreased

from 3,194.1 acer-feet in 2015 to 3,104.6 acre-feet in 2020 (MCWD 2021). This verifies the assumption above that the 2015 UWMP over-projected future water demands in the project area.

Therefore, considering that the 2020 UWMP confirmed the 2015 UWMP over-projected future population growth and water demands, and the 2015 UWMP was used to inform the 2020 WSA, which determined sufficient water supplies would be available to accommodate a development larger and with greater water demands than the proposed project, it is reasonable to conclude that the updated analysis in the 2020 UWMP does not change the determination that sufficient water supply is available for the project, but rather further validates this conclusion. In conclusion, MCWD had determined that sufficient water supply would be reliably available to support the development intensity that would occur under the proposed, by having determined that sufficient water supply would be reliably available for a greater intensity development.

Sufficient water supply is available from existing sources to support the proposed project through normal water-year (non-drought) conditions, single-dry-year (drought) conditions, and multiple-dry-year (extended drought) conditions, with no expansion to or relocation of existing water supply facilities. Potential impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

c.(i) Would the project 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?

c.(ii) Would the project 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 substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?

c.(iii) Would the project 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 that would 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?

c.(iv) Would the project 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 impede or redirect flood flows?

Drainage on the AHO sites generally follows the gently sloping topography of the sites. Existing stormwater drainage systems include curb and gutter along existing roadways adjacent to the AHO sites. Development facilitated by the project would involve grading of the AHO sites and improvements to the existing stormwater drainage of the site. Construction would not substantially change the topography of the sites. However, construction facilitated by the proposed project would replace impervious surfaces. Rainfall onto the AHO sites would run off the replaced surfaces and be incorporated into surface runoff. Therefore, the project would not result in increased surface runoff that could result in flooding or exceed the capacity of existing stormwater drainage systems. Additionally, the project would not result in additional sources of polluted runoff.

As stated previously, construction facilitated by the project would be conducted in compliance with the State's Construction General Permit (Order No. 2009-0009-DWQ). Preparation of the SWPPP in

accordance with the Construction General Permit would require erosion-control BMPs at the construction areas. BMPs that are typically specified within the SWPPP may include, but would not be limited to, temporary measures during construction, revegetation, and structural BMPs. Therefore, the project would not result in substantial erosion or siltation during construction. Construction and operational permitting requirements, including the NPDES Construction General Permit would require erosion-control measures and the construction of on-site retention basins or bioretention facilities. These features would capture and treat stormwater runoff during construction and operation, ensuring no increase in erosion, siltation, surface runoff, or polluted runoff at the AHO sites.

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps, the majority of the area surrounding the AHO sites is located within Zone X, Area of Minimal Flood Hazard. Although there are areas classified as Zone A and Zone AE, Special Flood Hazard Areas, throughout Marina, none of the AHO sites are within Zone A or Zone AE (FEMA 2017). Therefore, the project would not alter the flood zone boundaries, cause excess flooding downstream of the AHO sites, or impede or redirect flood flows. Impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

d. In flood hazard, tsunami, or seiche zones, would the project risk release of pollutants due to project inundation?

The Downtown area, including the AHO sites, is located approximately 0.5 mile from the Pacific Ocean. Dunes on the west side of SR 1 buffer the City of Marina from the ocean. The majority of the area surrounding the AHO sites is classified by the FEMA as Zone X, Area of Minimal Flood Hazard. Although there are areas classified as Zone A and Zone AE, Special Flood Hazard Areas, throughout Marina, none of the AHO sites are within Zone A or Zone AE (FEMA 2017). Further, the AHO sites are not located in a tsunami inundation zone and there are no large bodies of water that could seiche and inundate the AHO sites (DOC 2020). Therefore, inundation of the site would not occur during the one-percent annual flood, the project would not release pollutants into floodwaters, and this impact would be less than significant.

LESS THAN SIGNIFICANT IMPACT

e. Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Development under the proposed project would include site-specific connections to existing water supply infrastructure, in order to provide water supply service to individual housing units. These facilities would consist of underground pipes connecting individual housing units to existing water mains (larger underground water distribution pipes) that already exist throughout the project area, primarily within paved roadways. These connections would be installed during the projects' construction periods, within the project-specific construction footprints. As such, any potential environmental effects associated with project-specific water supply connections are included construction-related impacts of future developments, as evaluated throughout this Initial Study. The project would not involve the relocation or construction of new or expanded water supply infrastructure, as water supply for the project would be provided by MCWD from its existing water supply sources, and using its existing distribution infrastructure, consisting of underground water mains and appurtenances throughout the area. The proposed project is designed to support the planned maximum buildout of the General Plan, which is consistent with sustainable groundwater management plans. Because the project would not substantially decrease groundwater supplies or

interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin, the proposed project would not conflict with or obstruct a water quality control plan or sustainable groundwater management plan. Therefore, impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

11 Land Use and Planning

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Physically divide an established community?	☐	☐	☐	■
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?	☐	☐	■	☐

a. Would the project physically divide an established community?

The AHO would facilitate development of residential uses in Marina's downtown area within identified parcels. These parcels are either vacant or underutilized, and are located within developed, urbanized areas of the city. These parcels do not contain features that connect the established community. Further, development within the AHO sites would be required by the AHO ordinance to provide pedestrian access, and where pedestrian walkways or paseos are utilized, the placement of walkways would be required to emphasize connectivity to existing pedestrian facilities. Thus, development facilitated by the AHO would not physically divide an established community and there would be no impact.

NO IMPACT

b. Would the project 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?

Of the AHO sites, 10 are developed with existing uses and 13 are undeveloped. Developed AHO sites are occupied with single-family residential uses except for AHO sites 16 and 23, which contain commercial uses. The 13 vacant AHO sites are generally surrounded by residential and commercial uses, with some light industrial and visitor-serving uses along Del Monte Boulevard and Reservation Road. Table 1 summarizes the current General Plan land use designations and zoning districts of each AHO site.

The boundaries of the AHO sites are shown in Figure 2. Situated in the central part of the city, the AHO sites include and are surrounded by a mix of uses as diverse single- and multi-family residential, commercial, open space, research, and visitor-serving uses. Implementation of the AHO would encourage the development of very low and low income affordable housing, and new multi-family residential development.

Consistency Analysis

The following provides a consistency analysis for the land use plans, policies, and regulations applicable to the AHO sites.

General Plan Consistency

The City of Marina General Plan contains several policies related to development of new housing. As detailed in Table 16, the AHO would be consistent with applicable Marina General Plan policies.

Table 16 Project Consistency with the Marina General Plan

Marina General Plan Policy	Consistency
2.31 Housing Policies Promote construction of new housing that is environmentally and socially responsible (detailed further in individual sub-policies 2.31.1 through 2.31.11)	**Consistent** As detailed further in this table, new housing facilitated by the AHO would be required to comply with the 2019 California Building Energy Efficiency Standards for Residential and Non-Residential Buildings and CALGreen (California Code of Regulations Title 24, Parts 6 and 11), which would reduce energy and water consumption. Further, the AHO would facilitate development of housing for lower income households. Therefore, the project would promote construction of new housing that is environmentally and socially responsible, and the project would be consistent with Policy 2.31.
2.31.1 New housing shall be phased and shall provide for the needs of all economic groups, particularly with respect to matching the needs of the City's current and future workforce.	**Consistent** The AHO would facilitate very-low and low income housing by requiring that either 12 percent of units within proposed development be dedicated to very-low income households, or 15 percent be dedicated to low income households. Development applicants would be required to ensure continued affordability of the affordable unites for at least 55 years. Housing facilitated by the AHO would meet the needs of the City's workforce, and ensured continued affordability would meet the needs of the City's future workforce. Therefore, the AHO would be consistent with Policy 2.31.1.
2.31.2 Ensure availability of housing for lower income households in Marina.	**Consistent** The AHO would facilitate very-low and low income housing by requiring that either 12 percent of units within proposed development be dedicated to very-low income households, or 15 percent be dedicated to low income households. Development applicants would be required to ensure continued affordability of the affordable unites for at least 55 years. Therefore, the AHO would ensure availability of housing for lower income households in Marina, and the AHO would be consistent with Policy 2.31.2.
2.31.6 New housing shall be constructed at densities and in patterns which conserve land, reduce reliance on the private automobile and result in walkable, attractive neighborhoods.	**Consistent** The AHO would facilitate residential development or redevelopment on designated sites within the DVSP area. Because the AHO sites are already urbanized, the AHO would conserve land by utilizing undeveloped or underutilized sites within the downtown area. AHO sites would also be located near existing services and along existing transit corridors, which would reduce reliance on individual vehicle trips and encourage active transportation between destinations among future residents. Therefore, the project would be consistent with Policy 2.31.6.

Marina General Plan Policy	Consistency
2.31.10 New housing shall be built to development and construction standards that conserve water and energy.	**Consistent** Construction of development facilitated by the AHO would be required to comply with the 2019 California Building Energy Efficiency Standards for Residential and Non-Residential Buildings and CALGreen (California Code of Regulations Title 24, Parts 6 and 11), or later versions as they are published. These standards require the provision of electric vehicle supply equipment, water-efficient plumbing fixtures and fittings, recycling services, solar panels on low-rise residential development, other energy-efficient measures that would conserve water and energy. Therefore, the AHO would be consistent with this policy.

Source: City of Marina 2010

Further, as discussed under Section 7, *Project Background,* of the Project Description, a provision would be added under Accommodating Future Housing Needs, Section 2.28, to ensure consistency between the AHO and the City's General Plan. This section currently addresses the requirement by the HCD to assign the AMBAG an allocation of regional housing needs through its Regional Housing Needs Plan. The overlay is proposed as a mechanism to meet the regional housing needs as specified in the 4th and 5th Cycle Housing Elements and is therefore reasonably referenced in this section. Therefore, the AHO would be consistent with the City's General Plan.

Metropolitan Transportation Plan/Sustainable Communities Strategy

AMBAG developed the Moving Forward Monterey Bay 2045 MTP/SCS as a blueprint for sustainable growth in the Monterey Bay area. It is built on a set of integrated policies designed to maintain and improve the transportation system throughout the region, through 2045. The MTP/SCS advocates for overall land use patterns that "provide a diverse mixture of goods and services in combination with residential uses" as this approach has been shown to reduce vehicles miles traveled and thereby reduce greenhouse gas emissions (AMBAG 2022). Increased density combined with access to transit has been demonstrated to result in a higher likelihood that people would choose to use transit instead of drive. Furthermore, streets that are friendly for pedestrians and bicycles, along with cars and buses, in what are called "complete streets," are encouraged in local planning processes throughout the region.

The MTP/SCS identifies what it calls "Opportunity Areas," zones within 0.5 mile of an existing or planned high-quality transit corridor, as defined by the California Public Resources Code Section 21155(a), with the potential for transit-oriented development, including mixed-use. AMBAG designates the area in which the AHO sites are located as Opportunity Area MA-1 (AMBAG 2022). MST services the area currently, with bus service on Reservation Road and Del Monte Boulevard. The Marina Transit Exchange, at De Forest Road and Reservation Road, is centrally located to the AHO sites and forms a terminus for MST lines 16, 20, and 27, among others (MST 2019). The Marina Transit Exchange is approximately 0.4 mile west of AHO sites 4, 5, and 6, and 0.75 mile northeast of AHO site 20. Del Monte Boulevard is an arterial roadway that is planned for high-quality BRT service in the Marina Regional Transit Network.

The AHO sites are in proximity to the transit corridors indicated above, and would be designed and implemented specifically to encourage the kind of transit use described in the MTP/SCS. Thus, the AHO supports the goals and objectives set forth by AMBAG in the MTP/SCS.

City of Marina Pedestrian and Bicycle Master Plan

The City of Marina Pedestrian and Bicycle Master Plan has three primary purposes: providing guidelines for pedestrian and bicycle facilities improvements, positioning the City for grants to finance improvements, and playing a role in the City's work to reduce greenhouse gas emissions (City of Marina 2010b). The Plan provides a published set of pedestrian and bicycle facility design guidelines that are applicable to typical situations, including guidelines for sidewalks, crosswalks, pedestrian orientation, pedestrian amenities, bikeways, end-of-trip bicycle facilities, bicycling promotion and funding, street design, parking, roundabouts, and safety. The Plan provides a list of prioritized projects and a summary of future funding sources for pedestrian and bicycle facilities.

The AHO would allow residential development and redevelopment in sites within the downtown area. The siting of the AHO sites would encourage future residents to actively commute between destinations due to the close proximity of different uses. Therefore, the AHO would be consistent with the City of Marina Pedestrian and Bicycle Master Plan.

City of Marina Zoning Code

The AHO would be applied to 23 parcels located in the Marina downtown. The AHO would not involve re-zoning the parcels; rather, it would create an additional set of development options that property owners can choose to exercise at their discretion. Accordingly, development within the AHO sites would continue to be subject to the guidelines and requirements of the Marina Municipal Code. The AHO would not conflict with existing zoning code regulations in effect to avoid or mitigate environmental effects.

Implementation of the AHO would modify the City's development standards at these 23 parcels, but would not conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. Impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

12 Mineral Resources

	Potentially Significant Impact	Less than Significant with 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?	☐	☐	☐	■
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?	☐	☐	☐	■

a. Would the project 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?

b. Would the project 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?

The Marina General Plan discusses the presence of mineral resources at two locations within the City: west of SR 1, where sand mining operations have previously occurred; and east of SR 1 within the Armstrong Ranch portion of the City's sphere of influence (City of Marina 2010). Neither of these areas are located within the AHO sites. No mineral extraction occurs within the AHO sites and no land in the area is zoned or designated for such a use. Implementation of the AHO would not affect the availability of known mineral resources. There would be no impact.

NO IMPACT

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13 Noise

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

Environmental Setting

Fundamentals of Noise

Sound is a vibratory disturbance created by a moving or vibrating source, which is capable of being detected by the hearing organs. Noise is defined as sound that is loud, unpleasant, unexpected, or undesired and may therefore be classified as a more specific group of sounds. Noise levels are commonly measured in decibels (dB) using the A-weighted sound pressure level (dBA). Decibels are measured on a logarithmic scale that quantifies sound intensity in a manner similar to the Richter scale used to measure earthquake magnitudes. A doubling of the energy of a noise source, such as doubling of traffic volume, would increase the noise level by 3 dB; dividing the energy in half would result in a 3 dB decrease (Crocker 2007). It is widely accepted that the average healthy ear can barely perceive changes of 3 dBA, increase or decrease (i.e., twice the sound energy); that a change of 5 dBA is readily perceptible (8 times the sound energy); and that an increase (or decrease) of 10 dBA sounds twice (half) as loud (10.5x the sound energy) (Crocker 2007).

Noise levels from a point source typically attenuate, or drop off, at a rate of 6 dBA per doubling of distance (e.g., construction, industrial machinery, ventilation units). Noise from a line source (e.g., roadway, pipeline, railroad) typically attenuates at about 3 dBA per doubling of distance (Caltrans 2013a). Noise levels may also be reduced by intervening structures; the amount of attenuation provided by this "shielding" depends on the size of the object and the frequencies of the noise levels. Natural terrain features such as hills and dense woods, and man-made features such as

buildings and walls, can significantly alter noise levels. Generally, any large structure blocking the line of sight would provide at least a 5-dBA reduction in source noise levels at the receiver (Federal Highway Administration [FHWA] 2018). Structures can substantially reduce exposure to noise as well. The FHWA's guidelines indicate that modern building construction generally provides an exterior-to-interior noise level reduction of 20 to 35 dBA with closed windows.

The time of day when noise occurs and the duration of the noise are also important factors of project noise impact. One of the most frequently used noise metrics is the equivalent noise level (L_{eq}); it considers both duration and sound power level. L_{eq} is defined as the single steady A-weighted level equivalent to the same amount of energy as that contained in the actual fluctuating levels over time. Typically, L_{eq} is summed over a one-hour period. L_{max} is the highest root mean squared (RMS) sound pressure level within the sampling period, and L_{min} is the lowest RMS sound pressure level within the measuring period (Crocker 2007). Noise that occurs at night tends to be more disturbing than that occurring during the day. Community noise is usually measured using Day-Night Average Level (L_{DN}), which is the 24-hour average noise level with a +10 dBA penalty for noise occurring during nighttime hours (10:00 p.m. to 7:00 a.m.); it is also measured using Community Noise Equivalent Level (CNEL), which is the 24-hour average noise level with a +5 dBA penalty for noise occurring from 7:00 p.m. to 10:00 p.m. and a +10 dBA penalty for noise occurring from 10:00 p.m. to 7:00 a.m. (Caltrans 2013). Noise levels described by L_{DN} and CNEL usually differ by about 1 dBA. The relationship between the peak-hour L_{eq} value and the L_{DN}/CNEL depends on the distribution of traffic during the day, evening, and night.

Some land uses are more sensitive to ambient noise levels than other uses due to the amount of noise exposure and the types of activities involved. For example, residences, motels, hotels, schools, libraries, churches, nursing homes, auditoriums, museums, cultural facilities, parks, and outdoor recreation areas are more sensitive to noise than commercial and industrial land uses.

VIBRATION

Groundborne vibration of concern in environmental analysis consists of the oscillatory waves that move from a source through the ground to adjacent buildings or structures and vibration energy may propagate through the buildings or structures. Vibration may be felt, may manifest as an audible low-frequency rumbling noise (referred to as groundborne noise), and may cause windows, items on shelves, and pictures on walls to rattle. Although groundborne vibration is sometimes noticeable in outdoor environments, it is almost never annoying to people who are outdoors. The primary concern from vibration is that it can be intrusive and annoying to building occupants at vibration-sensitive land uses and may cause structural damage.

Typically, ground-borne vibration generated by manmade activities attenuates rapidly as distance from the source of the vibration increases. Vibration amplitudes are usually expressed in peak particle velocity (PPV) or root mean squared (RMS) vibration velocity. The PPV and RMS velocity are normally described in inches per second (in/sec). PPV is defined as the maximum instantaneous positive or negative peak of a vibration signal. PPV is often used as it corresponds to the stresses that are experienced by buildings (Caltrans 2020).

High levels of groundborne vibration may cause damage to nearby building or structures; at lower levels, groundborne vibration may cause minor cosmetic (i.e. non-structural damage) such as cracks. These vibration levels are nearly exclusively associated with high impact activities such as blasting, pile-driving, vibratory compaction, demolition, drilling, or excavation. The American Association of State Highway and Transportation Officials (AASHTO) has determined vibration levels with potential to damage nearby buildings and structures; these levels are identified in Table 17.

Table 17 AASHTO Maximum Vibration Levels for Preventing Damage

Type of Situation	Limiting Velocity (in/sec)
Historic sites or other critical locations	0.1
Residential buildings, plastered walls	0.2–0.3
Residential buildings in good repair with gypsum board walls	0.4–0.5
Engineered structures, without plaster	1.0–1.5

in/sec: inches per second

Source: Caltrans 2020

Numerous studies have been conducted to characterize the human response to vibration. The vibration annoyance potential criteria recommended for use by Caltrans, which are based on the general human response to different levels of groundborne vibration velocity levels, are described in Table 18.

Table 18 Vibration Annoyance Potential Criteria

	Vibration Level (in/sec PPV)	
Human Response	Transient Sources	Continuous/Frequent Intermittent Sources[1]
Severe	2.0	0.4
Strongly perceptible	0.9	0.10
Distinctly perceptible	0.25	0.04
Barely perceptible	0.04	0.01

in/sec: inches per second; PPV: peak particle velocity

[1] Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.

Source: Caltrans 2020

Existing Noise Environment

ROADWAYS

The major source of noise near the AHO sites is vehicle traffic. The main roadways that would generate noise include Reservation Road and Del Monte Boulevard, as well as SR 1, which would generate noise to the western portion of the Downtown area. Carmel Avenue, Palm Avenue, Reindollar Avenue, Seacrest Avenue, Crescent Avenue, Cypress Avenue, Hillcrest Avenue, Bayer Street, Salinas Avenue, Vista Del Camino Circle, Sunset Avenue, Mortimer Lane, and California Avenue would also contain noise-generating vehicle traffic; however, the lower speed limits and traffic volumes on these roadways would lead to relatively low levels of noise generated compared to the main roadways.

MARINA MUNICIPAL AIRPORT

Future noise contours for the Marina Municipal Airport are in the ALUCP Update for the airport (Monterey County Airport Land Use Commission 2019). As shown on the 20-Year Forecast Noise Contours in the ALUCP, the AHO sites are well outside of the 60 CNEL noise contour (approximately 3,000 feet at the closest point).

SENSITIVE NOISE RECEIVERS

Sensitive noise receivers are areas of human habitation or substantial use where the intrusion of noise has the potential to adversely impact the occupancy, use, or enjoyment of the environment. These can include residences, schools, hospitals, parks, and places of business requiring low levels of noise. Sensitive noise receptors in Marina include single- and multi-family residences, schools, churches, and parks.

Sound Level Measurements

To characterize ambient sound levels at and near the AHO sites, seven 15-minute sound level measurements were conducted for the proposed DVSP area on June 18, 2019. In addition, a follow up site visit took a 24-hour sound level measurement and two 15-minute sound level measurement (Noise Measurement [NM] 2 was repeated) on June 20 through June 21, 2019. These noise measurements are used in this analysis since the ambient noise levels at these locations are representative of the AHO sites due to the proximity to the AHO sites and similar adjacent uses. Figure 10 shows the noise measurement locations, Table 19 summarizes the results of the noise measurements. Detailed sound level measurement data are included in Appendix G.

Figure 10 Noise Measurement Locations

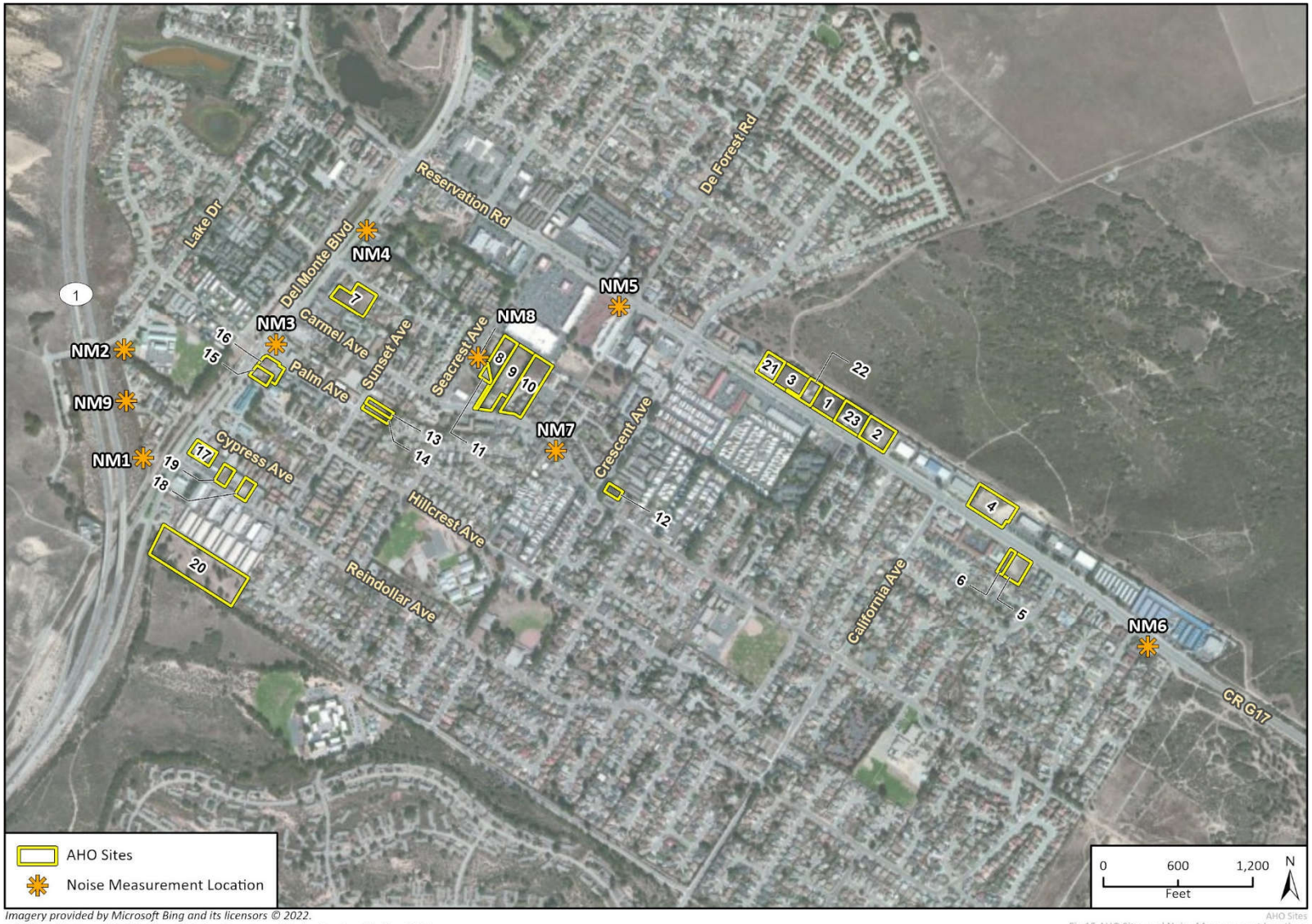

Table 19 Project Vicinity Sound Level Monitoring Results

Measurement Location	Measurement Location	Sample Times	Approximate Distance to Primary Noise Source	Leq (dBA)	Lmin (dBA)	Lmax (dBA)
1	San Pablo Court	June 20, 12:58 – 1:13 p.m.	200 feet from Highway 1	58.0	53.4	62.9
2a	Adjacent to Lake Drive, near Highway 1	June 18, 10:30 – 10:45 a.m.	50 feet to Lake Drive centerline	59.5	45.7	69.0
2b	Adjacent to Lake Drive, near Highway 1	June 20, 1:22 – 1:37 p.m.	50 feet to Lake Drive centerline	61.9	55.9	67.5
3	Del Monte Boulevard and Palm Drive	June 18, 10:56 – 11:11 a.m.	50 feet to roadway centerline	68.8	50.8	83.6
4	Reservation Road and Mortimer Lane	June 18, 11:20 – 11:35 a.m.	50 feet from centerline of Reservation Road	68.7	47.6	79.6
5	Reservation Road and De Forest Road	June 18, 11:59 a.m. – 12:14 p.m.	150 feet from Reservation Road centerline	59.9	49.7	74.8
6	Reservation Road and Bayer Street	June 18, 12:30 – 12:45 p.m.	100 feet from Reservation Road centerline	71.8	48.1	82.4
7	Seacrest Avenue	June 18, 1:04 – 1:19 p.m.	50 feet from roadway centerline	61.5	49.0	75.9
8	Carmel Avenue	June 18, 1:32 – 1:47 p.m.	50 feet from roadway centerline	60.8	47.3	74.8
9	End of San Pablo Court, near Highway 1	June 20, 12:52 p.m. – June 21, 12:52 p.m.	200 feet from Highway 1	60.9	48.6	80.5

See Figure 14 for Noise Measurement Locations.

Detailed sound level measurement data are included in Appendix G.

During the site measurements, the types of vehicles were also counted (automobiles, medium trucks, and heavy trucks), as can be seen in Appendix G. The percentage of medium trucks and heavy trucks ranged from zero percent to three percent in the measurements, which one measurement showing four percent heavy trucks. The truck counts on the smaller collector streets were generally lower.

Regulatory Setting

The following discussion summarizes federal, State and local regulatory authorities pertaining to noise.

City of Marina Municipal Code

Chapter 9.24 of the Marina Municipal Code contains regulations pertaining to noise, prohibiting excessive, unnecessary or unusually loud noises and vibrations in the community. This applies to any noise whose volume, level, or duration disturbs, injures or endangers the comfort, repose, health, peace or safety of Marina residents. Section 9.24.040 lists specific nuisances. Included in this list are many hand-powered, fuel-powered, and electric-powered tools that could be used during construction projects. Section 9.24.040 limits the operation of the listed equipment to after 7:00 a.m. and before 7:00 p.m. on a daily basis except for Sundays and holidays when their use is prohibited before 10:00 a.m. and after 7:00 p.m. During daylight savings, this equipment may be operated until 8:00 p.m.

Chapter 15.04 of the Marina Municipal Code establishes that noise levels from construction are restricted to no more than 60 dB for twenty-five percent of an hour at any receiving property line. In addition, when construction is performed adjacent to residential uses, construction may only occur between 7:00 a.m. and 7:00 p.m. on weekdays and Saturdays and between ten a.m. and seven p.m. on Sundays and holidays.

The Marina Municipal Code does not specify quantitative operational noise standards (these standards are included in the City of Marina General Plan, as shown in Table 21).

City of Marina General Plan

The City of Marina General Plan's noise element ensures that noise control is incorporated into the planning process. The noise element contains various policies to help Marina achieve and maintain consistent noise levels for existing and proposed land uses; relevant policies to the project are included below.

> **Policy 4.106:** The land use policies contained in the Community Land Use Element are designed to avoid conflicts between noise-sensitive uses (in particular, residences and schools) and major noise sources. Accordingly, land designated for such noise-sensitive purposes has been limited to locations which are unlikely to be exposed to excessive noise. At such time that future development of residences, schools and parks is proposed, more site-specific noise analysis shall be conducted for parcels that are in close proximity to major roadways or that lie in areas affected by aircraft-generated noise. If specific uses are found to be affected by noise levels greater than the standards set forth in Table 4.1 of the General Plan [Table 20 herein], or the mitigation measures identified in the following sections shall be required.
>
> **Policy 4.107:** The maximum allowable exterior noise exposure, as measured in L_{dn} (dBA) shall not exceed the "acceptable use" standards shown in Table 4.1 of the General Plan [Table 20 herein]. Where existing or projected exterior noise levels exceed the acceptable limit, construction shall be conditionally permitted only when appropriate mitigation measures are employed.
>
> **Policy 4.108:** These measures must reduce interior noise to the maximum allowable limits shown in Table 4.1 of the General Plan [Table 20 herein]. In such instances, the developer of a new building shall provide the City with proof from a professional acoustical consultant that exterior noise levels have been mitigated such that building occupants will not be subject to interior noise levels greater than those in Table 4.1. If the City finds the project to be in the public interest, the City may approve a project where the exterior noise level exceeds the conditionally acceptable level. Such approval shall be contingent upon a detailed analysis by a

qualified acoustical engineer showing that specific measures included in the project will reduce interior noise to the maximum interior levels shown in Table 4.1.

Policy 4.111: New and modified stationary noise sources adjoining or in close proximity to residential and other noise-sensitive uses shall adhere to the standards in Table 4.2 of the General Plan *(*Table 20 herein).

Table 20 City of Marina Allowable Noise Standards Measured in Ldn (dBA)

Land Use	Maximum Acceptable Exterior	Maximum Conditionally Acceptable Exterior	Maximum Acceptable Interior[1]
Residential	60	70	45
Live/Work	65	75	50
Hotel/Motel	65	75	50
Office	67	77	55
Other Commercial	70	80	60
Industrial/Agriculture	70	80	60
Schools, Libraries, Theaters, Churches, Nursing Homes	60	70	45
Parks and Playfields	65	70	NA
Golf Courses, Riding Stables, Cemeteries	70	75	NA

[1] It is preferred that the interior noise standard be attained with open windows. However, where the interior noise standard is attainable only with closed windows and doors, mechanical ventilation shall be required.

Source: City of Marina 2000

Table 21 City of Marina Noise Standards for Stationary Sources

	Maximum Allowable Noise (dBA))	
Duration	Daytime (7:00 a.m. to 10:00 p.m.)	Nighttime (10:00 p.m. to 7:00 a.m.)
Hourly L_{eq}	50	45
L_{max}	70	65
L_{max}, impulsive	65	60

[1] As determined at the property line of the receiver. When determining the effectiveness of noise mitigation measures, the standards may be applied on the receptor side of noise barriers or other property-line noise mitigation measures.

Source: City of Marina 2000

Methodology

Construction

The primary source of temporary noise associated with implementation of the project would be construction activities. Construction for each project under the AHO would typically involve several stages including grading, foundation construction, and finish construction. Noise generated by construction equipment can vary in intensity and duration during each phase of construction. The potential noise levels associated with typical construction equipment that may be used during construction of the proposed project are identified in Table 22. As shown in the table, construction noise levels at 50 feet from individual equipment would range from approximately 73 to 83 dBA L_{eq}, depending on the type of construction equipment.

Table 22 Typical Construction Equipment Noise Levels

Equipment	Usage Per Day (Percentage)	Maximum Noise Level at 50 Feet (dBA L_{eq})
Backhoe	40	74
Compactor	20	76
Concrete Saw	20	83
Dozer	40	78
Dump Truck	40	73
Excavator	40	77
Generator	50	78
Loader	40	75
Paver	40	80

Source: FHWA 2008

Reasonable conservative construction scenarios would be from the simultaneous operation of an excavator, loader, and dump truck during grading, which is the construction activity that typically generates the highest noise levels. These pieces of equipment would be used during grading to remove or modify soil, with the loaders and dump trucks removing the debris. These three pieces of equipment would generate a noise level of 79.9 dBA L_{eq} at 50 feet, with a 60 dBA L_{eq} noise contour located at 500 feet (see Appendix G for calculation details).

Vibration

Marina does not have defined thresholds for vibration. Vibration impacts are analyzed using the thresholds from Caltrans' Transportation and Construction Vibration Guidance Manual and the FTA's Transit Noise and Vibration Impact Assessment Manual (Caltrans 2013b; FTA 2018). From these documents, the applicable thresholds for the vibration analysis are 0.4 peak particle velocity (PPV) inches per second at residential structures and the human "distinctly perceptible" threshold of 0.24 PPV inches per second.

Traffic Noise

Existing traffic noise levels from major roadways near the AHO sites were calculated using the Federal Highway Administration (FHWA) Highway Traffic Noise Prediction Model, RD-77-108. The FHWA Model is an analytical method utilized for traffic noise prediction. The FHWA Model assumes a clear view of traffic with no shielding (e.g., from buildings or topography) at the receiver location; In reality, varied topography, in combination with the presence of buildings and other barriers, would reduce the distance from the noise source to the dB contours in many instances. Therefore, the traffic noise levels presented in this analysis should therefore be considered conservative estimates of future roadway noise levels.

In 2019, Kimley-Horn and Associates prepared a traffic study for the proposed Marina DVSP, which is a proposed plan to guide development in the Central Marina downtown area, which encompasses the proposed project sites. The DVSP is separate and distinct from the proposed project, and the traffic study for the DVSP does not specifically identify the proposed project; however, by assessing traffic levels for the larger DVSP proposal, which would have a larger impact than the proposed project because it would encompass a larger area which includes the proposed project area, then traffic associated with the proposed AHO are reasonably accounted for in the 2019 traffic study for the DVSP. Therefore, since traffic levels from the proposed project are reasonably captured within

the 2019 traffic study, the data from that traffic study is used to inform this analysis of existing and proposed traffic levels for the proposed project.

The PM peak hour trip rates were used to provide conservative sound level estimates due to generally higher traffic volumes in that timeframe. Table 23 shows the peak hour traffic volumes under existing and future conditions, and the roadway miles per hour (mph) entered into the model. Per site measurement observations, vehicle composition was assumed as 96 percent automobiles, 2 percent medium trucks, and 2 percent heavy trucks on Reservation Road and Del Monte Boulevard, and 98.5 percent automobiles, 1 percent medium trucks, and 0.5 percent heavy trucks on the rest of the streets. The defaults of 84 percent traffic during the day and 16 percent during the night were also used.

Table 23 Existing and Future Traffic Volumes

		Traffic Counts (Peak Hour PM Trips)		
Roadway	Segment	MPH	Existing[1]	Future (included DVSP buildout)
Del Monte Blvd	SR 1 to Reindollar Ave	35	2,135	2,493
	Reindollar Ave to Palm Ave	35	1,663	1,959
	Palm Ave to Reservation Rd	35	1,510	1,714
Reservation Rd	Del Monte Blvd to Vista Del Camino Cir	35	1,763	2,139
	Vista Del Camino Cir to Seacrest Ave	35	1,759	2,018
	Seacrest Ave to De Forest Rd	35	1,696	1,995
	De Forest Rd to Crescent Ave	35	1,720	1,993
	Crescent Ave to California Ave	40	1,669	1,917
	California Ave to Salinas Ave	40	1,515	1,840
	Salinas Ave to out of DVSP	40	1,518	1,880
Reindollar Ave	Del Monte Blvd to east	25	678	945
Cypress Ave[1]	Del Monte Blvd to east	25	177	248
Palm Ave	Del Monte Blvd to east	25	177	248
Carmel Ave[1]	Del Monte Blvd to east	25	678	945
Mortimer Ln[1]	Del Monte Blvd to east	25	177	248
Vista Del Camino Cir	Reservation Road to north	25	584	757
Seacrest Ave	Reservation Road to south	25	550	774
De Forest Rd	Reservation Road to north	25	225	322
Crescent	Reservation Road to north	25	203	246
	Reservation Road to south	25	422	584
California Ave	Reservation Road to south	35	378	547
Lynscott Dr[1]	Reservation Road to south	25	378	547
Bayer St[1]	Reservation Road to south	25	378	547
Salinas Ave	Reservation Road to south	25	34	136
Sunset Avenue[1]	Reindollar Ave to Carmel Ave	25	177	248
Hillcrest Ave[1]	End of street towards Zanetta Dr	25	177	248

[1] Traffic volumes for these roadways were not provided in the traffic study; volumes on these roadways were assumed to be similar to the nearest, similar-sized collector street.

Source: Kimley-Horn and Associates 2019

Stationary Noise

The primary on-site noise sources associated with operation of housing developments, including in mixed use developments, and those discussed in this analysis, would include noise from stationary heating, ventilation, and air conditioning (HVAC) equipment, on-site vehicle movement (e.g., delivery and trash hauling), and outdoor activities. Analysis of outdoor activity considers the existing noise environment and refers to regulations included in the City's noise ordinance (i.e., Chapter 9.24 and 15.04) and the General Plan Community Land Use Element.

Specific planning data for HVAC systems are not available at this stage of analysis; however, for a reasonable assessment, specification for a typical to larger-sized residential condenser was used to determine project HVAC noise. The unit used for this analysis is a Carrier 38HDR060 split system condenser. The manufacturer's noise data lists the unit as having a sound power level of 72 dBA (Carrier 2011).

a. Would the project 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?

Construction

If construction occurs next to an existing property line, over the course of a typical construction day, construction equipment could at times be located as close as 10 feet to the nearest structures, but would typically be located at an average distance further away due to the nature of construction where equipment is mobile throughout the day. Therefore, it is conservatively assumed that equipment would operate at an average distance of 50 feet from neighboring property lines.

As described under Methodology, at a distance of 50 feet, an excavator, loader, and dump truck would generate a noise level of 79.9 dBA L_{eq}. The 60 dBA L_{eq} noise contour for these pieces of equipment is located at a distance of 500 feet; therefore, construction occurring within 500 feet of nearby property lines may exceed Marina's 60 dBA L_{eq} threshold. Section 9.24.040 of the Marina Municipal Code limits the operation of construction equipment to after 7:00 a.m. and before 7:00 p.m. on a daily basis except for Sundays and holidays when their use is prohibited before 10:00 a.m. and after 7:00 p.m. During daylight savings, this equipment may be operated until 8:00 p.m. These limitations would reduce the impact of construction noise in the evenings. However, due to exceeding the construction noise threshold during daylight hours, impacts would be potentially significant.

Operation

LAND USE COMPATIBILITY

Agencies subject to CEQA generally are not required to analyze the impact of existing environmental conditions on a project's future users or residents. In *California Building Industry Association v. Bay Area Air Quality Management District (2015) 62 Cal. 4th 369*, the California Supreme Court explained that an agency is only required to analyze the potential impacts to future residents if the project would exacerbate those existing environmental hazards or conditions. CEQA analysis is concerned with a project's impact on the environment, rather than with the environment's impact on a project and its users or residents. Therefore, bringing a population into an area where noise currently exists is not a significant environmental impact under CEQA unless doing so would

exacerbate noise conditions. Nonetheless, the following analysis of potential exposure to excessive noise is provided for informational purposes.

Development of the proposed AHO sites would expose future housing development to ambient noise levels that characterize the city, predominantly associated with vehicular traffic. According to the baseline noise contour map in the General Plan Noise Element, land uses along major arterial roadways are exposed to noise levels of 60 to 65 CNEL. Based on the City's land use compatibility standards shown in Table 20, ambient noise up to 60 CNEL is normally acceptable for residential areas. Therefore, new housing development proposed by the AHO could be exposed to noise levels above the normally acceptable range for residences.

The City also has an interior noise standard of 45 CNEL for residences, which is consistent with the State's interior noise standard. According to the 2019 CBC, Title 24, Part 2, Section 1206.4, multi-family residences must be constructed and designed such that interior noise levels do not exceed 45 CNEL. Generally, any large structure blocking the line of sight (e.g., a concrete block wall on a property's boundary) will provide at least a 5-dBA reduction in source noise levels at the receiver (FHWA 2011). Building materials can also substantially reduce occupants' exposure to noise. The FHWA's guidelines indicate that modern building construction generally provides an exterior-to-interior noise level reduction of 20 to 35 dBA with closed windows (FHWA 2011). Modern residential buildings in California are typically constructed with storm windows, single- or double-glazed, that achieve the required energy saving on heating and cooling, which also provide an exterior-to-interior noise level reduction of at least 20 dBA. Based on a noise exposure level of approximately 65 CNEL and a noise attenuation of at least 20 dBA, the interior noise level within new housing development could be up to 50 CNEL. Nonetheless, housing development would be required to comply with the General Plan Noise Element policies and 2019 CBC, Title 24, Part 2, Section 1206.4, which would collectively govern excessive noise exposure and require that sensitive uses achieve an interior noise level of 45 dBA or less in any habitable room through appropriate sound insulation (e.g., dual-paned windows, exterior doors with solid core and perimeter weather stripping).

Traffic Noise Impacts to Existing Uses

A significant impact would occur from AHO buildout traffic noise if it results in noise increases that exceed the Maximum Acceptable Exterior limits specified by the Marina General Plan as shown in Table 20. If existing conditions are already above those limits, a significant increase would occur if the project generates a perceptible change (3 dBA) over existing conditions.

Table 24 shows the traffic noise contours under project buildout. Table 25 shows the traffic noise increase from the existing to the future scenario. As shown in the table, there are several segments where traffic noise is increased by 1 or 2 dBA that would cause noise levels to exceed the Maximum Acceptable Exterior limits for certain land uses (e.g., residential uses on Carmel Avenue). However, none of these segments would have the project generate a 3 dBA or greater increase. One roadway, Salinas Avenue, would have an increase of 3 dBA or greater; however, even with the increase, the roadway would be well below the Maximum Acceptable Exterior limit for residential uses. Therefore, the AHO's increase to traffic noise levels would be less than significant.

Table 24 Future Traffic Noise Contours (Buildout)

Roadway	Segment	Noise Level at 50 Feet (dBA L_{dn})	Noise Contours (feet)			
			75 dBA L_{dn}	70 dBA L_{dn}	65 dBA L_{dn}	60 dBA L_{dn}
Del Monte Blvd	HW1 to Reindollar Ave	71	26	57	122	262
	Reindollar Ave to Palm Ave	70	22	48	103	222
	Palm Ave to Reservation Rd	69	21	44	95	205
Reservation Rd	Del Monte Blvd to Vista Del Camino Cir	70	24	51	109	236
	Vista Del Camino Cir to Seacrest Ave	70	23	49	106	229
	Seacrest Ave to De Forest Rd	70	23	48	104	225
	De Forest Rd to Crescent Ave	70	23	48	104	225
	Crescent Ave to California Ave	71	27	57	124	266
	California Ave to Salinas Ave	71	26	56	120	258
	Salinas Ave to out of DVSP	71	26	57	122	262
Reindollar Ave	Del Monte Blvd to east	62	7	14	31	66
Cypress Ave[1]	Del Monte Blvd to east	56	3	6	13	27
Palm Ave	Del Monte Blvd to east	56	3	6	13	27
Carmel Ave[1]	Del Monte Blvd to east	62	7	14	31	66
Mortimer Ln[1]	Del Monte Blvd to east	56	3	6	13	27
Vista Del Camino Cir	Reservation Rd to north	61	6	12	27	57
Seacrest Ave	Reservation Rd to south	61	6	12	27	57
De Forest Rd	Reservation Rd to north	57	3	7	15	32
Crescent Ave	Reservation Rd to north	56	3	6	13	27
	Reservation Rd to south	60	5	10	22	48
California Ave	Reservation Rd to south	63	7	16	35	75
Lynscott Dr[1]	Reservation Rd to south	59	5	10	21	46
Bayer St[1]	Reservation Rd to south	59	5	10	21	46
Salinas Ave	Reservation Rd to south	53	2	4	8	18
Sunset Ave[1]	Reindollar Ave to Carmel Ave	56	3	6	13	27
Hillcrest Ave[1]	End of street towards Zanetta Dr	56	3	6	13	27

See Appendix G for model printout

[1] Noise contours are from the roadway centerline.

Table 25 Traffic Noise Increases

Roadway	Segment	Noise Level at 50 Feet (dBA L_{dn})[1]		
		Existing	Future	Increase from Existing to Future
Del Monte Blvd	HW1 to Reindollar Ave	70	71	1
	Reindollar Ave to Palm Ave	69	70	1
	Palm Ave to Reservation Rd	69	69	0
Reservation Rd	Del Monte Blvd to Vista Del Camino Cir	69	70	1
	Vista Del Camino Cir to Seacrest Ave	69	70	1
	Seacrest Ave to De Forest Rd	69	70	1
	De Forest Rd to Crescent Ave	69	70	1
	Crescent Ave to California Ave	70	71	1
	California Ave to Salinas Ave	70	71	1
	Salinas Ave to out of DVSP	70	71	1
Reindollar Ave	Del Monte Blvd to east	60	62	2
Cypress Ave[1]	Del Monte Blvd to east	55	56	1
Palm Ave	Del Monte Blvd to east	55	56	1
Carmel Ave[1]	Del Monte Blvd to east	60	62	2
Mortimer Ln[1]	Del Monte Blvd to east	55	56	1
Vista Del Camino Cir	Reservation Road to north	60	61	1
Seacrest Ave	Reservation Road to south	60	61	1
De Forest Rd	Reservation Road to north	56	57	1
Crescent	Reservation Road to north	55	56	1
	Reservation Road to south	58	60	2
California Ave	Reservation Road to south	61	63	2
Lynscott Dr[1]	Reservation Road to south	58	59	1
Bayer St[1]	Reservation Road to south	58	59	1
Salinas Ave	Reservation Road to south	47	53	6
Sunset Ave[1]	Reindollar Ave to Carmel Ave	55	56	1
Hillcrest Ave[1]	End of street towards Zanetta Dr	55	56	1

[1] Noise contours are from the roadway centerline.

See Appendix G for model printout

STATIONARY NOISE

Operational noise generated by the proposed project may affect off-site sensitive receivers. Potential noise-generating land uses of the project include the HVAC units for the residential uses.

HVAC UNITS

Mechanical HVAC units located on the ground or on rooftops of new residential buildings would have the potential to generate noise levels that run continuously during the day and night. For modeling, the units were conservatively assumed not to include noise attenuation provided by a parapet wall. Specific planning information is not available for the HVAC units at this time; modeling assumed the use of Carrier 38HDR060 with a manufacturer's Sound Power Rating of 72 dBA SWL as

these units are representative of typical residential HVAC units. A cluster of eight HVAC units operating at a distance of 7 feet would generate a noise level of 57 dBA.

Depending on where they are located, HVAC units could exceed Marina's stationary noise limit for 55 dBA L_{eq} from 7:00 a.m. to 10:00 p.m. and 45 dBA L_{eq} from 10:00 p.m. to 7:00 a.m. at nearby property lines. For a point source such as a piece of mechanical equipment, the sound level normally decreases by about 6 dBA for each doubling of distance from the source. Therefore, it is assumed that HVAC equipment would generate noise levels that would exceed 45 dBA within 28 feet of the equipment and 50 dBA within 16 feet of the equipment. Consequently, noise levels to residences or other sensitive receivers located in close proximity to a building that requires an HVAC system could result in a significant impact.

Summary

As described above, construction noise would exceed established thresholds at a distance of 500 feet. Therefore, mitigation is required to reduce the impact to a less than significant level. Operational impacts, including stationary noise from HVAC units, would also be potentially significant and require mitigation.

AHO-generated traffic noise impacts to existing land uses would be less than significant. Mitigation would not be required for these specific impacts.

Mitigation Measures

NOI-1 Construction Noise Reduction Measures

The following measures shall be implemented if construction is to occur within 500 feet of a residential property line:

- Notes for grading plans and/or site improvement plans shall clearly state the noise limitation requirements of Municipal Code Section 15.04.055.
- Construction activities shall occur as to not exceed the 60 dBA L_{EQ} noise limit at a receiving property line. Measures to reduce noise levels below the 60 dBA L_{EQ} noise limit include, but are not limited to, the following:
    a. **Mufflers.** During project site excavation and grading, construction equipment, fixed or mobile, shall be operated with closed engine doors and shall be equipped with properly operating and maintained mufflers consistent with manufacturers' standards.
    d. **Stationary Equipment.** Stationary construction equipment shall be located and oriented so that emitted noise is directed away from the nearest noise sensitive receivers.
    e. **Equipment Staging Areas.** Equipment staging shall be located in areas that will create the greatest distance feasible between construction-related noise sources and noise sensitive receivers.
    f. **Electrically-Powered Tools and Facilities.** Where available, electrical power shall be used to run air compressors and similar power tools and to power any temporary structures, such as construction trailers or caretaker facilities.
    g. **Sound Barriers.** Temporary noise barriers shall be implemented between the construction equipment and the receiving property lines. The noise barriers shall be constructed of material with a minimum weight of two pounds per square foot with no gaps or perforations. Noise barriers may be constructed of, but not limited to, 5/8-inch

plywood, 5/8-inch oriented strand board, and hay bales. Noise barriers may consist of sound blankets affixed to construction fencing along the construction site boundary facing potentially sensitive receivers

h. **Idling.** Construction vehicles shall be prohibited from idling in excess of five minutes.

NOI-2 HVAC Mechanical Equipment Shielding

Concurrent with Design Review and prior to the approval of building permits, the applicant shall provide a design plan demonstrating to the satisfaction of the Development Services Director (or their designee) that the noise level from operation of mechanical equipment shall not cumulatively exceed the following noise level limits for a designated receiving land use category as specified in Table 4.2 in the Marina General Plan:

- From 7 a.m. to 10 p.m.:
  a. 50 dBA L_{eq}
  b. 70 dBA L_{max}
  c. 65 dBA L_{max}, impulsive
- From 10 p.m. to 7 a.m.:
  a. s45 dBA L_{eq}
  b. 65 dBA L_{max}
  c. 60 dBA L_{max}, impulsive

Noise control measures may include, but are not limited to, the selection of quiet equipment, equipment setbacks, parapet walls, silencers, and/or acoustical louvers. Noise attenuation features shall be implemented that would reduce sound levels to allowable noise levels.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

b. Would the project result in generation of excessive groundborne vibration or groundborne noise levels?

Construction activities known to generate excessive ground-borne vibration, such as pile driving, would not be anticipated to be used for typical residential uses established pursuant to the AHO. The greatest anticipated source of vibration during general construction activities in the AHO would be from a vibratory roller, which may be used during paving activities and may be used within 25 feet of the nearest off-site structures. A vibratory roller would create approximately 0.210 in./sec. PPV at a distance of 25 feet (Caltrans 2013b). This would be lower than what is considered a distinctly perceptible impact for humans of 0.24 in./sec. PPV, and the structural damage impact to residential structures of 0.4 in./sec. PPV. Therefore, although a vibratory roller may be perceptible to nearby human receivers, temporary impacts associated with the roller (and other potential equipment) would be less than significant.

The proposed uses in the AHO do not include any substantial vibration sources associated with operation. Therefore, operational vibration impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

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?

The nearest AHO sites are located approximately 3,000 feet south of the outer edge of the 60 CNEL contour for the Marina Municipal Airport (Monterey County Airport Land Use Commission 2019). Therefore, the AHO sites would not be exposed to excessive noise from the airport, and impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

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14 Population and Housing

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

a. Would the project 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)?

The AHO would facilitate development of up to 898 new residential units in the City of Marina. According to the California Department of Finance (DOF), there is an average of 2.65 persons per household in Marina (DOF 2022). Assuming a conservative, maximum-growth scenario in which all new residents relocate to the City of Marina, the AHO would result in an estimated 2,380 new residents in the city.

The DOF estimates that the population of Marina as of January 2022 was 21,457 (DOF 2022). Population growth estimates for the City of Marina by AMBAG (2022) are shown below in Table 26. Because development facilitated by the AHO would be built out gradually, this analysis assumes that the additional 2,380 residents relocate to the city over 15 to 20 years. The AMBAG population estimate for the city in 2040 is 28,433 people, or 6,976 more people than the city's currently population. Therefore, the 2,380 new residents added by the project would be within AMBAG's growth projections for Marina.

Table 26 Marina Population Projections

2025	2030	2035	2040	2045
23,723	25,126	26,713	28,433	30,044

Source: AMBAG 2022

Therefore, the proposed project would not result in substantial unplanned population growth. Impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

b. Would the project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

Implementation of the AHO would involve demolition of some existing housing in order develop new units. However, any displacement of people or housing would be temporary, and new housing added to the downtown area would support a greater number of residents than existing housing. Therefore, the project would not result in the need for new housing elsewhere, as the AHO would result in a concentration of the City's housing stock within higher density development within the downtown area. Therefore, impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

15 Public Services

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a.	Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the 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:				
	1 Fire protection?	☐	☐	■	☐
	2 Police protection?	☐	☐	■	☐
	3 Schools?	☐	☐	■	☐
	4 Parks?	☐	☐	■	☐
	5 Other public facilities?	☐	☐	■	☐

a.1. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered fire protection facilities, or the need for new or physically altered fire protection facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives?

The Marina Fire Department (MFD) provides fire protection, medical emergency response, natural disaster preparedness, and hazardous materials mitigation services to the Downtown area, including the AHO sites. The Marina Fire Station is located within the Downtown area at 211 Hillcrest Avenue. The MFD maintains three Type 1 engines and 15 full-time shift uniformed staff members, which include three firefighters, 6 engineers, 6 captains, one division chief, one administrative assistant and one fire chief. In addition, there are 14 reserves (City of Marina 2021). MFD's service area boundaries are limited to the Marina city limits. In 2016, the most recent year with reported data, MFD received 2,136 calls for service. Under existing conditions MFD requires three additional uniformed staff members and a fire marshal.

Although the MFD has existing deficiencies in service, the City participates in a mutual aid agreement with all fire departments in Monterey County to enhance fire protection services and reduce response times (City of Marina 2000). Additionally, should the MFD propose to expand or construct new facilities in the future, such facilities would be subject to subsequent environmental review under CEQA in which potential environmental impacts would be addressed accordingly. It

should be noted that the allocation of funding for MFD staffing is the responsibility of the City of Marina and would be addressed as specific projects are proposed in the future. In addition, projects under the AHO would be required to pay impact mitigation fees pursuant to the City of Marina's developer fee schedule. Payment of impact mitigation fees would constitute funding equivalent to the provision of fire protection services to offset potential impacts associated with development facilitated by the AHO.

As described in Section 14, *Population and Housing*, buildout of the AHO would not cause substantial unplanned population growth. Rather, the project would facilitate the City's planned population growth within the existing DVSP area. The project would facilitate population growth and would result in an increased demand for services proportional to the population increase; however, the increase would be incremental and within the growth projections outlined in the City's General Plan (City of Marina 2010). The addition of an estimated 2,380 future residents would not create excessive demand for emergency services or introduce development to areas outside of normal service range that would necessitate new fire protection facilities. With the continued implementation of existing practices, including compliance with the California Fire Code, future development of the project sites would undergo review by the MFD during the Building Permitting process to ensure adequate access, consistency with existing facilities, and acceptable response times. Therefore, the project would not place an unanticipated burden on fire protection services or affect response times or service ratios such that new or expanded fire facilities would be needed. Impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

a.2. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered police protection facilities, or the need for new or physically altered police protection facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives?

The Downtown area, including the AHO sites, receives police protection services from the Marina Police Department (MPD). The Marina Police Station is located within the Downtown area at 211 Hillcrest Avenue. MPD provides preventative patrol, traffic control, crime prevention, investigations, drug enforcement, abuse prevention, and civil order services. The MPD staffs 29 sworn officers and eight non-sworn personnel. Based on the 2021 population estimate for the City of 22,507 (see Section 14, *Population and Housing*), the ratio of residents to police personnel is approximately 608 to 1. The project could result in an estimated maximum of 2,380 new residents, which would require the hire of approximately 4 new police personnel, and potentially a need for new facilities (US Census Bureau 2021). The project would generate new population and associated demand for services; however, the increase would be incremental and within the growth projections outlined in the City's General Plan (City of Marina 2010). The addition of an estimated 2,380 residents would not create excessive demand for police services or introduce development to areas outside of normal service range that would necessitate new police protection facilities. Therefore, the project would not place an unanticipated burden on police protection services or affect response times or service ratios such that new or expanded police facilities would be needed. Impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

a.3. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered schools, or the need for new or physically altered schools, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios or other performance objectives?

The Monterey Peninsula Unified School District (MPUSD) provides public education in the City of Marina. MPUSD operates five schools in Marina: J.C. Crumpton Elementary School (grades K-5), Marina Vista Elementary School (grades K-5), Ione Olson Elementary School (grades K-5), Los Arboles Middle School (grades 6-8), and Marina High School (grades 9-12). All five of these schools serve the Downtown area, which includes the AHO sites. Table 27 displays the 2020-2021 student enrollment and existing capacity levels for these schools.

Table 27 Marina School Enrollment and Capacity

School Name	Public/Private	Grades	Classrooms	2020-2021 Enrollment
J.C. Crumpton Elementary	Public	K-5	23	488
Marina Vista Elementary	Public	K-5	23	425
Ione Olson Elementary	Public	K-5	20	323
Los Arboles Middle	Public	6-8	27	557
Marina High	Public	9-12	32	648
Total		**K-12**	**145**	**2,441**

Source: Ed Data 2022

Development facilitated by the proposed project would add up to 898 new residential units in the Downtown area. Assuming a conservative student generation rate of one student per residential unit, the development of the AHO sites would generate up to 898 additional students at local schools. While future development would increase the number of students, the increase in student population would occur incrementally as development facilitated by the AHO would occur over several years. Furthermore, a school impact fee is collected for each residential unit that is constructed during the building permitting process. As stated in California Government Code Section 65996, payment of school impact fees is deemed to constitute full and complete mitigation for potential impacts to schools caused by development. Therefore, impacts related to the need for new school facilities as a result of implementing the proposed project would be less than significant.

LESS THAN SIGNIFICANT IMPACT

a.4. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered parks, or the need for new or physically altered parks, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios or other performance objectives?

As described in Section 16, *Recreation*, the City of Marina General Plan establishes a standard of 5.3 acres of City park and recreation land for every 1,000 residents. The AHO would result in an incremental reduction in available recreation space per resident in the City but would be above the minimum required parkland standard. Therefore, while the project would facilitate new housing development that would contribute additional residents to the City population, given the existing population in the City and the number of new residents the project would produce, it would not

result in overuse of parks such that substantial physical alteration of parks would occur, or require the construction of new park facilities. Furthermore, the development proposed under the AHO is within the City's growth projections, which takes the City's recreational needs and impacts into account. Impacts would be less than significant; refer to Section 16, *Recreation*, for further discussion.

LESS THAN SIGNIFICANT IMPACT

a.5. Would the project result in substantial adverse physical impacts associated with the provision of other new or physically altered public facilities, or the need for other new or physically altered public facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives?

As described in criteria a.1 – a.4 above, impacts related to expanded or altered government facilities, including fire, police, school, and park facilities, would be less than significant. Other government facilities include library services, which are provided by the Marina Library. The Marina Library is located at 188 Seaside Circle, less than one mile from most of the AHO sites, and is run by the City of Marina and the Monterey County Free Libraries (MCFL) system. The Marina Library was moved to its present location in 2007 to accommodate the City's growth (Marina 2010).

As described in Section 14, *Population and Housing*, development facilitated by the proposed project would generate population growth of approximately 2,380 people. This level of population growth would not be substantial in relation to the City's overall population and would thus not require construction of new library facilities. Therefore, impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

16 Recreation

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Would the project 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?	☐	☐	■	☐
b. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	■	☐

a. Would the project 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?

b. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

Implementation of the AHO would not require or directly involve on-site recreational facilities, which might have an adverse physical effect on the environment. As discussed in Section 14, *Population and Housing,* the AHO would result in a population increase of 2,380 residents in Marina in a conservative, maximum-growth scenario. This population increase would minimally increase use of existing parks within the city.

The City of Marina General Plan establishes a standard of 5.3 acres of City park and recreation land for every 1,000 residents (City of Marina 2010). The City's Parks and Recreation Master Plan identifies a more ambitious goal of 10 acres of park and recreation land per 1,000 residents. The present ratio of parkland to residents is 5.3 acres per 1,000 residents (City of Marina 2010), consistent with the standard established in the General Plan. An increase of 2,380 residents would decrease this ratio to 4.8 acres of parkland per 1,000 residents. However, City park and recreational land included in this calculation does not include undeveloped open space areas within the former Fort Ord, or approximately 650 acres of nearby state and regional coastal parkland. According to the General Plan, the City's parkland ratio is expected to grow to over 10 acres per 1,000 residents at full General Plan buildout after the improvement of former Fort Ord lands.

Currently, there are no public parks, open space areas, or land zoned or designated for park/recreation purposes within the downtown area, except for a parcel at the easternmost point that is designated Habitat Preserve & Other Open Space. Parks nearby to the AHO sites include Locke-Paddon Park, adjacent to the intersection of Del Monte Boulevard and Reservation Road to the northwest; Vince DiMaggio Park, immediately adjacent to Locke-Paddon Park across Del Monte Boulevard; and Marina City Park, approximately 0.3 mile east of Del Monte Boulevard. While the AHO would not designate land for new parks, the City plans to develop new park space elsewhere,

including on former Fort Ord lands (City of Marina 2010). Several new developments within the City, such as the University Village and Sea Haven residential developments, have been built to include public open space and public use parks. Additionally, the Fort Ord Regional Trail and Greenway (FORTAG) is proposed as a 30-mile regional network of paved recreational trails and greenways connecting communities, including the City of Marina, to open space.

The AHO sites are served by multiple nearby parks. New development facilitated by the project would be required to pay impact fees to contribute to park maintenance and development of new parkland to meet the City's parkland ratio standard. Because there are sufficient parks available near the AHO sites and because future development facilitated by the AHO would be required to pay applicable impact fees for park maintenance and development, development facilitated by the AHO would not 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. Impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

17 Transportation

	Potentially Significant Impact	Less than Significant with 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?	☐	☐	■	☐
b. Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	☐	☐	■	☐
c. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible use (e.g., farm equipment)?	☐	☐	■	☐
d. Result in inadequate emergency access?	☐	☐	■	☐

Some analysis in this section is based on a VMT Analysis prepared by Kimley-Horn. The VMT Analysis is included as Appendix H.

Regulatory Setting

Senate Bill 743

Level of Service (LOS) is a qualitative measure used to describe the operating conditions of a roadway or intersection based on speed, travel time, and delay. LOS is described in a ranking system from A to F, with LOS A describing free-flow traffic with individual roadway users primarily unaffected by other vehicles and LOS F describing forced traffic flow characterized by stop and go waves of movement. SB 743 was signed into law on September 27, 2013, and directed the Governor's Office of Planning and Research to develop revisions to the *CEQA Guidelines* to establish new criteria for determining the significance of transportation impacts. SB 743 changed the approach to transportation impact analysis by establishing measures such as VMT, VMT per capita, or automobile trip generation rates as the primary measures of transportation impacts. SB 743 also eliminated the traditionally used measures of auto delay and congestion, such as LOS and other measures of traffic congestion as a basis for determining significant impacts. Section 15064.3 of the *CEQA Guidelines* replaces the congestion-based metric of LOS with VMT as the basis for determining significant impacts.

City of Marina General Plan

Policy 3.9 of the General Plan Community Infrastructure Element states that the City shall strive to maintain LOS D at peak periods for all highway segments and major roads within Marina, except

where existing roadways are operating at a lower LOS at the time of plan adoption or project approval; in which case, the existing LOS will be maintained or improved (City of Marina 2010).

a. Would the project conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

Roadway Facilities

The AHO would increase the allowable housing density of certain sites within the City's downtown, enabling the City to meet and exceed the RHNA housing goal for the City. Accordingly, development facilitated by the AHO would generate more trips than anticipated by development facilitated by the sites' existing zoning, potentially resulting in a decreased LOS. However, per CEQA Guidelines Section 15064.3 and PRC Section 21099(b)(2), LOS is not considered a significant environmental effect. In addition, the Public Works Department collects Public Facilities Impact fees for all construction requiring a permit. Payment of these fees would support development and maintenance of roadway facilities serving the project site. Therefore, the project would not conflict with a program, plan, ordinance, or policy addressing roadway facilities, and impacts would be less than significant.

Bicycle Facilities

There are several bicycle facilities located in the vicinity of the AHO sites, including a recreation path located along Del Monte Boulevard that connects to the Monterey Peninsula Recreation Trail and bicycle lanes along Reservation Road from Salinas Avenue to Robin Drive. Future bicycle facilities that would serve development facilitated by the AHO include northbound bicycle lanes on Del Monte Boulevard, the extension of Del Monte Boulevard to Imjin Parkway, and connections to the Fort Ord Regional Trail and Greenway. While the project would generate additional bicycle traffic, existing and planned facilities would be adequate to serve the project and bicycle traffic would not exceed levels anticipated by the Transportation Agency for Monterey County's (TAMC) Bicycle and Pedestrian Master Plan (TAMC 2018). Therefore, the project would not conflict with a program, plan, ordinance, or policy addressing bicycle facilities, and impacts would be less than significant.

Pedestrian Facilities

Sidewalks are nearly continuous in the Marina downtown area and along AHO site frontages. AHO sites would be served by sidewalks that provide connections to pedestrian facilities throughout the city and to the Monterey Peninsula Recreation Trail. Future pedestrian facilities that would serve development facilitated by the AHO include sidewalks that close occasional gaps in the existing network, the extension of Del Monte Boulevard to Imjin Parkway, and connections to the Fort Ord Regional Trail and Greenway. Pedestrian activity is anticipated to increase due to the project; however, existing and planned facilities would be adequate to serve the project and pedestrian traffic would not exceed levels anticipated by the TAMC Bicycle and Pedestrian Master Plan (TAMC 2018). Therefore, Therefore, the project would not conflict with a program, plan, ordinance, or policy addressing pedestrian facilities, and impacts would be less than significant.

Transit Facilities

MST bus lines provide service along Reservation Road and Del Monte Boulevard, where the AHO sites are concentrated. In addition, AHO sites are proximate to the Marina Transit Exchange, a major transit stop. Projected transit demand associated with the project would be minimal and would be

accommodated by existing transit service in the project area. Furthermore, development facilitated by the AHO would be required to pay applicable fees pursuant to the City's Traffic Fee Ordinance and the Transportation Agency for Monterey County's Regional Development Impact Fee. Payment of these fees would support development and maintenance of transit facilities serving the project site. Therefore, the project would not conflict with a program, plan, ordinance, or policy addressing transit facilities, and impacts would be less than significant.

Development of the project site would not conflict with a program, plan, ordinance or policy addressing the circulation system, including pedestrian, bicycle, and transit facilities. This impact would be less than significant.

LESS THAN SIGNIFICANT IMPACT

b. Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?

Methodology and Assumptions

Because the AHO would be applied to 23 sites throughout Marina, each site was analyzed separately to determine the potential overall impact of the proposed project. The proposed AHO was analyzed in accordance with the City of Marina's SB 743 Guidelines (VMT Guidelines) to determine whether the zoning overlay applied to the 23 AHO sites would result in significant impacts related to transportation. The complete VMT analysis, prepared by Kimley-Horn, is included as Appendix H.

The City's VMT Guidelines provide screening criteria to determine if a detailed VMT analysis would be required for VMT generated at any of the 23 AHO sites. The screening criteria consist of:

- **Map Based Screening.** The City's VMT Guidelines include a screening map of traffic analysis zones (TAZ). If an AHO parcel is within a TAZ that is anticipated to produce VMT capita below the City's threshold, it is assumed that the parcel will also produce VMT below the City's threshold.
- **Proximity to High Quality Transit.** The City's VMT Guidelines state that projects within one-half mile of an existing major transit stop[7] can be assumed to result in a less-than-significant transportation impact.
- **Affordable Housing.** The City's VMT Guidelines assume that sites containing affordable housing would have 12 percent less VMT per capita than existing conditions.
- **Increased Residential Density.** Pursuant to guidance from the CAPCOA, the VMT per capita of a project site can be estimated using its existing VMT per capita, the 12 percent VMT per capita associated with affordable housing, and the increase in residential density.

As demonstrated in the following subsections, all 23 AHO sites were screened out using the above screening criteria, and a detailed VMT analysis would not be required for the project.

Map Based Screening

The City's Residential VMT per Capita screening map was compared to the 23 AHO sites to determine if any AHO sites are located in a TAZ that is anticipated to produce VMT per capita below the City's threshold of 10.9. The screening map is included in Appendix H. Two AHO sites, sites 13

[7] A major transit stop is defined as a transit stop maintaining a service interval frequency of 15 minutes or fewer during morning and evening commute peak hours.

and 14 on Sunset Avenue, are within a TAZ that is anticipated to produce VMT per capita below the City's threshold. Therefore, pursuant to the City's VMT Guidelines, it can be assumed that AHO sites 13 and 14 would result in a less than significant impact related to VMT.

Proximity to High Quality Transit

The City's VMT Guidelines state that a project can be assumed to result in a less-than significant VMT impact if the project is within one-half mile of an existing major transit stop. High quality transit provides a viable alternative to vehicle trips, which would contribute to a reduction in VMT.

The Marina Transit Exchange, located at 280 Reservation Road, is a high quality transit stop as it maintains service intervals of 15 minutes or less during morning and evening commute peak hours. As shown in Appendix H, the following 16 AHO sites are within one-half mile of the Marina Transit Exchange:

- Site 1
- Site 2
- Site 3
- Site 7
- Site 8
- Site 9
- Site 10
- Site 11
- Site 12
- Site 13
- Site 14
- Site 15
- Site 16
- Site 21
- Site 22
- Site 23

Although AHO sites 13 and 14 were already screened out using the City's screening map, they are also within one-half mile of quality transit. Therefore, it can be assumed that these 16 AHO sites would result in less-than-significant VMT impacts.

Affordable Housing

According to the City's VMT Guidelines, projects can be assumed to result in a 12 percent reduction to existing VMT if the project includes affordable housing. Existing VMT is determined by assuming a project site would have the same average VMT as the TAZ it lies within. The affordable housing VMT reduction calculation for sites that could be reduced to below the City's VMT threshold of 10.9 is shown below in Table 28.

Table 28 Affordable Housing VMT Reduction Calculation

AHO Site Number	TAZ	Existing VMT per Capita	Affordable Housing Reduction (12%)	Adjusted VMT per Capita	Exceeds City Threshold (10.9)?
5	873	11.19	-1.34	9.85	**No**
6	873	11.19	-1.34	9.85	**No**
20	812	11.64	-1.40	10.24	**No**

Source: Appendix H

As shown above, AHO sites 5, 6, and 20 would result in a VMT per capita below the City's threshold of 10.9 with the 12 percent affordable housing reduction. Therefore, sites 5, 6, and 20 can be assumed to result in less than significant VMT impacts.

Increased Residential Density

Four AHO sites (sites 4, 17, 18, and 19) would still result in VMT per capita above the City's threshold after applying the 12 percent affordable housing reduction. However, the increased residential density features associated with the AHO were incorporated into the analysis to further reduce these sites' VMT per capita. CAPCOA has defined a calculation that determines the percent reduction in VMT that could occur when considering a site's proposed residential density, existing residential density, and the elasticity of VMT with respect to residential density.[8] The maximum reduction in VMT that could be estimated with this calculation is capped at 30 percent. For additional information on this calculation, refer to Appendix H.

Table 29 below summarizes the results of the increased residential density calculation performed in Appendix H.

Table 29 Increased Residential Density VMT Reduction Calculation

AHO Site Number	TAZ	Existing VMT per Capita	Affordable Housing Reduction (12%)	Residential Density Reduction[1]	Adjusted VMT per Capita	Exceeds City Threshold (10.9)?
4	856	13.68	-1.64	-4.10	7.93	**No**
17	817	16.87	-2.02	-5.06	9.78	**No**
18	817	16.87	-2.02	-5.06	9.78	**No**
19	817	16.87	-2.02	-5.06	9.78	**No**

[1] The residential density reduction is based off existing densities of 13.9, 5.2, 3.5, and 3.5 du/acre and future max density of 50, 50, 35, 35 du/acre for each parcel, respectively. Using the average U.S. home density of 9.1 du/acre instead of existing densities would still result in a 30% reduction of VMT.

Source: Appendix H

As shown above, the 12 percent affordable housing reduction and increased residential density calculation would result in an adjusted VMT per capita that falls below the City's VMT threshold of 10.9. Therefore, it can be assumed that AHO sites 4, 17, 18, and 19 would result in less-than-significant impacts to VMT.

Summary

Table 30 summarizes the results of the VMT Analysis (Appendix H) and screening criteria applied to each AHO site pursuant to the City's VMT Guidelines.

8 Elasticity refers to how one variable changes in response to another variable, or in this case, how VMT would change in response to increased residential density. A variable with low elasticity does not change substantially in value in response to another variable. The elasticity of VMT in this calculation is 0.22, representing a low elasticity. Accordingly, this describes how an increase in residential density would not result in a proportionate increase in VMT. Refer to Appendix H for further information.

Table 30 Summary of Applied VMT Screening Criteria

Site ID	APN	Applied Screening Criteria			
		Map Based Screening	Proximity to High Quality Transit	Affordable Housing	Increased Residential Density
1	032121018000		X		
2	032121020000		X		
3	032121024000		X		
4	032121042000			X	X
5	032141029000			X	
6	032141030000			X	
7	032192051000		X		
8	032201003000		X		
9	032201004000		X		
10	032201005000		X		
11	032201031000		X		
12	032212016000		X		
13	032291053000	X	X		
14	032291054000	X	X		
15	032303015000		X		
16	032303039000		X		
17	032312014000			X	X
18	032312019000			X	X
19	032312032000			X	X
20	032421014000			X	
21	032121025000		X		
22	032121006000		X		
23	032121019000		X		

Source: Appendix H

As demonstrated above, all 23 AHO sites would be screened out by at least one screening criterion established by the City's VMT Guidelines. Pursuant to the City's VMT Guidelines, it can be assumed at all 23 AHO sites would not exceed the City's VMT threshold of 10.9. Therefore, the project would not conflict or be inconsistent with *CEQA Guidelines* section 15064.3, subdivision (b), and impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

c. Would the project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible use (e.g., farm equipment)?

Future development facilitated by the AHO would utilize existing driveways providing access to the AHO sites, as well as future driveways proposed under individual development projects.

Development and circulation plans for individual projects would be subject to review by the Marina Fire Department prior to issuance of building permits, which would ensure that individual projects facilitated by the AHO would not introduce sharp curves or dangerous intersections. Further, the

AHO would facilitate residential development, which would involve passenger vehicle traffic typical of the area and would not introduce incompatible uses on AHO sites. Therefore, impacts related to hazards or incompatible uses would be less than significant.

LESS THAN SIGNIFICANT IMPACT

d. Would the project result in inadequate emergency access?

Development facilitated by the AHO would be required to comply with the City's standards for emergency vehicle access (including providing adequate points of access, vertical clearance, and turning radius). Should development facilitated by the project require a lane closure of adjacent roadways, clear signage (e.g., closure and detour signs) would be provided to ensure vehicles, pedestrians and bicyclists are able to adequately reach their intended destinations safely. In operation, future development applicants would be required to provide the City with a detailed plan demonstrating that each floor of the proposed buildings would be accessible by a fire aerial apparatus, fire hoses, and other emergency vehicles from surrounding roadways. Project plans for development facilitated by the AHO would also be subject to review by the Marina Fire Department to ensure that adequate emergency access would be available prior to issuance of building permits. Therefore, the project would not result in inadequate emergency access and the impact would be less than significant.

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18 Tribal Cultural Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in a Public Resources Code Section 21074 as either a site, feature, place, or cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
a. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k), or	☐	■	☐	☐
b. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	■	☐	☐

PRC Section 21074 (a)(1)(A) and (B) define tribal cultural resources as "sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe" and is:

1. Listed or eligible for listing in the California Register of Historical Resources, or in 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 pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying these criteria, the lead agency shall consider the significance of the resource to a California Native American tribe.

Assembly Bill (AB) 52 also establishes a formal consultation process for California tribes regarding those resources. The consultation process must be completed before a CEQA document can be certified. Under AB 52, lead agencies are required to "begin consultation with a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project." Native American tribes to be included in the process are those that have requested notice of projects proposed within the jurisdiction of the lead agency.

On ~~June 6, 2019,~~ August 23, 2022, ~~as part of a previous study conducted in the DVSP Area,~~ Rincon contacted the Native American Heritage Commission (NAHC) and requested a search of the Sacred Lands File (SLF).

~~As stated above, all the AHO sites are located within the DVSP area. As such, the previous SLF search covered all the AHO sites.~~ The NAHC emailed a response on ~~June 11, 2019~~ October 4, 2022, stating that the SLF search was negative. ~~An updated SLF search was sent to NAHC on August 23, 2022, and the search results are pending.~~

On October 27, 2022, the City invited the following Tribes to consult pursuant to Assembly Bill 52 (AB 52) and Senate Bill 18 (SB 18)~~Under AB 52 and SB 18 of 2004, the City sent letters to the following Native American groups on June 26, 2019~~: Esselen Tribe of Monterey County, Costanoan Rumsen Carmel Tribe, Ohlone Costanoan Esselen Nation, Amah Mutsun Tribal Band, Amah Mutsun Tribal Band of Mission San Juan Bautista, ~~and the~~ Indian Canyon Mutsun Band of Costanoan, Wuksache Indian Tribe/Eshom Valley Band, Kakoon Ta Ruk Band of Ohlone-Costanoan Indians of the Big Sur Rancheria, and the Rumsen Am:a Tur:ataj Ohlone. (Appendix ~~TRIBAL~~ I). ~~A representative from the Amah Mutsun Tribal Band responded to the letter to state that the City of Marina falls just south of the Tribal Boundary and the Tribe is therefore unable to respond to consultation letters relating to the proposed Specific Plan. A representative with the Ohlone/Costanoan Esselen Nation request consultation with the City. Staff made several documented attempts to contact the Tribe via email, phone, and mail to arrange a time for consultation, however such attempts were unanswered. No other requests for tribal consultation were received, and consultation ended on December 20, 2019.~~ Consultation is ongoing; Tribes will notify the City if they would like to consult pursuant to AB 52 by November 27, 2022, and pursuant to SB 18 by January 25, 2023. At the time of preparation of this Final IS-MND, no tribes have requested consultation. All requests for consultation and the outcome of consultation will be considered by the City prior to considering project approval.

a. *Would the project cause a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code Section 21074 that is listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k)?*

b. *Would the project cause a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code 21074 that is a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1?*

~~The City did not receive requests for tribal consultation under AB 52, thus the City assumes for the purposes of this analysis that no tribal cultural resources are located within the AHO sites.~~ Tribal consultation is ongoing at the time of preparation of this IS-MND. Although no known tribal cultural resources are present on the AHO sites, there is the possibility of encountering unknown tribal cultural resources or known cultural resources that may be identified as tribal cultural resources. Ground disturbance associated with projects facilitated by the AHO has the potential to significantly impact tribal cultural resources. Mitigation is required to ensure that any unanticipated discoveries of tribal cultural resources are avoided or, where avoidance is infeasible, mitigated to a less than significant level.

Mitigation Measures

TCR-1 Suspension of Work around Tribal Cultural Resources

In the event that cultural resources of Native American origin are identified during construction of AHO sites, all earth-disturbing work in the vicinity of the find shall be temporarily suspended or redirected until an archaeologist has evaluated the nature and significance of the find as a cultural resource in accordance with Mitigation Measure CR-2 and an appropriate local Native American representative is consulted. If the City, in consultation with local Native Americans, determines that the resource is a tribal cultural resource and thus significant under CEQA, a mitigation plan shall be prepared and implemented in accordance with state guidelines and in consultation with local Native American group(s). The plan shall include avoidance of the resource or, if avoidance of the resource is infeasible, shall outline the appropriate treatment of the resource in coordination with the appropriate local Native American tribal representative and, if applicable, a qualified archaeologist. Examples of appropriate mitigation for tribal cultural resources include, but are not limited to, protecting the cultural character and integrity of the resource, protecting traditional use of the resource, protecting the confidentiality of the resource, or heritage recovery.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

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19 Utilities and Service Systems

	Potentially Significant Impact	Less than Significant with 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, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	■	☐	☐
b. Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	■	☐	☐
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?	☐	■	☐	☐
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?	☐	■	☐	☐
e. Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	■	☐	☐

a. Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

c. Would the project 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?

The construction of development under the proposed project would include site-specific connections to existing water supply infrastructure, in order to provide water supply service to individual housing units. These facilities would consist of underground pipes connecting individual

housing units to existing water mains (larger underground water distribution pipes) that already exist throughout the DVSP area, primarily within paved roadways. These connections would be installed during the projects' construction periods, within the project-specific construction footprints. As such, any potential environmental effects associated with project-specific water supply connections are included construction-related impacts of future developments, as evaluated throughout this Initial Study. The project would not involve the relocation or construction of new or expanded water supply infrastructure, as water supply for the project would be provided by MCWD from its existing water supply sources, and using its existing distribution infrastructure, consisting of underground water mains and appurtenances throughout the area. Therefore, the project would not result in environmental effects associated with the relocation or construction of new or expanded water facilities.

The City of Marina receives potable water service from the Marina Coast Water District; wastewater treatment from Monterey One Water (M1W); natural gas service and electricity transmission from Pacific Gas and Electric Company (PG&E); electricity supply from Monterey Bay Community Power; and telecommunication service from various providers.

The AHO sites are located in the downtown portion of the City, which is currently developed and connected to utilities. Development of the AHO sites may require new connections to electric power, natural gas, and telecommunications facilities that would increase demand of these utilities. However, as discussed in Section 6, *Energy*, the project would not result in wasteful or unnecessary energy use or conflict with a plan for renewable energy. Connecting new development to water, wastewater, stormwater, electric gas, and telecommunication infrastructure would require ground disturbance. Environmental effects associated with ground disturbance are discussed in Section 4, *Biological Resources*, Section 5, *Cultural Resources*, and Section 7, *Geology and Soils*. Ground disturbance associated with utility connections would be minor, as the AHO sites are located in an urbanized area with access to utilities, and redevelopment would be compact, allowing for efficiency.

Sanitary sewage from the AHO sites is conveyed to the M1W Regional Treatment Plant (RTP) approximately two miles north of the City. The RTP serves a population of approximately 250,000 and treats 17 million gallons per day (mgd). The RTP is designed for an average dry weather flow of 29.6 mgd; thus, remaining daily capacity is approximately 12.6 mgd (M1W 2022). As discussed in Section 14, *Population and Housing*, full buildout of the AHO sites could result in up to 2,380 new residents in the City. Conservatively estimating water use of 100 gallons per day per person, and all water use being treated as wastewater, wastewater treatment demand for the project would be approximately 238,000 gallons per day. This represents approximately two percent of available capacity at the RTP. Therefore, buildout of the AHO sites would be served by a wastewater treatment provider with sufficient capacity and the project would not require the relocation or construction of new or expanded utility facilities. Impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

b. Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?

As discussed in Section 10, *Hydrology and Water Quality,* development under the proposed project would receive water supply from MCWD from existing sources. The 2020 WSA determined that MCWD's total water demands accounted for less than one percent of the total groundwater pumped from the Salinas Groundwater Basin, and the Deep Aquifer does not experience substantial seasonal variations due to climatic conditions; in other words, water supply in the Deep Aquifer

remains relatively stable year-round. Based on the above water demands and assumptions, the 2020 WSA determined that sufficient water supply would be available to the DVSP area over a 20-year projection and with consideration to climatic (drought) variables, as well as assuming implementation of the proposed DVSP, which has a higher water demand than the proposed project and has not been implemented. Therefore, because the proposed project would have a lower water demand than the previously assessed DVSP, which is separate from the proposed project and has not been implemented, then sufficient water supply is available for the proposed project. Refer to Section 10, *Hydrology and Water Quality,* for further information.

Sufficient water supply is available from existing sources to support the proposed project through normal water-year (non-drought) conditions, single-dry-year (drought) conditions, and multiple-dry-year (extended drought) conditions, with no expansion to or relocation of existing water supply facilities. Potential impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

d. Would the project 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?

e. Would the project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

The City receives solid waste collection service by GreenWaste Recovery and landfill service by the Monterey Regional Waste Management District (MRWMD). Solid waste is delivered to the Monterey Peninsula Landfill (MPL), approximately 2.5 miles north of the Downtown area and AHO sites. To comply with the California Integrated Waste Management Act of 1989 (AB 939), the MRWMD must divert at least 50 percent of its solid waste from landfills. In addition, Assembly Bill 341 (AB 341) sets a statewide 75 percent recycling goal by 2020. AB 341 also requires businesses generating more than four cubic yards of solid waste to recycle and requires owners of multi-family housing with five or more units to provide recycling for their tenants.

The MPL is owned and operated by MRWMD. The landfill is permitted to receive a maximum throughput of 3,500 tons per day (CalRecycle 2019). The landfill has remaining capacity of 49,560,000 cubic yards and is estimated to have capacity for 85 years of use at current disposal rates. The MPL receives approximately 600,000 tons of solid waste per year, or 1,643 tons per day (CalRecycle 2019 and MRWMD 2018). Therefore, remaining daily available capacity is approximately 1,857 tons per day.

Based on CalRecycle estimates, Californians generate approximately 6.7 pounds of solid waste per day (CalRecycle 2019). Buildout of the proposed project would result in 2,380 new residents within the City. Therefore, solid waste generation by new residents would total an estimated 15,946 pounds per day, or 8.0 tons per day. This represents approximately 0.4 percent of the available daily capacity at MPL. This landfill demand would be reduced by requiring diversion of 75 percent of solid waste for recycling. Therefore, because buildout of the AHO sites would not generate solid waste in excess of local standards or landfill capacity, impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

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20 Wildfire

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:				
a. Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	■	☐
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?	☐	☐	■	☐
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?	☐	☐	■	☐
d. Expose people or structures to significant risks, including downslopes or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	■	☐

While nearly all of California is subject to some degree of wildfire hazard, there are specific features that make certain areas more hazardous. California Department of Forestry and Fire Protection (CAL FIRE) is required by law to map areas of significant fire hazards based on fuels, terrain, weather and other relevant factors (Public Resources Code [PRC] 4201-4204, California Government Code 51175-89). The primary factors that increase an area's susceptibility to fire hazards include topography and slope, vegetation type and vegetation condition, and weather and atmospheric conditions. CAL FIRE maps fire hazards based on zones, referred to as Fire Hazard Severity Zones. Each of the zones influence how people construct buildings and protect property to reduce risk associated with wildland fires. Under state regulations, areas within Very High Fire Hazard Severity Zones (VHFHSZ) must comply with specific building and vegetation management requirements intended to reduce property damage and loss of life within these areas.

In California, responsibility for wildfire prevention and suppression is shared by federal, state, and local agencies. Federal agencies have legal responsibility to prevent and suppress wildfires in Federal Responsibility Areas. CAL FIRE prevents and suppresses wildfires in State Responsibility Area lands, which are non-federal lands in unincorporated areas with watershed value, are of statewide

interest, defined by land ownership, population density, and land use. Wildfire prevention and suppression in Local Responsibility Areas (LRA) are typically provided by city fire departments, fire protection districts, counties, and by CAL FIRE under contract to local government. These lands include incorporated cities, cultivated agriculture lands, and portions of the desert (CAL FIRE 2020).

a. *If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project substantially impair an adopted emergency response plan or emergency evacuation plan?*

b. *If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project 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?*

c. *If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project 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?*

d. *If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project expose people or structures to significant risks, including downslopes or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?*

The CAL FIRE does not designate any moderate, high, or VHFHSZs within the City of Marina. The entirety of the City and all land bordering the City is within an area designated as a Local Responsibility Area (CAL FIRE 2007). The nearest land in a State Responsibility Area is in the Carmel Valley approximately seven miles south of the Downtown area where the AHO sites are concentrated. The AHO sites are within an urbanized portion of the City, consisting primarily of lots developed with structures and pavement. The majority of the AHO sites are located less than one mile from the Pacific Ocean and AHO sites 17 and 20 are located approximately 0.5 mile from the ocean. Open space areas with trees and other vegetation that could serve as wildfire fuel exist near the AHO sites located to the north and southeast.

The proposed project would facilitate development within an urbanized area. By intensifying development, exposure of people and structures to wildfire hazards would increase. However, the overall exposure to wildfire hazards would be similar to existing conditions because the project would not add development to heavily vegetated areas or substantially affect fuel amounts. Because the AHO sites are not within a state responsibility area, are not classified as a VHFHSZ, and would not exacerbate existing fire hazards, impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

21 Mandatory Findings of Significance

	Potentially Significant Impact	Less than Significant with 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?	☐	■	☐	☐
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)?	☐	■	☐	☐
c. Have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	■	☐

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?

As discussed in Section 4, *Biological Resources*, development facilitated by the AHO would have the potential to impact special status species and waters. However, these impacts would be less than significant with implementation of Mitigation Measures BIO-1(a) through BIO-1(g) and BIO-2, requiring, as needed, surveys, avoidance, and monitoring for biological resources and a jurisdictional delineation for a pond. As discussed in Section 5, *Cultural Resources*, development facilitated by the AHO could impact historic buildings and archaeological resources. Mitigation Measure CR-1 through CR-3 would ensure impacts to historical resources are less than significant by identifying historical

resources during the project planning process and avoiding or minimizing potential impacts as needed, and Mitigation Measure CR-4 would require an archaeological resources investigation, reducing impacts to a less than significant level. Therefore, the AHO would not 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. Impacts would be less than significant with implementation of identified mitigation measures.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

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)?

Cumulative impacts of several resource areas have been addressed in the individual resource sections above for Air Quality, GHG Emissions, and Noise. CalEEMod was utilized to assess the air quality and GHG impacts resulting from the project, concluding that the cumulative impacts associated with these two issues would be less than significant with implementation of Mitigation Measure AQ-1, requiring construction dust control measures. Implementation of the AHO could result in noise impacts due to construction activity and new development. Mitigation Measures NOI-1 through NOI-2 would require construction noise reduction measures and acoustical analysis to reduce impacts to a less than significant level. Other resource areas (agriculture and forestry resources and mineral resources) were determined to have no impact. Several resource areas (e.g., geology, hazards and hazardous materials) are by their nature project-specific and impacts at one location do not add to impacts at other locations or create additive impacts.

Cumulative impacts could occur if the construction of other projects occurs at the same time as the proposed project and in the same geographic scope, such that the effects of similar impacts of multiple projects combine to create greater levels of impact than would occur at the project-level. For example, if the construction of other projects in the area occurs at the same time as project activities, combined air quality and noise impacts may be greater than at the project-level. Nine planned projects are in the vicinity of the project sites, which are summarized in Table 31. The exact timing of implementation of these projects is not known; therefore, it is conservatively assumed that construction of these planned projects could overlap with construction of development facilitated by the AHO.

Table 31 Cumulative Development Projects in Marina

Project Name	Address	Description	Status
Veteran's Transition Center Supportive Housing	229 - 239 Hayes Circle	Three story, 71-unit permanent supportive housing building	Entitlements approved
Mosaic Apartments	225 Cypress Avenue	Four story, 12-unit apartment building	Entitlements approved, building permit pending
Seacrest Apartments	3108 Seacrest Avenue	Three story, 10-unit apartment building	Entitlements approved, building permit pending
Shores at Marina	3125 De Forest Road	Five story, 58-unit apartment building	Entitlements approved
Filiguera Apartments	264 Carmel Avenue	Three story, 10-unit apartment building	Entitlements approved, building permit pending
Carmel Avenue Apartments	353 Carmel Avenue	Two story, six-unit apartment building	Entitlements expired
Junsay Oaks Senior Housing	3098 De Forest Road	Three story, 47-unit apartment building	Certificate of Occupancy issued
Schulman Townhomes	3110 Seacrest Avenue	Seven townhomes	Under construction
Monterey Peninsula Water Supply Project	100 Lapis Road	Seven slant wells for Monterey Peninsula Water Supply Project	Project denied; appealed to Coastal Commission

Source: City of Marina 2019

The potential for the project to contribute to cumulative impacts would be limited to the following issue areas:

- **Air Quality.** Because the NCCAB is designated nonattainment-transitional for the ozone CAAQS and nonattainment for the PM_{10} CAAQS, cumulative air quality impacts currently exist for these pollutants. As discussed in the Section 3, *Air Quality*, project construction activities would not generate emissions of this air pollutant exceeding MBARD significance thresholds, which are intended to assess whether a project's contribution to existing cumulative air quality impacts is considerable. Therefore, the project's contribution to cumulative air quality impacts would not be cumulatively considerable.
- **Biological Resources.** Development facilitated by the AHO and the projects listed above would occur within urbanized and/or previously developed areas of Marina, and would not include elements that have the potential to result in significant impacts to special status plant and wildlife species, sensitive natural communities, and/or federally and state-protected waters. Further, each cumulative project listed above would be required to undergo CEQA review to identify the extent of these biological resources impacts and to mitigate those impacts appropriately. Given the uncertainty in the extent of impacts associated with these projects, this analysis conservatively assumes a significant cumulative impact to biological resources would occur. Nevertheless, the proposed project would be required to implement Mitigation Measures BIO-1(a) through BIO-1(g) and BIO-2 to reduce its impacts to biological resources to a less-than-significant level such that project-level impacts would not result in a cumulatively considerable contribution to this cumulative impact.

- **Cultural and Tribal Cultural Resources.** Cumulative development in the region would continue to disturb areas with the potential to contain cultural and tribal cultural resources. Some projects listed above would occur within previously developed sites with low potential to impact cultural resources. In addition, as mentioned above, all cumulative development projects would be required to undergo CEQA review, which would determine the extent of potential cultural and tribal cultural resources impacts and mitigate those impacts appropriately. If these cumulative projects would result in impacts to known or unknown cultural or tribal cultural resources, impacts to such resources would be addressed on a case-by-case basis. It is anticipated that if these projects have the potential to result in significant impacts to cultural or tribal cultural resources, they would be required to implement similar mitigation measures as those required for the proposed project and would comply with all applicable laws and regulations governing cultural resources. Therefore, cumulative impacts to cultural and tribal cultural resources would be less than significant.
- **Greenhouse Gas Emissions.** GHG emissions and climate change are, by definition, cumulative impacts. As discussed in Section 8, *Greenhouse Gas Emissions*, project emissions would be below the identified threshold of significance and would therefore not be cumulatively considerable.
- **Noise.** Overlapping construction activities associated with cumulative development projects in conjunction with proposed project activities could result in cumulative noise impacts related to a temporary increase in ambient noise levels at the same noise-sensitive receivers located throughout the area, especially during construction activities. However, similar to the proposed project, cumulative development projects would be subject to compliance with the noise level limits established in Marina Municipal Code. Therefore, no cumulative construction noise impact would occur.

Given the above discussion, the project would not result in a cumulatively considerable contribution to a significant cumulative impact with mitigation incorporated.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

c. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

In general, impacts to human beings are associated with air quality, hazards and hazardous materials, and noise impacts. As detailed in Section 1, *Air Quality*, and Section 13, *Noise,* the development facilitated by the AHO would not result, either directly or indirectly, in significant air quality or noise impacts. Similarly, as discussed in Section 8, *Hazards and Hazardous Materials,* impacts from development of projects would not result in any adverse hazards related to hazardous materials. Compliance with applicable rules and regulations related to hazards and hazardous materials would reduce potential impacts on human beings to a less than significant level. Impacts to human beings would be less than significant.

LESS THAN SIGNIFICANT IMPACT

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Appendix A

Proposed Affordable Housing Overlay Ordinance

17.48.130 Affordable Housing Overlay

A. Purpose and Intent

The Affordable Housing Overlay (AHO) serves to implement Housing Element programs and address housing needs within the City of Marina by encouraging the development of very low income and low income affordable housing and new multi-family residential development. The AHO implements the Housing Element programs by providing development regulations to support and incentivize affordable housing and multi-family residential development on designated housing opportunity sites. It shall provide for the continuation of the ability to develop land uses permitted by the existing base (underlying) zoning of a property unless the property is developed for residential uses in accordance with the AHO.

B. Applicability

The AHO shall apply to any underlying zone district to support Housing Element programs as designated on the Zoning Map. Properties are identified on the Zoning Map by an AHO label. For any housing project developed in accordance with this section, these standards shall apply instead of those in the underlying base zone district. A property owner may; however, elect to continue to use the site consistent with the underlying district, in which case the applicable underlying district standards will apply.

C. Permitted Uses.

Uses permitted in the AHO shall be as follows:

1. Multiple dwellings and dwelling groups;

2. Condominiums, shall be allowed in accordance with the standards allowed in Section 17.48.130 G. below;

3. Accessory dwelling units pursuant to the provisions of Section 17.42.040;

4. Home Occupations pursuant to Section 17.04.711;

D. Application and Review

1. Administrative-level approval shall be given to residential development projects that comply with all the requirements of this chapter. Evaluation of the proposed use by the planning department shall be granted as follows.
    a. Form of Application. An application for a project approval under the AHO shall be completed on a form provided by the planning department.
    b. Administrative-level Approval. Administrative-level approval is ministerial in nature and is conducted at the staff level under the general direction of the community development director without notice and hearing. A community meeting prior to filing an application is encouraged but not required. Approval shall be granted by the planning department only when the permit application contains sufficient information for the planning department to verify that the proposed use will be

consistent with the standards outlined in this Section 17.48.130 D. *Permitted Uses*, G. *Development Standards,* and H. *Design Standards*. No building, grading or other construction permit shall be issued by the responsible department until the administrative-level approval process has been conducted by the planning department. Projects that comply with the requirements shall be permitted by right. Compliance with the requirements of this chapter shall not, however, waive any additional requirements for compliance such as an application for a lot line adjustment, merger of parcels, or subdivision in conjunction with approval of an application. A separate application for the lot line adjustment, merger of parcels, or appropriate subdivision map shall proceed in accordance with Title 16.

c. Approval. The community development director shall approve any administrative-level approval if the application complies with all requirements of this Section 17.48.130.

d. Notice of Decision. A notice of decision shall be either mailed first class and postage pre-paid to both the applicant and the applicant's representative (as shown on the application) or emailed and sent via either of those methods to any person who has made a written request for a copy of the decision. The decision of the community development director shall be final and conclusive.

e. Expiration of Administrative-level Review. Within two (2) years of the date of approval by the community development director, commencement of construction shall have occurred or the approval shall become null and void. A one-year extension can be granted by the community development director if the project is complaint with the original approval.

E. General Regulations

1. Relationship to State Density Bonus Law.

a. An application for a project pursuant to this chapter may apply for a density bonus in accordance with California Government Code Section 65915. The incentives provided pursuant to the AHO may be combined with the incentives provided pursuant to state density bonus law at the discretion of the applicant.

b. Illustrative calculation. By way of example, for illustrative purposes only, where a proposed site consists of .5 acre of land and is proposed to be developed with a total of fifteen (15) dwelling units, the base density, affordable unit distribution and density bonus under State Density Bonus Law (if requested) would be calculated as follows:

Base density	30 dwelling units/acre
12% restriction	2 very low income units
State Density Bonus Law	Additional 38.8% for 12% restriction
Additional units with Density Bonus	5.82 = 6

Total units for project	21

c. In calculating the required number of units, fractional units of 0.50 or above shall be rounded up to a whole unit.

2. Relationship to inclusionary housing ordinance. Inclusionary housing in conformance with the Marina General Plan Housing Element and the Marina Municipal Code (Section 17.48.030) shall be provided for all residential developments or projects. Inclusionary requirements must be met when twenty (20) units are proposed notwithstanding units from a density bonus.

F. Development Standards

1. Density.

a. Each lot or parcel of land shall have a minimum residential density of thirty (30) dwelling units per acre. Maximum density for the development shall be thirty-five (35) dwelling units per acre, except for projects proposed along Reservation Road or Del Monte Boulevard, which shall be a maximum fifty (50) dwelling units per acre.

b. Affordable Housing Requirement

i. Either twelve percent (12%) of the development shall be dedicated to very low income households or fifteen percent (15%) shall be dedicated to low income households.

ii. Prior to issuance of building permits, the applicant shall execute an agreement with the City, to be executed by the city manager without review by the planning commission or city council, in a form acceptable to the city attorney ensuring the continued affordability of the affordable dwelling units for a period of not less than fifty-five (55) years.

2. Projects seeking approval pursuant to this chapter shall be subject to the following development standards:

a. *Total Open Space Required*. The minimum area of open space required for the development shall be a total of fifteen percent (15%) for sites one (1) acre or greater and ten percent (10%) for sites less than one (1) acre. A portion of all of the required usable open space shall be private as provided by this section; otherwise it shall be shared in common.

i. *Private Open Space*. A minimum of eighty (80) square feet for ground floor units and forty (40) square feet for units located on second levels and above.

ii. *Common Open Space*. Common open space shall average at least twenty-five (25) feet in width and at no time may be less than ten (10) feet in width.

b. *Building Height*. Maximum building height for residential buildings shall be 42 feet, except for projects proposed along Reservation Road or Del Monte Boulevard, which shall be forty-eight (48) feet.

c. *Minimum Building Site Area*. Building site area shall be a minimum of 6,000 square feet.

d. *Site Coverage*. No requirement.

e. Setbacks

i. Front yard- Minimum front yard setback shall be ten (10) feet. The front yard shall be measured from the front property line or the edge of easement for the private roadway, whichever is less. A maximum front yard setback shall be twenty-five (25) feet for Del Monte Road or Reservation Road.

ii. Side yard – Minimum side yard setback shall be five (5) feet; or ten (10) feet if adjacent to side street.

iii. Rear yard – Minimum rear yard setback shall be five (5) feet; or ten (10) feet if if adjacent to side street.

f. *Parking*. Parking requirements for residential uses permitted under this chapter shall be allowed in accordance with Table 1 below. Where the residential parking standards in Chapter 17.44.020 may differ, the provisions of this section shall apply.

Table 1 Reduced Parking Standards for Qualifying Housing Overlay Developments

Bedroom Count	Base Parking Standards	Modified Parking Standards for Qualifying Housing Overlay Developments
Studio	1 space/dwelling unit	1 space/dwelling unit
1 bedroom	2 spaces/dwelling unit	1.5 spaces/dwelling unit
2-3 bedroom	2 spaces/dwelling unit	1.5 spaces/dwelling unit
Guest spaces	None required	None required

3. Design Standards:

a. Height transitions from adjacent properties. Any portion of a building within twenty (20) feet of the R-1, R-2, or R-3 zone district shall be limited to thirty-five (35) feet.

b. *Building orientation*. All new or modified buildings shall orient the primary façade to the primary street. Secondary facades shall front side or rear yards. For corner buildings, buildings shall have primary facades fronting both primary streets.

c. *Entry feature*. Porch, stoop, terrace, forecourt, or similar entry feature are required for all shared residential entrances. Individual entrances to ground floor units must incorporate a porch, stoop, terrace, walled garden space or private deck.

d. *Facade composition.* Building facades shall be arranged in an orderly composition of bays, defined by vertically aligned openings alternating horizontally with solid walls or columns. The pattern shall be visually expressed through the spacing of openings, recesses, eaves, cornices, overhangs, trellises, exposed rafters, columns, or bay windows.

e. *Windows.* Upper story windows shall be recessed from the wall surface by a minimum or 2" or shall have surface trim and sills.

f. *Building articulation.*

    i. Blank walls without windows, doors, or other articulation are prohibited. The maximum length of any blank wall shall be limited to twenty (20) feet.

    ii. Elements such as roof dormers, hips, gables, balconies, wall projections and porches are required to break up the mass of building facades. Not less than 40% of the length of a building façade shall be treated with such elements. End units shall have the same design elements as front facades. Unarticulated and windowless walls are not allowed.

g. *Parking location*. Surface parking lots and garages shall be located to the side or rear of buildings or in basements and not adjacent to public roadways. Surface parking shall be prohibited within the front 25% of the lot depth. Structured parking shall be screened from the primary frontage.

h. *Mechanical and utility equipment*. Mechanical and utility equipment (e.g., heating, cooling, antennas, satellite dishes, air conditioners, transformers, electric and gas meters, junction boxes, or similar equipment) shall be concealed with landscaping, walls, or fencing or if roof mounted, with mechanical screens or roof wells.

i. *Primary pedestrian access*. Primary pedestrian access to building lobbies shall be provided along the sidewalk or permitted open spaces. Parcels longer than 300 feet shall be developed with a mid-block pedestrian paseo or open space. Where paseos are utilized, the placement shall emphasize connectivity to other paseos, alleys, or mid-block crossings. Pedestrian paseos may be no less than fifteen (15) feet wide.

j. *Privacy*.

    i. Projects within ten (15) feet of existing buildings along the interior property lines shall reduce direct views into the adjacent building by offsetting or staggering windows and upper story balconies and decks by a minimum of one (1) foot so there is no direct line of sight into the existing building's windows, balconies, or decks.

ii. Balconies, roof decks and other habitable outdoor space are not allowed on upper-story facades directly adjacent to R-1 zones.

G. Incentives

1. Applications meeting the purpose and applicability of the AHO will qualify for one of several incentive options for the creation of housing. The following development incentives are available to qualifying residential developments:

    a. Waived, reduced, or deferred planning, plan check or construction permit fees;

    b. Deferment of city generated construction and impact fees until project completion or occupancy;

    c. Payment of construction and impact fee over a twelve (12) month or longer period after project completion.

H. Design

1. Development in the any specific plan area shall be subject to the architectural control process identified in the that specific plan.

Appendix B

CalEEMod Modeling Output

Marina Affordable Housing Overlay - Monterey Bay Unified APCD Air District, Annual

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

Marina Affordable Housing Overlay

Monterey Bay Unified APCD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Mid Rise	898.00	Dwelling Unit	21.85	898,000.00	2568

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.8	**Precipitation Freq (Days)**	53
Climate Zone	4			**Operational Year**	2025
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - acreage is provided, default pop and SF

Construction Phase - Defaults

Off-road Equipment - Defaults

Grading - Assumed to be minimal - left as zero in modeling.

Demolition - Assumed that developed sites would be demolished, as included in Table 1 of the Initial Study. Assumed that half of the acreage is occupied with buildings that would require demolition. 50% of 8.16 acres = 177,724 sf

Trips and VMT - Defaults

Architectural Coating - MBARD Rule 426

Vehicle Trips - defaults

Water And Wastewater - 20% CalGreen reductions for indoor water use. Removed septic and lagoons

Mobile Land Use Mitigation - Assumed 12% BMR housing and 25% reduction in spaces based off of reduction from 2 spaces/unit to 1.5 spaces/unit for a 1-3 bdrm unit.

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

Area Mitigation - MBARD Rule 426 (Architectural Coatings), which specifies volatile organic content (VOC) limits of 50 grams per liter for flat coatings and 100 grams per liter for non-flat coatings.

Area Coating - MBARD Rule 426

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Interior	150.00	50.00
tblArchitecturalCoating	EF_Parking	150.00	50.00
tblArchitecturalCoating	EF_Residential_Exterior	100.00	50.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	50.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	150	50
tblAreaCoating	Area_EF_Nonresidential_Interior	150	50
tblAreaCoating	Area_EF_Parking	150	100
tblAreaCoating	Area_EF_Residential_Exterior	100	50
tblAreaCoating	Area_EF_Residential_Interior	100	50
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblLandUse	LotAcreage	23.63	21.85
tblWater	AerobicPercent	87.46	100.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	IndoorWaterUseRate	58,508,315.01	46,806,652.00
tblWater	SepticTankPercent	10.33	0.00

2.0 Emissions Summary

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

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					
2023	0.4696	3.0535	4.3112	0.0111	0.9237	0.1163	1.0400	0.2824	0.1087	0.3911	0.0000	1,007.9420	1,007.9420	0.1164	0.0444	1,024.0904
2024	3.1380	1.8349	3.2135	8.3800e-003	0.5173	0.0645	0.5818	0.1388	0.0606	0.1994	0.0000	769.1714	769.1714	0.0683	0.0354	781.4333
Maximum	**3.1380**	**3.0535**	**4.3112**	**0.0111**	**0.9237**	**0.1163**	**1.0400**	**0.2824**	**0.1087**	**0.3911**	**0.0000**	**1,007.9420**	**1,007.9420**	**0.1164**	**0.0444**	**1,024.0904**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.4696	3.0535	4.3112	0.0111	0.9237	0.1163	1.0400	0.2824	0.1087	0.3911	0.0000	1,007.9415	1,007.9415	0.1164	0.0444	1,024.0899
2024	3.1380	1.8349	3.2135	8.3800e-003	0.5173	0.0645	0.5818	0.1388	0.0606	0.1994	0.0000	769.1711	769.1711	0.0683	0.0354	781.4330
Maximum	**3.1380**	**3.0535**	**4.3112**	**0.0111**	**0.9237**	**0.1163**	**1.0400**	**0.2824**	**0.1087**	**0.3911**	**0.0000**	**1,007.9415**	**1,007.9415**	**0.1164**	**0.0444**	**1,024.0899**

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

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**1-2-2023**	**4-1-2023**	1.1024	1.1024
2	**4-2-2023**	**7-1-2023**	0.7920	0.7920
3	**7-2-2023**	**10-1-2023**	0.8010	0.8010
4	**10-2-2023**	**1-1-2024**	0.8254	0.8254
5	**1-2-2024**	**4-1-2024**	0.7692	0.7692
6	**4-2-2024**	**7-1-2024**	0.7461	0.7461
7	**7-2-2024**	**9-30-2024**	0.9010	0.9010
		Highest	1.1024	1.1024

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

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	4.0659	0.1066	9.2520	4.9000e-004		0.0513	0.0513		0.0513	0.0513	0.0000	15.1273	15.1273	0.0145	0.0000	15.4895
Energy	0.0406	0.3468	0.1476	2.2100e-003		0.0280	0.0280		0.0280	0.0280	0.0000	722.9035	722.9035	0.0597	0.0137	728.4669
Mobile	2.5778	3.5249	24.2762	0.0493	4.9762	0.0443	5.0205	1.3304	0.0414	1.3718	0.0000	4,660.0227	4,660.0227	0.3169	0.2307	4,736.6798
Waste						0.0000	0.0000		0.0000	0.0000	83.8515	0.0000	83.8515	4.9555	0.0000	207.7386
Water						0.0000	0.0000		0.0000	0.0000	16.5603	35.3784	51.9386	0.0627	0.0367	64.4454
Total	**6.6843**	**3.9783**	**33.6758**	**0.0520**	**4.9762**	**0.1237**	**5.0999**	**1.3304**	**0.1208**	**1.4512**	**100.4118**	**5,433.4319**	**5,533.8436**	**5.4093**	**0.2810**	**5,752.8201**

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

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	4.0659	0.1066	9.2520	4.9000e-004		0.0513	0.0513		0.0513	0.0513	0.0000	15.1273	15.1273	0.0145	0.0000	15.4895
Energy	0.0406	0.3468	0.1476	2.2100e-003		0.0280	0.0280		0.0280	0.0280	0.0000	722.9035	722.9035	0.0597	0.0137	728.4669
Mobile	2.4069	3.1551	21.7915	0.0431	4.3333	0.0390	4.3723	1.1585	0.0365	1.1950	0.0000	4,073.6488	4,073.6488	0.2897	0.2071	4,142.6113
Waste						0.0000	0.0000		0.0000	0.0000	83.8515	0.0000	83.8515	4.9555	0.0000	207.7386
Water						0.0000	0.0000		0.0000	0.0000	16.5603	35.3784	51.9386	0.0627	0.0367	64.4454
Total	**6.5134**	**3.6085**	**31.1911**	**0.0458**	**4.3333**	**0.1184**	**4.4517**	**1.1585**	**0.1158**	**1.2744**	**100.4118**	**4,847.0580**	**4,947.4698**	**5.3821**	**0.2575**	**5,158.7516**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**2.56**	**9.30**	**7.38**	**11.93**	**12.92**	**4.27**	**12.71**	**12.92**	**4.10**	**12.19**	**0.00**	**10.79**	**10.60**	**0.50**	**8.38**	**10.33**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/2/2023	1/27/2023	5	20	
2	Site Preparation	Site Preparation	1/28/2023	2/10/2023	5	10	
3	Grading	Grading	2/11/2023	3/31/2023	5	35	

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

4	Building Construction	Building Construction	4/1/2023	8/30/2024	5	370	
5	Paving	Paving	8/31/2024	9/27/2024	5	20	
6	Architectural Coating	Architectural Coating	9/28/2024	10/25/2024	5	20	

Acres of Grading (Site Preparation Phase): 15

Acres of Grading (Grading Phase): 105

Acres of Paving: 0

Residential Indoor: 1,818,450; Residential Outdoor: 606,150; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

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

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

Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	808.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	647.00	96.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	129.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 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					
Fugitive Dust					0.0891	0.0000	0.0891	0.0135	0.0000	0.0135	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0227	0.2148	0.1964	3.9000e-004		9.9800e-003	9.9800e-003		9.2800e-003	9.2800e-003	0.0000	33.9921	33.9921	9.5200e-003	0.0000	34.2301
Total	**0.0227**	**0.2148**	**0.1964**	**3.9000e-004**	**0.0891**	**9.9800e-003**	**0.0991**	**0.0135**	**9.2800e-003**	**0.0228**	**0.0000**	**33.9921**	**33.9921**	**9.5200e-003**	**0.0000**	**34.2301**

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

3.2 Demolition - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-003	0.0588	0.0122	2.4000e-004	6.8700e-003	5.2000e-004	7.3900e-003	1.8900e-003	4.9000e-004	2.3800e-003	0.0000	23.6169	23.6169	2.6000e-004	3.7200e-003	24.7328
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	4.9000e-004	3.8000e-004	4.2100e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.2000e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	1.0036	1.0036	4.0000e-005	3.0000e-005	1.0139
Total	**1.4900e-003**	**0.0591**	**0.0164**	**2.5000e-004**	**8.0600e-003**	**5.3000e-004**	**8.5900e-003**	**2.2100e-003**	**5.0000e-004**	**2.7000e-003**	**0.0000**	**24.6205**	**24.6205**	**3.0000e-004**	**3.7500e-003**	**25.7466**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0891	0.0000	0.0891	0.0135	0.0000	0.0135	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0227	0.2148	0.1964	3.9000e-004		9.9800e-003	9.9800e-003		9.2800e-003	9.2800e-003	0.0000	33.9920	33.9920	9.5200e-003	0.0000	34.2300
Total	**0.0227**	**0.2148**	**0.1964**	**3.9000e-004**	**0.0891**	**9.9800e-003**	**0.0991**	**0.0135**	**9.2800e-003**	**0.0228**	**0.0000**	**33.9920**	**33.9920**	**9.5200e-003**	**0.0000**	**34.2300**

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3.2 Demolition - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-003	0.0588	0.0122	2.4000e-004	6.8700e-003	5.2000e-004	7.3900e-003	1.8900e-003	4.9000e-004	2.3800e-003	0.0000	23.6169	23.6169	2.6000e-004	3.7200e-003	24.7328
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	4.9000e-004	3.8000e-004	4.2100e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.2000e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	1.0036	1.0036	4.0000e-005	3.0000e-005	1.0139
Total	**1.4900e-003**	**0.0591**	**0.0164**	**2.5000e-004**	**8.0600e-003**	**5.3000e-004**	**8.5900e-003**	**2.2100e-003**	**5.0000e-004**	**2.7000e-003**	**0.0000**	**24.6205**	**24.6205**	**3.0000e-004**	**3.7500e-003**	**25.7466**

3.3 Site Preparation - 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					
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	0.0133	0.1376	0.0912	1.9000e-004		6.3300e-003	6.3300e-003		5.8200e-003	5.8200e-003	0.0000	16.7254	16.7254	5.4100e-003	0.0000	16.8606
Total	**0.0133**	**0.1376**	**0.0912**	**1.9000e-004**	**0.0983**	**6.3300e-003**	**0.1046**	**0.0505**	**5.8200e-003**	**0.0563**	**0.0000**	**16.7254**	**16.7254**	**5.4100e-003**	**0.0000**	**16.8606**

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3.3 Site Preparation - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	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	2.9000e-004	2.3000e-004	2.5300e-003	1.0000e-005	7.2000e-004	0.0000	7.2000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.6022	0.6022	2.0000e-005	2.0000e-005	0.6083
Total	**2.9000e-004**	**2.3000e-004**	**2.5300e-003**	**1.0000e-005**	**7.2000e-004**	**0.0000**	**7.2000e-004**	**1.9000e-004**	**0.0000**	**1.9000e-004**	**0.0000**	**0.6022**	**0.6022**	**2.0000e-005**	**2.0000e-005**	**0.6083**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0983	0.0000	0.0983	0.0505	0.0000	0.0505	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0133	0.1376	0.0912	1.9000e-004		6.3300e-003	6.3300e-003		5.8200e-003	5.8200e-003	0.0000	16.7253	16.7253	5.4100e-003	0.0000	16.8606
Total	**0.0133**	**0.1376**	**0.0912**	**1.9000e-004**	**0.0983**	**6.3300e-003**	**0.1046**	**0.0505**	**5.8200e-003**	**0.0563**	**0.0000**	**16.7253**	**16.7253**	**5.4100e-003**	**0.0000**	**16.8606**

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

3.3 Site Preparation - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	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	2.9000e-004	2.3000e-004	2.5300e-003	1.0000e-005	7.2000e-004	0.0000	7.2000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.6022	0.6022	2.0000e-005	2.0000e-005	0.6083
Total	**2.9000e-004**	**2.3000e-004**	**2.5300e-003**	**1.0000e-005**	**7.2000e-004**	**0.0000**	**7.2000e-004**	**1.9000e-004**	**0.0000**	**1.9000e-004**	**0.0000**	**0.6022**	**0.6022**	**2.0000e-005**	**2.0000e-005**	**0.6083**

3.4 Grading - 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					
Fugitive Dust					0.1611	0.0000	0.1611	0.0639	0.0000	0.0639	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0581	0.6040	0.4909	1.0900e-003		0.0249	0.0249		0.0229	0.0229	0.0000	95.4366	95.4366	0.0309	0.0000	96.2083
Total	**0.0581**	**0.6040**	**0.4909**	**1.0900e-003**	**0.1611**	**0.0249**	**0.1860**	**0.0639**	**0.0229**	**0.0869**	**0.0000**	**95.4366**	**95.4366**	**0.0309**	**0.0000**	**96.2083**

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

3.4 Grading - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1400e-003	8.8000e-004	9.8200e-003	3.0000e-005	2.7800e-003	2.0000e-005	2.8000e-003	7.4000e-004	2.0000e-005	7.6000e-004	0.0000	2.3418	2.3418	8.0000e-005	7.0000e-005	2.3657
Total	**1.1400e-003**	**8.8000e-004**	**9.8200e-003**	**3.0000e-005**	**2.7800e-003**	**2.0000e-005**	**2.8000e-003**	**7.4000e-004**	**2.0000e-005**	**7.6000e-004**	**0.0000**	**2.3418**	**2.3418**	**8.0000e-005**	**7.0000e-005**	**2.3657**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1611	0.0000	0.1611	0.0639	0.0000	0.0639	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0581	0.6040	0.4909	1.0900e-003		0.0249	0.0249		0.0229	0.0229	0.0000	95.4365	95.4365	0.0309	0.0000	96.2082
Total	**0.0581**	**0.6040**	**0.4909**	**1.0900e-003**	**0.1611**	**0.0249**	**0.1860**	**0.0639**	**0.0229**	**0.0869**	**0.0000**	**95.4365**	**95.4365**	**0.0309**	**0.0000**	**96.2082**

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

3.4 Grading - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1400e-003	8.8000e-004	9.8200e-003	3.0000e-005	2.7800e-003	2.0000e-005	2.8000e-003	7.4000e-004	2.0000e-005	7.6000e-004	0.0000	2.3418	2.3418	8.0000e-005	7.0000e-005	2.3657
Total	**1.1400e-003**	**8.8000e-004**	**9.8200e-003**	**3.0000e-005**	**2.7800e-003**	**2.0000e-005**	**2.8000e-003**	**7.4000e-004**	**2.0000e-005**	**7.6000e-004**	**0.0000**	**2.3418**	**2.3418**	**8.0000e-005**	**7.0000e-005**	**2.3657**

3.5 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1533	1.4025	1.5838	2.6300e-003		0.0682	0.0682		0.0642	0.0642	0.0000	226.0096	226.0096	0.0538	0.0000	227.3537
Total	**0.1533**	**1.4025**	**1.5838**	**2.6300e-003**		**0.0682**	**0.0682**		**0.0642**	**0.0642**	**0.0000**	**226.0096**	**226.0096**	**0.0538**	**0.0000**	**227.3537**

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

3.5 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0133	0.4763	0.1502	1.9300e-003	0.0618	3.0400e-003	0.0648	0.0179	2.9100e-003	0.0208	0.0000	186.1426	186.1426	1.6200e-003	0.0273	194.3317
Worker	0.2059	0.1580	1.7699	4.5500e-003	0.5019	3.2700e-003	0.5051	0.1334	3.0200e-003	0.1365	0.0000	422.0713	422.0713	0.0149	0.0132	426.3853
Total	**0.2192**	**0.6343**	**1.9201**	**6.4800e-003**	**0.5636**	**6.3100e-003**	**0.5699**	**0.1513**	**5.9300e-003**	**0.1572**	**0.0000**	**608.2138**	**608.2138**	**0.0165**	**0.0406**	**620.7171**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1533	1.4025	1.5838	2.6300e-003		0.0682	0.0682		0.0642	0.0642	0.0000	226.0094	226.0094	0.0538	0.0000	227.3535
Total	**0.1533**	**1.4025**	**1.5838**	**2.6300e-003**		**0.0682**	**0.0682**		**0.0642**	**0.0642**	**0.0000**	**226.0094**	**226.0094**	**0.0538**	**0.0000**	**227.3535**

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

3.5 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0133	0.4763	0.1502	1.9300e-003	0.0618	3.0400e-003	0.0648	0.0179	2.9100e-003	0.0208	0.0000	186.1426	186.1426	1.6200e-003	0.0273	194.3317
Worker	0.2059	0.1580	1.7699	4.5500e-003	0.5019	3.2700e-003	0.5051	0.1334	3.0200e-003	0.1365	0.0000	422.0713	422.0713	0.0149	0.0132	426.3853
Total	**0.2192**	**0.6343**	**1.9201**	**6.4800e-003**	**0.5636**	**6.3100e-003**	**0.5699**	**0.1513**	**5.9300e-003**	**0.1572**	**0.0000**	**608.2138**	**608.2138**	**0.0165**	**0.0406**	**620.7171**

3.5 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1288	1.1763	1.4146	2.3600e-003		0.0537	0.0537		0.0505	0.0505	0.0000	202.8680	202.8680	0.0480	0.0000	204.0673
Total	**0.1288**	**1.1763**	**1.4146**	**2.3600e-003**		**0.0537**	**0.0537**		**0.0505**	**0.0505**	**0.0000**	**202.8680**	**202.8680**	**0.0480**	**0.0000**	**204.0673**

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

3.5 Building Construction - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0114	0.4223	0.1299	1.7100e-003	0.0554	2.7000e-003	0.0581	0.0160	2.5800e-003	0.0186	0.0000	164.4625	164.4625	1.4100e-003	0.0242	171.6993
Worker	0.1723	0.1256	1.4673	3.9500e-003	0.4504	2.7800e-003	0.4532	0.1198	2.5600e-003	0.1223	0.0000	369.8535	369.8535	0.0120	0.0110	373.4230
Total	**0.1837**	**0.5480**	**1.5972**	**5.6600e-003**	**0.5058**	**5.4800e-003**	**0.5113**	**0.1358**	**5.1400e-003**	**0.1409**	**0.0000**	**534.3160**	**534.3160**	**0.0134**	**0.0351**	**545.1223**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1288	1.1763	1.4146	2.3600e-003		0.0537	0.0537		0.0505	0.0505	0.0000	202.8677	202.8677	0.0480	0.0000	204.0670
Total	**0.1288**	**1.1763**	**1.4146**	**2.3600e-003**		**0.0537**	**0.0537**		**0.0505**	**0.0505**	**0.0000**	**202.8677**	**202.8677**	**0.0480**	**0.0000**	**204.0670**

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

3.5 Building Construction - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0114	0.4223	0.1299	1.7100e-003	0.0554	2.7000e-003	0.0581	0.0160	2.5800e-003	0.0186	0.0000	164.4625	164.4625	1.4100e-003	0.0242	171.6993
Worker	0.1723	0.1256	1.4673	3.9500e-003	0.4504	2.7800e-003	0.4532	0.1198	2.5600e-003	0.1223	0.0000	369.8535	369.8535	0.0120	0.0110	373.4230
Total	**0.1837**	**0.5480**	**1.5972**	**5.6600e-003**	**0.5058**	**5.4800e-003**	**0.5113**	**0.1358**	**5.1400e-003**	**0.1409**	**0.0000**	**534.3160**	**534.3160**	**0.0134**	**0.0351**	**545.1223**

3.6 Paving - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.8800e-003	0.0953	0.1463	2.3000e-004		4.6900e-003	4.6900e-003		4.3100e-003	4.3100e-003	0.0000	20.0265	20.0265	6.4800e-003	0.0000	20.1885
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**9.8800e-003**	**0.0953**	**0.1463**	**2.3000e-004**		**4.6900e-003**	**4.6900e-003**		**4.3100e-003**	**4.3100e-003**	**0.0000**	**20.0265**	**20.0265**	**6.4800e-003**	**0.0000**	**20.1885**

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

3.6 Paving - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.6000e-004	3.3000e-004	3.8900e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.2000e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	0.9800	0.9800	3.0000e-005	3.0000e-005	0.9894
Total	**4.6000e-004**	**3.3000e-004**	**3.8900e-003**	**1.0000e-005**	**1.1900e-003**	**1.0000e-005**	**1.2000e-003**	**3.2000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**0.9800**	**0.9800**	**3.0000e-005**	**3.0000e-005**	**0.9894**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.8800e-003	0.0953	0.1463	2.3000e-004		4.6900e-003	4.6900e-003		4.3100e-003	4.3100e-003	0.0000	20.0265	20.0265	6.4800e-003	0.0000	20.1884
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**9.8800e-003**	**0.0953**	**0.1463**	**2.3000e-004**		**4.6900e-003**	**4.6900e-003**		**4.3100e-003**	**4.3100e-003**	**0.0000**	**20.0265**	**20.0265**	**6.4800e-003**	**0.0000**	**20.1884**

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

3.6 Paving - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.6000e-004	3.3000e-004	3.8900e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.2000e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	0.9800	0.9800	3.0000e-005	3.0000e-005	0.9894
Total	**4.6000e-004**	**3.3000e-004**	**3.8900e-003**	**1.0000e-005**	**1.1900e-003**	**1.0000e-005**	**1.2000e-003**	**3.2000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**0.9800**	**0.9800**	**3.0000e-005**	**3.0000e-005**	**0.9894**

3.7 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	2.8095					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.8100e-003	0.0122	0.0181	3.0000e-005		6.1000e-004	6.1000e-004		6.1000e-004	6.1000e-004	0.0000	2.5533	2.5533	1.4000e-004	0.0000	2.5569
Total	**2.8113**	**0.0122**	**0.0181**	**3.0000e-005**		**6.1000e-004**	**6.1000e-004**		**6.1000e-004**	**6.1000e-004**	**0.0000**	**2.5533**	**2.5533**	**1.4000e-004**	**0.0000**	**2.5569**

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

3.7 Architectural Coating - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.9300e-003	2.8600e-003	0.0334	9.0000e-005	0.0103	6.0000e-005	0.0103	2.7300e-003	6.0000e-005	2.7900e-003	0.0000	8.4277	8.4277	2.7000e-004	2.5000e-004	8.5090
Total	**3.9300e-003**	**2.8600e-003**	**0.0334**	**9.0000e-005**	**0.0103**	**6.0000e-005**	**0.0103**	**2.7300e-003**	**6.0000e-005**	**2.7900e-003**	**0.0000**	**8.4277**	**8.4277**	**2.7000e-004**	**2.5000e-004**	**8.5090**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	2.8095					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.8100e-003	0.0122	0.0181	3.0000e-005		6.1000e-004	6.1000e-004		6.1000e-004	6.1000e-004	0.0000	2.5533	2.5533	1.4000e-004	0.0000	2.5568
Total	**2.8113**	**0.0122**	**0.0181**	**3.0000e-005**		**6.1000e-004**	**6.1000e-004**		**6.1000e-004**	**6.1000e-004**	**0.0000**	**2.5533**	**2.5533**	**1.4000e-004**	**0.0000**	**2.5568**

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

3.7 Architectural Coating - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.9300e-003	2.8600e-003	0.0334	9.0000e-005	0.0103	6.0000e-005	0.0103	2.7300e-003	6.0000e-005	2.7900e-003	0.0000	8.4277	8.4277	2.7000e-004	2.5000e-004	8.5090
Total	**3.9300e-003**	**2.8600e-003**	**0.0334**	**9.0000e-005**	**0.0103**	**6.0000e-005**	**0.0103**	**2.7300e-003**	**6.0000e-005**	**2.7900e-003**	**0.0000**	**8.4277**	**8.4277**	**2.7000e-004**	**2.5000e-004**	**8.5090**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Integrate Below Market Rate Housing

Limit Parking Supply

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	2.4069	3.1551	21.7915	0.0431	4.3333	0.0390	4.3723	1.1585	0.0365	1.1950	0.0000	4,073.6488	4,073.6488	0.2897	0.2071	4,142.6113
Unmitigated	2.5778	3.5249	24.2762	0.0493	4.9762	0.0443	5.0205	1.3304	0.0414	1.3718	0.0000	4,660.0227	4,660.0227	0.3169	0.2307	4,736.6798

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	4,885.12	4,409.18	3672.82	13,378,684	11,650,158
Total	4,885.12	4,409.18	3,672.82	13,378,684	11,650,158

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.80	7.30	7.50	44.00	18.80	37.20	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.517882	0.052795	0.193633	0.146997	0.027981	0.006802	0.010707	0.009580	0.001188	0.000578	0.027032	0.001276	0.003550

5.0 Energy Detail

Historical Energy Use: N

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

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	321.2475	321.2475	0.0520	6.3000e-003	324.4241
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	321.2475	321.2475	0.0520	6.3000e-003	324.4241
NaturalGas Mitigated	0.0406	0.3468	0.1476	2.2100e-003		0.0280	0.0280		0.0280	0.0280	0.0000	401.6560	401.6560	7.7000e-003	7.3600e-003	404.0428
NaturalGas Unmitigated	0.0406	0.3468	0.1476	2.2100e-003		0.0280	0.0280		0.0280	0.0280	0.0000	401.6560	401.6560	7.7000e-003	7.3600e-003	404.0428

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	7.52675e+006	0.0406	0.3468	0.1476	2.2100e-003		0.0280	0.0280		0.0280	0.0280	0.0000	401.6560	401.6560	7.7000e-003	7.3600e-003	404.0428
Total		**0.0406**	**0.3468**	**0.1476**	**2.2100e-003**		**0.0280**	**0.0280**		**0.0280**	**0.0280**	**0.0000**	**401.6560**	**401.6560**	**7.7000e-003**	**7.3600e-003**	**404.0428**

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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

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					
Apartments Mid Rise	7.52675e+006	0.0406	0.3468	0.1476	2.2100e-003		0.0280	0.0280		0.0280	0.0280	0.0000	401.6560	401.6560	7.7000e-003	7.3600e-003	404.0428
Total		**0.0406**	**0.3468**	**0.1476**	**2.2100e-003**		**0.0280**	**0.0280**		**0.0280**	**0.0280**	**0.0000**	**401.6560**	**401.6560**	**7.7000e-003**	**7.3600e-003**	**404.0428**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	3.47205e+006	321.2475	0.0520	6.3000e-003	324.4241
Total		**321.2475**	**0.0520**	**6.3000e-003**	**324.4241**

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

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	3.47205e+006	321.2475	0.0520	6.3000e-003	324.4241
Total		**321.2475**	**0.0520**	**6.3000e-003**	**324.4241**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	4.0659	0.1066	9.2520	4.9000e-004		0.0513	0.0513		0.0513	0.0513	0.0000	15.1273	15.1273	0.0145	0.0000	15.4895
Unmitigated	4.0659	0.1066	9.2520	4.9000e-004		0.0513	0.0513		0.0513	0.0513	0.0000	15.1273	15.1273	0.0145	0.0000	15.4895

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	0.2810					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	3.5071					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.2778	0.1066	9.2520	4.9000e-004		0.0513	0.0513		0.0513	0.0513	0.0000	15.1273	15.1273	0.0145	0.0000	15.4895
Total	**4.0659**	**0.1066**	**9.2520**	**4.9000e-004**		**0.0513**	**0.0513**		**0.0513**	**0.0513**	**0.0000**	**15.1273**	**15.1273**	**0.0145**	**0.0000**	**15.4895**

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

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.2810					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	3.5071					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.2778	0.1066	9.2520	4.9000e-004		0.0513	0.0513		0.0513	0.0513	0.0000	15.1273	15.1273	0.0145	0.0000	15.4895
Total	**4.0659**	**0.1066**	**9.2520**	**4.9000e-004**		**0.0513**	**0.0513**		**0.0513**	**0.0513**	**0.0000**	**15.1273**	**15.1273**	**0.0145**	**0.0000**	**15.4895**

7.0 Water Detail

7.1 Mitigation Measures Water

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

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	51.9386	0.0627	0.0367	64.4454
Unmitigated	51.9386	0.0627	0.0367	64.4454

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	46.8067 / 36.8857	51.9386	0.0627	0.0367	64.4454
Total		**51.9386**	**0.0627**	**0.0367**	**64.4454**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	46.8067 / 36.8857	51.9386	0.0627	0.0367	64.4454
Total		**51.9386**	**0.0627**	**0.0367**	**64.4454**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	83.8515	4.9555	0.0000	207.7386
Unmitigated	83.8515	4.9555	0.0000	207.7386

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

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	413.08	83.8515	4.9555	0.0000	207.7386
Total		**83.8515**	**4.9555**	**0.0000**	**207.7386**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	413.08	83.8515	4.9555	0.0000	207.7386
Total		**83.8515**	**4.9555**	**0.0000**	**207.7386**

9.0 Operational Offroad

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

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

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

Marina Affordable Housing Overlay - Monterey Bay Unified APCD Air District, Summer

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

Marina Affordable Housing Overlay

Monterey Bay Unified APCD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Mid Rise	898.00	Dwelling Unit	21.85	898,000.00	2568

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.8	**Precipitation Freq (Days)**	53
Climate Zone	4			**Operational Year**	2025
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - acreage is provided, default pop and SF

Construction Phase - Defaults

Off-road Equipment - Defaults

Grading - Assumed to be minimal - left as zero in modeling.

Demolition - Assumed that developed sites would be demolished, as included in Table 1 of the Initial Study. Assumed that half of the acreage is occupied with buildings that would require demolition. 50% of 8.16 acres = 177,724 sf

Trips and VMT - Defaults

Architectural Coating - MBARD Rule 426

Vehicle Trips - defaults

Water And Wastewater - 20% CalGreen reductions for indoor water use. Removed septic and lagoons

Mobile Land Use Mitigation - Assumed 12% BMR housing and 25% reduction in spaces based off of reduction from 2 spaces/unit to 1.5 spaces/unit for a 1-3 bdrm unit.

Marina Affordable Housing Overlay - Monterey Bay Unified APCD Air District, Summer

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

Area Mitigation - MBARD Rule 426 (Architectural Coatings), which specifies volatile organic content (VOC) limits of 50 grams per liter for flat coatings and 100 grams per liter for non-flat coatings.

Area Coating - MBARD Rule 426

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Interior	150.00	50.00
tblArchitecturalCoating	EF_Parking	150.00	50.00
tblArchitecturalCoating	EF_Residential_Exterior	100.00	50.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	50.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	150	50
tblAreaCoating	Area_EF_Nonresidential_Interior	150	50
tblAreaCoating	Area_EF_Parking	150	100
tblAreaCoating	Area_EF_Residential_Exterior	100	50
tblAreaCoating	Area_EF_Residential_Interior	100	50
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblLandUse	LotAcreage	23.63	21.85
tblWater	AerobicPercent	87.46	100.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	IndoorWaterUseRate	58,508,315.01	46,806,652.00
tblWater	SepticTankPercent	10.33	0.00

2.0 Emissions Summary

Marina Affordable Housing Overlay - Monterey Bay Unified APCD Air District, Summer

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

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	3.8572	34.5595	36.8305	0.0959	19.8049	1.4255	21.0718	10.1417	1.3115	11.3073	0.0000	9,681.3711	9,681.3711	1.9491	0.4456	9,833.7934
2024	281.5297	19.3541	35.2021	0.0940	5.9653	0.6758	6.6411	1.5970	0.6356	2.2326	0.0000	9,530.1335	9,530.1335	0.7651	0.4306	9,677.5686
Maximum	**281.5297**	**34.5595**	**36.8305**	**0.0959**	**19.8049**	**1.4255**	**21.0718**	**10.1417**	**1.3115**	**11.3073**	**0.0000**	**9,681.3711**	**9,681.3711**	**1.9491**	**0.4456**	**9,833.7934**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	3.8572	34.5595	36.8305	0.0959	19.8049	1.4255	21.0718	10.1417	1.3115	11.3073	0.0000	9,681.3711	9,681.3711	1.9491	0.4456	9,833.7934
2024	281.5297	19.3541	35.2021	0.0940	5.9653	0.6758	6.6411	1.5970	0.6356	2.2326	0.0000	9,530.1335	9,530.1335	0.7651	0.4306	9,677.5686
Maximum	**281.5297**	**34.5595**	**36.8305**	**0.0959**	**19.8049**	**1.4255**	**21.0718**	**10.1417**	**1.3115**	**11.3073**	**0.0000**	**9,681.3711**	**9,681.3711**	**1.9491**	**0.4456**	**9,833.7934**

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

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

Marina Affordable Housing Overlay - Monterey Bay Unified APCD Air District, Summer

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

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	22.9790	0.8526	74.0159	3.9100e-003		0.4107	0.4107		0.4107	0.4107	0.0000	133.4000	133.4000	0.1278	0.0000	136.5936
Energy	0.2224	1.9004	0.8087	0.0121		0.1537	0.1537		0.1537	0.1537		2,426.0270	2,426.0270	0.0465	0.0445	2,440.4436
Mobile	15.7359	18.7707	138.5510	0.2964	29.6896	0.2562	29.9458	7.9174	0.2395	8.1569		30,910.9046	30,910.9046	1.9084	1.3938	31,373.9550
Total	**38.9373**	**21.5237**	**213.3756**	**0.3124**	**29.6896**	**0.8206**	**30.5102**	**7.9174**	**0.8038**	**8.7212**	**0.0000**	**33,470.3315**	**33,470.3315**	**2.0827**	**1.4382**	**33,950.9922**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	22.9790	0.8526	74.0159	3.9100e-003		0.4107	0.4107		0.4107	0.4107	0.0000	133.4000	133.4000	0.1278	0.0000	136.5936
Energy	0.2224	1.9004	0.8087	0.0121		0.1537	0.1537		0.1537	0.1537		2,426.0270	2,426.0270	0.0465	0.0445	2,440.4436
Mobile	14.7725	16.7989	123.6382	0.2590	25.8537	0.2257	26.0794	6.8944	0.2109	7.1053		27,015.6502	27,015.6502	1.7355	1.2506	27,431.7071
Total	**37.9738**	**19.5519**	**198.4628**	**0.2751**	**25.8537**	**0.7900**	**26.6437**	**6.8944**	**0.7752**	**7.6697**	**0.0000**	**29,575.0771**	**29,575.0771**	**1.9098**	**1.2951**	**30,008.7443**

Marina Affordable Housing Overlay - Monterey Bay Unified APCD Air District, Summer

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**2.47**	**9.16**	**6.99**	**11.96**	**12.92**	**3.73**	**12.67**	**12.92**	**3.56**	**12.06**	**0.00**	**11.64**	**11.64**	**8.30**	**9.96**	**11.61**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/2/2023	1/27/2023	5	20	
2	Site Preparation	Site Preparation	1/28/2023	2/10/2023	5	10	
3	Grading	Grading	2/11/2023	3/31/2023	5	35	
4	Building Construction	Building Construction	4/1/2023	8/30/2024	5	370	
5	Paving	Paving	8/31/2024	9/27/2024	5	20	
6	Architectural Coating	Architectural Coating	9/28/2024	10/25/2024	5	20	

Acres of Grading (Site Preparation Phase): 15

Acres of Grading (Grading Phase): 105

Acres of Paving: 0

Residential Indoor: 1,818,450; Residential Outdoor: 606,150; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	7.00	231	0.29
Demolition	Excavators	3	8.00	158	0.38
Grading	Excavators	2	8.00	158	0.38

Marina Affordable Housing Overlay - Monterey Bay Unified APCD Air District, Summer

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

Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Graders	1	8.00	187	0.41
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	808.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	647.00	96.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	129.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Marina Affordable Housing Overlay - Monterey Bay Unified APCD Air District, Summer

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

3.2 Demolition - 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	lb/day										lb/day					
Fugitive Dust					8.9127	0.0000	8.9127	1.3497	0.0000	1.3497			0.0000			0.0000
Off-Road	2.2691	21.4844	19.6434	0.0388		0.9975	0.9975		0.9280	0.9280		3,746.9840	3,746.9840	1.0494		3,773.2183
Total	**2.2691**	**21.4844**	**19.6434**	**0.0388**	**8.9127**	**0.9975**	**9.9103**	**1.3497**	**0.9280**	**2.2777**		**3,746.9840**	**3,746.9840**	**1.0494**		**3,773.2183**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1032	5.6584	1.2085	0.0243	0.7069	0.0515	0.7584	0.1938	0.0493	0.2431		2,601.9489	2,601.9489	0.0291	0.4101	2,724.8862
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
Worker	0.0498	0.0330	0.4420	1.1400e-003	0.1232	7.8000e-004	0.1240	0.0327	7.2000e-004	0.0334		116.4591	116.4591	3.6800e-003	3.1800e-003	117.4977
Total	**0.1530**	**5.6913**	**1.6505**	**0.0255**	**0.8301**	**0.0523**	**0.8824**	**0.2265**	**0.0500**	**0.2765**		**2,718.4080**	**2,718.4080**	**0.0328**	**0.4133**	**2,842.3839**

Marina Affordable Housing Overlay - Monterey Bay Unified APCD Air District, Summer

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

3.2 Demolition - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.9127	0.0000	8.9127	1.3497	0.0000	1.3497			0.0000			0.0000
Off-Road	2.2691	21.4844	19.6434	0.0388		0.9975	0.9975		0.9280	0.9280	0.0000	3,746.9840	3,746.9840	1.0494		3,773.2183
Total	**2.2691**	**21.4844**	**19.6434**	**0.0388**	**8.9127**	**0.9975**	**9.9103**	**1.3497**	**0.9280**	**2.2777**	**0.0000**	**3,746.9840**	**3,746.9840**	**1.0494**		**3,773.2183**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1032	5.6584	1.2085	0.0243	0.7069	0.0515	0.7584	0.1938	0.0493	0.2431		2,601.9489	2,601.9489	0.0291	0.4101	2,724.8862
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
Worker	0.0498	0.0330	0.4420	1.1400e-003	0.1232	7.8000e-004	0.1240	0.0327	7.2000e-004	0.0334		116.4591	116.4591	3.6800e-003	3.1800e-003	117.4977
Total	**0.1530**	**5.6913**	**1.6505**	**0.0255**	**0.8301**	**0.0523**	**0.8824**	**0.2265**	**0.0500**	**0.2765**		**2,718.4080**	**2,718.4080**	**0.0328**	**0.4133**	**2,842.3839**

Marina Affordable Housing Overlay - Monterey Bay Unified APCD Air District, Summer

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

3.3 Site Preparation - 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	lb/day										lb/day					
Fugitive Dust					19.6570	0.0000	19.6570	10.1025	0.0000	10.1025			0.0000			0.0000
Off-Road	2.6595	27.5242	18.2443	0.0381		1.2660	1.2660		1.1647	1.1647		3,687.3081	3,687.3081	1.1926		3,717.1219
Total	**2.6595**	**27.5242**	**18.2443**	**0.0381**	**19.6570**	**1.2660**	**20.9230**	**10.1025**	**1.1647**	**11.2672**		**3,687.3081**	**3,687.3081**	**1.1926**		**3,717.1219**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	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
Worker	0.0597	0.0396	0.5304	1.3700e-003	0.1479	9.3000e-004	0.1488	0.0392	8.6000e-004	0.0401		139.7509	139.7509	4.4200e-003	3.8100e-003	140.9972
Total	**0.0597**	**0.0396**	**0.5304**	**1.3700e-003**	**0.1479**	**9.3000e-004**	**0.1488**	**0.0392**	**8.6000e-004**	**0.0401**		**139.7509**	**139.7509**	**4.4200e-003**	**3.8100e-003**	**140.9972**

Marina Affordable Housing Overlay - Monterey Bay Unified APCD Air District, Summer

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

3.3 Site Preparation - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					19.6570	0.0000	19.6570	10.1025	0.0000	10.1025			0.0000			0.0000
Off-Road	2.6595	27.5242	18.2443	0.0381		1.2660	1.2660		1.1647	1.1647	0.0000	3,687.3081	3,687.3081	1.1926		3,717.1219
Total	**2.6595**	**27.5242**	**18.2443**	**0.0381**	**19.6570**	**1.2660**	**20.9230**	**10.1025**	**1.1647**	**11.2672**	**0.0000**	**3,687.3081**	**3,687.3081**	**1.1926**		**3,717.1219**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	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
Worker	0.0597	0.0396	0.5304	1.3700e-003	0.1479	9.3000e-004	0.1488	0.0392	8.6000e-004	0.0401		139.7509	139.7509	4.4200e-003	3.8100e-003	140.9972
Total	**0.0597**	**0.0396**	**0.5304**	**1.3700e-003**	**0.1479**	**9.3000e-004**	**0.1488**	**0.0392**	**8.6000e-004**	**0.0401**		**139.7509**	**139.7509**	**4.4200e-003**	**3.8100e-003**	**140.9972**

Marina Affordable Housing Overlay - Monterey Bay Unified APCD Air District, Summer

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

3.4 Grading - 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	lb/day										lb/day					
Fugitive Dust					9.2036	0.0000	9.2036	3.6538	0.0000	3.6538			0.0000			0.0000
Off-Road	3.3217	34.5156	28.0512	0.0621		1.4245	1.4245		1.3105	1.3105		6,011.4777	6,011.4777	1.9442		6,060.0836
Total	**3.3217**	**34.5156**	**28.0512**	**0.0621**	**9.2036**	**1.4245**	**10.6281**	**3.6538**	**1.3105**	**4.9643**		**6,011.4777**	**6,011.4777**	**1.9442**		**6,060.0836**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	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
Worker	0.0663	0.0439	0.5894	1.5200e-003	0.1643	1.0400e-003	0.1653	0.0436	9.6000e-004	0.0445		155.2788	155.2788	4.9100e-003	4.2400e-003	156.6636
Total	**0.0663**	**0.0439**	**0.5894**	**1.5200e-003**	**0.1643**	**1.0400e-003**	**0.1653**	**0.0436**	**9.6000e-004**	**0.0445**		**155.2788**	**155.2788**	**4.9100e-003**	**4.2400e-003**	**156.6636**

Marina Affordable Housing Overlay - Monterey Bay Unified APCD Air District, Summer

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

3.4 Grading - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					9.2036	0.0000	9.2036	3.6538	0.0000	3.6538			0.0000			0.0000
Off-Road	3.3217	34.5156	28.0512	0.0621		1.4245	1.4245		1.3105	1.3105	0.0000	6,011.4777	6,011.4777	1.9442		6,060.0836
Total	**3.3217**	**34.5156**	**28.0512**	**0.0621**	**9.2036**	**1.4245**	**10.6281**	**3.6538**	**1.3105**	**4.9643**	**0.0000**	**6,011.4777**	**6,011.4777**	**1.9442**		**6,060.0836**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	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
Worker	0.0663	0.0439	0.5894	1.5200e-003	0.1643	1.0400e-003	0.1653	0.0436	9.6000e-004	0.0445		155.2788	155.2788	4.9100e-003	4.2400e-003	156.6636
Total	**0.0663**	**0.0439**	**0.5894**	**1.5200e-003**	**0.1643**	**1.0400e-003**	**0.1653**	**0.0436**	**9.6000e-004**	**0.0445**		**155.2788**	**155.2788**	**4.9100e-003**	**4.2400e-003**	**156.6636**

Marina Affordable Housing Overlay - Monterey Bay Unified APCD Air District, Summer

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

3.5 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584		2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**		**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1387	4.7058	1.5201	0.0198	0.6503	0.0312	0.6815	0.1872	0.0298	0.2170		2,102.8918	2,102.8918	0.0185	0.3086	2,195.3205
Worker	2.1457	1.4216	19.0664	0.0491	5.3150	0.0336	5.3485	1.4098	0.0309	1.4407		5,023.2694	5,023.2694	0.1587	0.1370	5,068.0668
Total	**2.2844**	**6.1274**	**20.5865**	**0.0689**	**5.9652**	**0.0648**	**6.0300**	**1.5970**	**0.0608**	**1.6578**		**7,126.1612**	**7,126.1612**	**0.1772**	**0.4456**	**7,263.3873**

Marina Affordable Housing Overlay - Monterey Bay Unified APCD Air District, Summer

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

3.5 Building Construction - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584	0.0000	2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**	**0.0000**	**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1387	4.7058	1.5201	0.0198	0.6503	0.0312	0.6815	0.1872	0.0298	0.2170		2,102.8918	2,102.8918	0.0185	0.3086	2,195.3205
Worker	2.1457	1.4216	19.0664	0.0491	5.3150	0.0336	5.3485	1.4098	0.0309	1.4407		5,023.2694	5,023.2694	0.1587	0.1370	5,068.0668
Total	**2.2844**	**6.1274**	**20.5865**	**0.0689**	**5.9652**	**0.0648**	**6.0300**	**1.5970**	**0.0608**	**1.6578**		**7,126.1612**	**7,126.1612**	**0.1772**	**0.4456**	**7,263.3873**

Marina Affordable Housing Overlay - Monterey Bay Unified APCD Air District, Summer

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

3.5 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769		2,555.6989	2,555.6989	0.6044		2,570.8077
Total	**1.4716**	**13.4438**	**16.1668**	**0.0270**		**0.6133**	**0.6133**		**0.5769**	**0.5769**		**2,555.6989**	**2,555.6989**	**0.6044**		**2,570.8077**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1327	4.6504	1.4639	0.0195	0.6503	0.0308	0.6811	0.1872	0.0294	0.2167		2,070.2739	2,070.2739	0.0179	0.3039	2,161.2964
Worker	1.9984	1.2600	17.5714	0.0475	5.3150	0.0317	5.3467	1.4098	0.0292	1.4390		4,904.1607	4,904.1607	0.1428	0.1266	4,945.4645
Total	**2.1310**	**5.9104**	**19.0353**	**0.0671**	**5.9653**	**0.0625**	**6.0278**	**1.5970**	**0.0587**	**1.6557**		**6,974.4346**	**6,974.4346**	**0.1607**	**0.4306**	**7,106.7609**

Marina Affordable Housing Overlay - Monterey Bay Unified APCD Air District, Summer

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

3.5 Building Construction - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769	0.0000	2,555.6989	2,555.6989	0.6044		2,570.8077
Total	**1.4716**	**13.4438**	**16.1668**	**0.0270**		**0.6133**	**0.6133**		**0.5769**	**0.5769**	**0.0000**	**2,555.6989**	**2,555.6989**	**0.6044**		**2,570.8077**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1327	4.6504	1.4639	0.0195	0.6503	0.0308	0.6811	0.1872	0.0294	0.2167		2,070.2739	2,070.2739	0.0179	0.3039	2,161.2964
Worker	1.9984	1.2600	17.5714	0.0475	5.3150	0.0317	5.3467	1.4098	0.0292	1.4390		4,904.1607	4,904.1607	0.1428	0.1266	4,945.4645
Total	**2.1310**	**5.9104**	**19.0353**	**0.0671**	**5.9653**	**0.0625**	**6.0278**	**1.5970**	**0.0587**	**1.6557**		**6,974.4346**	**6,974.4346**	**0.1607**	**0.4306**	**7,106.7609**

Marina Affordable Housing Overlay - Monterey Bay Unified APCD Air District, Summer

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

3.6 Paving - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9882	9.5246	14.6258	0.0228		0.4685	0.4685		0.4310	0.4310		2,207.5472	2,207.5472	0.7140		2,225.3963
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9882**	**9.5246**	**14.6258**	**0.0228**		**0.4685**	**0.4685**		**0.4310**	**0.4310**		**2,207.5472**	**2,207.5472**	**0.7140**		**2,225.3963**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	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
Worker	0.0463	0.0292	0.4074	1.1000e-003	0.1232	7.4000e-004	0.1240	0.0327	6.8000e-004	0.0334		113.6977	113.6977	3.3100e-003	2.9400e-003	114.6553
Total	**0.0463**	**0.0292**	**0.4074**	**1.1000e-003**	**0.1232**	**7.4000e-004**	**0.1240**	**0.0327**	**6.8000e-004**	**0.0334**		**113.6977**	**113.6977**	**3.3100e-003**	**2.9400e-003**	**114.6553**

Marina Affordable Housing Overlay - Monterey Bay Unified APCD Air District, Summer

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

3.6 Paving - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9882	9.5246	14.6258	0.0228		0.4685	0.4685		0.4310	0.4310	0.0000	2,207.5472	2,207.5472	0.7140		2,225.3963
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9882**	**9.5246**	**14.6258**	**0.0228**		**0.4685**	**0.4685**		**0.4310**	**0.4310**	**0.0000**	**2,207.5472**	**2,207.5472**	**0.7140**		**2,225.3963**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	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
Worker	0.0463	0.0292	0.4074	1.1000e-003	0.1232	7.4000e-004	0.1240	0.0327	6.8000e-004	0.0334		113.6977	113.6977	3.3100e-003	2.9400e-003	114.6553
Total	**0.0463**	**0.0292**	**0.4074**	**1.1000e-003**	**0.1232**	**7.4000e-004**	**0.1240**	**0.0327**	**6.8000e-004**	**0.0334**		**113.6977**	**113.6977**	**3.3100e-003**	**2.9400e-003**	**114.6553**

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

3.7 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	280.9505					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609		281.4481	281.4481	0.0159		281.8443
Total	**281.1313**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**		**281.4481**	**281.4481**	**0.0159**		**281.8443**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	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
Worker	0.3984	0.2512	3.5034	9.4800e-003	1.0597	6.3300e-003	1.0660	0.2811	5.8300e-003	0.2869		977.8002	977.8002	0.0285	0.0253	986.0354
Total	**0.3984**	**0.2512**	**3.5034**	**9.4800e-003**	**1.0597**	**6.3300e-003**	**1.0660**	**0.2811**	**5.8300e-003**	**0.2869**		**977.8002**	**977.8002**	**0.0285**	**0.0253**	**986.0354**

Marina Affordable Housing Overlay - Monterey Bay Unified APCD Air District, Summer

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

3.7 Architectural Coating - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	280.9505					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609	0.0000	281.4481	281.4481	0.0159		281.8443
Total	**281.1313**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**	**0.0000**	**281.4481**	**281.4481**	**0.0159**		**281.8443**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	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
Worker	0.3984	0.2512	3.5034	9.4800e-003	1.0597	6.3300e-003	1.0660	0.2811	5.8300e-003	0.2869		977.8002	977.8002	0.0285	0.0253	986.0354
Total	**0.3984**	**0.2512**	**3.5034**	**9.4800e-003**	**1.0597**	**6.3300e-003**	**1.0660**	**0.2811**	**5.8300e-003**	**0.2869**		**977.8002**	**977.8002**	**0.0285**	**0.0253**	**986.0354**

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

Integrate Below Market Rate Housing

Limit Parking Supply

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	14.7725	16.7989	123.6382	0.2590	25.8537	0.2257	26.0794	6.8944	0.2109	7.1053		27,015.6502	27,015.6502	1.7355	1.2506	27,431.7071
Unmitigated	15.7359	18.7707	138.5510	0.2964	29.6896	0.2562	29.9458	7.9174	0.2395	8.1569		30,910.9046	30,910.9046	1.9084	1.3938	31,373.9550

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	4,885.12	4,409.18	3672.82	13,378,684	11,650,158
Total	4,885.12	4,409.18	3,672.82	13,378,684	11,650,158

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.80	7.30	7.50	44.00	18.80	37.20	86	11	3

4.4 Fleet Mix

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

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.517882	0.052795	0.193633	0.146997	0.027981	0.006802	0.010707	0.009580	0.001188	0.000578	0.027032	0.001276	0.003550

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.2224	1.9004	0.8087	0.0121		0.1537	0.1537		0.1537	0.1537		2,426.0270	2,426.0270	0.0465	0.0445	2,440.4436
NaturalGas Unmitigated	0.2224	1.9004	0.8087	0.0121		0.1537	0.1537		0.1537	0.1537		2,426.0270	2,426.0270	0.0465	0.0445	2,440.4436

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	lb/day										lb/day					
Apartments Mid Rise	20621.2	0.2224	1.9004	0.8087	0.0121		0.1537	0.1537		0.1537	0.1537		2,426.0270	2,426.0270	0.0465	0.0445	2,440.4436
Total		**0.2224**	**1.9004**	**0.8087**	**0.0121**		**0.1537**	**0.1537**		**0.1537**	**0.1537**		**2,426.0270**	**2,426.0270**	**0.0465**	**0.0445**	**2,440.4436**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	20.6212	0.2224	1.9004	0.8087	0.0121		0.1537	0.1537		0.1537	0.1537		2,426.0270	2,426.0270	0.0465	0.0445	2,440.4436
Total		**0.2224**	**1.9004**	**0.8087**	**0.0121**		**0.1537**	**0.1537**		**0.1537**	**0.1537**		**2,426.0270**	**2,426.0270**	**0.0465**	**0.0445**	**2,440.4436**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Marina Affordable Housing Overlay - Monterey Bay Unified APCD Air District, Summer

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

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	22.9790	0.8526	74.0159	3.9100e-003		0.4107	0.4107		0.4107	0.4107	0.0000	133.4000	133.4000	0.1278	0.0000	136.5936
Unmitigated	22.9790	0.8526	74.0159	3.9100e-003		0.4107	0.4107		0.4107	0.4107	0.0000	133.4000	133.4000	0.1278	0.0000	136.5936

Marina Affordable Housing Overlay - Monterey Bay Unified APCD Air District, Summer

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	lb/day										lb/day					
Architectural Coating	1.5395					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	19.2172					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.2223	0.8526	74.0159	3.9100e-003		0.4107	0.4107		0.4107	0.4107		133.4000	133.4000	0.1278		136.5936
Total	**22.9790**	**0.8526**	**74.0159**	**3.9100e-003**		**0.4107**	**0.4107**		**0.4107**	**0.4107**	**0.0000**	**133.4000**	**133.4000**	**0.1278**	**0.0000**	**136.5936**

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

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	1.5395					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	19.2172					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.2223	0.8526	74.0159	3.9100e-003		0.4107	0.4107		0.4107	0.4107		133.4000	133.4000	0.1278		136.5936
Total	**22.9790**	**0.8526**	**74.0159**	**3.9100e-003**		**0.4107**	**0.4107**		**0.4107**	**0.4107**	**0.0000**	**133.4000**	**133.4000**	**0.1278**	**0.0000**	**136.5936**

7.0 Water Detail

7.1 Mitigation Measures Water

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

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Marina Affordable Housing Overlay - Monterey Bay Unified APCD Air District, Winter

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

Marina Affordable Housing Overlay

Monterey Bay Unified APCD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Mid Rise	898.00	Dwelling Unit	21.85	898,000.00	2568

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.8	**Precipitation Freq (Days)**	53
Climate Zone	4			**Operational Year**	2025
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - acreage is provided, default pop and SF

Construction Phase - Defaults

Off-road Equipment - Defaults

Grading - Assumed to be minimal - left as zero in modeling.

Demolition - Assumed that developed sites would be demolished, as included in Table 1 of the Initial Study. Assumed that half of the acreage is occupied with buildings that would require demolition. 50% of 8.16 acres = 177,724 sf

Trips and VMT - Defaults

Architectural Coating - MBARD Rule 426

Vehicle Trips - defaults

Water And Wastewater - 20% CalGreen reductions for indoor water use. Removed septic and lagoons

Mobile Land Use Mitigation - Assumed 12% BMR housing and 25% reduction in spaces based off of reduction from 2 spaces/unit to 1.5 spaces/unit for a 1-3 bdrm unit.

Marina Affordable Housing Overlay - Monterey Bay Unified APCD Air District, Winter

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

Area Mitigation - MBARD Rule 426 (Architectural Coatings), which specifies volatile organic content (VOC) limits of 50 grams per liter for flat coatings and 100 grams per liter for non-flat coatings.

Area Coating - MBARD Rule 426

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Interior	150.00	50.00
tblArchitecturalCoating	EF_Parking	150.00	50.00
tblArchitecturalCoating	EF_Residential_Exterior	100.00	50.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	50.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	150	50
tblAreaCoating	Area_EF_Nonresidential_Interior	150	50
tblAreaCoating	Area_EF_Parking	150	100
tblAreaCoating	Area_EF_Residential_Exterior	100	50
tblAreaCoating	Area_EF_Residential_Interior	100	50
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblLandUse	LotAcreage	23.63	21.85
tblWater	AerobicPercent	87.46	100.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	IndoorWaterUseRate	58,508,315.01	46,806,652.00
tblWater	SepticTankPercent	10.33	0.00

2.0 Emissions Summary

Marina Affordable Housing Overlay - Monterey Bay Unified APCD Air District, Winter

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

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	3.9894	34.5706	36.6906	0.0933	19.8049	1.4255	21.0718	10.1417	1.3115	11.3073	0.0000	9,415.8745	9,415.8745	1.9498	0.4690	9,575.7566
2024	281.5561	19.9433	35.1396	0.0915	5.9653	0.6759	6.6412	1.5970	0.6357	2.2327	0.0000	9,271.6940	9,271.6940	0.7831	0.4521	9,426.0091
Maximum	**281.5561**	**34.5706**	**36.6906**	**0.0933**	**19.8049**	**1.4255**	**21.0718**	**10.1417**	**1.3115**	**11.3073**	**0.0000**	**9,415.8745**	**9,415.8745**	**1.9498**	**0.4690**	**9,575.7566**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	3.9894	34.5706	36.6906	0.0933	19.8049	1.4255	21.0718	10.1417	1.3115	11.3073	0.0000	9,415.8745	9,415.8745	1.9498	0.4690	9,575.7566
2024	281.5561	19.9433	35.1396	0.0915	5.9653	0.6759	6.6412	1.5970	0.6357	2.2327	0.0000	9,271.6940	9,271.6940	0.7831	0.4521	9,426.0091
Maximum	**281.5561**	**34.5706**	**36.6906**	**0.0933**	**19.8049**	**1.4255**	**21.0718**	**10.1417**	**1.3115**	**11.3073**	**0.0000**	**9,415.8745**	**9,415.8745**	**1.9498**	**0.4690**	**9,575.7566**

Marina Affordable Housing Overlay - Monterey Bay Unified APCD Air District, Winter

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

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

Marina Affordable Housing Overlay - Monterey Bay Unified APCD Air District, Winter

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

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	22.9790	0.8526	74.0159	3.9100e-003		0.4107	0.4107		0.4107	0.4107	0.0000	133.4000	133.4000	0.1278	0.0000	136.5936
Energy	0.2224	1.9004	0.8087	0.0121		0.1537	0.1537		0.1537	0.1537		2,426.0270	2,426.0270	0.0465	0.0445	2,440.4436
Mobile	15.0251	21.4870	150.0830	0.2843	29.6896	0.2564	29.9460	7.9174	0.2396	8.1570		29,652.5046	29,652.5046	2.1367	1.5281	30,161.2940
Total	**38.2265**	**24.2400**	**224.9077**	**0.3004**	**29.6896**	**0.8207**	**30.5103**	**7.9174**	**0.8040**	**8.7213**	**0.0000**	**32,211.9315**	**32,211.9315**	**2.3110**	**1.5726**	**32,738.3312**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	22.9790	0.8526	74.0159	3.9100e-003		0.4107	0.4107		0.4107	0.4107	0.0000	133.4000	133.4000	0.1278	0.0000	136.5936
Energy	0.2224	1.9004	0.8087	0.0121		0.1537	0.1537		0.1537	0.1537		2,426.0270	2,426.0270	0.0465	0.0445	2,440.4436
Mobile	14.0030	19.2410	135.1248	0.2486	25.8537	0.2258	26.0795	6.8944	0.2110	7.1055		25,923.1129	25,923.1129	1.9601	1.3729	26,381.2303
Total	**37.2043**	**21.9939**	**209.9494**	**0.2646**	**25.8537**	**0.7901**	**26.6438**	**6.8944**	**0.7754**	**7.6698**	**0.0000**	**28,482.5398**	**28,482.5398**	**2.1344**	**1.4174**	**28,958.2675**

Marina Affordable Housing Overlay - Monterey Bay Unified APCD Air District, Winter

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**2.67**	**9.27**	**6.65**	**11.91**	**12.92**	**3.72**	**12.67**	**12.92**	**3.56**	**12.06**	**0.00**	**11.58**	**11.58**	**7.64**	**9.87**	**11.55**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/2/2023	1/27/2023	5	20	
2	Site Preparation	Site Preparation	1/28/2023	2/10/2023	5	10	
3	Grading	Grading	2/11/2023	3/31/2023	5	35	
4	Building Construction	Building Construction	4/1/2023	8/30/2024	5	370	
5	Paving	Paving	8/31/2024	9/27/2024	5	20	
6	Architectural Coating	Architectural Coating	9/28/2024	10/25/2024	5	20	

Acres of Grading (Site Preparation Phase): 15

Acres of Grading (Grading Phase): 105

Acres of Paving: 0

Residential Indoor: 1,818,450; Residential Outdoor: 606,150; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	7.00	231	0.29
Demolition	Excavators	3	8.00	158	0.38
Grading	Excavators	2	8.00	158	0.38

Marina Affordable Housing Overlay - Monterey Bay Unified APCD Air District, Winter

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

Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Graders	1	8.00	187	0.41
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	808.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	647.00	96.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	129.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Marina Affordable Housing Overlay - Monterey Bay Unified APCD Air District, Winter

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

3.2 Demolition - 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	lb/day										lb/day					
Fugitive Dust					8.9127	0.0000	8.9127	1.3497	0.0000	1.3497			0.0000			0.0000
Off-Road	2.2691	21.4844	19.6434	0.0388		0.9975	0.9975		0.9280	0.9280		3,746.9840	3,746.9840	1.0494		3,773.2183
Total	**2.2691**	**21.4844**	**19.6434**	**0.0388**	**8.9127**	**0.9975**	**9.9103**	**1.3497**	**0.9280**	**2.2777**		**3,746.9840**	**3,746.9840**	**1.0494**		**3,773.2183**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0965	5.9828	1.2308	0.0244	0.7069	0.0516	0.7584	0.1938	0.0494	0.2431		2,605.2113	2,605.2113	0.0288	0.4106	2,728.2964
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
Worker	0.0529	0.0412	0.4377	1.0800e-003	0.1232	7.8000e-004	0.1240	0.0327	7.2000e-004	0.0334		110.2154	110.2154	4.1400e-003	3.6900e-003	111.4199
Total	**0.1494**	**6.0240**	**1.6685**	**0.0255**	**0.8301**	**0.0524**	**0.8824**	**0.2265**	**0.0501**	**0.2765**		**2,715.4268**	**2,715.4268**	**0.0329**	**0.4143**	**2,839.7163**

Marina Affordable Housing Overlay - Monterey Bay Unified APCD Air District, Winter

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

3.2 Demolition - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.9127	0.0000	8.9127	1.3497	0.0000	1.3497			0.0000			0.0000
Off-Road	2.2691	21.4844	19.6434	0.0388		0.9975	0.9975		0.9280	0.9280	0.0000	3,746.9840	3,746.9840	1.0494		3,773.2183
Total	**2.2691**	**21.4844**	**19.6434**	**0.0388**	**8.9127**	**0.9975**	**9.9103**	**1.3497**	**0.9280**	**2.2777**	**0.0000**	**3,746.9840**	**3,746.9840**	**1.0494**		**3,773.2183**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0965	5.9828	1.2308	0.0244	0.7069	0.0516	0.7584	0.1938	0.0494	0.2431		2,605.2113	2,605.2113	0.0288	0.4106	2,728.2964
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
Worker	0.0529	0.0412	0.4377	1.0800e-003	0.1232	7.8000e-004	0.1240	0.0327	7.2000e-004	0.0334		110.2154	110.2154	4.1400e-003	3.6900e-003	111.4199
Total	**0.1494**	**6.0240**	**1.6685**	**0.0255**	**0.8301**	**0.0524**	**0.8824**	**0.2265**	**0.0501**	**0.2765**		**2,715.4268**	**2,715.4268**	**0.0329**	**0.4143**	**2,839.7163**

Marina Affordable Housing Overlay - Monterey Bay Unified APCD Air District, Winter

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

3.3 Site Preparation - 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	lb/day										lb/day					
Fugitive Dust					19.6570	0.0000	19.6570	10.1025	0.0000	10.1025			0.0000			0.0000
Off-Road	2.6595	27.5242	18.2443	0.0381		1.2660	1.2660		1.1647	1.1647		3,687.3081	3,687.3081	1.1926		3,717.1219
Total	**2.6595**	**27.5242**	**18.2443**	**0.0381**	**19.6570**	**1.2660**	**20.9230**	**10.1025**	**1.1647**	**11.2672**		**3,687.3081**	**3,687.3081**	**1.1926**		**3,717.1219**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	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
Worker	0.0635	0.0495	0.5253	1.2900e-003	0.1479	9.3000e-004	0.1488	0.0392	8.6000e-004	0.0401		132.2585	132.2585	4.9700e-003	4.4300e-003	133.7039
Total	**0.0635**	**0.0495**	**0.5253**	**1.2900e-003**	**0.1479**	**9.3000e-004**	**0.1488**	**0.0392**	**8.6000e-004**	**0.0401**		**132.2585**	**132.2585**	**4.9700e-003**	**4.4300e-003**	**133.7039**

Marina Affordable Housing Overlay - Monterey Bay Unified APCD Air District, Winter

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

3.3 Site Preparation - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					19.6570	0.0000	19.6570	10.1025	0.0000	10.1025			0.0000			0.0000
Off-Road	2.6595	27.5242	18.2443	0.0381		1.2660	1.2660		1.1647	1.1647	0.0000	3,687.3081	3,687.3081	1.1926		3,717.1219
Total	**2.6595**	**27.5242**	**18.2443**	**0.0381**	**19.6570**	**1.2660**	**20.9230**	**10.1025**	**1.1647**	**11.2672**	**0.0000**	**3,687.3081**	**3,687.3081**	**1.1926**		**3,717.1219**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	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
Worker	0.0635	0.0495	0.5253	1.2900e-003	0.1479	9.3000e-004	0.1488	0.0392	8.6000e-004	0.0401		132.2585	132.2585	4.9700e-003	4.4300e-003	133.7039
Total	**0.0635**	**0.0495**	**0.5253**	**1.2900e-003**	**0.1479**	**9.3000e-004**	**0.1488**	**0.0392**	**8.6000e-004**	**0.0401**		**132.2585**	**132.2585**	**4.9700e-003**	**4.4300e-003**	**133.7039**

Marina Affordable Housing Overlay - Monterey Bay Unified APCD Air District, Winter

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

3.4 Grading - 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	lb/day										lb/day					
Fugitive Dust					9.2036	0.0000	9.2036	3.6538	0.0000	3.6538			0.0000			0.0000
Off-Road	3.3217	34.5156	28.0512	0.0621		1.4245	1.4245		1.3105	1.3105		6,011.4777	6,011.4777	1.9442		6,060.0836
Total	**3.3217**	**34.5156**	**28.0512**	**0.0621**	**9.2036**	**1.4245**	**10.6281**	**3.6538**	**1.3105**	**4.9643**		**6,011.4777**	**6,011.4777**	**1.9442**		**6,060.0836**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	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
Worker	0.0705	0.0550	0.5836	1.4400e-003	0.1643	1.0400e-003	0.1653	0.0436	9.6000e-004	0.0445		146.9539	146.9539	5.5200e-003	4.9300e-003	148.5599
Total	**0.0705**	**0.0550**	**0.5836**	**1.4400e-003**	**0.1643**	**1.0400e-003**	**0.1653**	**0.0436**	**9.6000e-004**	**0.0445**		**146.9539**	**146.9539**	**5.5200e-003**	**4.9300e-003**	**148.5599**

Marina Affordable Housing Overlay - Monterey Bay Unified APCD Air District, Winter

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

3.4 Grading - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					9.2036	0.0000	9.2036	3.6538	0.0000	3.6538			0.0000			0.0000
Off-Road	3.3217	34.5156	28.0512	0.0621		1.4245	1.4245		1.3105	1.3105	0.0000	6,011.4777	6,011.4777	1.9442		6,060.0836
Total	**3.3217**	**34.5156**	**28.0512**	**0.0621**	**9.2036**	**1.4245**	**10.6281**	**3.6538**	**1.3105**	**4.9643**	**0.0000**	**6,011.4777**	**6,011.4777**	**1.9442**		**6,060.0836**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	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
Worker	0.0705	0.0550	0.5836	1.4400e-003	0.1643	1.0400e-003	0.1653	0.0436	9.6000e-004	0.0445		146.9539	146.9539	5.5200e-003	4.9300e-003	148.5599
Total	**0.0705**	**0.0550**	**0.5836**	**1.4400e-003**	**0.1643**	**1.0400e-003**	**0.1653**	**0.0436**	**9.6000e-004**	**0.0445**		**146.9539**	**146.9539**	**5.5200e-003**	**4.9300e-003**	**148.5599**

Marina Affordable Housing Overlay - Monterey Bay Unified APCD Air District, Winter

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

3.5 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584		2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**		**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1348	4.9833	1.5661	0.0199	0.6503	0.0313	0.6816	0.1872	0.0299	0.2171		2,106.7057	2,106.7057	0.0181	0.3097	2,199.4381
Worker	2.2818	1.7783	18.8805	0.0465	5.3150	0.0336	5.3485	1.4098	0.0309	1.4407		4,753.9589	4,753.9589	0.1786	0.1594	4,805.9124
Total	**2.4167**	**6.7616**	**20.4466**	**0.0663**	**5.9652**	**0.0649**	**6.0301**	**1.5970**	**0.0609**	**1.6579**		**6,860.6645**	**6,860.6645**	**0.1967**	**0.4690**	**7,005.3505**

Marina Affordable Housing Overlay - Monterey Bay Unified APCD Air District, Winter

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

3.5 Building Construction - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584	0.0000	2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**	**0.0000**	**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1348	4.9833	1.5661	0.0199	0.6503	0.0313	0.6816	0.1872	0.0299	0.2171		2,106.7057	2,106.7057	0.0181	0.3097	2,199.4381
Worker	2.2818	1.7783	18.8805	0.0465	5.3150	0.0336	5.3485	1.4098	0.0309	1.4407		4,753.9589	4,753.9589	0.1786	0.1594	4,805.9124
Total	**2.4167**	**6.7616**	**20.4466**	**0.0663**	**5.9652**	**0.0649**	**6.0301**	**1.5970**	**0.0609**	**1.6579**		**6,860.6645**	**6,860.6645**	**0.1967**	**0.4690**	**7,005.3505**

Marina Affordable Housing Overlay - Monterey Bay Unified APCD Air District, Winter

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

3.5 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769		2,555.6989	2,555.6989	0.6044		2,570.8077
Total	**1.4716**	**13.4438**	**16.1668**	**0.0270**		**0.6133**	**0.6133**		**0.5769**	**0.5769**		**2,555.6989**	**2,555.6989**	**0.6044**		**2,570.8077**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1285	4.9238	1.5104	0.0196	0.6503	0.0309	0.6812	0.1872	0.0296	0.2168		2,074.1044	2,074.1044	0.0176	0.3049	2,165.4136
Worker	2.1308	1.5757	17.4624	0.0450	5.3150	0.0317	5.3467	1.4098	0.0292	1.4390		4,641.8907	4,641.8907	0.1612	0.1472	4,689.7878
Total	**2.2593**	**6.4995**	**18.9728**	**0.0646**	**5.9653**	**0.0626**	**6.0279**	**1.5970**	**0.0588**	**1.6558**		**6,715.9951**	**6,715.9951**	**0.1788**	**0.4521**	**6,855.2015**

Marina Affordable Housing Overlay - Monterey Bay Unified APCD Air District, Winter

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

3.5 Building Construction - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769	0.0000	2,555.6989	2,555.6989	0.6044		2,570.8077
Total	**1.4716**	**13.4438**	**16.1668**	**0.0270**		**0.6133**	**0.6133**		**0.5769**	**0.5769**	**0.0000**	**2,555.6989**	**2,555.6989**	**0.6044**		**2,570.8077**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1285	4.9238	1.5104	0.0196	0.6503	0.0309	0.6812	0.1872	0.0296	0.2168		2,074.1044	2,074.1044	0.0176	0.3049	2,165.4136
Worker	2.1308	1.5757	17.4624	0.0450	5.3150	0.0317	5.3467	1.4098	0.0292	1.4390		4,641.8907	4,641.8907	0.1612	0.1472	4,689.7878
Total	**2.2593**	**6.4995**	**18.9728**	**0.0646**	**5.9653**	**0.0626**	**6.0279**	**1.5970**	**0.0588**	**1.6558**		**6,715.9951**	**6,715.9951**	**0.1788**	**0.4521**	**6,855.2015**

Marina Affordable Housing Overlay - Monterey Bay Unified APCD Air District, Winter

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

3.6 Paving - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9882	9.5246	14.6258	0.0228		0.4685	0.4685		0.4310	0.4310		2,207.5472	2,207.5472	0.7140		2,225.3963
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9882**	**9.5246**	**14.6258**	**0.0228**		**0.4685**	**0.4685**		**0.4310**	**0.4310**		**2,207.5472**	**2,207.5472**	**0.7140**		**2,225.3963**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	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
Worker	0.0494	0.0365	0.4049	1.0400e-003	0.1232	7.4000e-004	0.1240	0.0327	6.8000e-004	0.0334		107.6173	107.6173	3.7400e-003	3.4100e-003	108.7277
Total	**0.0494**	**0.0365**	**0.4049**	**1.0400e-003**	**0.1232**	**7.4000e-004**	**0.1240**	**0.0327**	**6.8000e-004**	**0.0334**		**107.6173**	**107.6173**	**3.7400e-003**	**3.4100e-003**	**108.7277**

Marina Affordable Housing Overlay - Monterey Bay Unified APCD Air District, Winter

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

3.6 Paving - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9882	9.5246	14.6258	0.0228		0.4685	0.4685		0.4310	0.4310	0.0000	2,207.5472	2,207.5472	0.7140		2,225.3963
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9882**	**9.5246**	**14.6258**	**0.0228**		**0.4685**	**0.4685**		**0.4310**	**0.4310**	**0.0000**	**2,207.5472**	**2,207.5472**	**0.7140**		**2,225.3963**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	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
Worker	0.0494	0.0365	0.4049	1.0400e-003	0.1232	7.4000e-004	0.1240	0.0327	6.8000e-004	0.0334		107.6173	107.6173	3.7400e-003	3.4100e-003	108.7277
Total	**0.0494**	**0.0365**	**0.4049**	**1.0400e-003**	**0.1232**	**7.4000e-004**	**0.1240**	**0.0327**	**6.8000e-004**	**0.0334**		**107.6173**	**107.6173**	**3.7400e-003**	**3.4100e-003**	**108.7277**

Marina Affordable Housing Overlay - Monterey Bay Unified APCD Air District, Winter

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

3.7 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	280.9505					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609		281.4481	281.4481	0.0159		281.8443
Total	**281.1313**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**		**281.4481**	**281.4481**	**0.0159**		**281.8443**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	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
Worker	0.4248	0.3142	3.4817	8.9700e-003	1.0597	6.3300e-003	1.0660	0.2811	5.8300e-003	0.2869		925.5084	925.5084	0.0321	0.0294	935.0582
Total	**0.4248**	**0.3142**	**3.4817**	**8.9700e-003**	**1.0597**	**6.3300e-003**	**1.0660**	**0.2811**	**5.8300e-003**	**0.2869**		**925.5084**	**925.5084**	**0.0321**	**0.0294**	**935.0582**

Marina Affordable Housing Overlay - Monterey Bay Unified APCD Air District, Winter

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

3.7 Architectural Coating - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	280.9505					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609	0.0000	281.4481	281.4481	0.0159		281.8443
Total	**281.1313**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**	**0.0000**	**281.4481**	**281.4481**	**0.0159**		**281.8443**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	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
Worker	0.4248	0.3142	3.4817	8.9700e-003	1.0597	6.3300e-003	1.0660	0.2811	5.8300e-003	0.2869		925.5084	925.5084	0.0321	0.0294	935.0582
Total	**0.4248**	**0.3142**	**3.4817**	**8.9700e-003**	**1.0597**	**6.3300e-003**	**1.0660**	**0.2811**	**5.8300e-003**	**0.2869**		**925.5084**	**925.5084**	**0.0321**	**0.0294**	**935.0582**

Marina Affordable Housing Overlay - Monterey Bay Unified APCD Air District, Winter

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

Integrate Below Market Rate Housing

Limit Parking Supply

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	14.0030	19.2410	135.1248	0.2486	25.8537	0.2258	26.0795	6.8944	0.2110	7.1055		25,923.1129	25,923.1129	1.9601	1.3729	26,381.2303
Unmitigated	15.0251	21.4870	150.0830	0.2843	29.6896	0.2564	29.9460	7.9174	0.2396	8.1570		29,652.5046	29,652.5046	2.1367	1.5281	30,161.2940

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	4,885.12	4,409.18	3672.82	13,378,684	11,650,158
Total	4,885.12	4,409.18	3,672.82	13,378,684	11,650,158

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.80	7.30	7.50	44.00	18.80	37.20	86	11	3

4.4 Fleet Mix

Marina Affordable Housing Overlay - Monterey Bay Unified APCD Air District, Winter

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

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.517882	0.052795	0.193633	0.146997	0.027981	0.006802	0.010707	0.009580	0.001188	0.000578	0.027032	0.001276	0.003550

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.2224	1.9004	0.8087	0.0121		0.1537	0.1537		0.1537	0.1537		2,426.0270	2,426.0270	0.0465	0.0445	2,440.4436
NaturalGas Unmitigated	0.2224	1.9004	0.8087	0.0121		0.1537	0.1537		0.1537	0.1537		2,426.0270	2,426.0270	0.0465	0.0445	2,440.4436

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	lb/day										lb/day					
Apartments Mid Rise	20621.2	0.2224	1.9004	0.8087	0.0121		0.1537	0.1537		0.1537	0.1537		2,426.0270	2,426.0270	0.0465	0.0445	2,440.4436
Total		**0.2224**	**1.9004**	**0.8087**	**0.0121**		**0.1537**	**0.1537**		**0.1537**	**0.1537**		**2,426.0270**	**2,426.0270**	**0.0465**	**0.0445**	**2,440.4436**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	20.6212	0.2224	1.9004	0.8087	0.0121		0.1537	0.1537		0.1537	0.1537		2,426.0270	2,426.0270	0.0465	0.0445	2,440.4436
Total		**0.2224**	**1.9004**	**0.8087**	**0.0121**		**0.1537**	**0.1537**		**0.1537**	**0.1537**		**2,426.0270**	**2,426.0270**	**0.0465**	**0.0445**	**2,440.4436**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Marina Affordable Housing Overlay - Monterey Bay Unified APCD Air District, Winter

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

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	22.9790	0.8526	74.0159	3.9100e-003		0.4107	0.4107		0.4107	0.4107	0.0000	133.4000	133.4000	0.1278	0.0000	136.5936
Unmitigated	22.9790	0.8526	74.0159	3.9100e-003		0.4107	0.4107		0.4107	0.4107	0.0000	133.4000	133.4000	0.1278	0.0000	136.5936

Marina Affordable Housing Overlay - Monterey Bay Unified APCD Air District, Winter

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	lb/day										lb/day					
Architectural Coating	1.5395					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	19.2172					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.2223	0.8526	74.0159	3.9100e-003		0.4107	0.4107		0.4107	0.4107		133.4000	133.4000	0.1278		136.5936
Total	**22.9790**	**0.8526**	**74.0159**	**3.9100e-003**		**0.4107**	**0.4107**		**0.4107**	**0.4107**	**0.0000**	**133.4000**	**133.4000**	**0.1278**	**0.0000**	**136.5936**

Marina Affordable Housing Overlay - Monterey Bay Unified APCD Air District, Winter

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

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	1.5395					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	19.2172					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.2223	0.8526	74.0159	3.9100e-003		0.4107	0.4107		0.4107	0.4107		133.4000	133.4000	0.1278		136.5936
Total	**22.9790**	**0.8526**	**74.0159**	**3.9100e-003**		**0.4107**	**0.4107**		**0.4107**	**0.4107**	**0.0000**	**133.4000**	**133.4000**	**0.1278**	**0.0000**	**136.5936**

7.0 Water Detail

7.1 Mitigation Measures Water

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

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Appendix C

Marina Downtown Traffic Study

Kimley»Horn

MEMORANDUM

From: Frederik Venter, P.E. and Marissa Garcia
Kimley-Horn and Associates

To: Brian McMinn, P.E. & Alexander Barton
City of Marina

Date: February 14, 2019

Re: Marina Downtown Traffic Study

Summary of Findings

The City of Marina is planning to redevelop their Downtown and turn it into a vibrant, fun place to be. The proposed land use redevelopment includes housing, office and retail. A successful Downtown will also comprise multimodal access, slow traveling cars and amenities that promotes daytime and nighttime activity for residents and visitors to the Monterey Bay area. This study evaluates the potential impacts of the proposed Downtown Redevelopment on the transportation infrastructure, including cars, trucks, bicycles and pedestrians.

The existing Reservation Road and Del Monte Boulevard are four-lane facilities and this analysis studies the continued four lane use and the feasibility of a two-lane road diet along Reservation Road and Del Monte Blvd. Narrowing the entire Reservation Road and Del Monte Boulevard to two lanes only, will result in congested travel behavior and a potential shift in traffic to Imjin Parkway. Reservation Road between Crescent Avenue and Del Monte Boulevard carries high traffic volumes, and it is recommended that the roadway be retained as four lanes. Although the level of service, which only analyzes individual intersections, shows that the intersections would operate acceptably, the street system has significant queuing spilling back onto Del Monte Boulevard, Reservation Road, and other side streets.

Seven intersections were considered for the conversion from signal control to roundabout intersection control. Roundabout control could be a feasible alternative to signalized intersections at the studied intersections. Dual lane roundabouts are feasible at some intersections along Del Monte Boulevard and Reservation Road in the Downtown area. A single lane roundabout is sufficient at the future intersection of Del Monte Boulevard and Patton Parkway.

However, mixing signals and roundabouts on a closely spaced grid system in the downtown area will result in traffic congestion even with four lanes and a median. The reason for this is that arrival and departure patterns between roundabouts and signals are not conducive to traffic flow and operations. We thus recommend that dual lane roundabouts be considered only at Del Monte Boulevard and State Route 1 Ramps, Del Monte Boulevard and Reindollar Avenue, Reservation Road and Crescent Avenue, Reservation Road and California Avenue, and Reservation Road and Salinas Avenue. These roundabouts will be used as the “gateway” to the Downtown corridor (see **Figure 5**).

The Downtown Marina area currently provides access to several bicycle and pedestrian facilities; however, these facilities are basic and lack state of the art amenities and features, such as

buffered or protected bike lanes, special markings for the bike lanes and crosswalk striping that promotes safety and increased use. Green colored pavement at the beginning of bicycle facilities, transitional green striping at intersections and right turn pockets are improvements to make cyclists more visible and provide continuity through the corridor. Narrowing of travel lanes should take into consideration the Monterey Salinas Transit (MST) buses that travel to and from the Marina Transit Center. No lanes wider than 11 feet are recommended since wide lanes promote speeding.

Reservation Road has extensive off-street parking facilities and on-street parking is also provided. A couple of options exist for providing parking facilities along Reservation Road; all parking could be off-site, or parking could be provided on the street, but with a diagonal parking configuration, which is more typical in downtowns. A mix of both on-street and off-street parking could also be provided based on the parking needs and Floor Area Ratio (FAR) of adjacent land uses. On-street parking demand along Reservation Road was surveyed. There is higher demand for on-street parking adjacent to residential land uses in the downtown core area, and only moderate demand for on-street parking east of Crescent Ave.

Extensive redevelopment of land-uses in downtown should consider placement of parking behind downtown buildings that will face Del Monte Boulevard and Reservation Road.

Introduction

This memorandum discusses the effect of the implementation of the Downtown Specific Plan to the circulation network due in the City of Marina. The proposed Downtown Plan would include up to 2,904 new multifamily dwelling units, 874,669 square feet of retail land uses, and 284,448 square feet of office land uses.

The Specific Plan area, or Project area, occupies approximately 267 acres generally bounded by the parcels along the north side of Reservation Road, the west side of Del Monte Boulevard, and the south side of Reindollar Avenue, west of Sunset Avenue. The purpose of this study is to identify impacts of the proposed development on the surrounding transportation system and to recommend improved multimodal facilities that is complimentary to Downtown redevelopment.

Reservation Road is a 96 feet wide 4-lane arterial with a posted speed of 35 mph and wide raised or two-way left-turn lane median. There are marked bike lanes and pedestrian facilities on both sides of the street as well as some on-street parking. Surrounding land uses are retail, restaurant, office and residential. Del Monte Boulevard is a 90 feet 4-lane arterial with a posted speed limit of 35 mph. Del Monte Boulevard has pedestrian facilities on both sides of the street. The pedestrian facilities on the west side of Del Monte Boulevard connect to the Monterey Peninsula Recreational Trail (MPRT).

Reservation Road and Del Monte Boulevard does not only serve local Marina traffic, but also regional traffic between Salinas and the Monterey Bay. Imjin Parkway also serves regional travel needs in the Monterey Bay Area, more so than Reservation Road. Traffic conditions along Imjin Parkway determines the extent of diverted travel onto Reservation Road and Del Monte Boulevard.

The Project's location is shown in **Figure 1**.

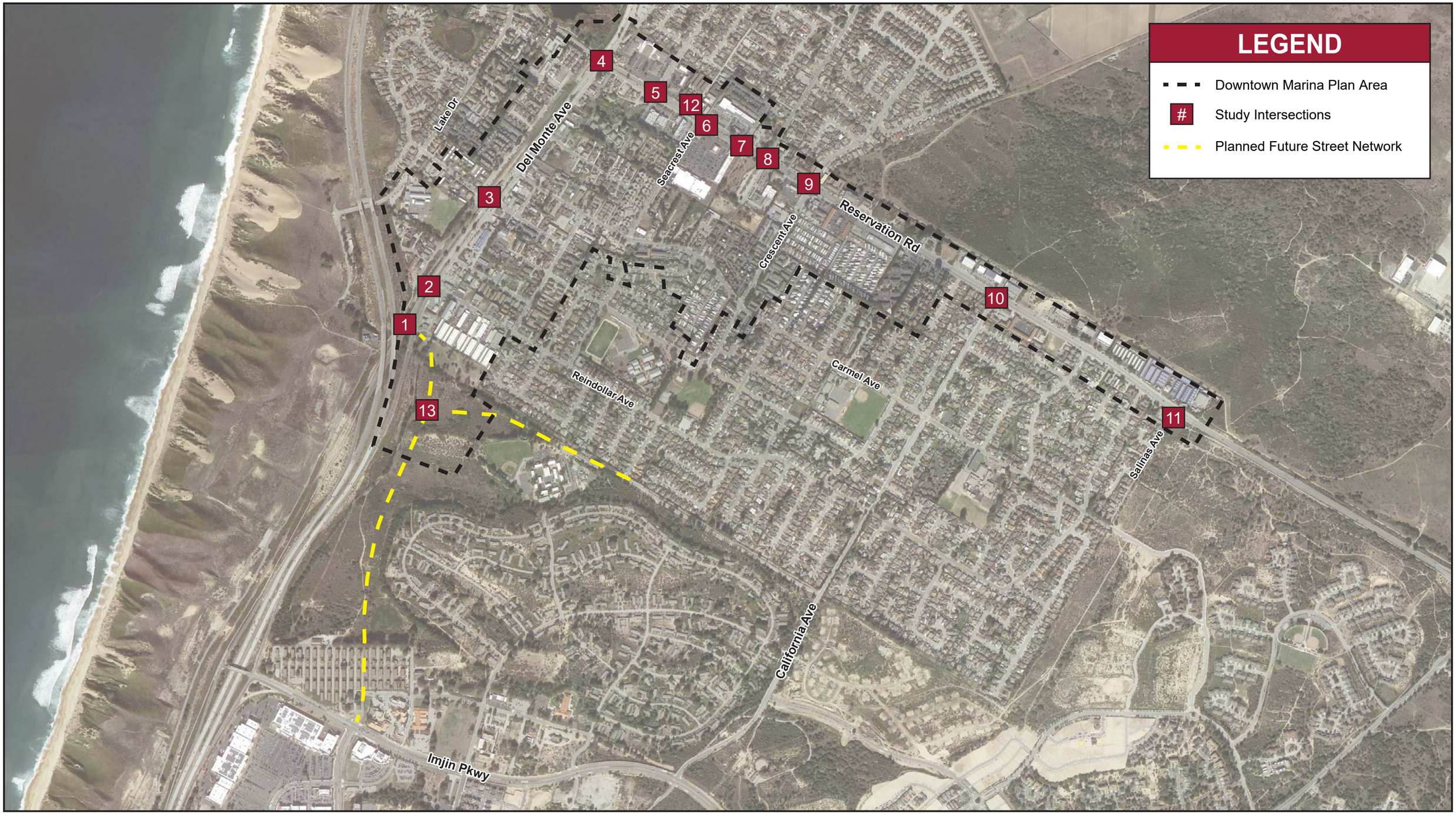

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Figure 1
Vicinity Map
Marina Downtown Study

Project Land Uses

The existing land uses have been categorized as Retail, Office/Light Manufacturing, or Multi-family residential that currently occupy the Project site include the following:

Table 1 – Existing Downtown Land Uses

	Acres	Square Footage	Residential Units
Core	**56.45**	**411,864**	**286**
Retail	--	*375,277*	
Office	--	*36,587*	
Multi-Family Residential	**106.66**	**--**	**1,638**
Transition	**104.00**	**593,894**	**377**
Retail	--	*316,428*	
Office/Light Manufacturing	--	*277,466*	
Total	**267.08**	**1,005,758**	**2,301**

Source: City of Marina, 2018.

Proposed Project Land Uses

The Downtown Specific Plan provides a maximum and minimum range for expected development to give flexibility for future development. The proposed future land uses have been categorized as Retail, Office, or Multi-family residential, the Project site include the following:

Table 2 – Proposed Downtown Specific Plan Land Uses

	Acres	Square Footage	Residential Units	Change in Square Footage	Change in Residential Units
Core	**56.45**	**729,630 - 1,313,334**	**1,497 – 1,658**	**317,766 - 901,470**	**1,211 – 1,372**
Retail	--	*583,704 - 1,050,667*	--	*208,427 - 675,390*	--
Office	--	*145,926 - 262,667*	--	*109,339 - 226,080*	--
Multi-Family Residential	**106.66**	**--**	**1,618 - 1,792**	**--**	**0 - 154**
Transition	**104.00**	**808,216 - 1,077,621**	**1,586 - 1,755**	**70,352 - 199,279**	**1,209 – 1,378**
Retail	--	*386,780 - 515,707*	--	*70,352 - 199,279*	--
Office	--	*421,436 - 561,914*	--	*143,970 - 284,448*	--
Total	**267.08**	**1,537,846 - 2,390,955**	**4,701 – 5,205**	**532,088 - 1,385,197**	**2,400 – 2,904**

Source: City of Marina, 2018.

Proposed Project Trip Generation

The change in land use assumptions from Existing Conditions to the Downtown Land use assumptions for the proposed uses are as follows:

1. Multi-Family (ITE Land Use: Multi-Family Housing (Low-Rise) [220])
2. Retail (ITE Land Use: Shopping Center [820])
3. Office (ITE Land Use: General Office Building [710])

As shown in **Table 3**, proposed conditions trip generation estimates indicate that the proposed land uses will generate approximately 35,520 – 58,740 gross daily trips, 1,753 – 2,495 gross AM peak hour trips, and 2,757 – 4,997 gross PM peak hour trips. After applying the ITE Recommended Internal Capture Reduction Method (NCHRP 851) and incorporating a 10 percent reduction due to Alternative Transportation modes, the total net project trip generation would be 26,640 – 42,880 net daily trips, 1,435 – 2,137 net AM peak hour trips, and 1,874 – 3,303 net PM peak hour trips. The reduction due to Alternative Transportation Modes is based on the 2016 American Community Survey, Commute Characteristics to Work Table (S0801).

Interaction in travel between the land uses within Downtown, within Marina also outside of Marina with the proposed Downtown is more accurately reflected by using the AMABG travel demand model to estimate traffic flows on the street system. Subsequently, the trip generation in the AMBAG model yields a lower trip generation because of the additional interaction. The model also assumes some level of multimodal travel, furthermore it also takes into consideration through traffic and diverts some traffic to Imjin Parkway as volumes increases in Downtown Marina. As such the traffic volumes from the model were used in this analysis.

The AMBAG model inputs increase in housing units and jobs at lesser rate that the Downtown Plan assumes. Therefore, it should be noted that if the upper threshold of residential units and retail/office square footage is built, the level of service at intersections will degrade and the queue lengths will increase. Based on the level of service findings for the future conditions there is sufficient capacity for the full buildout of the Downtown Plan and still meet the level of service threshold set by the City of Marina.

Table 3 - Project Trip Generation

	ITE No.	Project Size			MINIMUM						MAXIMUM					
					Daily	AM Peak Hour			PM Peak Hour			Daily	AM Peak Hour			PM Peak Hour		
		Min	Max	Units		Total	In	Out	Total	In	Out		Total	In	Out	Total	In	Out
Trip Generation Rates[1]																		
Multifamily - Multi-Family Housing (Low-Rise)[1]	220	-		DU			23%	77%		63%	37%			23%	77%		63%	37%
Office - General Office Building[2]	710	-		KSF			86%	14%		16%	84%			86%	14%		16%	84%
Retail - Shopping Center[3]	820	-		KSF			62%	38%		48%	52%			62%	38%		48%	52%
Project Trips																		
Core																		
Retail	820	208	675	KSF	9,906	256	159	97	936	449	487	22,035	489	303	186	2,233	1,072	1,161
Office	710	109	226	KSF	1,157	129	111	18	124	60	64	2,341	239	206	33	247	119	128
Multifamily	220	1,211	1,372	DU	9,114	510	117	393	544	343	201	10,331	574	132	442	608	383	225
Sub-Total					*20,177*	*895*	*387*	*508*	*1,604*	*852*	*752*	*34,707*	*1,302*	*641*	*661*	*3,088*	*1,574*	*1,514*
Residential																		
Multifamily	220	0	154	DU	0	0	0	0	0	0	0	1,123	72	17	55	87	55	32
Sub-Total					*0*	*0*	*0*	*0*	*0*	*0*	*0*	*1,123*	*72*	*17*	*55*	*87*	*55*	*32*
Transition																		
Retail	820	70	199	KSF	4,733	187	116	71	419	201	218	9,608	251	156	95	905	434	471
Office	710	144	284	KSF	1,511	162	139	23	161	26	135	2,925	294	253	41	307	49	258
Multifamily	220	1,209	1,378	DU	9,099	509	117	392	543	342	201	10,377	576	132	444	610	384	226
Sub-Total					*15,343*	*858*	*372*	*486*	*1,123*	*569*	*554*	*22,910*	*1,121*	*541*	*580*	*1,822*	*867*	*955*
TOTAL																		
Total Retail	820	279	875	KSF	14,639	443	275	168	1,355	650	705	31,643	740	459	281	3,138	1,506	1,632
Total Office	710	253	511	KSF	2,668	291	250	41	285	86	199	5,266	533	459	74	554	168	386
Total Residential	220	2,420	2,904	DU	18,213	1,019	234	785	1,087	685	402	21,831	1,222	281	941	1,305	822	483
New Trips					*35,520*	*1,753*	*759*	*994*	*2,727*	*1,421*	*1,306*	*58,740*	*2,495*	*1,199*	*1,296*	*4,997*	*2,496*	*2,501*
Trip Reduction																		
Internal Capture (NCHRP 851)					-5,328	-158	-79	-79	-644	-322	-322	-9,986	-136	-68	-68	-1,332	-666	-666
Transit Trips (3.1%)[2]					-1,101	-50	-21	-29	-65	-34	-31	-1,821	-68	-32	-36	-109	-54	-55
Non-motorized (Walk, Bike, Tele-commute (6.9%)[2]					-2,451	-110	-47	-63	-144	-76	-68	-4,053	-154	-74	-80	-253	-126	-127
Total Trip Reduction					*-8,880*	*-318*	*-147*	*-171*	*-853*	*-432*	*-421*	*-15,860*	*-358*	*-174*	*-184*	*-1,694*	*-846*	*-848*
NET NEW TRIPS					**26,640**	**1,435**	**612**	**823**	**1,874**	**989**	**885**	**42,880**	**2,137**	**1,025**	**1,112**	**3,303**	**1,650**	**1,653**

Notes:

1. ITE Trip Generation Manual, 10th Edition Trip Generation Equations used for Multi-family, Office and Retail Land Uses
2. Alternative Transportation Mode Share is based on the American Community Survey's 2016 Commute Characteristics for Marina, California

Intersection Operations Evaluation

The following intersections were analyzed as part of this memorandum:

1. Del Monte Boulevard and State Route 1 Ramps
2. Del Monte Boulevard and Reindollar Avenue
3. Del Monte Boulevard and Palm Avenue
4. Del Monte Boulevard and Reservation Road
5. Reservation Road and Vista Del Camino
6. Reservation Road and Seacrest Ave
7. Reservation Road and Shopping Center Driveways
8. Reservation Road and De Forest Road
9. Reservation Road and Crescent Avenue
10. Reservation Road and California Avenue
11. Reservation Road and Salinas Avenue
12. Reservation Road and Eucalyptus Avenue
13. Del Monte Boulevard and Patton Parkway (Future Conditions only)

Operations Methodology

The study intersections were modeled in Synchro 10 software. Roundabout controlled intersections were studied using Sidra 7.0. Highway Capacity Manual (HCM) 6th Edition was used to analyze intersection operations and report intersection delay.

Additionally, queues at the Study Intersections were analyzed in SimTraffic and reported based on an average of ten seedings per run.

The City of Marina recognizes LOS D as the acceptable Level of Service for intersections within its jurisdiction. The intersection of Del Monte Avenue and the State Route 1 Ramps is within the jurisdiction of Caltrans, the anticipated level of service conditions for intersections would be D or worse per the Caltrans State Routes 1 & 183 Corridor System Management Plan.

Weekday intersection turning movement counts were collected for 11 study intersections on September 26, 2018. (Wednesday). These counts included vehicles, bicycles, and pedestrians and represents typical traffic conditions. Volumes for intersections were collected during the AM and PM peak periods of 7:00-9:00 a.m. and 4:00-6:00 p.m., respectively. These traffic counts were taken when local schools were in session and the weather was fair. Existing roadway geometry is shown in **Figure 2**, Existing peak hour turning movements are summarized in **Figure 3**. Intersection volume data sheets for all traffic counts are provided in the **Appendix**.

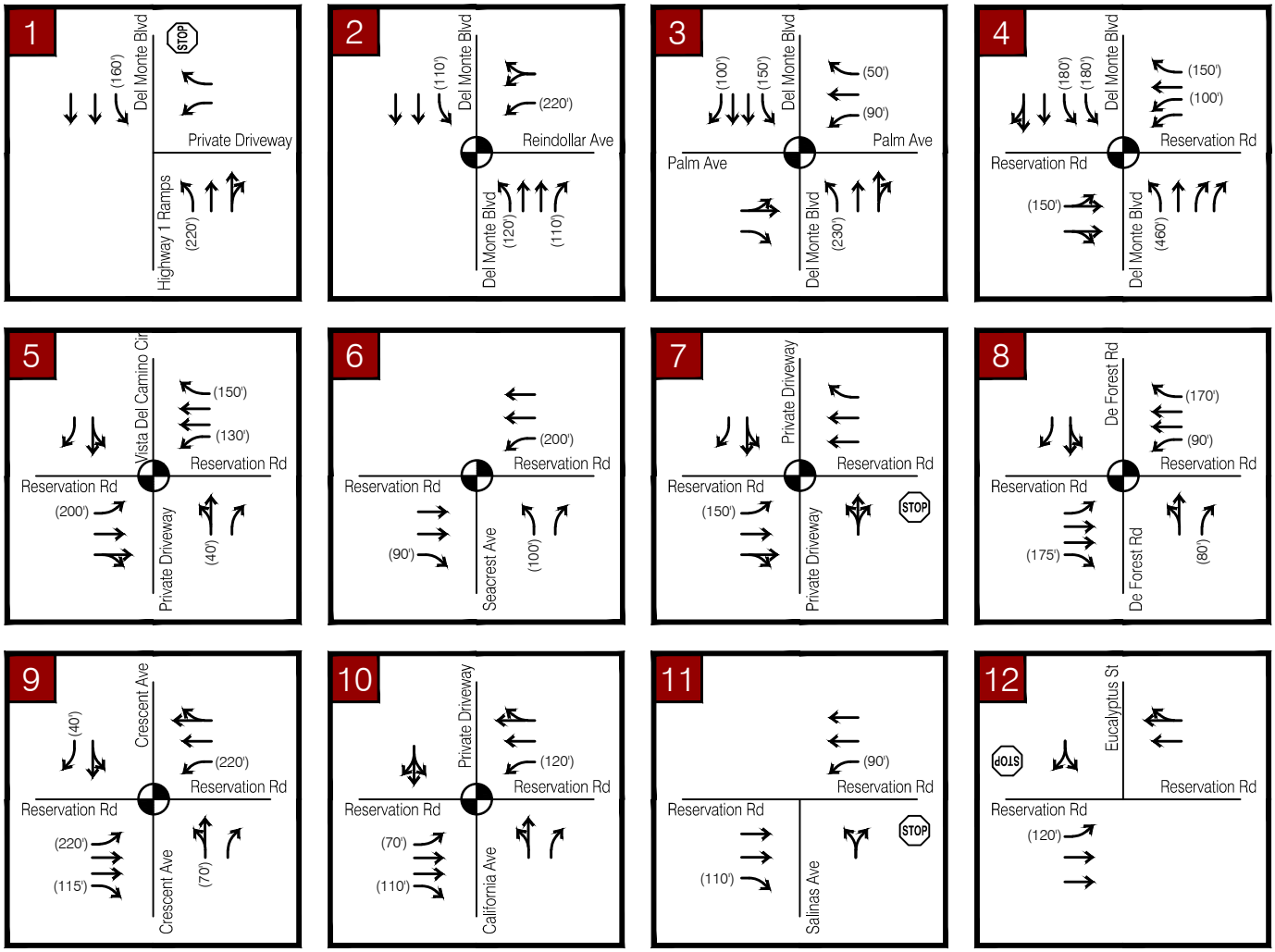

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Figure 2
Existing Conditions - Geometry
Marina Downtown Study

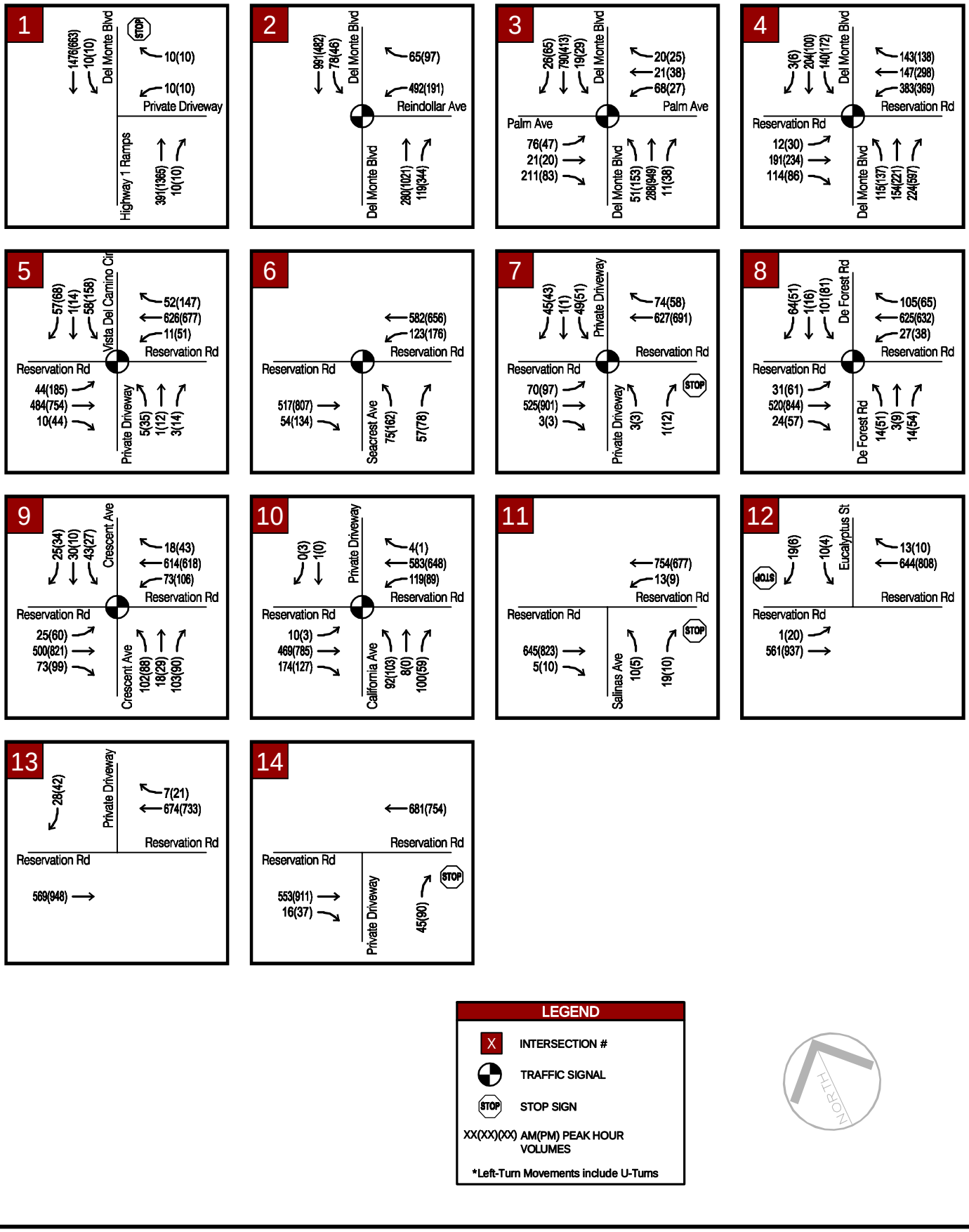

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Figure 3
Existing Conditions - Volumes
Marina Downtown Study

Level of Service (LOS) Operations

Traffic operations were evaluated at the study intersections based on Existing Conditions lane geometry, traffic control, and peak hour traffic volumes. No individual study intersection operates at unacceptable LOS in Existing Conditions. **Table 4** summarizes the Existing Conditions LOS.

Table 4 – Existing Conditions Intersection Level of Service

Intersection	City/ Caltrans[1]	Control[2]		Existing Conditions			
				AM Peak Hour		PM Peak Hour	
				Delay	LOS	Delay	LOS
1 Del Monte Blvd/ SR-1 Ramps	Caltrans	SSSC	Overall	0.2	A	0.3	A
			Worst Approach	*12.9*	*B (WB)*	*22.2*	*C (WB)*
2 Del Monte Blvd/ Reindollar Ave	City	Signal	Overall	10.3	B	10.4	B
3 Del Monte Blvd/ Palm Ave	City	Signal	Overall	18.0	B	16.2	B
4 Del Monte Blvd/ Reservation Rd	City	Signal	Overall	21.9	C	21.9	C
5 Reservation Rd/ Vista Del Camino	City	Signal	Overall	8.6	A	17.2	B
6 Reservation Rd/ Seacrest Ave	City	Signal	Overall	9.6	A	11.8	B
7 Reservation Rd/ Shopping Center	City	Signal	Overall	8.4	A	10.4	B
8 Reservation Rd/ De Forest Rd	City	Signal	Overall	16.6	B	18.0	B
9 Reservation Rd/ Crescent Ave	City	Signal	Overall	29.5	C	31.4	C
10 Reservation Rd/ California Ave	City	Signal	Overall	12.2	A	11.2	B
11 Reservation Rd/ Salinas Ave	City	SSSC	Overall	0.4	A	0.2	A
			Worst Approach	*13.1*	*B (NB)*	*14.6*	*B (NB)*
12 Reservation Rd/ Eucalyptus St	City	SSSC	Overall	0.3	A	0.2	A
			Worst Approach	*12.8*	*B (SB)*	*15.4*	*C (SB)*
13 Del Monte Blvd/ Patton Pkwy	City	RAB	Overall	Does Not Exist			

Note:
1. LOS Standard for Caltrans is LOS C, for the City of Marina is LOS D, Intersections Operating at below the Standard are **highlighted/ bolded**.

2. SSSC = Side Street Stop Control, AWSC = All-Way Stop Control, RAB = Roundabout for SSSC Worst Approach governs LOS.

3. HCM 6th Edition

Queueing Operations

SimTraffic was used to evaluate 95th percentile queues at the study intersections. The results are based on the average results of ten (10) simulation runs. **Table 5** summarizes the queueing results.

Table 5: Existing Conditions 95th Percentile Queue Summary

Intersection		MVMT	Pocket Length (ft)	Queue Length (ft)		# Vehicles	
				AM Peak	PM Peak	AM Peak	PM Peak
2	Del Monte Blvd/ Reindollar Ave	SBL	125	106	75	5	3
		WBL	-	198	108	8	5
		WBL/R	150	**170**	69	**6**	3
3	Del Monte Blvd / Palm Ave	NBL	225	69	174	3	7
		SBL	150	59	55	3	3
		EBL/T	-	100	78	4	4
		WBL	80	75	45	3	2
4	Del Monte Blvd / Reservation Rd	NBL	450	130	155	6	7
		SBL	150	53	96	3	4
		SBL2	150	100	120	5	5
		EBL/T	150	147	**159**	6	**7**
		WBL	100	**141**	**142**	**6**	**6**
		WBL2	590	187	209	8	9
5	Reservation Rd/ Vista Del Camino	NBL/T	-	21	64	1	3
		SBL/T	-	65	152	3	7
		EBL	175	62	164	3	7
		WBL	135	32	89	2	4
6	Reservation Rd/ Seacrest Ave	NBL	100	77	**119**	4	**5**
		WBL	200	116	151	5	7
7	Reservation Rd/ Shopping Center	NBL/T/R	-	15	32	1	2
		SBL/T	-	52	51	3	3
		EBL	145	60	72	3	3
8	Reservation Rd/ De Forest Rd	NBL/T	-	70	64	3	3
		SBL/T	-	83	78	4	4
		EBL	200	50	77	2	4
		WBL	175	51	80	3	4
9	Reservation Rd/ Crescent Ave	NBL/T	75	**102**	**100**	**5**	**4**
		SBL/T	-	93	67	4	3
		EBL	220	58	135	3	6
		WBL	220	98	135	4	6
10	Reservation Rd/ California Ave	NBL/T	-	96	96	4	4
		SBL/T/R	-	11	17	1	1
		EBL	75	39	21	2	1
		WBL	150	123	96	5	4

Note: Assumes 25 feet per vehicle spacing.
Intersections that exceed the pocket length are **bolded**, those that exceed the pocket length by more than one vehicle length are **bolded/highlighted**

The 95th queue length is rarely exceeded and is a representation of the absolute worst-case scenario of queueing at an intersection. Queueing was only studied at signalized intersections at left turn movements or shared left turn-through movements as they typically have greater impact to queueing spillback on the roadway segments.

Intersections # 2, 4, 6, and 9 have queues which exceed turn pocket lengths on one or more of the movements. Those intersections with queues that exceed turn pocket lengths by one or more car lengths are highlighted. The westbound left movement at Reservation Road and Del Monte Boulevard has a 95th percentile queue which exceeds the turn pocket length by two vehicles in the AM and PM peak hour. The shared northbound left and through movement at Reservation Road and Crescent exceeds the turn pocket length by two vehicles in the AM peak hour and one vehicle in the PM peak hour.

Future Conditions Analysis

Future Conditions describes the conditions anticipated in 2040. The Association of Monterey Bay Area Government (AMBAG) Regional Travel Demand Model was used to determine future traffic on Reservation Road and Del Monte Boulevard with the proposed Downtown Plan Redevelopment representing the average trips that would be generated. The 2018 Regional Travel Demand Model incorporates regional growth, traffic congestion, and alternative transportation mode share. The volumes were developed by furnessing the AMBAG Baseline (2015) and Metropolitan Transportation Plan Year (2040) data as well as existing traffic counts. **Figure 4** illustrates future conditions peak hour turning movement counts for the study intersections.

For the Future conditions, the extension of Del Monte Boulevard from the State Route 1 Ramps to Imjin Parkway is assumed to be completed. The same intersection control is assumed for Existing and Future conditions for Intersection #1.

Additional sections analyze a Road Diet Scenario for Reservation Road and Del Monte Boulevard and the conversion of some study intersections to roundabout control.

LOS Operations

Traffic operations were evaluated at the study intersections based on Future Conditions lane geometry, traffic control, and peak hour traffic volumes. The intersection of Del Monte Boulevard and State Route 1 Ramps (Intersection #1) operates at unacceptable levels in the PM Peak in Future Conditions. **Table 6** summarizes the Future Conditions level of service analysis.

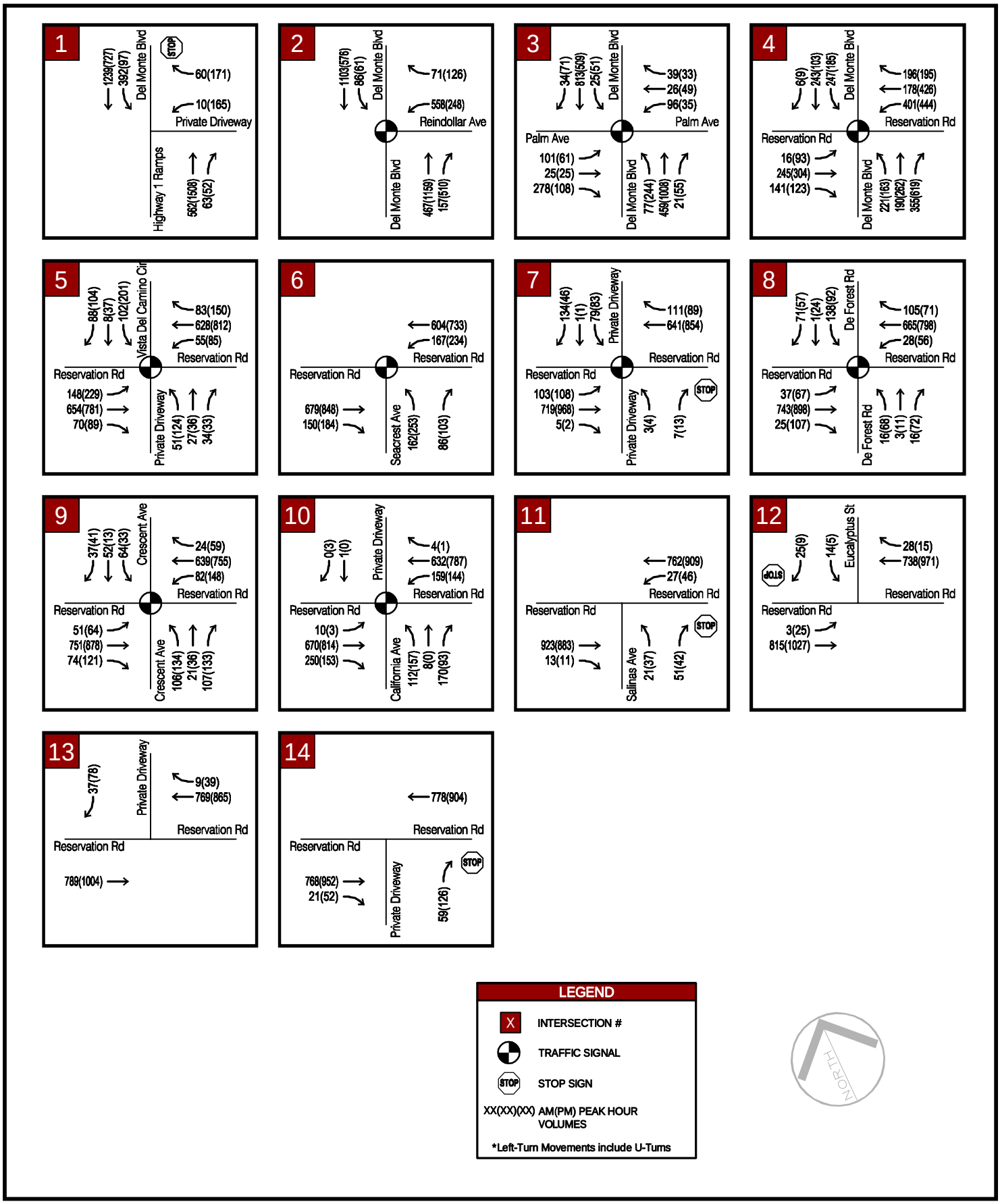

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Figure 4
Future Conditions - Volumes
Marina Downtown Study

Table 6 – Future Conditions Intersection Level of Service on Existing Road Network

Intersection	City/ Caltrans[1]	Control[2]		Future Conditions			
				AM Peak Hour		PM Peak Hour	
				Delay	LOS	Delay	LOS
1 Del Monte Blvd/ SR-1 Ramps	Caltrans	SSSC	Overall	2.7	A	33.2	D
			Worst Approach	*22.2*	*C (WB)*	***263.3***	***F (WB)***
2 Del Monte Blvd/ Reindollar Ave	City	Signal	Overall	11.5	B	12.0	B
3 Del Monte Blvd/ Palm Ave	City	Signal	Overall	22.7	C	19.2	B
4 Del Monte Blvd/ Reservation Rd	City	Signal	Overall	26.1	C	29.9	D
5 Reservation Rd/ Vista Del Camino	City	Signal	Overall	14.5	B	22.7	C
6 Reservation Rd/ Seacrest Ave	City	Signal	Overall	11.8	B	13.5	B
7 Reservation Rd/ Shopping Center	City	Signal	Overall	10.2	B	11.3	B
8 Reservation Rd/ De Forest Rd	City	Signal	Overall	25.5	C	21.4	C
9 Reservation Rd/ Crescent Ave	City	Signal	Overall	31.5	C	34.8	C
10 Reservation Rd/ California Ave	City	Signal	Overall	15.0	B	13.8	B
11 Reservation Rd/ Salinas Ave	City	SSSC	Overall	0.9	A	1.2	A
			Worst Approach	*17.2*	*C (NB)*	*22.5*	*C (NB)*
12 Reservation Rd/ Eucalyptus St	City	SSSC	Overall	0.3	A	0.2	A
			Worst Approach	*14.5*	*B (SB)*	*17.1*	*C (SB)*
13 Del Monte Blvd/ Patton Pkwy	City	RAB	Overall	5.4	A	4.3	A

Note:
1. LOS Standard for Caltrans is LOS C, for the City of Marina is LOS D, Intersections Operating at below the Standard are **highlighted/ bolded**.

2. AWSC = All-Way Stop Control, RAB = Roundabout, SSSC = Side Street Stop Control, for SSSC Worst Approach governs LOS.

3. HCM 6th Edition

Intersection #1 which operates at less than significant levels in Future Conditions, is programmed to become a roundabout with the extension of Del Monte Boulevard to Imjin Parkway. The implementation of a roundabout at this intersection will improve operations to acceptable conditions. The results of this analysis are discussed in the Roundabout Intersection Control section.

Queueing Operations

SimTraffic was used to evaluate 95th percentile queues at the study intersections. The results are based on the average results of ten (10) simulation runs. **Table 7** summarizes the queueing results for Future Conditions.

Table 7: Future Conditions 95th Percentile Queue Summary on Existing Network

Intersection		MVMT	Pocket Length (ft)	Queue Length (ft)		# Vehicles	
				AM Peak	PM Peak	AM Peak	PM Peak
2	Del Monte Blvd/ Reindollar Ave	SBL	125	138	91	6	4
		WBL	-	268	142	11	6
		WBL/R	150	**211**	101	**9**	5
3	Del Monte Blvd/ Palm Ave	NBL	225	104	215	5	9
		SBL	150	104	83	5	4
		EBL/T	-	159	83	7	4
		WBL	80	**96**	58	**4**	3
4	Del Monte Blvd/ Reservation Rd	NBL	450	235	169	6	7
		SBL	150	137	98	5	4
		SBL2	150	**163**	121	**7**	5
		EBL/T	150	**206**	**211**	**9**	**9**
		WBL	100	**148**	**154**	**6**	**7**
		WBL2	590	240	456	10	19
5	Reservation Rd/ Vista Del Camino	NBL/T	-	85	158	4	7
		SBL/T	-	102	258	5	11
		EBL	175	136	**200**	6	**8**
		WBL	135	92	**152**	4	**7**
6	Reservation Rd/ Seacrest Ave	NBL	100	**119**	**142**	**5**	**6**
		WBL	200	150	**201**	6	**9**
7	Reservation Rd/ Shopping Center	NBL/T/R	-	27	34	2	2
		SBL/T	-	70	74	3	3
		EBL	145	74	74	3	3
8	Reservation Rd/ De Forest Rd	NBL/T	-	32	74	2	3
		SBL/T	-	104	98	5	4
		EBL	200	56	73	3	3
		WBL	175	58	127	3	6
9	Reservation Rd/ Crescent Ave	NBL/T	75	**108**	**115**	**5**	**5**
		SBL/T	-	144	91	6	41
		EBL	220	110	183	5	8
		WBL	220	142	216	6	9
10	Reservation Rd/ California Ave	NBL/T	-	116	187	5	8
		SBL/T/R	-	12	17	1	1
		EBL	75	49	24	2	1
		WBL	150	**156**	150	**7**	6

Note: Assumes 25 feet per vehicle spacing.
Intersections that exceed the pocket length are **bolded**, those that exceed the pocket length by more than one vehicle length are **bolded/highlighted**

The 95th queue length is rarely exceeded and is a representation of the absolute worst-case scenario of queueing at an intersection. Queueing was studied at signalized intersections at left turn movements or shared left turn-through movements as they have greater impact to queueing spillback on the roadway segments.

Intersections # 2, 3, 4, 5, 6, 9 and 10 have queues which exceed turn pocket lengths. Queues that exceed turn pocket lengths by one or more car lengths are highlighted. The following intersections have a movement that exceeds the turn pocket length by more than one vehicle:

- # 2 – Del Monte Boulevard/ Reindollar Avenue – WBL/R, exceeds by 3 vehicles (AM Peak)
- # 4 – Del Monte Boulevard / Reservation Road – EBL/T, exceeds by 3 vehicles (AM & PM Peak)
- # 4 – Del Monte Boulevard / Reservation Road – WBL, exceeds by 2-3 vehicles (AM & PM Peak)
- # 6 – Del Monte Boulevard / Seacrest Avenue – NBL, exceeds by 2 vehicles (PM Peak)
- # 9 – Del Monte Boulevard / Crescent Avenue – NBL/T, exceeds by 2 vehicles (AM & PM Peak)

Reservation Road Diet

The scope of the study included the analysis of a road diet along Reservation Road and Del Monte Boulevard (i.e. converting the current five-lane facility to a three-lane facility). Analysis with the Road Diet option for roundabout control and signal control.

An initial review of volumes on Del Monte Boulevard eliminated the option of road diet on Del Monte Boulevard. The road diet along Reservation Road extend from just east of the intersection with Del Monte Boulevard to just west of the intersection with Crescent Avenue. **Table 8** summarizes the intersection level of service; a road diet is implemented between Del Monte Boulevard and Crescent Avenue.

Table 8 – Road Diet Intersection Level of Service

Intersection	City/ Caltrans[1]	Control[2]		Road Diet Conditions			
				AM Peak Hour		PM Peak Hour	
				Delay	LOS	Delay	LOS
4 Del Monte Blvd/ Reservation Rd	City	Signal	Overall	28.9	C	32.8	C
5 Reservation Rd/ Vista Del Camino	City	Signal	Overall	21.9	C	42.9	D
6 Reservation Rd/ Seacrest Ave	City	Signal	Overall	15.3	B	26.1	C
7 Reservation Rd/ Shopping Center	City	Signal	Overall	13.9	B	19.0	B
8 Reservation Rd/ De Forest Rd	City	Signal	Overall	32.6	C	30.8	C
9 Reservation Rd/ Crescent Ave	City	Signal	Overall	31.4	C	34.5	C
12 Reservation Rd/ Eucalyptus St	City	SSSC	Overall	0.4	A	0.3	A
			Worst Approach	*18.7*	*C (SB)*	*23.4*	*C (SB)*

Note: 1. LOS Standard for Caltrans is LOS C, for the City of Marina is LOS D, Intersections Operating at unacceptable levels are **highlighted/ bolded**.

2. AWSC = All-Way Stop Control, RAB = Roundabout, SSSC = Side Street Stop Control, for SSSC Worst Approach governs LOS.

3. HCM 6th Edition

The level of services of the intersections affected by the road diet lessen but do not reach unacceptable levels per the City of Marina Standard in the AM and PM peak hour.

Table 9 summarizes the queueing results from the Road Diet in the Future Conditions Scenario.

Table 9: Future Conditions 95th Percentile Queue Summary with Road Diet Conditions

Intersection		MVMT	Pocket Length (ft)	Queue Length (ft)		# Vehicles	
				AM Peak	PM Peak	AM Peak	PM Peak
4	Del Monte Blvd/ Reservation Rd	NBL	450	252	**551**	10	**23**
		SBL	150	**175**	**183**	**7**	**8**
		SBL2	150	**184**	**214**	**8**	**9**
		EBL/T	150	**226**	**1,214**	**8**	**49**
		WBL	100	**148**	**150**	**6**	**6**
		WBL2	590	233	258	10	11
5	Reservation Rd/ Vista Del Camino	NBL/T	-	92	196	4	8
		SBL/T	-	116	701	4	29
		EBL	175	137	**248**	6	**10**
		WBL	135	**221**	**157**	**9**	7
6	Reservation Rd/ Seacrest Ave	NBL	100	**129**	**143**	**6**	**6**
		WBL	200	173	**265**	7	**5**
7	Reservation Rd/ Shopping Center	NBL/T/R	-	28	35	2	2
		SBL/T	-	73	78	3	4
		EBL	145	78	80	4	4
8	Reservation Rd/ De Forest Rd	NBL/T	-	34	182	2	8
		SBL/T	-	128	164	6	7
		EBL	200	80	80	4	4
		WBL	175	158	**242**	3	**10**
9	Reservation Rd/ Crescent Ave	NBL/T	75	**110**	**115**	**5**	**5**
		SBL/T	-	164	109	7	5
		EBL	220	124	159	5	7
		WBL	220	**240**	**335**	**10**	**14**

Note: Assumes 25 feet per vehicle spacing.
Intersections that exceed the pocket length are **bolded**, those that exceed the pocket length by more than one vehicle length are **bolded/highlighted**

In the AM peak hour there are queue lengths that exceed turn pocket lengths. During the AM peak hour traffic flows, however in the PM peak hour the analysis shows gridlock in the transportation network. Queues extend onto Del Monte Boulevard/ SR-1 Northbound Off Ramp.

Roundabout Intersection Control

Roundabout intersection control was evaluated for six of the thirteen study intersections, the roundabouts were analyzed using Future Conditions:

- # 1 – Del Monte Boulevard/ SR-1 Ramps Avenue
- # 2 – Del Monte Boulevard/ Reindollar Avenue
- # 4 – Del Monte Boulevard / Reservation Road
- # 8 – Reservation Road / De Forest Road
- # 9 – Reservation Road / Crescent Avenue
- # 10 – Reservation Road / California Avenue
- # 11 – Reservation Road / Salinas Avenue
- # 13 – Del Monte Boulevard / Patton Parkway

Intersections # 8, 9, and 10 were analyzed as both single and dual lane roundabouts, to determine if a Road Diet with roundabouts was feasible along Reservation Road. Intersection #1 and #4 were analyzed as a dual-lane roundabouts and Intersection #13 was analyzed as a single lane roundabout.

Table 10 summarizes the Future Conditions level of service analysis for the proposed roundabout locations.

Table 10 – Future Conditions RAB Analysis, for 1 or 2 Circulating Lanes/Approach Lanes

Intersection	City/ Caltrans[1]	Circulating Lanes	Future Conditions					
			AM Peak Hour			PM Peak Hour		
			Delay	LOS	V/C	Delay	LOS	V/C
1 Del Monte Blvd/ SR-1 Ramps	Caltrans	2	7.4	A	0.557	10.1	B	0.592
2 Del Monte Blvd/ Reindollar Ave	City	2	11.8	B	0.729	9.1	A	0.604
4 Del Monte Blvd/ Reservation Rd	City	2	10.6	B	0.492	13.3	B	0.744
8 Reservation Rd/ De Forest Rd	City	2	6.9	A	0.389	8.1	A	0.478
		1	13.5	B	0.767	24.7	**C**	**0.947**
9 Reservation Rd/ Crescent Ave	City	2	8.1	A	0.433	10.3	B	0.584
		1	17.8	**B**	**0.854**	41.5	**D**	**1.018**
10 Reservation Rd/ California Ave	City	2	7.5	A	0.447	7.8	A	0.441
		1	18.0	**B**	**0.880**	19.4	**B**	**0.869**
11 Reservation Rd/ Salinas Ave	City	2	5.9	A	0.374	6.8	A	0.408
13 Del Monte Blvd/ Patton Pkwy	City	1	5.4	A	0.369	4.3	A	0.241

Note: 1. LOS Standard for Caltrans is LOS C, for the City of Marina is LOS D, Intersections Operating at below the Standard are **highlighted/ bolded**.
2. Intersections with a volume to capacity ratio (V/C) should not exceed 0.800 to ensure sufficient intersection capacity.
2. HCM 6th Edition

In addition to average overall delay and level of service at the intersection, the volume-to-capacity ratio (V/C) was evaluated. The V/C ratio is used to evaluate if the roundabout is operating past the recommended practical capacity. The recommended practical capacity is the condition in which delay, and queue length increase at a higher rate and the variability of delay times increases as a result of increased overflows. To prevent the roundabout from operating past its practical capacity it is recommended that the roundabout be designed with V/C ratios less than 0.80-0.85. In the case of the single lane roundabout at intersections #8, #9, and #10 it is not recommended that a single lane roundabout be implemented. If roundabouts were to be utilized at these locations it is recommended that the roundabouts have two circulating lanes to ensure sufficient operating capacity.

Mixing signals and roundabout on a closely spaced grid system similar to the downtown area will result in traffic congestion even with four lanes and a median. The reason for this is that arrival and departure patterns between roundabouts and signals are not conducive to optimum operations. We thus recommend that roundabouts be considered at the following intersections:

- Del Monte Boulevard and State Route 1 Ramps,
- Del Monte Boulevard and Reindollar Avenue,
- Reservation Road and Crescent Avenue,
- Reservation Road and California Avenue, and
- Reservation Road and Salinas Avenue.

The proposed roundabouts are desirable because they allow for defining entry to the downtown area on all the major roadways; Reservation Road from east and the west, and Del Monte Boulevard from the north and the south. It also has a traffic calming and placemaking effect on downtown center.

Figure 5 shows the proposed roundabout locations on the transportation network, including existing roundabouts.

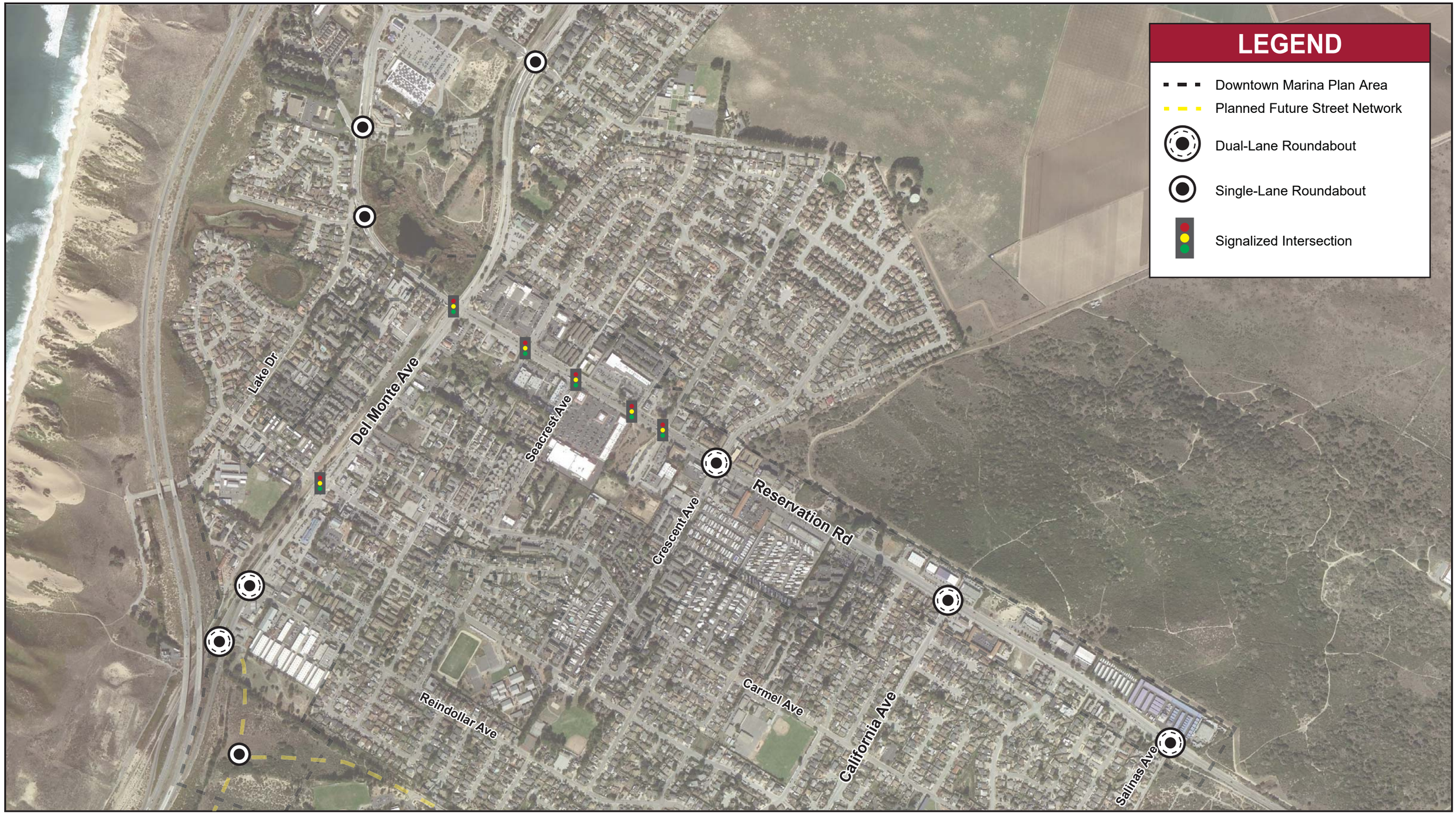

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Figure 5
Recommended Roundabout Locations
Marina Downtown Study

Multi Modal Connectivity Analysis

A review of pedestrian, bicycle and transit facilities on Del Monte Boulevard and Reservation Road. **Figure 6** illustrates the Existing Bicycle and Pedestrian facilities and **Figure 7** illustrates the gaps in existing infrastructure and other planned improvements.

Del Monte Boulevard

Del Monte Boulevard provides access to a Class I recreation path, this path runs along the westside of Del Monte Boulevard and connects to the regional recreation trail the Monterey Peninsula Recreation Trail (MPRT). On the eastside a sidewalk is available of pedestrians just south of the intersection of Reindollar Avenue and has a small gap in continuous sidewalk in front two small business which have extended driveway width. The path of travel for pedestrians is unclear and puts them in conflict with onsite circulation. There are no bicycle facilities in the northbound direction of Del Monte Boulevard.

Potential future bicycle and pedestrian improvements include the addition of bicycle facilities in the northbound direction, widening of the Class I recreation path, and closing the gap in the sidewalk infrastructure with future redevelopment. The extension of Del Monte Boulevard to Imjin Parkway will provide an additional multi-modal connection, there is both potential to extend the sidewalk or make room for a Class I path alongside the new extension.

Reservation Road

Class II bicycle lanes run along Reservation Road from Salinas Avenue to Robin Drive. There are connections to Class I facilities at Locke-Paddon Park and at Salinas Ave. Sidewalks run along both sides of Reservation Road from Del Monte Boulevard to just west of Salinas Avenue. There are several small gaps in the network due to a few extended driveways widths and undeveloped sites along Reservation Road. Most of the gaps in sidewalk infrastructure occur between Crescent and Salinas Avenue.

Potential future bicycle and pedestrian improvements include the addition of buffering along bicycle lanes, transitional green striping at turn pockets or intersections, bicycle facilities in the northbound direction, widening of the Class I recreation path, and closing the gap in the sidewalk infrastructure with future redevelopment. The extension of Del Monte Boulevard to Imjin Parkway will provide an additional multi-modal connection, there is both potential to extend the sidewalk or make room for a Class I path alongside the new extension.

Gaps in the sidewalk network after the Crescent Avenue on North side potential for green transitional striping or buffering.

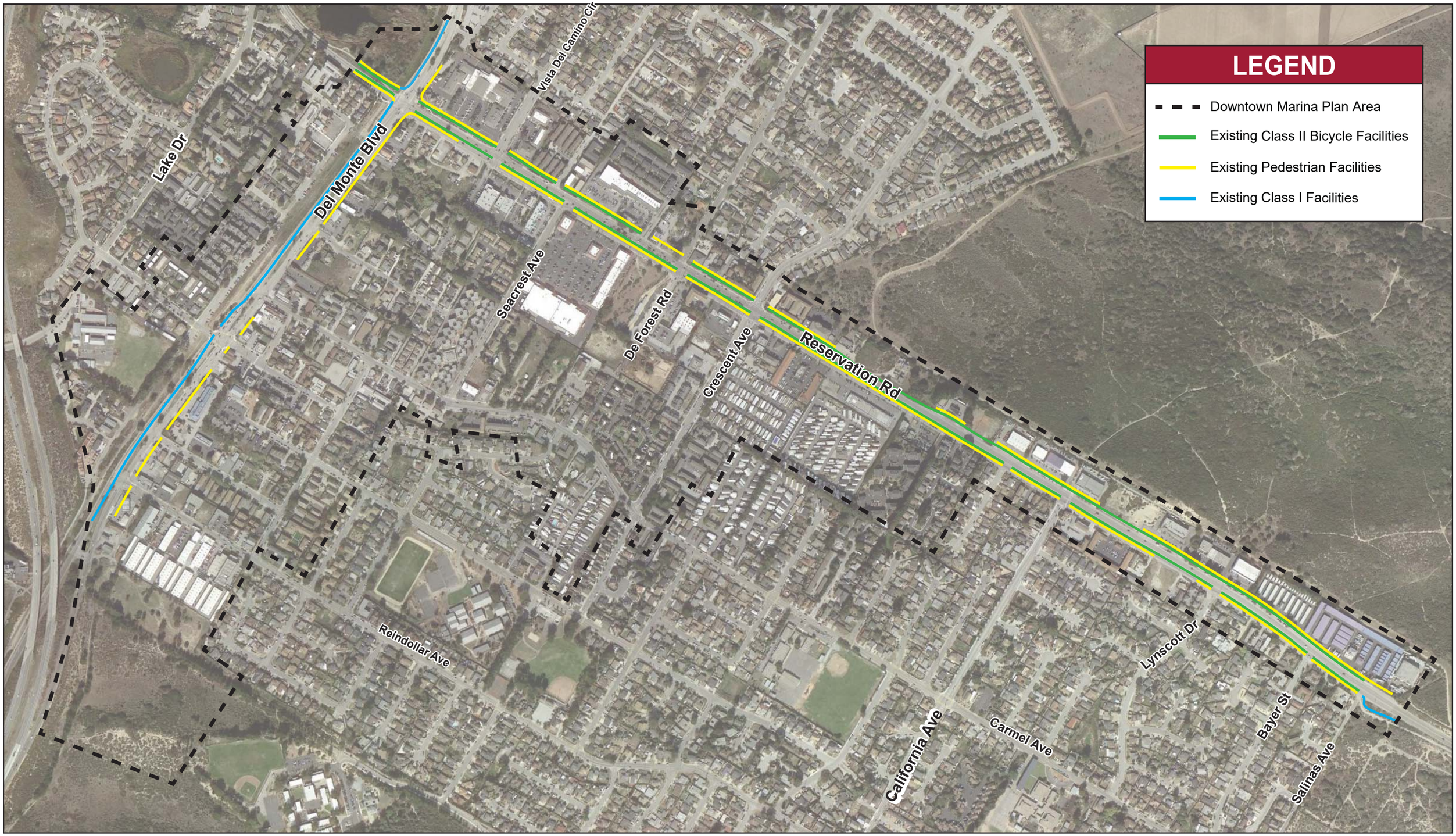

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Figure 6
Existing Pedestrian and Bicycle Facilties
Marina Downtown Study

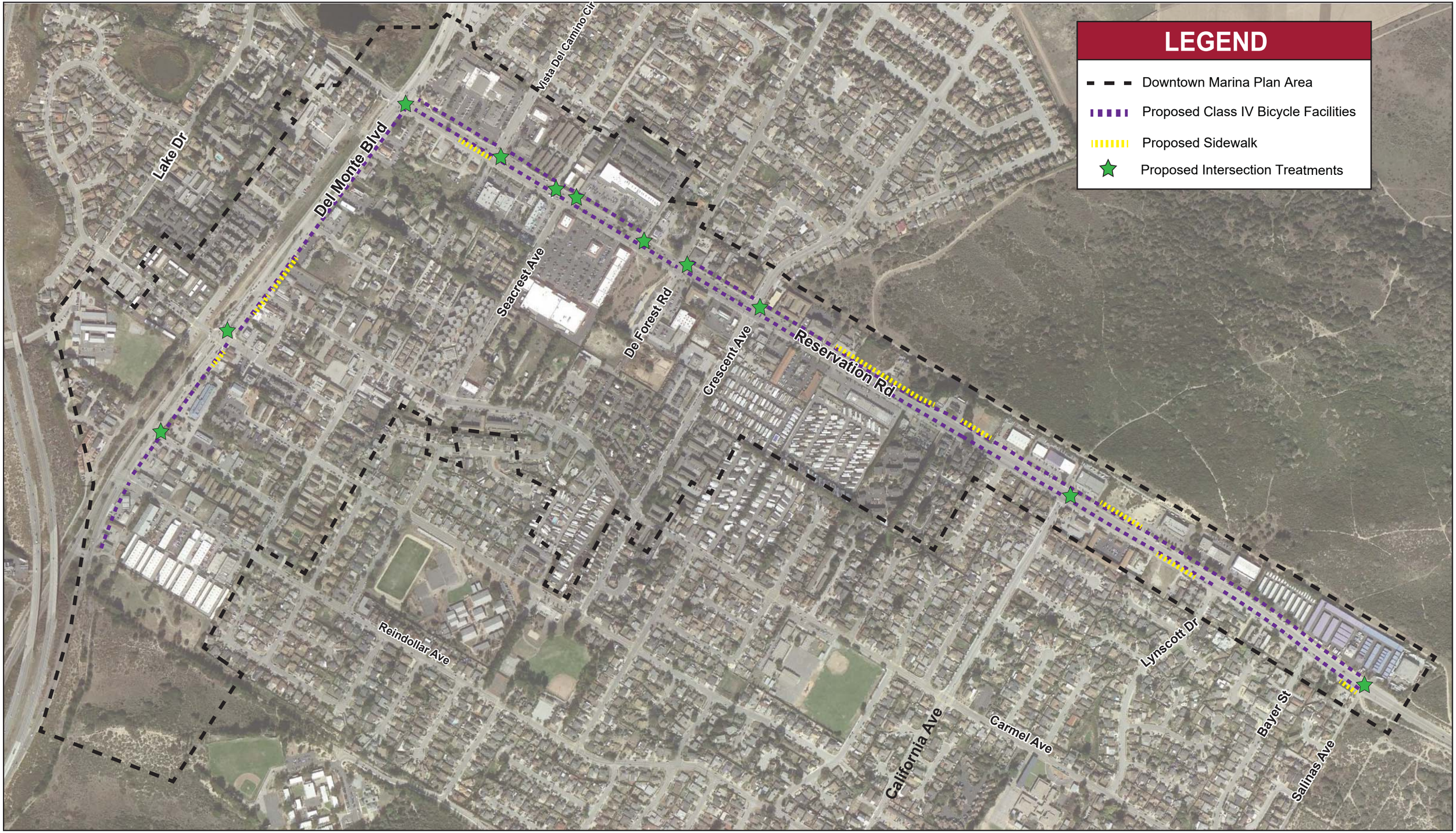

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Figure 7
Proposed Pedestrian and Bicycle Facilties
Marina Downtown Study

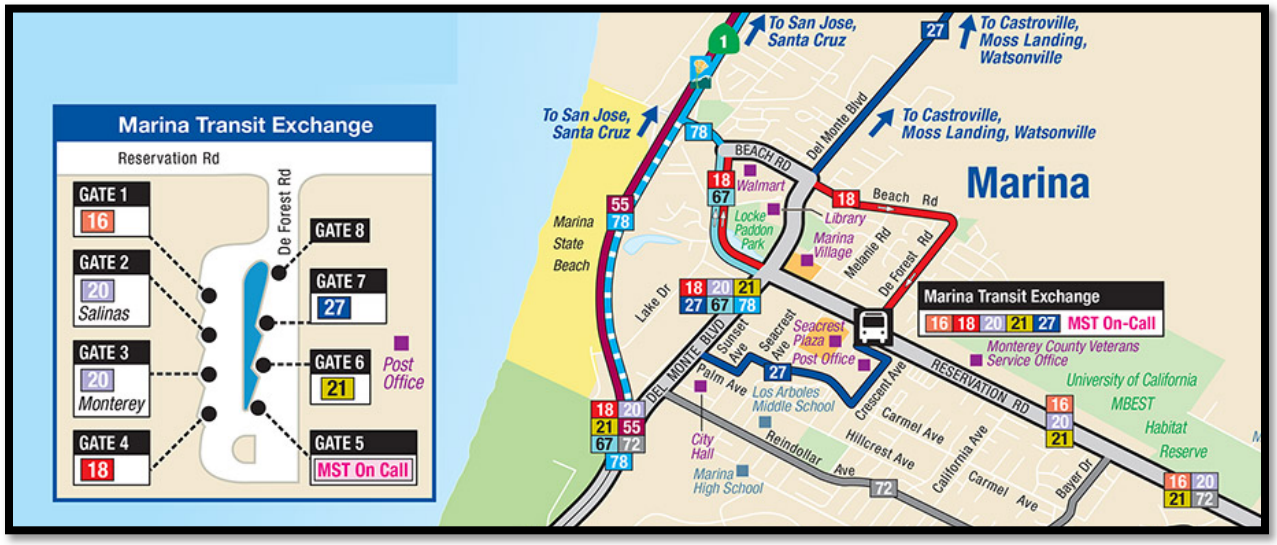
Monterey Salinas Transit

Monterey Salinas Transit (MST) is the local transit agency for Monterey County, MST serves over 130,000 passengers a year. Marina is served by fourteen MST transit line, in addition to the MST On-Call service. The following is a list of transit lines which serve the Reservation Road or Del Monte Boulevard with one or more bus stops:

- 16 – ***Marina – CSUMB*** – Marina Transit Exchange/ Reservation Road
- 18 – ***Monterey – Marina*** – Del Monte Boulevard/ Marina Transit Exchange/ Reservation Road
- 20 – ***Salinas – Monterey*** *via Marina* – Del Monte Boulevard/ Marina Transit Exchange/ Reservation Road
- 21 – ***Pebble Beach – Salinas Express*** – Marina Transit Exchange/ Reservation Road
- 27 – ***Watsonville – Marina*** – Del Monte Boulevard/ Marina Transit Exchange/ Reservation Road
- 67 – ***Presidio – Marina*** – Del Monte Boulevard
- 78 – ***Presidio – Santa Cruz Express*** – Del Monte Boulevard
- ***MST On-Call Service*** - Marina Transit Exchange

Figure 8 illustrates the MST line routes serving the Downtown Area of Marina.

Figure 8 – Marina Downtown MST Transit Lines



Source: Monterey Salinas Transit, 2019

Parking

The following sections discuss parking in the downtown area of Marina including special events and existing on-street parking.

Special Events

The Monterey Bay Peninsula is frequently home to special events, such as Car Week, the Monterey Jazz Festival, PGA Pro Am, and Sea Otter Classic as well as many other smaller regional events. There is at least one major event in Monterey Bay every month, and every weekend in the summer. Marina, along with the rest of the Monterey Peninsula, is part of the event destinations, and should provide tourism-based activities and world class facilities, which it does not have now. In coordination with other Cities and the Monterey Visitors Bureau, pre-planning for event coordination should be considered to ensure Marina's sharing in the events and the benefits they bring to the region. Marina should not merely provide parking, but the downtown should also be a destination. Events that will directly impact downtown Marina parking should be reviewed when more detail on event location and event size have been communicated.

Special Event parking must be managed and no calculation of parking supply for the downtown should be based on special event parking demand.

On-Street Parking

On-Street parking demand was evaluated along Reservation Road to determine the impact to parking if it is converted to an alternative use such as sidewalks, landscaping, or bicycle facilities. Data was collected January 22, 2019. **Figure 9** shows the available on-street parking along Reservation Road.

On Street Parking information was not collected for Del Monte Boulevard as between Reservation Road and the State Route 1 Ramps no on-street parking is available.

Table 11 summarizes the On-Street parking supply for Reservation Road and **Table 12** summarizes the On-Street parking demand and occupancy along Reservation Road.

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Figure 9
On-Street Parking Supply
Marina Downtown Study

Table 11 – Reservation Road On-Street Parking Supply

Segment	Eastbound	Westbound	Total
1. Del Monte Blvd to Vista Del Camino	5		5
2. Vista Del Camino to Seacrest Ave		5	5
3. Seacrest Ave to Shopping Center Dwy		10	10
4. De Forest Rd to Crescent Ave		8	8
5. Crescent Ave to California Ave	47	26	73
6. California Ave to Salinas Ave	36	43	79
TOTAL	**88**	**92**	**180**

Source: Kimley-Horn, 2019

Table 12 – Reservation Road On-Street Parking Demand

Segment	Average Demand				Peak Demand			
	EB	WB	Total	% Occu	EB	WB	Total	% Occu
1. Del Monte Blvd to Vista Del Camino	0		0	0%	0		0	0%
2. Vista Del Camino to Seacrest Ave[1]		4	4	80%		3	3	60%
3. Seacrest Ave to Shopping Center Dwy		0	0	0%		0	0	0%
4. De Forest Rd to Crescent Ave Rd[1]		8	8	80%		10	10	100%
5. Crescent Ave to California Ave	23	9	32	44%	24	11	35	49%
6. California Ave to Salinas Ave	8	12	20	25%	9	10	19	24%
TOTAL	**31**	**33**	**64**	**36%**	**33**	**34**	**67**	**38%**

Source: Kimley-Horn, 2019
Note: Peak Parking Demand occurred after 5:00 PM
1 Adjacent to Residential Land Uses

Due to the number of off-street parking lots, there is low utilization of on-street parking near retail and restaurant land uses. The two segments with highest on-street parking demand are adjacent to Residential land uses. Outside of the current downtown core area, Reservation Road (Segment 5 and 6) has moderate parking demand. This area has a mix of residential, hotel, and light industrial land uses.

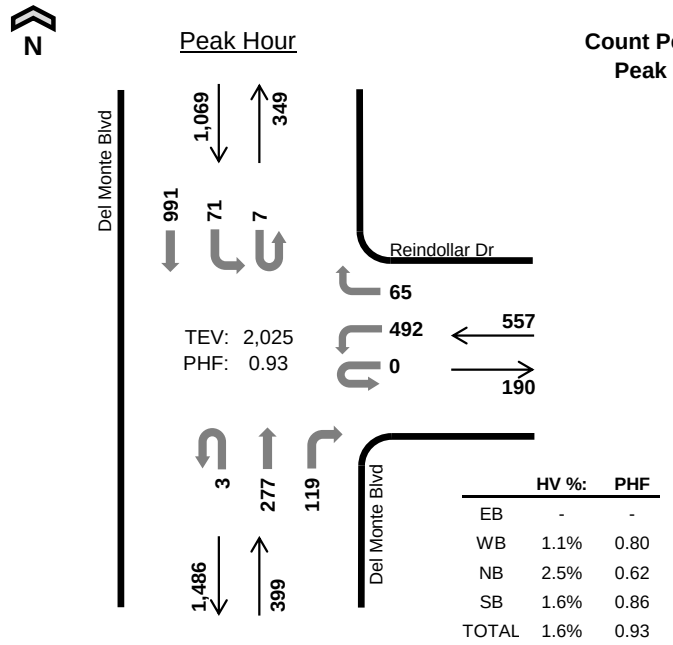
This area is under parked, meaning that there are more parking spaces empty than used. With the implementation of the Downtown plan on-street parking demand will increase, and to prevent parking intrusion from downtown businesses into the residential areas, sufficient off-street parking should be provided and managed. Parking may be provided in the rear of the business so that it does not affect the aesthetics of the downtown plan.

Appendix

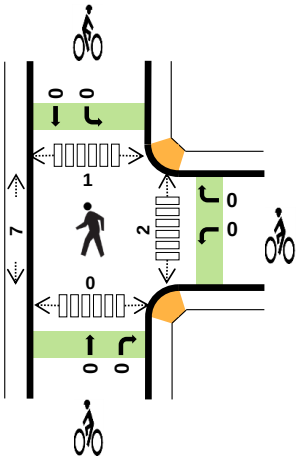
TRAFFIC COUNTS
AM & PM PEAK HOUR

Del Monte Blvd
Reindollar Dr

Date: 09-26-2018
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:00 AM to 8:00 AM



	HV %:	PHF
EB	-	-
WB	1.1%	0.80
NB	2.5%	0.62
SB	1.6%	0.86
TOTAL	1.6%	0.93



Two-Hour Count Summaries

Interval Start	0 Eastbound				Reindollar Dr Westbound				Del Monte Blvd Northbound				Del Monte Blvd Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	**0**	**0**	**0**	**0**	**0**	**160**	**0**	**14**	**1**	**0**	**40**	**13**	**3**	**18**	**291**	**0**	**540**	0
7:15 AM	**0**	**0**	**0**	**0**	**0**	**155**	**0**	**9**	**0**	**0**	**59**	**21**	**1**	**13**	**285**	**0**	**543**	0
7:30 AM	**0**	**0**	**0**	**0**	**0**	**105**	**0**	**19**	**2**	**0**	**70**	**32**	**2**	**27**	**234**	**0**	**491**	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**72**	**0**	**23**	**0**	**0**	**108**	**53**	**1**	**13**	**181**	**0**	**451**	**2,025**
8:00 AM	0	0	0	0	0	80	0	14	3	0	104	38	0	14	148	0	401	1,886
8:15 AM	0	0	0	0	0	80	0	21	2	0	81	30	5	7	161	0	387	1,730
8:30 AM	0	0	0	0	0	54	0	11	0	0	99	23	2	14	209	0	412	1,651
8:45 AM	0	0	0	0	0	50	0	13	3	0	87	23	0	13	166	0	355	1,555
Count Total	0	0	0	0	0	756	0	124	11	0	648	233	14	119	1,675	0	3,580	0
Peak Hour All	**0**	**0**	**0**	**0**	**0**	**492**	**0**	**65**	**3**	**0**	**277**	**119**	**7**	**71**	**991**	**0**	**2,025**	**0**
Peak Hour HV	**0**	**0**	**0**	**0**	**0**	**5**	**0**	**1**	**0**	**0**	**8**	**2**	**1**	**3**	**13**	**0**	**33**	**0**
Peak Hour HV%	**-**	**-**	**-**	**-**	**-**	**1%**	**-**	**2%**	**0%**	**-**	**3%**	**2%**	**14%**	**4%**	**1%**	**-**	**2%**	**0**

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

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	**0**	**1**	**2**	**5**	***8***	**0**	**0**	**0**	**0**	***0***	**0**	**1**	**0**	**0**	*1*
7:15 AM	**0**	**3**	**0**	**2**	***5***	**0**	**0**	**0**	**0**	***0***	**0**	**1**	**1**	**0**	*2*
7:30 AM	**0**	**1**	**4**	**3**	***8***	**0**	**0**	**0**	**0**	***0***	**2**	**1**	**0**	**0**	*3*
7:45 AM	**0**	**1**	**4**	**7**	***12***	**0**	**0**	**0**	**0**	***0***	**0**	**4**	**0**	**0**	***4***
8:00 AM	0	0	2	5	*7*	0	0	0	0	*0*	1	2	3	0	*6*
8:15 AM	0	4	3	4	*11*	0	0	0	0	*0*	2	4	2	0	*8*
8:30 AM	0	0	6	5	*11*	0	0	0	0	*0*	0	3	0	0	*3*
8:45 AM	0	1	3	4	*8*	0	0	0	0	*0*	0	2	1	0	*3*
Count Total	0	11	24	35	*70*	0	0	0	0	*0*	5	18	7	0	*30*
Peak Hr	**0**	**6**	**10**	**17**	***33***	**0**	**0**	**0**	**0**	***0***	**2**	**7**	**1**	**0**	***10***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	0				Reindollar Dr				Del Monte Blvd				Del Monte Blvd				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**1**	**0**	**0**	**5**	**0**	**8**	0
7:15 AM	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**5**	0
7:30 AM	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**4**	**0**	**1**	**0**	**2**	**0**	**8**	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**3**	**1**	**0**	**2**	**5**	**0**	**12**	**33**
8:00 AM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	5	0	7	32
8:15 AM	0	0	0	0	0	4	0	0	0	0	1	2	0	0	4	0	11	38
8:30 AM	0	0	0	0	0	0	0	0	0	0	6	0	0	0	5	0	11	41
8:45 AM	0	0	0	0	0	1	0	0	0	0	2	1	0	0	4	0	8	37
Count Total	0	0	0	0	0	10	0	1	0	0	18	6	1	3	31	0	70	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**5**	**0**	**1**	**0**	**0**	**8**	**2**	**1**	**3**	**13**	**0**	**33**	**0**

Two-Hour Count Summaries - Bikes

Interval Start	0			Reindollar Dr			Del Monte Blvd			Del Monte Blvd			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
7:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
7:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

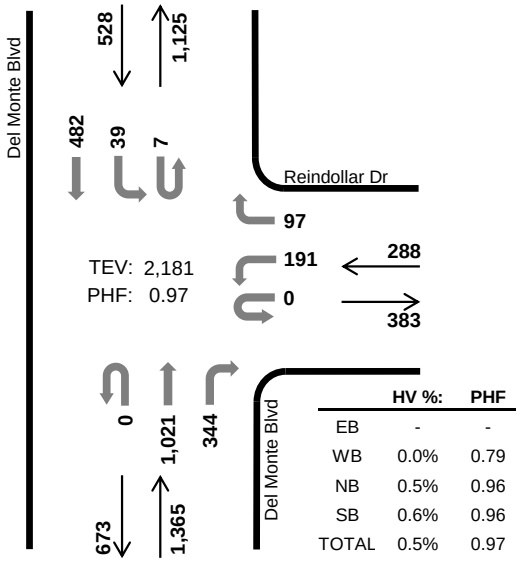
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Del Monte Blvd
Reindollar Dr

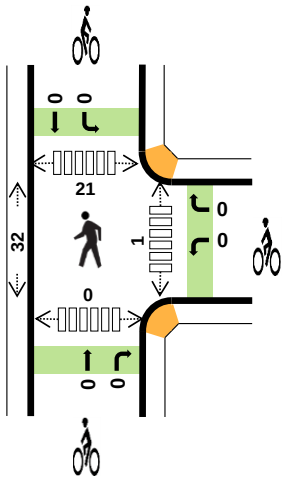
N

Peak Hour

Date: 09-26-2018
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 5:00 PM to 6:00 PM



	HV %:	PHF
EB	-	-
WB	0.0%	0.79
NB	0.5%	0.96
SB	0.6%	0.96
TOTAL	0.5%	0.97



Two-Hour Count Summaries

Interval Start	0 Eastbound				Reindollar Dr Westbound				Del Monte Blvd Northbound				Del Monte Blvd Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	30	0	22	2	0	199	66	2	9	132	0	462	0
4:15 PM	0	0	0	0	0	37	0	25	0	0	236	91	1	6	116	0	512	0
4:30 PM	0	0	0	0	0	43	0	21	0	0	227	81	2	11	133	0	518	0
4:45 PM	0	0	0	0	0	42	0	18	2	0	269	79	2	9	116	0	537	2,029
5:00 PM	**0**	**0**	**0**	**0**	**0**	**58**	**0**	**33**	**0**	**0**	**255**	**97**	**3**	**12**	**106**	**0**	**564**	2,131
5:15 PM	**0**	**0**	**0**	**0**	**0**	**45**	**0**	**18**	**0**	**0**	**262**	**92**	**1**	**13**	**118**	**0**	**549**	2,168
5:30 PM	**0**	**0**	**0**	**0**	**0**	**35**	**0**	**27**	**0**	**0**	**260**	**70**	**2**	**7**	**128**	**0**	**529**	2,179
5:45 PM	**0**	**0**	**0**	**0**	**0**	**53**	**0**	**19**	**0**	**0**	**244**	**85**	**1**	**7**	**130**	**0**	**539**	**2,181**
Count Total	0	0	0	0	0	343	0	183	4	0	1,952	661	14	74	979	0	4,210	0
Peak Hour **All**	**0**	**0**	**0**	**0**	**0**	**191**	**0**	**97**	**0**	**0**	**1,021**	**344**	**7**	**39**	**482**	**0**	**2,181**	**0**
Peak Hour **HV**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**6**	**1**	**0**	**0**	**3**	**0**	**10**	**0**
Peak Hour **HV%**	**-**	**-**	**-**	**-**	**-**	**0%**	**-**	**0%**	**-**	**-**	**1%**	**0%**	**0%**	**0%**	**1%**	**-**	**0%**	**0**

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

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	0	0	3	4	*7*	0	0	0	0	*0*	0	2	1	0	*3*
4:15 PM	0	0	5	2	*7*	0	0	0	0	*0*	0	10	0	0	*10*
4:30 PM	0	0	3	1	*4*	0	0	0	0	*0*	0	3	2	0	*5*
4:45 PM	0	2	4	2	*8*	0	0	0	0	*0*	0	3	2	0	*5*
5:00 PM	**0**	**0**	**2**	**0**	***2***	**0**	**0**	**0**	**0**	***0***	**0**	**2**	**1**	**0**	*3*
5:15 PM	**0**	**0**	**1**	**1**	***2***	**0**	**0**	**0**	**0**	***0***	**0**	**2**	**2**	**0**	*4*
5:30 PM	**0**	**0**	**2**	**0**	***2***	**0**	**0**	**0**	**0**	***0***	**1**	**6**	**1**	**0**	*8*
5:45 PM	**0**	**0**	**2**	**2**	***4***	**0**	**0**	**0**	**0**	***0***	**0**	**22**	**17**	**0**	***39***
Count Total	0	2	22	12	*36*	0	0	0	0	*0*	1	50	26	0	*77*
Peak Hr	**0**	**0**	**7**	**3**	***10***	**0**	**0**	**0**	**0**	***0***	**1**	**32**	**21**	**0**	***54***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	0				Reindollar Dr				Del Monte Blvd				Del Monte Blvd				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	2	1	0	1	3	0	7	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	4	1	0	0	2	0	7	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	2	1	0	0	1	0	4	0
4:45 PM	0	0	0	0	0	2	0	0	0	0	4	0	0	0	2	0	8	26
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**2**	21
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**0**	**2**	16
5:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**2**	14
5:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**2**	**0**	**4**	**10**
Count Total	0	0	0	0	0	2	0	0	0	0	18	4	0	1	11	0	36	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**6**	**1**	**0**	**0**	**3**	**0**	**10**	**0**

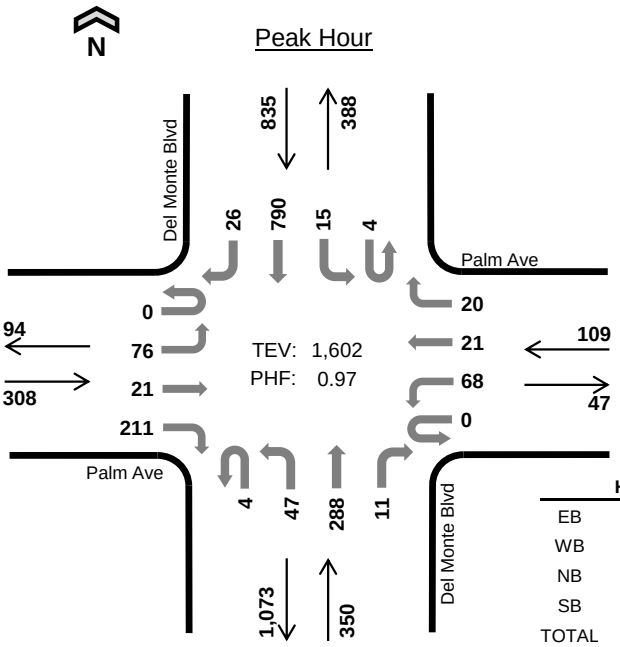
Two-Hour Count Summaries - Bikes

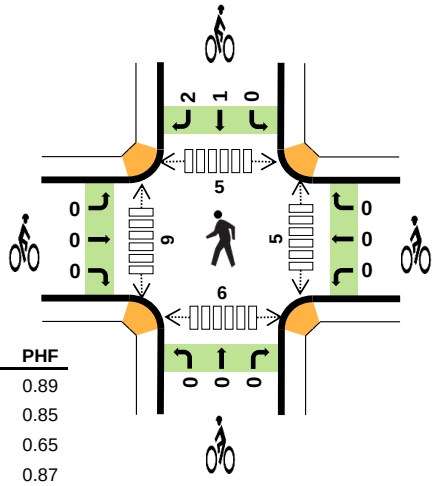
Interval Start	0			Reindollar Dr			Del Monte Blvd			Del Monte Blvd			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
5:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
5:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

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

Del Monte Blvd
Palm Ave

Date: 09-26-2018
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:00 AM to 8:00 AM





	HV %:	PHF
EB	0.3%	0.89
WB	1.8%	0.85
NB	3.1%	0.65
SB	1.8%	0.87
TOTAL	1.8%	0.97

Two-Hour Count Summaries

Interval Start	Palm Ave Eastbound				Palm Ave Westbound				Del Monte Blvd Northbound				Del Monte Blvd Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	**0**	**9**	**7**	**60**	**0**	**13**	**2**	**6**	**0**	**8**	**45**	**3**	**1**	**1**	**235**	**2**	**392**	0
7:15 AM	**0**	**20**	**4**	**61**	**0**	**28**	**1**	**3**	**1**	**7**	**54**	**4**	**0**	**5**	**211**	**6**	**405**	0
7:30 AM	**0**	**24**	**5**	**58**	**0**	**15**	**3**	**6**	**1**	**8**	**82**	**2**	**3**	**3**	**196**	**7**	**413**	0
7:45 AM	**0**	**23**	**5**	**32**	**0**	**12**	**15**	**5**	**2**	**24**	**107**	**2**	**0**	**6**	**148**	**11**	**392**	**1,602**
8:00 AM	0	9	12	33	0	7	15	8	1	23	99	3	1	4	111	12	338	1,548
8:15 AM	0	13	9	26	0	16	18	9	4	17	81	5	2	9	149	22	380	1,523
8:30 AM	0	28	4	58	0	11	14	9	2	22	83	3	1	3	153	15	406	1,516
8:45 AM	0	16	3	33	0	9	5	3	6	6	88	5	4	2	134	5	319	1,443
Count Total	0	142	49	361	0	111	73	49	17	115	639	27	12	33	1,337	80	3,045	0
Peak Hour All	**0**	**76**	**21**	**211**	**0**	**68**	**21**	**20**	**4**	**47**	**288**	**11**	**4**	**15**	**790**	**26**	**1,602**	**0**
Peak Hour HV	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**1**	**0**	**1**	**9**	**1**	**0**	**0**	**15**	**0**	**29**	**0**
Peak Hour HV%	**-**	**0%**	**0%**	**0%**	**-**	**1%**	**0%**	**5%**	**0%**	**2%**	**3%**	**9%**	**0%**	**0%**	**2%**	**0%**	**2%**	**0**

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

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	**1**	**1**	**2**	**4**	***8***	**0**	**0**	**0**	**1**	***1***	**1**	**0**	**2**	**1**	*4*
7:15 AM	**0**	**0**	**1**	**3**	***4***	**0**	**0**	**0**	**1**	***1***	**1**	**2**	**0**	**1**	*4*
7:30 AM	**0**	**0**	**5**	**4**	***9***	**0**	**0**	**0**	**1**	***1***	**2**	**4**	**0**	**1**	*7*
7:45 AM	**0**	**1**	**3**	**4**	***8***	**0**	**0**	**0**	**0**	***0***	**1**	**3**	**3**	**3**	***10***
8:00 AM	0	0	1	4	*5*	0	0	0	0	*0*	1	1	0	2	*4*
8:15 AM	0	0	1	5	*6*	0	0	0	0	*0*	2	3	0	5	*10*
8:30 AM	2	1	7	5	*15*	0	0	0	0	*0*	0	1	3	2	*6*
8:45 AM	2	0	2	3	*7*	0	0	0	0	*0*	1	1	0	3	*5*
Count Total	5	3	22	32	*62*	0	0	0	3	*3*	9	15	8	18	*50*
Peak Hour	**1**	**2**	**11**	**15**	***29***	**0**	**0**	**0**	**3**	***3***	**5**	**9**	**5**	**6**	***25***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Palm Ave Eastbound				Palm Ave Westbound				Del Monte Blvd Northbound				Del Monte Blvd Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**2**	**0**	**0**	**0**	**4**	**0**	**8**	0
7:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**3**	**0**	**4**	0
7:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**4**	**0**	**0**	**0**	**4**	**0**	**9**	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**4**	**0**	**8**	**29**
8:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	4	0	5	26
8:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	5	0	6	28
8:30 AM	0	2	0	0	0	0	1	0	0	2	5	0	0	1	3	1	15	34
8:45 AM	0	0	0	2	0	0	0	0	0	0	1	1	0	1	2	0	7	33
Count Total	0	2	0	3	0	1	1	1	0	3	17	2	0	2	29	1	62	0
Peak Hour	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**1**	**0**	**1**	**9**	**1**	**0**	**0**	**15**	**0**	**29**	**0**

Two-Hour Count Summaries - Bikes

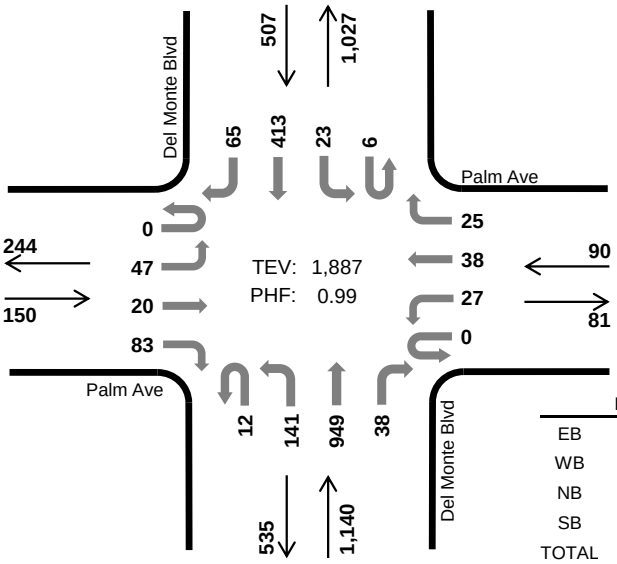
Interval Start	Palm Ave Eastbound			Palm Ave Westbound			Del Monte Blvd Northbound			Del Monte Blvd Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	0
7:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	0
7:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	0	0	0	0	1	2	3	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**2**	**3**	**0**

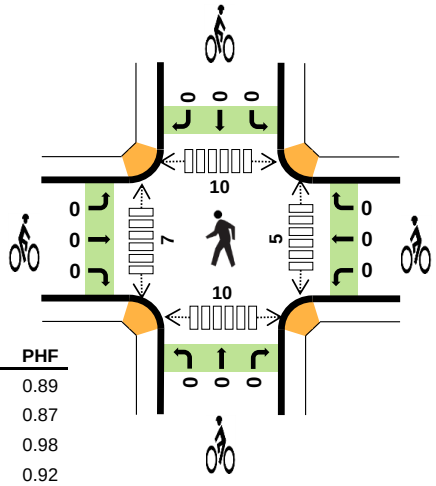
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Del Monte Blvd
Palm Ave

Date: 09-26-2018
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:45 PM to 5:45 PM

Peak Hour





	HV %:	PHF
EB	0.0%	0.89
WB	2.2%	0.87
NB	0.9%	0.98
SB	1.0%	0.92
TOTAL	0.9%	0.99

Two-Hour Count Summaries

Interval Start	Palm Ave Eastbound				Palm Ave Westbound				Del Monte Blvd Northbound				Del Monte Blvd Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	10	3	23	0	10	5	8	1	34	176	9	1	4	115	6	405	0
4:15 PM	0	5	2	17	0	4	6	4	1	48	213	9	1	7	94	11	422	0
4:30 PM	0	6	3	25	0	14	12	5	2	27	210	5	2	4	113	10	438	0
4:45 PM	**0**	**17**	**1**	**24**	**0**	**7**	**7**	**5**	**3**	**26**	**253**	**8**	**1**	**5**	**94**	**11**	**462**	1,727
5:00 PM	**0**	**8**	**10**	**17**	**0**	**4**	**7**	**9**	**4**	**35**	**236**	**11**	**3**	**4**	**102**	**20**	**470**	1,792
5:15 PM	**0**	**11**	**5**	**21**	**0**	**4**	**14**	**8**	**4**	**36**	**235**	**11**	**1**	**5**	**100**	**23**	**478**	1,848
5:30 PM	**0**	**11**	**4**	**21**	**0**	**12**	**10**	**3**	**1**	**44**	**225**	**8**	**1**	**9**	**117**	**11**	**477**	**1,887**
5:45 PM	0	12	2	20	0	7	6	6	1	41	214	9	1	3	112	3	437	1,862
Count Total	0	80	30	168	0	62	67	48	17	291	1,762	70	11	41	847	95	3,589	0
Peak Hour All	**0**	**47**	**20**	**83**	**0**	**27**	**38**	**25**	**12**	**141**	**949**	**38**	**6**	**23**	**413**	**65**	**1,887**	**0**
Peak Hour HV	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**10**	**0**	**0**	**2**	**3**	**0**	**17**	**0**
Peak Hour HV%	**-**	**0%**	**0%**	**0%**	**-**	**0%**	**3%**	**4%**	**0%**	**0%**	**1%**	**0%**	**0%**	**9%**	**1%**	**0%**	**1%**	**0**

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

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	0	1	3	3	*7*	0	0	0	0	*0*	0	3	1	4	*8*
4:15 PM	0	0	3	2	*5*	0	0	0	0	*0*	0	3	0	3	*6*
4:30 PM	0	0	2	2	*4*	0	0	1	0	*1*	1	3	5	2	*11*
4:45 PM	**0**	**0**	**5**	**2**	***7***	**0**	**0**	**0**	**0**	***0***	**3**	**0**	**0**	**3**	*6*
5:00 PM	**0**	**1**	**2**	**0**	***3***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**3**	**3**	*6*
5:15 PM	**0**	**0**	**1**	**2**	***3***	**0**	**0**	**0**	**0**	***0***	**0**	**2**	**3**	**2**	*7*
5:30 PM	**0**	**1**	**2**	**1**	***4***	**0**	**0**	**0**	**0**	***0***	**2**	**5**	**4**	**2**	***13***
5:45 PM	0	0	2	3	*5*	0	0	0	0	*0*	3	3	6	4	*16*
Count Total	0	3	20	15	*38*	0	0	1	0	*1*	9	19	22	23	*73*
Peak Hour	**0**	**2**	**10**	**5**	***17***	**0**	**0**	**0**	**0**	***0***	**5**	**7**	**10**	**10**	***32***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Palm Ave Eastbound				Palm Ave Westbound				Del Monte Blvd Northbound				Del Monte Blvd Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	1	0	0	0	0	3	0	0	0	3	0	7	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	2	0	5	0
4:30 PM	0	0	0	0	0	0	0	0	0	1	1	0	0	1	1	0	4	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**0**	**0**	**0**	**2**	**0**	**7**	23
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**3**	19
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**1**	**0**	**3**	17
5:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**2**	**0**	**0**	**1**	**0**	**0**	**4**	**17**
5:45 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	3	0	5	15
Count Total	0	0	0	0	0	1	1	1	0	1	19	0	0	3	12	0	38	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**10**	**0**	**0**	**2**	**3**	**0**	**17**	**0**

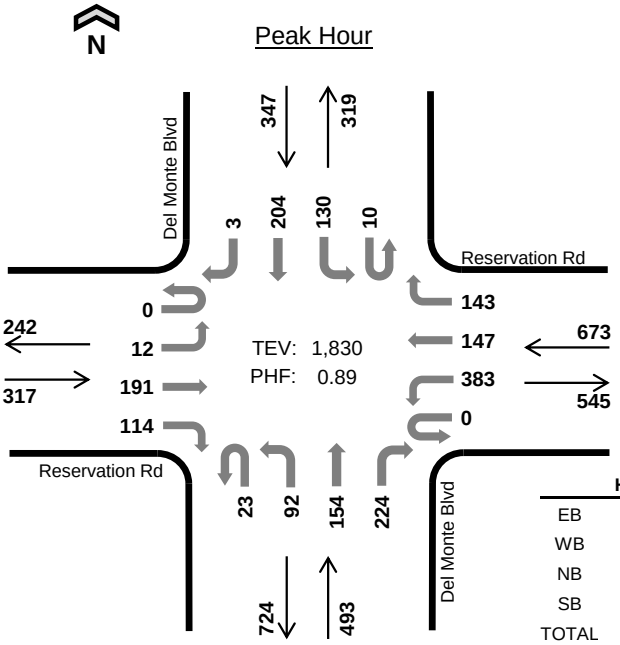
Two-Hour Count Summaries - Bikes

Interval Start	Palm Ave Eastbound			Palm Ave Westbound			Del Monte Blvd Northbound			Del Monte Blvd Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	1	0	0	0	0	1	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	1
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	1
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	1
5:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	0	1	0	0	0	0	1	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

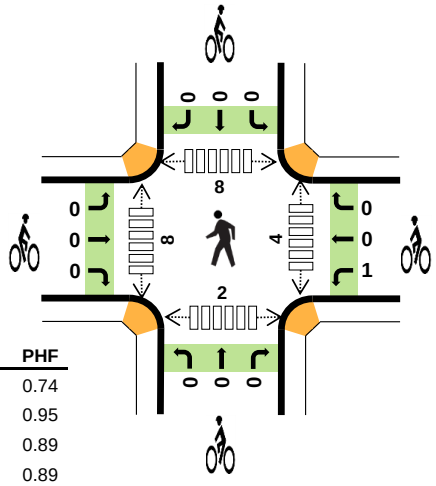
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Del Monte Blvd
Reservation Rd

Date: 09-26-2018
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:30 AM to 8:30 AM



	HV %:	PHF
EB	3.5%	0.74
WB	3.6%	0.95
NB	1.6%	0.89
SB	3.2%	0.89
TOTAL	3.0%	0.89



Two-Hour Count Summaries

Interval Start	Reservation Rd Eastbound				Reservation Rd Westbound				Del Monte Blvd Northbound				Del Monte Blvd Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	4	38	16	0	158	24	29	7	19	15	21	0	17	25	0	373	0
7:15 AM	0	1	41	22	0	129	24	17	5	11	23	38	1	29	46	0	387	0
7:30 AM	**0**	**1**	**64**	**31**	**0**	**117**	**21**	**33**	**3**	**20**	**36**	**55**	**0**	**23**	**68**	**1**	**473**	0
7:45 AM	**0**	**8**	**63**	**36**	**0**	**88**	**36**	**48**	**3**	**20**	**50**	**66**	**3**	**39**	**55**	**0**	**515**	1,748
8:00 AM	**0**	**2**	**36**	**20**	**0**	**83**	**36**	**33**	**6**	**19**	**38**	**57**	**4**	**33**	**41**	**1**	**409**	1,784
8:15 AM	**0**	**1**	**28**	**27**	**0**	**95**	**54**	**29**	**11**	**33**	**30**	**46**	**3**	**35**	**40**	**1**	**433**	**1,830**
8:30 AM	0	5	51	20	0	114	38	20	6	17	28	62	3	34	25	0	423	1,780
8:45 AM	0	2	40	14	0	90	30	19	5	13	36	67	1	13	23	2	355	1,620
Count Total	0	24	361	186	0	874	263	228	46	152	256	412	15	223	323	5	3,368	0
Peak Hour All	**0**	**12**	**191**	**114**	**0**	**383**	**147**	**143**	**23**	**92**	**154**	**224**	**10**	**130**	**204**	**3**	**1,830**	**0**
Peak Hour HV	**0**	**0**	**9**	**2**	**0**	**14**	**5**	**5**	**0**	**2**	**0**	**6**	**0**	**6**	**5**	**0**	**54**	**0**
Peak Hour HV%	**-**	**0%**	**5%**	**2%**	**-**	**4%**	**3%**	**3%**	**0%**	**2%**	**0%**	**3%**	**0%**	**5%**	**2%**	**0%**	**3%**	**0**

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

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	4	7	3	3	*17*	0	0	0	0	*0*	4	2	0	1	*7*
7:15 AM	3	3	0	1	*7*	0	1	0	0	*1*	2	1	1	0	*4*
7:30 AM	**4**	**7**	**2**	**1**	***14***	**0**	**1**	**0**	**0**	***1***	**0**	**4**	**2**	**0**	*6*
7:45 AM	**4**	**4**	**3**	**2**	***13***	**0**	**0**	**0**	**0**	***0***	**1**	**3**	**0**	**2**	*6*
8:00 AM	**2**	**8**	**2**	**5**	***17***	**0**	**0**	**0**	**0**	***0***	**3**	**1**	**3**	**0**	*7*
8:15 AM	**1**	**5**	**1**	**3**	***10***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**3**	**0**	***3***
8:30 AM	1	6	5	2	*14*	0	0	0	0	*0*	0	6	2	0	*8*
8:45 AM	0	6	3	1	*10*	0	0	0	0	*0*	3	1	3	0	*7*
Count Total	19	46	19	18	*102*	0	2	0	0	*2*	13	18	14	3	*48*
Peak Hour	**11**	**24**	**8**	**11**	***54***	**0**	**1**	**0**	**0**	***1***	**4**	**8**	**8**	**2**	***22***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Reservation Rd Eastbound				Reservation Rd Westbound				Del Monte Blvd Northbound				Del Monte Blvd Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	3	1	0	0	4	1	2	0	0	1	2	0	2	1	0	17	0
7:15 AM	0	0	2	1	0	3	0	0	0	0	0	0	0	1	0	0	7	0
7:30 AM	**0**	**0**	**4**	**0**	**0**	**3**	**2**	**2**	**0**	**1**	**0**	**1**	**0**	**0**	**1**	**0**	**14**	0
7:45 AM	**0**	**0**	**2**	**2**	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**2**	**0**	**13**	51
8:00 AM	**0**	**0**	**2**	**0**	**0**	**4**	**2**	**2**	**0**	**1**	**0**	**1**	**0**	**3**	**2**	**0**	**17**	51
8:15 AM	**0**	**0**	**1**	**0**	**0**	**3**	**1**	**1**	**0**	**0**	**0**	**1**	**0**	**3**	**0**	**0**	**10**	**54**
8:30 AM	0	0	1	0	0	5	0	1	0	1	0	4	0	1	1	0	14	54
8:45 AM	0	0	0	0	0	5	1	0	0	0	1	2	0	1	0	0	10	51
Count Total	0	3	13	3	0	31	7	8	0	3	2	14	0	11	7	0	102	0
Peak Hour	**0**	**0**	**9**	**2**	**0**	**14**	**5**	**5**	**0**	**2**	**0**	**6**	**0**	**6**	**5**	**0**	**54**	**0**

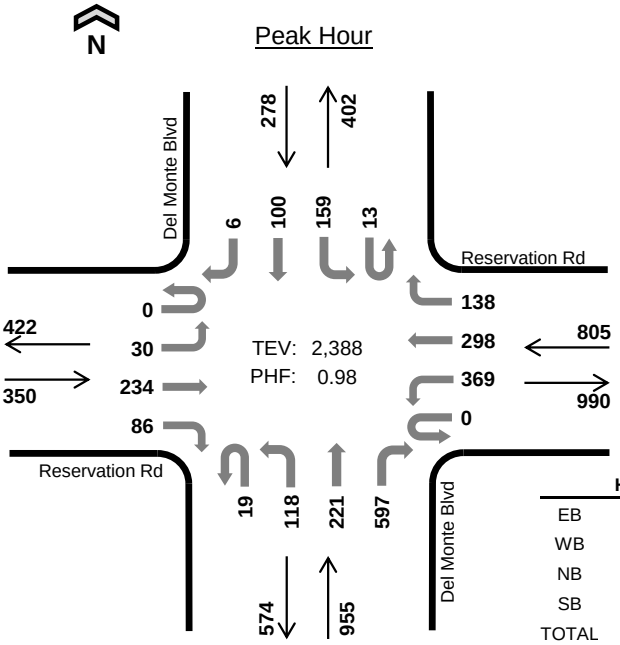
Two-Hour Count Summaries - Bikes

Interval Start	Reservation Rd Eastbound			Reservation Rd Westbound			Del Monte Blvd Northbound			Del Monte Blvd Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	1	0	0	0	0	0	0	0	0	1	0
7:30 AM	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	2
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	2
8:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	2	0	0	0	0	0	0	0	0	2	0
Peak Hour	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**

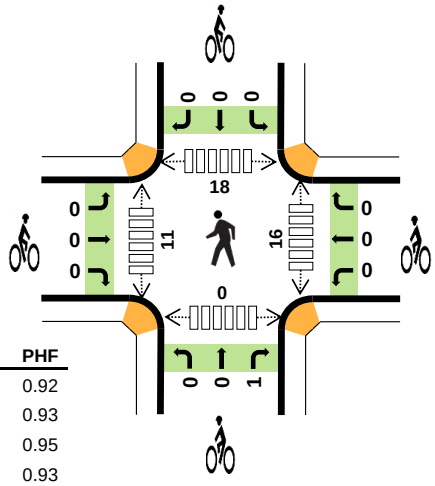
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Del Monte Blvd
Reservation Rd

Date: 09-26-2018
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:45 PM to 5:45 PM



	HV %:	PHF
EB	2.9%	0.92
WB	1.2%	0.93
NB	1.0%	0.95
SB	1.8%	0.93
TOTAL	1.5%	0.98



Two-Hour Count Summaries

Interval Start	Reservation Rd Eastbound				Reservation Rd Westbound				Del Monte Blvd Northbound				Del Monte Blvd Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	5	48	27	0	85	62	37	5	23	38	113	3	47	25	2	520	0
4:15 PM	0	2	54	22	0	76	54	30	6	25	35	133	3	36	19	1	496	0
4:30 PM	0	5	74	21	1	98	62	32	4	28	38	137	8	38	24	0	570	0
4:45 PM	**0**	**8**	**58**	**20**	**0**	**81**	**70**	**30**	**4**	**31**	**49**	**167**	**6**	**38**	**29**	**1**	**592**	2,178
5:00 PM	**0**	**5**	**53**	**28**	**0**	**82**	**78**	**35**	**6**	**32**	**68**	**138**	**3**	**36**	**24**	**2**	**590**	2,248
5:15 PM	**0**	**8**	**57**	**18**	**0**	**103**	**75**	**35**	**7**	**29**	**47**	**156**	**3**	**39**	**21**	**1**	**599**	2,351
5:30 PM	**0**	**9**	**66**	**20**	**0**	**103**	**75**	**38**	**2**	**26**	**57**	**136**	**1**	**46**	**26**	**2**	**607**	**2,388**
5:45 PM	0	7	49	21	0	93	86	30	1	28	38	151	10	38	21	1	574	2,370
Count Total	0	49	459	177	1	721	562	267	35	222	370	1,131	37	318	189	10	4,548	0
Peak Hour All	**0**	**30**	**234**	**86**	**0**	**369**	**298**	**138**	**19**	**118**	**221**	**597**	**13**	**159**	**100**	**6**	**2,388**	**0**
Peak Hour HV	**0**	**1**	**7**	**2**	**0**	**4**	**3**	**3**	**0**	**1**	**5**	**4**	**0**	**3**	**2**	**0**	**35**	**0**
Peak Hour HV%	**-**	**3%**	**3%**	**2%**	**-**	**1%**	**1%**	**2%**	**0%**	**1%**	**2%**	**1%**	**0%**	**2%**	**2%**	**0%**	**1%**	**0**

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

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	2	3	2	2	*9*	0	0	0	0	*0*	7	4	5	1	*17*
4:15 PM	0	3	4	1	*8*	0	0	0	0	*0*	4	3	5	0	*12*
4:30 PM	2	1	1	2	*6*	0	0	1	0	*1*	5	5	6	0	*16*
4:45 PM	**5**	**4**	**5**	**1**	***15***	**0**	**0**	**0**	**0**	***0***	**4**	**2**	**6**	**0**	*12*
5:00 PM	**1**	**3**	**3**	**2**	***9***	**0**	**0**	**1**	**0**	***1***	**1**	**2**	**1**	**0**	*4*
5:15 PM	**2**	**3**	**0**	**0**	***5***	**0**	**0**	**0**	**0**	***0***	**2**	**0**	**2**	**0**	*4*
5:30 PM	**2**	**0**	**2**	**2**	***6***	**0**	**0**	**0**	**0**	***0***	**9**	**7**	**9**	**0**	***25***
5:45 PM	1	4	3	0	*8*	0	0	0	0	*0*	1	3	7	1	*12*
Count Total	15	21	20	10	*66*	0	0	2	0	*2*	33	26	41	2	*102*
Peak Hour	**10**	**10**	**10**	**5**	***35***	**0**	**0**	**1**	**0**	***1***	**16**	**11**	**18**	**0**	***45***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Reservation Rd Eastbound				Reservation Rd Westbound				Del Monte Blvd Northbound				Del Monte Blvd Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	2	0	1	1	1	0	1	0	1	0	1	0	1	9	0
4:15 PM	0	0	0	0	0	2	0	1	0	1	1	2	0	1	0	0	8	0
4:30 PM	0	0	2	0	0	0	1	0	0	0	0	1	0	0	2	0	6	0
4:45 PM	**0**	**1**	**3**	**1**	**0**	**2**	**2**	**0**	**0**	**1**	**2**	**2**	**0**	**1**	**0**	**0**	**15**	38
5:00 PM	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**2**	**0**	**0**	**2**	**1**	**0**	**1**	**1**	**0**	**9**	38
5:15 PM	**0**	**0**	**1**	**1**	**0**	**2**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	35
5:30 PM	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**1**	**1**	**0**	**6**	**35**
5:45 PM	0	0	1	0	0	2	2	0	0	1	0	2	0	0	0	0	8	28
Count Total	0	1	10	4	0	9	7	5	0	4	6	10	0	5	4	1	66	0
Peak Hour	**0**	**1**	**7**	**2**	**0**	**4**	**3**	**3**	**0**	**1**	**5**	**4**	**0**	**3**	**2**	**0**	**35**	**0**

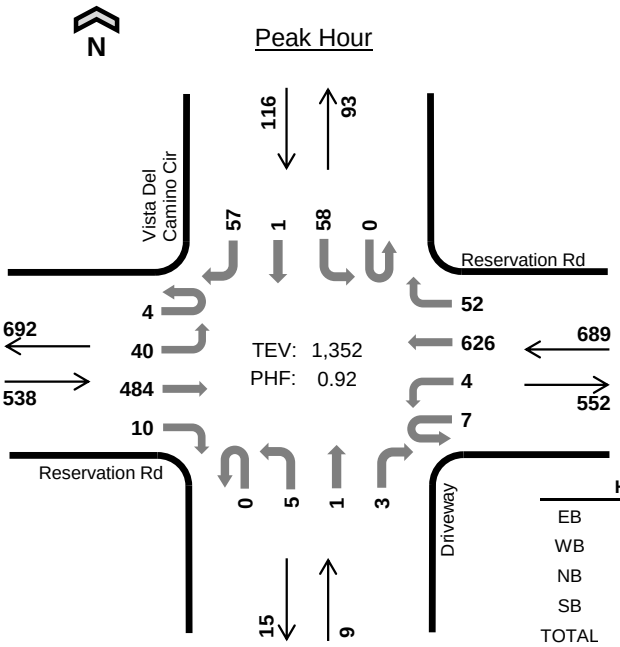
Two-Hour Count Summaries - Bikes

Interval Start	Reservation Rd Eastbound			Reservation Rd Westbound			Del Monte Blvd Northbound			Del Monte Blvd Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	1	0	0	0	1	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	1
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	2
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	2
5:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Count Total	0	0	0	0	0	0	0	0	2	0	0	0	2	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**

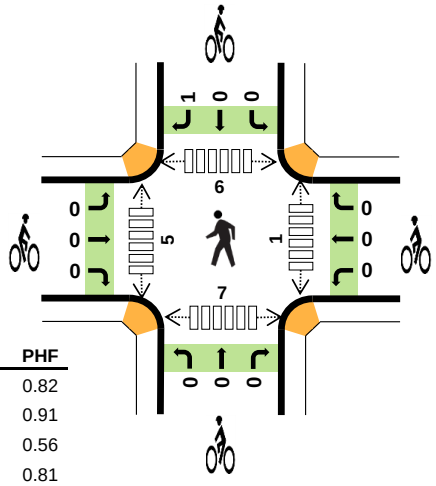
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Vista Del Camino Cir
Reservation Rd

Date: 09-26-2018
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:30 AM to 8:30 AM



	HV %:	PHF
EB	3.9%	0.82
WB	3.5%	0.91
NB	0.0%	0.56
SB	1.7%	0.81
TOTAL	3.5%	0.92



Two-Hour Count Summaries

Interval Start	Reservation Rd Eastbound				Reservation Rd Westbound				Driveway Northbound				Vista Del Camino Cir Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	2	73	0	2	0	183	5	0	0	0	0	0	7	0	21	293	0
7:15 AM	3	3	101	0	1	0	158	6	0	1	0	0	0	6	0	10	289	0
7:30 AM	**1**	**12**	**124**	**2**	**1**	**1**	**161**	**6**	**0**	**1**	**1**	**0**	**0**	**8**	**0**	**19**	**337**	0
7:45 AM	**2**	**11**	**149**	**2**	**2**	**1**	**156**	**14**	**0**	**2**	**0**	**0**	**0**	**16**	**1**	**11**	**367**	1,286
8:00 AM	**1**	**10**	**115**	**1**	**2**	**2**	**136**	**18**	**0**	**1**	**0**	**0**	**0**	**19**	**0**	**17**	**322**	1,315
8:15 AM	**0**	**7**	**96**	**5**	**2**	**0**	**173**	**14**	**0**	**1**	**0**	**3**	**0**	**15**	**0**	**10**	**326**	**1,352**
8:30 AM	4	11	127	4	5	1	142	11	0	5	0	1	0	8	2	14	335	1,350
8:45 AM	2	17	96	2	5	1	124	19	0	2	1	2	0	8	1	12	292	1,275
Count Total	13	73	881	16	20	6	1,233	93	0	13	2	6	0	87	4	114	2,561	0
Peak Hour All	**4**	**40**	**484**	**10**	**7**	**4**	**626**	**52**	**0**	**5**	**1**	**3**	**0**	**58**	**1**	**57**	**1,352**	**0**
Peak Hour HV	**0**	**4**	**17**	**0**	**0**	**1**	**21**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**47**	**0**
Peak Hour HV%	**0%**	**10%**	**4%**	**0%**	**0%**	**25%**	**3%**	**4%**	**-**	**0%**	**0%**	**0%**	**-**	**0%**	**0%**	**4%**	**3%**	**0**

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

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	5	5	0	0	*10*	0	0	0	0	*0*	0	0	0	0	*0*
7:15 AM	3	3	0	0	*6*	0	1	0	0	*1*	0	0	0	1	*1*
7:30 AM	**5**	**7**	**0**	**1**	***13***	**0**	**0**	**0**	**1**	***1***	**1**	**2**	**2**	**2**	*7*
7:45 AM	**5**	**3**	**0**	**0**	***8***	**0**	**0**	**0**	**0**	***0***	**0**	**2**	**1**	**1**	*4*
8:00 AM	**6**	**10**	**0**	**1**	***17***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**1**	**2**	*3*
8:15 AM	**5**	**4**	**0**	**0**	***9***	**0**	**0**	**0**	**0**	***0***	**0**	**1**	**2**	**2**	***5***
8:30 AM	6	4	0	0	*10*	0	0	0	0	*0*	2	1	1	1	*5*
8:45 AM	3	5	0	1	*9*	0	0	0	0	*0*	0	1	2	2	*5*
Count Total	38	41	0	3	*82*	0	1	0	1	*2*	3	7	9	11	*30*
Peak Hour	**21**	**24**	**0**	**2**	***47***	**0**	**0**	**0**	**1**	***1***	**1**	**5**	**6**	**7**	***19***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Reservation Rd Eastbound				Reservation Rd Westbound				Driveway Northbound				Vista Del Camino Cir Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	5	0	0	0	5	0	0	0	0	0	0	0	0	0	10	0
7:15 AM	0	0	3	0	0	0	2	1	0	0	0	0	0	0	0	0	6	0
7:30 AM	**0**	**1**	**4**	**0**	**0**	**0**	**6**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**13**	0
7:45 AM	**0**	**1**	**4**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**8**	37
8:00 AM	**0**	**1**	**5**	**0**	**0**	**1**	**8**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**17**	44
8:15 AM	**0**	**1**	**4**	**0**	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**9**	**47**
8:30 AM	0	2	4	0	0	0	4	0	0	0	0	0	0	0	0	0	10	44
8:45 AM	0	0	3	0	0	0	4	1	0	0	0	0	0	1	0	0	9	45
Count Total	0	6	32	0	0	1	36	4	0	0	0	0	0	1	0	2	82	0
Peak Hour	**0**	**4**	**17**	**0**	**0**	**1**	**21**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**47**	**0**

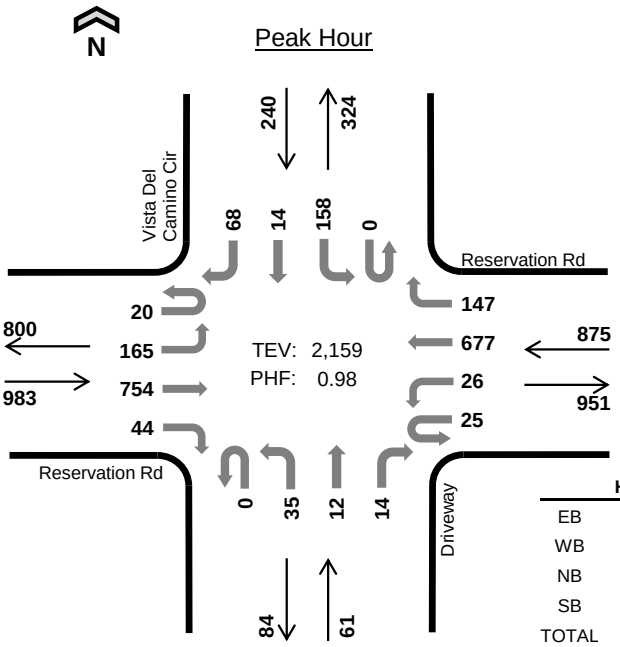
Two-Hour Count Summaries - Bikes

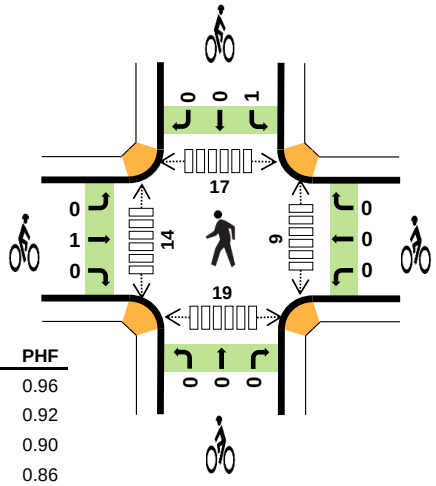
Interval Start	Reservation Rd Eastbound			Reservation Rd Westbound			Driveway Northbound			Vista Del Camino Cir Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	1	0	0	0	0	0	0	0	1	0
7:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	2
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	2
8:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	1	0	0	0	0	0	0	1	2	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**0**

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

Vista Del Camino Cir
Reservation Rd

Date: 09-26-2018
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 5:00 PM to 6:00 PM





	HV %:	PHF
EB	1.1%	0.96
WB	1.0%	0.92
NB	0.0%	0.90
SB	0.0%	0.86
TOTAL	0.9%	0.98

Two-Hour Count Summaries

Interval Start	Reservation Rd Eastbound				Reservation Rd Westbound				Driveway Northbound				Vista Del Camino Cir Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	7	34	155	6	9	4	152	36	0	6	2	9	0	22	2	18	462	0
4:15 PM	3	41	175	7	6	4	132	32	0	5	0	2	0	33	5	20	465	0
4:30 PM	4	23	208	13	6	0	150	35	0	10	0	4	0	33	2	21	509	0
4:45 PM	3	61	201	4	6	2	151	31	0	6	2	3	0	46	3	10	529	1,965
5:00 PM	**6**	**35**	**186**	**10**	**7**	**6**	**180**	**44**	**0**	**10**	**2**	**5**	**0**	**39**	**4**	**14**	**548**	2,051
5:15 PM	**4**	**41**	**201**	**11**	**3**	**5**	**166**	**36**	**0**	**9**	**3**	**1**	**0**	**31**	**3**	**17**	**531**	2,117
5:30 PM	**5**	**39**	**195**	**12**	**8**	**10**	**158**	**30**	**0**	**7**	**6**	**3**	**0**	**42**	**2**	**18**	**535**	2,143
5:45 PM	**5**	**50**	**172**	**11**	**7**	**5**	**173**	**37**	**0**	**9**	**1**	**5**	**0**	**46**	**5**	**19**	**545**	**2,159**
Count Total	37	324	1,493	74	52	36	1,262	281	0	62	16	32	0	292	26	137	4,124	0
Peak Hour All	**20**	**165**	**754**	**44**	**25**	**26**	**677**	**147**	**0**	**35**	**12**	**14**	**0**	**158**	**14**	**68**	**2,159**	**0**
Peak Hour HV	**0**	**0**	**11**	**0**	**0**	**0**	**9**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**20**	**0**
Peak Hour HV%	**0%**	**0%**	**1%**	**0%**	**0%**	**0%**	**1%**	**0%**	**-**	**0%**	**0%**	**0%**	**-**	**0%**	**0%**	**0%**	**1%**	**0**

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

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	2	3	0	0	*5*	0	0	1	1	*2*	4	2	2	4	*12*
4:15 PM	3	3	0	1	*7*	0	0	0	0	*0*	7	6	4	5	*22*
4:30 PM	3	3	0	0	*6*	1	0	0	0	*1*	1	1	5	1	*8*
4:45 PM	6	3	0	0	*9*	1	0	0	0	*1*	2	4	5	11	*22*
5:00 PM	**3**	**4**	**0**	**0**	***7***	**1**	**0**	**0**	**0**	***1***	**1**	**3**	**2**	**2**	*8*
5:15 PM	**1**	**1**	**0**	**0**	***2***	**0**	**0**	**0**	**0**	***0***	**4**	**4**	**5**	**4**	*17*
5:30 PM	**4**	**0**	**0**	**0**	***4***	**0**	**0**	**0**	**0**	***0***	**1**	**3**	**8**	**4**	*16*
5:45 PM	**3**	**4**	**0**	**0**	***7***	**0**	**0**	**0**	**1**	***1***	**3**	**4**	**2**	**9**	***18***
Count Total	25	21	0	1	*47*	3	0	1	2	*6*	23	27	33	40	*123*
Peak Hour	**11**	**9**	**0**	**0**	***20***	**1**	**0**	**0**	**1**	***2***	**9**	**14**	**17**	**19**	***59***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Reservation Rd Eastbound				Reservation Rd Westbound				Driveway Northbound				Vista Del Camino Cir Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	2	0	0	0	2	1	0	0	0	0	0	0	0	0	5	0
4:15 PM	0	0	3	0	0	0	3	0	0	0	0	0	0	0	1	0	7	0
4:30 PM	0	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0	6	0
4:45 PM	0	1	5	0	0	0	3	0	0	0	0	0	0	0	0	0	9	27
5:00 PM	**0**	**0**	**3**	**0**	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**7**	29
5:15 PM	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	24
5:30 PM	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	22
5:45 PM	**0**	**0**	**3**	**0**	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**7**	**20**
Count Total	0	1	24	0	0	0	20	1	0	0	0	0	0	0	1	0	47	0
Peak Hour	**0**	**0**	**11**	**0**	**0**	**0**	**9**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**20**	**0**

Two-Hour Count Summaries - Bikes

Interval Start	Reservation Rd Eastbound			Reservation Rd Westbound			Driveway Northbound			Vista Del Camino Cir Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	1	0	0	1	0	2	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	1	0	0	0	0	0	0	0	0	0	0	1	0
4:45 PM	0	1	0	0	0	0	0	0	0	0	0	0	1	4
5:00 PM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	3
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	3
5:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	2
5:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**2**
Count Total	0	3	0	0	0	0	0	1	0	1	1	0	6	0
Peak Hour	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**2**	**0**

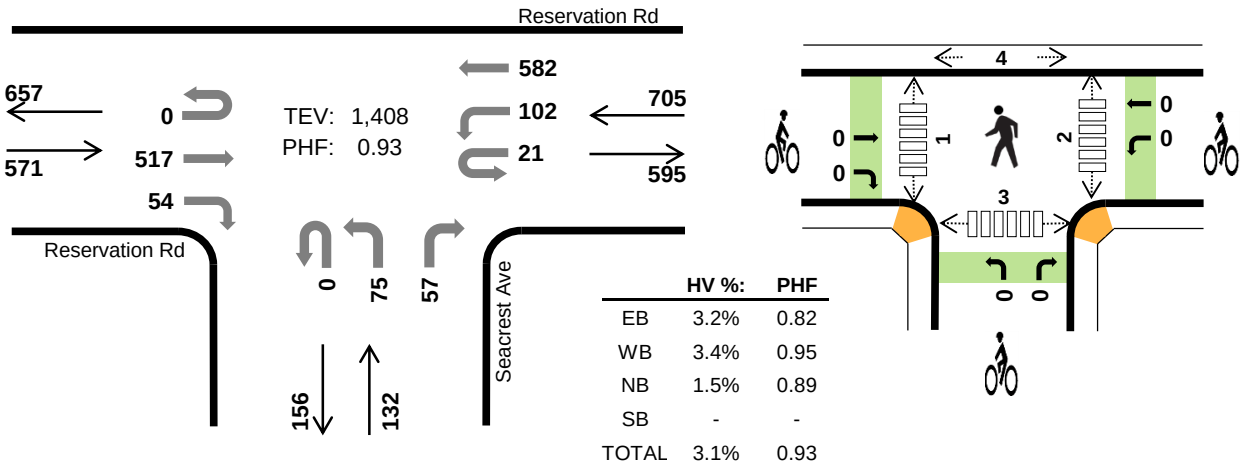
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Seacrest Ave
Reservation Rd

N

Peak Hour

Date: 09-26-2018
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:45 AM to 8:45 AM



	HV %:	PHF
EB	3.2%	0.82
WB	3.4%	0.95
NB	1.5%	0.89
SB	-	-
TOTAL	3.1%	0.93

Two-Hour Count Summaries

Interval Start		Reservation Rd Eastbound				Reservation Rd Westbound				Seacrest Ave Northbound				0 Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM		0	0	74	2	1	11	183	0	0	3	0	10	0	0	0	0	284	0
7:15 AM		0	0	102	6	7	13	149	0	0	9	0	10	0	0	0	0	296	0
7:30 AM		0	0	120	11	3	30	145	0	0	15	0	9	0	0	0	0	333	0
7:45 AM		**0**	**0**	**160**	**14**	**3**	**25**	**146**	**0**	**0**	**20**	**0**	**10**	**0**	**0**	**0**	**0**	**378**	1,291
8:00 AM		**0**	**0**	**123**	**13**	**6**	**23**	**137**	**0**	**0**	**20**	**0**	**11**	**0**	**0**	**0**	**0**	**333**	1,340
8:15 AM		**0**	**0**	**101**	**13**	**5**	**26**	**154**	**0**	**0**	**22**	**0**	**12**	**0**	**0**	**0**	**0**	**333**	1,377
8:30 AM		**0**	**0**	**133**	**14**	**7**	**28**	**145**	**0**	**0**	**13**	**0**	**24**	**0**	**0**	**0**	**0**	**364**	**1,408**
8:45 AM		0	0	90	16	5	14	126	0	0	19	0	16	0	0	0	0	286	1,316
Count Total		0	0	903	89	37	170	1,185	0	0	121	0	102	0	0	0	0	2,607	0
Peak Hour	**All**	**0**	**0**	**517**	**54**	**21**	**102**	**582**	**0**	**0**	**75**	**0**	**57**	**0**	**0**	**0**	**0**	**1,408**	**0**
	HV	**0**	**0**	**18**	**0**	**0**	**3**	**21**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**44**	**0**
	HV%	**-**	**-**	**3%**	**0%**	**0%**	**3%**	**4%**	**-**	**-**	**3%**	**-**	**0%**	**-**	**-**	**-**	**-**	**3%**	**0**

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

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	5	6	0	0	*11*	0	0	0	0	*0*	1	0	1	0	*2*
7:15 AM	2	5	0	0	*7*	0	1	0	0	*1*	0	0	0	1	*1*
7:30 AM	5	7	1	0	*13*	0	0	0	0	*0*	1	1	3	1	*6*
7:45 AM	**5**	**4**	**1**	**0**	***10***	**0**	**0**	**0**	**0**	***0***	**0**	**1**	**0**	**1**	*2*
8:00 AM	**5**	**9**	**0**	**0**	***14***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**1**	**1**	*2*
8:15 AM	**4**	**5**	**0**	**0**	***9***	**0**	**0**	**0**	**0**	***0***	**1**	**0**	**2**	**1**	*4*
8:30 AM	**4**	**6**	**1**	**0**	***11***	**0**	**0**	**0**	**0**	***0***	**1**	**0**	**1**	**0**	***2***
8:45 AM	4	5	0	0	*9*	0	0	0	0	*0*	4	0	6	3	*13*
Count Total	34	47	3	0	*84*	0	1	0	0	*1*	8	2	14	8	*32*
Peak Hr	**18**	**24**	**2**	**0**	***44***	**0**	**0**	**0**	**0**	***0***	**2**	**1**	**4**	**3**	***10***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Reservation Rd Eastbound				Reservation Rd Westbound				Seacrest Ave Northbound				0 Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	5	0	0	0	6	0	0	0	0	0	0	0	0	0	11	0
7:15 AM	0	0	1	1	0	2	3	0	0	0	0	0	0	0	0	0	7	0
7:30 AM	0	0	5	0	0	1	6	0	0	1	0	0	0	0	0	0	13	0
7:45 AM	**0**	**0**	**5**	**0**	**0**	**1**	**3**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**10**	41
8:00 AM	**0**	**0**	**5**	**0**	**0**	**0**	**9**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**14**	44
8:15 AM	**0**	**0**	**4**	**0**	**0**	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**9**	46
8:30 AM	**0**	**0**	**4**	**0**	**0**	**2**	**4**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**11**	**44**
8:45 AM	0	0	4	0	0	0	5	0	0	0	0	0	0	0	0	0	9	43
Count Total	0	0	33	1	0	6	41	0	0	3	0	0	0	0	0	0	84	0
Peak Hour	**0**	**0**	**18**	**0**	**0**	**3**	**21**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**44**	**0**

Two-Hour Count Summaries - Bikes

Interval Start	Reservation Rd Eastbound			Reservation Rd Westbound			Seacrest Ave Northbound			0 Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	1	0	0	0	0	0	0	0	1	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	1
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	1
8:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
8:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	1	0	0	0	0	0	0	0	1	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

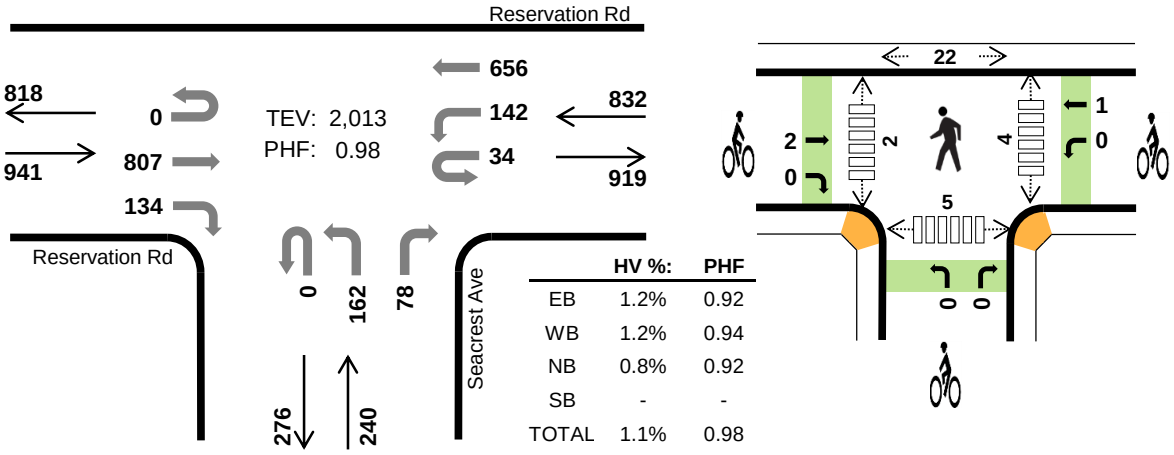
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Seacrest Ave
Reservation Rd

N

Peak Hour

Date: 09-26-2018
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 5:00 PM to 6:00 PM



Two-Hour Count Summaries

Interval Start	Reservation Rd Eastbound				Reservation Rd Westbound				Seacrest Ave Northbound				0 Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	178	27	5	35	149	0	0	36	0	25	0	0	0	0	455	0
4:15 PM	0	0	173	36	10	37	141	0	0	33	0	20	0	0	0	0	450	0
4:30 PM	0	0	221	24	14	33	131	0	0	42	0	18	0	0	0	0	483	0
4:45 PM	0	0	219	33	10	21	157	0	0	26	0	16	0	0	0	0	482	1,870
5:00 PM	**0**	**0**	**192**	**37**	**8**	**26**	**164**	**0**	**0**	**43**	**0**	**22**	**0**	**0**	**0**	**0**	**492**	1,907
5:15 PM	**0**	**0**	**204**	**27**	**6**	**47**	**168**	**0**	**0**	**36**	**0**	**21**	**0**	**0**	**0**	**0**	**509**	1,966
5:30 PM	**0**	**0**	**221**	**34**	**8**	**35**	**154**	**0**	**0**	**44**	**0**	**15**	**0**	**0**	**0**	**0**	**511**	1,994
5:45 PM	**0**	**0**	**190**	**36**	**12**	**34**	**170**	**0**	**0**	**39**	**0**	**20**	**0**	**0**	**0**	**0**	**501**	**2,013**
Count Total	0	0	1,598	254	73	268	1,234	0	0	299	0	157	0	0	0	0	3,883	0
Peak Hour All	**0**	**0**	**807**	**134**	**34**	**142**	**656**	**0**	**0**	**162**	**0**	**78**	**0**	**0**	**0**	**0**	**2,013**	**0**
Peak Hour HV	**0**	**0**	**9**	**2**	**0**	**2**	**8**	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**23**	**0**
Peak Hour HV%	**-**	**-**	**1%**	**1%**	**0%**	**1%**	**1%**	**-**	**-**	**1%**	**-**	**1%**	**-**	**-**	**-**	**-**	**1%**	**0**

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

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	2	4	1	0	*7*	0	0	0	0	*0*	4	0	4	1	*9*
4:15 PM	3	2	1	0	*6*	0	0	0	0	*0*	0	1	1	1	*3*
4:30 PM	2	3	0	0	*5*	1	0	0	0	*1*	1	2	8	2	*13*
4:45 PM	7	4	0	0	*11*	1	0	0	0	*1*	0	0	6	4	*10*
5:00 PM	**2**	**3**	**0**	**0**	***5***	**1**	**0**	**0**	**0**	***1***	**0**	**1**	**5**	**1**	*7*
5:15 PM	**2**	**3**	**0**	**0**	***5***	**0**	**1**	**0**	**0**	***1***	**1**	**0**	**3**	**2**	*6*
5:30 PM	**4**	**1**	**1**	**0**	***6***	**0**	**0**	**0**	**0**	***0***	**1**	**0**	**6**	**1**	*8*
5:45 PM	**3**	**3**	**1**	**0**	***7***	**1**	**0**	**0**	**0**	***1***	**2**	**1**	**8**	**1**	***12***
Count Total	25	23	4	0	*52*	4	1	0	0	*5*	9	5	41	13	*68*
Peak Hr	**11**	**10**	**2**	**0**	***23***	**2**	**1**	**0**	**0**	***3***	**4**	**2**	**22**	**5**	***33***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Reservation Rd Eastbound				Reservation Rd Westbound				Seacrest Ave Northbound				0 Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	2	0	0	1	3	0	0	0	0	1	0	0	0	0	7	0
4:15 PM	0	0	3	0	0	0	2	0	0	1	0	0	0	0	0	0	6	0
4:30 PM	0	0	2	0	0	1	2	0	0	0	0	0	0	0	0	0	5	0
4:45 PM	0	0	6	1	0	0	4	0	0	0	0	0	0	0	0	0	11	29
5:00 PM	**0**	**0**	**1**	**1**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	27
5:15 PM	**0**	**0**	**2**	**0**	**0**	**1**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	26
5:30 PM	**0**	**0**	**3**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**6**	27
5:45 PM	**0**	**0**	**3**	**0**	**0**	**0**	**3**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**7**	**23**
Count Total	0	0	22	3	0	4	19	0	0	2	0	2	0	0	0	0	52	0
Peak Hour	**0**	**0**	**9**	**2**	**0**	**2**	**8**	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**23**	**0**

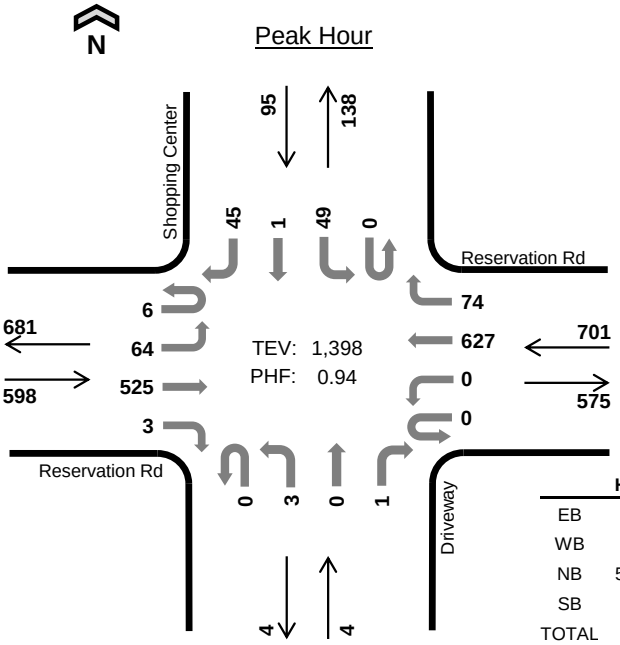
Two-Hour Count Summaries - Bikes

Interval Start	Reservation Rd Eastbound			Reservation Rd Westbound			Seacrest Ave Northbound			0 Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	1	0	0	0	0	0	0	0	0	0	0	1	0
4:45 PM	0	0	1	0	0	0	0	0	0	0	0	0	1	2
5:00 PM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	3
5:15 PM	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	4
5:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	3
5:45 PM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**3**
Count Total	0	3	1	0	1	0	0	0	0	0	0	0	5	0
Peak Hour	**0**	**2**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**

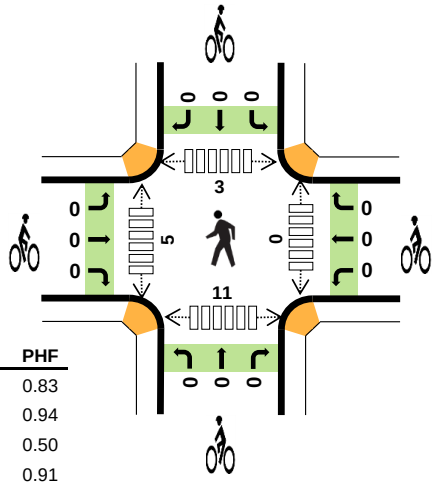
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Shopping Center
Reservation Rd

Date: 09-26-2018
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:30 AM to 8:30 AM



	HV %:	PHF
EB	2.8%	0.83
WB	3.7%	0.94
NB	50.0%	0.50
SB	0.0%	0.91
TOTAL	3.2%	0.94



Two-Hour Count Summaries

Interval Start	Reservation Rd Eastbound				Reservation Rd Westbound				Driveway Northbound				Shopping Center Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	1	12	76	0	0	0	182	12	0	0	0	0	0	4	0	11	298	0
7:15 AM	3	13	101	0	0	0	151	12	0	1	0	0	0	14	0	11	306	0
7:30 AM	**1**	**10**	**134**	**0**	**0**	**0**	**161**	**18**	**0**	**1**	**0**	**1**	**0**	**14**	**0**	**12**	**352**	0
7:45 AM	**1**	**17**	**161**	**1**	**0**	**0**	**156**	**14**	**0**	**1**	**0**	**0**	**0**	**13**	**1**	**8**	**373**	1,329
8:00 AM	**1**	**20**	**117**	**1**	**0**	**0**	**146**	**19**	**0**	**1**	**0**	**0**	**0**	**13**	**0**	**11**	**329**	1,360
8:15 AM	**3**	**17**	**113**	**1**	**0**	**0**	**164**	**23**	**0**	**0**	**0**	**0**	**0**	**9**	**0**	**14**	**344**	**1,398**
8:30 AM	2	16	127	1	1	0	151	14	0	0	1	0	0	18	0	11	342	1,388
8:45 AM	7	17	92	0	0	0	119	15	0	0	0	0	0	9	1	6	266	1,281
Count Total	19	122	921	4	1	0	1,230	127	0	4	1	1	0	94	2	84	2,610	0
Peak Hour All	**6**	**64**	**525**	**3**	**0**	**0**	**627**	**74**	**0**	**3**	**0**	**1**	**0**	**49**	**1**	**45**	**1,398**	**0**
Peak Hour HV	**0**	**0**	**17**	**0**	**0**	**0**	**26**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**45**	**0**
Peak Hour HV%	**0%**	**0%**	**3%**	**0%**	**-**	**-**	**4%**	**0%**	**-**	**67%**	**-**	**0%**	**-**	**0%**	**0%**	**0%**	**3%**	**0**

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

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	5	8	0	0	*13*	0	0	0	0	*0*	0	3	1	4	*8*
7:15 AM	1	4	1	0	*6*	0	1	0	0	*1*	0	2	0	2	*4*
7:30 AM	**4**	**7**	**1**	**0**	***12***	**0**	**0**	**0**	**0**	***0***	**0**	**2**	**0**	**2**	*4*
7:45 AM	**4**	**5**	**0**	**0**	***9***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**3**	*3*
8:00 AM	**6**	**9**	**1**	**0**	***16***	**0**	**0**	**0**	**0**	***0***	**0**	**3**	**2**	**5**	*10*
8:15 AM	**3**	**5**	**0**	**0**	***8***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**1**	**1**	***2***
8:30 AM	4	7	0	0	*11*	0	0	0	0	*0*	0	0	1	0	*1*
8:45 AM	4	6	0	0	*10*	0	0	0	0	*0*	0	0	1	7	*8*
Count Total	31	51	3	0	*85*	0	1	0	0	*1*	0	10	6	24	*40*
Peak Hour	**17**	**26**	**2**	**0**	***45***	**0**	**0**	**0**	**0**	***0***	**0**	**5**	**3**	**11**	***19***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Reservation Rd Eastbound				Reservation Rd Westbound				Driveway Northbound				Shopping Center Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	5	0	0	0	7	1	0	0	0	0	0	0	0	0	13	0
7:15 AM	0	0	1	0	0	0	4	0	0	1	0	0	0	0	0	0	6	0
7:30 AM	**0**	**0**	**4**	**0**	**0**	**0**	**7**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**12**	0
7:45 AM	**0**	**0**	**4**	**0**	**0**	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**9**	40
8:00 AM	**0**	**0**	**6**	**0**	**0**	**0**	**9**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**16**	43
8:15 AM	**0**	**0**	**3**	**0**	**0**	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**8**	**45**
8:30 AM	0	0	4	0	0	0	7	0	0	0	0	0	0	0	0	0	11	44
8:45 AM	0	0	4	0	0	0	5	1	0	0	0	0	0	0	0	0	10	45
Count Total	0	0	31	0	0	0	49	2	0	3	0	0	0	0	0	0	85	0
Peak Hour	**0**	**0**	**17**	**0**	**0**	**0**	**26**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**45**	**0**

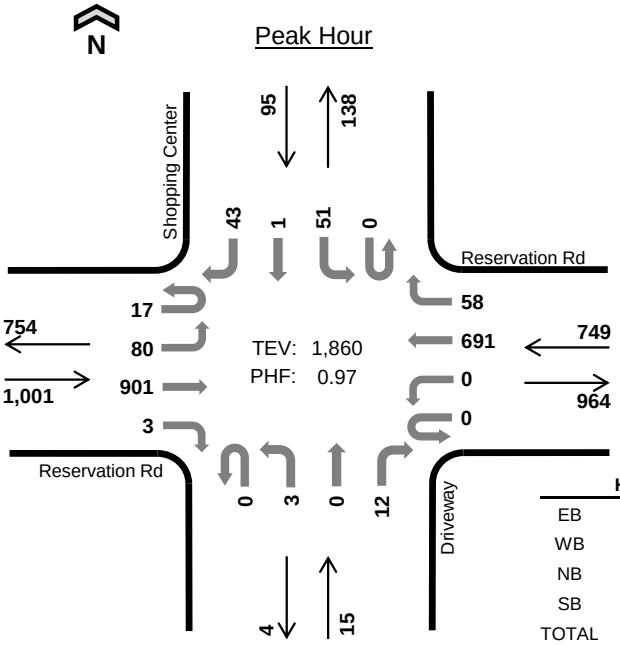
Two-Hour Count Summaries - Bikes

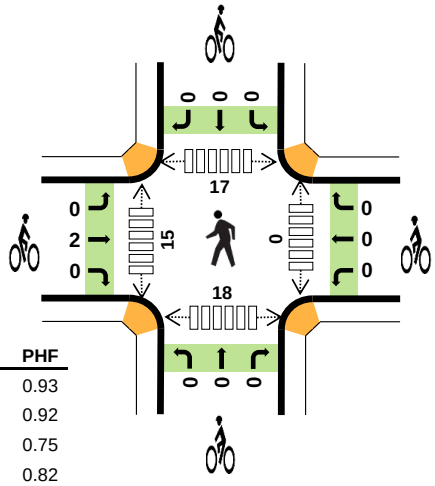
Interval Start	Reservation Rd Eastbound			Reservation Rd Westbound			Driveway Northbound			Shopping Center Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	1	0	0	0	0	0	0	0	1	0
7:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	1
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	1
8:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	1	0	0	0	0	0	0	0	1	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

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

Shopping Center
Reservation Rd

Date: 09-26-2018
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:30 PM to 5:30 PM





	HV %:	PHF
EB	1.3%	0.93
WB	1.5%	0.92
NB	0.0%	0.75
SB	2.1%	0.82
TOTAL	1.4%	0.97

Two-Hour Count Summaries

Interval Start	Reservation Rd Eastbound				Reservation Rd Westbound				Driveway Northbound				Shopping Center Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	8	21	177	3	0	0	168	15	0	0	0	1	0	13	0	6	412	0
4:15 PM	6	24	185	2	0	0	157	15	0	0	1	1	0	15	1	5	412	0
4:30 PM	**7**	**19**	**243**	**1**	**0**	**0**	**160**	**11**	**0**	**0**	**0**	**3**	**0**	**11**	**1**	**9**	**465**	0
4:45 PM	**3**	**25**	**228**	**1**	**0**	**0**	**160**	**21**	**0**	**1**	**0**	**3**	**0**	**12**	**0**	**13**	**467**	1,756
5:00 PM	**3**	**22**	**210**	**0**	**0**	**0**	**179**	**14**	**0**	**1**	**0**	**2**	**0**	**13**	**0**	**7**	**451**	1,795
5:15 PM	**4**	**14**	**220**	**1**	**0**	**0**	**192**	**12**	**0**	**1**	**0**	**4**	**0**	**15**	**0**	**14**	**477**	**1,860**
5:30 PM	2	26	222	0	0	0	158	12	0	1	1	2	0	19	0	11	454	1,849
5:45 PM	7	33	196	0	0	0	198	18	0	1	0	1	0	11	1	10	476	1,858
Count Total	40	184	1,681	8	0	0	1,372	118	0	5	2	17	0	109	3	75	3,614	0
Peak Hour All	**17**	**80**	**901**	**3**	**0**	**0**	**691**	**58**	**0**	**3**	**0**	**12**	**0**	**51**	**1**	**43**	**1,860**	**0**
Peak Hour HV	**0**	**1**	**11**	**1**	**0**	**0**	**11**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**26**	**0**
Peak Hour HV%	**0%**	**1%**	**1%**	**33%**	**-**	**-**	**2%**	**0%**	**-**	**0%**	**-**	**0%**	**-**	**2%**	**0%**	**2%**	**1%**	**0**

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

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	3	6	0	0	*9*	0	0	0	0	*0*	0	4	8	5	*17*
4:15 PM	4	3	1	1	*9*	0	0	0	0	*0*	0	1	2	6	*9*
4:30 PM	**3**	**3**	**0**	**0**	***6***	**1**	**0**	**0**	**0**	***1***	**0**	**9**	**2**	**5**	*16*
4:45 PM	**6**	**5**	**0**	**1**	***12***	**0**	**0**	**0**	**0**	***0***	**0**	**4**	**6**	**5**	*15*
5:00 PM	**2**	**2**	**0**	**1**	***5***	**1**	**0**	**0**	**0**	***1***	**0**	**1**	**4**	**5**	*10*
5:15 PM	**2**	**1**	**0**	**0**	***3***	**0**	**0**	**0**	**0**	***0***	**0**	**1**	**5**	**3**	***9***
5:30 PM	4	1	0	0	*5*	0	0	0	0	*0*	0	3	2	5	*10*
5:45 PM	2	3	0	1	*6*	1	0	0	0	*1*	0	8	4	3	*15*
Count Total	26	24	1	4	*55*	3	0	0	0	*3*	0	31	33	37	*101*
Peak Hour	**13**	**11**	**0**	**2**	***26***	**2**	**0**	**0**	**0**	***2***	**0**	**15**	**17**	**18**	***50***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Reservation Rd Eastbound				Reservation Rd Westbound				Driveway Northbound				Shopping Center Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	3	0	0	0	5	1	0	0	0	0	0	0	0	0	9	0
4:15 PM	0	1	3	0	0	0	3	0	0	0	1	0	0	0	1	0	9	0
4:30 PM	**0**	**1**	**2**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**6**	0
4:45 PM	**0**	**0**	**5**	**1**	**0**	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**12**	36
5:00 PM	**0**	**0**	**2**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**5**	32
5:15 PM	**0**	**0**	**2**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**26**
5:30 PM	0	0	4	0	0	0	1	0	0	0	0	0	0	0	0	0	5	25
5:45 PM	0	0	2	0	0	0	3	0	0	0	0	0	0	0	1	0	6	19
Count Total	0	2	23	1	0	0	23	1	0	0	1	0	0	1	2	1	55	0
Peak Hour	**0**	**1**	**11**	**1**	**0**	**0**	**11**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**26**	**0**

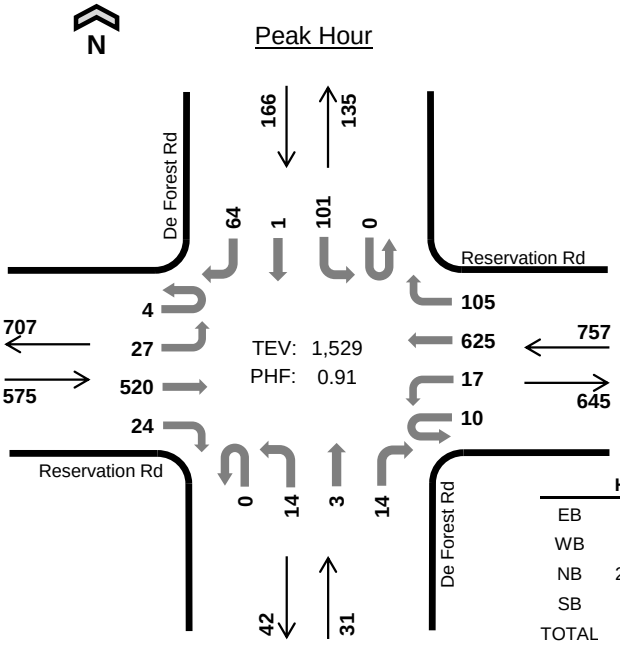
Two-Hour Count Summaries - Bikes

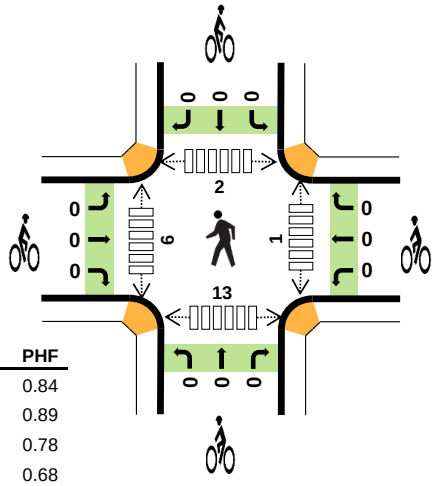
Interval Start	Reservation Rd Eastbound			Reservation Rd Westbound			Driveway Northbound			Shopping Center Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	1
5:00 PM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	2
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:45 PM	0	1	0	0	0	0	0	0	0	0	0	0	1	2
Count Total	0	3	0	0	0	0	0	0	0	0	0	0	3	0
Peak Hour	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**

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

De Forest Rd
Reservation Rd

Date: 09-26-2018
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:30 AM to 8:30 AM





	HV %:	PHF
EB	3.1%	0.84
WB	2.9%	0.89
NB	25.8%	0.78
SB	0.0%	0.68
TOTAL	3.1%	0.91

Two-Hour Count Summaries

Interval Start	Reservation Rd Eastbound				Reservation Rd Westbound				De Forest Rd Northbound				De Forest Rd Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	1	72	8	1	4	177	12	0	3	0	3	0	9	1	22	313	0
7:15 AM	2	4	99	10	2	10	137	13	0	7	2	2	0	27	0	15	330	0
7:30 AM	**2**	**7**	**137**	**4**	**3**	**4**	**152**	**27**	**0**	**2**	**1**	**4**	**0**	**38**	**0**	**23**	**404**	0
7:45 AM	**2**	**9**	**154**	**6**	**6**	**6**	**154**	**47**	**0**	**2**	**1**	**2**	**0**	**19**	**0**	**11**	**419**	1,466
8:00 AM	**0**	**6**	**118**	**6**	**0**	**6**	**149**	**20**	**0**	**7**	**0**	**3**	**0**	**24**	**0**	**16**	**355**	1,508
8:15 AM	**0**	**5**	**111**	**8**	**1**	**1**	**170**	**11**	**0**	**3**	**1**	**5**	**0**	**20**	**1**	**14**	**351**	**1,529**
8:30 AM	2	6	133	7	1	10	138	14	0	10	1	3	0	10	2	13	350	1,475
8:45 AM	2	6	79	9	0	4	116	12	0	4	1	10	0	7	1	8	259	1,315
Count Total	10	44	903	58	14	45	1,193	156	0	38	7	32	0	154	5	122	2,781	0
Peak Hour All	**4**	**27**	**520**	**24**	**10**	**17**	**625**	**105**	**0**	**14**	**3**	**14**	**0**	**101**	**1**	**64**	**1,529**	**0**
Peak Hour HV	**0**	**0**	**14**	**4**	**0**	**3**	**17**	**2**	**0**	**5**	**0**	**3**	**0**	**0**	**0**	**0**	**48**	**0**
Peak Hour HV%	**0%**	**0%**	**3%**	**17%**	**0%**	**18%**	**3%**	**2%**	**-**	**36%**	**0%**	**21%**	**-**	**0%**	**0%**	**0%**	**3%**	**0**

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

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	5	5	2	0	*12*	0	0	0	0	*0*	0	1	0	0	*1*
7:15 AM	1	3	3	0	*7*	0	0	0	1	*1*	1	3	0	10	*14*
7:30 AM	**4**	**5**	**2**	**0**	***11***	**0**	**0**	**0**	**0**	***0***	**0**	**1**	**0**	**3**	*4*
7:45 AM	**4**	**6**	**1**	**0**	***11***	**0**	**0**	**0**	**0**	***0***	**1**	**1**	**0**	**2**	*4*
8:00 AM	**6**	**7**	**4**	**0**	***17***	**0**	**0**	**0**	**0**	***0***	**0**	**3**	**2**	**4**	*9*
8:15 AM	**4**	**4**	**1**	**0**	***9***	**0**	**0**	**0**	**0**	***0***	**0**	**1**	**0**	**4**	***5***
8:30 AM	4	7	3	0	*14*	0	0	0	0	*0*	0	2	1	3	*6*
8:45 AM	4	5	4	1	*14*	0	0	0	0	*0*	0	2	1	5	*8*
Count Total	32	42	20	1	*95*	0	0	0	1	*1*	2	14	4	31	*51*
Peak Hour	**18**	**22**	**8**	**0**	***48***	**0**	**0**	**0**	**0**	***0***	**1**	**6**	**2**	**13**	***22***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Reservation Rd Eastbound				Reservation Rd Westbound				De Forest Rd Northbound				De Forest Rd Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	3	2	0	1	4	0	0	2	0	0	0	0	0	0	12	0
7:15 AM	0	0	1	0	0	1	2	0	0	2	0	1	0	0	0	0	7	0
7:30 AM	**0**	**0**	**3**	**1**	**0**	**1**	**4**	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**11**	0
7:45 AM	**0**	**0**	**2**	**2**	**0**	**1**	**3**	**2**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**11**	41
8:00 AM	**0**	**0**	**6**	**0**	**0**	**1**	**6**	**0**	**0**	**3**	**0**	**1**	**0**	**0**	**0**	**0**	**17**	46
8:15 AM	**0**	**0**	**3**	**1**	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**9**	**48**
8:30 AM	0	0	3	1	0	3	4	0	0	2	0	1	0	0	0	0	14	51
8:45 AM	0	0	3	1	0	1	4	0	0	1	0	3	0	0	1	0	14	54
Count Total	0	0	24	8	0	9	31	2	0	12	0	8	0	0	1	0	95	0
Peak Hour	**0**	**0**	**14**	**4**	**0**	**3**	**17**	**2**	**0**	**5**	**0**	**3**	**0**	**0**	**0**	**0**	**48**	**0**

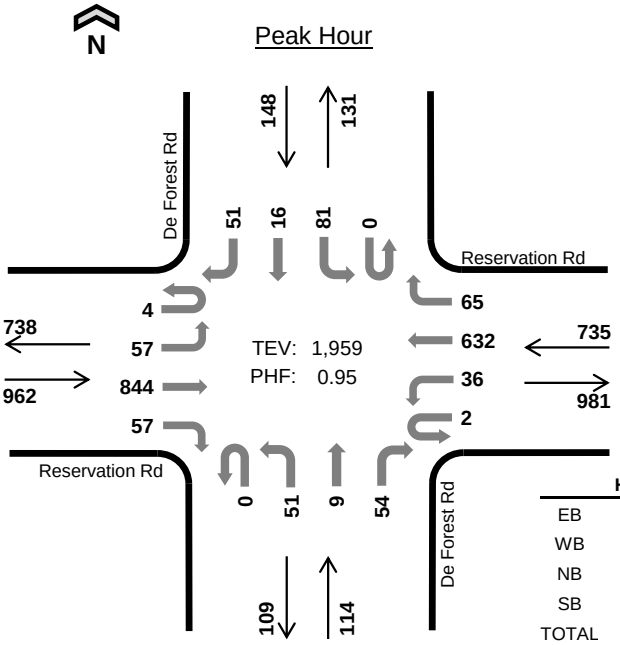
Two-Hour Count Summaries - Bikes

Interval Start	Reservation Rd Eastbound			Reservation Rd Westbound			De Forest Rd Northbound			De Forest Rd Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	1	1	0
7:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	1
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	1
8:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	0	0	0	0	0	1	1	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

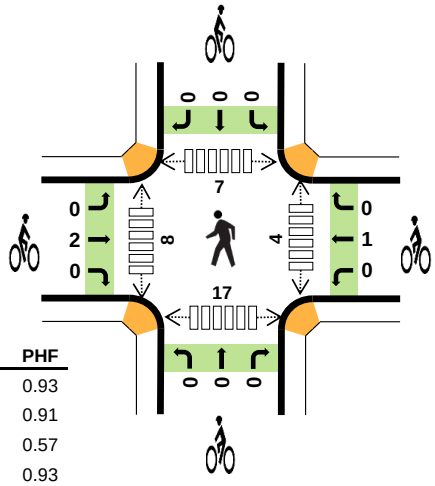
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

De Forest Rd
Reservation Rd

Date: 09-26-2018
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:30 PM to 5:30 PM



	HV %:	PHF
EB	1.1%	0.93
WB	1.9%	0.91
NB	7.9%	0.57
SB	1.4%	0.93
TOTAL	1.8%	0.95



Two-Hour Count Summaries

Interval Start	Reservation Rd Eastbound				Reservation Rd Westbound				De Forest Rd Northbound				De Forest Rd Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	9	174	14	0	5	154	12	0	13	1	13	0	11	0	8	414	0
4:15 PM	4	12	165	15	1	12	146	8	0	20	2	13	0	8	2	6	414	0
4:30 PM	**1**	**10**	**230**	**19**	**0**	**13**	**139**	**13**	**0**	**12**	**0**	**7**	**0**	**18**	**5**	**16**	**483**	0
4:45 PM	**0**	**16**	**209**	**20**	**1**	**11**	**154**	**16**	**0**	**20**	**6**	**24**	**0**	**19**	**4**	**14**	**514**	1,825
5:00 PM	**1**	**15**	**199**	**7**	**0**	**5**	**163**	**19**	**0**	**13**	**1**	**11**	**0**	**20**	**4**	**8**	**466**	1,877
5:15 PM	**2**	**16**	**206**	**11**	**1**	**7**	**176**	**17**	**0**	**6**	**2**	**12**	**0**	**24**	**3**	**13**	**496**	**1,959**
5:30 PM	1	17	222	4	1	6	165	15	0	8	1	10	0	16	3	8	477	1,953
5:45 PM	1	17	187	3	2	3	183	16	0	10	0	5	0	10	2	13	452	1,891
Count Total	10	112	1,592	93	6	62	1,280	116	0	102	13	95	0	126	23	86	3,716	0
Peak Hour All	**4**	**57**	**844**	**57**	**2**	**36**	**632**	**65**	**0**	**51**	**9**	**54**	**0**	**81**	**16**	**51**	**1,959**	**0**
Peak Hour HV	**0**	**0**	**9**	**2**	**0**	**6**	**8**	**0**	**0**	**3**	**1**	**5**	**0**	**1**	**1**	**0**	**36**	**0**
Peak Hour HV%	**0%**	**0%**	**1%**	**4%**	**0%**	**17%**	**1%**	**0%**	**-**	**6%**	**11%**	**9%**	**-**	**1%**	**6%**	**0%**	**2%**	**0**

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

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	3	4	1	1	*9*	0	0	0	0	*0*	0	0	11	3	*14*
4:15 PM	3	3	2	1	*9*	0	0	0	0	*0*	0	1	3	3	*7*
4:30 PM	**3**	**5**	**1**	**0**	***9***	**1**	**0**	**0**	**0**	***1***	**0**	**1**	**1**	**3**	*5*
4:45 PM	**5**	**6**	**6**	**1**	***18***	**0**	**0**	**0**	**0**	***0***	**4**	**0**	**2**	**2**	*8*
5:00 PM	**2**	**2**	**0**	**1**	***5***	**1**	**1**	**0**	**0**	***2***	**0**	**7**	**4**	**8**	*19*
5:15 PM	**1**	**1**	**2**	**0**	***4***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**4**	***4***
5:30 PM	4	1	2	0	*7*	0	0	0	0	*0*	2	1	2	3	*8*
5:45 PM	2	3	2	1	*8*	1	0	0	0	*1*	1	1	2	2	*6*
Count Total	23	25	16	5	*69*	3	1	0	0	*4*	7	11	25	28	*71*
Peak Hour	**11**	**14**	**9**	**2**	***36***	**2**	**1**	**0**	**0**	***3***	**4**	**8**	**7**	**17**	***36***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Reservation Rd Eastbound				Reservation Rd Westbound				De Forest Rd Northbound				De Forest Rd Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	1	2	0	0	1	3	0	0	0	0	1	0	0	0	1	9	0
4:15 PM	0	0	2	1	0	1	2	0	0	1	0	1	0	1	0	0	9	0
4:30 PM	**0**	**0**	**3**	**0**	**0**	**2**	**3**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**9**	0
4:45 PM	**0**	**0**	**4**	**1**	**0**	**2**	**4**	**0**	**0**	**2**	**1**	**3**	**0**	**0**	**1**	**0**	**18**	45
5:00 PM	**0**	**0**	**1**	**1**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**5**	41
5:15 PM	**0**	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**4**	**36**
5:30 PM	0	0	2	2	0	1	0	0	0	1	0	1	0	0	0	0	7	34
5:45 PM	0	0	1	1	0	1	2	0	0	2	0	0	0	0	1	0	8	24
Count Total	0	1	16	6	0	10	15	0	0	7	1	8	0	2	2	1	69	0
Peak Hour	**0**	**0**	**9**	**2**	**0**	**6**	**8**	**0**	**0**	**3**	**1**	**5**	**0**	**1**	**1**	**0**	**36**	**0**

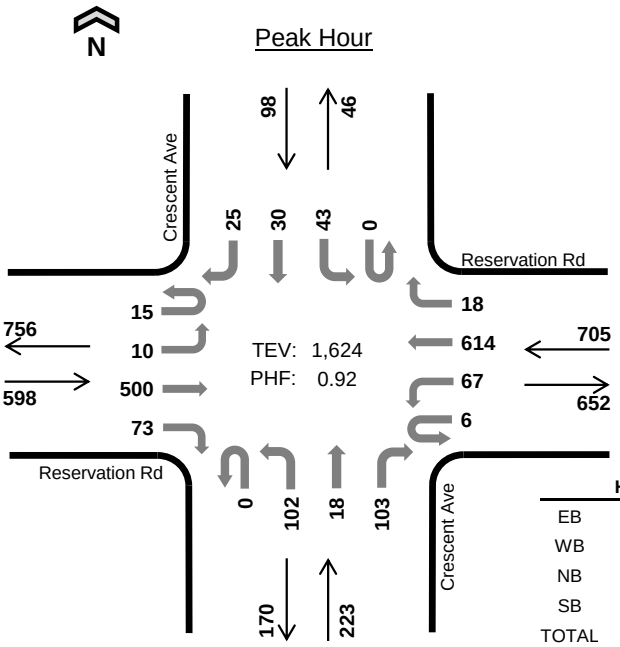
Two-Hour Count Summaries - Bikes

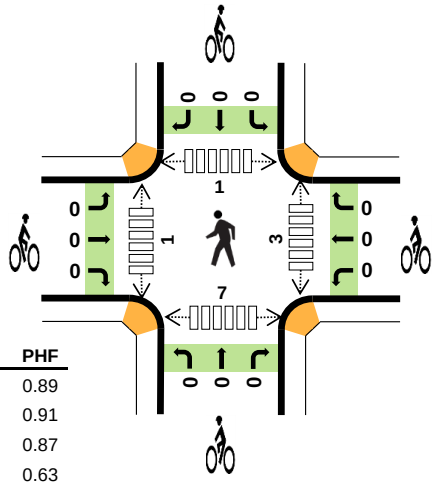
Interval Start	Reservation Rd Eastbound			Reservation Rd Westbound			De Forest Rd Northbound			De Forest Rd Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	1
5:00 PM	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	3
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2
5:45 PM	0	1	0	0	0	0	0	0	0	0	0	0	1	3
Count Total	0	3	0	0	1	0	0	0	0	0	0	0	4	0
Peak Hour	**0**	**2**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**

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

Crescent Ave
Reservation Rd

Date: 10-02-2018
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:30 AM to 8:30 AM





	HV %:	PHF
EB	3.0%	0.89
WB	3.3%	0.91
NB	0.9%	0.87
SB	4.1%	0.63
TOTAL	2.9%	0.92

Two-Hour Count Summaries

Interval Start	Reservation Rd Eastbound				Reservation Rd Westbound				Crescent Ave Northbound				Crescent Ave Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	1	1	86	7	1	10	140	1	0	9	1	17	0	10	5	19	308	0
7:15 AM	2	4	104	18	0	10	132	1	0	14	3	17	0	15	8	9	337	0
7:30 AM	**1**	**1**	**141**	**20**	**0**	**12**	**155**	**4**	**0**	**21**	**5**	**23**	**0**	**21**	**13**	**5**	**422**	0
7:45 AM	**4**	**1**	**144**	**19**	**4**	**14**	**172**	**4**	**0**	**27**	**5**	**28**	**0**	**6**	**6**	**5**	**439**	1,506
8:00 AM	**4**	**3**	**118**	**21**	**0**	**26**	**145**	**8**	**0**	**21**	**2**	**27**	**0**	**9**	**6**	**8**	**398**	1,596
8:15 AM	**6**	**5**	**97**	**13**	**2**	**15**	**142**	**2**	**0**	**33**	**6**	**25**	**0**	**7**	**5**	**7**	**365**	**1,624**
8:30 AM	3	5	98	9	2	12	134	5	0	21	1	16	0	10	2	7	325	1,527
8:45 AM	1	4	98	15	1	3	144	3	0	14	2	22	0	7	2	7	323	1,411
Count Total	22	24	886	122	10	102	1,164	28	0	160	25	175	0	85	47	67	2,917	0
Peak Hour All	**15**	**10**	**500**	**73**	**6**	**67**	**614**	**18**	**0**	**102**	**18**	**103**	**0**	**43**	**30**	**25**	**1,624**	**0**
Peak Hour HV	**1**	**0**	**13**	**4**	**0**	**1**	**21**	**1**	**0**	**2**	**0**	**0**	**0**	**3**	**1**	**0**	**47**	**0**
Peak Hour HV%	**7%**	**0%**	**3%**	**5%**	**0%**	**1%**	**3%**	**6%**	**-**	**2%**	**0%**	**0%**	**-**	**7%**	**3%**	**0%**	**3%**	**0**

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

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	3	2	0	0	*5*	0	0	1	0	*1*	0	8	3	2	*13*
7:15 AM	2	7	1	0	*10*	0	0	0	0	*0*	0	0	0	0	*0*
7:30 AM	**7**	**1**	**1**	**2**	***11***	**0**	**0**	**0**	**0**	***0***	**2**	**0**	**1**	**2**	*5*
7:45 AM	**3**	**9**	**1**	**0**	***13***	**0**	**0**	**0**	**0**	***0***	**0**	**1**	**0**	**1**	*2*
8:00 AM	**5**	**7**	**0**	**1**	***13***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**1**	*1*
8:15 AM	**3**	**6**	**0**	**1**	***10***	**0**	**0**	**0**	**0**	***0***	**1**	**0**	**0**	**3**	***4***
8:30 AM	3	4	1	0	*8*	0	0	0	0	*0*	1	0	0	2	*3*
8:45 AM	6	4	1	1	*12*	0	0	1	0	*1*	0	0	1	2	*3*
Count Total	32	40	5	5	*82*	0	0	2	0	*2*	4	9	5	13	*31*
Peak Hour	**18**	**23**	**2**	**4**	***47***	**0**	**0**	**0**	**0**	***0***	**3**	**1**	**1**	**7**	***12***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Reservation Rd Eastbound				Reservation Rd Westbound				Crescent Ave Northbound				Crescent Ave Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	3	0	0	0	2	0	0	0	0	0	0	0	0	0	5	0
7:15 AM	0	0	2	0	0	0	7	0	0	1	0	0	0	0	0	0	10	0
7:30 AM	**0**	**0**	**4**	**3**	**0**	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**1**	**0**	**11**	0
7:45 AM	**0**	**0**	**2**	**1**	**0**	**0**	**8**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**13**	39
8:00 AM	**1**	**0**	**4**	**0**	**0**	**1**	**6**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**13**	47
8:15 AM	**0**	**0**	**3**	**0**	**0**	**0**	**6**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**10**	**47**
8:30 AM	0	0	3	0	0	1	3	0	0	0	0	1	0	0	0	0	8	44
8:45 AM	0	0	5	1	0	0	4	0	0	1	0	0	0	1	0	0	12	43
Count Total	1	0	26	5	0	2	37	1	0	4	0	1	0	4	1	0	82	0
Peak Hour	**1**	**0**	**13**	**4**	**0**	**1**	**21**	**1**	**0**	**2**	**0**	**0**	**0**	**3**	**1**	**0**	**47**	**0**

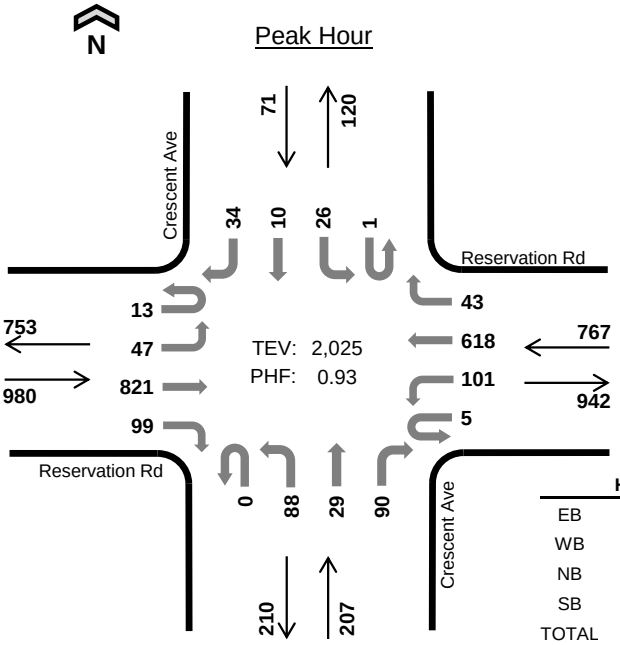
Two-Hour Count Summaries - Bikes

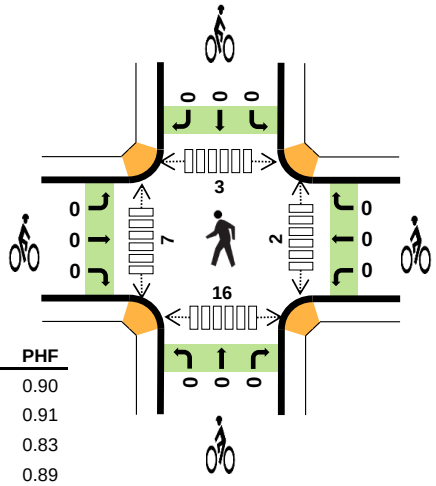
Interval Start	Reservation Rd Eastbound			Reservation Rd Westbound			Crescent Ave Northbound			Crescent Ave Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	1	0	0	0	0	0	1	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	1
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
8:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	1	0	0	0	0	0	1	1
Count Total	0	0	0	0	0	0	2	0	0	0	0	0	2	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

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

Crescent Ave
Reservation Rd

Date: 10-02-2018
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:30 PM to 5:30 PM





	HV %:	PHF
EB	1.5%	0.90
WB	1.2%	0.91
NB	1.4%	0.83
SB	1.4%	0.89
TOTAL	1.4%	0.93

Two-Hour Count Summaries

Interval Start	Reservation Rd Eastbound				Reservation Rd Westbound				Crescent Ave Northbound				Crescent Ave Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	6	9	170	17	0	12	155	7	0	19	5	16	0	6	2	8	432	0
4:15 PM	2	9	230	20	0	19	148	5	0	15	7	20	0	7	2	4	488	0
4:30 PM	**4**	**10**	**181**	**22**	**1**	**32**	**160**	**17**	**0**	**19**	**7**	**21**	**0**	**5**	**4**	**8**	**491**	0
4:45 PM	**4**	**12**	**187**	**22**	**0**	**25**	**141**	**7**	**0**	**21**	**3**	**20**	**1**	**5**	**2**	**11**	**461**	1,872
5:00 PM	**3**	**13**	**233**	**24**	**1**	**18**	**143**	**11**	**0**	**22**	**10**	**30**	**0**	**10**	**2**	**8**	**528**	1,968
5:15 PM	**2**	**12**	**220**	**31**	**3**	**26**	**174**	**8**	**0**	**26**	**9**	**19**	**0**	**6**	**2**	**7**	**545**	**2,025**
5:30 PM	3	16	177	23	1	26	169	5	0	20	4	15	0	5	5	3	472	2,006
5:45 PM	2	12	182	23	1	22	137	15	0	15	4	14	0	6	2	10	445	1,990
Count Total	26	93	1,580	182	7	180	1,227	75	0	157	49	155	1	50	21	59	3,862	0
Peak Hour All	**13**	**47**	**821**	**99**	**5**	**101**	**618**	**43**	**0**	**88**	**29**	**90**	**1**	**26**	**10**	**34**	**2,025**	**0**
Peak Hour HV	**1**	**0**	**12**	**2**	**0**	**0**	**9**	**0**	**0**	**2**	**0**	**1**	**0**	**0**	**0**	**1**	**28**	**0**
Peak Hour HV%	**8%**	**0%**	**1%**	**2%**	**0%**	**0%**	**1%**	**0%**	**-**	**2%**	**0%**	**1%**	**0%**	**0%**	**0%**	**3%**	**1%**	**0**

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

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	5	2	0	0	*7*	0	0	0	0	*0*	8	3	1	0	*12*
4:15 PM	5	2	0	0	*7*	0	0	0	0	*0*	3	2	3	2	*10*
4:30 PM	**3**	**2**	**1**	**0**	***6***	**0**	**0**	**0**	**0**	***0***	**0**	**4**	**3**	**5**	*12*
4:45 PM	**4**	**3**	**1**	**1**	***9***	**0**	**0**	**0**	**0**	***0***	**0**	**2**	**0**	**4**	*6*
5:00 PM	**5**	**1**	**0**	**0**	***6***	**0**	**0**	**0**	**0**	***0***	**0**	**1**	**0**	**7**	*8*
5:15 PM	**3**	**3**	**1**	**0**	***7***	**0**	**0**	**0**	**0**	***0***	**2**	**0**	**0**	**0**	***2***
5:30 PM	1	0	0	0	*1*	0	0	0	0	*0*	2	2	0	0	*4*
5:45 PM	2	2	0	0	*4*	0	0	0	0	*0*	2	2	0	0	*4*
Count Total	28	15	3	1	*47*	0	0	0	0	*0*	17	16	7	18	*58*
Peak Hour	**15**	**9**	**3**	**1**	***28***	**0**	**0**	**0**	**0**	***0***	**2**	**7**	**3**	**16**	***28***

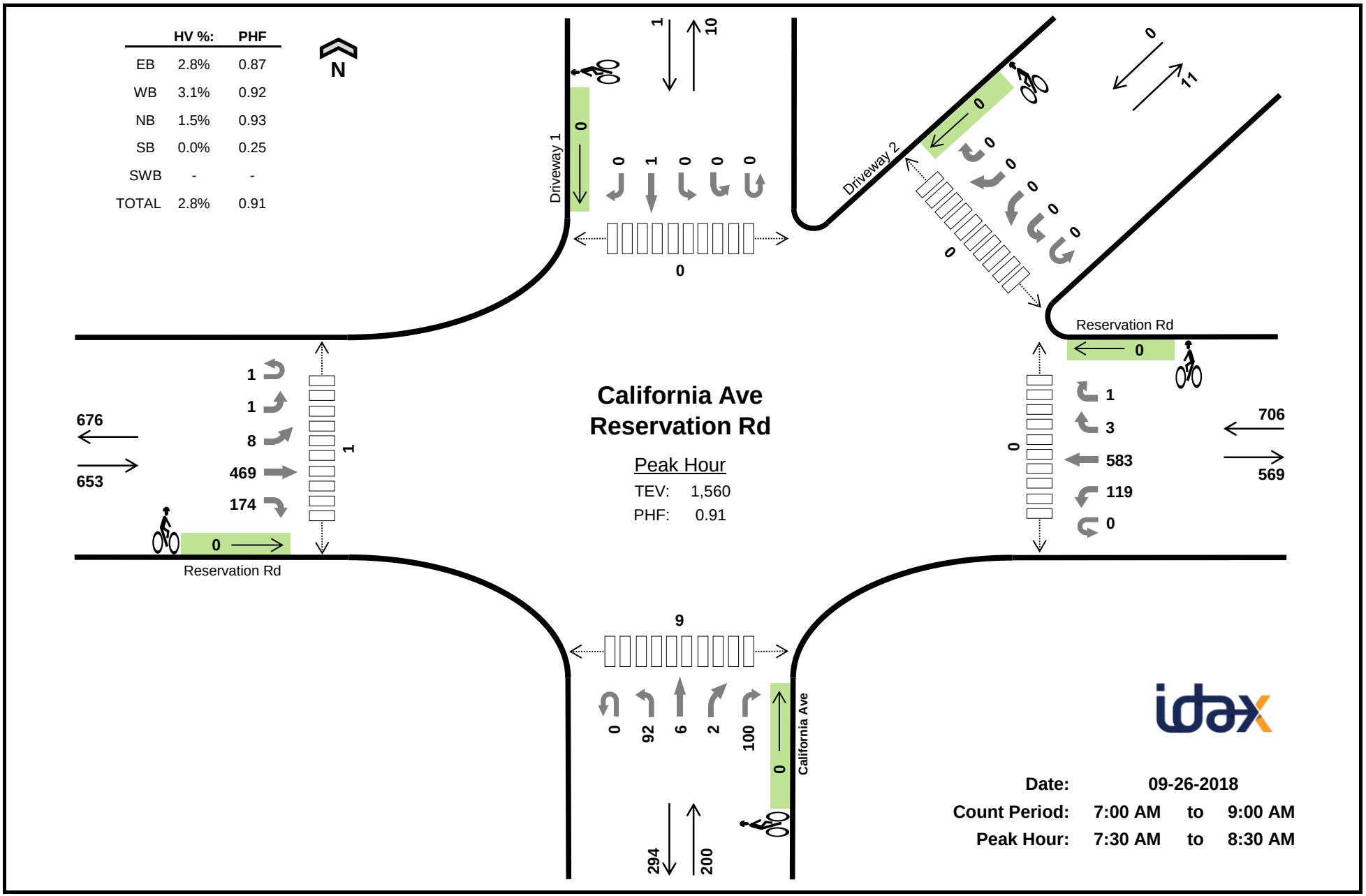
Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Reservation Rd Eastbound				Reservation Rd Westbound				Crescent Ave Northbound				Crescent Ave Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	5	0	0	0	2	0	0	0	0	0	0	0	0	0	7	0
4:15 PM	0	0	4	1	0	0	2	0	0	0	0	0	0	0	0	0	7	0
4:30 PM	**1**	**0**	**1**	**1**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**6**	0
4:45 PM	**0**	**0**	**3**	**1**	**0**	**0**	**3**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**9**	29
5:00 PM	**0**	**0**	**5**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**6**	28
5:15 PM	**0**	**0**	**3**	**0**	**0**	**0**	**3**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**7**	**28**
5:30 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	23
5:45 PM	0	0	1	1	0	0	2	0	0	0	0	0	0	0	0	0	4	18
Count Total	1	0	23	4	0	0	15	0	0	2	0	1	0	0	0	1	47	0
Peak Hour	**1**	**0**	**12**	**2**	**0**	**0**	**9**	**0**	**0**	**2**	**0**	**1**	**0**	**0**	**0**	**1**	**28**	**0**

Two-Hour Count Summaries - Bikes

Interval Start	Reservation Rd Eastbound			Reservation Rd Westbound			Crescent Ave Northbound			Crescent Ave Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

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


HV %: PHF
EB 2.8% 0.87
WB 3.1% 0.92
NB 1.5% 0.93
SB 0.0% 0.25
SWB - -
TOTAL 2.8% 0.91
N
California Ave
Reservation Rd
Peak Hour
TEV: 1,560
PHF: 0.91
Driveway 1
Driveway 2
Reservation Rd
Reservation Rd
California Ave
676
653
706
569
Date: 09-26-2018
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:30 AM to 8:30 AM

Two-Hour Count Summaries

Interval Start		Reservation Rd Eastbound					Reservation Rd Westbound					California Ave Northbound					Driveway 1 Southbound					Driveway 2 Southwestbound					15-min Total	Rolling One Hour
		UT	LT	BL	TH	RT	UT	LT	TH	RT	HR	UT	LT	TH	BR	RT	UT	HL	LT	TH	RT	UT	HL	BL	BR	HR		
7:00 AM		0	0	0	83	17	0	24	145	0	1	0	6	1	2	15	0	0	1	0	0	0	0	0	0	0	295	0
7:15 AM		0	0	2	106	31	0	24	124	2	3	0	11	0	0	17	0	0	0	0	0	0	0	0	0	0	320	0
7:30 AM		**0**	**1**	**1**	**120**	**66**	**0**	**39**	**147**	**0**	**1**	**0**	**26**	**2**	**0**	**25**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**428**	0
7:45 AM		**1**	**0**	**4**	**127**	**49**	**0**	**40**	**151**	**1**	**0**	**0**	**26**	**1**	**1**	**26**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**427**	1,470
8:00 AM		**0**	**0**	**2**	**122**	**32**	**0**	**24**	**144**	**2**	**0**	**0**	**20**	**2**	**1**	**27**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**377**	1,552
8:15 AM		**0**	**0**	**1**	**100**	**27**	**0**	**16**	**141**	**0**	**0**	**0**	**20**	**1**	**0**	**22**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**328**	**1,560**
8:30 AM		0	0	0	138	20	0	21	129	0	2	0	14	0	0	15	0	0	0	0	0	0	0	0	0	0	339	1,471
8:45 AM		0	0	2	73	24	0	8	104	0	0	0	10	0	0	12	0	0	0	0	0	0	0	0	1	0	234	1,278
Count Total		1	1	12	869	266	0	196	1,085	5	7	0	133	7	4	159	0	0	1	1	0	0	0	0	1	0	2,748	0
Peak Hour	**All**	**1**	**1**	**8**	**469**	**174**	**0**	**119**	**583**	**3**	**1**	**0**	**92**	**6**	**2**	**100**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1,560**	**0**
	HV	**0**	**0**	**0**	**15**	**3**	**0**	**3**	**19**	**0**	**0**	**0**	**1**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**43**	**0**
	HV%	**0%**	**0%**	**0%**	**3%**	**2%**	**-**	**3%**	**3%**	**0%**	**0%**	**-**	**1%**	**0%**	**0%**	**2%**	**-**	**-**	**-**	**0%**	**-**	**-**	**-**	**-**	**-**	**-**	**3%**	**0**

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

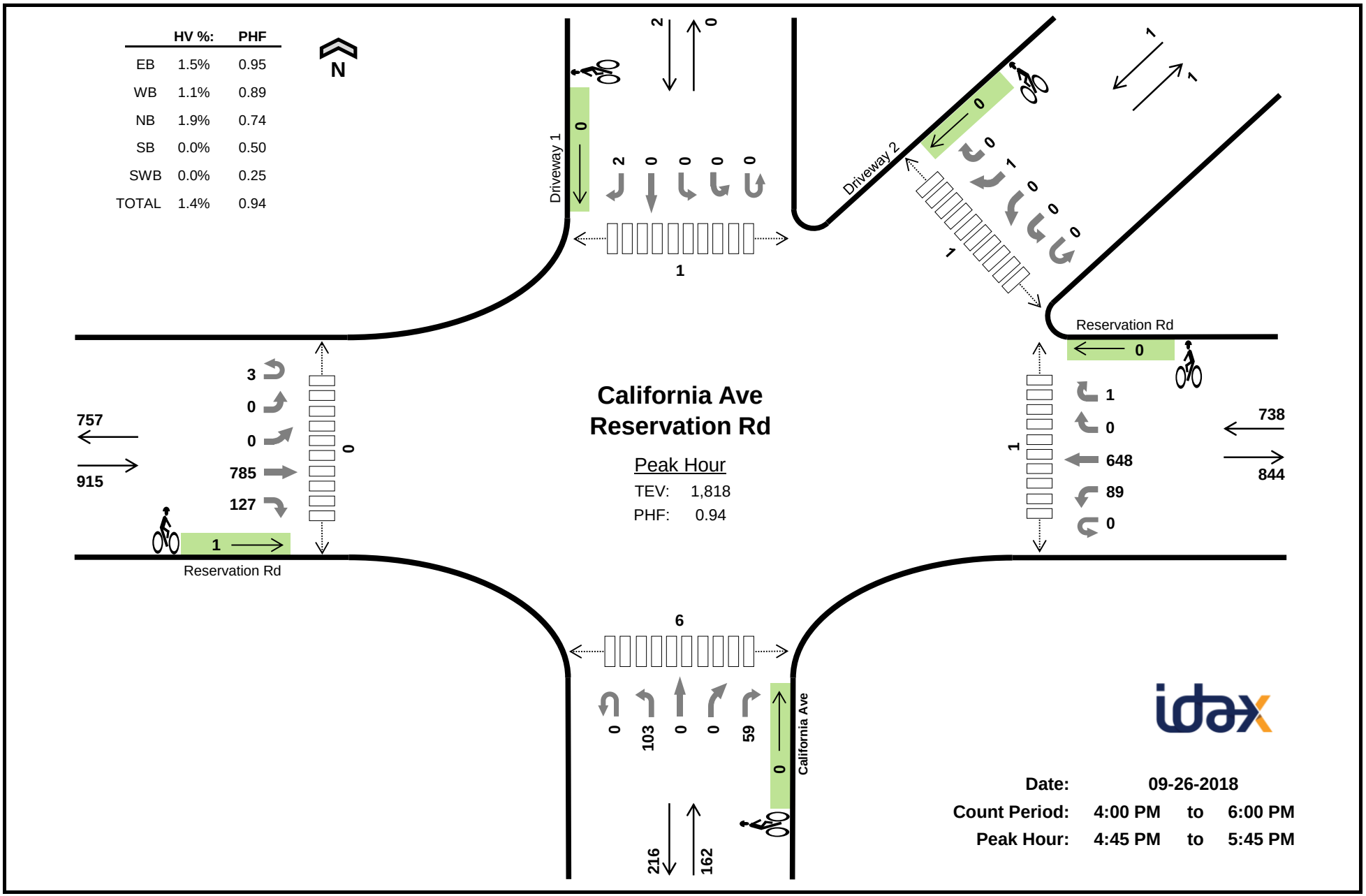
Interval Start	Heavy Vehicle Totals						Bicycles						Pedestrians (Crossing Leg)					
	EB	WB	NB	SB	SWB	Total	EB	WB	NB	SB	SWB	Total	East	West	North	South	Northeast	Total
7:00 AM	3	5	0	0	0	*8*	0	0	0	0	0	*0*	0	0	0	1	0	*1*
7:15 AM	2	2	0	0	0	*4*	0	0	0	0	0	*0*	0	0	0	0	0	*0*
7:30 AM	**4**	**5**	**3**	**0**	**0**	***12***	**0**	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**3**	**0**	***3***
7:45 AM	**3**	**6**	**0**	**0**	**0**	***9***	**0**	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**2**	**0**	***2***
8:00 AM	**6**	**6**	**0**	**0**	**0**	***12***	**0**	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**3**	**0**	***3***
8:15 AM	**5**	**5**	**0**	**0**	**0**	***10***	**0**	**0**	**0**	**0**	**0**	***0***	**0**	**1**	**0**	**1**	**0**	***2***
8:30 AM	2	4	1	0	0	*7*	0	0	0	0	0	*0*	0	0	0	0	0	*0*
8:45 AM	3	3	0	0	0	*6*	0	0	0	0	0	*0*	0	0	0	0	0	*0*
Count Total	28	36	4	0	0	*68*	0	0	0	0	0	*0*	0	1	0	10	0	*11*
Peak Hr	**18**	**22**	**3**	**0**	**0**	***43***	**0**	**0**	**0**	**0**	**0**	***0***	**0**	**1**	**0**	**9**	**0**	*10*

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Reservation Rd					Reservation Rd					California Ave					Driveway 1					Driveway 2					15-min Total	Rolling One Hour
	Eastbound					Westbound					Northbound					Southbound					Southwestbound						
	UT	LT	BL	TH	RT	UT	LT	TH	RT	HR	UT	LT	TH	BR	RT	UT	HL	LT	TH	RT	UT	HL	BL	BR	HR		
7:00 AM	0	0	0	3	0	0	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0
7:15 AM	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0
7:30 AM	**0**	**0**	**0**	**3**	**1**	**0**	**2**	**3**	**0**	**0**	**0**	**1**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**12**	0
7:45 AM	**0**	**0**	**0**	**2**	**1**	**0**	**1**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**9**	33
8:00 AM	**0**	**0**	**0**	**5**	**1**	**0**	**0**	**6**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**12**	37
8:15 AM	**0**	**0**	**0**	**5**	**0**	**0**	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**10**	**43**
8:30 AM	0	0	0	2	0	0	0	4	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	7	38
8:45 AM	0	0	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	35
Count Total	0	0	0	25	3	0	5	31	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	68	0
Peak Hour	**0**	**0**	**0**	**15**	**3**	**0**	**3**	**19**	**0**	**0**	**0**	**1**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	43	**0**

Two-Hour Count Summaries - Bikes

Interval Start	Reservation Rd					Reservation Rd					California Ave					Driveway 1					Driveway 2					15-min Total	Rolling One Hour
	Eastbound					Westbound					Northbound					Southbound					Southwestbound						
	UT	LT	BL	TH	RT	UT	LT	TH	RT	HR	UT	LT	TH	BR	RT	UT	HL	LT	TH	RT	UT	HL	BL	BR	HR		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
8:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0	**0**


HV %: PHF
EB 1.5% 0.95
WB 1.1% 0.89
NB 1.9% 0.74
SB 0.0% 0.50
SWB 0.0% 0.25
TOTAL 1.4% 0.94
N
Driveway 1
Driveway 2
Reservation Rd
California Ave
Reservation Rd
California Ave
Reservation Rd
Peak Hour
TEV: 1,818
PHF: 0.94
757
915
3
0
0
785
127
1
738
844
1
0
648
89
0
216
162
0
103
0
0
59
Date: 09-26-2018
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:45 PM to 5:45 PM

Two-Hour Count Summaries

Interval Start		Reservation Rd Eastbound					Reservation Rd Westbound					California Ave Northbound					Driveway 1 Southbound					Driveway 2 Southwestbound					15-min Total	Rolling One Hour
		UT	LT	BL	TH	RT	UT	LT	TH	RT	HR	UT	LT	TH	BR	RT	UT	HL	LT	TH	RT	UT	HL	BL	BR	HR		
4:00 PM		0	0	1	145	38	0	11	126	0	0	0	27	0	1	17	0	0	1	2	1	0	0	0	0	0	370	0
4:15 PM		0	0	0	151	25	0	18	116	0	0	0	20	0	0	16	0	0	2	2	0	0	0	0	0	0	350	0
4:30 PM		0	0	0	168	31	0	22	152	0	1	0	33	0	0	28	0	0	0	3	0	0	0	0	0	0	438	0
4:45 PM		**1**	**0**	**0**	**203**	**34**	**0**	**16**	**147**	**0**	**1**	**0**	**22**	**0**	**0**	**15**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**440**	1,598
5:00 PM		**1**	**0**	**0**	**194**	**26**	**0**	**13**	**147**	**0**	**0**	**0**	**36**	**0**	**0**	**19**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**437**	1,665
5:15 PM		**0**	**0**	**0**	**187**	**27**	**0**	**32**	**176**	**0**	**0**	**0**	**23**	**0**	**0**	**12**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**458**	1,773
5:30 PM		**1**	**0**	**0**	**201**	**40**	**0**	**28**	**178**	**0**	**0**	**0**	**22**	**0**	**0**	**13**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**483**	**1,818**
5:45 PM		0	0	0	139	41	1	22	160	0	0	0	39	0	0	19	0	0	0	0	0	0	0	0	0	0	421	1,799
Count Total		3	0	1	1,388	262	1	162	1,202	0	2	0	222	0	1	139	0	0	3	7	3	0	0	0	1	0	3,397	0
Peak Hour	**All**	**3**	**0**	**0**	**785**	**127**	**0**	**89**	**648**	**0**	**1**	**0**	**103**	**0**	**0**	**59**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**1**	**0**	**1,818**	**0**
	HV	**0**	**0**	**0**	**13**	**1**	**0**	**0**	**8**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**25**	**0**
	HV%	**0%**	**-**	**-**	**2%**	**1%**	**-**	**0%**	**1%**	**-**	**0%**	**-**	**3%**	**-**	**-**	**0%**	**-**	**-**	**-**	**-**	**0%**	**-**	**-**	**-**	**0%**	**-**	**1%**	**0**

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

Interval Start	Heavy Vehicle Totals						Bicycles						Pedestrians (Crossing Leg)					
	EB	WB	NB	SB	SWB	Total	EB	WB	NB	SB	SWB	Total	East	West	North	South	Northeast	Total
4:00 PM	4	3	1	1	0	*9*	0	0	0	0	0	*0*	0	0	0	2	0	*2*
4:15 PM	3	3	2	0	0	*8*	0	0	0	0	0	*0*	0	0	0	0	0	*0*
4:30 PM	2	3	0	0	0	*5*	1	0	0	0	0	*1*	0	0	0	1	0	*1*
4:45 PM	**4**	**4**	**1**	**0**	**0**	***9***	**1**	**0**	**0**	**0**	**0**	***1***	**0**	**0**	**0**	**2**	**0**	***2***
5:00 PM	**5**	**3**	**0**	**0**	**0**	***8***	**0**	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**2**	**0**	***2***
5:15 PM	**2**	**0**	**1**	**0**	**0**	***3***	**0**	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**2**	**0**	***2***
5:30 PM	**3**	**1**	**1**	**0**	**0**	***5***	**0**	**0**	**0**	**0**	**0**	***0***	**1**	**0**	**1**	**0**	**1**	***3***
5:45 PM	3	3	0	0	0	*6*	0	0	0	0	0	*0*	0	0	0	3	0	*3*
Count Total	26	20	6	1	0	*53*	2	0	0	0	0	*2*	1	0	1	12	1	*15*
Peak Hr	**14**	**8**	**3**	**0**	**0**	***25***	**1**	**0**	**0**	**0**	**0**	***1***	**1**	**0**	**1**	**6**	**1**	*9*

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Reservation Rd					Reservation Rd					California Ave					Driveway 1					Driveway 2					15-min Total	Rolling One Hour
	Eastbound					Westbound					Northbound					Southbound					Southwestbound						
	UT	LT	BL	TH	RT	UT	LT	TH	RT	HR	UT	LT	TH	BR	RT	UT	HL	LT	TH	RT	UT	HL	BL	BR	HR		
4:00 PM	0	0	0	4	0	0	1	2	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	9	0
4:15 PM	0	0	0	3	0	0	0	3	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	8	0
4:30 PM	0	0	0	2	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0
4:45 PM	**0**	**0**	**0**	**4**	**0**	**0**	**0**	**4**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**9**	31
5:00 PM	**0**	**0**	**0**	**4**	**1**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**8**	30
5:15 PM	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	25
5:30 PM	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**25**
5:45 PM	0	0	0	2	1	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	22
Count Total	0	0	0	24	2	0	2	18	0	0	0	4	0	0	2	0	0	0	0	1	0	0	0	0	0	53	0
Peak Hour	**0**	**0**	**0**	**13**	**1**	**0**	**0**	**8**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	25	**0**

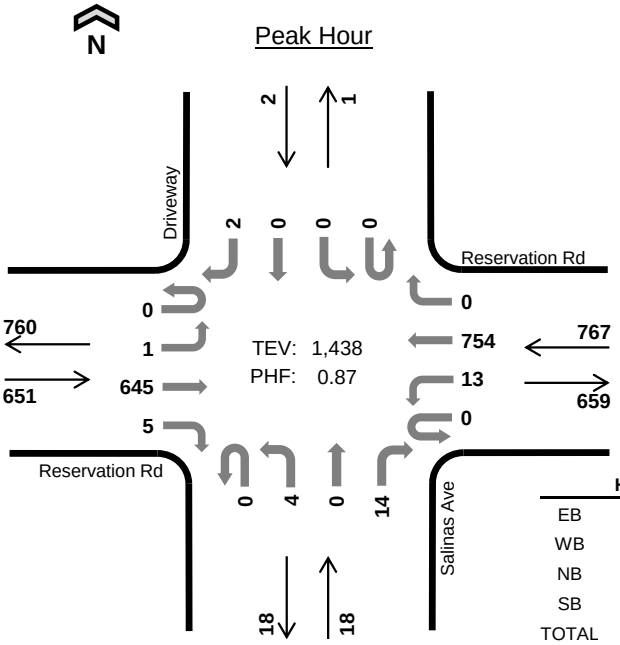
Two-Hour Count Summaries - Bikes

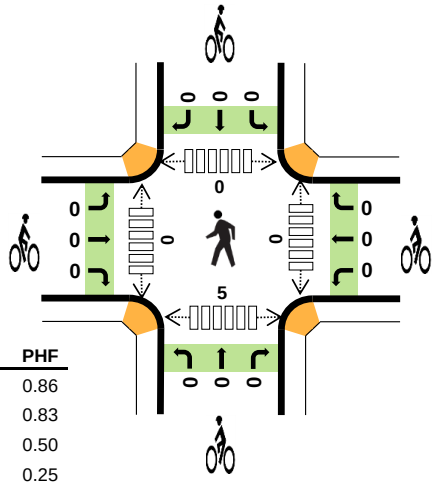
Interval Start	Reservation Rd					Reservation Rd					California Ave					Driveway 1					Driveway 2					15-min Total	Rolling One Hour
	Eastbound					Westbound					Northbound					Southbound					Southwestbound						
	UT	LT	BL	TH	RT	UT	LT	TH	RT	HR	UT	LT	TH	BR	RT	UT	HL	LT	TH	RT	UT	HL	BL	BR	HR		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
4:45 PM	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	2
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	2
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	2
5:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0
Peak Hour	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	1	**0**

Salinas Ave
Reservation Rd

Date: 10-02-2018
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:15 AM to 8:15 AM

Peak Hour





	HV %:	PHF
EB	1.7%	0.86
WB	2.6%	0.83
NB	0.0%	0.50
SB	0.0%	0.25
TOTAL	2.2%	0.87

Two-Hour Count Summaries

Interval Start	Reservation Rd Eastbound				Reservation Rd Westbound				Salinas Ave Northbound				Driveway Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	1	120	2	0	1	149	0	0	2	0	2	0	0	0	0	277	0
7:15 AM	**0**	**0**	**145**	**2**	**0**	**2**	**155**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**2**	**307**	0
7:30 AM	**0**	**0**	**189**	**1**	**0**	**4**	**214**	**0**	**0**	**1**	**0**	**3**	**0**	**0**	**0**	**0**	**412**	0
7:45 AM	**0**	**0**	**158**	**1**	**0**	**4**	**227**	**0**	**0**	**1**	**0**	**8**	**0**	**0**	**0**	**0**	**399**	1,395
8:00 AM	**0**	**1**	**153**	**1**	**0**	**3**	**158**	**0**	**0**	**2**	**0**	**2**	**0**	**0**	**0**	**0**	**320**	**1,438**
8:15 AM	0	0	112	1	1	2	155	0	0	1	0	2	0	0	0	0	274	1,405
8:30 AM	0	0	122	0	0	0	135	0	0	1	0	0	0	0	0	0	258	1,251
8:45 AM	0	0	79	0	0	0	111	0	0	2	0	1	0	0	0	0	193	1,045
Count Total	0	2	1,078	8	1	16	1,304	0	0	10	0	19	0	0	0	2	2,440	0
Peak Hour All	**0**	**1**	**645**	**5**	**0**	**13**	**754**	**0**	**0**	**4**	**0**	**14**	**0**	**0**	**0**	**2**	**1,438**	**0**
Peak Hour HV	**0**	**0**	**10**	**1**	**0**	**1**	**19**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**31**	**0**
Peak Hour HV%	**-**	**0%**	**2%**	**20%**	**-**	**8%**	**3%**	**-**	**-**	**0%**	**-**	**0%**	**-**	**-**	**-**	**0%**	**2%**	**0**

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

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	4	3	0	0	*7*	0	0	0	0	*0*	0	0	0	0	*0*
7:15 AM	**4**	**7**	**0**	**0**	***11***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**2**	*2*
7:30 AM	**3**	**2**	**0**	**0**	***5***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
7:45 AM	**1**	**5**	**0**	**0**	***6***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**1**	*1*
8:00 AM	**3**	**6**	**0**	**0**	***9***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**2**	***2***
8:15 AM	0	2	0	0	*2*	0	0	0	0	*0*	0	0	0	1	*1*
8:30 AM	6	3	0	0	*9*	0	0	0	0	*0*	0	0	0	2	*2*
8:45 AM	2	2	2	0	*6*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	23	30	2	0	*55*	0	0	0	0	*0*	0	0	0	8	*8*
Peak Hour	**11**	**20**	**0**	**0**	***31***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**5**	***5***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Reservation Rd Eastbound				Reservation Rd Westbound				Salinas Ave Northbound				Driveway Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	4	0	0	1	2	0	0	0	0	0	0	0	0	0	7	0
7:15 AM	**0**	**0**	**3**	**1**	**0**	**1**	**6**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**11**	0
7:30 AM	**0**	**0**	**3**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	0
7:45 AM	**0**	**0**	**1**	**0**	**0**	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**6**	29
8:00 AM	**0**	**0**	**3**	**0**	**0**	**0**	**6**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**9**	**31**
8:15 AM	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2	22
8:30 AM	0	0	6	0	0	0	3	0	0	0	0	0	0	0	0	0	9	26
8:45 AM	0	0	2	0	0	0	2	0	0	2	0	0	0	0	0	0	6	26
Count Total	0	0	22	1	0	2	28	0	0	2	0	0	0	0	0	0	55	0
Peak Hour	**0**	**0**	**10**	**1**	**0**	**1**	**19**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**31**	**0**

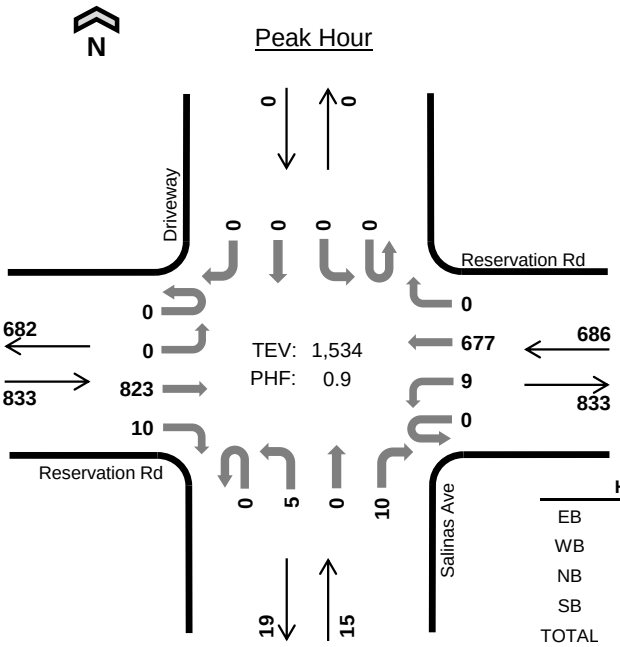
Two-Hour Count Summaries - Bikes

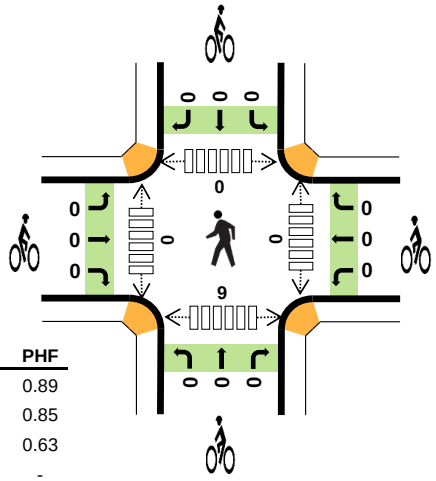
Interval Start	Reservation Rd Eastbound			Reservation Rd Westbound			Salinas Ave Northbound			Driveway Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
7:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

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

Salinas Ave
Reservation Rd

Date: 10-02-2018
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:45 PM to 5:45 PM





	HV %:	PHF
EB	1.2%	0.89
WB	0.9%	0.85
NB	0.0%	0.63
SB	-	-
TOTAL	1.0%	0.90

Two-Hour Count Summaries

Interval Start	Reservation Rd Eastbound				Reservation Rd Westbound				Salinas Ave Northbound				Driveway Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	178	0	0	0	141	0	0	0	0	3	0	0	0	0	322	0
4:15 PM	0	0	186	2	0	0	144	0	0	0	0	1	0	0	0	4	337	0
4:30 PM	0	0	176	1	0	0	166	0	0	1	0	3	0	0	0	0	347	0
4:45 PM	**0**	**0**	**196**	**2**	**0**	**1**	**140**	**0**	**0**	**1**	**0**	**2**	**0**	**0**	**0**	**0**	**342**	1,348
5:00 PM	**0**	**0**	**230**	**3**	**0**	**2**	**148**	**0**	**0**	**2**	**0**	**2**	**0**	**0**	**0**	**0**	**387**	1,413
5:15 PM	**0**	**0**	**216**	**3**	**0**	**5**	**196**	**0**	**0**	**1**	**0**	**5**	**0**	**0**	**0**	**0**	**426**	1,502
5:30 PM	**0**	**0**	**181**	**2**	**0**	**1**	**193**	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**379**	**1,534**
5:45 PM	1	0	147	2	0	5	165	0	0	0	0	4	0	0	0	0	324	1,516
Count Total	1	0	1,510	15	0	14	1,293	0	0	6	0	21	0	0	0	4	2,864	0
Peak Hour All	**0**	**0**	**823**	**10**	**0**	**9**	**677**	**0**	**0**	**5**	**0**	**10**	**0**	**0**	**0**	**0**	**1,534**	**0**
Peak Hour HV	**0**	**0**	**10**	**0**	**0**	**0**	**6**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**16**	**0**
Peak Hour HV%	**-**	**-**	**1%**	**0%**	**-**	**0%**	**1%**	**-**	**-**	**0%**	**-**	**0%**	**-**	**-**	**-**	**-**	**1%**	**0**

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

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	4	2	0	0	*6*	0	0	0	0	*0*	0	0	0	0	*0*
4:15 PM	2	2	0	0	*4*	0	0	0	0	*0*	0	0	0	3	*3*
4:30 PM	2	3	0	0	*5*	0	0	0	0	*0*	0	0	0	0	*0*
4:45 PM	**1**	**1**	**0**	**0**	***2***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**4**	*4*
5:00 PM	**5**	**2**	**0**	**0**	***7***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
5:15 PM	**3**	**1**	**0**	**0**	***4***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**4**	*4*
5:30 PM	**1**	**2**	**0**	**0**	***3***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**1**	***1***
5:45 PM	1	1	0	0	*2*	0	0	0	0	*0*	0	0	6	0	*6*
Count Total	19	14	0	0	*33*	0	0	0	0	*0*	0	0	6	12	*18*
Peak Hour	**10**	**6**	**0**	**0**	***16***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**9**	***9***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Reservation Rd Eastbound				Reservation Rd Westbound				Salinas Ave Northbound				Driveway Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	4	0	0	0	2	0	0	0	0	0	0	0	0	0	6	0
4:15 PM	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	4	0
4:30 PM	0	0	2	0	0	0	3	0	0	0	0	0	0	0	0	0	5	0
4:45 PM	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	17
5:00 PM	**0**	**0**	**5**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**7**	18
5:15 PM	**0**	**0**	**3**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	18
5:30 PM	**0**	**0**	**1**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**16**
5:45 PM	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	2	16
Count Total	0	0	19	0	0	0	14	0	0	0	0	0	0	0	0	0	33	0
Peak Hour	**0**	**0**	**10**	**0**	**0**	**0**	**6**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**16**	**0**

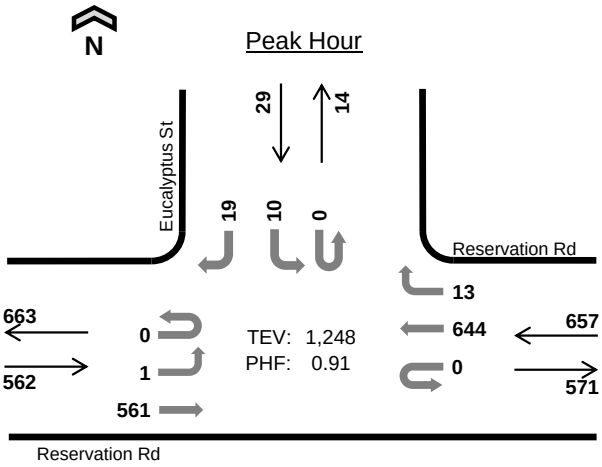
Two-Hour Count Summaries - Bikes

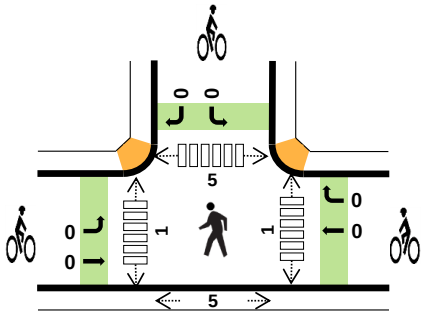
Interval Start	Reservation Rd Eastbound			Reservation Rd Westbound			Salinas Ave Northbound			Driveway Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
5:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

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

Eucalyptus St
Reservation Rd

Date: 09-26-2018
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:45 AM to 8:45 AM





	HV %:	PHF
EB	3.2%	0.82
WB	3.5%	0.93
NB	-	-
SB	0.0%	0.73
TOTAL	3.3%	0.91

Two-Hour Count Summaries

Interval Start		Reservation Rd Eastbound				Reservation Rd Westbound				0 Northbound				Eucalyptus St Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM		0	0	75	0	0	0	186	0	0	0	0	0	0	1	0	5	267	0
7:15 AM		0	1	106	0	0	0	157	1	0	0	0	0	0	2	0	4	271	0
7:30 AM		0	0	129	0	0	0	159	1	0	0	0	0	0	2	0	1	292	0
7:45 AM		**0**	**0**	**172**	**0**	**0**	**0**	**164**	**2**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**3**	**343**	1,173
8:00 AM		**0**	**0**	**135**	**0**	**0**	**0**	**152**	**5**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**3**	**296**	1,202
8:15 AM		**0**	**0**	**110**	**0**	**0**	**0**	**171**	**5**	**0**	**0**	**0**	**0**	**0**	**4**	**0**	**6**	**296**	1,227
8:30 AM		**0**	**1**	**144**	**0**	**0**	**0**	**157**	**1**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**7**	**313**	**1,248**
8:45 AM		0	3	104	0	0	0	143	2	0	0	0	0	0	2	0	0	254	1,159
Count Total		0	5	975	0	0	0	1,289	17	0	0	0	0	0	17	0	29	2,332	0
Peak Hour	**All**	**0**	**1**	**561**	**0**	**0**	**0**	**644**	**13**	**0**	**0**	**0**	**0**	**0**	**10**	**0**	**19**	**1,248**	**0**
	HV	**0**	**0**	**18**	**0**	**0**	**0**	**23**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**41**	**0**
	HV%	**-**	**0%**	**3%**	**-**	**-**	**-**	**4%**	**0%**	**-**	**-**	**-**	**-**	**-**	**0%**	**-**	**0%**	**3%**	**0**

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

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	5	6	0	0	*11*	0	0	0	0	*0*	0	0	1	0	*1*
7:15 AM	2	3	0	0	*5*	0	1	0	0	*1*	0	0	0	1	*1*
7:30 AM	5	7	0	0	*12*	0	0	0	0	*0*	1	0	3	1	*5*
7:45 AM	**5**	**4**	**0**	**0**	***9***	**0**	**0**	**0**	**0**	***0***	**1**	**1**	**1**	**2**	*5*
8:00 AM	**5**	**9**	**0**	**0**	***14***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**1**	**0**	*1*
8:15 AM	**4**	**5**	**0**	**0**	***9***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**2**	**2**	*4*
8:30 AM	**4**	**5**	**0**	**0**	***9***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**1**	**1**	***2***
8:45 AM	4	5	0	0	*9*	0	0	0	0	*0*	0	0	5	2	*7*
Count Total	34	44	0	0	*78*	0	1	0	0	*1*	2	1	14	9	*26*
Peak Hr	**18**	**23**	**0**	**0**	***41***	**0**	**0**	**0**	**0**	***0***	**1**	**1**	**5**	**5**	***12***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Reservation Rd				Reservation Rd				0				Eucalyptus St				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	5	0	0	0	6	0	0	0	0	0	0	0	0	0	11	0
7:15 AM	0	0	2	0	0	0	3	0	0	0	0	0	0	0	0	0	5	0
7:30 AM	0	0	5	0	0	0	7	0	0	0	0	0	0	0	0	0	12	0
7:45 AM	**0**	**0**	**5**	**0**	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**9**	37
8:00 AM	**0**	**0**	**5**	**0**	**0**	**0**	**9**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**14**	40
8:15 AM	**0**	**0**	**4**	**0**	**0**	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**9**	44
8:30 AM	**0**	**0**	**4**	**0**	**0**	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**9**	**41**
8:45 AM	0	0	4	0	0	0	5	0	0	0	0	0	0	0	0	0	9	41
Count Total	0	0	34	0	0	0	44	0	0	0	0	0	0	0	0	0	78	0
Peak Hour	**0**	**0**	**18**	**0**	**0**	**0**	**23**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**41**	**0**

Two-Hour Count Summaries - Bikes

Interval Start	Reservation Rd			Reservation Rd			0			Eucalyptus St			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	1	0	0	0	0	0	0	0	1	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	1
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	1
8:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
8:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	1	0	0	0	0	0	0	0	1	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

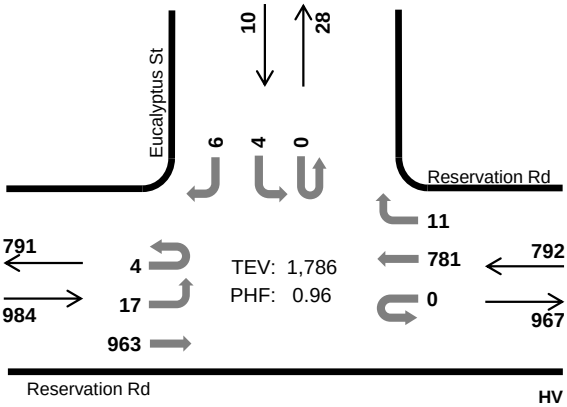
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

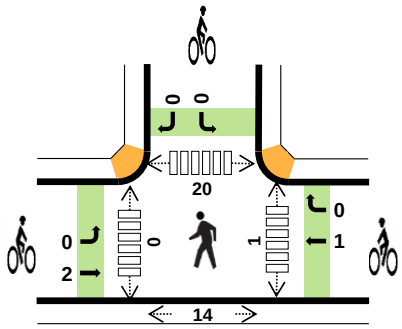
Eucalyptus St
Reservation Rd

Date: 09-26-2018
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:45 PM to 5:45 PM

N

Peak Hour





	HV %:	PHF
EB	1.5%	0.94
WB	1.1%	0.96
NB	-	-
SB	0.0%	0.63
TOTAL	1.3%	0.96

Two-Hour Count Summaries

Interval Start		Reservation Rd Eastbound				Reservation Rd Westbound				0 Northbound				Eucalyptus St Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	5	203	0	0	0	180	5	0	0	0	0	0	2	0	3	398	0
4:15 PM		0	2	205	0	0	0	171	3	0	0	0	0	0	4	0	3	388	0
4:30 PM		0	2	243	0	0	0	170	3	0	0	0	0	0	2	0	2	422	0
4:45 PM		**1**	**3**	**250**	**0**	**0**	**0**	**181**	**2**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**1**	**440**	1,648
5:00 PM		**0**	**3**	**229**	**0**	**0**	**0**	**204**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**441**	1,691
5:15 PM		**3**	**4**	**230**	**0**	**0**	**0**	**203**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**442**	1,745
5:30 PM		**0**	**7**	**254**	**0**	**0**	**0**	**193**	**5**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**3**	**463**	**1,786**
5:45 PM		1	2	224	0	0	0	208	1	0	0	0	0	0	2	0	1	439	1,785
Count Total		5	28	1,838	0	0	0	1,510	23	0	0	0	0	0	14	0	15	3,433	0
Peak Hour	**All**	**4**	**17**	**963**	**0**	**0**	**0**	**781**	**11**	**0**	**0**	**0**	**0**	**0**	**4**	**0**	**6**	**1,786**	**0**
	HV	**0**	**0**	**15**	**0**	**0**	**0**	**9**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**24**	**0**
	HV%	**0%**	**0%**	**2%**	**-**	**-**	**-**	**1%**	**0%**	**-**	**-**	**-**	**-**	**-**	**0%**	**-**	**0%**	**1%**	**0**

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

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
4:00 PM	2	3	0	0	*5*	0	0	0	0	*0*	0	0	6	3	*9*
4:15 PM	3	3	0	0	*6*	0	0	0	0	*0*	1	1	4	2	*8*
4:30 PM	2	2	0	0	*4*	1	0	0	0	*1*	2	0	10	2	*14*
4:45 PM	**7**	**4**	**0**	**0**	***11***	**1**	**0**	**0**	**0**	***1***	**0**	**0**	**5**	**5**	*10*
5:00 PM	**2**	**3**	**0**	**0**	***5***	**1**	**0**	**0**	**0**	***1***	**1**	**0**	**4**	**3**	*8*
5:15 PM	**2**	**2**	**0**	**0**	***4***	**0**	**1**	**0**	**0**	***1***	**0**	**0**	**2**	**5**	*7*
5:30 PM	**4**	**0**	**0**	**0**	***4***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**9**	**1**	***10***
5:45 PM	3	4	0	0	*7*	1	0	0	0	*1*	1	1	5	3	*10*
Count Total	25	21	0	0	*46*	4	1	0	0	*5*	5	2	45	24	*76*
Peak Hr	**15**	**9**	**0**	**0**	***24***	**2**	**1**	**0**	**0**	***3***	**1**	**0**	**20**	**14**	***35***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Reservation Rd				Reservation Rd				0				Eucalyptus St				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	2	0	0	0	3	0	0	0	0	0	0	0	0	0	5	0
4:15 PM	0	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0	6	0
4:30 PM	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	4	0
4:45 PM	**0**	**0**	**7**	**0**	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**11**	26
5:00 PM	**0**	**0**	**2**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	26
5:15 PM	**0**	**0**	**2**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	24
5:30 PM	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**24**
5:45 PM	0	0	3	0	0	0	4	0	0	0	0	0	0	0	0	0	7	20
Count Total	0	0	25	0	0	0	21	0	0	0	0	0	0	0	0	0	46	0
Peak Hour	**0**	**0**	**15**	**0**	**0**	**0**	**9**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**24**	**0**

Two-Hour Count Summaries - Bikes

Interval Start	Reservation Rd			Reservation Rd			0			Eucalyptus St			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	1	0	0	0	0	0	0	0	0	0	0	1	0
4:45 PM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	2
5:00 PM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	3
5:15 PM	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	4
5:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**
5:45 PM	0	1	0	0	0	0	0	0	0	0	0	0	1	3
Count Total	0	4	0	0	1	0	0	0	0	0	0	0	5	0
Peak Hour	**0**	**2**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**

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

SYNCHRO LEVEL OF SERVICE REPORTS

EXISTING CONDITIONS

AM & PM PEAK HOUR

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Traffic Vol, veh/h	10	10	0	391	10	10	1476
Future Vol, veh/h	10	10	0	391	10	10	1476
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free
RT Channelized	-	None	-	-	None	-	None
Storage Length	0	0	225	-	-	150	-
Veh in Median Storage, #	2	-	-	0	-	-	0
Grade, %	0	-	-	0	-	-	0
Peak Hour Factor	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2
Mvmt Flow	11	11	0	420	11	11	1587

Major/Minor	Minor1		Major1			Major2	
Conflicting Flow All	1242	216	1587	0	0	431	0
Stage 1	426	-	-	-	-	-	-
Stage 2	816	-	-	-	-	-	-
Critical Hdwy	6.84	6.94	6.44	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.52	-	-	2.22	-
Pot Cap-1 Maneuver	167	789	138	-	-	1125	-
Stage 1	627	-	-	-	-	-	-
Stage 2	395	-	-	-	-	-	-
Platoon blocked, %				-	-		-
Mov Cap-1 Maneuver	165	789	138	-	-	1125	-
Mov Cap-2 Maneuver	336	-	-	-	-	-	-
Stage 1	621	-	-	-	-	-	-
Stage 2	395	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.9	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBU	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	138	-	-	336	789	1125	-
HCM Lane V/C Ratio	-	-	-	0.032	0.014	0.01	-
HCM Control Delay (s)	0	-	-	16.1	9.6	8.2	-
HCM Lane LOS	A	-	-	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-

Movement	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Traffic Volume (veh/h)	492	65	0	280	119	78	991
Future Volume (veh/h)	492	65	0	280	119	78	991
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	1900		1870	1870	1870	1870
Adj Flow Rate, veh/h	594	0		301	128	84	1066
Peak Hour Factor	0.93	0.93		0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	0		2	2	2	2
Cap, veh/h	935	423		1084	482	138	1686
Arrive On Green	0.26	0.00		0.31	0.31	0.08	0.47
Sat Flow, veh/h	3563	1610		3647	1580	1781	3647
Grp Volume(v), veh/h	594	0		301	128	84	1066
Grp Sat Flow(s),veh/h/ln	1781	1610		1777	1580	1781	1777
Q Serve(g_s), s	5.6	0.0		2.4	2.3	1.7	8.6
Cycle Q Clear(g_c), s	5.6	0.0		2.4	2.3	1.7	8.6
Prop In Lane	1.00	1.00			1.00	1.00	
Lane Grp Cap(c), veh/h	935	423		1084	482	138	1686
V/C Ratio(X)	0.64	0.00		0.28	0.27	0.61	0.63
Avail Cap(c_a), veh/h	2811	1271		2804	1247	1406	2804
HCM Platoon Ratio	1.00	1.00		1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00		1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.4	0.0		10.0	10.0	17.0	7.5
Incr Delay (d2), s/veh	0.7	0.0		0.1	0.3	4.3	0.4
Initial Q Delay(d3),s/veh	0.0	0.0		0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.0		0.7	0.7	0.7	1.9
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	13.1	0.0		10.2	10.3	21.3	7.9
LnGrp LOS	B	A		B	B	C	A
Approach Vol, veh/h	594			429			1150
Approach Delay, s/veh	13.1			10.2			8.9
Approach LOS	B			B			A

Timer - Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	6.4	16.6				23.0		15.0
Change Period (Y+Rc), s	3.5	5.0				5.0		5.0
Max Green Setting (Gmax), s	30.0	30.0				30.0		30.0
Max Q Clear Time (g_c+I1), s	3.7	4.4				10.6		7.6
Green Ext Time (p_c), s	0.2	2.3				7.5		2.3

Intersection Summary	
HCM 6th Ctrl Delay	10.3
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.
User approved ignoring U-Turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	76	21	211	68	21	20	51	288	11	19	790	26
Future Volume (veh/h)	76	21	211	68	21	20	51	288	11	19	790	26
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.96	1.00		0.98	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	78	22	218	70	22	21	53	297	11	20	814	27
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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	325	92	359	144	151	123	70	1401	52	34	1354	580
Arrive On Green	0.23	0.23	0.23	0.08	0.08	0.08	0.04	0.40	0.40	0.02	0.38	0.38
Sat Flow, veh/h	1404	396	1552	1781	1870	1520	1781	3492	129	1781	3554	1523
Grp Volume(v), veh/h	100	0	218	70	22	21	53	151	157	20	814	27
Grp Sat Flow(s),veh/h/ln	1800	0	1552	1781	1870	1520	1781	1777	1844	1781	1777	1523
Q Serve(g_s), s	2.7	0.0	7.5	2.2	0.7	0.8	1.8	3.3	3.3	0.7	11.0	0.7
Cycle Q Clear(g_c), s	2.7	0.0	7.5	2.2	0.7	0.8	1.8	3.3	3.3	0.7	11.0	0.7
Prop In Lane	0.78		1.00	1.00		1.00	1.00		0.07	1.00		1.00
Lane Grp Cap(c), veh/h	417	0	359	144	151	123	70	713	740	34	1354	580
V/C Ratio(X)	0.24	0.00	0.61	0.49	0.15	0.17	0.76	0.21	0.21	0.59	0.60	0.05
Avail Cap(c_a), veh/h	1354	0	1168	596	625	508	596	713	740	447	1783	764
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.7	0.0	20.5	26.3	25.6	25.6	28.5	11.7	11.7	29.1	14.9	11.7
Incr Delay (d2), s/veh	1.1	0.0	5.9	2.5	0.4	0.7	6.2	0.7	0.7	6.1	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	3.1	1.0	0.3	0.3	0.8	1.3	1.3	0.3	3.8	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.8	0.0	26.4	28.8	26.0	26.3	34.7	12.4	12.4	35.2	15.0	11.7
LnGrp LOS	B	A	C	C	C	C	C	B	B	D	B	B
Approach Vol, veh/h		318			113			361			861	
Approach Delay, s/veh		24.3			27.8			15.7			15.4	
Approach LOS		C			C			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	4.6	28.5		17.9	5.8	27.3		8.8
Change Period (Y+Rc), s	3.5	4.5		4.0	3.5	4.5		4.0
Max Green Setting (Gmax), s	15.0	24.0		45.0	20.0	30.0		20.0
Max Q Clear Time (g_c+I1), s	2.7	5.3		9.5	3.8	13.0		4.2
Green Ext Time (p_c), s	0.0	0.5		4.2	0.0	2.0		0.3

Intersection Summary	
HCM 6th Ctrl Delay	18.0
HCM 6th LOS	B

Notes

User approved ignoring U-Turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	191	114	383	147	143	115	154	224	140	204	3
Future Volume (veh/h)	12	191	114	383	147	143	115	154	224	140	204	3
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		0.98	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	13	215	128	430	165	161	129	173	252	157	229	3
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	20	333	204	698	378	310	172	496	726	330	947	12
Arrive On Green	0.16	0.16	0.16	0.20	0.20	0.20	0.10	0.27	0.27	0.10	0.26	0.26
Sat Flow, veh/h	124	2068	1268	3456	1870	1538	1781	1870	2737	3456	3590	47
Grp Volume(v), veh/h	195	0	161	430	165	161	129	173	252	157	113	119
Grp Sat Flow(s),veh/h/ln	1864	0	1596	1728	1870	1538	1781	1870	1369	1728	1777	1860
Q Serve(g_s), s	5.7	0.0	5.4	6.6	4.5	5.4	4.1	4.3	4.3	2.5	2.9	2.9
Cycle Q Clear(g_c), s	5.7	0.0	5.4	6.6	4.5	5.4	4.1	4.3	4.3	2.5	2.9	2.9
Prop In Lane	0.07		0.79	1.00		1.00	1.00		1.00	1.00		0.03
Lane Grp Cap(c), veh/h	300	0	257	698	378	310	172	496	726	330	469	491
V/C Ratio(X)	0.65	0.00	0.63	0.62	0.44	0.52	0.75	0.35	0.35	0.48	0.24	0.24
Avail Cap(c_a), veh/h	645	0	552	1792	970	798	924	970	1420	1195	1229	1286
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.7	0.0	22.6	21.0	20.2	20.6	25.4	17.2	17.2	24.8	16.7	16.7
Incr Delay (d2), s/veh	2.4	0.0	2.5	0.9	0.8	1.3	6.4	0.4	0.3	1.1	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	0.0	2.1	2.5	1.9	1.9	1.9	1.7	1.2	1.0	1.1	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.1	0.0	25.1	21.9	21.0	21.9	31.8	17.6	17.5	25.9	17.0	17.0
LnGrp LOS	C	A	C	C	C	C	C	B	B	C	B	B
Approach Vol, veh/h		356			756			554			389	
Approach Delay, s/veh		25.1			21.7			20.9			20.6	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.5	19.3		13.3	9.6	19.3		15.7
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	20.0	30.0		20.0	30.0	40.0		30.0
Max Q Clear Time (g_c+I1), s	4.5	6.3		7.7	6.1	4.9		8.6
Green Ext Time (p_c), s	0.4	2.0		1.7	0.3	1.3		3.1

Intersection Summary	
HCM 6th Ctrl Delay	21.9
HCM 6th LOS	C

Notes

User approved ignoring U-Turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	44	484	10	11	626	52	5	1	3	58	1	57
Future Volume (veh/h)	44	484	10	11	626	52	5	1	3	58	1	57
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		1.00	0.98		0.98	0.98		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	48	526	11	12	680	0	5	1	3	63	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	266	1956	41	55	1533		348	57	266	385	5	
Arrive On Green	0.15	0.55	0.55	0.03	0.43	0.00	0.17	0.17	0.17	0.17	0.17	0.00
Sat Flow, veh/h	1781	3558	74	1781	3554	1585	1202	335	1552	1346	29	1585
Grp Volume(v), veh/h	48	262	275	12	680	0	6	0	3	64	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1856	1781	1777	1585	1536	0	1552	1375	0	1585
Q Serve(g_s), s	1.1	3.6	3.6	0.3	6.2	0.0	0.0	0.0	0.1	1.8	0.0	0.0
Cycle Q Clear(g_c), s	1.1	3.6	3.6	0.3	6.2	0.0	0.1	0.0	0.1	1.9	0.0	0.0
Prop In Lane	1.00		0.04	1.00		1.00	0.83		1.00	0.98		1.00
Lane Grp Cap(c), veh/h	266	977	1020	55	1533		406	0	266	390	0	
V/C Ratio(X)	0.18	0.27	0.27	0.22	0.44		0.01	0.00	0.01	0.16	0.00	
Avail Cap(c_a), veh/h	615	1897	1982	423	1571		1098	0	1004	946	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	17.2	5.5	5.5	21.9	9.3	0.0	16.0	0.0	15.9	16.8	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.1	0.1	2.0	0.2	0.0	0.0	0.0	0.0	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.9	1.0	0.1	1.9	0.0	0.0	0.0	0.0	0.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.6	5.7	5.7	23.9	9.5	0.0	16.0	0.0	16.0	17.0	0.0	0.0
LnGrp LOS	B	A	A	C	A		B	A	B	B	A	
Approach Vol, veh/h		585			692	A		9			64	A
Approach Delay, s/veh		6.6			9.7			16.0			17.0	
Approach LOS		A			A			B			B	

Timer - Assigned Phs	2	3	4		6	7	8
Phs Duration (G+Y+Rc), s	11.9	4.9	29.5		11.9	10.4	24.0
Change Period (Y+Rc), s	4.0	3.5	4.0		4.0	3.5	4.0
Max Green Setting (Gmax), s	30.0	11.0	49.5		26.5	16.0	20.5
Max Q Clear Time (g_c+I1), s	2.1	2.3	5.6		3.9	3.1	8.2
Green Ext Time (p_c), s	0.0	0.0	3.6		0.3	0.1	3.7

Intersection Summary	
HCM 6th Ctrl Delay	8.8
HCM 6th LOS	A

Notes

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

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	517	54	123	582	75	57
Future Volume (veh/h)	517	54	123	582	75	57
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	556	58	132	626	81	61
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1412	629	296	2283	304	270
Arrive On Green	0.40	0.40	0.17	0.64	0.17	0.17
Sat Flow, veh/h	3647	1583	1781	3647	1781	1585
Grp Volume(v), veh/h	556	58	132	626	81	61
Grp Sat Flow(s),veh/h/ln	1777	1583	1781	1777	1781	1585
Q Serve(g_s), s	5.7	1.2	3.4	3.9	2.0	1.7
Cycle Q Clear(g_c), s	5.7	1.2	3.4	3.9	2.0	1.7
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1412	629	296	2283	304	270
V/C Ratio(X)	0.39	0.09	0.45	0.27	0.27	0.23
Avail Cap(c_a), veh/h	2100	935	1018	2283	1053	937
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	10.9	9.6	19.1	3.9	18.3	18.2
Incr Delay (d2), s/veh	0.2	0.1	1.0	0.1	0.5	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.3	1.4	0.8	0.8	0.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	11.1	9.6	20.1	4.0	18.8	18.6
LnGrp LOS	B	A	C	A	B	B
Approach Vol, veh/h	614			758	142	
Approach Delay, s/veh	11.0			6.8	18.7	
Approach LOS	B			A	B	

Timer - Assigned Phs	2	3	4		8
Phs Duration (G+Y+Rc), s	13.6	12.4	24.7		37.1
Change Period (Y+Rc), s	5.0	4.0	4.5		4.5
Max Green Setting (Gmax), s	30.0	29.0	30.0		30.0
Max Q Clear Time (g_c+I1), s	4.0	5.4	7.7		5.9
Green Ext Time (p_c), s	0.4	0.3	4.0		4.5

Intersection Summary	
HCM 6th Ctrl Delay	9.6
HCM 6th LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	525	3	0	627	74	3	0	1	49	1	45
Future Volume (veh/h)	70	525	3	0	627	74	3	0	1	49	1	45
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		1.00	0.99		0.98	0.98		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	0	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	74	559	3	0	667	79	3	0	1	52	1	48
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	0	2	2	2	2	2	2	2	2
Cap, veh/h	119	2150	12	0	1600	711	331	19	71	450	7	329
Arrive On Green	0.07	0.59	0.59	0.00	0.45	0.45	0.21	0.00	0.21	0.21	0.21	0.21
Sat Flow, veh/h	1781	3624	19	0	3647	1580	919	92	337	1400	34	1568
Grp Volume(v), veh/h	74	274	288	0	667	79	4	0	0	53	0	48
Grp Sat Flow(s),veh/h/ln	1781	1777	1867	0	1777	1580	1349	0	0	1435	0	1568
Q Serve(g_s), s	1.9	3.4	3.4	0.0	5.8	1.3	0.0	0.0	0.0	0.0	0.0	1.1
Cycle Q Clear(g_c), s	1.9	3.4	3.4	0.0	5.8	1.3	1.1	0.0	0.0	1.1	0.0	1.1
Prop In Lane	1.00		0.01	0.00		1.00	0.75		0.25	0.98		1.00
Lane Grp Cap(c), veh/h	119	1054	1107	0	1600	711	421	0	0	457	0	329
V/C Ratio(X)	0.62	0.26	0.26	0.00	0.42	0.11	0.01	0.00	0.00	0.12	0.00	0.15
Avail Cap(c_a), veh/h	603	1164	1223	0	2329	1035	736	0	0	1077	0	1027
HCM Platoon Ratio	1.00	1.00	1.00	1.00	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	0.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	20.8	4.5	4.5	0.0	8.5	7.3	14.3	0.0	0.0	14.7	0.0	14.7
Incr Delay (d2), s/veh	5.3	0.1	0.1	0.0	0.2	0.1	0.0	0.0	0.0	0.1	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.8	0.8	0.0	1.7	0.4	0.0	0.0	0.0	0.4	0.0	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.1	4.6	4.6	0.0	8.7	7.4	14.3	0.0	0.0	14.8	0.0	14.9
LnGrp LOS	C	A	A	A	A	A	B	A	A	B	A	B
Approach Vol, veh/h		636			746			4			101	
Approach Delay, s/veh		7.1			8.6			14.3			14.9	
Approach LOS		A			A			B			B	

Timer - Assigned Phs	2	4	6	7	8
Phs Duration (G+Y+Rc), s	13.6	32.2	13.6	6.5	25.6
Change Period (Y+Rc), s	4.0	5.0	4.0	3.5	5.0
Max Green Setting (Gmax), s	20.0	30.0	30.0	15.5	30.0
Max Q Clear Time (g_c+I1), s	3.1	5.4	3.1	3.9	7.8
Green Ext Time (p_c), s	0.0	3.5	0.4	0.1	5.0

Intersection Summary	
HCM 6th Ctrl Delay	8.4
HCM 6th LOS	A

Notes

User approved ignoring U-Turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	520	24	27	625	105	14	3	14	101	1	64
Future Volume (veh/h)	31	520	24	27	625	105	14	3	14	101	1	64
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.98	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	34	571	26	30	687	115	15	3	15	111	1	70
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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	79	1155	490	71	1141	498	135	16	660	153	1	665
Arrive On Green	0.04	0.33	0.33	0.04	0.32	0.32	0.42	0.42	0.42	0.42	0.42	0.42
Sat Flow, veh/h	1781	3554	1506	1781	3554	1550	17	38	1564	33	2	1576
Grp Volume(v), veh/h	34	571	26	30	687	115	18	0	15	112	0	70
Grp Sat Flow(s),veh/h/ln	1781	1777	1506	1781	1777	1550	54	0	1564	35	0	1576
Q Serve(g_s), s	1.0	6.7	0.6	0.8	8.4	2.8	0.3	0.0	0.3	0.5	0.0	1.4
Cycle Q Clear(g_c), s	1.0	6.7	0.6	0.8	8.4	2.8	21.8	0.0	0.3	21.8	0.0	1.4
Prop In Lane	1.00		1.00	1.00		1.00	0.83		1.00	0.99		1.00
Lane Grp Cap(c), veh/h	79	1155	490	71	1141	498	151	0	660	153	0	665
V/C Ratio(X)	0.43	0.49	0.05	0.42	0.60	0.23	0.12	0.00	0.02	0.73	0.00	0.11
Avail Cap(c_a), veh/h	689	1685	714	689	1650	720	156	0	666	159	0	671
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	24.1	14.0	12.0	24.2	14.8	12.9	13.1	0.0	8.7	25.7	0.0	9.0
Incr Delay (d2), s/veh	3.7	0.3	0.0	3.9	0.5	0.2	0.3	0.0	0.0	15.2	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	2.4	0.2	0.4	3.0	0.9	0.1	0.0	0.1	1.9	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.8	14.4	12.0	28.1	15.3	13.1	13.4	0.0	8.7	40.9	0.0	9.1
LnGrp LOS	C	B	B	C	B	B	B	A	A	D	A	A
Approach Vol, veh/h		631			832			33			182	
Approach Delay, s/veh		15.0			15.4			11.3			28.6	
Approach LOS		B			B			B			C	

Timer - Assigned Phs	2	3	4		6	7	8
Phs Duration (G+Y+Rc), s	25.9	5.6	20.4		25.9	5.8	20.2
Change Period (Y+Rc), s	4.0	3.5	3.5		4.0	3.5	3.5
Max Green Setting (Gmax), s	22.0	20.0	24.5		22.0	20.0	24.0
Max Q Clear Time (g_c+I1), s	23.8	2.8	8.7		23.8	3.0	10.4
Green Ext Time (p_c), s	0.0	0.0	3.6		0.0	0.0	4.3

Intersection Summary	
HCM 6th Ctrl Delay	16.6
HCM 6th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	500	73	73	614	18	102	18	103	43	30	25
Future Volume (veh/h)	25	500	73	73	614	18	102	18	103	43	30	25
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	27	543	79	79	667	20	111	20	112	47	33	27
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	50	824	361	105	924	28	386	70	398	244	171	360
Arrive On Green	0.03	0.23	0.23	0.06	0.26	0.26	0.25	0.25	0.25	0.23	0.23	0.23
Sat Flow, veh/h	1781	3554	1558	1781	3520	106	1520	274	1566	1067	750	1577
Grp Volume(v), veh/h	27	543	79	79	336	351	131	0	112	80	0	27
Grp Sat Flow(s),veh/h/ln	1781	1777	1558	1781	1777	1849	1794	0	1566	1817	0	1577
Q Serve(g_s), s	1.2	11.3	3.3	3.6	14.0	14.1	4.8	0.0	4.7	2.9	0.0	1.1
Cycle Q Clear(g_c), s	1.2	11.3	3.3	3.6	14.0	14.1	4.8	0.0	4.7	2.9	0.0	1.1
Prop In Lane	1.00		1.00	1.00		0.06	0.85		1.00	0.59		1.00
Lane Grp Cap(c), veh/h	50	824	361	105	467	486	456	0	398	415	0	360
V/C Ratio(X)	0.54	0.66	0.22	0.75	0.72	0.72	0.29	0.00	0.28	0.19	0.00	0.07
Avail Cap(c_a), veh/h	874	1744	764	874	872	907	881	0	769	892	0	774
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	39.1	28.4	25.3	37.8	27.3	27.3	24.5	0.0	24.4	25.4	0.0	24.7
Incr Delay (d2), s/veh	8.8	0.9	0.3	10.4	2.1	2.0	0.3	0.0	0.4	0.2	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	4.8	1.2	1.8	6.0	6.2	2.0	0.0	1.7	1.2	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.9	29.3	25.6	48.1	29.5	29.4	24.8	0.0	24.8	25.6	0.0	24.8
LnGrp LOS	D	C	C	D	C	C	C	A	C	C	A	C
Approach Vol, veh/h		649			766			243			107	
Approach Delay, s/veh		29.6			31.4			24.8			25.4	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	25.7	8.3	23.9	23.6	5.8	26.4
Change Period (Y+Rc), s	5.0	3.5	5.0	5.0	3.5	5.0
Max Green Setting (Gmax), s	40.0	40.0	40.0	40.0	40.0	40.0
Max Q Clear Time (g_c+I1), s	6.8	5.6	13.3	4.9	3.2	16.1
Green Ext Time (p_c), s	1.2	0.2	4.2	0.5	0.0	4.5

Intersection Summary	
HCM 6th Ctrl Delay	29.5
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	469	174	119	583	4	92	8	100	0	1	0
Future Volume (veh/h)	10	469	174	119	583	4	92	8	100	0	1	0
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		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	11	515	191	131	641	4	101	9	110	0	1	0
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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	25	1464	645	177	1800	11	201	18	189	0	10	0
Arrive On Green	0.01	0.41	0.41	0.10	0.50	0.50	0.12	0.12	0.12	0.00	0.01	0.00
Sat Flow, veh/h	1781	3554	1566	1781	3620	23	1642	146	1546	0	1870	0
Grp Volume(v), veh/h	11	515	191	131	315	330	110	0	110	0	1	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1566	1781	1777	1866	1788	0	1546	0	1870	0
Q Serve(g_s), s	0.3	4.8	4.0	3.5	5.2	5.3	2.8	0.0	3.3	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.3	4.8	4.0	3.5	5.2	5.3	2.8	0.0	3.3	0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.01	0.92		1.00	0.00		0.00
Lane Grp Cap(c), veh/h	25	1464	645	177	884	928	219	0	189	0	10	0
V/C Ratio(X)	0.43	0.35	0.30	0.74	0.36	0.36	0.50	0.00	0.58	0.00	0.10	0.00
Avail Cap(c_a), veh/h	972	2196	968	1339	1098	1153	1326	0	1147	0	1117	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	23.7	9.8	9.6	21.2	7.5	7.5	19.9	0.0	20.1	0.0	24.0	0.0
Incr Delay (d2), s/veh	11.3	0.1	0.3	5.9	0.2	0.2	1.8	0.0	2.8	0.0	4.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	1.5	1.1	1.6	1.6	1.6	1.2	0.0	1.2	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.1	10.0	9.8	27.2	7.7	7.7	21.7	0.0	22.9	0.0	28.1	0.0
LnGrp LOS	D	A	A	C	A	A	C	A	C	A	C	A
Approach Vol, veh/h		717			776			220			1	
Approach Delay, s/veh		10.3			11.0			22.3			28.1	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	4.2	29.1		9.9	8.3	25.0		5.3
Change Period (Y+Rc), s	3.5	5.0		4.0	3.5	5.0		5.0
Max Green Setting (Gmax), s	20.5	30.0		36.0	36.5	30.0		29.0
Max Q Clear Time (g_c+I1), s	2.3	7.3		5.3	5.5	6.8		2.0
Green Ext Time (p_c), s	0.0	4.1		1.0	0.4	4.3		0.0

Intersection Summary	
HCM 6th Ctrl Delay	12.2
HCM 6th LOS	B

Intersection	
Int Delay, s/veh	0.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	645	5	13	754	10	19
Future Vol, veh/h	645	5	13	754	10	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	100	150	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	701	5	14	820	11	21

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	706	0	1139	351
Stage 1	-	-	-	-	701	-
Stage 2	-	-	-	-	438	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	888	-	195	645
Stage 1	-	-	-	-	453	-
Stage 2	-	-	-	-	618	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	888	-	192	645
Mov Cap-2 Maneuver	-	-	-	-	319	-
Stage 1	-	-	-	-	446	-
Stage 2	-	-	-	-	618	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	13.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	477	-	-	888	-
HCM Lane V/C Ratio	0.066	-	-	0.016	-
HCM Control Delay (s)	13.1	-	-	9.1	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	561	644	13	10	19
Future Vol, veh/h	1	561	644	13	10	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	125	-	-	-	-	-
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	616	708	14	11	21

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	722	0	-	0	1025	361
Stage 1	-	-	-	-	715	-
Stage 2	-	-	-	-	310	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	876	-	-	-	231	636
Stage 1	-	-	-	-	446	-
Stage 2	-	-	-	-	717	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	876	-	-	-	231	636
Mov Cap-2 Maneuver	-	-	-	-	347	-
Stage 1	-	-	-	-	446	-
Stage 2	-	-	-	-	717	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	12.8
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	876	-	-	-	494
HCM Lane V/C Ratio	0.001	-	-	-	0.065
HCM Control Delay (s)	9.1	-	-	-	12.8
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.2

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Traffic Vol, veh/h	10	10	0	1365	10	10	663
Future Vol, veh/h	10	10	0	1365	10	10	663
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free
RT Channelized	-	None	-	-	None	-	None
Storage Length	0	0	225	-	-	150	-
Veh in Median Storage, #	2	-	-	0	-	-	0
Grade, %	0	-	-	0	-	-	0
Peak Hour Factor	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2
Mvmt Flow	11	11	0	1468	11	11	713

Major/Minor	Minor1		Major1			Major2	
Conflicting Flow All	1853	740	713	0	0	1479	0
Stage 1	1474	-	-	-	-	-	-
Stage 2	379	-	-	-	-	-	-
Critical Hdwy	6.84	6.94	6.44	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.52	-	-	2.22	-
Pot Cap-1 Maneuver	66	359	507	-	-	451	-
Stage 1	177	-	-	-	-	-	-
Stage 2	662	-	-	-	-	-	-
Platoon blocked, %				-	-		-
Mov Cap-1 Maneuver	64	359	507	-	-	451	-
Mov Cap-2 Maneuver	161	-	-	-	-	-	-
Stage 1	173	-	-	-	-	-	-
Stage 2	662	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	22.2	0	0.2
HCM LOS	C		

Minor Lane/Major Mvmt	NBU	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	507	-	-	161	359	451	-
HCM Lane V/C Ratio	-	-	-	0.067	0.03	0.024	-
HCM Control Delay (s)	0	-	-	29	15.3	13.2	-
HCM Lane LOS	A	-	-	D	C	B	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.1	0.1	-

Movement	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Traffic Volume (veh/h)	191	97	0	1021	344	46	482
Future Volume (veh/h)	191	97	0	1021	344	46	482
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	1900		1870	1870	1870	1870
Adj Flow Rate, veh/h	154	158		1098	370	49	518
Peak Hour Factor	0.93	0.93		0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	0		2	2	2	2
Cap, veh/h	368	333		1633	728	89	2073
Arrive On Green	0.21	0.21		0.46	0.46	0.05	0.58
Sat Flow, veh/h	1781	1610		3647	1583	1781	3647
Grp Volume(v), veh/h	154	158		1098	370	49	518
Grp Sat Flow(s),veh/h/ln	1781	1610		1777	1583	1781	1777
Q Serve(g_s), s	3.6	4.1		11.5	7.8	1.3	3.4
Cycle Q Clear(g_c), s	3.6	4.1		11.5	7.8	1.3	3.4
Prop In Lane	1.00	1.00			1.00	1.00	
Lane Grp Cap(c), veh/h	368	333		1633	728	89	2073
V/C Ratio(X)	0.42	0.47		0.67	0.51	0.55	0.25
Avail Cap(c_a), veh/h	1123	1015		2240	998	1123	2240
HCM Platoon Ratio	1.00	1.00		1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00		1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.4	16.6		10.1	9.1	22.1	4.8
Incr Delay (d2), s/veh	0.8	1.1		0.5	0.6	5.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0		0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	1.5		3.3	2.3	0.6	0.7
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	17.2	17.7		10.5	9.6	27.3	4.9
LnGrp LOS	B	B		B	A	C	A
Approach Vol, veh/h	312			1468			567
Approach Delay, s/veh	17.4			10.3			6.8
Approach LOS	B			B			A

Timer - Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	5.9	26.9				32.8		14.8
Change Period (Y+Rc), s	3.5	5.0				5.0		5.0
Max Green Setting (Gmax), s	30.0	30.0				30.0		30.0
Max Q Clear Time (g_c+I1), s	3.3	13.5				5.4		6.1
Green Ext Time (p_c), s	0.1	8.4				3.5		1.0

Intersection Summary	
HCM 6th Ctrl Delay	10.4
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.
User approved ignoring U-Turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	20	83	27	38	25	153	949	38	29	413	65
Future Volume (veh/h)	47	20	83	27	38	25	153	949	38	29	413	65
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.94	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	47	20	84	27	38	25	155	959	38	29	417	66
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	169	72	203	142	149	120	205	1589	63	47	1307	569
Arrive On Green	0.13	0.13	0.13	0.08	0.08	0.08	0.12	0.46	0.46	0.03	0.37	0.37
Sat Flow, veh/h	1268	539	1524	1781	1870	1496	1781	3481	138	1781	3554	1548
Grp Volume(v), veh/h	67	0	84	27	38	25	155	489	508	29	417	66
Grp Sat Flow(s),veh/h/ln	1807	0	1524	1781	1870	1496	1781	1777	1842	1781	1777	1548
Q Serve(g_s), s	1.8	0.0	2.7	0.7	1.0	0.8	4.4	10.9	10.9	0.8	4.4	1.5
Cycle Q Clear(g_c), s	1.8	0.0	2.7	0.7	1.0	0.8	4.4	10.9	10.9	0.8	4.4	1.5
Prop In Lane	0.70		1.00	1.00		1.00	1.00		0.07	1.00		1.00
Lane Grp Cap(c), veh/h	240	0	203	142	149	120	205	811	841	47	1307	569
V/C Ratio(X)	0.28	0.00	0.41	0.19	0.25	0.21	0.76	0.60	0.60	0.62	0.32	0.12
Avail Cap(c_a), veh/h	1547	0	1305	678	712	569	678	811	841	508	2028	884
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.5	0.0	20.9	22.6	22.7	22.6	22.5	10.7	10.7	25.3	11.9	11.0
Incr Delay (d2), s/veh	2.3	0.0	4.9	0.6	0.9	0.9	5.6	3.3	3.2	12.6	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	1.2	0.3	0.5	0.3	2.0	4.0	4.1	0.5	1.5	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.8	0.0	25.8	23.2	23.6	23.5	28.2	14.0	13.9	38.0	12.0	11.1
LnGrp LOS	C	A	C	C	C	C	C	B	B	D	B	B
Approach Vol, veh/h		151			90			1152			512	
Approach Delay, s/veh		24.4			23.5			15.9			13.4	
Approach LOS		C			C			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	4.9	28.5		11.0	9.5	23.8		8.2
Change Period (Y+Rc), s	3.5	4.5		4.0	3.5	4.5		4.0
Max Green Setting (Gmax), s	15.0	24.0		45.0	20.0	30.0		20.0
Max Q Clear Time (g_c+I1), s	2.8	12.9		4.7	6.4	6.4		3.0
Green Ext Time (p_c), s	0.0	4.7		2.0	0.3	2.9		0.3

Intersection Summary	
HCM 6th Ctrl Delay	16.2
HCM 6th LOS	B

Notes

User approved ignoring U-Turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	234	86	369	298	138	137	221	597	172	100	6
Future Volume (veh/h)	30	234	86	369	298	138	137	221	597	172	100	6
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		0.96	1.00		0.97	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	31	239	88	377	304	141	140	226	609	176	102	6
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	45	354	135	802	434	354	184	545	1439	297	932	54
Arrive On Green	0.15	0.15	0.15	0.23	0.23	0.23	0.10	0.29	0.29	0.09	0.27	0.27
Sat Flow, veh/h	297	2323	884	3456	1870	1524	1781	1870	2713	3456	3399	198
Grp Volume(v), veh/h	194	0	164	377	304	141	140	226	609	176	53	55
Grp Sat Flow(s),veh/h/ln	1856	0	1648	1728	1870	1524	1781	1870	1357	1728	1777	1819
Q Serve(g_s), s	6.7	0.0	6.3	6.3	10.0	5.3	5.1	6.5	9.3	3.3	1.5	1.5
Cycle Q Clear(g_c), s	6.7	0.0	6.3	6.3	10.0	5.3	5.1	6.5	9.3	3.3	1.5	1.5
Prop In Lane	0.16		0.54	1.00		1.00	1.00		1.00	1.00		0.11
Lane Grp Cap(c), veh/h	283	0	251	802	434	354	184	545	1439	297	487	499
V/C Ratio(X)	0.69	0.00	0.65	0.47	0.70	0.40	0.76	0.41	0.42	0.59	0.11	0.11
Avail Cap(c_a), veh/h	552	0	490	1542	835	680	795	835	1858	1028	1057	1083
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.0	0.0	26.8	22.2	23.7	21.8	29.3	19.2	9.8	29.6	18.2	18.3
Incr Delay (d2), s/veh	2.9	0.0	2.9	0.4	2.1	0.7	6.4	0.5	0.2	1.9	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	0.0	2.6	2.5	4.4	1.8	2.4	2.7	4.0	1.4	0.6	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.9	0.0	29.7	22.7	25.7	22.6	35.7	19.7	10.0	31.5	18.3	18.4
LnGrp LOS	C	A	C	C	C	C	D	B	B	C	B	B
Approach Vol, veh/h		358			822			975			284	
Approach Delay, s/veh		29.8			23.8			16.0			26.5	
Approach LOS		C			C			B			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.8	23.6		14.2	10.9	22.4		19.6
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	20.0	30.0		20.0	30.0	40.0		30.0
Max Q Clear Time (g_c+I1), s	5.3	11.3		8.7	7.1	3.5		12.0
Green Ext Time (p_c), s	0.5	3.8		1.6	0.3	0.6		3.6

Intersection Summary	
HCM 6th Ctrl Delay	21.9
HCM 6th LOS	C

Notes

User approved ignoring U-Turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	185	754	44	51	677	147	35	12	14	158	14	68
Future Volume (veh/h)	185	754	44	51	677	147	35	12	14	158	14	68
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		1.00	0.97		0.96	0.97		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	189	769	45	52	691	0	36	12	14	161	14	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	406	1526	89	169	1121		412	124	420	431	33	
Arrive On Green	0.23	0.45	0.45	0.09	0.32	0.00	0.27	0.27	0.27	0.27	0.27	0.00
Sat Flow, veh/h	1781	3398	199	1781	3554	1585	1138	451	1528	1171	120	1585
Grp Volume(v), veh/h	189	402	412	52	691	0	48	0	14	175	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1820	1781	1777	1585	1589	0	1528	1292	0	1585
Q Serve(g_s), s	5.8	10.2	10.2	1.7	10.5	0.0	0.0	0.0	0.4	6.6	0.0	0.0
Cycle Q Clear(g_c), s	5.8	10.2	10.2	1.7	10.5	0.0	1.3	0.0	0.4	7.9	0.0	0.0
Prop In Lane	1.00		0.11	1.00		1.00	0.75		1.00	0.92		1.00
Lane Grp Cap(c), veh/h	406	798	817	169	1121		536	0	420	464	0	
V/C Ratio(X)	0.47	0.50	0.50	0.31	0.62		0.09	0.00	0.03	0.38	0.00	
Avail Cap(c_a), veh/h	450	1388	1422	309	1149		826	0	723	660	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	21.1	12.4	12.4	26.8	18.4	0.0	17.1	0.0	16.8	19.9	0.0	0.0
Incr Delay (d2), s/veh	0.8	0.5	0.5	1.0	1.0	0.0	0.1	0.0	0.0	0.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	3.6	3.7	0.7	4.1	0.0	0.5	0.0	0.1	2.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.0	12.9	12.9	27.8	19.4	0.0	17.2	0.0	16.8	20.4	0.0	0.0
LnGrp LOS	C	B	B	C	B		B	A	B	C	A	
Approach Vol, veh/h		1003			743	A		62			175	A
Approach Delay, s/veh		14.6			20.0			17.1			20.4	
Approach LOS		B			B			B			C	

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	21.4	9.5	32.5	21.4	18.0	24.0
Change Period (Y+Rc), s	4.0	3.5	4.0	4.0	3.5	4.0
Max Green Setting (Gmax), s	30.0	11.0	49.5	26.5	16.0	20.5
Max Q Clear Time (g_c+I1), s	3.3	3.7	12.2	9.9	7.8	12.5
Green Ext Time (p_c), s	0.3	0.0	6.0	0.9	0.3	2.9

Intersection Summary	
HCM 6th Ctrl Delay	17.2
HCM 6th LOS	B

Notes

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

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	807	134	176	656	162	78
Future Volume (veh/h)	807	134	176	656	162	78
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.97	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	823	137	180	669	165	80
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1379	596	312	2268	326	290
Arrive On Green	0.39	0.39	0.17	0.64	0.18	0.18
Sat Flow, veh/h	3647	1536	1781	3647	1781	1585
Grp Volume(v), veh/h	823	137	180	669	165	80
Grp Sat Flow(s),veh/h/ln	1777	1536	1781	1777	1781	1585
Q Serve(g_s), s	9.8	3.2	4.9	4.5	4.4	2.3
Cycle Q Clear(g_c), s	9.8	3.2	4.9	4.5	4.4	2.3
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1379	596	312	2268	326	290
V/C Ratio(X)	0.60	0.23	0.58	0.29	0.51	0.28
Avail Cap(c_a), veh/h	2005	867	972	2268	1005	894
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	13.0	10.9	20.1	4.3	19.6	18.7
Incr Delay (d2), s/veh	0.4	0.2	1.7	0.1	1.2	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.4	1.0	2.0	1.0	1.8	0.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	13.4	11.1	21.8	4.4	20.8	19.2
LnGrp LOS	B	B	C	A	C	B
Approach Vol, veh/h	960			849	245	
Approach Delay, s/veh	13.0			8.1	20.3	
Approach LOS	B			A	C	

Timer - Assigned Phs	2	3	4		8
Phs Duration (G+Y+Rc), s	14.7	13.3	25.1		38.4
Change Period (Y+Rc), s	5.0	4.0	4.5		4.5
Max Green Setting (Gmax), s	30.0	29.0	30.0		30.0
Max Q Clear Time (g_c+I1), s	6.4	6.9	11.8		6.5
Green Ext Time (p_c), s	0.7	0.5	6.1		4.8

Intersection Summary	
HCM 6th Ctrl Delay	11.8
HCM 6th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	97	901	3	0	691	58	3	0	12	51	1	43
Future Volume (veh/h)	97	901	3	0	691	58	3	0	12	51	1	43
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.98	0.97		0.96	0.96		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	0	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	100	929	3	0	712	60	3	0	12	53	1	44
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
Percent Heavy Veh, %	2	2	2	0	2	2	2	2	2	2	2	2
Cap, veh/h	131	2051	7	0	1506	658	125	38	322	489	8	402
Arrive On Green	0.07	0.56	0.56	0.00	0.42	0.42	0.26	0.00	0.26	0.26	0.26	0.26
Sat Flow, veh/h	1781	3633	12	0	3647	1553	161	144	1221	1338	30	1527
Grp Volume(v), veh/h	100	454	478	0	712	60	15	0	0	54	0	44
Grp Sat Flow(s),veh/h/ln	1781	1777	1868	0	1777	1553	1527	0	0	1368	0	1527
Q Serve(g_s), s	2.9	7.8	7.8	0.0	7.5	1.2	0.0	0.0	0.0	1.1	0.0	1.1
Cycle Q Clear(g_c), s	2.9	7.8	7.8	0.0	7.5	1.2	0.4	0.0	0.0	1.5	0.0	1.1
Prop In Lane	1.00		0.01	0.00		1.00	0.20		0.80	0.98		1.00
Lane Grp Cap(c), veh/h	131	1003	1054	0	1506	658	485	0	0	497	0	402
V/C Ratio(X)	0.76	0.45	0.45	0.00	0.47	0.09	0.03	0.00	0.00	0.11	0.00	0.11
Avail Cap(c_a), veh/h	528	1019	1071	0	2039	891	661	0	0	918	0	876
HCM Platoon Ratio	1.00	1.00	1.00	1.00	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	0.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	23.8	6.7	6.7	0.0	10.9	9.0	14.3	0.0	0.0	14.7	0.0	14.6
Incr Delay (d2), s/veh	8.7	0.3	0.3	0.0	0.2	0.1	0.0	0.0	0.0	0.1	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	2.2	2.3	0.0	2.5	0.4	0.1	0.0	0.0	0.5	0.0	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.5	7.0	7.0	0.0	11.1	9.1	14.4	0.0	0.0	14.8	0.0	14.7
LnGrp LOS	C	A	A	A	B	A	B	A	A	B	A	B
Approach Vol, veh/h		1032			772			15			98	
Approach Delay, s/veh		9.4			10.9			14.4			14.8	
Approach LOS		A			B			B			B	

Timer - Assigned Phs	2	4	6	7	8
Phs Duration (G+Y+Rc), s	17.8	34.5	17.8	7.4	27.2
Change Period (Y+Rc), s	4.0	5.0	4.0	3.5	5.0
Max Green Setting (Gmax), s	20.0	30.0	30.0	15.5	30.0
Max Q Clear Time (g_c+I1), s	2.4	9.8	3.5	4.9	9.5
Green Ext Time (p_c), s	0.0	6.1	0.4	0.2	5.2

Intersection Summary	
HCM 6th Ctrl Delay	10.4
HCM 6th LOS	B

Notes

User approved ignoring U-Turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	61	844	57	38	632	65	51	9	54	81	16	51
Future Volume (veh/h)	61	844	57	38	632	65	51	9	54	81	16	51
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		0.95	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	64	888	60	40	665	68	54	9	57	85	17	54
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	120	1284	541	88	1220	517	119	11	611	118	13	615
Arrive On Green	0.07	0.36	0.36	0.05	0.34	0.34	0.39	0.39	0.39	0.39	0.39	0.39
Sat Flow, veh/h	1781	3554	1496	1781	3554	1504	0	28	1555	0	34	1567
Grp Volume(v), veh/h	64	888	60	40	665	68	63	0	57	102	0	54
Grp Sat Flow(s),veh/h/ln	1781	1777	1496	1781	1777	1504	28	0	1555	34	0	1567
Q Serve(g_s), s	1.9	11.9	1.5	1.2	8.5	1.7	0.0	0.0	1.3	0.0	0.0	1.2
Cycle Q Clear(g_c), s	1.9	11.9	1.5	1.2	8.5	1.7	22.0	0.0	1.3	22.0	0.0	1.2
Prop In Lane	1.00		1.00	1.00		1.00	0.86		1.00	0.83		1.00
Lane Grp Cap(c), veh/h	120	1284	541	88	1220	517	130	0	611	131	0	615
V/C Ratio(X)	0.53	0.69	0.11	0.45	0.54	0.13	0.48	0.00	0.09	0.78	0.00	0.09
Avail Cap(c_a), veh/h	636	1554	654	636	1522	644	130	0	611	131	0	615
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	25.3	15.2	11.9	25.9	14.9	12.6	24.2	0.0	10.7	25.2	0.0	10.7
Incr Delay (d2), s/veh	3.6	1.0	0.1	3.6	0.4	0.1	2.8	0.0	0.1	25.0	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	4.4	0.5	0.6	3.1	0.5	0.9	0.0	0.4	2.2	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.9	16.3	12.0	29.5	15.2	12.8	26.9	0.0	10.8	50.2	0.0	10.8
LnGrp LOS	C	B	B	C	B	B	C	A	B	D	A	B
Approach Vol, veh/h		1012			773			120			156	
Approach Delay, s/veh		16.8			15.8			19.2			36.5	
Approach LOS		B			B			B			D	

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	26.0	6.3	23.7	26.0	7.3	22.7
Change Period (Y+Rc), s	4.0	3.5	3.5	4.0	3.5	3.5
Max Green Setting (Gmax), s	22.0	20.0	24.5	22.0	20.0	24.0
Max Q Clear Time (g_c+I1), s	24.0	3.2	13.9	24.0	3.9	10.5
Green Ext Time (p_c), s	0.0	0.1	4.7	0.0	0.1	4.0

Intersection Summary	
HCM 6th Ctrl Delay	18.0
HCM 6th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	821	99	106	618	43	88	29	90	27	10	34
Future Volume (veh/h)	60	821	99	106	618	43	88	29	90	27	10	34
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	65	883	106	114	665	46	95	31	97	29	11	37
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	86	1111	487	147	1169	81	300	98	344	248	94	298
Arrive On Green	0.05	0.31	0.31	0.08	0.35	0.35	0.22	0.22	0.22	0.19	0.19	0.19
Sat Flow, veh/h	1781	3554	1557	1781	3368	233	1359	443	1559	1309	496	1574
Grp Volume(v), veh/h	65	883	106	114	351	360	126	0	97	40	0	37
Grp Sat Flow(s),veh/h/ln	1781	1777	1557	1781	1777	1824	1802	0	1559	1805	0	1574
Q Serve(g_s), s	3.4	21.6	4.8	6.0	15.3	15.3	5.6	0.0	4.9	1.7	0.0	1.9
Cycle Q Clear(g_c), s	3.4	21.6	4.8	6.0	15.3	15.3	5.6	0.0	4.9	1.7	0.0	1.9
Prop In Lane	1.00		1.00	1.00		0.13	0.75		1.00	0.72		1.00
Lane Grp Cap(c), veh/h	86	1111	487	147	617	633	398	0	344	342	0	298
V/C Ratio(X)	0.76	0.79	0.22	0.77	0.57	0.57	0.32	0.00	0.28	0.12	0.00	0.12
Avail Cap(c_a), veh/h	749	1495	655	749	747	767	758	0	656	759	0	662
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	44.7	29.9	24.1	42.7	25.3	25.3	31.0	0.0	30.8	32.0	0.0	32.0
Incr Delay (d2), s/veh	12.7	2.2	0.2	8.4	0.8	0.8	0.5	0.0	0.4	0.2	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	9.3	1.8	2.9	6.4	6.6	2.4	0.0	1.9	0.8	0.0	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.4	32.1	24.3	51.1	26.1	26.1	31.5	0.0	31.2	32.1	0.0	32.2
LnGrp LOS	E	C	C	D	C	C	C	A	C	C	A	C
Approach Vol, veh/h		1054			825			223			77	
Approach Delay, s/veh		32.9			29.5			31.4			32.1	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	26.0	11.4	34.7	23.0	8.1	38.0
Change Period (Y+Rc), s	5.0	3.5	5.0	5.0	3.5	5.0
Max Green Setting (Gmax), s	40.0	40.0	40.0	40.0	40.0	40.0
Max Q Clear Time (g_c+I1), s	7.6	8.0	23.6	3.9	5.4	17.3
Green Ext Time (p_c), s	1.1	0.3	6.1	0.3	0.2	4.6

Intersection Summary	
HCM 6th Ctrl Delay	31.4
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	785	127	89	648	1	103	0	59	0	0	3
Future Volume (veh/h)	3	785	127	89	648	1	103	0	59	0	0	3
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		0.99	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	3	835	135	95	689	1	110	0	63	0	0	3
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	7	1519	659	135	1817	3	190	0	166	0	0	25
Arrive On Green	0.00	0.43	0.43	0.08	0.50	0.50	0.11	0.00	0.11	0.00	0.00	0.02
Sat Flow, veh/h	1781	3554	1541	1781	3641	5	1781	0	1554	0	0	1572
Grp Volume(v), veh/h	3	835	135	95	336	354	110	0	63	0	0	3
Grp Sat Flow(s),veh/h/ln	1781	1777	1541	1781	1777	1869	1781	0	1554	0	0	1572
Q Serve(g_s), s	0.1	8.2	2.6	2.4	5.5	5.5	2.8	0.0	1.8	0.0	0.0	0.1
Cycle Q Clear(g_c), s	0.1	8.2	2.6	2.4	5.5	5.5	2.8	0.0	1.8	0.0	0.0	0.1
Prop In Lane	1.00		1.00	1.00		0.00	1.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	7	1519	659	135	887	933	190	0	166	0	0	25
V/C Ratio(X)	0.41	0.55	0.20	0.70	0.38	0.38	0.58	0.00	0.38	0.00	0.00	0.12
Avail Cap(c_a), veh/h	1009	2278	988	1389	1139	1198	1370	0	1195	0	0	974
HCM Platoon Ratio	1.00	1.00	1.00	1.00	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	0.00	0.00	1.00
Uniform Delay (d), s/veh	23.2	10.0	8.4	21.1	7.2	7.2	19.9	0.0	19.5	0.0	0.0	22.7
Incr Delay (d2), s/veh	33.3	0.3	0.2	6.5	0.3	0.3	2.8	0.0	1.4	0.0	0.0	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	2.6	0.7	1.2	1.6	1.6	1.2	0.0	0.6	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.5	10.3	8.6	27.6	7.5	7.5	22.7	0.0	20.9	0.0	0.0	24.7
LnGrp LOS	E	B	A	C	A	A	C	A	C	A	A	C
Approach Vol, veh/h		973			785			173			3	
Approach Delay, s/veh		10.2			9.9			22.0			24.7	
Approach LOS		B			A			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	3.7	28.4		9.0	7.0	25.0		5.8				
Change Period (Y+Rc), s	3.5	5.0		4.0	3.5	5.0		5.0				
Max Green Setting (Gmax), s	26.5	30.0		36.0	36.5	30.0		29.0				
Max Q Clear Time (g_c+I1), s	2.1	7.5		4.8	4.4	10.2		2.1				
Green Ext Time (p_c), s	0.0	4.4		0.8	0.2	6.4		0.0				

Intersection Summary	
HCM 6th Ctrl Delay	11.2
HCM 6th LOS	B

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	823	10	9	677	5	10
Future Vol, veh/h	823	10	9	677	5	10
Conflicting Peds, #/hr	0	9	9	0	9	9
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	100	150	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	914	11	10	752	6	11

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	934	0	1328	475
Stage 1	-	-	-	-	923	-
Stage 2	-	-	-	-	405	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	729	-	146	536
Stage 1	-	-	-	-	347	-
Stage 2	-	-	-	-	642	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	723	-	141	527
Mov Cap-2 Maneuver	-	-	-	-	257	-
Stage 1	-	-	-	-	339	-
Stage 2	-	-	-	-	636	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	14.6
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	390	-	-	723	-
HCM Lane V/C Ratio	0.043	-	-	0.014	-
HCM Control Delay (s)	14.6	-	-	10	-
HCM Lane LOS	B	-	-	B	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	20	937	808	10	4	6
Future Vol, veh/h	20	937	808	10	4	6
Conflicting Peds, #/hr	20	0	0	21	21	20
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	125	-	-	-	-	-
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	21	976	842	10	4	6

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	873	0	-	0	1419	467
Stage 1	-	-	-	-	868	-
Stage 2	-	-	-	-	551	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	768	-	-	-	128	542
Stage 1	-	-	-	-	371	-
Stage 2	-	-	-	-	541	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	753	-	-	-	120	521
Mov Cap-2 Maneuver	-	-	-	-	243	-
Stage 1	-	-	-	-	354	-
Stage 2	-	-	-	-	530	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	15.4
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	753	-	-	-	357
HCM Lane V/C Ratio	0.028	-	-	-	0.029
HCM Control Delay (s)	9.9	-	-	-	15.4
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1

SIMTRAFFIC QUEUEING REPORTS

EXISTING CONDITIONS

AM & PM PEAK HOUR

Intersection: 1: SR-1 Ramps/Del Monte Blvd & Driveway

Movement	WB	WB	SB
Directions Served	L	R	L
Maximum Queue (ft)	32	30	31
Average Queue (ft)	7	8	4
95th Queue (ft)	26	28	20
Link Distance (ft)	148	148	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			150
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 2: Del Monte Blvd & Reindollar Ave

Movement	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	LR	T	T	R	L	T	T
Maximum Queue (ft)	241	175	121	92	68	147	259	263
Average Queue (ft)	123	70	64	35	31	52	105	125
95th Queue (ft)	198	170	107	77	56	106	200	217
Link Distance (ft)	856		471	471			1066	1066
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)		150			125	125		
Storage Blk Time (%)	2	0	0	0	0	0	3	
Queuing Penalty (veh)	8	1	0	0	0	1	3	

Intersection: 3: Del Monte Blvd & Palm Ave

Movement	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LT	R	L	T	R	L	T	TR	L	T	T	R
Maximum Queue (ft)	147	123	88	64	47	81	139	127	97	290	295	113
Average Queue (ft)	46	59	39	18	13	34	57	48	16	141	145	18
95th Queue (ft)	100	105	75	50	39	69	114	100	59	234	245	81
Link Distance (ft)	744			828			1066	1066		1812	1812	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)		100	80		50	225			150			100
Storage Blk Time (%)	1	1	1	3	0					7	18	0
Queuing Penalty (veh)	1	1	1	2	0					1	5	0

Intersection: 4: Del Monte Blvd & Reservation Rd

Movement	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	LT	TR	L	L	T	R	L	T	R	R	L	L
Maximum Queue (ft)	169	271	124	246	173	148	161	160	80	82	71	116
Average Queue (ft)	65	123	82	105	68	44	71	73	39	37	22	54
95th Queue (ft)	147	222	141	187	135	100	130	134	65	70	53	100
Link Distance (ft)		973		622	622			1812	1812			
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	150		100			125	450			450	150	150
Storage Blk Time (%)	0	5	3	7	1	0						0
Queuing Penalty (veh)	0	6	5	14	2	0						0

Intersection: 4: Del Monte Blvd & Reservation Rd

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (ft)	124	84
Average Queue (ft)	51	16
95th Queue (ft)	102	49
Link Distance (ft)	571	571
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)	0	
Queuing Penalty (veh)	0	

Intersection: 5: Vista Del Camino Cir & Reservation Rd

Movement	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	T	R	LT	R	LT	R
Maximum Queue (ft)	75	121	133	46	203	183	50	32	29	78	32
Average Queue (ft)	30	44	58	8	89	70	3	4	2	31	1
95th Queue (ft)	62	93	112	32	172	147	36	21	14	65	18
Link Distance (ft)		622	622		375	375		283		591	
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	175			135			135		50		100
Storage Blk Time (%)					2	1	0	0		0	0
Queuing Penalty (veh)					0	1	0	0		0	0

Intersection: 6: Seacrest Ave & Reservation Rd

Movement	EB	EB	EB	WB	WB	WB	NB	NB
Directions Served	T	T	R	L	T	T	L	R
Maximum Queue (ft)	118	116	52	152	177	181	96	60
Average Queue (ft)	65	68	16	64	51	57	40	24
95th Queue (ft)	114	120	44	116	128	141	77	50
Link Distance (ft)	39	39	39		261	261		724
Upstream Blk Time (%)	14	17	1		0	0		
Queuing Penalty (veh)	27	32	2		0	0		
Storage Bay Dist (ft)				200			100	
Storage Blk Time (%)					0		0	0
Queuing Penalty (veh)					0		0	0

Intersection: 7: Driveway/Shopping Center & Reservation Rd

Movement	EB	EB	EB	WB	WB	WB	NB	SB	SB
Directions Served	L	T	TR	T	T	R	LTR	LT	R
Maximum Queue (ft)	68	90	92	209	207	100	33	66	50
Average Queue (ft)	32	38	49	88	84	32	2	23	18
95th Queue (ft)	60	88	98	188	189	90	15	52	40
Link Distance (ft)		73	73	220	220		474	485	
Upstream Blk Time (%)	0	1	3	0	0				
Queuing Penalty (veh)	0	4	10	1	1				
Storage Bay Dist (ft)	145					75			150
Storage Blk Time (%)	0	1			7	0			
Queuing Penalty (veh)	1	1			5	0			

Intersection: 8: De Forest Rd & Reservation Rd

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	T	R	L	T	T	R	LT	R	LT	R
Maximum Queue (ft)	67	127	153	24	68	190	210	123	37	26	115	74
Average Queue (ft)	20	44	59	5	18	73	75	21	8	5	41	25
95th Queue (ft)	50	100	121	19	51	157	169	70	29	20	83	62
Link Distance (ft)		220	220			490	490		409		830	
Upstream Blk Time (%)			0									
Queuing Penalty (veh)			0									
Storage Bay Dist (ft)	200			175	175			175		200		50
Storage Blk Time (%)			0			0	1	0			6	1
Queuing Penalty (veh)			0			0	1	0			4	1

Intersection: 9: Crescent Ave & Reservation Rd

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	T	R	L	T	TR	LT	R	LT	R
Maximum Queue (ft)	82	217	247	125	143	254	276	98	166	125	73
Average Queue (ft)	21	101	122	43	45	111	132	59	41	47	18
95th Queue (ft)	58	176	208	120	98	206	237	102	105	93	57
Link Distance (ft)		490	490			562	562		681	808	
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	220			100	220			75			50
Storage Blk Time (%)		0	14	0	0	1		9	0	15	0
Queuing Penalty (veh)		0	10	0	0	0		9	0	4	0

Intersection: 10: California Ave & Reservation Rd

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	SB
Directions Served	L	T	T	R	L	T	TR	LT	R	LTR
Maximum Queue (ft)	61	207	245	125	151	193	170	116	72	21
Average Queue (ft)	10	80	91	61	66	65	72	52	28	1
95th Queue (ft)	39	170	193	129	123	144	144	96	54	11
Link Distance (ft)		1635	1635			2271	2271	1450		183
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	75			100	150				150	
Storage Blk Time (%)	0	10	6	0	0	1		0		
Queuing Penalty (veh)	0	1	11	1	1	1		0		

Intersection: 11: Salinas Ave & Reservation Rd

Movement	WB	NB
Directions Served	L	LR
Maximum Queue (ft)	35	37
Average Queue (ft)	6	15
95th Queue (ft)	26	34
Link Distance (ft)		445
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	150	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 12: Reservation Rd & Eucalyptus St

Movement	EB	EB	EB	SB
Directions Served	L	T	T	LR
Maximum Queue (ft)	6	60	67	62
Average Queue (ft)	0	5	8	21
95th Queue (ft)	4	30	40	50
Link Distance (ft)		375	375	1022
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	125			
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 13: Reservation Rd & Driveway 1

Movement	EB	EB	WB	SB
Directions Served	T	T	T	R
Maximum Queue (ft)	34	70	6	52
Average Queue (ft)	1	6	0	17
95th Queue (ft)	20	37	5	44
Link Distance (ft)	261	261	46	179
Upstream Blk Time (%)			0	
Queuing Penalty (veh)			0	
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 14: Driveway 2 & Reservation Rd

Movement	EB	EB	WB	NB
Directions Served	T	TR	T	R
Maximum Queue (ft)	45	57	3	53
Average Queue (ft)	4	10	0	23
95th Queue (ft)	24	43	3	48
Link Distance (ft)	46	46	73	240
Upstream Blk Time (%)	0	1		
Queuing Penalty (veh)	1	4		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 186

Intersection: 1: SR-1 Ramps/Del Monte Blvd & Driveway

Movement	WB	WB	NB	SB
Directions Served	L	R	TR	L
Maximum Queue (ft)	44	30	4	44
Average Queue (ft)	12	8	0	8
95th Queue (ft)	39	28	3	31
Link Distance (ft)	148	148	557	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				150
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: Del Monte Blvd & Reindollar Ave

Movement	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	LR	T	T	R	L	T	T
Maximum Queue (ft)	130	104	275	282	150	95	156	164
Average Queue (ft)	61	29	145	125	77	35	45	65
95th Queue (ft)	108	69	237	229	148	75	116	134
Link Distance (ft)	856		471	471			1066	1066
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)		150			125	125		
Storage Blk Time (%)	0	0	9	4	0	0	0	
Queuing Penalty (veh)	0	0	0	14	1	0	0	

Intersection: 3: Del Monte Blvd & Palm Ave

Movement	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LT	R	L	T	R	L	T	TR	L	T	T	R
Maximum Queue (ft)	103	88	56	91	70	233	326	321	78	171	187	125
Average Queue (ft)	37	31	17	29	19	89	147	158	21	70	80	25
95th Queue (ft)	78	63	45	69	53	174	273	282	55	139	155	85
Link Distance (ft)	744			828			1066	1066		1812	1812	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)		100	80		50	225			150			100
Storage Blk Time (%)	0	0	0	5	0	0	2			1	5	0
Queuing Penalty (veh)	0	0	0	3	0	0	4			0	3	0

Intersection: 4: Del Monte Blvd & Reservation Rd

Movement	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	LT	TR	L	L	T	R	L	T	R	R	L	L
Maximum Queue (ft)	174	237	124	272	368	150	176	236	154	163	139	148
Average Queue (ft)	84	122	81	110	154	70	90	117	73	77	42	65
95th Queue (ft)	159	200	142	209	292	163	155	200	131	139	96	120
Link Distance (ft)		973		622	622			1812	1812			
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	150		100			125	450			450	150	150
Storage Blk Time (%)	0	4	2	11	15	0					0	0
Queuing Penalty (veh)	1	6	4	20	21	0					0	0

Intersection: 4: Del Monte Blvd & Reservation Rd

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (ft)	87	58
Average Queue (ft)	27	10
95th Queue (ft)	66	37
Link Distance (ft)	571	571
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)	0	
Queuing Penalty (veh)	0	

Intersection: 5: Vista Del Camino Cir & Reservation Rd

Movement	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	T	R	LT	R	LT	R
Maximum Queue (ft)	181	219	240	127	246	275	159	75	48	193	124
Average Queue (ft)	98	102	135	37	114	134	42	27	12	87	13
95th Queue (ft)	164	185	217	89	207	237	152	64	38	152	74
Link Distance (ft)		622	622		375	375		283		591	
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	175			135			135		50		100
Storage Blk Time (%)	1	1		0	5	8	0	4	0	7	0
Queuing Penalty (veh)	2	1		0	2	11	0	1	0	5	0

Intersection: 6: Seacrest Ave & Reservation Rd

Movement	EB	EB	EB	WB	WB	WB	NB	NB
Directions Served	T	T	R	L	T	T	L	R
Maximum Queue (ft)	124	122	77	177	176	212	122	178
Average Queue (ft)	97	96	31	90	65	86	73	38
95th Queue (ft)	137	133	66	151	139	175	119	101
Link Distance (ft)	39	39	39		261	261		724
Upstream Blk Time (%)	30	31	4			0		
Queuing Penalty (veh)	95	98	12			0		
Storage Bay Dist (ft)				200			100	
Storage Blk Time (%)				0	0		4	0
Queuing Penalty (veh)				0	0		3	0

Intersection: 7: Driveway/Shopping Center & Reservation Rd

Movement	EB	EB	EB	WB	WB	WB	NB	SB	SB
Directions Served	L	T	TR	T	T	R	LTR	LT	R
Maximum Queue (ft)	72	108	108	218	226	100	40	60	47
Average Queue (ft)	43	69	73	113	112	34	9	23	15
95th Queue (ft)	72	115	113	207	206	96	32	51	37
Link Distance (ft)		73	73	220	220		474	485	
Upstream Blk Time (%)	1	9	12	1	1				
Queuing Penalty (veh)	0	44	59	2	2				
Storage Bay Dist (ft)	145					75			150
Storage Blk Time (%)	1	9			14	0			
Queuing Penalty (veh)	4	9			8	1			

Intersection: 8: De Forest Rd & Reservation Rd

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	T	R	L	T	T	R	LT	R	LT	R
Maximum Queue (ft)	99	216	219	99	114	230	243	141	78	63	104	73
Average Queue (ft)	35	87	103	13	28	87	97	21	29	20	40	24
95th Queue (ft)	77	170	192	58	80	188	196	84	64	46	78	59
Link Distance (ft)		220	220			490	490		409		830	
Upstream Blk Time (%)	0	0	0									
Queuing Penalty (veh)	0	1	1									
Storage Bay Dist (ft)	200			175	175			175		200		50
Storage Blk Time (%)	0	0	1	0		1	1	0			7	1
Queuing Penalty (veh)	0	0	1	0		0	1	0			4	1

Intersection: 9: Crescent Ave & Reservation Rd

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	T	R	L	T	TR	LT	R	LT	R
Maximum Queue (ft)	230	392	413	125	178	253	281	98	182	83	69
Average Queue (ft)	54	185	207	60	65	126	149	57	43	29	24
95th Queue (ft)	135	325	354	149	135	220	247	100	112	67	57
Link Distance (ft)		490	490			562	562		681	808	
Upstream Blk Time (%)			0								
Queuing Penalty (veh)			0								
Storage Bay Dist (ft)	220			100	220			75			50
Storage Blk Time (%)		5	29	0	0	0		10	0	7	1
Queuing Penalty (veh)		3	28	0	0	1		9	1	2	0

Intersection: 10: California Ave & Reservation Rd

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	SB
Directions Served	L	T	T	R	L	T	TR	LT	R	LTR
Maximum Queue (ft)	40	327	356	125	128	151	155	112	65	29
Average Queue (ft)	3	116	135	55	48	59	63	53	22	3
95th Queue (ft)	21	248	278	133	96	122	130	96	49	17
Link Distance (ft)		1635	1635			2271	2271	1450		183
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	75			100	150				150	
Storage Blk Time (%)		13	11	0	0	0		0		
Queuing Penalty (veh)		0	14	0	0	0		0		

Intersection: 11: Salinas Ave & Reservation Rd

Movement	EB	EB	EB	WB	WB	WB	NB
Directions Served	T	T	R	L	T	T	LR
Maximum Queue (ft)	68	91	8	33	58	45	42
Average Queue (ft)	6	9	0	5	7	3	9
95th Queue (ft)	35	46	5	23	36	22	30
Link Distance (ft)	2271	2271			1110	1110	445
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)			100	150			
Storage Blk Time (%)		0					
Queuing Penalty (veh)		0					

Intersection: 12: Reservation Rd & Eucalyptus St

Movement	EB	EB	EB	WB	WB	SB
Directions Served	L	T	T	T	TR	LR
Maximum Queue (ft)	88	214	228	54	53	39
Average Queue (ft)	12	61	84	12	15	9
95th Queue (ft)	50	158	186	43	48	32
Link Distance (ft)		375	375	39	39	1022
Upstream Blk Time (%)				1	1	
Queuing Penalty (veh)				3	4	
Storage Bay Dist (ft)	125					
Storage Blk Time (%)		2				
Queuing Penalty (veh)		0				

Intersection: 13: Reservation Rd & Driveway 1

Movement	EB	EB	WB	SB
Directions Served	T	T	TR	R
Maximum Queue (ft)	150	156	5	59
Average Queue (ft)	28	37	0	26
95th Queue (ft)	101	114	5	50
Link Distance (ft)	261	261	46	179
Upstream Blk Time (%)			0	
Queuing Penalty (veh)			0	
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 14: Driveway 2 & Reservation Rd

Movement	EB	EB	WB	WB	NB
Directions Served	T	TR	T	T	R
Maximum Queue (ft)	64	73	8	15	100
Average Queue (ft)	24	33	1	0	43
95th Queue (ft)	65	77	9	2	80
Link Distance (ft)	46	46	73	73	240
Upstream Blk Time (%)	5	7		0	
Queuing Penalty (veh)	23	35		0	
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Network Summary

Network wide Queuing Penalty: 570

SYNCHRO LEVEL OF SERVICE REPORTS

FUTURE CONDITIONS

AM & PM PEAK HOUR

Intersection	
Int Delay, s/veh	2.7

Movement	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Traffic Vol, veh/h	10	60	0	562	63	392	1239
Future Vol, veh/h	10	60	0	562	63	392	1239
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free
RT Channelized	-	None	-	-	None	-	None
Storage Length	0	0	225	-	-	150	-
Veh in Median Storage, #	2	-	-	0	-	-	0
Grade, %	0	-	-	0	-	-	0
Peak Hour Factor	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2
Mvmt Flow	11	65	0	604	68	422	1332

Major/Minor	Minor1		Major1			Major2	
Conflicting Flow All	2148	336	1332	0	0	672	0
Stage 1	638	-	-	-	-	-	-
Stage 2	1510	-	-	-	-	-	-
Critical Hdwy	6.84	6.94	6.44	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.52	-	-	2.22	-
Pot Cap-1 Maneuver	41	660	203	-	-	915	-
Stage 1	488	-	-	-	-	-	-
Stage 2	169	-	-	-	-	-	-
Platoon blocked, %				-	-		-
Mov Cap-1 Maneuver	22	660	203	-	-	915	-
Mov Cap-2 Maneuver	53	-	-	-	-	-	-
Stage 1	263	-	-	-	-	-	-
Stage 2	169	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	22.2	0	2.9
HCM LOS	C		

Minor Lane/Major Mvmt	NBU	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	203	-	-	53	660	915	-
HCM Lane V/C Ratio	-	-	-	0.203	0.098	0.461	-
HCM Control Delay (s)	0	-	-	89.5	11	12.2	-
HCM Lane LOS	A	-	-	F	B	B	-
HCM 95th %tile Q(veh)	0	-	-	0.7	0.3	2.5	-

Movement	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Traffic Volume (veh/h)	558	71	0	467	157	86	1103
Future Volume (veh/h)	558	71	0	467	157	86	1103
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	1900		1870	1870	1870	1870
Adj Flow Rate, veh/h	671	0		502	169	92	1186
Peak Hour Factor	0.93	0.93		0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	0		2	2	2	2
Cap, veh/h	982	444		1169	520	139	1738
Arrive On Green	0.28	0.00		0.33	0.33	0.08	0.49
Sat Flow, veh/h	3563	1610		3647	1580	1781	3647
Grp Volume(v), veh/h	671	0		502	169	92	1186
Grp Sat Flow(s),veh/h/ln	1781	1610		1777	1580	1781	1777
Q Serve(g_s), s	7.1	0.0		4.7	3.4	2.1	10.9
Cycle Q Clear(g_c), s	7.1	0.0		4.7	3.4	2.1	10.9
Prop In Lane	1.00	1.00			1.00	1.00	
Lane Grp Cap(c), veh/h	982	444		1169	520	139	1738
V/C Ratio(X)	0.68	0.00		0.43	0.33	0.66	0.68
Avail Cap(c_a), veh/h	2514	1136		2507	1115	1257	2507
HCM Platoon Ratio	1.00	1.00		1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00		1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.7	0.0		11.1	10.7	19.1	8.3
Incr Delay (d2), s/veh	0.8	0.0		0.3	0.4	5.3	0.5
Initial Q Delay(d3),s/veh	0.0	0.0		0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	0.0		1.4	1.0	1.0	2.7
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	14.6	0.0		11.4	11.1	24.4	8.8
LnGrp LOS	B	A		B	B	C	A
Approach Vol, veh/h	671			671			1278
Approach Delay, s/veh	14.6			11.3			9.9
Approach LOS	B			B			A

Timer - Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	6.8	19.0				25.8		16.7
Change Period (Y+Rc), s	3.5	5.0				5.0		5.0
Max Green Setting (Gmax), s	30.0	30.0				30.0		30.0
Max Q Clear Time (g_c+I1), s	4.1	6.7				12.9		9.1
Green Ext Time (p_c), s	0.2	3.9				7.9		2.6

Intersection Summary	
HCM 6th Ctrl Delay	11.5
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.
User approved ignoring U-Turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	101	25	278	96	26	39	77	459	21	25	813	34
Future Volume (veh/h)	101	25	278	96	26	39	77	459	21	25	813	34
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	1.00		0.98	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	104	26	287	99	27	40	79	473	22	26	838	35
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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	399	100	432	177	185	152	104	1244	58	41	1155	493
Arrive On Green	0.28	0.28	0.28	0.10	0.10	0.10	0.06	0.36	0.36	0.02	0.32	0.32
Sat Flow, veh/h	1439	360	1558	1781	1870	1532	1781	3454	160	1781	3554	1518
Grp Volume(v), veh/h	130	0	287	99	27	40	79	243	252	26	838	35
Grp Sat Flow(s),veh/h/ln	1798	0	1558	1781	1870	1532	1781	1777	1837	1781	1777	1518
Q Serve(g_s), s	3.8	0.0	10.9	3.5	0.9	1.6	2.9	6.7	6.8	1.0	13.9	1.1
Cycle Q Clear(g_c), s	3.8	0.0	10.9	3.5	0.9	1.6	2.9	6.7	6.8	1.0	13.9	1.1
Prop In Lane	0.80		1.00	1.00		1.00	1.00		0.09	1.00		1.00
Lane Grp Cap(c), veh/h	499	0	432	177	185	152	104	640	662	41	1155	493
V/C Ratio(X)	0.26	0.00	0.66	0.56	0.15	0.26	0.76	0.38	0.38	0.64	0.73	0.07
Avail Cap(c_a), veh/h	1215	0	1052	535	561	460	535	640	662	401	1600	684
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.7	0.0	21.3	28.6	27.4	27.8	30.9	15.8	15.8	32.3	19.9	15.5
Incr Delay (d2), s/veh	1.0	0.0	6.2	2.8	0.4	0.9	10.9	1.7	1.7	15.3	1.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.0	4.5	1.6	0.4	0.6	1.5	2.8	2.9	0.6	5.3	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.7	0.0	27.5	31.4	27.8	28.7	41.9	17.5	17.5	47.5	20.9	15.6
LnGrp LOS	B	A	C	C	C	C	D	B	B	D	C	B
Approach Vol, veh/h		417			166			574			899	
Approach Delay, s/veh		25.1			30.2			20.8			21.5	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.0	28.5		22.5	7.4	26.2		10.6
Change Period (Y+Rc), s	3.5	4.5		4.0	3.5	4.5		4.0
Max Green Setting (Gmax), s	15.0	24.0		45.0	20.0	30.0		20.0
Max Q Clear Time (g_c+I1), s	3.0	8.8		12.9	4.9	15.9		5.5
Green Ext Time (p_c), s	0.0	2.5		5.6	0.1	5.0		0.4

Intersection Summary	
HCM 6th Ctrl Delay	22.7
HCM 6th LOS	C

Notes

User approved ignoring U-Turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	245	141	401	178	196	221	190	355	247	243	6
Future Volume (veh/h)	16	245	141	401	178	196	221	190	355	247	243	6
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		0.98	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	18	275	158	451	200	220	248	213	399	278	273	7
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	24	373	224	721	390	321	302	516	1338	397	782	20
Arrive On Green	0.18	0.18	0.18	0.21	0.21	0.21	0.17	0.28	0.28	0.11	0.22	0.22
Sat Flow, veh/h	135	2082	1251	3456	1870	1539	1781	1870	2739	3456	3536	90
Grp Volume(v), veh/h	248	0	203	451	200	220	248	213	399	278	137	143
Grp Sat Flow(s),veh/h/ln	1864	0	1605	1728	1870	1539	1781	1870	1370	1728	1777	1850
Q Serve(g_s), s	9.1	0.0	8.6	8.6	6.8	9.5	9.7	6.7	6.4	5.6	4.7	4.7
Cycle Q Clear(g_c), s	9.1	0.0	8.6	8.6	6.8	9.5	9.7	6.7	6.4	5.6	4.7	4.7
Prop In Lane	0.07		0.78	1.00		1.00	1.00		1.00	1.00		0.05
Lane Grp Cap(c), veh/h	334	0	287	721	390	321	302	516	1338	397	393	409
V/C Ratio(X)	0.74	0.00	0.70	0.63	0.51	0.68	0.82	0.41	0.30	0.70	0.35	0.35
Avail Cap(c_a), veh/h	516	0	444	1435	776	639	739	776	1719	956	983	1024
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.1	0.0	27.9	26.0	25.3	26.4	28.9	21.4	11.2	30.8	23.8	23.8
Incr Delay (d2), s/veh	3.3	0.0	3.2	0.9	1.0	2.6	5.5	0.5	0.1	2.2	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	0.0	3.4	3.5	3.0	3.6	4.4	2.8	2.7	2.3	1.9	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.4	0.0	31.0	26.9	26.4	29.0	34.4	21.9	11.4	33.0	24.3	24.3
LnGrp LOS	C	A	C	C	C	C	C	C	B	C	C	C
Approach Vol, veh/h		451			871			860			558	
Approach Delay, s/veh		31.2			27.3			20.6			28.6	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	12.3	23.9		16.9	16.3	20.0		19.1				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	20.0	30.0		20.0	30.0	40.0		30.0				
Max Q Clear Time (g_c+I1), s	11.6	8.7		11.1	11.7	6.7		11.5				
Green Ext Time (p_c), s	0.7	2.8		1.8	0.6	1.6		3.5				

Intersection Summary	
HCM 6th Ctrl Delay	26.1
HCM 6th LOS	C

Notes

User approved ignoring U-Turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	148	654	70	55	628	83	51	27	34	102	8	88
Future Volume (veh/h)	148	654	70	55	628	83	51	27	34	102	8	88
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		1.00	0.99		0.98	0.99		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	161	711	76	60	683	0	55	29	37	111	9	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	430	1561	167	191	1239		311	144	327	334	23	
Arrive On Green	0.24	0.48	0.48	0.11	0.35	0.00	0.21	0.21	0.21	0.21	0.21	0.00
Sat Flow, veh/h	1781	3234	345	1781	3554	1585	990	685	1558	1019	108	1585
Grp Volume(v), veh/h	161	390	397	60	683	0	84	0	37	120	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1803	1781	1777	1585	1675	0	1558	1127	0	1585
Q Serve(g_s), s	4.3	8.4	8.4	1.8	8.9	0.0	0.0	0.0	1.1	4.4	0.0	0.0
Cycle Q Clear(g_c), s	4.3	8.4	8.4	1.8	8.9	0.0	2.2	0.0	1.1	6.6	0.0	0.0
Prop In Lane	1.00		0.19	1.00		1.00	0.65		1.00	0.92		1.00
Lane Grp Cap(c), veh/h	430	857	870	191	1239		455	0	327	357	0	
V/C Ratio(X)	0.37	0.46	0.46	0.31	0.55		0.18	0.00	0.11	0.34	0.00	
Avail Cap(c_a), veh/h	497	1533	1555	341	1270		933	0	814	697	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	18.2	9.8	9.8	23.7	15.1	0.0	18.8	0.0	18.4	21.3	0.0	0.0
Incr Delay (d2), s/veh	0.5	0.4	0.4	0.9	0.5	0.0	0.2	0.0	0.2	0.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	2.8	2.8	0.8	3.3	0.0	0.9	0.0	0.4	1.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.7	10.2	10.2	24.6	15.6	0.0	19.0	0.0	18.5	21.9	0.0	0.0
LnGrp LOS	B	B	B	C	B		B	A	B	C	A	
Approach Vol, veh/h		948			743	A		121			120	A
Approach Delay, s/veh		11.7			16.3			18.8			21.9	
Approach LOS		B			B			B			C	

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	16.0	9.7	31.7	16.0	17.3	24.0
Change Period (Y+Rc), s	4.0	3.5	4.0	4.0	3.5	4.0
Max Green Setting (Gmax), s	30.0	11.0	49.5	26.5	16.0	20.5
Max Q Clear Time (g_c+I1), s	4.2	3.8	10.4	8.6	6.3	10.9
Green Ext Time (p_c), s	0.6	0.1	5.8	0.6	0.3	3.2

Intersection Summary	
HCM 6th Ctrl Delay	14.5
HCM 6th LOS	B

Notes

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

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	679	150	167	604	162	86
Future Volume (veh/h)	679	150	167	604	162	86
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	730	161	180	649	174	92
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1359	605	313	2254	331	294
Arrive On Green	0.38	0.38	0.18	0.63	0.19	0.19
Sat Flow, veh/h	3647	1583	1781	3647	1781	1585
Grp Volume(v), veh/h	730	161	180	649	174	92
Grp Sat Flow(s),veh/h/ln	1777	1583	1781	1777	1781	1585
Q Serve(g_s), s	8.4	3.7	4.9	4.3	4.7	2.6
Cycle Q Clear(g_c), s	8.4	3.7	4.9	4.3	4.7	2.6
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1359	605	313	2254	331	294
V/C Ratio(X)	0.54	0.27	0.57	0.29	0.53	0.31
Avail Cap(c_a), veh/h	2021	900	979	2254	1013	901
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	12.7	11.2	19.9	4.3	19.4	18.6
Incr Delay (d2), s/veh	0.3	0.2	1.7	0.1	1.3	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	1.1	2.0	1.0	1.9	0.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	13.0	11.4	21.6	4.4	20.7	19.2
LnGrp LOS	B	B	C	A	C	B
Approach Vol, veh/h	891			829	266	
Approach Delay, s/veh	12.7			8.1	20.2	
Approach LOS	B			A	C	

Timer - Assigned Phs	2	3	4		8
Phs Duration (G+Y+Rc), s	14.8	13.3	24.7		38.0
Change Period (Y+Rc), s	5.0	4.0	4.5		4.5
Max Green Setting (Gmax), s	30.0	29.0	30.0		30.0
Max Q Clear Time (g_c+I1), s	6.7	6.9	10.4		6.3
Green Ext Time (p_c), s	0.8	0.5	5.6		4.7

Intersection Summary	
HCM 6th Ctrl Delay	11.8
HCM 6th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	103	719	5	0	641	111	3	0	7	79	1	134
Future Volume (veh/h)	103	719	5	0	641	111	3	0	7	79	1	134
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		1.00	0.99		0.98	0.98		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	0	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	110	765	5	0	682	118	3	0	7	84	1	143
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	0	2	2	2	2	2	2	2	2
Cap, veh/h	145	2086	14	0	1505	669	163	41	253	475	5	375
Arrive On Green	0.08	0.58	0.58	0.00	0.42	0.42	0.24	0.00	0.24	0.24	0.24	0.24
Sat Flow, veh/h	1781	3619	24	0	3647	1579	281	172	1057	1372	20	1569
Grp Volume(v), veh/h	110	376	394	0	682	118	10	0	0	85	0	143
Grp Sat Flow(s),veh/h/ln	1781	1777	1866	0	1777	1579	1510	0	0	1392	0	1569
Q Serve(g_s), s	2.9	5.5	5.5	0.0	6.7	2.3	0.0	0.0	0.0	2.1	0.0	3.7
Cycle Q Clear(g_c), s	2.9	5.5	5.5	0.0	6.7	2.3	0.2	0.0	0.0	2.4	0.0	3.7
Prop In Lane	1.00		0.01	0.00		1.00	0.30		0.70	0.99		1.00
Lane Grp Cap(c), veh/h	145	1024	1076	0	1505	669	457	0	0	479	0	375
V/C Ratio(X)	0.76	0.37	0.37	0.00	0.45	0.18	0.02	0.00	0.00	0.18	0.00	0.38
Avail Cap(c_a), veh/h	566	1093	1148	0	2186	972	704	0	0	1001	0	965
HCM Platoon Ratio	1.00	1.00	1.00	1.00	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	0.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	21.9	5.5	5.5	0.0	10.0	8.8	14.2	0.0	0.0	15.0	0.0	15.5
Incr Delay (d2), s/veh	7.9	0.2	0.2	0.0	0.2	0.1	0.0	0.0	0.0	0.2	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	1.4	1.5	0.0	2.1	0.7	0.1	0.0	0.0	0.7	0.0	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.8	5.8	5.8	0.0	10.2	8.9	14.2	0.0	0.0	15.2	0.0	16.2
LnGrp LOS	C	A	A	A	B	A	B	A	A	B	A	B
Approach Vol, veh/h		880			800			10			228	
Approach Delay, s/veh		8.8			10.0			14.2			15.8	
Approach LOS		A			B			B			B	

Timer - Assigned Phs	2	4	6	7	8
Phs Duration (G+Y+Rc), s	15.6	33.1	15.6	7.5	25.6
Change Period (Y+Rc), s	4.0	5.0	4.0	3.5	5.0
Max Green Setting (Gmax), s	20.0	30.0	30.0	15.5	30.0
Max Q Clear Time (g_c+I1), s	2.2	7.5	5.7	4.9	8.7
Green Ext Time (p_c), s	0.0	5.0	0.9	0.2	5.2

Intersection Summary	
HCM 6th Ctrl Delay	10.2
HCM 6th LOS	B

Notes

User approved ignoring U-Turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	743	25	28	665	105	16	3	16	138	1	71
Future Volume (veh/h)	37	743	25	28	665	105	16	3	16	138	1	71
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.98	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	41	816	27	31	731	115	18	3	18	152	1	78
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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	91	1228	521	74	1193	521	124	12	639	133	0	644
Arrive On Green	0.05	0.35	0.35	0.04	0.34	0.34	0.41	0.41	0.41	0.41	0.41	0.41
Sat Flow, veh/h	1781	3554	1509	1781	3554	1552	0	28	1563	0	1	1576
Grp Volume(v), veh/h	41	816	27	31	731	115	21	0	18	153	0	78
Grp Sat Flow(s),veh/h/ln	1781	1777	1509	1781	1777	1552	28	0	1563	1	0	1576
Q Serve(g_s), s	1.2	10.5	0.6	0.9	9.3	2.9	0.0	0.0	0.4	0.0	0.0	1.7
Cycle Q Clear(g_c), s	1.2	10.5	0.6	0.9	9.3	2.9	22.0	0.0	0.4	22.0	0.0	1.7
Prop In Lane	1.00		1.00	1.00		1.00	0.86		1.00	0.99		1.00
Lane Grp Cap(c), veh/h	91	1228	521	74	1193	521	136	0	639	134	0	644
V/C Ratio(X)	0.45	0.66	0.05	0.42	0.61	0.22	0.15	0.00	0.03	1.14	0.00	0.12
Avail Cap(c_a), veh/h	662	1618	687	662	1585	692	136	0	639	134	0	644
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	24.8	15.0	11.7	25.2	14.9	12.8	14.9	0.0	9.5	26.8	0.0	9.9
Incr Delay (d2), s/veh	3.5	0.6	0.0	3.8	0.5	0.2	0.5	0.0	0.0	121.5	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	3.8	0.2	0.4	3.3	0.9	0.1	0.0	0.1	6.1	0.0	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.3	15.6	11.8	28.9	15.5	13.0	15.4	0.0	9.5	148.3	0.0	10.0
LnGrp LOS	C	B	B	C	B	B	B	A	A	F	A	A
Approach Vol, veh/h		884			877			39			231	
Approach Delay, s/veh		16.1			15.6			12.7			101.6	
Approach LOS		B			B			B			F	

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	26.0	5.7	22.1	26.0	6.2	21.6
Change Period (Y+Rc), s	4.0	3.5	3.5	4.0	3.5	3.5
Max Green Setting (Gmax), s	22.0	20.0	24.5	22.0	20.0	24.0
Max Q Clear Time (g_c+I1), s	24.0	2.9	12.5	24.0	3.2	11.3
Green Ext Time (p_c), s	0.0	0.0	4.5	0.0	0.1	4.4

Intersection Summary	
HCM 6th Ctrl Delay	25.5
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	51	751	74	82	639	24	106	21	107	64	52	37
Future Volume (veh/h)	51	751	74	82	639	24	106	21	107	64	52	37
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		0.98	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	55	816	80	89	695	26	115	23	116	70	57	40
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	73	1047	461	117	1116	42	335	67	351	217	177	341
Arrive On Green	0.04	0.29	0.29	0.07	0.32	0.32	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	1781	3554	1564	1781	3491	131	1496	299	1564	1003	817	1576
Grp Volume(v), veh/h	55	816	80	89	354	367	138	0	116	127	0	40
Grp Sat Flow(s),veh/h/ln	1781	1777	1564	1781	1777	1844	1796	0	1564	1820	0	1576
Q Serve(g_s), s	2.8	19.5	3.5	4.6	15.7	15.7	6.0	0.0	5.8	5.5	0.0	1.9
Cycle Q Clear(g_c), s	2.8	19.5	3.5	4.6	15.7	15.7	6.0	0.0	5.8	5.5	0.0	1.9
Prop In Lane	1.00		1.00	1.00		0.07	0.83		1.00	0.55		1.00
Lane Grp Cap(c), veh/h	73	1047	461	117	568	590	403	0	351	394	0	341
V/C Ratio(X)	0.76	0.78	0.17	0.76	0.62	0.62	0.34	0.00	0.33	0.32	0.00	0.12
Avail Cap(c_a), veh/h	767	1529	673	767	765	794	773	0	673	783	0	678
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	44.1	30.0	24.4	42.7	26.9	26.9	30.3	0.0	30.2	30.7	0.0	29.3
Incr Delay (d2), s/veh	14.7	1.6	0.2	9.6	1.1	1.1	0.5	0.0	0.5	0.5	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	8.3	1.3	2.3	6.7	6.9	2.6	0.0	2.2	2.4	0.0	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.8	31.6	24.5	52.3	28.0	27.9	30.8	0.0	30.8	31.2	0.0	29.4
LnGrp LOS	E	C	C	D	C	C	C	A	C	C	A	C
Approach Vol, veh/h		951			810			254			167	
Approach Delay, s/veh		32.6			30.6			30.8			30.7	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	25.8	9.6	32.4	25.1	7.3	34.7
Change Period (Y+Rc), s	5.0	3.5	5.0	5.0	3.5	5.0
Max Green Setting (Gmax), s	40.0	40.0	40.0	40.0	40.0	40.0
Max Q Clear Time (g_c+I1), s	8.0	6.6	21.5	7.5	4.8	17.7
Green Ext Time (p_c), s	1.2	0.2	5.8	0.9	0.1	4.6

Intersection Summary	
HCM 6th Ctrl Delay	31.5
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	670	250	159	632	4	112	8	170	0	1	0
Future Volume (veh/h)	10	670	250	159	632	4	112	8	170	0	1	0
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		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	11	736	275	175	695	4	123	9	187	0	1	0
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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	25	1307	575	233	1755	10	290	21	271	0	10	0
Arrive On Green	0.01	0.37	0.37	0.13	0.48	0.48	0.17	0.17	0.17	0.00	0.01	0.00
Sat Flow, veh/h	1781	3554	1564	1781	3622	21	1665	122	1558	0	1870	0
Grp Volume(v), veh/h	11	736	275	175	341	358	132	0	187	0	1	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1564	1781	1777	1866	1787	0	1558	0	1870	0
Q Serve(g_s), s	0.3	9.0	7.3	5.1	6.7	6.7	3.6	0.0	6.1	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.3	9.0	7.3	5.1	6.7	6.7	3.6	0.0	6.1	0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.01	0.93		1.00	0.00		0.00
Lane Grp Cap(c), veh/h	25	1307	575	233	861	904	311	0	271	0	10	0
V/C Ratio(X)	0.44	0.56	0.48	0.75	0.40	0.40	0.42	0.00	0.69	0.00	0.10	0.00
Avail Cap(c_a), veh/h	868	1961	863	1196	981	1030	1183	0	1032	0	998	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	26.6	13.7	13.2	22.8	8.9	8.9	20.0	0.0	21.1	0.0	26.9	0.0
Incr Delay (d2), s/veh	11.6	0.4	0.6	4.9	0.3	0.3	0.9	0.0	3.1	0.0	4.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	3.2	2.3	2.3	2.1	2.2	1.4	0.0	2.3	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.2	14.1	13.8	27.7	9.2	9.2	20.9	0.0	24.2	0.0	31.0	0.0
LnGrp LOS	D	B	B	C	A	A	C	A	C	A	C	A
Approach Vol, veh/h		1022			874			319			1	
Approach Delay, s/veh		14.3			12.9			22.8			31.0	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	4.3	31.3		13.5	10.6	25.0		5.3
Change Period (Y+Rc), s	3.5	5.0		4.0	3.5	5.0		5.0
Max Green Setting (Gmax), s	26.5	30.0		36.0	36.5	30.0		29.0
Max Q Clear Time (g_c+I1), s	2.3	8.7		8.1	7.1	11.0		2.0
Green Ext Time (p_c), s	0.0	4.4		1.4	0.5	6.0		0.0

Intersection Summary	
HCM 6th Ctrl Delay	15.0
HCM 6th LOS	B

Intersection	
Int Delay, s/veh	0.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	923	13	27	762	21	51
Future Vol, veh/h	923	13	27	762	21	51
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	100	150	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1003	14	29	828	23	55

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1017	0	1475	502
Stage 1	-	-	-	-	1003	-
Stage 2	-	-	-	-	472	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	678	-	117	515
Stage 1	-	-	-	-	315	-
Stage 2	-	-	-	-	594	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	678	-	112	515
Mov Cap-2 Maneuver	-	-	-	-	224	-
Stage 1	-	-	-	-	301	-
Stage 2	-	-	-	-	594	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	17.2
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	373	-	-	678	-
HCM Lane V/C Ratio	0.21	-	-	0.043	-
HCM Control Delay (s)	17.2	-	-	10.6	-
HCM Lane LOS	C	-	-	B	-
HCM 95th %tile Q(veh)	0.8	-	-	0.1	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	3	815	738	28	14	25
Future Vol, veh/h	3	815	738	28	14	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	125	-	-	-	-	-
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	896	811	31	15	27

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	842	0	-	0	1281	421
Stage 1	-	-	-	-	827	-
Stage 2	-	-	-	-	454	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	789	-	-	-	157	581
Stage 1	-	-	-	-	390	-
Stage 2	-	-	-	-	606	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	789	-	-	-	156	581
Mov Cap-2 Maneuver	-	-	-	-	282	-
Stage 1	-	-	-	-	388	-
Stage 2	-	-	-	-	606	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	14.5
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	789	-	-	-	421
HCM Lane V/C Ratio	0.004	-	-	-	0.102
HCM Control Delay (s)	9.6	-	-	-	14.5
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.3

Intersection	
Int Delay, s/veh	33.2

Movement	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Traffic Vol, veh/h	165	171	0	1508	52	97	727
Future Vol, veh/h	165	171	0	1508	52	97	727
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free
RT Channelized	-	None	-	-	None	-	None
Storage Length	0	0	225	-	-	150	-
Veh in Median Storage, #	2	-	-	0	-	-	0
Grade, %	0	-	-	0	-	-	0
Peak Hour Factor	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2
Mvmt Flow	177	184	0	1622	56	104	782

Major/Minor	Minor1		Major1			Major2	
Conflicting Flow All	2249	839	782	0	0	1678	0
Stage 1	1650	-	-	-	-	-	-
Stage 2	599	-	-	-	-	-	-
Critical Hdwy	6.84	6.94	6.44	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.52	-	-	2.22	-
Pot Cap-1 Maneuver	~ 35	309	458	-	-	378	-
Stage 1	~ 142	-	-	-	-	-	-
Stage 2	511	-	-	-	-	-	-
Platoon blocked, %				-	-		-
Mov Cap-1 Maneuver	~ 25	309	458	-	-	378	-
Mov Cap-2 Maneuver	~ 95	-	-	-	-	-	-
Stage 1	~ 103	-	-	-	-	-	-
Stage 2	511	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	263.3	0	2.1
HCM LOS	F		

Minor Lane/Major Mvmt	NBU	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	458	-	-	95	309	378	-
HCM Lane V/C Ratio	-	-	-	1.868	0.595	0.276	-
HCM Control Delay (s)	0	-	-	$ 502.6	32.4	18.1	-
HCM Lane LOS	A	-	-	F	D	C	-
HCM 95th %tile Q(veh)	0	-	-	14.8	3.6	1.1	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Movement	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Traffic Volume (veh/h)	248	126	0	1159	510	61	576
Future Volume (veh/h)	248	126	0	1159	510	61	576
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	1900		1870	1870	1870	1870
Adj Flow Rate, veh/h	201	206		1246	548	66	619
Peak Hour Factor	0.93	0.93		0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	0		2	2	2	2
Cap, veh/h	344	311		1730	771	106	2181
Arrive On Green	0.19	0.19		0.49	0.49	0.06	0.61
Sat Flow, veh/h	1781	1610		3647	1583	1781	3647
Grp Volume(v), veh/h	201	206		1246	548	66	619
Grp Sat Flow(s),veh/h/ln	1781	1610		1777	1583	1781	1777
Q Serve(g_s), s	5.3	6.1		14.3	14.0	1.9	4.2
Cycle Q Clear(g_c), s	5.3	6.1		14.3	14.0	1.9	4.2
Prop In Lane	1.00	1.00			1.00	1.00	
Lane Grp Cap(c), veh/h	344	311		1730	771	106	2181
V/C Ratio(X)	0.58	0.66		0.72	0.71	0.63	0.28
Avail Cap(c_a), veh/h	1034	934		2062	919	1034	2181
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	19.0	19.3		10.5	10.4	23.8	4.7
Incr Delay (d2), s/veh	1.6	2.4		1.0	2.1	5.9	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	2.2	2.3		4.3	4.4	0.9	0.9
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	20.6	21.7		11.5	12.5	29.7	4.7
LnGrp LOS	C	C		B	B	C	A
Approach Vol, veh/h	407			1794			685
Approach Delay, s/veh	21.2			11.8			7.1
Approach LOS	C			B			A

Timer - Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	6.6	30.2				36.7		15.0
Change Period (Y+Rc), s	3.5	5.0				5.0		5.0
Max Green Setting (Gmax), s	30.0	30.0				30.0		30.0
Max Q Clear Time (g_c+I1), s	3.9	16.3				6.2		8.1
Green Ext Time (p_c), s	0.1	8.8				4.2		1.3

Intersection Summary		
HCM 6th Ctrl Delay		12.0
HCM 6th LOS		B

Notes

User approved volume balancing among the lanes for turning movement.
User approved ignoring U-Turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	61	25	108	35	49	33	244	1008	55	51	509	71
Future Volume (veh/h)	61	25	108	35	49	33	244	1008	55	51	509	71
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		0.95	1.00		0.98	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	62	25	109	35	49	33	246	1018	56	52	514	72
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	202	81	241	149	156	125	302	1477	81	71	1073	465
Arrive On Green	0.16	0.16	0.16	0.08	0.08	0.08	0.17	0.43	0.43	0.04	0.30	0.30
Sat Flow, veh/h	1287	519	1534	1781	1870	1500	1781	3421	188	1781	3554	1540
Grp Volume(v), veh/h	87	0	109	35	49	33	246	529	545	52	514	72
Grp Sat Flow(s),veh/h/ln	1806	0	1534	1781	1870	1500	1781	1777	1832	1781	1777	1540
Q Serve(g_s), s	2.4	0.0	3.6	1.0	1.4	1.1	7.4	13.4	13.4	1.6	6.6	1.9
Cycle Q Clear(g_c), s	2.4	0.0	3.6	1.0	1.4	1.1	7.4	13.4	13.4	1.6	6.6	1.9
Prop In Lane	0.71		1.00	1.00		1.00	1.00		0.10	1.00		1.00
Lane Grp Cap(c), veh/h	283	0	241	149	156	125	302	767	791	71	1073	465
V/C Ratio(X)	0.31	0.00	0.45	0.24	0.31	0.26	0.81	0.69	0.69	0.73	0.48	0.15
Avail Cap(c_a), veh/h	1462	0	1242	641	673	540	641	767	791	481	1918	832
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.7	0.0	21.3	23.8	24.0	23.9	22.2	12.8	12.8	26.4	15.8	14.2
Incr Delay (d2), s/veh	2.2	0.0	4.8	0.8	1.1	1.1	2.0	5.0	4.9	5.4	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.0	1.5	0.4	0.6	0.4	2.9	5.3	5.5	0.7	2.3	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.9	0.0	26.0	24.6	25.1	25.0	24.3	17.8	17.6	31.8	16.0	14.3
LnGrp LOS	C	A	C	C	C	C	C	B	B	C	B	B
Approach Vol, veh/h		196			117			1320			638	
Approach Delay, s/veh		24.7			24.9			18.9			17.1	
Approach LOS		C			C			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.7	28.5		12.7	12.9	21.3		8.6
Change Period (Y+Rc), s	3.5	4.5		4.0	3.5	4.5		4.0
Max Green Setting (Gmax), s	15.0	24.0		45.0	20.0	30.0		20.0
Max Q Clear Time (g_c+I1), s	3.6	15.4		5.6	9.4	8.6		3.4
Green Ext Time (p_c), s	0.0	1.8		2.6	0.3	1.2		0.4

Intersection Summary	
HCM 6th Ctrl Delay	19.2
HCM 6th LOS	B

Notes

User approved ignoring U-Turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	93	304	123	444	426	195	163	262	619	185	103	9
Future Volume (veh/h)	93	304	123	444	426	195	163	262	619	185	103	9
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.97	1.00		0.97	1.00		0.93
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	95	310	126	453	435	199	166	267	632	189	105	9
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	115	387	165	975	528	433	207	492	1499	279	750	63
Arrive On Green	0.19	0.19	0.19	0.28	0.28	0.28	0.12	0.26	0.26	0.08	0.23	0.23
Sat Flow, veh/h	606	2034	866	3456	1870	1534	1781	1870	2705	3456	3293	277
Grp Volume(v), veh/h	289	0	242	453	435	199	166	267	632	189	56	58
Grp Sat Flow(s),veh/h/ln	1840	0	1666	1728	1870	1534	1781	1870	1352	1728	1777	1794
Q Serve(g_s), s	13.1	0.0	12.0	9.4	18.9	9.3	7.9	10.7	12.1	4.6	2.2	2.3
Cycle Q Clear(g_c), s	13.1	0.0	12.0	9.4	18.9	9.3	7.9	10.7	12.1	4.6	2.2	2.3
Prop In Lane	0.33		0.52	1.00		1.00	1.00		1.00	1.00		0.15
Lane Grp Cap(c), veh/h	350	0	317	975	528	433	207	492	1499	279	405	409
V/C Ratio(X)	0.83	0.00	0.77	0.46	0.82	0.46	0.80	0.54	0.42	0.68	0.14	0.14
Avail Cap(c_a), veh/h	423	0	383	1191	645	529	614	645	1719	794	817	824
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.9	0.0	33.4	25.8	29.2	25.8	37.5	27.6	11.7	38.9	26.8	26.8
Incr Delay (d2), s/veh	10.7	0.0	7.4	0.3	7.2	0.8	7.0	0.9	0.2	2.9	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.8	0.0	5.4	3.8	9.2	3.4	3.7	4.7	6.1	2.0	0.9	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.6	0.0	40.8	26.2	36.4	26.5	44.5	28.5	11.9	41.8	27.0	27.0
LnGrp LOS	D	A	D	C	D	C	D	C	B	D	C	C
Approach Vol, veh/h		531			1087			1065			303	
Approach Delay, s/veh		42.9			30.3			21.2			36.2	
Approach LOS		D			C			C			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.0	26.9		20.5	14.1	23.8		28.5				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	20.0	30.0		20.0	30.0	40.0		30.0				
Max Q Clear Time (g_c+I1), s	10.6	14.1		15.1	9.9	4.3		20.9				
Green Ext Time (p_c), s	0.5	4.0		1.4	0.4	0.6		3.6				

Intersection Summary	
HCM 6th Ctrl Delay	29.9
HCM 6th LOS	C

Notes

User approved ignoring U-Turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	229	781	89	85	812	150	124	36	33	201	37	104
Future Volume (veh/h)	229	781	89	85	812	150	124	36	33	201	37	104
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		1.00	0.98		0.97	0.98		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	234	797	91	87	829	0	127	37	34	205	38	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	385	1244	142	210	1037		475	127	498	385	57	
Arrive On Green	0.22	0.39	0.39	0.12	0.29	0.00	0.32	0.32	0.32	0.32	0.32	0.00
Sat Flow, veh/h	1781	3189	364	1781	3554	1585	1178	392	1537	890	176	1585
Grp Volume(v), veh/h	234	444	444	87	829	0	164	0	34	243	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1776	1781	1777	1585	1571	0	1537	1066	0	1585
Q Serve(g_s), s	8.1	13.9	13.9	3.1	14.8	0.0	0.0	0.0	1.0	10.8	0.0	0.0
Cycle Q Clear(g_c), s	8.1	13.9	13.9	3.1	14.8	0.0	5.1	0.0	1.0	16.0	0.0	0.0
Prop In Lane	1.00		0.20	1.00		1.00	0.77		1.00	0.84		1.00
Lane Grp Cap(c), veh/h	385	693	693	210	1037		602	0	498	442	0	
V/C Ratio(X)	0.61	0.64	0.64	0.41	0.80		0.27	0.00	0.07	0.55	0.00	
Avail Cap(c_a), veh/h	416	1284	1283	286	1063		766	0	673	528	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	24.2	17.0	17.0	28.0	22.4	0.0	17.4	0.0	16.0	23.2	0.0	0.0
Incr Delay (d2), s/veh	2.2	1.0	1.0	1.3	4.3	0.0	0.2	0.0	0.1	1.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	5.3	5.3	1.3	6.4	0.0	1.9	0.0	0.4	3.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.5	18.0	18.0	29.3	26.7	0.0	17.6	0.0	16.1	24.3	0.0	0.0
LnGrp LOS	C	B	B	C	C		B	A	B	C	A	
Approach Vol, veh/h		1122			916	A		198			243	A
Approach Delay, s/veh		19.7			27.0			17.3			24.3	
Approach LOS		B			C			B			C	

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	26.2	11.6	30.7	26.2	18.3	24.0
Change Period (Y+Rc), s	4.0	3.5	4.0	4.0	3.5	4.0
Max Green Setting (Gmax), s	30.0	11.0	49.5	26.5	16.0	20.5
Max Q Clear Time (g_c+I1), s	7.1	5.1	15.9	18.0	10.1	16.8
Green Ext Time (p_c), s	1.1	0.1	6.7	0.9	0.3	1.9

Intersection Summary	
HCM 6th Ctrl Delay	22.7
HCM 6th LOS	C

Notes

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

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	848	184	234	733	253	103
Future Volume (veh/h)	848	184	234	733	253	103
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.97	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	865	188	239	748	258	105
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1350	583	319	2247	344	306
Arrive On Green	0.38	0.38	0.18	0.63	0.19	0.19
Sat Flow, veh/h	3647	1536	1781	3647	1781	1585
Grp Volume(v), veh/h	865	188	239	748	258	105
Grp Sat Flow(s),veh/h/ln	1777	1536	1781	1777	1781	1585
Q Serve(g_s), s	10.8	4.7	6.9	5.3	7.4	3.1
Cycle Q Clear(g_c), s	10.8	4.7	6.9	5.3	7.4	3.1
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1350	583	319	2247	344	306
V/C Ratio(X)	0.64	0.32	0.75	0.33	0.75	0.34
Avail Cap(c_a), veh/h	1961	848	950	2247	983	875
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	13.8	11.9	21.2	4.7	20.7	19.0
Incr Delay (d2), s/veh	0.5	0.3	3.5	0.1	3.3	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.8	1.4	2.9	1.3	3.2	1.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	14.3	12.2	24.7	4.7	24.0	19.6
LnGrp LOS	B	B	C	A	C	B
Approach Vol, veh/h	1053			987	363	
Approach Delay, s/veh	14.0			9.6	22.7	
Approach LOS	B			A	C	

Timer - Assigned Phs	2	3	4		8
Phs Duration (G+Y+Rc), s	15.5	13.7	25.1		38.9
Change Period (Y+Rc), s	5.0	4.0	4.5		4.5
Max Green Setting (Gmax), s	30.0	29.0	30.0		30.0
Max Q Clear Time (g_c+I1), s	9.4	8.9	12.8		7.3
Green Ext Time (p_c), s	1.1	0.6	6.4		5.4

Intersection Summary	
HCM 6th Ctrl Delay	13.5
HCM 6th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	108	968	2	0	854	89	4	0	13	83	1	46
Future Volume (veh/h)	108	968	2	0	854	89	4	0	13	83	1	46
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.98	0.97		0.96	0.96		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	0	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	111	998	2	0	880	92	4	0	13	86	1	47
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
Percent Heavy Veh, %	2	2	2	0	2	2	2	2	2	2	2	2
Cap, veh/h	146	2046	4	0	1475	644	140	39	313	497	5	412
Arrive On Green	0.08	0.56	0.56	0.00	0.42	0.42	0.27	0.00	0.27	0.27	0.27	0.27
Sat Flow, veh/h	1781	3638	7	0	3647	1553	213	145	1162	1348	19	1529
Grp Volume(v), veh/h	111	487	513	0	880	92	17	0	0	87	0	47
Grp Sat Flow(s),veh/h/ln	1781	1777	1869	0	1777	1553	1519	0	0	1366	0	1529
Q Serve(g_s), s	3.3	8.8	8.8	0.0	10.3	2.0	0.0	0.0	0.0	2.1	0.0	1.2
Cycle Q Clear(g_c), s	3.3	8.8	8.8	0.0	10.3	2.0	0.4	0.0	0.0	2.6	0.0	1.2
Prop In Lane	1.00		0.00	0.00		1.00	0.24		0.76	0.99		1.00
Lane Grp Cap(c), veh/h	146	999	1051	0	1475	644	492	0	0	502	0	412
V/C Ratio(X)	0.76	0.49	0.49	0.00	0.60	0.14	0.03	0.00	0.00	0.17	0.00	0.11
Avail Cap(c_a), veh/h	516	999	1051	0	1992	870	646	0	0	897	0	857
HCM Platoon Ratio	1.00	1.00	1.00	1.00	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	0.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	24.0	7.1	7.1	0.0	12.2	9.7	14.4	0.0	0.0	15.2	0.0	14.7
Incr Delay (d2), s/veh	7.8	0.4	0.4	0.0	0.4	0.1	0.0	0.0	0.0	0.2	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	2.5	2.7	0.0	3.5	0.6	0.1	0.0	0.0	0.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.9	7.4	7.4	0.0	12.6	9.8	14.5	0.0	0.0	15.3	0.0	14.9
LnGrp LOS	C	A	A	A	B	A	B	A	A	B	A	B
Approach Vol, veh/h		1111			972			17			134	
Approach Delay, s/veh		9.9			12.3			14.5			15.2	
Approach LOS		A			B			B			B	

Timer - Assigned Phs	2	4	6	7	8
Phs Duration (G+Y+Rc), s	18.4	35.1	18.4	7.9	27.2
Change Period (Y+Rc), s	4.0	5.0	4.0	3.5	5.0
Max Green Setting (Gmax), s	20.0	30.0	30.0	15.5	30.0
Max Q Clear Time (g_c+I1), s	2.4	10.8	4.6	5.3	12.3
Green Ext Time (p_c), s	0.0	6.5	0.6	0.2	6.3

Intersection Summary	
HCM 6th Ctrl Delay	11.3
HCM 6th LOS	B

Notes

User approved ignoring U-Turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	67	898	107	56	798	71	68	11	72	92	24	57
Future Volume (veh/h)	67	898	107	56	798	71	68	11	72	92	24	57
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		0.95	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	71	945	113	59	840	75	72	12	76	97	25	60
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	126	1302	548	113	1277	541	116	11	591	112	17	595
Arrive On Green	0.07	0.37	0.37	0.06	0.36	0.36	0.38	0.38	0.38	0.38	0.38	0.38
Sat Flow, veh/h	1781	3554	1497	1781	3554	1506	0	28	1554	0	44	1566
Grp Volume(v), veh/h	71	945	113	59	840	75	84	0	76	122	0	60
Grp Sat Flow(s),veh/h/ln	1781	1777	1497	1781	1777	1506	28	0	1554	44	0	1566
Q Serve(g_s), s	2.2	13.3	3.0	1.9	11.5	1.9	0.0	0.0	1.8	0.0	0.0	1.4
Cycle Q Clear(g_c), s	2.2	13.3	3.0	1.9	11.5	1.9	22.0	0.0	1.8	22.0	0.0	1.4
Prop In Lane	1.00		1.00	1.00		1.00	0.86		1.00	0.80		1.00
Lane Grp Cap(c), veh/h	126	1302	548	113	1277	541	126	0	591	128	0	595
V/C Ratio(X)	0.56	0.73	0.21	0.52	0.66	0.14	0.67	0.00	0.13	0.95	0.00	0.10
Avail Cap(c_a), veh/h	616	1504	634	616	1474	625	126	0	591	128	0	595
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	26.0	15.8	12.6	26.2	15.6	12.5	26.1	0.0	11.7	26.0	0.0	11.6
Incr Delay (d2), s/veh	3.9	1.5	0.2	3.7	0.9	0.1	12.4	0.0	0.1	64.2	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	5.0	0.9	0.9	4.2	0.6	1.5	0.0	0.6	3.9	0.0	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.0	17.3	12.8	29.9	16.4	12.6	38.6	0.0	11.8	90.1	0.0	11.6
LnGrp LOS	C	B	B	C	B	B	D	A	B	F	A	B
Approach Vol, veh/h		1129			974			160			182	
Approach Delay, s/veh		17.7			17.0			25.8			64.3	
Approach LOS		B			B			C			E	

Timer - Assigned Phs	2	3	4		6	7	8
Phs Duration (G+Y+Rc), s	26.0	7.2	24.7		26.0	7.6	24.3
Change Period (Y+Rc), s	4.0	3.5	3.5		4.0	3.5	3.5
Max Green Setting (Gmax), s	22.0	20.0	24.5		22.0	20.0	24.0
Max Q Clear Time (g_c+I1), s	24.0	3.9	15.3		24.0	4.2	13.5
Green Ext Time (p_c), s	0.0	0.1	4.6		0.0	0.1	4.4

Intersection Summary	
HCM 6th Ctrl Delay	21.4
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	64	878	121	148	755	59	134	36	133	33	13	41
Future Volume (veh/h)	64	878	121	148	755	59	134	36	133	33	13	41
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	69	944	130	159	812	63	144	39	143	35	14	44
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	91	1139	499	195	1266	98	290	78	319	240	96	292
Arrive On Green	0.05	0.32	0.32	0.11	0.38	0.38	0.20	0.20	0.20	0.19	0.19	0.19
Sat Flow, veh/h	1781	3554	1558	1781	3337	259	1416	384	1557	1290	516	1573
Grp Volume(v), veh/h	69	944	130	159	432	443	183	0	143	49	0	44
Grp Sat Flow(s),veh/h/ln	1781	1777	1558	1781	1777	1819	1800	0	1557	1806	0	1573
Q Serve(g_s), s	3.9	25.4	6.4	9.0	20.6	20.6	9.3	0.0	8.3	2.3	0.0	2.4
Cycle Q Clear(g_c), s	3.9	25.4	6.4	9.0	20.6	20.6	9.3	0.0	8.3	2.3	0.0	2.4
Prop In Lane	1.00		1.00	1.00		0.14	0.79		1.00	0.71		1.00
Lane Grp Cap(c), veh/h	91	1139	499	195	674	690	368	0	319	336	0	292
V/C Ratio(X)	0.76	0.83	0.26	0.81	0.64	0.64	0.50	0.00	0.45	0.15	0.00	0.15
Avail Cap(c_a), veh/h	690	1377	603	690	688	705	697	0	603	700	0	609
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	48.4	32.5	26.0	44.9	26.3	26.3	36.4	0.0	36.0	35.2	0.0	35.2
Incr Delay (d2), s/veh	12.1	3.7	0.3	7.9	2.0	1.9	1.0	0.0	1.0	0.2	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	11.3	2.4	4.4	8.9	9.1	4.2	0.0	3.2	1.0	0.0	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.5	36.2	26.3	52.9	28.3	28.2	37.4	0.0	37.0	35.4	0.0	35.4
LnGrp LOS	E	D	C	D	C	C	D	A	D	D	A	D
Approach Vol, veh/h		1143			1034			326			93	
Approach Delay, s/veh		36.5			32.0			37.2			35.4	
Approach LOS		D			C			D			D	

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	26.1	14.8	38.1	24.2	8.8	44.2
Change Period (Y+Rc), s	5.0	3.5	5.0	5.0	3.5	5.0
Max Green Setting (Gmax), s	40.0	40.0	40.0	40.0	40.0	40.0
Max Q Clear Time (g_c+I1), s	11.3	11.0	27.4	4.4	5.9	22.6
Green Ext Time (p_c), s	1.6	0.4	5.7	0.4	0.2	5.4

Intersection Summary	
HCM 6th Ctrl Delay	34.8
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	814	153	144	787	1	157	0	93	0	0	3
Future Volume (veh/h)	3	814	153	144	787	1	157	0	93	0	0	3
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		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	3	866	163	153	837	1	167	0	99	0	0	3
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	7	1364	591	206	1803	2	265	0	232	0	0	25
Arrive On Green	0.00	0.38	0.38	0.12	0.50	0.50	0.15	0.00	0.15	0.00	0.00	0.02
Sat Flow, veh/h	1781	3554	1540	1781	3642	4	1781	0	1563	0	0	1570
Grp Volume(v), veh/h	3	866	163	153	408	430	167	0	99	0	0	3
Grp Sat Flow(s),veh/h/ln	1781	1777	1540	1781	1777	1870	1781	0	1563	0	0	1570
Q Serve(g_s), s	0.1	10.3	3.8	4.3	7.9	7.9	4.6	0.0	3.0	0.0	0.0	0.1
Cycle Q Clear(g_c), s	0.1	10.3	3.8	4.3	7.9	7.9	4.6	0.0	3.0	0.0	0.0	0.1
Prop In Lane	1.00		1.00	1.00		0.00	1.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	7	1364	591	206	880	926	265	0	232	0	0	25
V/C Ratio(X)	0.41	0.63	0.28	0.74	0.46	0.46	0.63	0.00	0.43	0.00	0.00	0.12
Avail Cap(c_a), veh/h	906	2046	886	1248	1023	1076	1231	0	1080	0	0	874
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	25.9	13.1	11.1	22.3	8.6	8.6	20.8	0.0	20.2	0.0	0.0	25.3
Incr Delay (d2), s/veh	33.4	0.5	0.3	5.3	0.4	0.4	2.5	0.0	1.2	0.0	0.0	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	3.6	1.1	2.0	2.4	2.6	1.9	0.0	1.1	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.3	13.6	11.3	27.6	9.0	9.0	23.3	0.0	21.4	0.0	0.0	27.3
LnGrp LOS	E	B	B	C	A	A	C	A	C	A	A	C
Approach Vol, veh/h		1032			991			266			3	
Approach Delay, s/veh		13.4			11.9			22.6			27.3	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	3.7	30.8		11.8	9.5	25.0		5.8
Change Period (Y+Rc), s	3.5	5.0		4.0	3.5	5.0		5.0
Max Green Setting (Gmax), s	26.5	30.0		36.0	36.5	30.0		29.0
Max Q Clear Time (g_c+I1), s	2.1	9.9		6.6	6.3	12.3		2.1
Green Ext Time (p_c), s	0.0	5.3		1.3	0.4	6.4		0.0

Intersection Summary	
HCM 6th Ctrl Delay	13.8
HCM 6th LOS	B

Intersection	
Int Delay, s/veh	1.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	883	11	46	909	37	42
Future Vol, veh/h	883	11	46	909	37	42
Conflicting Peds, #/hr	0	9	9	0	9	9
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	100	150	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	981	12	51	1010	41	47

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1002	0	1606	509
Stage 1	-	-	-	-	990	-
Stage 2	-	-	-	-	616	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	687	-	96	509
Stage 1	-	-	-	-	320	-
Stage 2	-	-	-	-	501	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	681	-	87	500
Mov Cap-2 Maneuver	-	-	-	-	199	-
Stage 1	-	-	-	-	293	-
Stage 2	-	-	-	-	496	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	22.5
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	293	-	-	681	-
HCM Lane V/C Ratio	0.3	-	-	0.075	-
HCM Control Delay (s)	22.5	-	-	10.7	-
HCM Lane LOS	C	-	-	B	-
HCM 95th %tile Q(veh)	1.2	-	-	0.2	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	25	1027	971	15	5	9
Future Vol, veh/h	25	1027	971	15	5	9
Conflicting Peds, #/hr	20	0	0	21	21	20
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	125	-	-	-	-	-
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	26	1070	1011	16	5	9

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1048	0	-	0	1648	555
Stage 1	-	-	-	-	1040	-
Stage 2	-	-	-	-	608	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	660	-	-	-	90	475
Stage 1	-	-	-	-	302	-
Stage 2	-	-	-	-	506	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	647	-	-	-	83	457
Mov Cap-2 Maneuver	-	-	-	-	197	-
Stage 1	-	-	-	-	284	-
Stage 2	-	-	-	-	496	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	17.1
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	647	-	-	-	311
HCM Lane V/C Ratio	0.04	-	-	-	0.047
HCM Control Delay (s)	10.8	-	-	-	17.1
HCM Lane LOS	B	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1

SIMTRAFFIC QUEUEING REPORTS

FUTURE CONDITIONS

AM & PM PEAK HOUR

Intersection: 1: SR-1 Ramps & Del Monte Blvd

Movement	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	R	T	TR	L	T	T
Maximum Queue (ft)	79	50	4	39	174	349	299
Average Queue (ft)	25	27	0	5	116	46	23
95th Queue (ft)	77	50	2	24	187	230	170
Link Distance (ft)	309	309	545	545		487	487
Upstream Blk Time (%)						0	0
Queuing Penalty (veh)						0	0
Storage Bay Dist (ft)					150		
Storage Blk Time (%)					10	0	
Queuing Penalty (veh)					61	0	

Intersection: 2: Del Monte Blvd & Reindollar Ave

Movement	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	LR	T	T	R	L	T	T
Maximum Queue (ft)	332	175	187	167	99	150	335	325
Average Queue (ft)	166	108	102	70	40	67	156	163
95th Queue (ft)	268	211	162	138	76	138	291	287
Link Distance (ft)	856		487	487			1066	1066
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)		150			125	125		
Storage Blk Time (%)	8	1	2	0	0	0	9	
Queuing Penalty (veh)	28	2	0	1	0	2	8	

Intersection: 3: Del Monte Blvd & Palm Ave

Movement	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LT	R	L	T	R	L	T	TR	L	T	T	R
Maximum Queue (ft)	210	125	100	108	67	137	205	199	174	336	336	125
Average Queue (ft)	72	78	56	21	25	52	101	95	30	193	192	29
95th Queue (ft)	159	129	96	67	57	104	176	170	104	300	301	105
Link Distance (ft)	744			828			1066	1066		1812	1812	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)		100	80		50	225			150			100
Storage Blk Time (%)	2	3	5	2	1	0	0		0	18	28	0
Queuing Penalty (veh)	5	4	3	3	1	0	0		0	4	10	0

Intersection: 4: Del Monte Blvd & Reservation Rd

Movement	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	LT	TR	L	L	T	R	L	T	R	R	L	L
Maximum Queue (ft)	174	441	124	305	273	149	271	205	101	109	157	169
Average Queue (ft)	114	189	95	130	92	66	145	99	48	48	66	97
95th Queue (ft)	206	347	148	240	195	140	235	176	86	91	137	163
Link Distance (ft)		973		622	622			1812	1812			
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	150		100			125	450			450	150	150
Storage Blk Time (%)	1	18	7	14	4	0					0	2
Queuing Penalty (veh)	3	25	14	29	8	1					0	2

Intersection: 4: Del Monte Blvd & Reservation Rd

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (ft)	202	124
Average Queue (ft)	70	39
95th Queue (ft)	146	95
Link Distance (ft)	571	571
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)	0	
Queuing Penalty (veh)	1	

Intersection: 5: Vista Del Camino Cir & Reservation Rd

Movement	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	T	R	LT	R	LT	R
Maximum Queue (ft)	167	210	251	129	251	231	159	101	72	125	82
Average Queue (ft)	77	82	117	36	107	102	16	45	22	56	6
95th Queue (ft)	136	158	203	92	196	191	91	85	57	102	42
Link Distance (ft)		622	622		375	375		283		591	
Upstream Blk Time (%)					0						
Queuing Penalty (veh)					0						
Storage Bay Dist (ft)	175			135			135		50		100
Storage Blk Time (%)	0	0		0	4	3	0	10	0	2	0
Queuing Penalty (veh)	0	0		0	2	3	0	3	0	1	0

Intersection: 6: Seacrest Ave & Reservation Rd

Movement	EB	EB	EB	WB	WB	WB	NB	NB
Directions Served	T	T	R	L	T	T	L	R
Maximum Queue (ft)	122	118	87	178	179	184	123	161
Average Queue (ft)	89	88	34	88	62	65	74	37
95th Queue (ft)	133	131	70	150	139	146	119	84
Link Distance (ft)	39	39	39		261	261		724
Upstream Blk Time (%)	25	25	5		0			
Queuing Penalty (veh)	69	70	12		0			
Storage Bay Dist (ft)				200			100	
Storage Blk Time (%)				0	0		4	0
Queuing Penalty (veh)				0	0		3	0

Intersection: 7: Driveway/Shopping Center & Reservation Rd

Movement	EB	EB	EB	WB	WB	WB	NB	SB	SB
Directions Served	L	T	TR	T	T	R	LTR	LT	R
Maximum Queue (ft)	72	113	101	217	230	100	31	80	82
Average Queue (ft)	44	62	66	111	108	47	7	35	33
95th Queue (ft)	74	112	108	207	214	109	27	70	65
Link Distance (ft)		73	73	220	220		474	485	
Upstream Blk Time (%)	1	6	8	1	1				
Queuing Penalty (veh)	0	23	31	2	4				
Storage Bay Dist (ft)	145					75			150
Storage Blk Time (%)	1	6			11	0			
Queuing Penalty (veh)	3	6			12	1			

Intersection: 8: De Forest Rd & Reservation Rd

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	T	R	L	T	T	R	LT	R	LT	R
Maximum Queue (ft)	67	186	192	57	93	251	277	176	42	30	134	73
Average Queue (ft)	24	74	89	4	19	92	96	30	9	7	51	29
95th Queue (ft)	56	151	169	17	58	198	211	107	32	24	104	66
Link Distance (ft)		220	220			490	490		409		830	
Upstream Blk Time (%)		0	0									
Queuing Penalty (veh)		0	0									
Storage Bay Dist (ft)	200			175	175			175		200		50
Storage Blk Time (%)		0	0			1	1	0			11	1
Queuing Penalty (veh)		0	0			0	1	0			8	2

Intersection: 9: Crescent Ave & Reservation Rd

Movement	EB	EB	EB	EB	WB	WB	WB	B34	NB	NB	SB	SB
Directions Served	L	T	T	R	L	T	TR	T	LT	R	LT	R
Maximum Queue (ft)	166	310	348	125	195	296	338	2	98	188	181	74
Average Queue (ft)	43	173	202	53	62	138	166	0	65	57	77	29
95th Queue (ft)	110	285	313	144	142	250	282	2	108	138	144	76
Link Distance (ft)		490	490			562	562	1635		681	808	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	220			100	220				75			50
Storage Blk Time (%)		3	30	0	0	1			13	1	28	1
Queuing Penalty (veh)		2	22	0	0	1			14	1	10	1

Intersection: 10: California Ave & Reservation Rd

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	SB
Directions Served	L	T	T	R	L	T	TR	LT	R	LTR
Maximum Queue (ft)	79	334	378	125	170	226	205	148	132	24
Average Queue (ft)	13	134	161	88	89	84	87	62	46	1
95th Queue (ft)	49	268	318	157	156	174	175	116	90	12
Link Distance (ft)		1635	1635			2271	2271	1450		183
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	75			100	150				150	
Storage Blk Time (%)	0	19	15	1	2	1		0	0	
Queuing Penalty (veh)	0	2	38	4	5	2		0	0	

Intersection: 11: Salinas Ave & Reservation Rd

Movement	EB	WB	NB
Directions Served	R	L	LR
Maximum Queue (ft)	2	52	75
Average Queue (ft)	0	12	27
95th Queue (ft)	2	40	55
Link Distance (ft)			445
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	100	150	
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 12: Reservation Rd & Eucalyptus St

Movement	EB	EB	EB	WB	SB
Directions Served	L	T	T	TR	LR
Maximum Queue (ft)	28	133	164	9	78
Average Queue (ft)	2	26	37	0	30
95th Queue (ft)	15	88	116	8	65
Link Distance (ft)		375	375	39	1022
Upstream Blk Time (%)				0	
Queuing Penalty (veh)				0	
Storage Bay Dist (ft)	125				
Storage Blk Time (%)		0			
Queuing Penalty (veh)		0			

Intersection: 13: Reservation Rd & Driveway 1

Movement	EB	EB	WB	WB	SB
Directions Served	T	T	T	TR	R
Maximum Queue (ft)	91	108	3	2	65
Average Queue (ft)	12	16	0	0	24
95th Queue (ft)	55	66	3	2	51
Link Distance (ft)	261	261	46	46	179
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 14: Driveway 2 & Reservation Rd

Movement	EB	EB	WB	NB
Directions Served	T	TR	T	R
Maximum Queue (ft)	61	70	8	84
Average Queue (ft)	17	26	0	31
95th Queue (ft)	54	68	6	63
Link Distance (ft)	46	46	73	240
Upstream Blk Time (%)	2	5		
Queuing Penalty (veh)	9	18		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 607

Intersection: 1: SR-1 Ramps & Del Monte Blvd

Movement	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	R	T	TR	L	T	T
Maximum Queue (ft)	296	292	6	19	170	244	223
Average Queue (ft)	278	179	0	1	100	71	59
95th Queue (ft)	304	397	4	9	190	306	280
Link Distance (ft)	280	280	552	552		479	479
Upstream Blk Time (%)	93	58				2	0
Queuing Penalty (veh)	0	0				6	0
Storage Bay Dist (ft)					150		
Storage Blk Time (%)					22	0	
Queuing Penalty (veh)					80	0	

Intersection: 2: Del Monte Blvd & Reindollar Ave

Movement	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	LR	T	T	R	L	T	T
Maximum Queue (ft)	165	144	297	277	150	114	189	195
Average Queue (ft)	80	42	165	144	103	44	62	82
95th Queue (ft)	142	101	260	250	171	91	147	164
Link Distance (ft)	856		479	479			1066	1066
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)		150			125	125		
Storage Blk Time (%)	1	0	13	5	2	0	2	
Queuing Penalty (veh)	1	0	0	26	10	0	1	

Intersection: 3: Del Monte Blvd & Palm Ave

Movement	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LT	R	L	T	R	L	T	TR	L	T	T	R
Maximum Queue (ft)	104	101	81	101	71	234	362	349	123	234	236	125
Average Queue (ft)	44	36	23	35	25	119	162	172	35	104	114	38
95th Queue (ft)	83	73	58	75	60	215	286	299	83	192	206	113
Link Distance (ft)	744			828			1066	1066		1812	1812	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)		100	80		50	225			150			100
Storage Blk Time (%)	0	0	0	7	1	0	3			3	11	0
Queuing Penalty (veh)	0	0	0	5	1	2	7			2	8	0

Intersection: 4: Del Monte Blvd & Reservation Rd

Movement	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	LT	TR	L	L	T	R	L	T	R	R	L	L
Maximum Queue (ft)	174	573	125	512	602	150	204	249	161	164	129	149
Average Queue (ft)	156	290	98	197	356	110	98	132	76	82	46	66
95th Queue (ft)	211	552	154	456	651	199	169	226	130	138	98	121
Link Distance (ft)		973		622	622			1812	1812			
Upstream Blk Time (%)				0	2							
Queuing Penalty (veh)				0	13							
Storage Bay Dist (ft)	150		100			125	450			450	150	150
Storage Blk Time (%)	16	32	8	18	42	1					0	0
Queuing Penalty (veh)	44	77	17	39	82	3					0	0

Intersection: 4: Del Monte Blvd & Reservation Rd

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (ft)	109	75
Average Queue (ft)	29	13
95th Queue (ft)	78	44
Link Distance (ft)	571	571
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)	0	
Queuing Penalty (veh)	0	

Intersection: 5: Vista Del Camino Cir & Reservation Rd

Movement	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	T	R	LT	R	LT	R
Maximum Queue (ft)	198	275	319	160	387	399	160	204	75	314	125
Average Queue (ft)	125	128	165	71	180	223	82	85	28	134	52
95th Queue (ft)	200	236	272	152	348	399	210	158	73	258	147
Link Distance (ft)		622	622		375	375		283		591	
Upstream Blk Time (%)					2	4				0	
Queuing Penalty (veh)					8	19				0	
Storage Bay Dist (ft)	175			135			135		50		100
Storage Blk Time (%)	4	1		0	13	24	0	28	1	19	0
Queuing Penalty (veh)	17	2		1	11	36	1	9	1	20	1

Intersection: 6: Seacrest Ave & Reservation Rd

Movement	EB	EB	EB	WB	WB	WB	NB	NB
Directions Served	T	T	R	L	T	T	L	R
Maximum Queue (ft)	128	125	90	218	255	264	124	256
Average Queue (ft)	106	103	42	120	96	123	101	84
95th Queue (ft)	134	130	79	201	207	236	142	211
Link Distance (ft)	39	39	39		261	261		724
Upstream Blk Time (%)	42	43	6		0	0		
Queuing Penalty (veh)	143	147	22		1	2		
Storage Bay Dist (ft)				200			100	
Storage Blk Time (%)				1	1		16	0
Queuing Penalty (veh)				4	1		17	0

Intersection: 7: Driveway/Shopping Center & Reservation Rd

Movement	EB	EB	EB	WB	WB	WB	NB	SB	SB
Directions Served	L	T	TR	T	T	R	LTR	LT	R
Maximum Queue (ft)	72	111	104	237	239	100	38	96	57
Average Queue (ft)	47	73	77	150	154	45	11	36	18
95th Queue (ft)	74	119	110	257	263	110	34	74	41
Link Distance (ft)		73	73	220	220		474	485	
Upstream Blk Time (%)	1	11	14	2	3				
Queuing Penalty (veh)	0	58	76	10	13				
Storage Bay Dist (ft)	145					75			150
Storage Blk Time (%)	1	11			19	0			
Queuing Penalty (veh)	6	12			17	1			

Intersection: 8: De Forest Rd & Reservation Rd

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	T	R	L	T	T	R	LT	R	LT	R
Maximum Queue (ft)	88	216	232	199	190	300	319	200	94	67	124	72
Average Queue (ft)	37	104	123	35	46	128	145	38	37	24	51	27
95th Queue (ft)	73	199	223	120	127	245	274	137	74	52	98	65
Link Distance (ft)		220	220			490	490		409		830	
Upstream Blk Time (%)		0	1									
Queuing Penalty (veh)		2	3									
Storage Bay Dist (ft)	200			175	175			175		200		50
Storage Blk Time (%)		1	3	0	0	3	5	0			12	2
Queuing Penalty (veh)		0	3	0	0	2	3	0			7	3

Intersection: 9: Crescent Ave & Reservation Rd

Movement	EB	EB	EB	EB	WB	WB	WB	B34	NB	NB	SB	SB
Directions Served	L	T	T	R	L	T	TR	T	LT	R	LT	R
Maximum Queue (ft)	244	429	454	125	243	379	404	6	99	269	125	74
Average Queue (ft)	70	248	272	73	112	176	204	0	80	89	41	28
95th Queue (ft)	183	404	426	163	216	313	339	6	115	211	91	67
Link Distance (ft)		490	490			562	562	1635		681	808	
Upstream Blk Time (%)		0	0			0						
Queuing Penalty (veh)		0	0			0						
Storage Bay Dist (ft)	220			100	220				75			50
Storage Blk Time (%)	0	12	39	0	0	4			23	2	13	1
Queuing Penalty (veh)	0	8	47	0	1	5			30	3	5	1

Intersection: 10: California Ave & Reservation Rd

Movement	EB	EB	EB	EB	B34	WB	WB	WB	NB	NB	SB	
Directions Served	L	T	T	R	T	L	T	TR	LT	R	LTR	
Maximum Queue (ft)	44	360	391	125	5	168	252	224	189	114	30	
Average Queue (ft)	4	164	188	69	0	83	95	95	77	31	3	
95th Queue (ft)	24	320	359	150	5	150	201	187	145	71	17	
Link Distance (ft)		1635	1635		562		2271	2271	1450		183	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	75			100		150				150		
Storage Blk Time (%)		21	18	0		1	2		1			
Queuing Penalty (veh)		1	28	1		3	3		1			

Intersection: 11: Salinas Ave & Reservation Rd

Movement	EB	EB	EB	WB	WB	WB	NB					
Directions Served	T	T	R	L	T	T	LR					
Maximum Queue (ft)	106	99	18	51	61	60	111					
Average Queue (ft)	8	10	1	19	11	5	40					
95th Queue (ft)	50	52	13	49	42	28	88					
Link Distance (ft)	2271	2271			1110	1110	445					
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)			100	150								
Storage Blk Time (%)		0										
Queuing Penalty (veh)		0										

Intersection: 12: Reservation Rd & Eucalyptus St

Movement	EB	EB	EB	WB	WB	SB
Directions Served	L	T	T	T	TR	LR
Maximum Queue (ft)	116	283	305	62	83	60
Average Queue (ft)	16	97	129	13	19	16
95th Queue (ft)	60	216	259	47	67	49
Link Distance (ft)		375	375	39	39	1022
Upstream Blk Time (%)		0		1	3	
Queuing Penalty (veh)		0		5	16	
Storage Bay Dist (ft)	125					
Storage Blk Time (%)		5				
Queuing Penalty (veh)		1				

Intersection: 13: Reservation Rd & Driveway 1

Movement	EB	EB	WB	WB	SB
Directions Served	T	T	T	TR	R
Maximum Queue (ft)	185	185	14	16	82
Average Queue (ft)	43	54	1	1	35
95th Queue (ft)	137	152	10	11	61
Link Distance (ft)	261	261	46	46	179
Upstream Blk Time (%)			0	0	
Queuing Penalty (veh)			0	0	
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 14: Driveway 2 & Reservation Rd

Movement	EB	EB	WB	WB	NB
Directions Served	T	TR	T	T	R
Maximum Queue (ft)	60	79	8	11	145
Average Queue (ft)	29	40	0	0	60
95th Queue (ft)	70	79	10	8	115
Link Distance (ft)	46	46	73	73	240
Upstream Blk Time (%)	7	9	0	0	0
Queuing Penalty (veh)	33	48	0	0	0
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Network Summary

Network wide Queuing Penalty: 1343

SIDRA LEVEL OF SERVICE REPORTS

FUTURE CONDITIONS

AM & PM PEAK HOUR

MOVEMENT SUMMARY

Site: 101 [Del Monte/Hwy1 - AM]

New Site
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Highway 1 On/Off Ramp											
8	T1	604	3.0	0.319	6.6	LOS A	1.7	44.5	0.59	0.51	34.4
18	R2	68	3.0	0.319	6.5	LOS A	1.6	41.3	0.57	0.49	33.4
Approach		672	3.0	0.319	6.6	LOS A	1.7	44.5	0.59	0.51	34.3
East: Del Monte Blvd											
1	L2	11	3.0	0.013	4.3	LOS A	0.1	1.4	0.57	0.40	32.9
16	R2	65	3.0	0.071	4.6	LOS A	0.3	7.4	0.55	0.46	34.2
Approach		75	3.0	0.071	4.6	LOS A	0.3	7.4	0.55	0.45	34.0
North: Del Monte Blvd											
7	L2	422	3.0	0.557	7.9	LOS A	5.7	145.0	0.14	0.03	32.6
4	T1	1332	3.0	0.557	7.9	LOS A	5.7	145.0	0.13	0.03	33.3
Approach		1754	3.0	0.557	7.9	LOS A	5.7	145.0	0.13	0.03	33.2
All Vehicles		2501	3.0	0.557	7.4	LOS A	5.7	145.0	0.27	0.17	33.5

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

Site: 101 [Del Monte/Hwy1 - PM]

New Site
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Highway 1 On/Off Ramp											
8	T1	1622	3.0	0.583	8.9	LOS A	5.5	141.3	0.47	0.25	33.3
18	R2	56	3.0	0.583	8.8	LOS A	5.1	129.3	0.45	0.24	32.3
Approach		1677	3.0	0.583	8.9	LOS A	5.5	141.3	0.47	0.25	33.3
East: Del Monte Blvd											
1	L2	177	3.0	0.592	31.0	LOS C	2.9	73.1	0.91	1.06	24.0
16	R2	184	3.0	0.519	23.2	LOS C	2.3	58.8	0.88	0.98	26.6
Approach		361	3.0	0.592	27.0	LOS C	2.9	73.1	0.89	1.02	25.2
North: Del Monte Blvd											
7	L2	104	3.0	0.331	5.7	LOS A	2.1	53.0	0.44	0.27	34.3
4	T1	782	3.0	0.331	5.7	LOS A	2.1	53.0	0.42	0.26	34.6
Approach		886	3.0	0.331	5.7	LOS A	2.1	53.0	0.42	0.26	34.6
All Vehicles		2925	3.0	0.592	10.1	LOS B	5.5	141.3	0.50	0.35	32.4

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

Site: 102 [Del Monte/Reindollar - AM]

New Site
Roundabout

Movement Performance - Vehicles												
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Del Monte Blvd											
3u	U	11	2.0	0.245	4.5	LOS A	1.5	37.4	0.29	0.14	36.5
8	T1	534	3.0	0.245	4.5	LOS A	1.5	37.4	0.28	0.13	35.4
18	R2	169	3.0	0.245	4.5	LOS A	1.3	33.9	0.26	0.12	34.3
Approach		714	3.0	0.245	4.5	LOS A	1.5	37.4	0.27	0.13	35.2
East: Reindollar Ave											
1	L2	600	3.0	0.362	7.9	LOS A	1.9	49.3	0.67	0.63	31.6
16	R2	76	3.0	0.362	7.7	LOS A	1.8	46.2	0.64	0.61	30.9
Approach		676	3.0	0.362	7.8	LOS A	1.9	49.3	0.66	0.63	31.5
North: Del Monte Blvd											
7	L2	92	3.0	0.729	18.4	LOS B	7.4	189.0	0.92	1.10	29.0
4	T1	1186	3.0	0.729	17.9	LOS B	7.4	189.0	0.90	1.07	29.3
Approach		1278	3.0	0.729	18.0	LOS B	7.4	189.0	0.90	1.08	29.3
All Vehicles		2669	3.0	0.729	11.8	LOS B	7.4	189.0	0.67	0.71	31.2

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 102 [Del Monte/Reindollar - PM]

New Site
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Del Monte Blvd											
3u	U	11	2.0	0.604	9.1	LOS A	6.3	160.7	0.41	0.18	34.1
8	T1	1246	3.0	0.604	9.1	LOS A	6.3	160.7	0.40	0.18	33.1
18	R2	548	3.0	0.604	9.0	LOS A	5.7	146.3	0.37	0.17	32.1
Approach		1805	3.0	0.604	9.0	LOS A	6.3	160.7	0.39	0.18	32.8
East: Reindollar Ave											
1	L2	267	3.0	0.431	16.0	LOS B	2.0	52.3	0.81	0.89	28.6
16	R2	135	3.0	0.431	14.8	LOS B	2.0	50.4	0.79	0.86	28.9
Approach		402	3.0	0.431	15.6	LOS B	2.0	52.3	0.80	0.88	28.7
North: Del Monte Blvd											
7	L2	66	3.0	0.282	5.6	LOS A	1.6	40.8	0.51	0.37	34.5
4	T1	619	3.0	0.282	5.5	LOS A	1.6	40.8	0.48	0.35	34.7
Approach		685	3.0	0.282	5.5	LOS A	1.6	40.8	0.49	0.35	34.7
All Vehicles		2892	3.0	0.604	9.1	LOS A	6.3	160.7	0.47	0.32	32.6

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

Site: 104 [Del Monte/Reservation - AM]

New Site
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Del Monte Blvd											
3	L2	248	3.0	0.492	10.0	LOS A	3.0	78.0	0.72	0.76	31.6
8	T1	213	3.0	0.492	10.0	LOS A	3.0	78.0	0.72	0.76	31.5
18	R2	399	3.0	0.451	9.6	LOS A	2.8	70.8	0.74	0.76	31.8
Approach		861	3.0	0.492	9.8	LOS A	3.0	78.0	0.73	0.76	31.6
East: Reservation Road											
1	L2	451	3.0	0.488	10.3	LOS B	2.8	71.6	0.66	0.68	30.5
6	T1	200	3.0	0.488	10.3	LOS B	2.8	71.6	0.66	0.68	32.5
16	R2	220	3.0	0.488	10.3	LOS B	2.8	71.6	0.66	0.68	31.5
Approach		871	3.0	0.488	10.3	LOS B	2.8	71.6	0.66	0.68	31.2
North: Del Monte Blvd											
7	L2	278	3.0	0.440	12.3	LOS B	2.4	61.0	0.79	0.85	29.6
4	T1	273	3.0	0.404	10.7	LOS B	2.0	50.9	0.74	0.78	32.4
14	R2	7	3.0	0.404	10.7	LOS B	2.0	50.9	0.74	0.78	31.5
Approach		557	3.0	0.440	11.5	LOS B	2.4	61.0	0.76	0.81	30.9
West: Reservation Road											
5	L2	18	3.0	0.377	12.0	LOS B	1.8	46.9	0.78	0.82	31.7
2	T1	275	3.0	0.377	11.7	LOS B	1.8	46.9	0.77	0.81	31.8
12	R2	158	3.0	0.377	11.0	LOS B	1.7	44.7	0.74	0.78	31.2
Approach		452	3.0	0.377	11.5	LOS B	1.8	46.9	0.76	0.80	31.6
All Vehicles		2740	3.0	0.492	10.6	LOS B	3.0	78.0	0.72	0.75	31.3

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

Site: 104 [Del Monte/Reservation - PM]

New Site
Roundabout

Movement Performance - Vehicles												
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Del Monte Blvd											
3	L2	166	3.0	0.502	10.8	LOS B	3.3	85.4	0.77	0.83	31.5
8	T1	267	3.0	0.502	10.8	LOS B	3.3	85.4	0.77	0.83	31.5
18	R2	632	3.0	0.688	15.5	LOS B	6.1	155.2	0.85	0.98	29.3
Approach		1065	3.0	0.688	13.6	LOS B	6.1	155.2	0.82	0.92	30.2
East: Reservation Road											
1	L2	453	3.0	0.532	11.6	LOS B	3.2	83.0	0.70	0.76	29.9
6	T1	435	3.0	0.744	19.1	LOS B	6.9	176.6	0.86	1.01	28.9
16	R2	199	3.0	0.744	19.1	LOS B	6.9	176.6	0.86	1.01	28.1
Approach		1087	3.0	0.744	16.0	LOS B	6.9	176.6	0.79	0.90	29.2
North: Del Monte Blvd											
7	L2	189	3.0	0.315	10.3	LOS B	1.3	34.2	0.73	0.74	30.4
4	T1	105	3.0	0.213	9.6	LOS A	0.9	22.6	0.73	0.73	33.0
14	R2	9	3.0	0.213	9.6	LOS A	0.9	22.6	0.73	0.73	32.0
Approach		303	3.0	0.315	10.0	LOS B	1.3	34.2	0.73	0.74	31.3
West: Reservation Road											
5	L2	95	3.0	0.346	9.2	LOS A	1.7	44.0	0.73	0.74	32.3
2	T1	310	3.0	0.346	8.9	LOS A	1.7	44.0	0.71	0.72	32.7
12	R2	126	3.0	0.346	8.6	LOS A	1.6	41.5	0.69	0.70	32.3
Approach		531	3.0	0.346	8.9	LOS A	1.7	44.0	0.71	0.72	32.6
All Vehicles		2986	3.0	0.744	13.3	LOS B	6.9	176.6	0.78	0.86	30.3

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

Site: 108 [Reservation/De Forest - AM]

New Site
Roundabout

Movement Performance - Vehicles												
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: De Forest Rd											
3	L2	18	3.0	0.067	7.1	LOS A	0.2	5.6	0.60	0.60	33.0
8	T1	3	3.0	0.067	7.1	LOS A	0.2	5.6	0.60	0.60	32.9
18	R2	18	3.0	0.067	7.1	LOS A	0.2	5.6	0.60	0.60	32.0
Approach		38	3.0	0.067	7.1	LOS A	0.2	5.6	0.60	0.60	32.5
East: Reservation Rd											
1	L2	31	3.0	0.339	5.9	LOS A	2.3	58.6	0.28	0.12	34.7
6	T1	731	3.0	0.339	5.9	LOS A	2.3	58.6	0.25	0.11	34.7
16	R2	115	3.0	0.339	5.9	LOS A	1.8	46.4	0.22	0.10	33.7
Approach		877	3.0	0.339	5.9	LOS A	2.3	58.6	0.25	0.11	34.5
North: De Forest Rd											
7	L2	152	3.0	0.331	9.4	LOS A	1.3	33.9	0.64	0.65	31.5
4	T1	1	3.0	0.331	9.4	LOS A	1.3	33.9	0.64	0.65	31.4
14	R2	78	3.0	0.331	9.4	LOS A	1.3	33.9	0.64	0.65	30.6
Approach		231	3.0	0.331	9.4	LOS A	1.3	33.9	0.64	0.65	31.2
West: Reservation Rd											
5	L2	41	3.0	0.389	7.3	LOS A	2.5	65.2	0.51	0.34	33.9
2	T1	816	3.0	0.389	7.1	LOS A	2.5	65.2	0.46	0.31	34.0
12	R2	27	3.0	0.389	7.0	LOS A	2.1	53.1	0.41	0.28	33.1
Approach		885	3.0	0.389	7.1	LOS A	2.5	65.2	0.46	0.31	34.0
All Vehicles		2031	3.0	0.389	6.9	LOS A	2.5	65.2	0.39	0.27	33.8

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

Site: 108 [Reservation/De Forest - PM]

New Site
Roundabout

Movement Performance - Vehicles												
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: De Forest Rd											
3	L2	72	3.0	0.303	11.3	LOS B	1.1	28.4	0.70	0.72	31.1
8	T1	12	3.0	0.303	11.3	LOS B	1.1	28.4	0.70	0.72	31.0
18	R2	76	3.0	0.303	11.3	LOS B	1.1	28.4	0.70	0.72	30.2
Approach		159	3.0	0.303	11.3	LOS B	1.1	28.4	0.70	0.72	30.7
East: Reservation Rd											
1	L2	59	3.0	0.415	7.4	LOS A	2.9	73.4	0.48	0.31	33.8
6	T1	840	3.0	0.415	7.3	LOS A	2.9	73.4	0.44	0.28	33.9
16	R2	75	3.0	0.415	7.2	LOS A	2.3	59.6	0.39	0.25	33.0
Approach		974	3.0	0.415	7.3	LOS A	2.9	73.4	0.44	0.28	33.8
North: De Forest Rd											
7	L2	87	3.0	0.232	9.1	LOS A	0.8	20.9	0.64	0.64	31.7
4	T1	1	3.0	0.232	9.1	LOS A	0.8	20.9	0.64	0.64	31.6
14	R2	48	3.0	0.232	9.1	LOS A	0.8	20.9	0.64	0.64	30.7
Approach		137	3.0	0.232	9.1	LOS A	0.8	20.9	0.64	0.64	31.3
West: Reservation Rd											
5	L2	71	3.0	0.478	8.3	LOS A	3.6	92.0	0.51	0.33	33.3
2	T1	945	3.0	0.478	8.2	LOS A	3.6	92.0	0.47	0.30	33.4
12	R2	113	3.0	0.478	8.1	LOS A	2.9	75.0	0.42	0.27	32.6
Approach		1128	3.0	0.478	8.2	LOS A	3.6	92.0	0.46	0.30	33.3
All Vehicles		2398	3.0	0.478	8.1	LOS A	3.6	92.0	0.48	0.34	33.2

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

Site: 109 [Reservation/Crescent - AM]

New Site
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Crescent Ave											
3	L2	115	3.0	0.415	12.0	LOS B	1.8	46.2	0.70	0.75	30.8
8	T1	23	3.0	0.415	12.0	LOS B	1.8	46.2	0.70	0.75	30.7
18	R2	116	3.0	0.415	12.0	LOS B	1.8	46.2	0.70	0.75	29.9
Approach		254	3.0	0.415	12.0	LOS B	1.8	46.2	0.70	0.75	30.4
East: Reservation Rd											
1	L2	89	3.0	0.360	6.9	LOS A	2.3	58.0	0.50	0.34	33.7
6	T1	695	3.0	0.360	6.8	LOS A	2.3	58.0	0.45	0.31	34.1
16	R2	26	3.0	0.360	6.7	LOS A	1.8	47.3	0.41	0.28	33.3
Approach		810	3.0	0.360	6.8	LOS A	2.3	58.0	0.45	0.31	34.0
North: Crescent Ave											
7	L2	70	3.0	0.261	9.0	LOS A	1.0	24.5	0.64	0.64	32.3
4	T1	57	3.0	0.261	9.0	LOS A	1.0	24.5	0.64	0.64	32.2
14	R2	40	3.0	0.261	9.0	LOS A	1.0	24.5	0.64	0.64	31.3
Approach		166	3.0	0.261	9.0	LOS A	1.0	24.5	0.64	0.64	32.0
West: Reservation Rd											
5	L2	55	3.0	0.433	8.1	LOS A	2.9	74.3	0.57	0.41	33.4
2	T1	816	3.0	0.433	7.9	LOS A	2.9	74.3	0.52	0.38	33.6
12	R2	80	3.0	0.433	7.8	LOS A	2.4	61.2	0.47	0.34	32.8
Approach		952	3.0	0.433	7.9	LOS A	2.9	74.3	0.51	0.38	33.5
All Vehicles		2183	3.0	0.433	8.1	LOS A	2.9	74.3	0.52	0.42	33.2

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

Site: 109 [Reservation/Crescent - PM]

New Site
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Crescent Ave											
3	L2	144	3.0	0.584	18.0	LOS B	3.0	76.6	0.78	0.88	28.6
8	T1	39	3.0	0.584	18.0	LOS B	3.0	76.6	0.78	0.88	28.5
18	R2	143	3.0	0.584	18.0	LOS B	3.0	76.6	0.78	0.88	27.8
Approach		326	3.0	0.584	18.0	LOS B	3.0	76.6	0.78	0.88	28.2
East: Reservation Rd											
1	L2	159	3.0	0.489	9.3	LOS A	3.4	86.6	0.64	0.50	32.4
6	T1	812	3.0	0.489	9.0	LOS A	3.4	86.6	0.58	0.45	32.9
16	R2	63	3.0	0.489	8.9	LOS A	2.8	72.3	0.53	0.42	32.3
Approach		1034	3.0	0.489	9.1	LOS A	3.4	86.6	0.58	0.46	32.7
North: Crescent Ave											
7	L2	35	3.0	0.178	9.2	LOS A	0.6	15.4	0.67	0.67	32.2
4	T1	14	3.0	0.178	9.2	LOS A	0.6	15.4	0.67	0.67	32.1
14	R2	44	3.0	0.178	9.2	LOS A	0.6	15.4	0.67	0.67	31.3
Approach		94	3.0	0.178	9.2	LOS A	0.6	15.4	0.67	0.67	31.7
West: Reservation Rd											
5	L2	69	3.0	0.517	9.5	LOS A	3.8	98.3	0.62	0.45	32.8
2	T1	944	3.0	0.517	9.3	LOS A	3.8	98.3	0.57	0.42	32.9
12	R2	130	3.0	0.517	9.1	LOS A	3.2	81.6	0.51	0.38	32.1
Approach		1143	3.0	0.517	9.3	LOS A	3.8	98.3	0.56	0.41	32.8
All Vehicles		2597	3.0	0.584	10.3	LOS B	3.8	98.3	0.60	0.50	32.1

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

Site: 110 [Reservation/California - AM]

New Site
Roundabout

Movement Performance - Vehicles												
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: California Ave											
3	L2	123	3.0	0.233	9.4	LOS A	1.0	26.3	0.71	0.71	30.9
8	T1	9	3.0	0.233	9.4	LOS A	1.0	26.3	0.71	0.71	30.8
18	R2	187	3.0	0.271	8.5	LOS A	1.1	27.1	0.63	0.63	32.3
Approach		319	3.0	0.271	8.9	LOS A	1.1	27.1	0.67	0.67	31.7
East: Reservation Rd											
1	L2	175	3.0	0.368	6.7	LOS A	2.4	62.1	0.44	0.27	33.3
6	T1	695	3.0	0.368	6.6	LOS A	2.4	62.1	0.39	0.24	34.0
16	R2	4	3.0	0.368	6.6	LOS A	2.0	50.1	0.36	0.22	33.4
Approach		874	3.0	0.368	6.6	LOS A	2.4	62.1	0.40	0.25	33.9
North: Driveway											
7	L2	1	3.0	0.006	6.3	LOS A	0.0	0.5	0.59	0.47	33.7
4	T1	1	3.0	0.006	6.3	LOS A	0.0	0.5	0.59	0.47	33.6
14	R2	1	3.0	0.006	6.3	LOS A	0.0	0.5	0.59	0.47	32.7
Approach		3	3.0	0.006	6.3	LOS A	0.0	0.5	0.59	0.47	33.3
West: Reservation Rd											
5	L2	11	3.0	0.447	8.0	LOS A	3.1	80.4	0.53	0.36	33.7
2	T1	736	3.0	0.447	7.9	LOS A	3.1	80.4	0.50	0.34	33.7
12	R2	275	3.0	0.447	7.8	LOS A	2.6	65.8	0.44	0.30	32.7
Approach		1022	3.0	0.447	7.9	LOS A	3.1	80.4	0.48	0.33	33.4
All Vehicles		2218	3.0	0.447	7.5	LOS A	3.1	80.4	0.48	0.34	33.3

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

Site: 110 [Reservation/California - PM]

New Site
Roundabout

Movement Performance - Vehicles												
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: California Ave											
3	L2	167	3.0	0.273	9.4	LOS A	1.0	26.5	0.66	0.66	30.8
8	T1	1	3.0	0.273	9.4	LOS A	1.0	26.5	0.66	0.66	30.7
18	R2	99	3.0	0.202	10.2	LOS B	0.8	21.6	0.73	0.73	31.5
Approach		267	3.0	0.273	9.7	LOS A	1.0	26.5	0.68	0.68	31.0
East: Reservation Rd											
1	L2	153	3.0	0.417	7.6	LOS A	2.8	72.7	0.51	0.34	33.2
6	T1	805	3.0	0.417	7.4	LOS A	2.8	72.7	0.45	0.30	33.7
16	R2	1	3.0	0.417	7.3	LOS A	2.3	59.3	0.41	0.28	33.0
Approach		960	3.0	0.417	7.4	LOS A	2.8	72.7	0.46	0.31	33.6
North: Driveway											
7	L2	1	3.0	0.010	7.1	LOS A	0.0	0.8	0.63	0.55	33.7
4	T1	1	3.0	0.010	7.1	LOS A	0.0	0.8	0.63	0.55	33.6
14	R2	3	3.0	0.010	7.1	LOS A	0.0	0.8	0.63	0.55	32.6
Approach		5	3.0	0.010	7.1	LOS A	0.0	0.8	0.63	0.55	33.0
West: Reservation Rd											
5	L2	3	3.0	0.441	7.8	LOS A	3.1	80.3	0.50	0.32	33.9
2	T1	866	3.0	0.441	7.7	LOS A	3.1	80.3	0.46	0.30	33.8
12	R2	163	3.0	0.441	7.6	LOS A	2.6	65.3	0.41	0.26	32.8
Approach		1032	3.0	0.441	7.7	LOS A	3.1	80.3	0.45	0.29	33.7
All Vehicles		2264	3.0	0.441	7.8	LOS A	3.1	80.3	0.48	0.35	33.3

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

Site: 111 [Reservation/Salinas - AM]

New Site
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Salinas Ave											
3	L2	23	3.0	0.137	8.0	LOS A	0.5	11.7	0.62	0.62	33.0
18	R2	55	3.0	0.137	8.0	LOS A	0.5	11.7	0.62	0.62	32.0
Approach		78	3.0	0.137	8.0	LOS A	0.5	11.7	0.62	0.62	32.3
East: Reservation Rd											
1	L2	29	3.0	0.313	5.4	LOS A	1.7	43.2	0.12	0.04	35.0
6	T1	828	3.0	0.313	5.4	LOS A	1.7	43.2	0.12	0.04	35.0
Approach		858	3.0	0.313	5.4	LOS A	1.7	43.2	0.12	0.04	35.0
West: Reservation Rd											
2	T1	1003	3.0	0.374	6.1	LOS A	2.2	56.0	0.15	0.05	34.7
12	R2	14	3.0	0.374	6.1	LOS A	2.2	56.0	0.15	0.05	33.6
Approach		1017	3.0	0.374	6.1	LOS A	2.2	56.0	0.15	0.05	34.7
All Vehicles		1953	3.0	0.374	5.9	LOS A	2.2	56.0	0.16	0.07	34.7

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

Site: 111 [Reservation/Salinas - PM]

New Site
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Salinas Ave											
3	L2	100	3.0	0.336	10.8	LOS B	1.3	33.6	0.67	0.70	31.3
18	R2	100	3.0	0.336	10.8	LOS B	1.3	33.6	0.67	0.70	30.3
Approach		200	3.0	0.336	10.8	LOS B	1.3	33.6	0.67	0.70	30.8
East: Reservation Rd											
1	L2	50	3.0	0.408	6.8	LOS A	2.4	61.2	0.32	0.17	34.2
6	T1	988	3.0	0.408	6.8	LOS A	2.4	61.2	0.32	0.17	34.2
Approach		1038	3.0	0.408	6.8	LOS A	2.4	61.2	0.32	0.17	34.2
West: Reservation Rd											
2	T1	960	3.0	0.364	6.1	LOS A	2.1	53.1	0.21	0.08	34.7
12	R2	12	3.0	0.364	6.1	LOS A	2.1	53.1	0.21	0.08	33.6
Approach		972	3.0	0.364	6.1	LOS A	2.1	53.1	0.21	0.08	34.7
All Vehicles		2210	3.0	0.408	6.8	LOS A	2.4	61.2	0.30	0.18	34.1

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 113 [Del Monte/Patton Pkwy - AM]

New Site
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Del Monte Blvd											
8	T1	43	3.0	0.044	3.1	LOS A	0.2	4.9	0.19	0.07	36.3
18	R2	14	3.0	0.044	3.1	LOS A	0.2	4.9	0.19	0.07	35.2
Approach		58	3.0	0.044	3.1	LOS A	0.2	4.9	0.19	0.07	36.0
East: Patton Pkwy											
1	L2	41	3.0	0.061	3.2	LOS A	0.3	6.9	0.15	0.05	34.7
16	R2	40	3.0	0.061	3.2	LOS A	0.3	6.9	0.15	0.05	33.6
Approach		82	3.0	0.061	3.2	LOS A	0.3	6.9	0.15	0.05	34.2
North: Del Monte Blvd											
7	L2	70	3.0	0.369	6.1	LOS A	2.3	59.6	0.20	0.08	34.3
4	T1	425	3.0	0.369	6.1	LOS A	2.3	59.6	0.20	0.08	34.3
Approach		495	3.0	0.369	6.1	LOS A	2.3	59.6	0.20	0.08	34.3
All Vehicles		634	3.0	0.369	5.4	LOS A	2.3	59.6	0.19	0.07	34.4

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

Site: 113 [Del Monte/Patton Pkwy - PM]

New Site
Roundabout

Movement Performance - Vehicles												
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Del Monte Blvd											
8	T1	266	3.0	0.241	4.7	LOS A	1.3	33.1	0.14	0.05	35.4
18	R2	60	3.0	0.241	4.7	LOS A	1.3	33.1	0.14	0.05	34.3
Approach		326	3.0	0.241	4.7	LOS A	1.3	33.1	0.14	0.05	35.2
East: Patton Pkwy											
1	L2	20	3.0	0.111	4.4	LOS A	0.5	12.4	0.41	0.28	35.0
16	R2	99	3.0	0.111	4.4	LOS A	0.5	12.4	0.41	0.28	33.9
Approach		118	3.0	0.111	4.4	LOS A	0.5	12.4	0.41	0.28	34.1
North: Del Monte Blvd											
7	L2	30	3.0	0.118	3.6	LOS A	0.6	14.2	0.10	0.02	35.5
4	T1	132	3.0	0.118	3.6	LOS A	0.6	14.2	0.10	0.02	35.4
Approach		162	3.0	0.118	3.6	LOS A	0.6	14.2	0.10	0.02	35.5
All Vehicles		607	3.0	0.241	4.3	LOS A	1.3	33.1	0.18	0.09	35.1

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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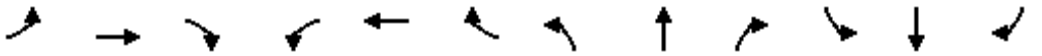
SYNCHRO LEVEL OF SERVICE REPORTS

ROAD DIET CONDITIONS

AM & PM PEAK HOUR



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	245	141	401	178	196	221	190	355	247	243	6
Future Volume (veh/h)	16	245	141	401	178	196	221	190	355	247	243	6
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		0.98	1.00		0.98	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	18	275	158	451	200	220	248	213	399	278	273	7
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	25	384	231	598	323	268	295	540	791	391	835	21
Arrive On Green	0.18	0.18	0.18	0.17	0.17	0.17	0.17	0.29	0.29	0.11	0.24	0.24
Sat Flow, veh/h	135	2083	1251	3456	1870	1552	1781	1870	2741	3456	3537	90
Grp Volume(v), veh/h	248	0	203	451	200	220	248	213	399	278	137	143
Grp Sat Flow(s),veh/h/ln	1864	0	1606	1728	1870	1552	1781	1870	1371	1728	1777	1850
Q Serve(g_s), s	8.3	0.0	7.8	8.2	6.6	9.1	9.0	6.1	8.1	5.2	4.2	4.3
Cycle Q Clear(g_c), s	8.3	0.0	7.8	8.2	6.6	9.1	9.0	6.1	8.1	5.2	4.2	4.3
Prop In Lane	0.07		0.78	1.00		1.00	1.00		1.00	1.00		0.05
Lane Grp Cap(c), veh/h	344	0	296	598	323	268	295	540	791	391	420	437
V/C Ratio(X)	0.72	0.00	0.68	0.75	0.62	0.82	0.84	0.39	0.50	0.71	0.33	0.33
Avail Cap(c_a), veh/h	561	0	483	624	338	280	349	845	1238	624	776	808
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.5	0.0	25.3	26.1	25.4	26.5	26.9	19.0	19.7	28.4	21.0	21.0
Incr Delay (d2), s/veh	2.9	0.0	2.8	5.0	3.2	16.7	14.7	0.5	0.5	2.4	0.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	0.0	3.1	3.6	3.1	4.4	4.7	2.5	2.4	2.1	1.7	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.4	0.0	28.1	31.1	28.6	43.2	41.5	19.4	20.2	30.8	21.4	21.4
LnGrp LOS	C	A	C	C	C	D	D	B	C	C	C	C
Approach Vol, veh/h		451			871			860			558	
Approach Delay, s/veh		28.2			33.6			26.1			26.1	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.5	23.2		16.3	15.0	19.7		15.5				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	12.0	30.0		20.0	13.0	29.0		12.0				
Max Q Clear Time (g_c+I1), s	7.2	10.1		10.3	11.0	6.3		11.1				
Green Ext Time (p_c), s	0.4	2.8		1.9	0.1	1.5		0.4				

Intersection Summary			
HCM 6th Ctrl Delay		28.9	
HCM 6th LOS		C	

Notes

User approved ignoring U-Turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	148	654	70	55	628	83	51	27	34	102	8	88
Future Volume (veh/h)	148	654	70	55	628	83	51	27	34	102	8	88
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		1.00	0.98		0.97	0.98		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	161	711	76	60	683	0	55	29	37	111	9	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	376	878	94	178	782		289	135	309	302	21	
Arrive On Green	0.21	0.53	0.53	0.10	0.42	0.00	0.20	0.20	0.20	0.20	0.20	0.00
Sat Flow, veh/h	1781	1659	177	1781	1870	1585	998	671	1538	995	103	1585
Grp Volume(v), veh/h	161	0	787	60	683	0	84	0	37	120	0	0
Grp Sat Flow(s),veh/h/ln	1781	0	1836	1781	1870	1585	1669	0	1538	1098	0	1585
Q Serve(g_s), s	5.3	0.0	23.9	2.1	22.6	0.0	0.0	0.0	1.3	5.4	0.0	0.0
Cycle Q Clear(g_c), s	5.3	0.0	23.9	2.1	22.6	0.0	2.6	0.0	1.3	8.0	0.0	0.0
Prop In Lane	1.00		0.10	1.00		1.00	0.65		1.00	0.92		1.00
Lane Grp Cap(c), veh/h	376	0	971	178	782		424	0	309	323	0	
V/C Ratio(X)	0.43	0.00	0.81	0.34	0.87		0.20	0.00	0.12	0.37	0.00	
Avail Cap(c_a), veh/h	421	0	1113	290	995		713	0	602	578	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	23.1	0.0	13.1	28.4	18.0	0.0	22.6	0.0	22.1	25.8	0.0	0.0
Incr Delay (d2), s/veh	0.8	0.0	4.1	1.1	7.2	0.0	0.2	0.0	0.2	0.7	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	0.0	9.3	0.9	10.2	0.0	1.1	0.0	0.5	1.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.9	0.0	17.2	29.5	25.2	0.0	22.9	0.0	22.3	26.5	0.0	0.0
LnGrp LOS	C	A	B	C	C		C	A	C	C	A	
Approach Vol, veh/h		948			743	A		121			120	A
Approach Delay, s/veh		18.4			25.6			22.7			26.5	
Approach LOS		B			C			C			C	

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	17.6	10.3	39.8	17.6	17.8	32.3
Change Period (Y+Rc), s	4.0	3.5	4.0	4.0	3.5	4.0
Max Green Setting (Gmax), s	26.5	11.0	41.0	26.5	16.0	36.0
Max Q Clear Time (g_c+I1), s	4.6	4.1	25.9	10.0	7.3	24.6
Green Ext Time (p_c), s	0.5	0.0	5.2	0.6	0.3	3.6

Intersection Summary	
HCM 6th Ctrl Delay	21.9
HCM 6th LOS	C

Notes

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

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	679	150	167	604	162	86
Future Volume (veh/h)	679	150	167	604	162	86
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	730	161	180	649	174	92
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	867	734	277	1279	287	256
Arrive On Green	0.46	0.46	0.16	0.68	0.16	0.16
Sat Flow, veh/h	1870	1583	1781	1870	1781	1585
Grp Volume(v), veh/h	730	161	180	649	174	92
Grp Sat Flow(s),veh/h/ln	1870	1583	1781	1870	1781	1585
Q Serve(g_s), s	21.1	3.7	5.8	10.3	5.6	3.2
Cycle Q Clear(g_c), s	21.1	3.7	5.8	10.3	5.6	3.2
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	867	734	277	1279	287	256
V/C Ratio(X)	0.84	0.22	0.65	0.51	0.61	0.36
Avail Cap(c_a), veh/h	1204	1019	290	1631	784	698
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	14.5	9.8	24.3	4.7	23.9	22.9
Incr Delay (d2), s/veh	4.0	0.1	4.7	0.3	2.1	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.5	1.2	2.7	2.6	2.4	1.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	18.5	10.0	29.1	5.0	26.0	23.8
LnGrp LOS	B	A	C	A	C	C
Approach Vol, veh/h	891			829	266	
Approach Delay, s/veh	17.0			10.2	25.2	
Approach LOS	B			B	C	

Timer - Assigned Phs	2	3	4		8
Phs Duration (G+Y+Rc), s	14.9	13.5	32.9		46.5
Change Period (Y+Rc), s	5.0	4.0	4.5		4.5
Max Green Setting (Gmax), s	27.0	10.0	39.5		53.5
Max Q Clear Time (g_c+I1), s	7.6	7.8	23.1		12.3
Green Ext Time (p_c), s	0.8	0.1	5.3		5.2

Intersection Summary	
HCM 6th Ctrl Delay	15.3
HCM 6th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	103	719	5	0	641	111	3	0	7	79	1	134
Future Volume (veh/h)	103	719	5	0	641	111	3	0	7	79	1	134
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		1.00	0.99		0.97	0.97		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	0	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	110	765	5	0	682	118	3	0	7	84	1	143
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	0	2	2	2	2	2	2	2	2
Cap, veh/h	141	1094	7	0	825	697	157	39	243	456	5	362
Arrive On Green	0.08	0.59	0.59	0.00	0.44	0.44	0.23	0.00	0.23	0.23	0.23	0.23
Sat Flow, veh/h	1781	1856	12	0	1870	1580	279	169	1045	1353	20	1558
Grp Volume(v), veh/h	110	0	770	0	682	118	10	0	0	85	0	143
Grp Sat Flow(s),veh/h/ln	1781	0	1868	0	1870	1580	1493	0	0	1373	0	1558
Q Serve(g_s), s	3.1	0.0	14.6	0.0	16.2	2.3	0.0	0.0	0.0	2.3	0.0	3.9
Cycle Q Clear(g_c), s	3.1	0.0	14.6	0.0	16.2	2.3	0.2	0.0	0.0	2.5	0.0	3.9
Prop In Lane	1.00		0.01	0.00		1.00	0.30		0.70	0.99		1.00
Lane Grp Cap(c), veh/h	141	0	1101	0	825	697	439	0	0	461	0	362
V/C Ratio(X)	0.78	0.00	0.70	0.00	0.83	0.17	0.02	0.00	0.00	0.18	0.00	0.39
Avail Cap(c_a), veh/h	211	0	1385	0	1035	874	770	0	0	778	0	724
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	22.9	0.0	7.2	0.0	12.4	8.5	15.0	0.0	0.0	15.8	0.0	16.4
Incr Delay (d2), s/veh	10.2	0.0	1.1	0.0	4.6	0.1	0.0	0.0	0.0	0.2	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.0	4.1	0.0	6.4	0.7	0.1	0.0	0.0	0.7	0.0	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.1	0.0	8.4	0.0	17.0	8.6	15.0	0.0	0.0	16.0	0.0	17.1
LnGrp LOS	C	A	A	A	B	A	B	A	A	B	A	B
Approach Vol, veh/h		880			800			10			228	
Approach Delay, s/veh		11.5			15.8			15.0			16.7	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	2	4	6	7	8
Phs Duration (G+Y+Rc), s	15.8	34.8	15.8	7.5	27.3
Change Period (Y+Rc), s	4.0	5.0	4.0	3.5	5.0
Max Green Setting (Gmax), s	23.5	37.5	23.5	6.0	28.0
Max Q Clear Time (g_c+I1), s	2.2	16.6	5.9	5.1	18.2
Green Ext Time (p_c), s	0.0	5.8	0.8	0.0	3.6

Intersection Summary	
HCM 6th Ctrl Delay	13.9
HCM 6th LOS	B

Notes

User approved ignoring U-Turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	743	25	28	665	105	16	3	16	138	1	71
Future Volume (veh/h)	37	743	25	28	665	105	16	3	16	138	1	71
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.99	1.00		0.97	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	41	816	27	31	731	115	18	3	18	152	1	78
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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	89	908	739	72	891	744	115	11	435	124	0	444
Arrive On Green	0.05	0.49	0.49	0.04	0.48	0.48	0.28	0.28	0.28	0.28	0.28	0.28
Sat Flow, veh/h	1781	1870	1522	1781	1870	1562	0	38	1532	0	1	1563
Grp Volume(v), veh/h	41	816	27	31	731	115	21	0	18	153	0	78
Grp Sat Flow(s),veh/h/ln	1781	1870	1522	1781	1870	1562	38	0	1532	1	0	1563
Q Serve(g_s), s	1.3	23.1	0.5	1.0	19.5	2.4	0.0	0.0	0.5	0.0	0.0	2.2
Cycle Q Clear(g_c), s	1.3	23.1	0.5	1.0	19.5	2.4	16.5	0.0	0.5	16.5	0.0	2.2
Prop In Lane	1.00		1.00	1.00		1.00	0.86		1.00	0.99		1.00
Lane Grp Cap(c), veh/h	89	908	739	72	891	744	126	0	435	124	0	444
V/C Ratio(X)	0.46	0.90	0.04	0.43	0.82	0.15	0.17	0.00	0.04	1.23	0.00	0.18
Avail Cap(c_a), veh/h	184	1015	826	184	1015	847	126	0	435	124	0	444
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	26.8	13.6	7.8	27.2	13.1	8.6	20.7	0.0	15.0	29.0	0.0	15.7
Incr Delay (d2), s/veh	3.7	10.0	0.0	4.0	4.9	0.1	0.6	0.0	0.0	156.5	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	10.3	0.2	0.5	7.9	0.7	0.3	0.0	0.2	7.0	0.0	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.5	23.6	7.8	31.1	18.0	8.7	21.3	0.0	15.1	185.5	0.0	15.8
LnGrp LOS	C	C	A	C	B	A	C	A	B	F	A	B
Approach Vol, veh/h		884			877			39			231	
Approach Delay, s/veh		23.4			17.2			18.4			128.2	
Approach LOS		C			B			B			F	

Timer - Assigned Phs	2	3	4		6	7	8
Phs Duration (G+Y+Rc), s	20.5	5.9	31.7		20.5	6.4	31.2
Change Period (Y+Rc), s	4.0	3.5	3.5		4.0	3.5	3.5
Max Green Setting (Gmax), s	16.5	6.0	31.5		16.5	6.0	31.5
Max Q Clear Time (g_c+I1), s	18.5	3.0	25.1		18.5	3.3	21.5
Green Ext Time (p_c), s	0.0	0.0	3.1		0.0	0.0	3.9

Intersection Summary	
HCM 6th Ctrl Delay	32.6
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	51	751	74	82	639	24	106	21	107	64	52	37
Future Volume (veh/h)	51	751	74	82	639	24	106	21	107	64	52	37
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		0.98	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	55	816	80	89	695	26	115	23	116	70	57	40
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	72	1078	474	114	1140	43	332	66	347	215	175	337
Arrive On Green	0.04	0.30	0.30	0.06	0.33	0.33	0.22	0.22	0.22	0.21	0.21	0.21
Sat Flow, veh/h	1781	3554	1564	1781	3491	131	1496	299	1564	1003	817	1576
Grp Volume(v), veh/h	55	816	80	89	354	367	138	0	116	127	0	40
Grp Sat Flow(s),veh/h/ln	1781	1777	1564	1781	1777	1844	1796	0	1564	1820	0	1576
Q Serve(g_s), s	2.9	19.5	3.5	4.6	15.7	15.7	6.1	0.0	5.9	5.5	0.0	1.9
Cycle Q Clear(g_c), s	2.9	19.5	3.5	4.6	15.7	15.7	6.1	0.0	5.9	5.5	0.0	1.9
Prop In Lane	1.00		1.00	1.00		0.07	0.83		1.00	0.55		1.00
Lane Grp Cap(c), veh/h	72	1078	474	114	580	603	398	0	347	390	0	337
V/C Ratio(X)	0.76	0.76	0.17	0.78	0.61	0.61	0.35	0.00	0.33	0.33	0.00	0.12
Avail Cap(c_a), veh/h	161	2042	899	161	1021	1060	516	0	449	523	0	453
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	44.6	29.6	24.0	43.3	26.6	26.6	30.8	0.0	30.7	31.2	0.0	29.8
Incr Delay (d2), s/veh	15.1	1.1	0.2	14.7	1.0	1.0	0.5	0.0	0.6	0.5	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	8.3	1.3	2.5	6.7	6.9	2.7	0.0	2.2	2.5	0.0	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.7	30.7	24.2	58.1	27.6	27.6	31.3	0.0	31.3	31.7	0.0	29.9
LnGrp LOS	E	C	C	E	C	C	C	A	C	C	A	C
Approach Vol, veh/h		951			810			254			167	
Approach Delay, s/veh		31.8			31.0			31.3			31.3	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	25.8	9.5	33.5	25.1	7.3	35.7
Change Period (Y+Rc), s	5.0	3.5	5.0	5.0	3.5	5.0
Max Green Setting (Gmax), s	27.0	8.5	54.0	27.0	8.5	54.0
Max Q Clear Time (g_c+I1), s	8.1	6.6	21.5	7.5	4.9	17.7
Green Ext Time (p_c), s	1.1	0.0	7.0	0.7	0.0	5.1

Intersection Summary	
HCM 6th Ctrl Delay	31.4
HCM 6th LOS	C

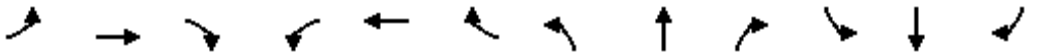
Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	3	815	738	28	14	25
Future Vol, veh/h	3	815	738	28	14	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	125	-	-	-	-	-
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	896	811	31	15	27

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	842	0	-	0	1729	827
Stage 1	-	-	-	-	827	-
Stage 2	-	-	-	-	902	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	794	-	-	-	97	371
Stage 1	-	-	-	-	430	-
Stage 2	-	-	-	-	396	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	794	-	-	-	97	371
Mov Cap-2 Maneuver	-	-	-	-	231	-
Stage 1	-	-	-	-	428	-
Stage 2	-	-	-	-	396	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	18.7
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	794	-	-	-	305
HCM Lane V/C Ratio	0.004	-	-	-	0.141
HCM Control Delay (s)	9.6	-	-	-	18.7
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.5



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	93	304	123	444	426	195	163	262	619	185	103	9
Future Volume (veh/h)	93	304	123	444	426	195	163	262	619	185	103	9
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.98	1.00		0.96	1.00		0.92
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	95	310	126	453	435	199	166	267	632	189	105	9
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	123	413	176	1001	542	450	193	390	1367	224	744	63
Arrive On Green	0.20	0.20	0.20	0.29	0.29	0.29	0.11	0.21	0.21	0.13	0.23	0.23
Sat Flow, veh/h	606	2036	867	3456	1870	1555	1781	1870	2683	1781	3293	277
Grp Volume(v), veh/h	288	0	243	453	435	199	166	267	632	189	56	58
Grp Sat Flow(s),veh/h/ln	1840	0	1668	1728	1870	1555	1781	1870	1341	1781	1777	1794
Q Serve(g_s), s	13.7	0.0	12.5	9.9	19.9	9.6	8.4	12.2	14.3	9.6	2.3	2.4
Cycle Q Clear(g_c), s	13.7	0.0	12.5	9.9	19.9	9.6	8.4	12.2	14.3	9.6	2.3	2.4
Prop In Lane	0.33		0.52	1.00		1.00	1.00		1.00	1.00		0.15
Lane Grp Cap(c), veh/h	373	0	338	1001	542	450	193	390	1367	224	401	405
V/C Ratio(X)	0.77	0.00	0.72	0.45	0.80	0.44	0.86	0.68	0.46	0.84	0.14	0.14
Avail Cap(c_a), veh/h	639	0	579	1424	771	641	193	507	1535	270	559	564
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.8	0.0	34.3	26.8	30.3	26.7	40.4	33.7	15.2	39.4	28.5	28.6
Incr Delay (d2), s/veh	3.4	0.0	2.9	0.3	4.1	0.7	30.1	2.5	0.2	18.2	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.4	0.0	5.2	4.0	9.3	3.6	5.2	5.6	7.1	5.2	1.0	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.2	0.0	37.2	27.1	34.4	27.4	70.5	36.2	15.4	57.6	28.7	28.7
LnGrp LOS	D	A	D	C	C	C	E	D	B	E	C	C
Approach Vol, veh/h		531			1087			1065			303	
Approach Delay, s/veh		37.7			30.1			29.2			46.7	
Approach LOS		D			C			C			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	15.6	23.2		22.7	14.0	24.8		30.7				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	14.0	25.0		32.0	10.0	29.0		38.0				
Max Q Clear Time (g_c+I1), s	11.6	16.3		15.7	10.4	4.4		21.9				
Green Ext Time (p_c), s	0.1	3.0		3.0	0.0	0.5		4.8				

Intersection Summary		
HCM 6th Ctrl Delay		32.8
HCM 6th LOS		C

Notes

User approved pedestrian interval to be less than phase max green.
User approved ignoring U-Turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	229	781	89	85	812	150	124	36	33	201	37	104
Future Volume (veh/h)	229	781	89	85	812	150	124	36	33	201	37	104
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		1.00	1.00		0.94	0.99		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	234	797	91	87	829	0	127	37	34	205	38	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	263	876	100	151	882		398	109	412	288	42	
Arrive On Green	0.15	0.53	0.53	0.08	0.47	0.00	0.28	0.28	0.28	0.28	0.28	0.00
Sat Flow, veh/h	1781	1638	187	1781	1870	1585	1230	394	1490	825	153	1585
Grp Volume(v), veh/h	234	0	888	87	829	0	164	0	34	243	0	0
Grp Sat Flow(s),veh/h/ln	1781	0	1825	1781	1870	1585	1625	0	1490	978	0	1585
Q Serve(g_s), s	14.2	0.0	48.5	5.2	46.3	0.0	0.0	0.0	1.9	18.9	0.0	0.0
Cycle Q Clear(g_c), s	14.2	0.0	48.5	5.2	46.3	0.0	8.8	0.0	1.9	27.7	0.0	0.0
Prop In Lane	1.00		0.10	1.00		1.00	0.77		1.00	0.84		1.00
Lane Grp Cap(c), veh/h	263	0	976	151	882		507	0	412	331	0	
V/C Ratio(X)	0.89	0.00	0.91	0.58	0.94		0.32	0.00	0.08	0.74	0.00	
Avail Cap(c_a), veh/h	284	0	1036	180	953		568	0	474	389	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	46.0	0.0	23.2	48.4	27.6	0.0	32.0	0.0	29.5	43.1	0.0	0.0
Incr Delay (d2), s/veh	26.1	0.0	11.3	3.5	16.0	0.0	0.4	0.0	0.1	5.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.1	0.0	22.7	2.4	23.7	0.0	3.6	0.0	0.7	7.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	72.0	0.0	34.5	51.9	43.6	0.0	32.3	0.0	29.6	49.1	0.0	0.0
LnGrp LOS	E	A	C	D	D		C	A	C	D	A	
Approach Vol, veh/h		1122			916	A		198			243	A
Approach Delay, s/veh		42.3			44.4			31.8			49.1	
Approach LOS		D			D			C			D	

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	34.4	12.8	62.8	34.4	19.8	55.8
Change Period (Y+Rc), s	4.0	3.5	4.0	4.0	3.5	4.0
Max Green Setting (Gmax), s	35.0	11.1	62.4	35.0	17.5	56.0
Max Q Clear Time (g_c+I1), s	10.8	7.2	50.5	29.7	16.2	48.3
Green Ext Time (p_c), s	1.1	0.1	5.3	0.6	0.1	3.6

Intersection Summary	
HCM 6th Ctrl Delay	42.9
HCM 6th LOS	D

Notes

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

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	848	184	234	733	253	103
Future Volume (veh/h)	848	184	234	733	253	103
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.97	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	865	188	239	748	258	105
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	929	765	260	1301	318	283
Arrive On Green	0.50	0.50	0.15	0.70	0.18	0.18
Sat Flow, veh/h	1870	1540	1781	1870	1781	1585
Grp Volume(v), veh/h	865	188	239	748	258	105
Grp Sat Flow(s),veh/h/ln	1870	1540	1781	1870	1781	1585
Q Serve(g_s), s	32.7	5.3	10.0	15.3	10.5	4.4
Cycle Q Clear(g_c), s	32.7	5.3	10.0	15.3	10.5	4.4
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	929	765	260	1301	318	283
V/C Ratio(X)	0.93	0.25	0.92	0.57	0.81	0.37
Avail Cap(c_a), veh/h	979	806	260	1351	614	546
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	10.9	31.8	5.8	29.8	27.3
Incr Delay (d2), s/veh	14.5	0.2	35.4	0.6	5.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	16.1	1.7	6.7	4.5	4.8	1.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	32.3	11.0	67.2	6.4	34.8	28.1
LnGrp LOS	C	B	E	A	C	C
Approach Vol, veh/h	1053			987	363	
Approach Delay, s/veh	28.5			21.1	32.8	
Approach LOS	C			C	C	

Timer - Assigned Phs	2	3	4		8
Phs Duration (G+Y+Rc), s	18.5	15.0	42.0		57.0
Change Period (Y+Rc), s	5.0	4.0	4.5		4.5
Max Green Setting (Gmax), s	26.0	11.0	39.5		54.5
Max Q Clear Time (g_c+I1), s	12.5	12.0	34.7		17.3
Green Ext Time (p_c), s	1.0	0.0	2.8		6.4

Intersection Summary	
HCM 6th Ctrl Delay	26.1
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	108	968	2	0	854	89	4	0	13	83	1	46
Future Volume (veh/h)	108	968	2	0	854	89	4	0	13	83	1	46
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.98	0.94		0.93	0.93		0.93
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	0	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	111	998	2	0	880	92	4	0	13	86	1	47
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
Percent Heavy Veh, %	2	2	2	0	2	2	2	2	2	2	2	2
Cap, veh/h	142	1222	2	0	987	823	109	29	248	386	4	325
Arrive On Green	0.08	0.66	0.66	0.00	0.53	0.53	0.22	0.00	0.22	0.22	0.22	0.22
Sat Flow, veh/h	1781	1866	4	0	1870	1560	214	130	1119	1301	18	1470
Grp Volume(v), veh/h	111	0	1000	0	880	92	17	0	0	87	0	47
Grp Sat Flow(s),veh/h/ln	1781	0	1869	0	1870	1560	1463	0	0	1319	0	1470
Q Serve(g_s), s	4.5	0.0	28.9	0.0	30.6	2.2	0.0	0.0	0.0	3.2	0.0	1.9
Cycle Q Clear(g_c), s	4.5	0.0	28.9	0.0	30.6	2.2	0.6	0.0	0.0	3.9	0.0	1.9
Prop In Lane	1.00		0.00	0.00		1.00	0.24		0.76	0.99		1.00
Lane Grp Cap(c), veh/h	142	0	1225	0	987	823	385	0	0	390	0	325
V/C Ratio(X)	0.78	0.00	0.82	0.00	0.89	0.11	0.04	0.00	0.00	0.22	0.00	0.14
Avail Cap(c_a), veh/h	183	0	1463	0	1182	985	538	0	0	532	0	485
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	32.9	0.0	9.3	0.0	15.3	8.6	22.3	0.0	0.0	23.5	0.0	22.8
Incr Delay (d2), s/veh	15.1	0.0	3.2	0.0	7.8	0.1	0.0	0.0	0.0	0.3	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	0.0	9.9	0.0	13.3	0.7	0.2	0.0	0.0	1.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.0	0.0	12.5	0.0	23.1	8.7	22.4	0.0	0.0	23.8	0.0	23.0
LnGrp LOS	D	A	B	A	C	A	C	A	A	C	A	C
Approach Vol, veh/h		1111			972			17			134	
Approach Delay, s/veh		16.0			21.8			22.4			23.5	
Approach LOS		B			C			C			C	

Timer - Assigned Phs	2	4	6	7	8
Phs Duration (G+Y+Rc), s	20.1	52.7	20.1	9.3	43.4
Change Period (Y+Rc), s	4.0	5.0	4.0	3.5	5.0
Max Green Setting (Gmax), s	24.0	57.0	24.0	7.5	46.0
Max Q Clear Time (g_c+I1), s	2.6	30.9	5.9	6.5	32.6
Green Ext Time (p_c), s	0.0	9.5	0.5	0.0	5.8

Intersection Summary	
HCM 6th Ctrl Delay	19.0
HCM 6th LOS	B

Notes

User approved ignoring U-Turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	67	898	107	56	798	71	68	11	72	92	24	57
Future Volume (veh/h)	67	898	107	56	798	71	68	11	72	92	24	57
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.96	1.00		0.95	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	71	945	113	59	840	75	72	12	76	97	25	60
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	114	1026	832	104	1016	827	95	9	354	92	14	362
Arrive On Green	0.06	0.55	0.55	0.06	0.54	0.54	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	1781	1870	1516	1781	1870	1522	0	38	1501	0	58	1535
Grp Volume(v), veh/h	71	945	113	59	840	75	84	0	76	122	0	60
Grp Sat Flow(s),veh/h/ln	1781	1870	1516	1781	1870	1522	38	0	1501	58	0	1535
Q Serve(g_s), s	2.7	32.3	2.5	2.3	26.1	1.7	0.0	0.0	2.9	0.0	0.0	2.2
Cycle Q Clear(g_c), s	2.7	32.3	2.5	2.3	26.1	1.7	16.5	0.0	2.9	16.5	0.0	2.2
Prop In Lane	1.00		1.00	1.00		1.00	0.86		1.00	0.80		1.00
Lane Grp Cap(c), veh/h	114	1026	832	104	1016	827	104	0	354	106	0	362
V/C Ratio(X)	0.62	0.92	0.14	0.57	0.83	0.09	0.80	0.00	0.21	1.15	0.00	0.17
Avail Cap(c_a), veh/h	153	1108	898	153	1108	902	104	0	354	106	0	362
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	31.9	14.4	7.7	32.1	13.3	7.7	33.3	0.0	21.5	32.9	0.0	21.3
Incr Delay (d2), s/veh	5.4	11.8	0.1	4.8	4.9	0.0	35.2	0.0	0.3	133.5	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	14.6	0.7	1.1	10.5	0.5	2.4	0.0	1.0	5.7	0.0	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.3	26.2	7.8	36.9	18.2	7.7	68.5	0.0	21.8	166.4	0.0	21.5
LnGrp LOS	D	C	A	D	B	A	E	A	C	F	A	C
Approach Vol, veh/h		1129			974			160			182	
Approach Delay, s/veh		25.0			18.5			46.3			118.6	
Approach LOS		C			B			D			F	

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	20.5	7.6	41.9	20.5	8.0	41.5
Change Period (Y+Rc), s	4.0	3.5	3.5	4.0	3.5	3.5
Max Green Setting (Gmax), s	16.5	6.0	41.5	16.5	6.0	41.5
Max Q Clear Time (g_c+I1), s	18.5	4.3	34.3	18.5	4.7	28.1
Green Ext Time (p_c), s	0.0	0.0	4.2	0.0	0.0	5.5

Intersection Summary	
HCM 6th Ctrl Delay	30.8
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	64	878	121	148	755	59	134	36	133	33	13	41
Future Volume (veh/h)	64	878	121	148	755	59	134	36	133	33	13	41
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	69	944	130	159	812	63	144	39	143	35	14	44
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	89	1183	519	191	1349	105	277	75	305	231	92	282
Arrive On Green	0.05	0.33	0.33	0.11	0.40	0.40	0.20	0.20	0.20	0.18	0.18	0.18
Sat Flow, veh/h	1781	3554	1559	1781	3337	259	1416	384	1556	1290	516	1572
Grp Volume(v), veh/h	69	944	130	159	432	443	183	0	143	49	0	44
Grp Sat Flow(s),veh/h/ln	1781	1777	1559	1781	1777	1819	1800	0	1556	1806	0	1572
Q Serve(g_s), s	4.1	26.1	6.6	9.5	20.7	20.7	9.8	0.0	8.8	2.5	0.0	2.6
Cycle Q Clear(g_c), s	4.1	26.1	6.6	9.5	20.7	20.7	9.8	0.0	8.8	2.5	0.0	2.6
Prop In Lane	1.00		1.00	1.00		0.14	0.79		1.00	0.71		1.00
Lane Grp Cap(c), veh/h	89	1183	519	191	718	736	352	0	305	324	0	282
V/C Ratio(X)	0.78	0.80	0.25	0.83	0.60	0.60	0.52	0.00	0.47	0.15	0.00	0.16
Avail Cap(c_a), veh/h	110	1718	754	319	1068	1093	462	0	400	451	0	392
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	50.8	32.8	26.3	47.3	25.4	25.4	38.9	0.0	38.5	37.5	0.0	37.5
Incr Delay (d2), s/veh	23.9	1.7	0.3	9.0	0.8	0.8	1.2	0.0	1.1	0.2	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	11.3	2.5	4.7	8.7	9.0	4.4	0.0	3.4	1.1	0.0	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	74.7	34.5	26.5	56.3	26.2	26.2	40.1	0.0	39.6	37.7	0.0	37.7
LnGrp LOS	E	C	C	E	C	C	D	A	D	D	A	D
Approach Vol, veh/h		1143			1034			326			93	
Approach Delay, s/veh		36.0			30.8			39.9			37.7	
Approach LOS		D			C			D			D	

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	26.2	16.6	41.0	24.4	8.9	48.7
Change Period (Y+Rc), s	5.0	5.0	* 5	5.0	3.5	5.0
Max Green Setting (Gmax), s	27.8	19.4	* 52	27.0	6.7	65.0
Max Q Clear Time (g_c+I1), s	11.8	11.5	28.1	4.6	6.1	22.7
Green Ext Time (p_c), s	1.4	0.2	7.9	0.3	0.0	6.8

Intersection Summary	
HCM 6th Ctrl Delay	34.5
HCM 6th LOS	C

Notes

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

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	25	1027	971	15	5	9
Future Vol, veh/h	25	1027	971	15	5	9
Conflicting Peds, #/hr	20	0	0	21	21	20
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	125	-	-	-	-	-
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	26	1070	1011	16	5	9

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1048	0	-	0	2183	1060
Stage 1	-	-	-	-	1040	-
Stage 2	-	-	-	-	1143	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	664	-	-	-	50	272
Stage 1	-	-	-	-	341	-
Stage 2	-	-	-	-	304	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	651	-	-	-	46	261
Mov Cap-2 Maneuver	-	-	-	-	155	-
Stage 1	-	-	-	-	321	-
Stage 2	-	-	-	-	298	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	23.4
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	651	-	-	-	210
HCM Lane V/C Ratio	0.04	-	-	-	0.069
HCM Control Delay (s)	10.8	-	-	-	23.4
HCM Lane LOS	B	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.2

SIMTRAFFIC QUEUEING REPORTS

ROAD DIET CONDITIONS

AM & PM PEAK HOUR

Intersection: 4: Del Monte Ave & Reservation Rd

Movement	EB	EB	WB	WB	WB	WB	B39	NB	NB	NB	NB	SB
Directions Served	LT	TR	L	L	T	R	T	L	T	R	R	L
Maximum Queue (ft)	256	227	125	275	261	150	24	277	176	208	160	161
Average Queue (ft)	128	76	101	139	110	74	1	147	86	107	35	116
95th Queue (ft)	226	177	148	233	207	146	30	252	148	184	109	175
Link Distance (ft)	973	973		288	288		278		1813	1813		
Upstream Blk Time (%)				0	0							
Queuing Penalty (veh)				1	2							
Storage Bay Dist (ft)			100			125		450			450	150
Storage Blk Time (%)			11	23	7	0						15
Queuing Penalty (veh)			21	46	14	0						18

Intersection: 4: Del Monte Ave & Reservation Rd

Movement	SB	SB	SB
Directions Served	L	T	TR
Maximum Queue (ft)	172	374	296
Average Queue (ft)	101	110	65
95th Queue (ft)	193	326	249
Link Distance (ft)		571	571
Upstream Blk Time (%)		1	
Queuing Penalty (veh)		0	
Storage Bay Dist (ft)	150		
Storage Blk Time (%)	15	0	
Queuing Penalty (veh)	18	0	

Intersection: 5: Vista Del Camino Cir & Reservation Rd

Movement	EB	EB	B39	B39	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	T		L	T	R	LT	R	LT	R
Maximum Queue (ft)	200	364	222	34	160	437	160	113	73	133	100
Average Queue (ft)	118	238	50	1	50	231	47	47	28	60	14
95th Queue (ft)	221	390	215	30	137	398	165	92	67	116	68
Link Distance (ft)		278	288	288		374		295		603	
Upstream Blk Time (%)		11	1	0		2					
Queuing Penalty (veh)		97	5	0		16					
Storage Bay Dist (ft)	175				135		135		50		100
Storage Blk Time (%)	0	19			0	20	0	12	3	4	0
Queuing Penalty (veh)	3	29			0	27	0	4	2	3	0

Intersection: 6: Seacrest Ave & Reservation Rd

Movement	EB	EB	WB	WB	NB	NB
Directions Served	T	R	L	T	L	R
Maximum Queue (ft)	132	76	208	260	123	180
Average Queue (ft)	108	28	100	121	81	49
95th Queue (ft)	129	65	173	231	129	123
Link Distance (ft)	39	39		260		736
Upstream Blk Time (%)	43	3		0		
Queuing Penalty (veh)	179	13		3		
Storage Bay Dist (ft)			200		100	
Storage Blk Time (%)			0	2	6	0
Queuing Penalty (veh)			3	3	5	0

Intersection: 7: Driveway/Shopping Center & Reservation Rd

Movement	EB	EB	WB	WB	NB	SB	SB
Directions Served	L	TR	T	R	LTR	LT	R
Maximum Queue (ft)	73	116	235	100	35	88	98
Average Queue (ft)	47	88	200	56	7	36	40
95th Queue (ft)	78	112	280	123	28	73	77
Link Distance (ft)		73	221		486	497	
Upstream Blk Time (%)	1	27	10				
Queuing Penalty (veh)	0	220	78				
Storage Bay Dist (ft)	145			75			150
Storage Blk Time (%)	1	27	33	0			0
Queuing Penalty (veh)	8	28	37	1			0

Intersection: 8: De Forest Rd & Reservation Rd

Movement	EB	EB	EB	WB	WB	WB	B40	B40	NB	NB	SB	SB
Directions Served	L	T	R	L	T	R	T	T	LT	R	LT	R
Maximum Queue (ft)	127	237	61	200	310	86	299	146	44	34	150	75
Average Queue (ft)	27	152	8	46	229	22	90	12	11	8	65	38
95th Queue (ft)	80	253	48	158	360	58	272	89	34	27	128	80
Link Distance (ft)		221			216	216	219	219	421		842	
Upstream Blk Time (%)	0	1		0	23		4	0				
Queuing Penalty (veh)	0	11		0	90		16	1				
Storage Bay Dist (ft)	200		175	175						200		50
Storage Blk Time (%)		6	0	0	27						17	5
Queuing Penalty (veh)		4	0	0	8						12	7

Intersection: 9: Cresent Ave & Reservation Rd

Movement	EB	EB	EB	EB	B40	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	T	R	T	L	T	TR	LT	R	LT	R
Maximum Queue (ft)	185	282	267	125	100	245	434	411	98	298	193	75
Average Queue (ft)	48	174	173	54	7	99	233	161	68	80	86	30
95th Queue (ft)	124	267	257	144	51	240	399	341	110	232	164	78
Link Distance (ft)		219	219		216		562	562		681	809	
Upstream Blk Time (%)	0	2	2				0	0				
Queuing Penalty (veh)	0	9	10				0	0				
Storage Bay Dist (ft)	220			100		220			75			50
Storage Blk Time (%)	0	2	26	0		0	14		20	1	34	1
Queuing Penalty (veh)	0	1	19	0		0	11		22	1	13	1

Intersection: 12: Reservation Rd & Eucalyptus St

Movement	EB	EB	WB	SB
Directions Served	L	T	TR	LR
Maximum Queue (ft)	51	381	69	314
Average Queue (ft)	3	217	5	126
95th Queue (ft)	26	423	36	361
Link Distance (ft)		374	39	1034
Upstream Blk Time (%)		3	1	
Queuing Penalty (veh)		20	6	
Storage Bay Dist (ft)	125			
Storage Blk Time (%)		21		
Queuing Penalty (veh)		1		

Zone Summary

Zone wide Queuing Penalty: 1148

Intersection: 4: Del Monte Ave & Reservation Rd

Movement	EB	EB	WB	WB	WB	WB	B39	NB	NB	NB	NB	SB
Directions Served	LT	TR	L	L	T	R	T	L	T	R	R	L
Maximum Queue (ft)	957	949	125	305	366	150	200	475	1837	1843	475	162
Average Queue (ft)	759	732	100	149	251	106	27	256	1260	1298	417	145
95th Queue (ft)	1214	1217	150	258	397	196	138	551	2335	2336	622	183
Link Distance (ft)	973	973		288	288		278		1813	1813		
Upstream Blk Time (%)	42	39		1	10		1		18	20		
Queuing Penalty (veh)	0	0		5	51		9		99	111		
Storage Bay Dist (ft)			100			125		450			450	150
Storage Blk Time (%)			9	21	29	0		0	43	73	31	73
Queuing Penalty (veh)			20	47	57	1		0	69	226	97	37

Intersection: 4: Del Monte Ave & Reservation Rd

Movement	SB	SB	SB
Directions Served	L	T	TR
Maximum Queue (ft)	175	603	571
Average Queue (ft)	152	423	220
95th Queue (ft)	214	803	626
Link Distance (ft)		571	571
Upstream Blk Time (%)		62	7
Queuing Penalty (veh)		0	0
Storage Bay Dist (ft)	150		
Storage Blk Time (%)	66	0	
Queuing Penalty (veh)	34	0	

Intersection: 5: Vista Del Camino Cir & Reservation Rd

Movement	EB	EB	B39	B39	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	T		L	T	R	LT	R	LT	R
Maximum Queue (ft)	200	380	357	286	160	474	160	231	75	597	125
Average Queue (ft)	182	351	305	22	77	396	72	111	34	393	91
95th Queue (ft)	248	381	393	150	164	546	200	196	83	701	178
Link Distance (ft)		278	288	288		374		295		603	
Upstream Blk Time (%)		64	36	1		21		0		20	
Queuing Penalty (veh)		708	199	8		207		0		0	
Storage Bay Dist (ft)	175				135		135		50		100
Storage Blk Time (%)	9	62			1	37	0	42	6	72	1
Queuing Penalty (veh)	80	142			13	87	1	14	10	75	1

Intersection: 6: Seacrest Ave & Reservation Rd

Movement	EB	EB	WB	WB	NB	NB
Directions Served	T	R	L	T	L	R
Maximum Queue (ft)	130	78	225	287	125	484
Average Queue (ft)	111	27	168	219	112	169
95th Queue (ft)	119	65	265	331	143	399
Link Distance (ft)	39	39		260		736
Upstream Blk Time (%)	55	3		10		
Queuing Penalty (veh)	286	13		97		
Storage Bay Dist (ft)			200		100	
Storage Blk Time (%)			6	18	32	1
Queuing Penalty (veh)			41	43	33	2

Intersection: 7: Driveway/Shopping Center & Reservation Rd

Movement	EB	EB	WB	WB	NB	SB	SB
Directions Served	L	TR	T	R	LTR	LT	R
Maximum Queue (ft)	73	118	237	100	40	96	72
Average Queue (ft)	45	90	227	52	11	38	22
95th Queue (ft)	80	105	245	123	35	78	53
Link Distance (ft)		73	221		486	497	
Upstream Blk Time (%)	1	33	27				
Queuing Penalty (veh)	0	350	250				
Storage Bay Dist (ft)	145			75			150
Storage Blk Time (%)	1	33	51	0			
Queuing Penalty (veh)	11	35	46	1			

Intersection: 8: De Forest Rd & Reservation Rd

Movement	EB	EB	EB	WB	WB	WB	B40	B40	NB	NB	SB	SB
Directions Served	L	T	R	L	T	R	T	T	LT	R	LT	R
Maximum Queue (ft)	110	237	199	200	323	56	322	271	218	136	218	75
Average Queue (ft)	35	161	37	95	291	14	272	82	74	37	76	41
95th Queue (ft)	80	256	143	242	311	39	369	259	182	102	164	86
Link Distance (ft)		221			216	216	219	219	421		842	
Upstream Blk Time (%)	0	2		0	67		35	4	0			
Queuing Penalty (veh)	0	19		0	314		165	19	0			
Storage Bay Dist (ft)	200		175	175						200		50
Storage Blk Time (%)		6	0	0	68				3	0	24	14
Queuing Penalty (veh)		10	0	0	38				2	0	14	17

Intersection: 9: Cresent Ave & Reservation Rd

Movement	EB	EB	EB	EB	B40	WB	WB	WB	B34	B34	NB	NB
Directions Served	L	T	T	R	T	L	T	TR	T	T	LT	R
Maximum Queue (ft)	205	292	280	125	276	245	658	652	1643	1646	100	725
Average Queue (ft)	65	205	190	62	49	185	573	540	845	827	93	535
95th Queue (ft)	159	314	275	151	189	335	786	798	1913	1916	115	943
Link Distance (ft)		219	219		216		562	562	1635	1635		681
Upstream Blk Time (%)	0	8	7		2		71	44	12	11		57
Queuing Penalty (veh)	0	40	35		17		337	207	54	50		0
Storage Bay Dist (ft)	220			100		220					75	
Storage Blk Time (%)	0	8	32	0		1	74				79	3
Queuing Penalty (veh)	0	5	39	0		3	109				106	6

Intersection: 9: Cresent Ave & Reservation Rd

Movement	SB	SB
Directions Served	LT	R
Maximum Queue (ft)	152	75
Average Queue (ft)	47	32
95th Queue (ft)	109	73
Link Distance (ft)	809	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		50
Storage Blk Time (%)	16	6
Queuing Penalty (veh)	6	3

Intersection: 12: Reservation Rd & Eucalyptus St

Movement	EB	EB	WB	SB
Directions Served	L	T	TR	LR
Maximum Queue (ft)	149	395	128	194
Average Queue (ft)	34	378	71	73
95th Queue (ft)	121	429	137	189
Link Distance (ft)		374	39	1034
Upstream Blk Time (%)		22	20	
Queuing Penalty (veh)		220	200	
Storage Bay Dist (ft)	125			
Storage Blk Time (%)	0	61		
Queuing Penalty (veh)	0	16		

Zone Summary

Zone wide Queuing Penalty: 5667

SIDRA LEVEL OF SERVICE REPORTS

ROAD DIET CONDITIONS

AM & PM PEAK HOUR

MOVEMENT SUMMARY

Site: 104 [Del Monte/Reservation - AM]

ROAD DIET SCENARIO
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Del Monte Blvd											
3	L2	248	3.0	0.492	10.0	LOS A	3.0	78.0	0.72	0.76	31.6
8	T1	213	3.0	0.492	10.0	LOS A	3.0	78.0	0.72	0.76	31.5
18	R2	399	3.0	0.451	9.6	LOS A	2.8	70.8	0.74	0.76	31.8
Approach		861	3.0	0.492	9.8	LOS A	3.0	78.0	0.73	0.76	31.6
East: Reservation Road											
1	L2	451	3.0	0.488	10.3	LOS B	2.8	71.6	0.66	0.68	30.5
6	T1	200	3.0	0.488	10.3	LOS B	2.8	71.6	0.66	0.68	32.5
16	R2	220	3.0	0.488	10.3	LOS B	2.8	71.6	0.66	0.68	31.5
Approach		871	3.0	0.488	10.3	LOS B	2.8	71.6	0.66	0.68	31.2
North: Del Monte Blvd											
7	L2	278	3.0	0.440	12.3	LOS B	2.4	61.0	0.79	0.85	29.6
4	T1	273	3.0	0.404	10.7	LOS B	2.0	50.9	0.74	0.78	32.4
14	R2	7	3.0	0.404	10.7	LOS B	2.0	50.9	0.74	0.78	31.5
Approach		557	3.0	0.440	11.5	LOS B	2.4	61.0	0.76	0.81	30.9
West: Reservation Road											
5	L2	18	3.0	0.466	12.9	LOS B	2.4	61.4	0.77	0.84	31.4
2	T1	275	3.0	0.466	12.9	LOS B	2.4	61.4	0.77	0.84	31.3
12	R2	158	3.0	0.279	10.2	LOS B	1.2	30.8	0.75	0.75	31.5
Approach		452	3.0	0.466	12.0	LOS B	2.4	61.4	0.76	0.81	31.4
All Vehicles		2740	3.0	0.492	10.7	LOS B	3.0	78.0	0.72	0.75	31.3

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

Site: 104 [Del Monte/Reservation - PM]

ROAD DIET SCENARIO
Roundabout

Movement Performance - Vehicles												
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Del Monte Blvd											
3	L2	166	3.0	0.502	10.8	LOS B	3.3	85.4	0.77	0.83	31.5
8	T1	267	3.0	0.502	10.8	LOS B	3.3	85.4	0.77	0.83	31.5
18	R2	632	3.0	0.688	15.5	LOS B	6.1	155.2	0.85	0.98	29.3
Approach		1065	3.0	0.688	13.6	LOS B	6.1	155.2	0.82	0.92	30.2
East: Reservation Road											
1	L2	453	3.0	0.532	11.6	LOS B	3.2	83.0	0.70	0.76	29.9
6	T1	435	3.0	0.744	19.1	LOS B	6.9	176.6	0.86	1.01	28.9
16	R2	199	3.0	0.744	19.1	LOS B	6.9	176.6	0.86	1.01	28.1
Approach		1087	3.0	0.744	16.0	LOS B	6.9	176.6	0.79	0.90	29.2
North: Del Monte Blvd											
7	L2	189	3.0	0.315	10.3	LOS B	1.3	34.2	0.73	0.74	30.4
4	T1	105	3.0	0.213	9.6	LOS A	0.9	22.6	0.73	0.73	33.0
14	R2	9	3.0	0.213	9.6	LOS A	0.9	22.6	0.73	0.73	32.0
Approach		303	3.0	0.315	10.0	LOS B	1.3	34.2	0.73	0.74	31.3
West: Reservation Road											
5	L2	95	3.0	0.453	10.5	LOS B	2.5	63.9	0.74	0.78	32.0
2	T1	310	3.0	0.453	10.1	LOS B	2.5	63.9	0.73	0.77	32.1
12	R2	126	3.0	0.230	7.5	LOS A	1.0	26.8	0.69	0.69	32.8
Approach		531	3.0	0.453	9.5	LOS A	2.5	63.9	0.72	0.75	32.3
All Vehicles		2986	3.0	0.744	13.4	LOS B	6.9	176.6	0.78	0.87	30.2

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

Site: 108 [Reservation/De Forest - AM]

ROAD DIET SCENARIO
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: De Forest Rd											
3	L2	18	3.0	0.079	8.5	LOS A	0.3	7.5	0.67	0.67	32.4
8	T1	3	3.0	0.079	8.5	LOS A	0.3	7.5	0.67	0.67	32.3
18	R2	18	3.0	0.079	8.5	LOS A	0.3	7.5	0.67	0.67	31.4
Approach		38	3.0	0.079	8.5	LOS A	0.3	7.5	0.67	0.67	31.9
East: Reservation Rd											
1	L2	31	3.0	0.669	11.5	LOS B	7.2	184.4	0.44	0.21	32.1
6	T1	731	3.0	0.669	11.5	LOS B	7.2	184.4	0.44	0.21	32.0
16	R2	115	3.0	0.669	11.5	LOS B	7.2	184.4	0.44	0.21	31.1
Approach		877	3.0	0.669	11.5	LOS B	7.2	184.4	0.44	0.21	31.9
North: De Forest Rd											
7	L2	152	3.0	0.374	11.2	LOS B	1.8	45.4	0.72	0.75	30.8
4	T1	1	3.0	0.374	11.2	LOS B	1.8	45.4	0.72	0.75	30.7
14	R2	78	3.0	0.374	11.2	LOS B	1.8	45.4	0.72	0.75	29.9
Approach		231	3.0	0.374	11.2	LOS B	1.8	45.4	0.72	0.75	30.4
West: Reservation Rd											
5	L2	41	3.0	0.767	16.4	LOS B	10.0	255.9	0.82	0.64	30.0
2	T1	816	3.0	0.767	16.4	LOS B	10.0	255.9	0.82	0.64	29.9
12	R2	27	3.0	0.767	16.4	LOS B	10.0	255.9	0.82	0.64	29.1
Approach		885	3.0	0.767	16.4	LOS B	10.0	255.9	0.82	0.64	29.9
All Vehicles		2031	3.0	0.767	13.5	LOS B	10.0	255.9	0.64	0.47	30.8

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

Site: 108 [Reservation/De Forest - PM]

ROAD DIET SCENARIO
Roundabout

Movement Performance - Vehicles												
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: De Forest Rd											
3	L2	72	3.0	0.362	14.6	LOS B	1.5	39.5	0.77	0.82	29.8
8	T1	12	3.0	0.362	14.6	LOS B	1.5	39.5	0.77	0.82	29.7
18	R2	76	3.0	0.362	14.6	LOS B	1.5	39.5	0.77	0.82	29.0
Approach		159	3.0	0.362	14.6	LOS B	1.5	39.5	0.77	0.82	29.4
East: Reservation Rd											
1	L2	59	3.0	0.818	19.0	LOS B	12.7	325.8	0.89	0.65	28.9
6	T1	840	3.0	0.818	19.0	LOS B	12.7	325.8	0.89	0.65	28.9
16	R2	75	3.0	0.818	19.0	LOS B	12.7	325.8	0.89	0.65	28.2
Approach		974	3.0	0.818	19.0	LOS B	12.7	325.8	0.89	0.65	28.8
North: De Forest Rd											
7	L2	87	3.0	0.271	11.1	LOS B	1.1	27.7	0.72	0.72	30.8
4	T1	1	3.0	0.271	11.1	LOS B	1.1	27.7	0.72	0.72	30.7
14	R2	48	3.0	0.271	11.1	LOS B	1.1	27.7	0.72	0.72	29.9
Approach		137	3.0	0.271	11.1	LOS B	1.1	27.7	0.72	0.72	30.5
West: Reservation Rd											
5	L2	71	3.0	0.942	32.7	LOS C	28.2	723.0	1.00	0.87	24.7
2	T1	945	3.0	0.942	32.7	LOS C	28.2	723.0	1.00	0.87	24.6
12	R2	113	3.0	0.942	32.7	LOS C	28.2	723.0	1.00	0.87	24.1
Approach		1128	3.0	0.942	32.7	LOS C	28.2	723.0	1.00	0.87	24.6
All Vehicles		2398	3.0	0.942	24.7	LOS C	28.2	723.0	0.92	0.77	26.8

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

Site: 109 [Reservation/Crescent - AM]

ROAD DIET SCENARIO
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Crescent Ave											
3	L2	115	3.0	0.489	15.8	LOS B	2.5	64.5	0.78	0.86	29.3
8	T1	23	3.0	0.489	15.8	LOS B	2.5	64.5	0.78	0.86	29.3
18	R2	116	3.0	0.489	15.8	LOS B	2.5	64.5	0.78	0.86	28.5
Approach		254	3.0	0.489	15.8	LOS B	2.5	64.5	0.78	0.86	28.9
East: Reservation Rd											
1	L2	89	3.0	0.710	14.0	LOS B	7.7	195.9	0.74	0.58	30.8
6	T1	695	3.0	0.710	14.0	LOS B	7.7	195.9	0.74	0.58	30.7
16	R2	26	3.0	0.710	14.0	LOS B	7.7	195.9	0.74	0.58	29.9
Approach		810	3.0	0.710	14.0	LOS B	7.7	195.9	0.74	0.58	30.7
North: Crescent Ave											
7	L2	70	3.0	0.306	11.0	LOS B	1.3	33.0	0.72	0.73	31.3
4	T1	57	3.0	0.306	11.0	LOS B	1.3	33.0	0.72	0.73	31.3
14	R2	40	3.0	0.306	11.0	LOS B	1.3	33.0	0.72	0.73	30.4
Approach		166	3.0	0.306	11.0	LOS B	1.3	33.0	0.72	0.73	31.1
West: Reservation Rd											
5	L2	55	3.0	0.854	22.8	LOS C	15.5	397.7	1.00	0.92	27.6
2	T1	816	3.0	0.854	22.8	LOS C	15.5	397.7	1.00	0.92	27.6
12	R2	80	3.0	0.854	22.8	LOS C	15.5	397.7	1.00	0.92	26.9
Approach		952	3.0	0.854	22.8	LOS C	15.5	397.7	1.00	0.92	27.5
All Vehicles		2183	3.0	0.854	17.8	LOS B	15.5	397.7	0.86	0.77	29.1

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

Site: 109 [Reservation/Crescent - PM]

ROAD DIET SCENARIO
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Crescent Ave											
3	L2	144	3.0	0.688	26.2	LOS C	4.4	112.5	0.85	1.04	25.9
8	T1	39	3.0	0.688	26.2	LOS C	4.4	112.5	0.85	1.04	25.8
18	R2	143	3.0	0.688	26.2	LOS C	4.4	112.5	0.85	1.04	25.3
Approach		326	3.0	0.688	26.2	LOS C	4.4	112.5	0.85	1.04	25.6
East: Reservation Rd											
1	L2	159	3.0	0.963	38.7	LOS D	29.2	747.0	1.00	1.26	23.1
6	T1	812	3.0	0.963	38.7	LOS D	29.2	747.0	1.00	1.26	23.0
16	R2	63	3.0	0.963	38.7	LOS D	29.2	747.0	1.00	1.26	22.6
Approach		1034	3.0	0.963	38.7	LOS D	29.2	747.0	1.00	1.26	23.0
North: Crescent Ave											
7	L2	35	3.0	0.216	11.7	LOS B	0.8	20.7	0.74	0.74	31.1
4	T1	14	3.0	0.216	11.7	LOS B	0.8	20.7	0.74	0.74	31.1
14	R2	44	3.0	0.216	11.7	LOS B	0.8	20.7	0.74	0.74	30.2
Approach		94	3.0	0.216	11.7	LOS B	0.8	20.7	0.74	0.74	30.7
West: Reservation Rd											
5	L2	69	3.0	1.018	50.8	LOS F	46.9	1199.6	1.00	1.42	20.6
2	T1	944	3.0	1.018	50.8	LOS F	46.9	1199.6	1.00	1.42	20.6
12	R2	130	3.0	1.018	50.8	LOS F	46.9	1199.6	1.00	1.42	20.2
Approach		1143	3.0	1.018	50.8	LOS D	46.9	1199.6	1.00	1.42	20.6
All Vehicles		2597	3.0	1.018	41.5	LOS D	46.9	1199.6	0.97	1.29	22.3

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

Site: 110 [Reservation/California - AM]

ROAD DIET SCENARIO
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: California Ave											
3	L2	123	3.0	0.190	7.4	LOS A	0.7	18.5	0.61	0.61	31.8
8	T1	9	3.0	0.190	7.4	LOS A	0.7	18.5	0.61	0.61	31.7
18	R2	187	3.0	0.269	8.4	LOS A	1.1	27.4	0.64	0.64	32.3
Approach		319	3.0	0.269	8.0	LOS A	1.1	27.4	0.63	0.63	32.1
East: Reservation Rd											
1	L2	175	3.0	0.718	13.7	LOS B	6.4	165.1	0.60	0.40	30.7
6	T1	695	3.0	0.718	13.7	LOS B	6.4	165.1	0.60	0.40	30.7
16	R2	4	3.0	0.718	13.7	LOS B	6.4	165.1	0.60	0.40	29.9
Approach		874	3.0	0.718	13.7	LOS B	6.4	165.1	0.60	0.40	30.7
North: Driveway											
7	L2	1	3.0	0.007	7.4	LOS A	0.0	0.6	0.66	0.53	33.2
4	T1	1	3.0	0.007	7.4	LOS A	0.0	0.6	0.66	0.53	33.1
14	R2	1	3.0	0.007	7.4	LOS A	0.0	0.6	0.66	0.53	32.2
Approach		3	3.0	0.007	7.4	LOS A	0.0	0.6	0.66	0.53	32.8
West: Reservation Rd											
5	L2	11	3.0	0.880	24.8	LOS C	18.4	470.9	1.00	0.85	27.0
2	T1	736	3.0	0.880	24.8	LOS C	18.4	470.9	1.00	0.85	27.0
12	R2	275	3.0	0.880	24.8	LOS C	18.4	470.9	1.00	0.85	26.3
Approach		1022	3.0	0.880	24.8	LOS C	18.4	470.9	1.00	0.85	26.8
All Vehicles		2218	3.0	0.880	18.0	LOS B	18.4	470.9	0.79	0.64	28.9

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

Site: 110 [Reservation/California - PM]

ROAD DIET SCENARIO
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: California Ave											
3	L2	167	3.0	0.272	9.3	LOS A	1.0	26.8	0.66	0.66	30.8
8	T1	1	3.0	0.272	9.3	LOS A	1.0	26.8	0.66	0.66	30.7
18	R2	99	3.0	0.160	7.7	LOS A	0.6	15.0	0.63	0.63	32.6
Approach		267	3.0	0.272	8.7	LOS A	1.0	26.8	0.65	0.65	31.4
East: Reservation Rd											
1	L2	153	3.0	0.809	18.4	LOS B	10.6	271.4	0.79	0.61	29.0
6	T1	805	3.0	0.809	18.4	LOS B	10.6	271.4	0.79	0.61	28.9
16	R2	1	3.0	0.809	18.4	LOS B	10.6	271.4	0.79	0.61	28.2
Approach		960	3.0	0.809	18.4	LOS B	10.6	271.4	0.79	0.61	28.9
North: Driveway											
7	L2	1	3.0	0.012	8.6	LOS A	0.0	1.1	0.70	0.62	33.0
4	T1	1	3.0	0.012	8.6	LOS A	0.0	1.1	0.70	0.62	32.9
14	R2	3	3.0	0.012	8.6	LOS A	0.0	1.1	0.70	0.62	31.9
Approach		5	3.0	0.012	8.6	LOS A	0.0	1.1	0.70	0.62	32.3
West: Reservation Rd											
5	L2	3	3.0	0.869	23.2	LOS C	17.1	437.6	1.00	0.78	27.6
2	T1	866	3.0	0.869	23.2	LOS C	17.1	437.6	1.00	0.78	27.5
12	R2	163	3.0	0.869	23.2	LOS C	17.1	437.6	1.00	0.78	26.8
Approach		1032	3.0	0.869	23.2	LOS C	17.1	437.6	1.00	0.78	27.4
All Vehicles		2264	3.0	0.869	19.4	LOS B	17.1	437.6	0.87	0.69	28.5

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

PARKING DATA COLLECTION SHEET

PARKING DATA COLLECTION SUMMARY

LOCATION: Downtown Marina/ Reservation Rd
DATE: January 22, 2019
TIME: 10:00 AM - 5:00 PM (Sundown)
TEAM: KS

Segment	Supply			10:00 AM Count			12:00 PM Count			3:00 PM Count			5:00 PM Count		
	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total
1. Del Monte Blvd to Vista Del Camino	5		5	1		1	0		0	0		0	0		0
2. Vista Del Camino to Seacrest Ave		5	5		5	5		3	3		3	3		3	3
3. Seacrest Ave to Shopping Center Dwy		10	10		1	1		0	0		0	0		0	0
4. De Forest Rd to Crescent Ave		8	8		8	8		7	7		8	8		10	10
5. Crescent Ave to California Ave	47	26	73	25	7	32	22	9	31	21	10	31	24	11	35
6. California Ave to Salinas Ave	36	43	79	7	12	19	7	12	19	8	12	20	9	10	19
TOTAL	**88**	**92**	**180**	**33**	**33**	**66**	**29**	**31**	**60**	**29**	**33**	**62**	**33**	**34**	**67**

Segment	Supply			Average			Peak (5:00 PM)		
	EB	WB	Total	EB	WB	Total	EB	WB	Total
1. Del Monte Blvd to Vista Del Camino	5		5	0		0	0		0
2. Vista Del Camino to Seacrest Ave		5	5		4	4		3	3
3. Seacrest Ave to Shopping Center Dwy		10	10		0	0		0	0
4. De Forest Rd to Crescent Ave		8	8		8	8		10	10
5. Crescent Ave to California Ave	47	26	73	23	9	32	24	11	35
6. California Ave to Salinas Ave	36	43	79	8	12	20	9	10	19
TOTAL	**88**	**92**	**180**	**31**	**33**	**64**	**33**	**34**	**67**

Appendix D

Biological Resource Assessment

Downtown Vitalization Specific Plan

Biological Resources Assessment

prepared by

City of Marina
Community Development Department
209 Cypress Avenue
Marina, California 93933
Contact: Fred Aegerter, Community Development Director

prepared with the assistance of

Rincon Consultants, Inc.
437 Figueroa Street, Suite 203
Monterey, California 93940

July 2019

RINCON CONSULTANTS, INC.
Environmental Scientists | Planners | Engineers
rinconconsultants.com

Downtown Vitalization Specific Plan

Biological Resources Assessment

prepared by

City of Marina
Community Development Department
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Executive Summary

This Biological Resources Assessment was prepared to support environmental review of the City of Marina's Downtown Vitalization Specific Plan (Specific Plan). The Specific Plan was developed to provide guidance for future development within the City's downtown area. The intent of the Specific Plan is to provide opportunities for vitalization and enhancement within downtown Marina.

Six vegetation communities and/or land cover types were identified within the Specific Plan: developed, Ice plant mat, ruderal, sand mat manzanita (*Arctostaphylos pumila*), annual grassland, and willow riparian.

Suitable habitat is present for 14 special status plant species. Of the 14 species, five federal or state listed plant species have the potential to occur within the project area: Monterey spineflower (*Chorizanthe pungens* var. *pungens*), and Monterey gilia (*Gilia tenuiflora* ssp. *arenaria*), robust spineflower (*Chorizanthe robusta* var. *robusta*), seaside bird's-beak (*Cordylanthus rigidus* ssp. *littoralis*), and Yadon's rein orchid (*Piperia yadonii*). Of the remaining 9 non-listed species, three were observed in the Specific Plan: sandmat manzanita (*Arctostaphylos pumila*), Monterey cypress (*Hesperocyparis macrocarpa*), and Monterey Pine (*Pinus radiata*). Monterey cypress and Monterey pine are not naturally occurring however, and are largely contained with landscaped areas The remaining six non-listed species include Fort Ord spineflower (*Chorizanthe minutiflora*), Eastwood's goldenbush (*Ericameria fasciculata*), sand-loving wallflower (*Erysimum ammophilum*), Kellogg's horkelia (*Horkelia cuneata* var. *sericea*), Point Reyes horkelia (*Horkelia marinensis*), and northern curly-leaved monardella (*Monardella sinuata* ssp. *Nigrescens*).

Seven special status wildlife species have the potential to occur within the Specific Plan area: Smith's blue butterfly (*Euphilotes enoptes smithi*), tricolored blackbird (*Agelaius tricolor*), northern California legless lizard (*Anniella pulchra*), coast horned lizard (*Phrynosoma blainvillii*), burrowing owl (*Athene cunicularia*), white-tailed kite (*Elanus leucurus*) and Monterey shrew (*Sorex ornatus salarius*).

Potentially jurisdictional waters in the Specific Plan area include two detention basins, riparian habitat at Locke-Paddon Park, and a pond on private property. These features are potentially under the jurisdiction of the USACE, RWQCB, and or CDFW.

Eight mitigation measures have been proposed to reduce impacts to biological resources to less than significant under the California Environmental Quality Act (CEQA).

1 Introduction

Rincon Consultants, Inc. (Rincon) has prepared this Biological Resources Assessment (BRA) to document existing conditions, summarize previous biological resource reports and studies, and provide a basis for evaluation of potential impacts to special status and sensitive biological resources from the implementation of the Specific Plan located in the City of Marina, California (City). This BRA has been prepared to support CEQA environmental review of the Specific Plan. The Specific Plan Environmental Impact Report will be a programmatic environmental review, and this BRA provides programmatic-level analysis, with mitigation measures designed to be implemented at the project-level, when individual projects are proposed for development.

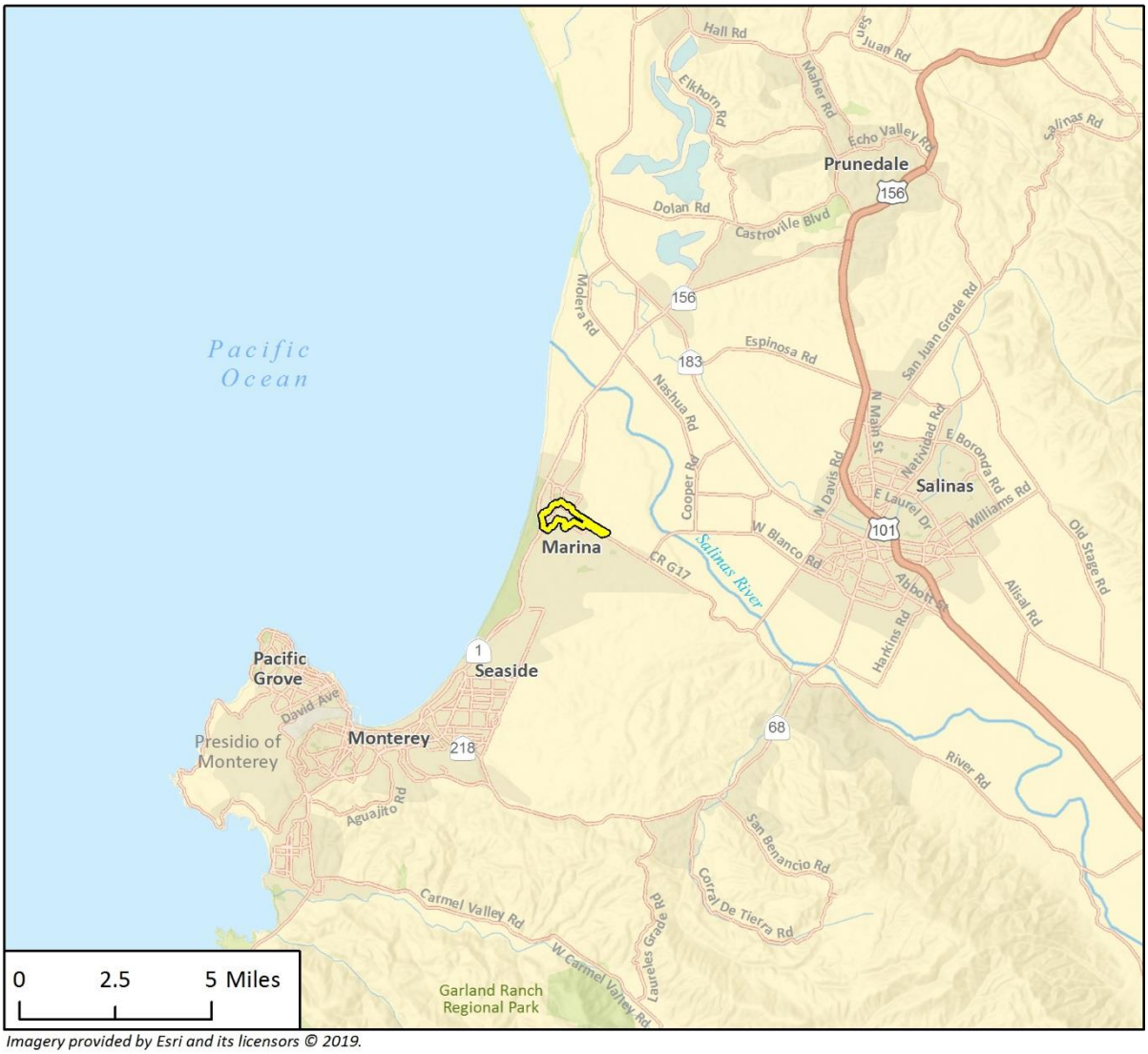
1.1 Project Location

The City of Marina is located in Monterey County, adjacent to Monterey Bay along State Route 1 (SR1) between the cities of Monterey and Santa Cruz (Figure 1). The Specific Plan area encompasses approximately 322 acres near the center of the City of Marina. The Specific Plan is depicted within the Marina, California United States Geological Survey (USGS) 7.5-minute topographic quadrangle, and is generally bounded by development to the north and south, SR1 to the west, and open space to the east (Figure 2). In the greater vicinity, to the west is the Pacific Ocean, to the north are agricultural lands, to the east is the Marina Airport, and to the south is the former Fort Ord.

1.2 Project Description

The Specific Plan implements the goals and policies of the City of Marina General Plan and provides specific direction to reflect conditions unique to the Downtown area. The Specific Plan includes land use designations, access requirements and standards, infrastructure location and sizing, financing, and development standards. The maximum buildout would increase residential, retail, and office space in the downtown area, and would focus on mixed-use and retail along Reservation Road, with multi-family residential uses in the surrounding area. The Specific Plan also provides road and access improvements for pedestrians, cyclists, and motorists.

Figure 1 Regional Location Map



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Specific Plan Area

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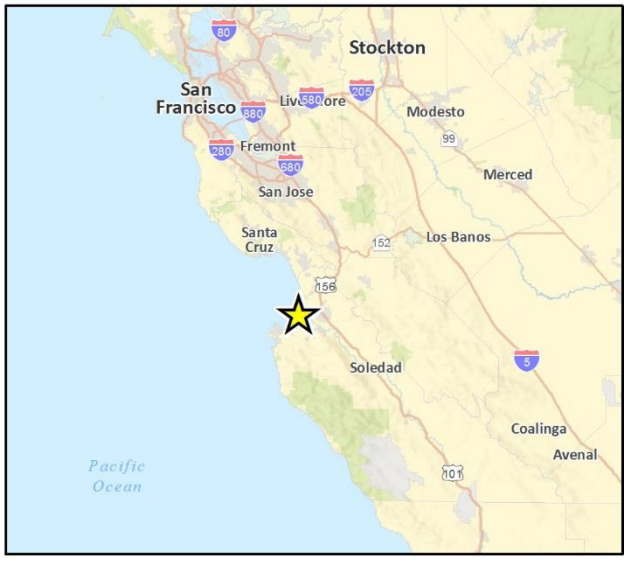

Figure 2 Project Area Map

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Fig 2 Project Location

2 Methodology

2.1 Regulatory Overview

Regulated or sensitive resources studied and analyzed herein include special status plant and animal species, nesting birds and raptors, sensitive plant communities, jurisdictional waters and wetlands, wildlife movement, and locally protected resources, such as protected trees. Regulatory authority over biological resources is shared by Federal, State, and local authorities. Primary authority for regulation of general biological resources lies within the land use control and planning authority of local jurisdictions (in this instance, the City of Marina).

2.1.1 Definition of Special Status Species

For the purposes of this report, special status species include:

- Species listed as threatened or endangered under the Federal Endangered Species Act (FESA); species that are under review may be included if there is a reasonable expectation of listing within the life of the project
- Species listed as candidate, threatened, or endangered under the California Endangered Species Act (CESA)
- Species designated as Fully Protected, Species of Special Concern, or Watch List by the California Department of Fish and Wildlife (CDFW)
- Species designated as sensitive by the U.S. Forest Service or Bureau of Land Management, if the project would affect lands administered by these agencies
- Species designated as locally important by the Local Agency and/or otherwise protected through ordinance or local policy

2.1.2 Environmental Statutes

For the purpose of this report, potential impacts to biological resources were analyzed based on the following statutes (Appendix A):

- California Environmental Quality Act (CEQA)
- Federal Endangered Species Act (ESA)
- California Endangered Species Act (CESA)
- Federal Clean Water Act (CWA)
- California Fish and Game Code (CFGC)
- Migratory Bird Treaty Act (MBTA)
- The Bald and Golden Eagle Protection Act
- Porter-Cologne Water Quality Control Act
- City of Marina Municipal Code

The Specific Plan area is located outside of the coastal zone, and is therefore not subject to the regulations contained in the Marina Local Coastal Land Use Plan (LCLUP).

2.1.3 Guidelines for Determining CEQA Significance

The following threshold criteria, as defined by the CEQA Guidelines Appendix G Initial Study Checklist, were used to evaluate potential environmental effects. Based on these criteria, the proposed project would have a significant effect on biological resources if it would:

a) *Have substantial adverse effects, 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 Wildlife or U.S. Fish and Wildlife Service.*

b) *Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Wildlife or US Fish and Wildlife Service.*

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.*

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.*

e) *Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or 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.*

2.2 Literature Review

Rincon reviewed literature for baseline information on biological resources potentially occurring In the Specific Plan and vicinity. The purpose of this review was to identify biological resources that could be affected by development under the Specific Plan goals and policies. The literature review included information available in peer reviewed journals, standard reference materials, and online databases (e.g., Holland, 1986; Baldwin et al., 2012, Sawyer et al., 2009; Stebbins, 2003; Sibley, 2016; Sullivan et al., 2009).

Rincon also conducted a review of relevant databases of sensitive resource occurrences from the California Department of Fish and Wildlife (CDFW) California Natural Diversity Data Base (CNDDB) (CDFW, 2019a) and Biogeographic Information and Observation System (CDFW, 2019b); the U.S. Fish and Wildlife Service (USFWS) Critical Habitat Portal (USFWS, 2019a), National Wetlands Inventory Wetlands Mapper (USFWS, 2019b), and Information for Planning and Consultation (IPaC) System (USFWS, 2019c); the United States Department of Agriculture, Natural Resources Conservation Service (USDA, NRCS) Web Soil Survey (USDA, NRCS, 2019); and the California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants of California (CNPS, 2019). Other sources of information about the site included aerial photographs, topographic maps, geologic maps, climatic data, and project plans.

Queries of the CDFW CNDDB and the CNPS Inventory of Rare and Endangered Plants of California included the *Marina*, California USGS 7.5-minute topographic quadrangles, and surrounding six quadrangles; *Spreckels, Prunedale, Salinas, Monterey, Seaside,* and *Moss Landing*. A list of federal

species known to occur in Monterey County was acquired from the USFWS IPaC System. The results of these scientific database queries were compiled into a table that is presented as Appendix A.

2.3 Field Reconnaissance Survey

A biological resource reconnaissance survey was conducted to assess the habitat suitability for potential special status species, map the existing vegetation, map any evident sensitive biological resources currently onsite, note the presence of potential jurisdictional waters or wetlands, document any wildlife connectivity/movement features, and record all observations of plant and wildlife species within the Specific Plan area. The focus of this survey was to asses undeveloped areas identified through a review of areal imagery as possibly contain sensitive biological resources, natural habitat, or habitat that is potentially suitable for special status species. Most of the survey area could be assessed from the public right of way. Meandering transects were walked throughout vacant lots that were accessible from the public right of way. A wind shield survey was conducted throughout the rest of the developed area to confirm the desk top evaluation of aerial imagery. Rincon Biologist Samantha Kehr conducted the site visit on June 17, 2019, between the hours of 2:00pm and 4:00pm. Conditions onsite were 65°F and clear with a slight breeze. Site photos from the survey are included as Appendix B.

3 Existing Conditions

3.1 Physical Characteristics

The Specific Plan areas is located at the southern end of Monterey Bay, within the Central California Coast Ecoregion. It is bordered to the west by the Pacific Ocean and to the east by Fort Ord National Monument. The climate in this region is generally mild with an annual minimum temperature of 39.9°F, a maximum average temperature of 67.9°F, and an annual precipitation of 14.89 inches (WRCC 2019). Elevation within the City ranges from approximately 19 feet mean sea level (msl) near Locke-Paddon Park, to 64 feet above msl along the Specific Plan area's eastern border along Reservation Road.

The Specific Plan area covers 336 acres comprised primarily of existing residential development and commercial and industrial development. A small component of the Specific Plan area is comprised of vacant lots and small patches of open space, primarily within existing development. As such the Specific Plan area is largely developed, with very little natural habitat. What natural or semi-natural habitat is present is limited to the eastern edge of the Specific Plan area along reservation Road, the eastern edge of Locke-Paddon Park, and south of development at Reindollar Avenue between SR1 and George Patton Senior Elementary School.

3.1.1 Watershed and Drainages

The Specific Plan is located in the Monterey Bay Subwatershed (HUC12 180600150305), south of the Salinas River watershed. According to the National Wetland Inventory (NWI) (USFWS, 2019b), known jurisdictional wetlands and waters within the Specific Plan area are limited to the freshwater wetlands at Locke-Paddon Park in the north west corner. No other wetlands or waters are mapped in the Specific Plan area.

3.1.2 Soils

Based on the most recent Natural Resources Conservation Service (NRCS) soil survey for Monterey County (USDA 2019), the Specific Plan contains one soil map unit:

Baywood Sand, 2 to 15 Percent Slopes

Baywood sand is somewhat excessively drained soils derived from stabilized sandy eolian sands with 2 to 15 percent slopes. This soil map unit has 8 centimeters (cm) of available water storage. This soil map unit typically lacks hydric soils.

3.2 Vegetation and Other Land Cover

Vegetation community mapping for the Specific Plan is based on aerial imagery and reconnaissance surveys conducted on June 17, 2019. Vegetation classification was based on *A Manual of California Vegetation, Second Edition* (Sawyer et al., 2009), *Preliminary Descriptions of the Terrestrial Communities of California* (Holland, 1986), and *A Guide to Wildlife Habitats of California* (Mayer and

Laudenslayer, 1988); however, classifications have been modified as needed to accurately describe the existing habitats observed on-site.

Vegetation composition and structure within the Specific Plan is generally limited to landscape and ruderal vegetation types, with developed being the dominate land cover type in the Specific Plan (Figure 3).

Developed

This land cover type is not described by Holland (1986), Sawyer et al. (2009), or Mayer and Laudenslayer (1988). It includes all areas that have been developed, including paved roads, sidewalks, parking lots, buildings, and basketball courts. Vegetation in this land cover type consists of primarily non-native ornamental plantings in lawns, park strips, parking lots, commercial parks, baseball fields, etc. Tree species found in this community are highly variable and typically non-native or not occurring as part of a natural woodland. Species observed within this land cover type in the Specific Plan are primarily Monterey cypress (*Hesperocyparis macrocarpa*) and eucalyptus (*Eucalyptus* sp.), with some Monterey pine (*Pinus radiata*). Bushes and shrubs in this community are variable by occurrence and may include coyote brush (*Baccharis pilularis*), California poppy (*Eschscholzia californica*), sweet alyssum (*Lobularia maritima*), and juniper (*Juniperus* spp.). A drought tolerant demonstration garden was also observed within the developed area of the Specific Plan, planted at the Marina Coast water Districts Well site 11, on Reservation Road west of Salinas Avenue. Native and drought tolerant species were planted at the site in 2002 by the Marina Tree and Garden Club, including Pajaro manzanita (*Arctostaphylos pajaroensis*), Hooker's manzanita (*Arctostaphylos hookerI*), matilija poppy (*Romneya coulterI*), Red Monkeyflower (*Diplacus parvifolius*), Coast Buckwheat (*Eriogonum fasciculatum*), and statice (*Limonium sinuatum*).

Ice Plant Mat

Ice plant species (*Carpobrotus edulis*, *C. chilensis*) are non-native invasive species, originally planted in the 1940s and 1950s for landscaping and dune stabilization (USACE 1992). These perennial ground-hugging succulents form large monospecific mats (Sawyer et al., 2009). *Carpobrotus edulis* is an invasive species with a Cal ICP rating of "High" for its invasive tendencies. This hardy species spreads readily from landscaped areas into dune and scrub habitats, out competing native species for space, nutrients, and moisture.

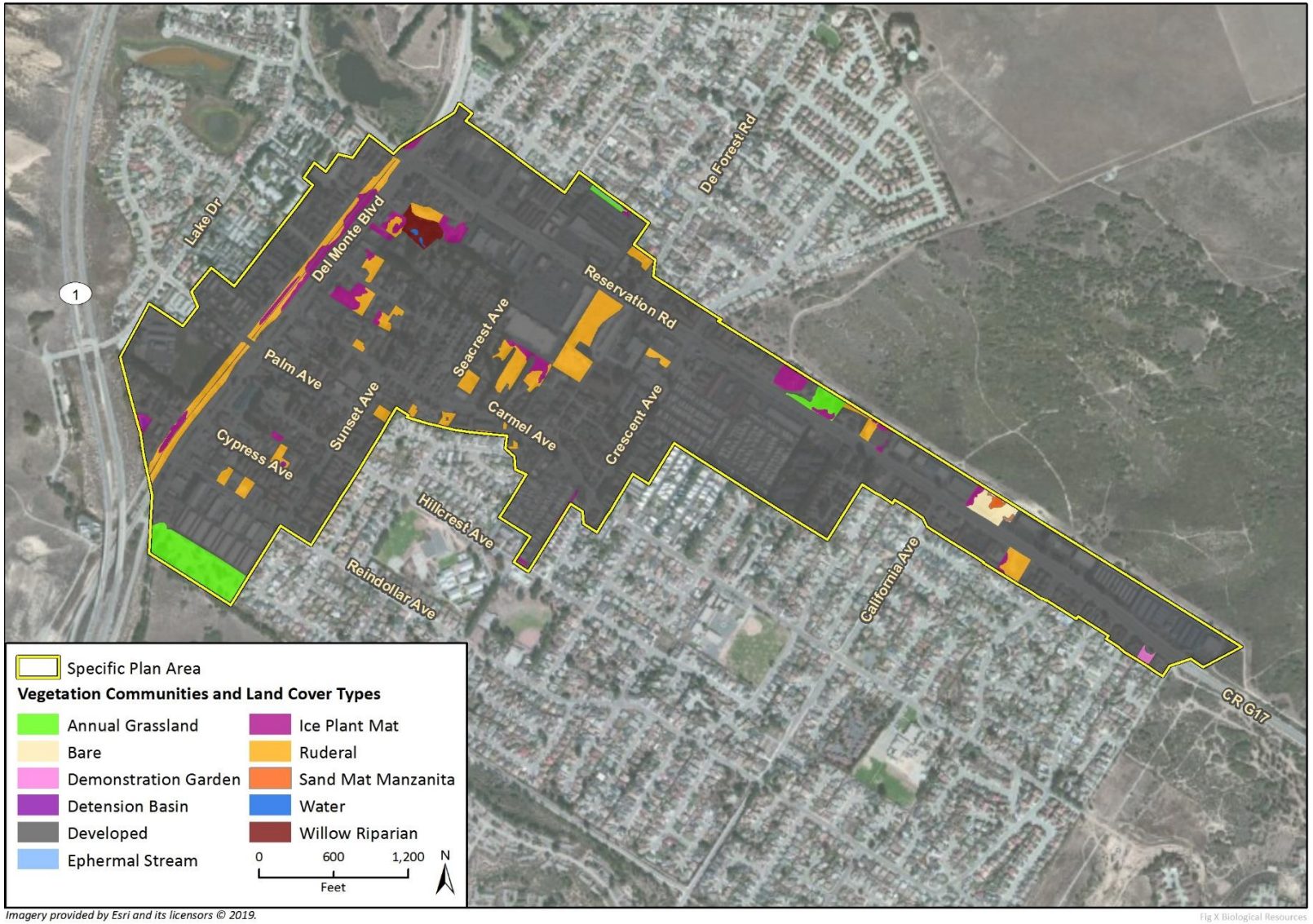
Ruderal

Ruderal vegetation communities are also not described by Holland (1986), Sawyer et al. (2009), or Mayer and Laudenslayer (1988). This vegetation community is highly variable and contains a large component of bare soil or sand. Species found in this community are typical of disturbed areas between development, and are largely non-native, invasive, or ornamental, including wild oats (*Avena* ssp.), ripgut brome (*Bromus diandrus*), sweet alyssum, statice, and ice plant.

Sandmat Manzanita

A small patch of sandmat manzanita (*Arctostaphylos pumila*) was observed on an open parcel adjacent to the ranch to the north of Reservation Road. Other species observed in this area include black sage (*Salvia mellifera*), manzanita (*Arctostaphylos* sp.), and coast live oak (*Quercus agrifolia*).

Figure 3 Vegetation Communities and Land Cover Types



Annual Grassland

This community is typically comprised of grasses and forbs introduced during and since the Spanish colonial period. While some invasive plants may have been first introduced during the 16th century as Spanish explorers came to California's coast, it is likely that the majority of invasive plants were introduced after people of Old World descent began to settle in California. Non-native species are dominant, including annual grasses such as wild oats, ripgut brome, rattail fescue (*Festuca myuros*), Italian rye (*Festuca perennis*), and foxtail barley (*Hordeum murinum* var. *leporinum*).

Willow Riparian

This community occurs along the margins of Locke-Paddon Park and around a perennial pond on private property south of Styles Court and is dominated by arroyo willow (*Salix lasiolepis*) in tree form. Other trees in this community include Monterey cypress and occasional coast live oak trees. In the understory at Locke-Paddon Park California blackberry and coyote brush are present.

3.3 General Wildlife

Wildlife observed in the Specific Plan is consistent with urban disturbance tolerant species, including American crow (*Corvus brachyrhynchos*), anna's hummingbird (*Calypte anna*), black phoebe (*Sayornis nigricans*), red-shouldered hawk (*Buteo lineatus*), and red-tailed hawk (*Buteo jamaicensis*). Parks and landscaped trees also provide habitat for migratory birds such as California towhee (*Melozone crissalis*), bushtit (*Psaltriparus minimus*), western scrub jay (*Aphelocoma californica*), and chestnut-backed chickadee (*Poecile rufescens*).

4 Sensitive Biological Resources

Local, state, and federal agencies regulate special status species and other sensitive biological resources and require an assessment of their presence or potential presence to be conducted on-site prior to the approval of proposed development on a property. This section discusses sensitive biological resources observed on the project site, and evaluates the potential for the project site to support additional sensitive biological resources. Assessments for the potential occurrence of special status species are based upon known ranges, habitat preferences for the species, species occurrence records from the CNDDB, species occurrence records from other sites in the vicinity of the survey area, previous reports for the project site, and the results of surveys of the project site. The potential for each special status species to occur in the study area was evaluated according to the following criteria:

- **Not Expected.** Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime), and species would have been identifiable on-site if present (e.g., oak trees). Protocol surveys (if conducted) did not detect species.
- **Low Potential.** Few of the habitat components meeting the species requirements are present, and/or the majority of habitat on and adjacent to the site is unsuitable or of very poor quality. The species is not likely to be found on the site. Protocol surveys (if conducted) did not detect species.
- **Moderate Potential.** Some of the habitat components meeting the species requirements are present, and/or only some of the habitat on or adjacent to the site is unsuitable. The species has a moderate probability of being found on the site.
- **High Potential.** All of the habitat components meeting the species requirements are present and/or most of the habitat on or adjacent to the site is highly suitable. The species has a high probability of being found on the site.
- **Present.** Species is observed on the site or has been recorded (e.g., CNDDB, other reports) on the site recently (within the last 5 years).

4.1 Special Status Species

4.1.1 Special Status Plant Species

Based on the database and literature review, 53 special status plants species were documented within the *Marina*, California USGS 7.5-minute topographic quadrangle (within which the Specific Plan area is located) and the six surrounding quadrangles. Thirty-nine (39) of these could be eliminated based on the absence of suitable habitat, lack of suitable soils, and existing development in the Specific Plan (see Appendix D for a species by species evaluation). Of the remaining 14 species, three (3) Federal and/or State listed plant species and three (3) non-listed species with a rare plant rank of 1B to 2B have a low potential to occur in the Specific Plan area. Eight (8) special status plant species are known to occur, or have at least a moderate potential to occur within the vicinity of the Specific Plan area.

Federal and/or State Listed Species

- Monterey spineflower (*Chorizanthe pungens* var. *pungens*)
- Monterey gilia (*Gilia tenuiflora* ssp. *arenaria*)
- Robust spineflower (*Chorizanthe robusta* var. *robusta*)
- Seaside bird's-beak (*Cordylanthus rigidus* ssp. *littoralis*)
- Yadon's rein orchid (*Piperia yadonii*)

One special status plant species with a CRPR rank of 1B.2, sandmat manzanita (*Arctostaphylos pumila*), was observed in the Specific Plan and is considered present.

Two rare plants were observed in landscaping, Monterey cypress (*Hesperocyparis macrocarpa*) 1B.2, and Monterey Pine (*Pinus radiata*) 1B.1; however, these individuals occur as isolated remnants or occur as landscaping. Both species have special status only when they occur as part of a natural stand or woodland. They are protected by the City of Marina's municipal code however, which requires a permit for the removal of any tree with a diameter at breast height (DBH) of ten inches or more. No Federal or State listed plants were observed within the Specific Plan area.

The remaining six non-listed species include:

- Fort Ord spineflower (*Chorizanthe minutiflora*)
- Eastwood's goldenbush (Ericameria fasciculata)
- Sand-loving wallflower (*Erysimum ammophilum*)
- Kellogg's horkelia (*Horkelia cuneata* var. *sericea*)
- Point Reyes horkelia (*Horkelia marinensis*)
- Northern curly-leaved monardella (*Monardella sinuata* ssp. *Nigrescens*)

The limited portions of the Specific Plan area where natural vegetation communities occur generally provide marginal habitat due to development, landscaping, and the presence of non-native invasive species. Bare patches in ice plant mats and lawns provide sandy open habitat for dune species such as seaside bird's-beak, Monterey spineflower, and Monterey gilia. Remnant patches of chaparral species north of Reservation Road may also contain robust spineflower, and Yadon's rein-orchid.

4.1.2 Special Status Animal Species

Based on the database and literature review, 33 special status wildlife species were documented within the *Marina*, California USGS 7.5-minute topographic quadrangle (within which the Specific Plan area is located) and the six surrounding quadrangles. Twenty-six (26) of these could be eliminated based on the absence of suitable habitat (e.g., aquatic habitat, specific vegetation communities) and existing development in the Specific Plan area (see Appendix D). One (1) non-listed special status species was determined to have a low potential to occur in the Specific Plan area. The remaining six (6) species have low to high potential to occur based on the potential presence of suitable habitat and known occurrences

Species with potential to occur within the Specific Plan area include:

- Smith's blue butterfly (*Euphilotes enoptes smithi*) – Federally Endangered
- Tricolored blackbird (*Agelaius tricolor*) –State Threatened
- Northern California legless lizard (*Anniella pulchra*) – SSC

- Coast horned lizard (*Phrynosoma blainvillii*) – SSC
- Burrowing owl (*Athene cunicularia*) - SSC
- White-tailed kite (*Elanus leucurus*) - FP
- Monterey shrew (*Sorex ornatus salarius*) – SSC

Because these species have very specific habitat requirements, their potential to occur within the Specific Plan is restricted to undeveloped habitats and ruderal or landscaped areas adjacent to undeveloped habitat, particularly for small terrestrial species with limited mobility and small home ranges such as coast horned lizard, northern California legless lizard, and Monterey shrew. Smith's blue butterfly is dependent on its host plant coast buckheat (*Eriogonum latifolium*) and sea cliff buckwheat (*Eriogonum parvifolium*), which may occur in sandmat manzanita communities or on undeveloped areas north of Reservation Road. Suitable habitat for tricolored blackbird within the Specific Plan is restricted to willow riparian habitat at Locke-Paddon Park and the pond on private property. Burrowing owl is a highly mobile species which nests and roosts in California ground squirrel burrows. This species may utilize ruderal and grassland habitats on vacant lots within the Specific Plan, however this species also requires a sufficient prey base of insects, therefore smaller vacant lots and ruderal areas are likely unsuitable for burrowing owl.

4.1.3 Other Protected Species

Migratory birds protected by California Fish and Game Code were also observed in the Specific Plan. Trees, shrubs, buildings and other structures in the Specific Plan provide suitable nesting habitat for many migratory birds commonly found in developed areas.

4.2 Sensitive Plant Communities and Critical Habitats

Sensitive natural communities are vegetation types, associations, or sub-associations that support concentrations of special status plant and/or wildlife species, are of relatively limited distribution, and/or are of particular value to wildlife. According to the CDFW Vegetation Program, Alliances with State ranks of S1-S3 are considered to be imperiled, and thus, potentially of special concern. Natural communities with these ranks are generally addressed during CEQA environmental review with compensatory mitigation prescribed for impacts as applicable.

Sensitive natural communities documented within five miles of the Specific Plan area include:

- Central dune scrub
- Central maritime chaparral
- Valley needlegrass grassland

Sandmat manzanita (G1 S1) is considered a sensitive natural community by CDFW, however the sandmat manzanita observed in the Specific Plan is largely isolated from adjacent higher quality habitats and is highly disturbed.

4.3 Jurisdictional Waters and Wetlands

The Specific Plan area is located within the Salinas River watershed, which covers approximately 4,600 square miles from San Luis Obispo to Monterey County. No CDFW or USACE jurisdictional wetlands or waters are present in the Specific Plan area. Two small isolated stormwater retention

basins were observed north of Cypress Avenue and southwest of San Pablo Court, which appear to be properly maintained (Figure 3). These stormwater features drain water from the street and surrounding development, no “bed,” “Bank,” “channel,” or riparian vegetation was observed at either basin. They are therefore not likely to be USACE or CDFW jurisdictional, but would potentially be considered a RWQCB jurisdictional stormwater feature under the Porter-Cologne Water Quality Control Act, which regulates discharge to waters of the State, including discharge of stormwater.

The edge of riparian vegetation at Locke-Paddon Park also falls within the Specific Plan and is likely to be jurisdictional under CDFW. A “pond” observed on aerial imagery on private property may also be USACE, RWQCB, or CDFW jurisdictional. Historical topographic maps of the area depict a wetland in this area prior to the surrounding development (USGS 2019). Additionally, a stormwater drainage runs above ground for approximately 325 feet south of Viking Lane.

4.4 Wildlife Movement

Wildlife movement corridors, or habitat linkages, are generally defined as connections between habitat patches that allow for physical and genetic exchange between otherwise isolated animal populations or those populations that are at risk of becoming isolated. Such linkages may serve a local purpose, such as providing a linkage between foraging and denning areas, or they may be regional in nature. Some habitat linkages may serve as migration corridors, wherein animals periodically move away from an area and then subsequently return. Others may be important as dispersal corridors for young animals. A group of habitat linkages in an area can form a wildlife corridor network.

The habitats within the link do not necessarily need to be the same as the habitats that are being linked. Rather, the link merely needs to contain sufficient cover and forage to allow temporary inhabitation by ground-dwelling species. Habitat linkages are contiguous strips of natural areas, though dense plantings of landscape vegetation can be used by certain disturbance-tolerant species. Depending upon the species using a corridor, specific physical resources (such as rock outcroppings, vernal pools, or oak trees) may need to be located within the habitat link at certain intervals to allow slower-moving species to traverse the link. For highly mobile or aerial species, habitat linkages may be discontinuous patches of suitable resources spaced sufficiently close together to permit travel along a route in a short period of time. Wildlife movement corridors can be both large and small scale.

The California Essential Habitat Connectivity Project commissioned by the California Department of Transportation (Caltrans) and CDFW; identifies “natural landscape blocks” which support native biodiversity and the “essential connectivity areas” which link them (Spencer et al., 2010). No essential connectivity areas or landscape blocks are mapped within the Specific Plan. There is some open space to the north of Reservation Road and former Fort Ord lands to the south and west, however, the extent of existing development has isolated the Specific Plan, and it is not likely to function as an essential connectivity area or an important regional wildlife movement corridor.

4.5 Resources Protected By Local Policies and Ordinances

Protected Trees

The City of Marina Municipal Code Chapter 17.51 (Tree Removal, Preservation and Protection) requires a tree removal permit for the removal of any tree within the city with a single stem six inches or more in diameter at breast height (DBH), or a multistemmed plant having an aggregate diameter of ten inches or more DBH, and any living woody plant which was planted as part of an approved compensation plan or landscaping plan. The City also designates landmark trees for protection, and the City Tree Committee maintains a list of designated landmark trees. No landmark trees occur within the Specific Plan.

4.6 Habitat Conservation Plans

The Specific Plan is not within any Habitat Conservation Plan (HCP) or other conservation plan areas. It is also outside of the Fort Ord Base Reuse Plan area.

5 Impact Analysis and Mitigation Measures

5.1 Special Status Species

The proposed project would have a significant effect on biological resources if it would:

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 Wildlife or U.S. Fish and Wildlife Service.*

State and/or federally listed animal species with the potential to occur in areas of species-specific, suitable natural habitat within the Specific Plan area include tricolored blackbird and Smith's blue butterfly. State and/or federally listed plant species with the potential to occur in areas of species-specific, suitable natural habitat within the Specific Plan area include seaside bird's-beak, Monterey gilia, robust spineflower, Yadon's rein orchid, and Monterey spineflower. Additionally, non-listed special status species, rare plants, and birds protected by California Fish and Game code have the potential to occur in areas of natural habitat and ruderal areas of the Specific Plan area. Special status species are most likely to occur in undeveloped or ruderal areas, however Monterey spineflower and Monterey gillia may occur in sandy openings within landscaped areas.

Construction activity associated with individual projects developed under the Specific Plan could include demolition, grading, vegetation removal, equipment and vehicle staging, parking, construction noise and construction staging. At the individual project level these activities have the potential to directly impact special status plant and wildlife species. Wildlife species may be injured or killed by construction activity if present during construction. Wildlife present in the Specific Plan or in adjacent areas could be impacted by construction noise and activity if that activity causes individuals to abandon breeding activity and increases competition with other individuals of the same species. Special status plant species would be directly impacted through clearing, grading and vegetation removal in vegetated portions of the Specific Plan area if those species are present.

Impacts may also occur if the quality of habitat were degraded by development in adjacent areas through the introduction of invasive weeds, human disturbance, and altered hydrology. Impacts to CRPR 1B and 2B plants are generally considered significant under CEQA if the loss of individuals represented a population-level impact that resulted in a loss of, or risk to an entire local or regional population. The impacts to the sensitive biological resources listed above and resulting from projects developed under the Specific Plan would potentially be significant under CEQA without mitigation. Implementation of measures BIO-1(a) through BIO-1(h) would reduce impacts to less than significant.

Mitigation Measures

BIO-1(a) Biological Resources Screening and Assessment

For projects proposed for development within the Specific Plan the City should engage a qualified biologist to perform a preliminary biological resource screening to determine whether the project has any potential to impact special status biological resources, inclusive of special status plants and

animals, sensitive vegetation communities, jurisdictional waters (including creeks, drainages, streams, ponds, vernal pools, riparian areas and other wetlands), or biological resources protected under local or regional ordinances. If it is determined that the project has no potential to impact biological resources, no further action is required. If the project would have the potential to impact biological resources, prior to construction, a qualified biologist shall conduct a project-specific biological analysis to document the existing biological resources within a project footprint plus a minimum buffer of 100 feet around the project footprint, as is feasible, and to determine the potential impacts to those resources. If the project would have the potential to impact biological resources, the following mitigation measures [BIO-1(b) through BIO-1(h)] should be incorporated, as applicable, to reduce impacts to a less than significant. Pending the results of the project-specific biological analysis, design alterations, further technical studies (e.g., protocol surveys) and consultations with the USFWS, NMFS, CDFW, and/or other local, state, and federal agencies may be required. Note that specific surveys described in the mitigation measures below may be completed as part of the project-specific biological analysis where suitable habitat is present.

BIO-1(b) Special Status Plant Pre-Construction Survey

Surveys for special status plants should be completed by the project proponent prior to any vegetation removal, grubbing, or other construction activity (including staging and mobilization). The surveys should be floristic in nature, that is, every plant observed should be identified to species subspecies, or variety, sufficient to identify listed plants. The surveys should be seasonally timed to coincide with the target Federal and State listed species and rare plants identified above. All plant surveys should be conducted by a City-approved biologist during the appropriate blooming period during the year prior to initial ground disturbance. All special status plant species identified on-site should be mapped onto a site-specific aerial photograph or topographic map with the use of Global Positioning System (GPS) unit. Surveys should be conducted in accordance with the most current protocols established by the CDFW, USFWS, and the local jurisdictions if said protocols exist. A report of the survey results should be submitted to the implementing agency. If impacts to federal or state-listed species are identified for an individual project, consultation with CDFW and/or USFWS, as appropriate, may be required.

BIO-1(c) Special Status Plant Species Avoidance, Minimization, and Mitigation

If Federal and/or State listed species are found during special status plant pre-construction surveys [required under Mitigation Measure BIO-1(b)], avoidance of, or mitigation for impacts to, occupied habitat should be required. If populations of CRPR List 1B or 2 species are found during special status plant pre-construction surveys, the City-approved biologist should evaluate whether the loss of occupied areas would result in a local or regional population-level impact (i.e., jeopardize the continued existence of a local or regional population). Mitigation for regional population level impacts to rare plants should be required by the City. If feasible, the Proposed Project should be re-designed to avoid development in locations of Federal and/or State listed or CRPR List 1B or 2 species. Federal and/or State listed or CRPR List 1B or 2 species occurrences that are not within the immediate disturbance footprint and would be avoided, but which are located within 50 feet of disturbance limits, should have bright orange protective fencing installed at an appropriate distance (as determined by a qualified biologist) to ensure they are protected during construction activities.

If development cannot avoid Federally or State listed plants species, then USFWS and CDFW, as appropriate, should be consulted regarding the potential for salvage of individual plants or seek compensation (minimum compensation ratio of 1:1 for the impact area, with the conservation area of a similar density of individuals) for the loss of these individuals or their habitat either in an on-site

or off-site preserve, through payments to an appropriate mitigation bank, or as otherwise determined in coordination with USFWS and CDFW. Project applicants should consult with USFWS and CDFW for the potential to salvage or "take" listed species and to determine if take authorization would be required by one or both agencies. Impacts to Federal and/or State listed or CRPR List 1B or 2 species would require adherence to Mitigation Measure BIO-1(c).

BIO-1(d) Restoration and Monitoring

If development cannot avoid Federal or State listed plant species, all impacts should be mitigated by the project applicant at a minimum ratio of 1:1 for areas occupied by the species. Ratios may be higher pending consultation with CDFW and/or USFWS for listed species. Restoration areas should be of a similar density of individuals as areas impacted Project activities. A restoration plan should be prepared by the project applicant and submitted to the City for review and approval. Documentation demonstrating consultation with CDFW and USFWS regarding impacts to federal or state listed species should be submitted to the City. Population level impacts to CRPR List 1B or 2 species should also be mitigated at a 1:1 ratio for occupied areas, and should also require a restoration plan in coordination with the City. The restoration plan(s) should include, at a minimum, the following components:

- Description of the project/affected species location(s) (i.e., location, responsible parties, areas to be impacted by habitat type)
- Compensatory mitigation [type(s) and area(s) species to be established, restored, enhanced, and/or preserved; specific functions and values of species type(s) to be established, restored, enhanced, and/or preserved]
- Description of the proposed compensatory mitigation site (location and size, ownership status, existing functions and values)
- Implementation plan for the compensatory mitigation site (rationale for expecting implementation success, responsible parties, schedule, site preparation, planting plan)
- Maintenance activities during the monitoring period, including weed removal as appropriate (activities, responsible parties, schedule)
- Monitoring plan for the compensatory mitigation site, including no less than quarterly monitoring for the first year (performance standards, target functions and values, target acreages to be established, restored, enhanced, and/or preserved, annual monitoring reports)
- Success criteria based on the goals and measurable objectives; said criteria to be, at a minimum, at least 80 percent survival of container plants and 30 percent relative cover by vegetation type
- An adaptive management program and remedial measures to address any shortcomings in meeting success criteria
- Notification of completion of compensatory mitigation and agency confirmation
- Contingency measures (initiating procedures, alternative locations for contingency compensatory mitigation, funding mechanism)

BIO-1(e) Special Status Wildlife Pre-Construction Surveys

GENERAL WILDLIFE SURVEYS

Pre-construction clearance surveys for northern California legless lizard and coast horned lizard should be conducted within 14 days prior to the start of construction (including staging and mobilization) in areas of suitable habitat. The surveys should cover the entire disturbance footprint

plus a minimum 200-foot buffer within suitable habitat, where permissible, and should identify all special status animal species that may occur on-site. California legless lizard and coast horned lizard should be relocated from the site to a safe location within suitable habitat as near to the project area as possible by a qualified biologist.

BURROWING OWL SURVEYS

A qualified biologist should conduct pre-construction clearance surveys prior to ground disturbance activities within suitable natural habitats and ruderal areas to confirm the presence/absence of burrowing owls. The surveys should be consistent with the recommended survey methodology provided by CDFW (2012). Clearance surveys should be conducted within 14 days prior to construction and ground disturbance activities. If no burrowing owls are observed, no further actions are required. If burrowing owls are detected during the pre-construction clearance surveys, the following measures should apply:

- Avoidance buffers during the breeding and non-breeding season should be implemented in accordance with the CDFW (2012) and Burrowing Owl Consortium (1993) minimization mitigation measures.
- If avoidance of burrowing owls is not feasible, then additional measures such as passive relocation during the nonbreeding season and construction buffers of 200 feet during the breeding season should be implemented, in consultation with CDFW. In addition, a Burrowing Owl Exclusion Plan and Mitigation and Monitoring Plan will be developed by a qualified biologist in accordance with the CDFW (2012) and Burrowing Owl Consortium (1993).

SMITH'S BLUE BUTTERFLY HOST PLANT SURVEYS

Prior to grading and construction in undeveloped areas, an approved biologist should conduct surveys for seacliff buckwheat (*Eriogonum parvifolium*) and seaside buckwheat (*Eriogonum latifolium*), host plants of Smith's blue butterfly in areas of suitable habitat.

If Smith's blue butterfly host plants are not located, no further action is required. If host plants are located within proposed disturbance areas, they should be avoided if feasible. If avoidance is not feasible, focused surveys should be conducted to determine presence or absence of the butterfly species. This may include surveys during the adult flight period (mid-June through early September), and/or inspection of host plants for all life forms (egg, larva, pupa, and adult). If individuals of any life stage that may be impacted by the Proposed Project are detected during focused surveys, a permit for relocation should be obtained from USFWS, and they should be relocated by a USFWS permitted biologist.

REPORTING

A report of all pre-construction and pre-demolition survey results should be submitted to the City for its review prior to the start of demolition. The report should include a description of the survey methodology for each species, the environmental conditions at the time of the survey(s), the results of the survey, any requirements for addressing special status species identified during surveys, and the biological qualifications of the surveyors. The report should be accompanied by maps and figures showing the location of any special status species occurrences and associated avoidance buffers.

BIO-1(f) Biological Resources Avoidance and Minimization

The following measures should be applied to avoid impacts to sensitive species and biological resources. The project applicant should be responsible for implementing selected measures.

- Ground disturbance should be limited to the minimum necessary to complete the project. The limits of disturbance for each construction phase should be flagged. Areas of special biological concern within or adjacent to the limits of disturbance should have highly visible orange construction fencing installed between said area and the limits of disturbance.
- All construction occurring within or adjacent to natural habitats that may support Federally and/or State listed endangered/threatened species, State fully protected species, and/or special status species should have a qualified biological monitor present during all initial ground disturbing/vegetation clearing activities.
- No endangered/threatened species should be captured and relocated without express permission from the CDFW and/or USFWS.
- If at any time during construction an endangered, threatened, or fully protected species enters the construction site or otherwise may be impacted, all construction activities should cease. A CDFW/USFWS-approved biologist should document the occurrence and consult with the CDFW and USFWS, as appropriate, to determine whether it was safe for project activities to resume.
- At the end of each workday, excavations should be secured with cover or a ramp provided to prevent wildlife entrapment.
- All trenches, pipes, culverts or similar structures should be inspected for animals prior to burying, capping, moving, or filling.
- If night work is required, all construction lighting should be pointed down and directed only on the work area.
- The City should approve one or more qualified biologists to oversee and monitor biological compliance for the project. At least one qualified biologist should be present during all initial ground disturbing activities, including vegetation removal to recover special status animal species unearthed by construction activities.

BIO-1(g) Pre-Construction Nesting Birds Surveys

Ground disturbance, building demolition, and vegetation removal activities should be restricted to the non-breeding season (September 16 to January 31) when feasible. For ground disturbance, building demolition, and vegetation removal activities occurring in natural habitat areas, ruderal areas and developed areas during the bird nesting season (February 1 to September 15), general pre-construction nesting bird surveys should be conducted by a qualified biologist, including for, but not limited to, the tricolored blackbird and White-tailed kite, not more than 14 days prior to construction activities involving ground clearing, vegetation removal/trimming, or building demolition. The surveys should include the disturbance area plus a 200-foot buffer around the site if feasible, and a 500-foot buffer for tricolored blackbird and White-tailed kite. If active nests are located, an appropriate avoidance buffer should be established within which no work activity will be allowed which would impact these nests. The avoidance buffer would be established by the qualified biologist on a case-by-case basis based on the species and site conditions. In no cases should the buffer be smaller than 50 feet for non-raptor bird species, 200 feet for raptor species, or a 500-foot buffer for White-tailed kite. Larger buffers may be required depending upon the status of the nest and the construction activities occurring in the vicinity of the nest. If fully protected White-tailed kites are documented nesting within 500 feet of construction activities, CDFW should be

consulted on appropriate avoidance and minimization methods. The buffer area(s) should be closed to all construction personnel and equipment until juveniles have fledged and the nest is inactive. City-approved Biologist should confirm that breeding/nesting is completed and young have fledged the nest prior to removal of the buffer.

BIO-1(h) Worker Environmental Awareness Program (WEAP)

Prior to initiation of construction activities (including staging and mobilization) for projects developed under the Specific Plan for which potential impacts to biological resources have been identified at the biological scoping phase (Measure BIO-1[a]), the project proponent should arrange for all personnel associated with project construction for the applicable phase to attend WEAP training, conducted by a City-approved biologist, to aid workers in recognizing special status resources that may occur in the construction area. The specifics of this program should include identification of the sensitive species and habitats, a description of the regulatory status and general ecological characteristics of sensitive resources, and review of the limits of construction and mitigation measures required to reduce impacts to biological resources within the work area. A fact sheet conveying this information should also be prepared for distribution to all contractors, their employers, and other personnel involved with construction. All employees should sign a form provided by the trainer indicating they have attended the WEAP and understand the information presented to them. The form should be submitted to the City to document compliance.

5.2 Sensitive Plant Communities

The proposed project would have a significant effect on biological resources if it would:

b) Have a substantial adverse impact 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 Wildlife or US Fish and Wildlife Service.

The small patch of sandmat manzanita in the Specific Plan is isolated and highly degraded by the surrounding development and incursion of ice plant. This vegetation community has a limited distribution, largely restricted to coastal areas of Monterey County. It is locally common in the vicinity of the Specific Plan; however, given the higher quality chaparral habitat to the north of Reservation Road and within the Fort Ord National Monument, removal of a small patch of sandmat manzanita would not represent a significant impact to this vegetation community.

Mitigation Measures

No mitigation is required.

5.3 Jurisdictional Waters and Wetlands

The proposed project would have a significant effect on biological resources if it would:

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.

Alteration of the two stormwater basins and the drainage would require authorization from the City of Marina and evaluation under the City's NPDES permit. The Specific Plan will include storm drainage improvements, which will likely be implemented under the City's NPDES permit. No project

elements are planned that would alter or impact riparian vegetation at Locke-Paddon Park. Impacts to these features that resulted from development under the Specific Plan would therefore be less than significant. If alteration of the pond located on private property is proposed, a jurisdictional delineation and potential permitting would be required. Impacts to this feature may be significant but mitigable to less than significant.

BIO-2 Jurisdictional Delineation

If a proposed project under the Specific Plan would impact a potentially jurisdictional feature as determined at the biological scoping phase (Measure BIO-1[a]), a qualified biologist should complete a jurisdictional delineation. The jurisdictional delineation will determine the extent of the jurisdiction for CDFW, USACE, and/or RWQCB, and should be conducted in accordance with the requirement set forth by each agency. The result will be a preliminary jurisdictional delineation report that should be submitted to the implementing agency, USACE, RWQCB, and CDFW, as appropriate, for review and approval. Jurisdictional areas should be avoided to the maximum extent possible. If jurisdictional areas are expected to be impacted, then the RWQCB would require a Waste Discharge Requirements (WDRs) permit and/or Section 401 Water Quality Certification (depending upon whether or not the feature falls under federal jurisdiction). If CDFW asserts its jurisdictional authority, then a Streambed Alteration Agreement pursuant to Section 1600 et seq. of the CFGC would also be required prior to construction within the areas of CDFW jurisdiction. If the USACE asserts its authority, then a permit pursuant to Section 404 of the CWA would likely be required. Furthermore, a compensatory mitigation program should be implemented, and the measures set forth by the regulatory agencies during the permitting process. Compensatory mitigations for all permanent impacts to waters of the U.S. and waters of the state shall be completed at a ratio as required in applicable permits, but should not be less than a minimum ratio of 1:1. All temporary impacts to waters of the U.S. and waters of the state should be fully restored to natural condition.

5.4 Wildlife Movement

The proposed project would have a significant effect on biological resources if it would:

d) Interfere substantially with the movement of any resident or migratory fish or wildlife species or with established resident or migratory wildlife corridors, or impede the use of wildlife nursery sites.

No significant corridors for wildlife movement occur within the Specific Plan and there are no policies related to wildlife movement in the Specific Plan. Therefore, there are no impacts to movement from development under the Specific Plan.

Mitigation Measures

No mitigation is required.

5.5 Local Policies and Ordinances

The proposed project would have a significant effect on biological resources if it would:

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance

The Specific Plan includes an objective about urban forestry, which outlines the need for preservation of the City's trees while improving accessibility and aesthetics due to root upheaval and improper planting/pruning. The Specific Plan also includes a discussion of the City's tree committee and links to the City's recommended street tree species list. The strategies outlined for this objective include developing a street tree plan to ensure suitable species are incorporated into right of way improvements and properly maintained. This strategy also includes encouraging developers to preserve trees onsite. Tree removal as a result of proposed projects under the Specific Plan will be required to get approval from the City of Marina, and therefore would not conflict with the local tree policy and impacts would be less than significant.

Mitigation Measures

No mitigation is required.

5.6 Adopted or Approved Plans

The proposed project would have a significant effect on biological resources if it would:

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Conservation Community Plan, or other approved local, regional, or state habitat conservation plan.

There are no habitat conservation plans or natural community conservation plans that have been adopted in the Specific Plan area. Therefore, development facilitated by the Specific Plan would not conflict with any such plans and no impact would occur.

Mitigation Measures

No mitigation is required.

6 Limitations, Assumptions, and Use Reliance

This Biological Resources Assessment has been performed in accordance with professionally accepted biological investigation practices conducted at this time and in this geographic area. The biological investigation is limited by the scope of work performed. Reconnaissance biological surveys for certain taxa may have been conducted as part of this assessment but were not performed during a particular blooming period, nesting period, or particular portion of the season when positive identification would be expected if present, and therefore, cannot be considered definitive. The biological surveys are limited also by the environmental conditions present at the time of the surveys. In addition, general biological (or protocol) surveys do not guarantee that the organisms are not present and will not be discovered in the future within the site. In particular, mobile wildlife species could occupy the site on a transient basis, or re-establish populations in the future. Our field studies were based on current industry practices, which change over time and may not be applicable in the future. No other guarantees or warranties, expressed or implied, are provided. The findings and opinions conveyed in this report are based on findings derived from site reconnaissance, jurisdictional areas, review of CNDDB RareFind5, and specified historical and literature sources. Standard data sources relied upon during the completion of this report, such as the CNDDB, may vary with regard to accuracy and completeness. In particular, the CNDDB is compiled from research and observations reported to CDFW that may or may not have been the result of comprehensive or site-specific field surveys. Although Rincon believes the data sources are reasonably reliable, Rincon cannot and does not guarantee the authenticity or reliability of the data sources it has used. Additionally, pursuant to our contract, the data sources reviewed included only those that are practically reviewable without the need for extraordinary research and analysis.

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Appendix A

Regulatory Setting

Regulatory Setting

Special status habitats are vegetation types, associations, or sub-associations that support concentrations of special status plant or animal species, are of relatively limited distribution, or are of particular value to wildlife.

Listed species are those taxa that are formally listed as endangered or threatened by the federal government (e.g. U.S. Fish and Wildlife Service [USFWS]), pursuant to the Federal Endangered Species Act (FESA) or as endangered, threatened, or rare (for plants only) by the State of California (i.e. California Fish and Game Commission), pursuant to the California Endangered Species Act or the California Native Plant Protection Act. Some species are considered rare (but not formally listed) by resource agencies, organizations with biological interests/expertise (e.g. Audubon Society, CNPS, The Wildlife Society), and the scientific community.

The following is a brief summary of the regulatory context under which biological resources are managed at the federal, state, and local levels. A number of federal and state statutes provide a regulatory structure that guides the protection of biological resources. Agencies with the responsibility for protection of biological resources within the project site include:

- U.S. Army Corps of Engineers (wetlands and other waters of the United States);
- Central Coast Regional Water Quality Control Board (waters of the State);
- U.S. Fish and Wildlife Service (federally listed species and migratory birds);
- California Department Fish and Wildlife (riparian areas, streambeds, and lakes; state-listed species; Species of Special Concern; nesting birds);
- City of Marina Municipal Code

U.S. Army Corps of Engineers

Under Section 404 of the Clean Water Act, the U.S. Army Corps of Engineers (USACE) has authority to regulate activities that could discharge fill of material into wetlands or other “waters of the United States.” Perennial and intermittent creeks are considered waters of the United States if they are hydrologically connected to other jurisdictional waters (typically a navigable water). The USACE also implements the federal policy embodied in Executive Order 11990, which is intended to result in no net loss of wetland value or acres. In achieving the goals of the Clean Water Act, the USACE seeks to avoid adverse impacts and offset unavoidable adverse impacts on existing aquatic resources. Any fill of wetlands that are hydrologically connected to jurisdictional waters would require a permit from the USACE prior to the start of work. Typically, when a project involves impacts to waters of the United States, the goal of no net loss of wetland acres or values is met through avoidance and minimization to the extent practicable, followed by compensatory mitigation involving creation or enhancement of similar habitats.

Regional Water Quality Control Board

The State Water Resources Control Board (SWRCB) and the local Regional Water Quality Control Board (RWQCB) have jurisdiction over “waters of the State,” pursuant to the Porter-Cologne Water Quality Control Act, which are defined as any surface water or groundwater, including saline waters,

within the boundaries of the State. The SWRCB has issued general Waste Discharge Requirements (WDRs) regarding discharges to "isolated" waters of the State (Water Quality Order No. 2004-0004-DWQ, Statewide General Waste Discharge Requirements for Dredged or Fill Discharges to Waters Deemed by the U.S. Army Corps of Engineers to be Outside of Federal Jurisdiction). The RWQCB administers actions under this general order for isolated waters not subject to federal jurisdiction, and is also responsible for the issuance of water quality certifications pursuant to Section 401 of the Clean Water Act for waters subject to federal jurisdiction.

United States Fish and Wildlife Service

The USFWS implements the Migratory Bird Treaty Act (16 United States Code [USC] Section 703-711) and the Bald and Golden Eagle Protection Act (16 USC Section 668). The USFWS and National Marine Fisheries Service (NMFS) share responsibility for implementing the Federal Endangered Species Act (FESA) (16 USC § 153 et seq.). Generally, the USFWS implements the FESA for terrestrial and freshwater species, while the NMFS implements the FESA for marine and anadramous species. Projects that would result in "take" of any federally threatened or endangered species are required to obtain permits from the USFWS or NMFS through either Section 7 (interagency consultation with a federal nexus) or Section 10 (Habitat Conservation Plan) of the FESA, depending on the involvement by the federal government in permitting and/or funding of the project. The permitting process is used to determine if a project would jeopardize the continued existence of a listed species and what measures would be required to avoid jeopardizing the species. "Take" under federal definition means to harass, harm (which includes habitat modification), pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. Proposed or candidate species do not have the full protection of the FESA; however, the USFWS and NMFS advise project applicants that they could be elevated to listed status at any time.

California Department of Fish and Wildlife

The California Department of Fish and Wildlife (CDFW) derives its authority from the Fish and Game Code of California. The California Endangered Species Act (CESA) (Fish and Game Code Section 2050 et. seq.) prohibits take of state listed threatened or endangered. Take under CESA is restricted to direct mortality of a listed species and the law does not prohibit indirect harm by way of habitat modification. Where incidental take would occur during construction or other lawful activities, CESA allows the CDFW to issue an Incidental Take Permit upon finding, among other requirements, that impacts to the species have been minimized and fully mitigated.

The CDFW also enforces Sections 3511, 4700, 5050, and 5515 of the Fish and Game Code, which prohibits take of species designated as Fully Protected. The CDFW is not allowed to issue an Incidental Take Permit for Fully Protected species; therefore, impacts to these species must be avoided.

California Fish and Game Code sections 3503, 3503.5, and 3513 describe unlawful take, possession, or destruction of native birds, nests, and eggs. Section 3503.5 of the Code protects all birds-of-prey and their eggs and nests against take, possession, or destruction of nests or eggs. Section 3513 makes it a state-level office to take any bird in violation of the federal Migratory Bird Treaty Act. CDFW administers these requirements.

Species of Special Concern (SSC) is a category used by the CDFW for those species which are considered to be indicators of regional habitat changes or are considered to be potential future protected species. Species of Special Concern do not have any special legal status except that which may be afforded by the Fish and Game Code as noted above. The SSC category is intended by the

CDFW for use as a management tool to include these species in special consideration when decisions are made concerning the development of natural lands. The CDFW also has authority to administer the Native Plant Protection Act (NPPA) (Fish and Game Code Section 1900 et seq.). The NPPA requires the CDFW to establish criteria for determining if a species, subspecies, or variety of native plant is endangered or rare. Effective in 2015, CDFW promulgated regulations (14 CCR 786.9) under the authority of the NPPA, establishing that the CESA's permitting procedures would be applied to plants listed under the NPPA as "Rare." With this change, there is little practical difference for the regulated public between plants listed under CESA and those listed under the NPPA.

Perennial, intermittent, and ephemeral streams and associated riparian vegetation, when present, also fall under the jurisdiction of the CDFW. Section 1600 *et seq*. of the Fish and Game Code (Lake and Streambed Alteration Agreements) gives the CDFW regulatory authority over activities that divert, obstruct, or alter the channel, bed, or bank of any river, stream or lake.

1997 Fort Ord Reuse Authority (FORA) Base Reuse Plan

The Fort Ord Reuse Authority (FORA) adopted the *Fort Ord Base Reuse Plan* (BRP) in June 1997, and a revised version of the BRP was published in digital format in September 2001, incorporating various corrections and errata. The main objectives related to biological resources that are outlined in the BRP for the City of Seaside are: to preserve and protect the sensitive species and habitats addressed in the HMP; preserve and protect the sensitive species and habitats that are not addressed in the HMP; avoid or minimize disturbance to natural land features and habitats through project design; promote awareness and education concerning the biological resources on the former Fort Ord; and develop strategies for interim management of undeveloped natural land areas.

Conservation goals, policies, and programs are defined in the BRP to accomplish these objectives. Some of the main policies outlined for the City of Seaside are as follows. Policy A-4 requires the City to encourage the preservation of small pockets of habitat and populations of HMP species within and around developed areas. Policy B-1 requires that the City strive to avoid or minimize loss of any sensitive species occurring in areas planned for development. Policy B-3 requires the City to preserve, enhance and protect wetland areas. Policy C-2 requires the City to encourage the preservation and enhancement of oak woodland elements in the natural and built environments. Policy D-2 requires the City to encourage and participate in the preparation of educational materials through various media sources which describe the biological resources on the former Fort Ord. Policy E-1 requires that the City develop a plan describing how it intends to address the interim management of natural land areas for which the City is designated as the responsible party.

Fort Ord Habitat Management Plan and Habitat Conservation Plan

The Fort Ord Habitat Management Plan (HMP) was published by the USACE in 1997 in compliance with the USFWS final Biological Opinion for disposal and reuse of former Fort Ord lands. The HMP establishes guidelines for the conservation and management of plant and wildlife species and their habitat that occur on former Fort Ord lands. The HMP promotes preservation, enhancement, and restoration of habitat and populations of HMP covered species while allowing development on selected properties that promotes economic recovery after closure of the fort.

The Fort Ord Habitat Conservation Plan (HCP) is currently being prepared by the Fort Ord Reuse Authority and is independent of the Fort Ord HMP. The HCP provides the framework for ensuring conservation of State and federally listed plant and animal species (HCP species) and the natural communities that support them on former Fort Ord. The HCP incorporates all relevant information

from the HMP, and would supersede it as the primary conservation planning document for listed species and non-federal recipients of Fort Ord lands; however, the HCP has not yet been adopted. To date, USFWS has generally accepted adherence to the HMP conditions as sufficient to avoid and mitigate impacts to federally listed plant species within designated development areas of the FORA. CDFW has generally accepted adherence to the HMP conditions as sufficient to avoid and mitigate impacts to non-listed sensitive species within designated development areas of the FORA. However, these are project-specific determinations, and impacts to federally or state listed wildlife generally requires individual take authorization from one or both agencies.

Local Jurisdiction

City of Marina Municipal Code

The City of Marina Municipal Code Chapter 17.51 (Tree Removal, Preservation and Protection) requires a tree removal permit for the removal of any tree within the city with a single stem six inches or more in diameter at breast height (DBH), or a multistemmed plant having an aggregate diameter of ten inches or more DBH, and any living woody plant which was planted as part of an approved compensation plan or landscaping plan. Conditions imposed on the removal may include, but would not be limited to, one or more of the following:

1) Preparation of a tree removal and protection plan, including tree protection guidelines.
2) A compensation plan requiring the replacement or placement of additional trees on the property and/or the payment to the city to fund the purchase, planting, and maintenance of off-site replacement trees.
3) Preparation of a site restoration plan requiring restoration of ground surface area in the vicinity of tree removals.

Additionally, section 17.51.070 provides for the protection of Landmark trees and landmark tree stands. Landmark trees and landmark tree stands are defined by the City as;

1) Prominently visible from public streets, public parking areas, parks or open space, from a minimum distance of one hundred feet; and
2) Indicate at least a seventy percent chance of surviving more than ten years, and be able to be maintained without excessive threat to the public health, safety and welfare.

Landmark trees and landmark tree stands must also meet one of the following criteria:

1) Possesses special beauty, or horticultural or historic interest;
2) Is of such substantial size or prominence that it has significant visibility from city streets, parks or open space;
3) Is of such substantial size that it makes a significant contribution to the forested skyline of the city;
4) Is a rare or unusual species for this area; and
5) Is a particularly outstanding representative of the species.

Applications for the removal of landmark trees and landmark tree stands must be reviewed and approved by the City Planning Commission and tree committee.

City of Marina General Plan

The City of Marina General Plan (GP) includes policies to provide "Habitat Reserves and Other Open Space for the protection of important habitat areas, scenic areas, and other areas of natural open space." Under the GP areas designated as "Habitat Reserve and Other Open Space" will be permanently maintained to "protect significant plants and wildlife inhabiting these areas." These areas include;

1. Riparian habitats and vegetation along the Salinas River;
2. Coastal Strand and Dunes;
3. 1,160 acres of maritime chaparral, coastal scrub, and coast live oak woodland designated for protection within the University of California Natural Reserve System, a 124 acre reserve site and adjacent land on Armstrong Ranch, 160 acres within the East Garrison Reserve, a 227 acre reserve south of Imjin Road, and a 50 acre reserve located along the east side of Highway 1 near the planned extension of Del Monte Boulevard; and
4. Wetlands, including habitat at the Armstrong Ranch to preserve vernal pools. The GP also requires a biological field survey to determine if additional vernal ponds exist prior to development on the Armstrong Ranch. If vernal pools are present, development must preserve vernal pools or provide either for the replacement of habitat. Several ponds in the developed areas of the City are also protected as open space.

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Appendix B

Site Photographs

Photograph 1. A detention basin on Cypress Avenue, facing east

Photograph 2. Annual grassland south of Reindollar Avenue, facing east

Photograph 3. A vacant lot with ruderal vegetation, facing south

Photograph 4. Landscaped Monterey cypress between commercial and residential development, facing south

Photograph 5. The pond and willow riparian vegetation on private property, facing west

Photograph 6. Reservation Road near the east end of the Specific Plan, facing west

Photograph 7. A parcel containing sandmat manzanita, bare ground, and ice plant mat, facing west

Photograph 8. The drainage south of Viking Avenue, facing east

Appendix C

Special Status Species Evaluation Tables

Special Status Plant and Lichen Species in the Regional Vicinity of the Project Site

Scientific Name Common Name	Status Fed/State ESA CRPR	Habitat Requirements	Potential to Occur	Rationale
Agrostis lacuna-vernalis vernal pool bent grass	None/None G1/S1 1B.1	Vernal pools. In mima mound areas or on the margins of vernal pools. 125-150 m. annual herb. Blooms Apr-May	Not Expected	Vernal Pools are not present.
Allium hickmanii Hickman's onion	None/None G2/S2 1B.2	Closed-cone coniferous forest, chaparral, coastal scrub, coastal prairie, cismontane woodland. Sandy loam, damp ground and vernal swales; mostly in grassland though can be associated with chaparral or woodland. 5-200 m. perennial bulbiferous herb. Blooms Mar-May	Not Expected	Suitable habitats are not present.
Arctostaphylos hookeri ssp. *hookeri* Hooker's manzanita	None/None G3T2/S2 1B.2	Chaparral, coastal scrub, closed-cone coniferous forest, cismontane woodland. Sandy soils, sandy shales, sandstone outcrops. 30-550 m. perennial evergreen shrub. Blooms Jan-Jun	Not Expected	Suitable habitats are not present.
Arctostaphylos montereyensis Toro manzanita	None/None G2?/S2? 1B.2	Chaparral, cismontane woodland, coastal scrub. Sandy soil, usually with chaparral associates. 45-765 m. perennial evergreen shrub. Blooms Feb-Mar	Not Expected	Suitable habitats are not present.
Arctostaphylos pajaroensis Pajaro manzanita	None/None G1/S1 1B.1	Chaparral. Sandy soils. 30-155 m. perennial evergreen shrub. Blooms Dec-Mar	Not Expected	Suitable habitats are not present.
Arctostaphylos pumila sandmat manzanita	None/None G1/S1 1B.2	Closed-cone coniferous forest, chaparral, cismontane woodland, coastal dunes, coastal scrub. On sandy soil with other chaparral associates. 3-210 m. perennial evergreen shrub. Blooms Feb-May	Present	A small patch of Sandmat manzanita was observed in the Specific Plan north of Reservation Road.
Astragalus tener var. *tener* alkali milk-vetch	None/None G2T1/S1 1B.2	Alkali playa, valley and foothill grassland, vernal pools. Low ground, alkali flats, and flooded lands; in annual grassland or in playas or vernal pools. 0-168 m. annual herb. Blooms Mar-Jun	Not Expected	Vernal Pools and alkali soils are not present, and there are no known occurrences within 5 miles.
Astragalus tener var. *titi* coastal dunes milk-vetch	Endangered/ Endangered G2T1/S1 1B.1	Coastal bluff scrub, coastal dunes, coastal prairie. Moist, sandy depressions of bluffs or dunes along and near the Pacific Ocean; one site on a clay terrace. 1-45 m. annual herb. Blooms Mar-May	Not Expected	Natural dune habitats and moist soils are not present, and there are no known occurrences within 5 miles.

Scientific Name Common Name	Status Fed/State ESA CRPR	Habitat Requirements	Potential to Occur	Rationale
Bryoria spiralifera twisted horsehair lichen	None/None G3/S1S2 1B.1	North coast coniferous forest. Usually on conifers. 0-30 m. fruticose lichen (epiphytic).	Not Expected	Coniferous forests are not present, and there are no known occurrences within 5 miles.
Castilleja ambigua var. *insalutata* pink Johnny-nip	None/None G4T2/S2 1B.1	Coastal bluff scrub, coastal prairie. 0-100 m. annual herb (hemiparasitic). Blooms May-Aug	Not Expected	Natural dune habitats are not present.
Centromadia parryi ssp. *congdonii* Congdon's tarplant	None/None G3T1T2/S1S2 1B.1	Valley and foothill grassland. Alkaline soils, sometimes described as heavy white clay. 0-230 m. annual herb. Blooms May-Oct(Nov)	Not Expected	Suitable habitats and alkaline soils are not present, and there are no known occurrences within 5 miles.
Chorizanthe minutiflora Fort Ord spineflower	None/None G1/S1 1B.2	Coastal scrub, chaparral (maritime). Sandy, openings. 60-145 m. annual herb. Blooms Apr-Jul	Low Potential	Sandy soils are present and there are 4 known occurrences within 5 miles.
Chorizanthe pungens var. *pungens* Monterey spineflower	Threatened/ None G2T2/S2 1B.2	Coastal dunes, chaparral, cismontane woodland, coastal scrub, valley and foothill grassland. Sandy soils in coastal dunes or more inland within chaparral or other habitats. 0-170 m. annual herb. Blooms Apr-Jun(Jul-Aug)	High Potential	Sandy soils are present and there are 12 known occurrences within 5 miles, including areas directly adjacent to the Specific Plan.
Chorizanthe robusta var. *robusta* robust spineflower	Endangered/ None G2T1/S1 1B.1	Cismontane woodland, coastal dunes, coastal scrub, chaparral. Sandy terraces and bluffs or in loose sand. 9-245 m. annual herb. Blooms Apr-Sep	Low Potential	Sandy soils are present, however there are no known occurrences within 5 miles.
Clarkia jolonensis Jolon clarkia	None/None G2/S2 1B.2	Cismontane woodland, chaparral, coastal scrub, riparian woodland. 10-1280 m. annual herb. Blooms Apr-Jun	Not Expected	Suitable habitats are not present.

Scientific Name Common Name	Status Fed/State ESA CRPR	Habitat Requirements	Potential to Occur	Rationale
Collinsia multicolor San Francisco collinsia	None/None G2/S2 1B.2	Closed-cone coniferous forest, coastal scrub. On decomposed shale (mudstone) mixed with humus; sometimes on serpentine. 30-275 m. annual herb. Blooms (Feb)Mar-May	Not Expected	Suitable habitats on shale soils are not present, and there are no known occurrences within 5 miles.
Cordylanthus rigidus ssp. *littoralis* seaside bird's-beak	None/ Endangered G5T2/S2 1B.1	Closed-cone coniferous forest, chaparral, cismontane woodland, coastal scrub, coastal dunes. Sandy, often disturbed sites, usually within chaparral or coastal scrub. 30-520 m. annual herb (hemiparasitic). Blooms Apr-Oct	Low Potential	Sandy soils and disturbed sites are present, and there are 9 known occurrences within 5 miles.
Delphinium californicum ssp. *interius* Hospital Canyon larkspur	None/None G3T3/S3 1B.2	Cismontane woodland, chaparral, coastal scrub. In wet, boggy meadows, openings in chaparral and in canyons. 195-1095 m. perennial herb. Blooms Apr-Jun	Not Expected	Suitable habitats in wet areas are not present, and there are no known occurrences within 5 miles.
Delphinium hutchinsoniae Hutchinson's larkspur	None/None G2/S2 1B.2	Broadleafed upland forest, chaparral, coastal prairie, coastal scrub. On semi-shaded, slightly moist slopes, usually west-facing. 15-535 m. perennial herb. Blooms Mar-Jun	Not Expected	Suitable habitats in wet areas are not present, and there are no known occurrences within 5 miles.
Delphinium umbraculorum umbrella larkspur	None/None G3/S3 1B.3	Cismontane woodland, chaparral. Mesic sites. 215-2075 m. perennial herb. Blooms Apr-Jun	Not Expected	Suitable habitats in wet areas are not present, and there are no known occurrences within 5 miles.
Ericameria fasciculata Eastwood's goldenbush	None/None G2/S2 1B.1	Closed-cone coniferous forest, chaparral (maritime), coastal scrub, coastal dunes. In sandy openings. 30-215 m. perennial evergreen shrub. Blooms Jul-Oct	High Potential	Sandy soils are present and there are 9 known occurrences within 5 miles, one of which includes the eastern end of the Specific Plan area, at the corner of Salinas Ave and Reservation Rd.

Scientific Name Common Name	Status Fed/State ESA CRPR	Habitat Requirements	Potential to Occur	Rationale
Eriogonum nortonii Pinnacles buckwheat	None/None G2/S2 1B.3	Chaparral, valley and foothill grassland. Sandy soils; often on recent burns; western Santa Lucias. 90-975 m. annual herb. Blooms (Apr)May-Aug(Sep)	Not Expected	Suitable habitats are not present, and there are no known occurrences within 5 miles.
Erysimum ammophilum sand-loving wallflower	None/None G2/S2 1B.2	Chaparral (maritime), coastal dunes, coastal scrub. Sandy openings. 5-130 m. perennial herb. Blooms Feb-Jun	High Potential	Sandy soils are present and there are 15 known occurrences within 5 miles, one of which includes the undeveloped area south of Reindollar Ave.
Erysimum menziesii Menzies' wallflower	Endangered/ Endangered G1/S1 1B.1	Coastal dunes. Localized on dunes and coastal strand. 1-25 m. perennial herb. Blooms Mar-Sep	Not Expected	Natural dune habitats are not present.
Fritillaria liliacea fragrant fritillary	None/None G2/S2 1B.2	Coastal scrub, valley and foothill grassland, coastal prairie, cismontane woodland. Often on serpentine; various soils reported though usually on clay, in grassland. 3-400 m. perennial bulbiferous herb. Blooms Feb-Apr	Not Expected	Suitable habitats on serpentine soils are not present, and there are no known occurrences within 5 miles.
Gilia tenuiflora ssp. *arenaria* Monterey gilia	Endangered/ Threatened G3G4T2/S2 1B.2	Coastal dunes, coastal scrub, chaparral (maritime), cismontane woodland. Sandy openings in bare, wind-sheltered areas. Often near dune summit or in the hind dunes; two records from Pleistocene inland dunes. 5-245 m. annual herb. Blooms Apr-Jun	High Potential	Sandy soils are present and there are 15 known occurrences within 5 miles, one of which includes the eastern end of the Specific Plan area, at the corner of Salinas Ave and Reservation Rd. A second occurrence also crosses the Specific Plan area south of Reindollar Ave.

Scientific Name Common Name	Status Fed/State ESA CRPR	Habitat Requirements	Potential to Occur	Rationale
Hesperocyparis goveniana Gowen cypress	Threatened/ None G1/S1 1B.2	Closed-cone coniferous forest, chaparral. Coastal terraces; usually in sandy soils; sometimes with Monterey pine, bishop pine. 100-125 m. perennial evergreen tree.	Not Expected	Natural coniferous forest and chaparral habitats are not present, and there are no known occurrences within 5 miles.
Hesperocyparis macrocarpa Monterey cypress	None/None G1/S1 1B.2	Closed-cone coniferous forest. Granitic soils. 10-20 m. perennial evergreen tree.	Present (landscaped)	This species is present in the Specific Plan area as a commonly cultivated species.
Holocarpha macradenia Santa Cruz tarplant	Threatened/ Endangered G1/S1 1B.1	Coastal prairie, coastal scrub, valley and foothill grassland. Light, sandy soil or sandy clay; often with nonnatives. 10-220 m. annual herb. Blooms Jun-Oct	Not Expected	Suitable habitats are not present, and there are no known occurrences within 5 miles.
Horkelia cuneata var. *sericea* Kellogg's horkelia	None/None G4T1?/S1? 1B.1	Closed-cone coniferous forest, coastal scrub, coastal dunes, chaparral. Old dunes, coastal sandhills; openings. Sandy or gravelly soils. 5-430 m. perennial herb. Blooms Apr-Sep	High Potential	Sandy soils are present and there are 12 known occurrences within 5 miles, one of which occurs approximately 0.2 miles south of the Specific Plan area along Hwy 1.
Horkelia marinensis Point Reyes horkelia	None/None G2/S2 1B.2	Coastal dunes, coastal prairie, coastal scrub. Sandy flats and dunes near coast; in grassland or scrub plant communities. 2-775 m. perennial herb. Blooms May-Sep	Low Potential	Sandy soils are present and there is 1 known occurrence just west of the Specific Plan area at the
Lasthenia conjugens Contra Costa goldfields	Endangered/ None G1/S1 1B.1	Valley and foothill grassland, vernal pools, alkaline playas, cismontane woodland. Vernal pools, swales, low depressions, in open grassy areas. 1-450 m. annual herb. Blooms Mar-Jun	Not Expected	Vernal Pools are not present.

Scientific Name Common Name	Status Fed/State ESA CRPR	Habitat Requirements	Potential to Occur	Rationale
Layia carnosa beach layia	Endangered/ Endangered G2/S2 1B.1	Coastal dunes, coastal scrub. On sparsely vegetated, semi-stabilized dunes, usually behind foredunes. 0-30 m. annual herb. Blooms Mar-Jul	Not Expected	Native dune communities are not present and the are no known occurrences of this species within 5 miles.
Legenere limosa legenere	None/None G2/S2 1B.1	Vernal pools. In beds of vernal pools. 1-1005 m. annual herb. Blooms Apr-Jun	Not Expected	Vernal Pools are not present.
Lupinus tidestromii Tidestrom's lupine	Endangered/ Endangered G1/S1 1B.1	Coastal dunes. Partially stabilized dunes, immediately near the ocean. 4-25 m. perennial rhizomatous herb. Blooms Apr-Jun	Not Expected	Native dune communities are not present and the are no known occurrences of this species within 5 miles.
Malacothamnus palmeri var. *involucratus* Carmel Valley bush-mallow	None/None G3T2Q/S2 1B.2	Cismontane woodland, chaparral, coastal scrub. Talus hilltops and slopes, sometimes on serpentine. Fire dependent. 5-520 m. perennial deciduous shrub. Blooms Apr-Oct	Not Expected	Suitable habitats and soils are not present and the are no known occurrences of this species within 5 miles.
Malacothamnus palmeri var. *palmeri* Santa Lucia bush-mallow	None/None G3T2Q/S2 1B.2	Chaparral. Dry rocky slopes, mostly near summits, but occasionally extending down canyons to the sea. 3-670 m. perennial deciduous shrub. Blooms May-Jul	Not Expected	Suitable habitats and soils are not present and the are no known occurrences of this species within 5 miles.
Malacothrix saxatilis var. *arachnoidea* Carmel Valley malacothrix	None/None G5T2/S2 1B.2	Chaparral, coastal scrub. Rock outcrops or steep rocky roadcuts. 30-1040 m. perennial rhizomatous herb. Blooms (Mar)Jun-Dec	Not Expected	Suitable habitats and soils are not present and the are no known occurrences of this species within 5 miles.
Meconella oregana Oregon meconella	None/None G2G3/S2 1B.1	Coastal prairie, coastal scrub. Open, moist places. 60-640 m. annual herb. Blooms Mar-Apr	Not Expected	Suitable habitats and moist soils are not present.
Microseris paludosa marsh microseris	None/None G2/S2 1B.2	Closed-cone coniferous forest, cismontane woodland, coastal scrub, valley and foothill grassland. 3-610 m. perennial herb. Blooms Apr-Jun(Jul)	Not Expected	Suitable habitats are not present.

Scientific Name Common Name	Status Fed/State ESA CRPR	Habitat Requirements	Potential to Occur	Rationale
Monardella sinuata ssp. *nigrescens* northern curly-leaved monardella	None/None G3T2/S2 1B.2	Coastal dunes, coastal scrub, chaparral, lower montane coniferous forest. Sandy soils. 10-245 m. annual herb. Blooms (Apr)May-Jul(Aug-Sep)	Low potential	Sandy soils are present and there are 4 known occurrences within 5 mile, however the habitats within the Specific Plan area are heavily disturbed.
Monolopia gracilens woodland woollythreads	None/None G3/S3 1B.2	Chaparral, valley and foothill grassland, cismontane woodland, broadleafed upland forest, North Coast coniferous forest. Grassy sites, in openings; sandy to rocky soils. Often seen on serpentine after burns, but may have only weak affinity to serpentine. 120-975 m. annual herb. Blooms (Feb)Mar-Jul	Not Expected	Suitable habitats and soils are not present and the are no known occurrences of this species within 5 miles.
Pinus radiata Monterey pine	None/None G1/S1 1B.1	Closed-cone coniferous forest, cismontane woodland. Three primary stands are native to California. Dry bluffs and slopes. 60-125 m. perennial evergreen tree.	Present (landscaped)	This species is present in the Specific Plan area as a commonly cultivated species.
Piperia yadonii Yadon's rein orchid	Endangered/ None G1/S1 1B.1	Closed-cone coniferous forest, chaparral, coastal bluff scrub. On sandstone and sandy soil, but poorly drained and often dry. 10-505 m. perennial herb. Blooms (Feb)May-Aug	Low Potential	Sandy soils are present and there is a known occurrence approximately 250 feet south of the Specific Plan area, however the habitats within the Specific Plan area are heavily disturbed.
Plagiobothrys chorisianus var. *chorisianus* Choris' popcornflower	None/None G3T1Q/S1 1B.2	Chaparral, coastal scrub, coastal prairie. Mesic sites. 2-705 m. annual herb. Blooms Mar-Jun	Not Expected	Suitable habitats and moist soils are not present.
Potentilla hickmanii Hickman's cinquefoil	Endangered/ Endangered G1/S1 1B.1	Coastal bluff scrub, closed-cone coniferous forest, meadows and seeps, marshes and swamps. Freshwater marshes, seeps, and small streams in open or forested areas along the coast. 5-125 m. perennial herb. Blooms Apr-Aug	Not Expected	Suitable habitats and mesic sites are not present and the are no known occurrences of this species within 5 miles.

Scientific Name Common Name	Status Fed/State ESA CRPR	Habitat Requirements	Potential to Occur	Rationale
Ramalina thrausta angel's hair lichen	None/None G5/S2? 2B.1	North coast coniferous forest. On dead twigs and other lichens. 75-430 m. fruticose lichen (epiphytic).	Not Expected	Suitable habitats not present and the are no known occurrences of this species within 5 miles.
Rosa pinetorum pine rose	None/None G2/S2 1B.2	Closed-cone coniferous forest, cismontane woodland. 5-1090 m. perennial shrub. Blooms May-Jul	Not Expected	Suitable habitats are not present and the are no known occurrences of this species within 5 miles.
Stebbinsoseris decipiens Santa Cruz microseris	None/None G2/S2 1B.2	Broadleafed upland forest, closed-cone coniferous forest, chaparral, coastal prairie, coastal scrub, valley and foothill grassland. Open areas in loose or disturbed soil, usually derived from sandstone, shale or serpentine, on seaward slopes. 90-750 m. annual herb. Blooms Apr-May	Not Expected	Suitable habitats are not present and the are no known occurrences of this species within 5 miles.
Trifolium buckwestiorum Santa Cruz clover	None/None G2/S2 1B.1	Coastal prairie, broadleafed upland forest, cismontane woodland. Moist grassland. Gravelly margins. 30-550 m. annual herb. Blooms Apr-Oct	Not Expected	Suitable habitats are not present.
Trifolium hydrophilum saline clover	None/None G2/S2 1B.2	Marshes and swamps, valley and foothill grassland, vernal pools. Mesic, alkaline sites. 1-335 m. annual herb. Blooms Apr-Jun	Not Expected	Suitable habitats and mesic sites are not present and the are no known occurrences of this species within 5 miles.
Trifolium polyodon Pacific Grove clover	None/Rare G1/S1 1B.1	Closed-cone coniferous forest, meadows and seeps, coastal prairie, valley and foothill grassland. Along small springs and seeps in grassy openings. 5-260 m. annual herb. Blooms Apr-Jun(Jul)	Not Expected	Suitable habitats are not present and the are no known occurrences of this species within 5 miles.
Trifolium trichocalyx Monterey clover	Endangered/ Endangered G1/S1 1B.1	Closed-cone coniferous forest. Openings, burned areas, and roadsides. Sandy soils. 60-210 m. annual herb. Blooms Apr-Jun	Not Expected	Suitable habitats are not present and the are no known occurrences of this species within 5 miles.

Scientific Name Common Name	Status Fed/State ESA CRPR	Habitat Requirements	Potential to Occur	Rationale

Regional Vicinity refers to within a 7-quad search radius of site.

FE = Federally Endangered FT = Federally Threatened FC = Federal Candidate Species

SE = State Endangered ST = State Threatened SC = State Candidate SR = State Rare

CRPR (CNPS California Rare Plant Rank)

1A=Presumed Extinct in California

1B=Rare, Threatened, or Endangered in California and elsewhere

2A=Plants presumed extirpated in California, but more common elsewhere

2B=Plants Rare, Threatened, or Endangered in California, but more common elsewhere

CRPR Threat Code Extension

.1=Seriously endangered in California (over 80% of occurrences threatened/high degree and immediacy of threat)

.2=Fairly endangered in California (20-80% occurrences threatened)

.3=Not very endangered in California (<20% of occurrences threatened)

Special Status Animal Species in the Regional Vicinity of the Project Site

Scientific Name Common Name	Status Fed/State ESA CDFW	Habitat Requirements	Potential to Occur	Rationale
Invertebrates				
Danaus plexippus pop. 1 monarch - California overwintering population	None/None G4T2T3/S2S3	Winter roost sites extend along the coast from northern Mendocino to Baja California, Mexico. Roosts located in wind-protected tree groves (eucalyptus, Monterey pine, cypress), with nectar and water sources nearby.	Not Expected	There are no known occurrences of wintering monarchs this species within 5 miles.
Euphilotes enoptes smithi Smith's blue butterfly	Endangered/None G5T1T2/S1S2	Most commonly associated with coastal dunes & coastal sage scrub plant communities in Monterey & Santa Cruz counties. Hostplant: *Eriogonum latifolium* and *Eriogonum parvifolium* are utilized as both larval and adult food plants.	High Potential in undeveloped areas	There are 5 known occurrences within 5 mile one of which is approximately 773 feet west of the Specific Plan area. One occurrence of host plant *Eriogonum latifolium*, was also reported from just north of the Specific Plan area adjacent to the small patch of sandmat manzanita.
Fish				
Eucyclogobius newberryi tidewater goby	Endangered/None G3/S3 SSC	Brackish water habitats along the California coast from Agua Hedionda Lagoon, San Diego County to the mouth of the Smith River. Found in shallow lagoons and lower stream reaches, they need fairly still but not stagnant water and high oxygen levels.	Not Expected	Suitable Aquatic habitats are not present.
Oncorhynchus mykiss irideus pop. 9 steelhead - south-central California coast DPS	Threatened/None G5T2Q/S2	Federal listing refers to runs in coastal basins from the Pajaro River south to, but not including, the Santa Maria River.	Not Expected	Suitable Aquatic habitats are not present and the are no known occurrences of this species within 5 miles.
Spirinchus thaleichthys longfin smelt	Candidate Threatened G5/S1 SSC	Euryhaline, nektonic & anadromous. Found in open waters of estuaries, mostly in middle or bottom of water column. Prefer salinities of 15-30 ppt, but can be found in completely freshwater to almost pure seawater.	Not Expected	Suitable Aquatic habitats are not present and the are no known occurrences of this species within 5 miles.
Reptiles				
Anniella pulchra northern California legless lizard	None/None G3/S3 SSC	Sandy or loose loamy soils under sparse vegetation. Soil moisture is essential. They prefer soils with a high moisture content.	High Potential in undeveloped	Suitable sandy soils are present and there are 27 known occurrences within 5 miles, including one within

Scientific Name Common Name	Status Fed/State ESA CDFW	Habitat Requirements	Potential to Occur	Rationale
			areas	the Specific Plan area.
Emys marmorata western pond turtle	None/None G3G4/S3 SSC	A thoroughly aquatic turtle of ponds, marshes, rivers, streams and irrigation ditches, usually with aquatic vegetation, below 6000 ft elevation. Needs basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.5 km from water for egg-laying.	Not Expected	The Specific Plan area does not contain suitable ponds or connectivity to suitable ponds.
Phrynosoma blainvillii coast horned lizard	None/None G3G4/S3S4 SSC	Frequents a wide variety of habitats, most common in lowlands along sandy washes with scattered low bushes. Open areas for sunning, bushes for cover, patches of loose soil for burial, and abundant supply of ants and other insects.	High Potential in undeveloped areas	Suitable sandy soils are present and there are 5 known occurrences within 5 miles.
Thamnophis hammondii two-striped gartersnake	None/None G4/S3S4 SSC	Coastal California from vicinity of Salinas to northwest Baja California. From sea to about 7,000 ft elevation. Highly aquatic, found in or near permanent fresh water. Often along streams with rocky beds and riparian growth.	Not Expected	Suitable Aquatic habitats are not present and the are no known occurrences of this species within 5 miles.
Amphibians				
Ambystoma californiense California tiger salamander	Threatened/ Threatened G2G3/S2S3 WL	Central Valley DPS federally listed as threatened. Santa Barbara and Sonoma counties DPS federally listed as endangered. Need underground refuges, especially ground squirrel burrows, and vernal pools or other seasonal water sources for breeding.	Not Expected	Suitable breeding habitats are not present and there is no connectivity to populations on the former Fort Ord.
Ambystoma macrodactylum croceum Santa Cruz long-toed salamander	Endangered/ Endangered G5T1T2/S1S2 FP	Wet meadows near sea level in a few restricted locales in Santa Cruz and Monterey counties. Aquatic larvae prefer shallow (<12 inches) water, using clumps of vegetation or debris for cover. Adults use mammal burrows.	Not Expected	Suitable Aquatic habitats are not present and the are no known occurrences of this species within 5 miles.
Rana boylii foothill yellow-legged frog	None/Candidate Threatened G3/S3 SSC	Partly-shaded, shallow streams and riffles with a rocky substrate in a variety of habitats. Needs at least some cobble-sized substrate for egg-laying. Needs at least 15 weeks to attain metamorphosis.	Not Expected	Suitable Aquatic habitats are not present and the are no known occurrences of this species within 5 miles.
Rana draytonii California red-legged frog	Threatened/None G2G3/S2S3 SSC	Lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation. Requires 11-20 weeks of permanent water for larval development. Must have access to estivation habitat.	Not Expected	There is one occurrence within 5 miles, from the Salinas River approximately 2.6 miles north of the Specific Plan area, however suitable Aquatic habitats are not

Scientific Name Common Name	Status Fed/State ESA CDFW	Habitat Requirements	Potential to Occur	Rationale
				present and agricultural and airport development are likely to block movement from the river.
Spea hammondii western spadefoot	None/None G3/S3 SSC	Occurs primarily in grassland habitats, but can be found in valley-foothill hardwood woodlands. Vernal pools are essential for breeding and egg-laying.	Not Expected	Suitable habitats are not present and the are no known occurrences of this species within 5 miles.
Taricha torosa Coast Range newt	None/None G4/S4 SSC	Coastal drainages from Mendocino County to San Diego County. Lives in terrestrial habitats & will migrate over 1 km to breed in ponds, reservoirs & slow moving streams.	Not Expected	Suitable habitats are not present and the are no known occurrences of this species within 5 miles.
Birds				
Agelaius tricolor tricolored blackbird	None/Threatened G2G3/S1S2 SSC	Highly colonial species, most numerous in Central Valley & vicinity. Largely endemic to California. Requires open water, protected nesting substrate, and foraging area with insect prey within a few km of the colony.	Moderate Potential at Locke-Paddon Park only	There is one known occurrence that overlaps the Specific Plan area at Locke-Paddon Park, however it only overlaps a small area.
Asio flammeus short-eared owl	None/None G5/S3 SSC	Found in swamp lands, both fresh and salt; lowland meadows; irrigated alfalfa fields. Tule patches/tall grass needed for nesting/daytime seclusion. Nests on dry ground in depression concealed in vegetation.	Not Expected	Suitable habitats are not present and the are no known occurrences of this species within 5 miles.
Athene cunicularia burrowing owl	None/None G4/S3 SSC	Open, dry annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	Moderate Potential in undeveloped areas	There is a known occurrence within the Specific Plan area, however the Specific Plan is mostly developed, with small isolated patches of suitable habitat.
Buteo regalis ferruginous hawk	None/None G4/S3S4 WL	Open grasslands, sagebrush flats, desert scrub, low foothills and fringes of pinyon and juniper habitats. Eats mostly lagomorphs, ground squirrels, and mice. Population trends may follow lagomorph population cycles.	Not Expected	Suitable foraging habitat occurs in the open grasslands and agricultural lands to the north of the Specific Plan and this species is known to winter there, however vacant lots and open spaces within the Specific Plan are too small to be considered foraging habitat for large raptors.
Charadrius alexandrinus nivosus	Threatened/None G3T3/S2S3	Sandy beaches, salt pond levees & shores of large alkali lakes. Needs sandy, gravelly or friable soils for nesting.	Not Expected	Suitable nesting habitat is not present.

Scientific Name Common Name	Status Fed/State ESA CDFW	Habitat Requirements	Potential to Occur	Rationale
western snowy plover	SSC			
Coturnicops noveboracensis yellow rail	None/None G4/S1S2 SSC	Summer resident in eastern Sierra Nevada in Mono County. Freshwater marshlands.	Not Expected	Suitable marsh habitat is not present.
Cypseloides niger black swift	None/None G4/S2 SSC	Coastal belt of Santa Cruz and Monterey counties; central & southern Sierra Nevada; San Bernardino & San Jacinto mountains. Breeds in small colonies on cliffs behind or adjacent to waterfalls in deep canyons and sea-bluffs above the surf; forages widely.	Not Expected	Suitable nesting habitat is not present.
Elanus leucurus white-tailed kite	None/None G5/S3S4 FP	Rolling foothills and valley margins with scattered oaks & river bottomlands or marshes next to deciduous woodland. Open grasslands, meadows, or marshes for foraging close to isolated, dense-topped trees for nesting and perching.	Low potential for nesting in stands of trees	Large trees in the Specific Plan may provide nesting habitat, and there are multiple occurrences in the vicinity of the Specific Plan (ebird 2019).
Eremophila alpestris actia California horned lark	None/None G5T4Q/S4 WL	Coastal regions, chiefly from Sonoma County to San Diego County. Also main part of San Joaquin Valley and east to foothills. Short-grass prairie, “bald” hills, mountain meadows, open coastal plains, fallow grain fields, alkali flats.	Not Expected	Suitable grassland habitats are not present.
Falco mexicanus prairie falcon	None/None G5/S4 WL	Inhabits dry, open terrain, either level or hilly. Breeding sites located on cliffs. Forages far afield, even to marshlands and ocean shores.	Not Expected	Suitable open habitats are not present.
Falco peregrinus anatum American peregrine falcon	Delisted/Delisted G4T4/S3S4 FP	Near wetlands, lakes, rivers, or other water; on cliffs, banks, dunes, mounds; also, human-made structures. Nest consists of a scrape or a depression or ledge in an open site.	Not Expected	Buildings tall enough to provide
Laterallus jamaicensis coturniculus California black rail	None/Threatened G3G4T1/S1 FP	Inhabits freshwater marshes, wet meadows and shallow margins of saltwater marshes bordering larger bays. Needs water depths of about 1 inch that do not fluctuate during the year and dense vegetation for nesting habitat.	Not Expected	Suitable marsh habitat is not present.
Pelecanus occidentalis californicus California brown pelican	Delisted/Delisted G4T3T4/S3 FP	Colonial nester on coastal islands just outside the surf line. Nests on coastal islands of small to moderate size which afford immunity from attack by ground-dwelling predators. Roosts communally.	Not Expected	Suitable nesting habitat and nest colonies are not present.

Scientific Name Common Name	Status Fed/State ESA CDFW	Habitat Requirements	Potential to Occur	Rationale
Rallus obsoletus obsoletus California Ridgway's rail	Endangered/ Endangered G5T1/S1 FP	Salt water and brackish marshes traversed by tidal sloughs in the vicinity of San Francisco Bay. Associated with abundant growths of pickleweed, but feeds away from cover on invertebrates from mud-bottomed sloughs.	Not Expected	Suitable marsh habitat is not present.
Riparia riparia bank swallow	None/Threatened G5/S2	Colonial nester; nests primarily in riparian and other lowland habitats west of the desert. Requires vertical banks/cliffs with fine-textured/sandy soils near streams, rivers, lakes, ocean to dig nesting hole.	Not Expected	Suitable nesting habitat is not present.
Mammals				
Corynorhinus townsendii Townsend's big-eared bat	None/None G3G4/S2 SSC	Throughout California in a wide variety of habitats. Most common in mesic sites. Roosts in the open, hanging from walls and ceilings. Roosting sites limiting. Extremely sensitive to human disturbance.	Not Expected	Suitable roosting habitat is not present.
Sorex ornatus salarius Monterey shrew	None/None G5T1T2/S1S2 SSC	Riparian, wetland & upland areas in the vicinity of the Salinas River delta. Prefers moist microhabitats. feeds on insects & other invertebrates found under logs, rocks & litter.	Low Potential in suitable habitat adjacent to wetlands only	Marginal habitat occurs in the Specific Plan, and there are no known occurrences within 5 miles.
Taxidea taxus American badger	None/None G5/S3 SSC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Needs sufficient food, friable soils and open, uncultivated ground. Preys on burrowing rodents. Digs burrows.	Not Expected	Suitable open habitat is not present.

Regional Vicinity refers to within a 7-quad search radius of site.

FE = Federally Endangered FT = Federally Threatened FC = Federal Candidate Species FS=Federally Sensitive

SE = State Endangered ST = State Threatened SC = State Candidate SS=State Sensitive

SSC = CDFW Species of Special Concern SFP = State Fully Protected

Appendix E

Energy Consumption Calculations

City of Marina Affordable Housing Overlay

Last Updated: 8 24 2022

Compression-Ignition Engine Brake-Specific Fuel Consumption (BSFC) Factors **[1]**:

HP: 0 to 100	0.0588	HP: Greater than 100	0.0529

Values above are expressed in gallons per horsepower-hour/BSFC.

CONSTRUCTION EQUIPMENT

Construction Equipment	#	Hours per Day	Horsepower	Load Factor	Construction Phase	Fuel Used (gallons)
Rubber Tired Dozers	2	8	247	0.4	Demolition Phase	1,671
Concrete/Industrial Saws	1	8	81	0.73	Demolition Phase	556
Excavators	3	8	158	0.38	Demolition Phase	1,523
Rubber Tired Dozers	3	8	247	0.4	Site Preparation Phase	1,253
Tractors/Loaders/Backhoes	4	8	97	0.37	Site Preparation Phase	675
Graders	1	8	187	0.41	Grading Phase	1,135
Excavators	2	8	158	0.38	Grading Phase	1,777
Rubber Tired Dozers	1	8	247	0.4	Grading Phase	1,462
Tractors/Loaders/Backhoes	2	8	97	0.37	Grading Phase	1,181
Scrapers	2	8	367	0.48	Grading Phase	5,215
Cranes	1	7	231	0.29	Building Construction Phase	9,171
Forklifts	3	8	89	0.2	Building Construction Phase	9,289
Generator Sets	1	8	84	0.74	Building Construction Phase	10,812
Tractors/Loaders/Backhoes	3	7	97	0.37	Building Construction Phase	16,387
Welders	1	8	46	0.45	Building Construction Phase	3,601
Air Compressors	1	6	78	0.48	Architectural Coating Phase	264
Pavers	2	8	130	0.42	Paving Phase	924
Paving Equipment	2	8	132	0.36	Paving Phase	804
Rollers	2	8	80	0.38	Paving Phase	572
					Total Fuel Used	**68,272 (Gallons)**

Construction Phase	Days of Operation
Demolition Phase	20
Site Preparation Phase	10
Grading Phase	35
Building Construction Phase	370
Paving Phase	20
Architectural Coating Phase	20
Total Days	475

WORKER TRIPS

Constuction Phase	MPG [2]	Trips		Trip Length (miles)	Fuel Used (gallons)
Demolition Phase	24.1	15		10.8	134.44
Site Preparation Phase	24.1	18		10.8	80.66
Grading Phase	24.1	20		10.8	313.69
Building Construction Phase	24.1	647		10.8	107278.51
Paving Phase	24.1	15		10.8	134.44
Architectural Coating Phase	24.1	129		10.8	1156.18
			Total		**109,097.93**

HAULING AND VENDOR TRIPS

Trip Class	MPG [2]	Trips	Trip Length (miles)	Fuel Used (gallons)
HAULING TRIPS				
Demolition Phase	7.5	808	20.0	2154.67
Site Preparation Phase	7.5	0	0.0	0.00
Grading Phase	7.5	0	0.0	0.00
Building Construction Phase	7.5	0	0.0	0.00
Paving Phase	7.5	0	0.0	0.00
Architectural Coating Phase	7.5	0	0.0	0.00
		Total		**2,154.67**
VENDOR TRIPS				
Demolition Phase	7.5	0	0.0	0.00
Site Preparation Phase	7.5	0	0.0	0.00
Grading Phase	7.5	0	0.0	0.00
Building Construction Phase	7.5	96	7.3	34572.80
Paving Phase	7.5	0	0.0	0.00
Architectural Coating Phase	7.5	0	0.0	0.00
		Total		**34,572.80**

Total Gasoline Consumption (gallons)	**109,098**
Total Diesel Consumption (gallons)	**104,999**

Sources:

[1] United States Environmental Protection Agency. 2021. *Exhaust and Crankcase Emission Factors for Nonroad Compression-Ignition Engines in MOVES3.0.2* . September. Available at: https://www.epa.gov/system/files/documents/2021-08/420r21021.pdf.

[2] United States Department of Transportation, Bureau of Transportation Statistics. 2021. *National Transportation Statistics* . Available at: https://www.bts.gov/topics/national-transportation-statistics.

City of Marina Affordable Housing Overlay

Last Updated: 8 24 2022

Populate one of the following tables (Leave the other blank):

Annual VMT		OR	Daily Vehicle Trips	
Annual VMT:	11,650,158		Daily Vehicle Trips:	
			Average Trip Distance:	

Fleet Class	Fleet Mix
Light Duty Auto (LDA)	0.517882
Light Duty Truck 1 (LDT1)	0.052795
Light Duty Truck 2 (LDT2)	0.193633
Medium Duty Vehicle (MDV)	0.146997
Light Heavy Duty 1 (LHD1)	0.027981
Light Heavy Duty 2 (LHD2)	0.006802
Medium Heavy Duty (MHD)	0.010707
Heavy Heavy Duty (HHD)	0.009580
Other Bus (OBUS)	0.001188
Urban Bus (UBUS)	0.000578
Motorcycle (MCY)	0.027032
School Bus (SBUS)	0.001276
Motorhome (MH)	0.003550

Fuel Economy (MPG) [1]	
Passenger Vehicles	24.1
Light-Med Duty Trucks	17.6
Heavy Trucks/Other	7.5
Motorcycles	44

Fleet Mix

Vehicle Type	Percent	Fuel Type	Annual VMT: VMT	Vehicle Trips: VMT	Fuel Consumption (Gallons)
Passenger Vehicles	*51.79%*	*Gasoline*	6,033,407	0.00	250,349
Light-Medium Duty Trucks	*39.34%*	*Gasoline*	4,583,463	0.00	260,424
Heavy Trucks/Other	*6.17%*	*Diesel*	718,372	0.00	95,783
Motorcycle	*2.70%*	*Gasoline*	314,927	0.00	7,157

Total Gasoline Consumption (gallons)	**517,930**
Total Diesel Consumption (gallons)	**95,783**

Sources:

[1] United States Department of Transportation, Bureau of Transportation Statistics. 2021. National Transportation Statistics. Available at: https://www.bts.gov/topics/national-transportation-statistics.

City of Marina Affordable Housing Overlay

Last Updated: 8 24 2022

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Fleet Mix

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[1] United States Department of Transportation, Bureau of Transportation Statistics. 2021. National Transportation Statistics. Available at: https://www.bts.gov/topics/national-transportation-statistics.

Appendix F

Water Supply Assessment

WATER SUPPLY ASSESSMENT

FOR THE

MARINA DOWNTOWN VITALIZATION

SPECIFIC PLAN

Prepared by

MARINA COAST WATER DISTRICT

and

Schaaf & Wheeler
CONSULTING CIVIL ENGINEERS

April 2020

WATER SUPPLY ASSESSMENT AND WRITTEN VERIFICATION OF SUPPLY

FOR THE

MARINA DOWNTOWN VITALIZATION SPECIFIC PLAN

Prepared by

MARINA COAST WATER DISTRICT

Board of Directors
Thomas P. Moore, President
Jan Shriner, Vice-President
Herbert Cortez
Peter Le
Matt Zefferman

and

Schaaf & Wheeler
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April 2020

REGISTERED PROFESSIONAL ENGINEER
ANDREW A. STERBENZ
No. 69703
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Table i. Acronyms Used in this Report

Acronym	Description
afy, ac-ft/yr	Acre-feet/year
ccf, hcf	Hundred cubic feet
gpd	Gallons per day
gpcd	Gallons per capita day, or gallons per person per day
mgd	Million gallons per day
sq-ft	Square feet
BMP	Best management practice
CAW, CalAm	California American Water Company
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CSUMB	California State University – Monterey Bay
CWC	California Water Code
DDW	SWRCB Division of Drinking Water
DMM	Demand management measure
DVSP	Downtown Vitalization Specific Plan
DWR	California Department of Water Resources
FORA	Fort Ord Reuse Authority
LAFCO	Local Agency Formation Commission
M1W	Monterey One Water (formerly MRWPCA)
MCWD, District	Marina Coast Water District
MCWRA	Monterey County Water Resources Agency
MPWMD	Monterey Peninsula Water Management District
OMC	Ord Military Community
POM	Presidio of Monterey
PWM	Pure Water Monterey Project
SB	California Senate Bill
SRDP	Salinas River Diversion Project
SVBGSA	Salinas Valley Basin Groundwater Sustainability Agency
SVWP	Salinas Valley Water Project
SVGB	Salinas Valley Groundwater Basin
SWRCB	State Water Resources Control Board
UCMBEST	University of California Monterey Bay Education, Science and Technology Center
UWMP	Urban Water Management Plan
WSA	Water Supply Assessment
WVS	Written Verification of Supply

Table ii. Units of Measure Used in this Report

Unit	Equals
1 acre-foot	= 43,560 cubic feet = 325,851 gallons
1 cubic foot	= 7.48 gallons
1 CCF	= 100 cubic feet = 748 gallons
1 MGD	= 1,000,000 gallons/day = 1,120 acre-feet / year

Summary of Water Supply Assessment

Project: Marina Downtown Vitalization Specific Plan, Marina, California

Pursuant to Section 10910 of the California Water Code (CWC), and based on the analysis detailed in this report and the representations by the Project's proponents, the Marina Coast Water District (the District) has determined that its currently projected water supplies are sufficient to meet the projected annual water demands of existing and previously approved uses and the implementation of the Marina Downtown Vitalization Specific Plan during normal, single-dry, and multiple-dry years. The Project will increase the amount of in-fill development in the District's Central Marina service area. The increased development adds approximately 282.3 acre-feet per year (AFY) to the previously projected water demand due to in-fill development. A portion of this is offset by reduced baseline water demand due to permanent water conservation modifications made during the recent drought. The projected water demand for Central Marina with the Project is 2,785 AFY in year 2040. The City has an existing allocation of Salinas Valley Groundwater of 3,020 AFY for Central Marina. Therefore, there is sufficient supply available for the proposed project.

Section 1 - Introduction

1.1 Project Overview

The City of Marina in Monterey County, California, is preparing the Downtown Vitalization Specific Plan (DVSP). The Downtown Vitalization Specific Plan is a community-initiated plan intended to guide the future development and ultimate transformation of the City's 322-acre downtown. Water supply for the City is provided by the Marina Coast Water District. Further description of the Project is given in Section 2.0.

1.2 Purpose of Water Supply Assessment

The California Water Code (§10910 et. seq.), based on Senate Bill 610 of 2001 (SB 610), requires a project proponent to assess the reliability of a project's water supply as part of the California Environmental Quality Act (CEQA) process. Under the California Government Code (§66473.7), based on Senate Bill 221 of 2001, proposed subdivisions adding 500 dwelling units are also required to receive written verification of the available water supply from the project's water supplier. This project includes the addition of up to 2,904 dwelling units but is not a subdivision as explained in Section 1.5, so only a water supply assessment is required.

This report is meant to serve as the Water Supply Assessment (WSA) for the Project to meet the California Water and Government Code requirements. This WSA documents the District's existing and future water supplies for the Project area and compares them to the District's total projected water demands for the next twenty (20) years.

The SB 610 process requires the following several steps to identify the need and scope of a project's WSA:

1. Determine whether the project is subject to CEQA.
2. Determine whether the project meets the definition of a "project" per SB 610.
3. Determine the public water agency that will serve the project.
4. Determine whether any current Urban Water Management Plan considers the projected water demand for the project area.
5. Determine whether groundwater is used by the public water agency to serve the project area.

1.3 Project Subject to CEQA

CEQA applies to projects for which a public agency is directly responsible, funds, and/or requires the issuance of a permit. The City of Marina determined that the Project is subject to the requirements of CEQA. An Environmental Impact Report (EIR) is currently being prepared.

1.4 Project Requiring a Water Supply Assessment

CWC §10912(a) defines a Project for WSA purposes as including any of the following[1]:

- a proposed residential development of more than 500 dwelling units;
- a proposed shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet of floor space;
- a mixed-use project that includes one or more of the projects identified in this list;
- a project that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500 dwelling unit project.

The Downtown Vitalization Specific Plan proposes the addition of up to 2,904 dwelling units and 1,385,000 square feet of commercial space, so a water supply assessment is required.

1.5 Requirements of a Written Verification of Supply

Government Code §66473.7(b)(1) requires:

> *The legislative body of a city or county or the advisory agency, to the extent that it is authorized by local ordinance to approve, conditionally approve, or disapprove the tentative map, shall include as a condition in any tentative map that includes a subdivision a requirement that a sufficient water supply shall be available. Proof of the availability of a sufficient water supply shall be requested by the subdivision applicant or local agency, at the discretion of the local agency, and shall be based on written verification from the applicable public water system within 90 days of a request.*

The public water system must determine if there is sufficient water supply for the subdivision, as defined in Government Code §66473.7(a)(2): *''Sufficient water supply'' means the total water supplies available during normal, single-dry, and multiple dry years within a 20- year projection that will meet the projected demand associated with the proposed subdivision, in addition to existing and planned future uses, including, but not limited to, agricultural and industrial uses.*

However, Government Code §66473.7(i) exempts infill projects:

> *This section shall not apply to any residential project proposed for a site that is within an urbanized area and has been previously developed for urban uses, or where the immediate contiguous properties surrounding the residential project site are, or previously have been, developed for urban uses, or housing projects that are exclusively for very low and low-income households.*

[1] There are additional uses that may qualify as a "project" under the CWC, but included here are the applicable categories.

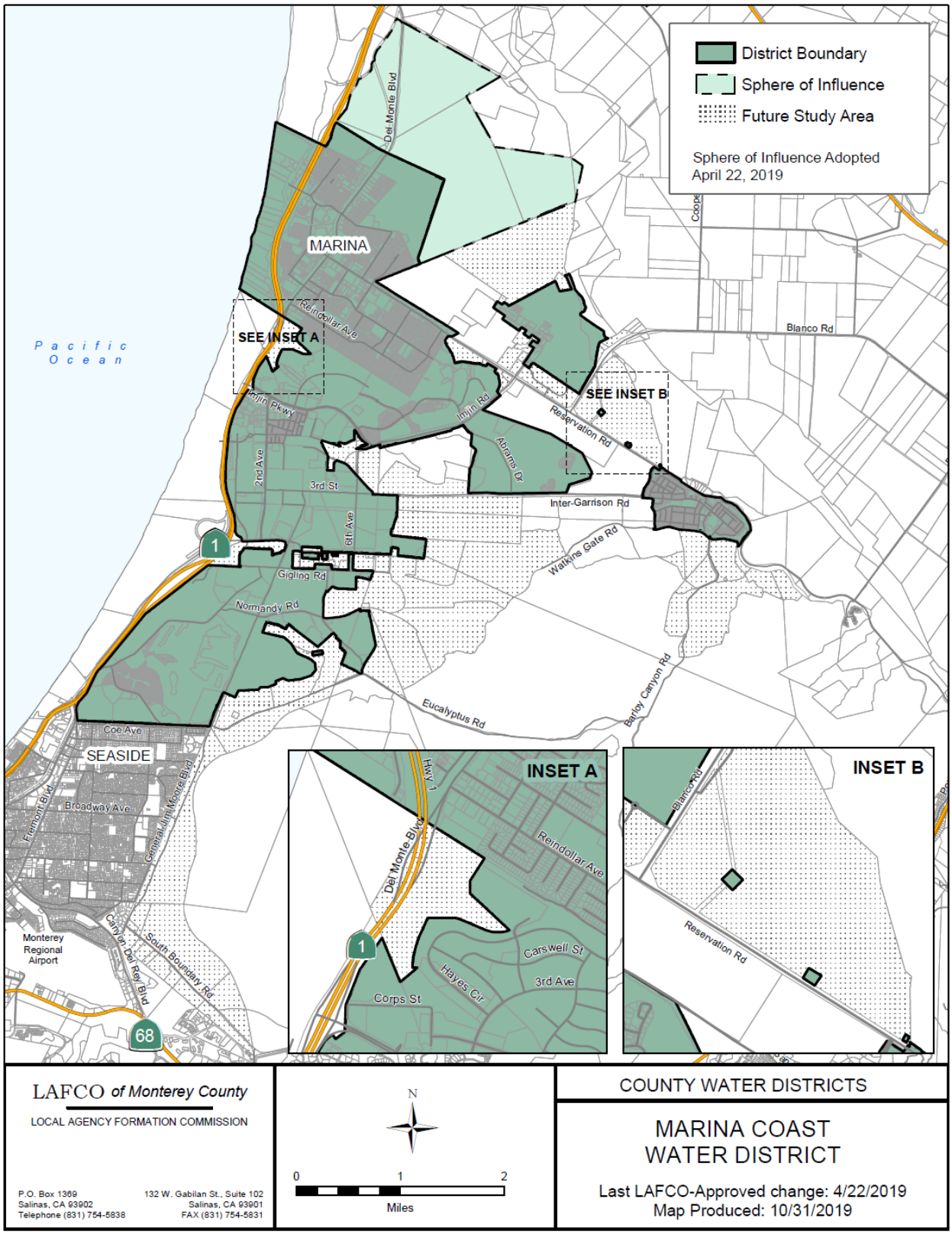
The DVSP is a zoning action that facilitates infill development but does not require preparing a tentative map or final map, so a Written Verification of Supply is not required.

1.6 Public Water Agency Serving the Project

The Marina Coast Water District, a county water district, serves the City of Marina and the former Fort Ord, which includes portions of the City of Marina, City of Seaside, City of Del Rey Oaks, City of Monterey and unincorporated Monterey County. The District has two service areas, Central Marina (outside the former Fort Ord) and the Ord Community. The Project is located in the Central Marina Service Area (see Figure 1.1). MCWD provides water and wastewater service to the Ord Community as outlined in the Water/ Wastewater Facilities Agreement between the Fort Ord Reuse Authority (FORA) and MCWD (1998) and as further described in the Assignment of Easements on Former Fort Ord and Ord Military Community, County of Monterey, and Quitclaim Deed for Water and Wastewater Systems, between FORA and MCWD, dated October 24, 2001. MCWD recently completed the Local Agency Formation Commission of Monterey County (LAFCO) annexation of the served portions of the Ord Community into the District's service area and sphere of influence (see Figure 1.2).

Figure 1.1: Marina Coast Water District Service Area Designations

Figure 1.2: Marina Coast Water District LAFCO Service Boundary



1.7 Relationship of WSA to MCWD Urban Water Management Plan

The California Urban Water Management Planning Act (§10610 et. seq. of the CWC) requires urban water suppliers providing over 3,000 acre-feet per year (AFY) of water or having a minimum of 3,000 service connections to prepare plans (urban water management plans or UWMPs) on a five-year, ongoing basis. An UWMP must demonstrate the continued ability of the provider to serve customers with water supplies that meet current and future expected demands under normal, single dry, and multiple dry year scenarios. These plans must also include the assessment of urban water conservation measures and wastewater recycling. Pursuant to Section 10632 of the CWC, the plans must also include a water shortage contingency plan outlining how the water provider will manage water shortages, including shortages of up to fifty percent (50%) of their normal supplies, and catastrophic interruptions of water supply. The Marina Coast Water District is required to prepare Urban Water Management Plans. The District's most recent Urban Water Management Plan (2015 UWMP) was adopted in June 2016. The 2015 UWMP projected demands for 20 years through the year 2035.

As provided for in the State law, this WSA incorporates by reference and relies upon many of the planning assumptions and projections of the 2015 UWMP in assessing the water demands of the proposed Project relative to the overall increase in water demands expected within the entire District service area. The 2015 UWMP projected a significant increase in water demand within the Central Marina Service Area due to anticipated in-fill development, based upon the City's General Plan, Zoning Ordinance and earlier drafts of the DVSP, and the planned Marina Station subdivision on the north edge of the City. Water demand for Central Marina was projected to increase from 1,823 acre-feet/year (AFY) in 2012 to 3,905 AFY in 2035. The increased demand was projected to be met with existing groundwater resources.

The 2015 UWMP found that the projected Central Marina water demand of 2,725 AFY in year 2035 could be met using the available groundwater supply, but the Ord Community water demand of 8,293 AFY in year 2035 exceeded the currently available supply of 6,600 AFY. Additionally, because the current water supply within the Ord Community has been allocated among the land use jurisdictions, some jurisdictions maintain a projected surplus, while others have projected shortages. The District is pursuing two water supply projects to address the projected shortfall. First, an urban recycled water system is being constructed, which will provide an initial 600 AFY for landscape irrigation, and ultimately provide up to 1,427 AFY of non-potable supply. Second, a seawater desalination project is proposed to provide up to 1,500 AFY of potable water supply. The District is currently considering alternative groundwater replenishment projects which, if feasible, may replace the desalination portion of the RUWAP.

Section 2 - Project Description and Water Demands

2.1 Project Description

The DVSP for the City of Marina, California describes the planned redevelopment in the 322-acre Project Area, whose boundaries are shown in Figure 2.1. The DVSP area is located within the District's Central Marina service area, generally including parcels along and near Del Monte Boulevard and Reservation Road. The Project area is currently developed, as described further below.

Based on the DSVP documentation, the Project entails rezoning of the Project Area to allow for development of the following:

- A Commercial Core District with a mix of retail, office, commercial, entertainment, residential and civic uses, focused along portions of Reservation Road and Del Monte Boulevard. Residential development in the Core District is high-density (70 dwelling units per acre) and restricted to the upper floors (no ground-floor residential);
- A Transition District for retail, service and hospitality businesses. Residential development in the Transition District is high-density (50 dwelling units per acre). In mixed use buildings facing Reservation Road and Del Monte Blvd, residential is restricted to the upper floors.
- Mixed Use nodes with retail and commercial space on the ground floor, and high-density residential (70 dwelling units per acre) on upper floors.
- Multifamily Residential Districts with apartments, townhomes and row homes at densities from 25 to 37 dwelling units per acre.

Other elements of the DVSP are the identification of required access and circulation to serve future development, location and sizing of needed infrastructure, financing methods for public improvements, and establishing standards of development. These other elements, except for the discussion of future water supply infrastructure, are not relevant to the WSA and so are not discussed further.

2.2 Proposed Land Uses and Water Demands

Table 2-1 and Table 2-2 quantify the existing and proposed land uses within the plan area. Anticipated build-out of the DVSP area includes adding from 532,000 to 1,385,200 SF of commercial space and 2,904 high-density residential units to the specific plan area. The timing of the planned development would depend upon market forces, so an exact estimate of when build-out would occur is not possible. This report assumes build-out will occur over 20-years so that the full water demand increase is reflected in the analysis.

Figure 2.1: Specific Plan Area

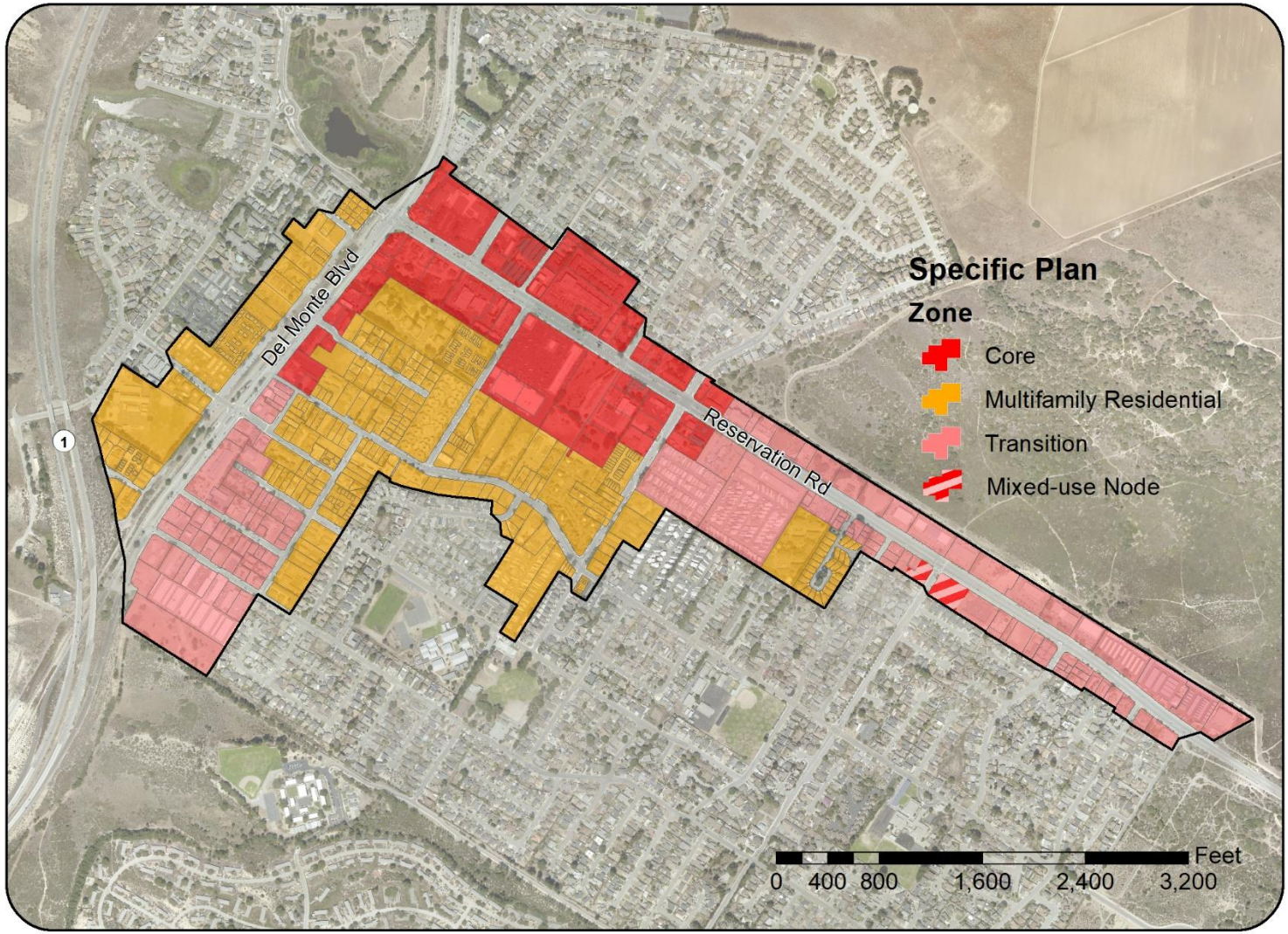


Table 2-1: Current Land Use in DVSP Area

Current Land Use		
	Square Footage	**Residential Units**
Core		286
Retail	375,277	
Office	36,587	
Multifamily Residential	0	1,638
Transition		377
Retail	316,428	
Office	277,466	
Total	1,005,758	2,301

Table 2-2: Projected Land Use in DVSP Area

DVSP (Current plus Development)				
	Minimum Sq. Ft	**Maximum Sq. Ft**	**Residential Density**	**Residential Units**
Core			70/acre	1,658
Retail	583,704	1,050,667		
Office	145,926	262,667		
Multifamily Residential	0	0	35/acre	1,792
Transition			50/acre	1,755
Retail	386,780	515,707		
Office	421,436	561,914		
Total	1,537,846	2,390,955		5,205

Table 2-3: Projected Increases

	Commercial Min Sq. Ft	**Commercial Max Sq. Ft**	**Residential Units**
Current	1,005,708	1,005,758	2,301
Projected	1,537,846	2,390,955	5,205
Increase	532,138	1,385,197	2,904

2.2.1 Residential

Multi-family residential densities are proposed to increase from the current maximum of 35 units per acre to as high as 70 units per acre, depending upon the district. The MCWD 2015 UWMP uses a demand factor of 0.25 AFY/DU for all multi-family residential development. The projected increase in multi-family dwelling units is 2,904, with a resulting increase in water demand of 726 AFY = (2,904 DU) x (0.25 AFY/DU). This value is inclusive of on-site landscaping and laundry facilities.

2.2.2 Commercial

The specific plan anticipates commercial square-footage increases of 532,088 SF (minimum) to 1,385,197 (maximum). The new uses will be a mix of office, retail, dining, entertainment and light industrial. The MCWD 2015 UWMP has demand factors for various types of development, as well as a generic Commercial demand factor, as shown in Table 2-4. Applying the generic commercial demand factor to the projected increases, the estimated demand ranges from 159.6 AFY to 415.6 AFY. Applying the retail demand factor, which is mid-way between the factors for office and restaurant, the estimated demand ranges from 111.7 AFY to 290.9 AFY. For this analysis, we will use 290.9 as the projected commercial demand increase. This is the upper end estimate using the retail demand factor, and also the mid-point of the range using the commercial demand factor.

Table 2-4: Water Demand Factors

Use Type	Qty/AFY	Factor	Unit
Apartments	4	0.25	AFY/DU
Commercial (generic)	3,333	0.00030	AFY/SF
Retail	4,762	0.00021	AFY/SF
Office	7,407	0.00014	AFY/SF
Govt./Institutional	3,333	0.00030	AFY/SF
Restaurant	2,857	0.00035	AFY/SF
Light Industrial	6,667	0.00015	AFY/SF

2.2.3 Parks and Landscaping

The specific plan text speaks to the need for in-fill parks and recreation areas, but none are specifically proposed. Since the project area is fully developed, we assume that existing irrigated landscaping will be reconfigured within the project, but no additional landscaping will be added.

Landscaping for street medians, parks and commercial sites may be irrigated with recycled water. MCWD will begin delivering recycled water for urban irrigation in 2021. Initial sites in Central Marina are outside the DVSP area, so no reduction in potable water demand for landscape irrigation is assumed for this analysis.

2.2.4 Project Total Water Demands

The total water demand projected for the project is 1,016.9 AFY, as shown in Table 2-5, below. A portion of this growth was included in the 2015 UWMP, as discussed in later sections.

Table 2-5: Summary of Estimated Water Demand

Land Use	Maximum Quantity	Unit	Demand Factor (AFY/unit)	Demand (AFY)
MF Residential	2,904	DU	0.25	726
Commercial	1,385,197	SF	0.00021	290.9
Total				**1016.9**

Section 3 - District Water Demands

3.1 Historic and Current Water Demands

Table 3-1 shows the District's water production over the period 2010-2019. The District's average production over that period was 3,690 AFY, with 1,582 AFY in the Central Marina service area and 2,107 AFY in the Ord Community service area.

Table 3-1: Water Production by Service Area (AF)[2]

Year	Central Marina	Ord Community	Total
2010	1,744	2,389	4,133
2011	1,698	2,348	4,047
2012	1,814	2,360	4,174
2013	1,467	2,964	4,431
2014	1,619	2,407	4,026
2015	1,420	1,808	3,228
2016	1,303	1,722	3,025
2017	1,587	1,651	3,238
2018	1,744	1,661	3,405
2019	1,425	1,764	3,189

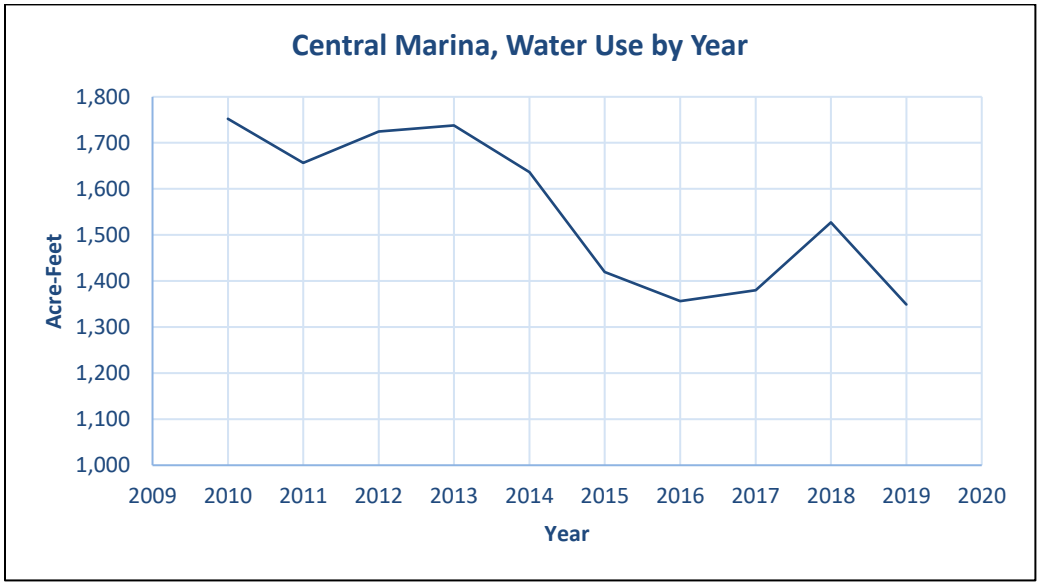
The City of Marina is made up of six sub-areas used for planning. Central Marina is divided into the three parties to the 1996 Zone 2/2A Annexation Agreement with MCWRA, which were the City of Marina (outside the former Fort Ord), the Armstrong Ranch and the RMC-Lonestar (now CEMEX) property. Armstrong Ranch is undeveloped land north of the City and east of Highway 1. CEMEX is north of the City and west of Highway 1. Each party to the annexation agreement has a separate allocation of Salinas Valley groundwater, so development and use is tracked by sub-area, although the City has since annexed the CEMEX property and a portion of the Armstrong Ranch. Similarly, the former Fort Ord was annexed into MCWRA Zones 2/2A and has an allocation of Salinas Valley Groundwater. The City portion of the Ord Community includes three land use jurisdictions, the City of Marina, the University of California and California State University. Each jurisdiction was allocated a portion of the existing groundwater supply by the Fort Ord Reuse Authority and is tracked as a separate entity.

For this WSA, we only assess the City portion of Central Marina, which is where the project is located. Planned development has not yet occurred in the Armstrong Ranch and CEMEX properties. Significant redevelopment is occurring in the City portion of the Ord Community, although at a slower pace than what was projected in the 2015 UWMP.

[2] Source: District Operations Staff

Water use in Central Marina is shown in Figure 3.1. Demand declined during the drought of record (2012-2016) due to mandated water conservation measures. Following the drought, demand rebounded somewhat but has not returned to pre-drought levels due to non-temporary changes (installation of water-conserving fixtures, reductions in irrigated landscaping, etc.) as well as changes in customer consumption behavior. System wide use in 2019 was approximately equal to the use in 2018. The 2015 UWMP assumed a baseline water demand of 1,823 AFY for Central Marina, based upon pre-drought usage. For this analysis, the baseline demand is revised to 1,600 AFY, reflective of the post-drought trend.

Figure 3.1: Water Use within Central Marina[3] (acre-feet)



3.2 Future Demands

Table 3-2 shows projected water demands for the District through 2035. The projection is based on Table 3.5 of the 2015 UWMP, with updates to the City of Seaside portion of the Ord Community made under a previous WSA[4]. The projected water demand for Central Marina is based upon a baseline usage of 1,823 acre-feet per year, and a significant amount of in-fill development. A portion of the in-fill was based upon the 2010 version of the draft DVSP, but it also included a new school with irrigated sports fields, 400 new hotel rooms and low-density housing additions outside the DVSP area. City staff has revised the in-fill projection based on available in-fill sites outside the DVSP area. A comparison of the previous and current in-fill projections is provided in Table 3-3. Infill within the DVSP area significantly increases, partially because the 2015 UWMP showed the first 20-years of a 30-year buildout projection, but

[3] Source: MCWD Quarterly Water Consumption Reports
[4] See the WSA/WSV for the Campus Town Specific Plan

also because the updated DVSP projects a much greater amount of infill. This increased the demand projection by 554.7 AFY. Outside the DVSP area, the projected demand decreases by 272.4, as explained below. The net result is the projected in-fill water demand increases by 282.3 AFY.

Table 3-2: Water Demand Projection by Service Area (AF)[5]

	Jurisdiction	2012*	2015**	2020	2025	2030	2035	Notes	Allocation
Ord	U.S. Army	620	633	663	825	825	825		1,577
	CSUMB	404	404	442	632	755	779		1,035
	Del Rey Oaks	0	0	186	551	551	551		243
	City of Monterey	0	0	0	130	130	130		65
	County of Monterey	8	52	377	539	539	539		720
	UCMBEST	3	3	94	299	515	515	4	230
	City of Seaside	657	657	*592*	*783*	*1,097*	*1,560*	1, 2	1,012
	State Parks and Rec.	0	0	12	18	20	25		45
	Marina Ord Comm.	264	285	901	1,572	1,702	1,704	3	*1,325*
	Assumed Line Loss	395	348	348	348	348	348		348
Marina	Armstrong Ranch	0	0	0	680	680	680		920
	Cemex	0	0	0	0	0	500		500
	Marina Central	1,823	1,823	2,184	2,491	2,606	2,725		3,020
	Subtotal - Ord	2,351	2,382	3,616	5,698	6,482	6,976		6,600
	Subtotal - Marina	1,823	1,823	2,184	3,171	3,286	3,905		4,440
	Total	4,174	4,204	5,800	8,868	9,768	10,881		11,040

*Actual demands from calendar year 2012 used to represent a non-drought year.

** Projected demands. Actual use was lower due to mandatory drought restrictions.

1 Includes Seaside Resort Golf Course use in 2012 and 2015 (temporary use).

2. Revised values shown initalics. Removes Monterey Downs project.

3. Revised allocation to reflect groundwater only. Supply from existing pilot desalination plant removed.

4. MBEST commented that they may develop up to 230 AFY as soon as the market allows it.

[5] Source: Table 3-3 of the WSA/WSV for the Campus Town Specific Plan. Marina-Ord allocation revised per note 3.

Table 3-3: Central Marina In-Fill Projection Compared to Elements in the 2015 UWMP[6]

	2015 UWMP					2019 Specific Plan			
Area and Use	**Qty**	**Unit**	**Factor**	**Demand**		**Qty**	**Unit**	**Factor**	**Demand**
DVSP In-Fill									
MF Residential (> 15 DU/Acre)	1,600	DU	0.25	400.0		2,904	DU	0.25	726.0
Office	84,000	SF	0.000135	11.3		510,528	SF	0.000135	68.9
Retail/Commercial	169,400	SF	0.0003	50.8		874,669	SF	0.000254	222.0
			Total:	462.2				Total:	1,016.9
In-Fill Outside the DVSP									
SF Residential (5-8 DU/Acre)	33	DU	0.33	10.9		0	DU	0.33	0.0
SF Residential (8-12 DU/acre)	0	DU	0.25	0.0		200	DU	0.25	50.0
MF Residential (> 15 DU/Acre)	349	DU	0.25	87.3		189	DU	0.25	47.3
Hotel/Motel	400	Room	0.17	68.0		180	Room	0.11	19.8
Retail/Restuarants	92,000	SF	0.00145	133.4		0	SF	0.00145	0.0
Other Commercial	60,000	SF	0.0003	18.0		138,521	SF	0.0003	41.6
Institutional	10,000	SF	0.0003	3.0		0	SF	0.0003	0.0
Schools	188,260	SF	0.0003	56.5		0	SF	0.0003	0.0
RV Park	0	Space	0.065	0.0		24	Space	0.065	1.6
Landscape (turf)	25.2	AC	2.5	63.0		0	AC	2.5	0.0
Landscape (non-turf)	0	AC	2.1	0.0		3.53	AC	2.1	7.4
			Total:	440.0				Total:	167.6
Total for Central Marina:				**902.2**					**1,184.5**

The most significant change to the in-fill projection is the removal of the previously proposed school[7], but the demand projection is also reduced due to assuming higher-density housing which uses less water per unit, and revising the demand factor for hotels to reflect the current average demand per room within the District[8]. The revised demand factor for hotel rooms is used in the current Capacity Fee Study and will be posted in the next revision to Appendix C of the District Code. Assuming infill-occurs at a steady rate over 20-years, the revised projection for the City portion of Central Marina is shown in Table 3-4. The revised projection for Central Marina is provided in Table 3-5. Note that the projections for the Ord Community were not carried past the 2015 UWMP Projection.

Table 3-4: Cumulative Central Marina Demand by Time Increment

	2020	2025	2030	2035	2040
Revised Baseline	1,600.0	1,641.9	1,683.8	1,725.7	1,767.6
DVSP	0.0	254.2	508.5	762.7	1,016.9
Total Central Marina	1,600.0	1,896.1	2,192.3	2,488.4	2,784.5

Assumes flat-line growth

[6] Source: Table C-3, 2015 UWMP. DVSP demands per Section 2.2 of this report.

[7] The Monterey Peninsula Unified School District Facilities Master Plan does not include a new school.

[8] Based on billing records for 2015 to 2018

Table 3-5: Revised Water Demand Projection by Service Area (AF)

	Jurisdiction	2015*	2020	2025	2030	2035	2040**	Notes	Allocation
Ord	U.S. Army	633	663	825	825	825			1,577
	CSUMB	404	442	632	755	779			1,035
	Del Rey Oaks	0	186	551	551	551			243
	City of Monterey	0	0	130	130	130			65
	County of Monterey	52	377	539	539	539			720
	UCMBEST	3	94	299	515	515			230
	City of Seaside	657	992	1,183	1,497	1,960			1,012
	State Parks and Rec.	0	12	18	20	25			45
	Marina Ord Comm.	285	901	1,572	1,702	1,704			1,625
	Assumed Line Loss	348	348	348	348	348			348
Marina	Armstrong Ranch	0	0	680	680	680	680	3	920
	Cemex	0	0	0	0	0	500	4	500
	Marina Central	1,419	1,600	1,896	2,192	2,488	2,785	1, 2	3,020
	Subtotal - Ord	2,382	4,016	6,098	6,882	7,376			6,900
	Subtotal - Marina	1,419	1,600	2,576	2,872	3,168	3,964		4,440
	Total	3,801	5,616	8,674	9,754	10,544			11,340

* Ord Community values are projected demands from 2015 UWMP.

** Ord Community projections for 2040 have not been developed.

1. Revised current baseline water demand to 1,600 AFY
2. Assumes a uniform in-fill rate
3. Projection is for the Marina Station project
4. Projection is from the 1996 2/2A Annexation Agreement.

3.3 Dry-Year Demands

Section 10631 of the Water Code requires that water demands be estimated for an average water year, a single dry water year and multiple dry water years. As discussed in the District's 2015 Urban Water Management Plan, the MCWD service area has a cool summer-type Mediterranean climate, with rain occurring in October through May, and advection fog enveloping the coast in the summer in response to inland heating. Due to these cool summer conditions, the area does not experience the significant increases in summer irrigation demands common to areas further inland in the Salinas River Valley. Periods of below normal rainfall do not reduce the coastal fog, resulting in very minor demand fluctuations between average and dry years.

During the drought of 2012-2016, Central Marina water demand increased by 4% in the first dry year and 5% in the second dry year, compared with the use in 2011[9]. Demands then declined to 99%, 86% and finally 82% of the pre-drought use due to mandatory drought restrictions. The

[9] Values based on MCWD Quarterly Water Consumption Reports

projected demands for Central Marina during single dry years and multiple dry years are provided in Table 3-6, with the maximum demand being 2,923.7 AFY.

Table 3-6: Dry Year Demand Projections

	Average Year	Single Dry Year	1st Dry Year	2nd Dry Year	3rd Dry Year	4th Dry Year	5th Dry Year
Factor		1.04	1.04	1.05	0.99	0.86	0.82
Projected Demand (AFY)	2,784.5	2,895.9	2,895.9	2,923.7	2,756.7	2,394.7	2,283.3

MCWD has sufficient supply and well capacity to meet all customer demands during peak (dry year) conditions.

Section 4 - Water Supply

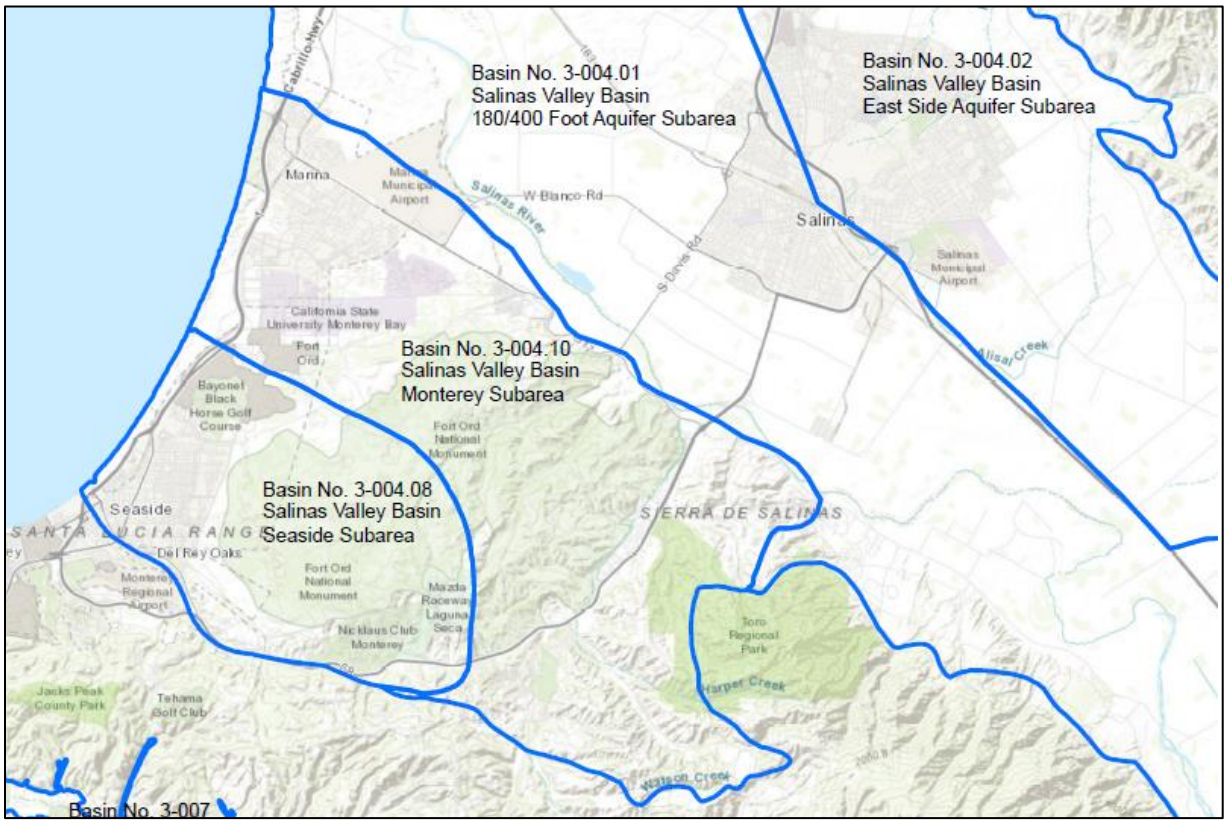
4.1 Current Water Supply

The District's primary source of water supply is the Salinas Valley Groundwater Basin, and it also has a small desalination plant in the Central Marina Service Area. Under the Regional Urban Water Augmentation Project, the District is working to develop recycled water and a larger desalination plant to meet the projected demands of the Ord Community. None of the District's current supply is purchased under wholesale contract.

4.1.1 Groundwater

The District supplies groundwater from the Salinas Valley Groundwater Basin. In 2016, the California Department of Water Resources (DWR) published an Interim Update to Bulletin 118, California's Groundwater. Bulletin 118 defines groundwater basin and sub-basin boundaries used for planning and groundwater management. The update reflects changes submitted to and approved by DWR under the Sustainable Groundwater Management Act. Within northern Monterey County, the changes include redefining the boundaries of the Seaside and Corral De Tierra sub-areas to reflect the defined boundary of the adjudicated Seaside Groundwater Basin, and merge the remaining portion of the Seaside sub-area with the Corral de Tierra sub-area (renamed the Monterey sub-area). The revised boundaries are shown in Figure 4.1.

Figure 4.1: Groundwater Basins



All of the District's wells are located within the Monterey Sub-Basin of the Salinas Valley Groundwater Basin. MCWD has been designated as an exclusive Groundwater Sustainability Agency (GSA) within its LAFCO service area, and it participates in the Salinas Valley Basin GSA as a member of the Advisory Committee. A portion of the District's Ord Community service area overlays the Seaside Sub-Basin of the Salinas Valley Groundwater Basin, which is an adjudicated basin managed by the Seaside Water Master Board.

Under the "Agreement between the United States of America and the Monterey County Water Resources Agency concerning Annexation of Fort Ord into Zones 2 and 2A of the Monterey County Water Resources Agency, Agreement No. A-06404", dated September 21, 1993, the District (successor to the United States) may withdraw up to 6,600 acre-feet per year from the Salinas Valley Groundwater Basin for use in the District's Ord Community service area. Under the "Annexation Agreement and Groundwater Mitigation Framework for Marina Area Lands" dated March 1996, by and between the MCWRA, the Marina Coast Water District, J.G. Armstrong Family Members, RMC Lonestar, and the City of Marina, the District may withdraw up to 3,020 AFY from the Salinas Valley Groundwater Basin for use in the District's Central Marina service area. Under that agreement, additional groundwater supply will be made available to the District for use within the Armstrong Ranch and the RMC Lonestar properties north of Marina, if and when the City annexes and develops those areas. The City and the District annexed the Marina Station portion of the Armstrong Ranch in 2007. That subdivision has not yet been constructed.

There are three defined aquifers within the Marina Coast Water District service area, the 180-foot, the 400-foot and the 900-foot or Deep Aquifer. The District operates seven wells, with two in Central Marina and five in the Ord Community. The service areas are interconnected for reliability, with meters at the points of connection to facilitate managing the two well-fields to ensure each service area remains within its authorized withdrawal limit. Table 4-1 summarizes the existing pumping capacity of the District wells. As can be seen, the District has sufficient well capacity to meet the maximum day demands with the largest well out-of-service.

Table 4-1: Existing Pumping Capacity

Location	Well #	Aquifer	Estimated Capacity	
			(AFY)	(GPM)
Marina	10	Deep	2,352	1,458
	11	Deep	3,266	2,025
Ord	29	180/400	2,420	1,500
	30	180/400	2,465	1,528
	31	180/400	3,734	2,315
	34	Deep	4,000	2,480
	35	400 foot	4,023	2,494

4.1.2 Desalinated Water

The District has a desalination plant located near Marina State Beach, which was designed to contribute up to 300 AFY of potable water supply to the Central Marina service area. The plant was constructed in 1997 as a pilot project but is not currently in use. Supply from this facility is not included in this water supply assessment, although the District may elect to reinstate the plant at some point in the future.

4.2 Future Water Supply

The District is working towards developing new sources of water supply to meet projected demand increases due to redevelopment within the Ord Community, as well as taking actions to address groundwater wells impacted by seawater intrusion. The two major water supply projects described below are (i) reclaimed wastewater, and (ii) desalinated water, which make up the Regional Urban Water Augmentation Project. MCWD is investigating alternative sources of potable supply, which may be less costly than desalination.

4.2.1 Recycled Water

Recycled water refers to sanitary sewage which undergoes treatment and disinfection, typically for non-potable uses such as agricultural and landscape irrigation. The Monterey One Water (M1W, formerly Monterey Regional Water Pollution Control Agency) operates a regional wastewater treatment facility in north Marina and produces reclaimed water for agricultural irrigation in the Castroville area. Through prior agreements with the M1W, the District is entitled to receive recycled water from the regional plant, up to the volume of wastewater generated within the District and sent to the plant. In 2007, MCWD began detailed design of the recycled water distribution system, and constructed several portions of the transmission main in conjunction with road improvement projects. In 2012, M1W began planning the Pure Water Monterey Groundwater Replenishment Project, which will develop additional sources of water supply and produce advanced treated water for injection into the Seaside Groundwater Basin for indirect potable reuse. In 2016, MCWD and M1W entered into an agreement allowing MCWD to participate in the Pure Water Monterey Project. MCWD has now completed construction of the transmission main, which will be used to deliver advanced treated water for both groundwater injection and for urban irrigation.

Under the initial phase of the project, MCWD will receive up to 600 AFY of advanced treated water for urban irrigation use. In later phases, the project may be expanded and MCWD's share would increase to 1,427 AFY, which was the amount of non-potable demand in the Ord Community analyzed in the RUWAP EIR.

4.2.2 Desalinated Water

Given readily available saline and brackish waters near the District's service area, desalinated water has been considered as another potential water supply. The Regional Urban Water Augmentation Project EIR includes a 1,500 AFY desalination facility for the District. The

facility was sized to provide 1,200 AFY of new supply to the Ord Community and 300 AFY to Central Marina.

4.2.3 Conservation

The Marina Coast Water District has an active water conservation program. Under the District's water conservation ordinance, all new construction is required to incorporate water saving devices over and above the requirements of the state building code. Additionally, the District has adopted the State's Model Water Efficient Landscape Ordinance. The District requires developers to install water conserving fixtures during construction, landscapes which require high irrigation are discouraged, and a tiered water rate structure discourages water waste. The District offers rebate incentives to replace less efficient water fixtures, for installing smart irrigation controllers, and for replacing lawns and sprinklers.

The State of California has established a goal of reducing per person water use by 20% by the year 2020, compared to the 2008 baseline demands. Toward that end, the California Building Code was updated in 2010, with the goal of reducing indoor water use to 55 gallons per person per day. In the 2010 UWMP, the District identified a year 2020 conservation target of 117 gallons per person per day (system-wide potable average). It is anticipated that the Downtown Vitalization Specific Plan area will meet that goal, based upon the new indoor plumbing fixture codes and the increased housing density.

4.3 Regulatory Permits Necessary for Supply Delivery

The Marina Coast Water District is a public water system, permitted by the State Water Resources Control Board, Division of Drinking Water, System No. 2710017. The recycled water distribution system is permitted as System No. 2790009. Permits required for the construction and operation of new facilities are obtained on a project-by-project basis.

Section 5 - Supply Sufficiency Analysis

5.1 Comparison of Project Demands to Projected Supply

The water demand for the Central Marina service area with the implementation of the DVSP is projected to increase to 2,784.5 AFY over the next 20 years. The Central Marina service area has 3,020 AFY of groundwater supply available, which is sufficient to meet the existing and projected demands over the 20-year projection during normal, single-dry and multiple-dry water years.

Within the Ord Community, the 6,600 AFY of existing Salinas Valley groundwater supply has been allocated among the land use jurisdictions by the Fort Ord Reuse Authority (FORA), as shown in Table 5-1, below. The municipal jurisdictions (Cities and Monterey County) formally sub-allocate this supply to developments. Until additional water supplies are developed and allocated within the Ord Community, MCWD will only allow new service connections up to the usage totals allocated by the respective jurisdictions. FORA has also formally allocated the recycled water supply from the Phase 1 Recycled Water Project. Those allocations are included in Table 5-1.

Table 5-1: FORA Allocations in the Ord Community

Land Use Jurisdiction	Existing Groundwater Allocation (AFY)	Future Recycled Allocation (AFY)
City of Del Rey Oaks	243	280
City of Marina (Ord)	1,325	345
City of Monterey	65	0
City of Seaside	1,012	453
County of Monterey	710	134
Marina Sphere (existing use)	10	0
CA State Parks and Rec.	45	0
CSU Monterey Bay	1,035	87
Univ. of California MBEST	230	60
U.S. Army	1,577	0
Assumed Line Loss	348	68
Total – Ord Community	6,600	1,427

As shown in Table 3-2, water demand in the Ord Community service area is projected to exceed the available existing supply of Salinas Valley groundwater. The District is pursuing the development of additional water supplies to meet the demands of that service area.

5.2 Plans for Acquiring Additional Water Supplies

Under the provisions of Section 10911 of the California Water Code, if the water supplier concludes that water supplies will be insufficient for the proposed project, the water supplier

shall provide its plans for acquiring additional water supplies. The Marina Coast Water District is currently pursuing two water supply projects, the Recycled Water Project and the Desalination Project, which are intended to allow the District to develop 2,400 AFY of new supply to meet the projected Ord Community demand. Detailed descriptions of these projects are provided in Appendices B and C.

5.3 Reliability of Water Supply

The Salinas Valley Groundwater Basin has a large storage volume, and is recharged by the Salinas River, which is augmented by upstream reservoirs managed by MCWRA. Consequently, the aquifer does not experience wide level variations due to climatic conditions. Water levels vary by 20 to 30 feet seasonally and decline an additional 10 to 20 feet during drought periods. The District's demands accounted for less than one percent of the total groundwater pumped from the Salinas groundwater basin in 2015, the latest year reported. Therefore, the District's supply is considered reliable on a quantity basis. The upper aquifers in the Salinas Valley Groundwater Basin (180-foot aquifer and 400-foot aquifer) along the coast are experiencing high salinity due to seawater intrusion. The District's wells in Central Marina are in the Deep Aquifer, which has not experienced signs of seawater intrusion and is considered to have reliable quality. In the Ord Community, the District has one well in the deep aquifer and four wells in the upper aquifers, but outside the area currently affected by seawater intrusion. The District is closely monitoring the quality in these wells.

The planned additional sources of supply are recycled wastewater and seawater desalination. The source of supply for recycled water is wastewater return flows, which originate from indoor water use. Indoor water use is not subject to the same levels of curtailment during drought periods as outdoor water use, so the source of recycled water supply is considered drought-proof. The SVRP treatment plant operated by the MRWPCA has reliably produced recycled water meeting the requirements of Title 22 for over a decade. Similarly, seawater desalination is considered a reliable source of supply. Reverse osmosis technology is a proven method of desalinating seawater and brackish groundwater.

5.4 Effect on Agricultural and Industrial Users Reliant on the Same Source

There are no agricultural water users within the MCWD service area, nor are there industrial users with privately-owned wells. Agricultural users in the Salinas Valley rely on the same basin-wide supply from the Salinas Valley Groundwater Basin, accounting for 92.9% of the groundwater pumping in 2015. In the local area, 12,000 acres of irrigated agriculture are supplied with recycled water from the Castroville Seawater Intrusion Project. These uses are taken into account in the basin planning of the MCWRA and SVBGSA as part of developing a water balance for the Basin. Additional demands in the Central Marina and Ord Community area are not expected to affect the agricultural users, provided that the District groundwater pumping to meet new demands remains consistent with the MCWRA agreements.

Section 6 - Conclusions

6.1 Sufficiency of Water Supply for the Project

The City of Marina has sufficient existing water supply within the Central Marina service area to achieve the complete build-out of the planned Downtown Vitalization Specific Plan. The available supply is sufficient to meet the existing and projected demands over the 20-year projection during normal, single-dry and multiple-dry water years.

Appendix A: Recycled Water Project Details

In 2004-2005, the District prepared engineering studies for the Regional Urban Water Augmentation Project (RUWAP). This project was intended to develop 2,400 AFY of additional water supply for the Ord Community, to meet projected demands identified in the Fort Ord Base Reuse Plan. The RUWAP has two components, urban use of recycled water and a desalination facility. The final capacity of the two components may be adjusted during final design, but the total amount of new supply will be 2,400 AFY.

In 2012, the Monterey One Water (M1W, formerly the Monterey Regional Water Pollution Control Agency) and the Monterey Peninsula Water Management District began planning the Pure Water Monterey Groundwater Replenishment Project, which includes the advanced treatment of recycled water for indirect potable reuse. On April 8, 2016, MCWD and M1W entered into an agreement which would provide up to 1,427 AFY of advanced treated water for urban landscape irrigation instead of the tertiary treated recycled water planned under the RUWAP. The Pure Water Monterey Project required a pipeline running parallel to MCWD's planned RUWAP pipeline, so the agencies agreed to share a single pipeline, realizing a cost savings to each project.

1. Source of Supply: Tertiary treated wastewater available at the MRWPCA Regional Wastewater Treatment Plant in North Marina. Under the annexation agreement between MCWD and MRWPCA, the District has the right to purchase recycled water, subject to annual and seasonal limits. The Advanced Water Purification Facility (AWPF) was constructed in 2018-2019, with a design capacity of 5.0 mgd. The plant produces advanced-treated recycled water meeting the Title 22 standards for indirect potable reuse (injection into a groundwater aquifer and recovery at other wells).

2. Expected Supply Capability: The Phase 1 project has an initial yield of 4,100 AFY, of which 600 AFY is available to MCWD. The remaining 3,500 AFY is conveyed to an injection wellfield in the Ord Community and stored in the Seaside Groundwater Basin. Future Phases of the project will increase MCWD's yield to 1,427 AFY.

3. Project Facilities:
    - Advanced water purification facility and pump station, located within the M1W plant in North Marina
    - Product water transmission and distribution pipelines within Marina and the Ord Community
    - Recycled water storage tank within the Ord Community

4. Historical Record:

   - MCWD connected into the Regional wastewater collection system in the early 1990's but operated a recycled water system located at the Marina Wastewater Treatment Plant from 1996 to 1998. Thereafter the Marina Wastewater Treatment Plant was fully retired and all wastewater flows were conveyed to the Regional Treatment Plant.
   - MCWD prepared engineering studies for the Regional Urban Water Augmentation Project (RUWAP), which included a recycled water component. The District approved the CEQA EIR for the RUWAP in 2005, and amended the findings in 2006 and 2007 as detailed planning progressed.
   - In 2004, MCWD published standards for recycled water infrastructure and began requiring the construction of recycled water pipelines in new subdivisions.
   - MCWD constructed 3.5 miles of recycled water pipelines within the Ord Community during on-going road construction projects, in cooperation with the Fort Ord Reuse Authority and California State University Monterey Bay.
   - MCWD constructed the shared product water transmission main and storage reservoir in 2018. The transmission main connects the AWPF in north Marina to the injection wellfield in Seaside.
   - M1W constructed the Pure Water Monterey AWPF and the injection wellfield in 2018-2019.
   - Start-up and testing of the full Pure Water Monterey system occurred in February-March 2020. The system is now in full operation.
   - MCWD completed design of the recycled water distribution system in 2019, which connects customers to the transmission system. Construction will begin in 2020.
   - MCWD obtained a pipeline easement for the recycled water main across the Armstrong Ranch in 2007. MCWD obtained a pipeline easement from the City of Seaside for the recycled water main from Normandy Ave to the water tank site in 2010. The District obtained ownership of the recycled water tank site in 2010 (previously held as an exclusive easement). MCWD finalized the recycled water main easements with the Presidio of Monterey in 2012. MCWD finalized the recycled water main easements with CSUMB in 2018.

5. Written Contracts and Agreements:

   - In the annexation agreement between MCWD and MRWPCA, MCWD retained the right to obtain recycled water in an amount not to exceed the volume of wastewater flows originating from the District.
   - MCWD entered into an agreement with the Fort Ord Reuse Authority in 2005 to develop the RUWAP water supplies.
   - MCWD executed two memoranda of understanding with MRWPCA and MCWRA (one in 2009 and one in 2010) to work cooperatively towards the RUWAP, and to specify quantities, (seasonal) availability, and roles and responsibilities.

- MCWD entered into the Pure Water Delivery and Supply Project Agreement with M1W in 2016 to participate in the Pure Water Monterey Project and receive advanced treated water instead of tertiary treated and disinfected recycled water for the RUWAP.
- In agreements with developers of new subdivisions for the construction of water infrastructure, the District requires the installation of recycled water pipelines for the irrigation of public and commercial landscapes.

6. Estimated Costs and Financing: The Pure Water Monterey Project overall cost is approximately $104 million. This includes both the MCWD and M1W Facilities. Both agencies have received State Revolving Fund Loans to cover a majority of the construction costs. The Fort Ord Reuse Authority has budgeted $37 million for the Regional Urban Water Augmentation Project. A portion of that funding was applied to this project.

7. Timeframes: The District began constructing recycled water pipelines in conjunction with road construction projects by other jurisdictions (Fort Ord Reuse Authority and CSU Monterey Bay) and private developers beginning in 2004. Construction of the transmission main and water tank was completed in 2018. Construction of the AWPF and injection wellfield was completed in 2019, with start-up in 2020. Construction of the distribution laterals to customers will occur in 2020.

8. Federal, State and Local Permits for Construction:
   - The project is subject to the California Environmental Quality Act (CEQA) and also the National Environmental Policy Act (NEPA) because the SVRP facility is partially funded by the U.S. Department of the Interior, Bureau of Reclamation. The CEQA EIR for the RUWAP Phase 1 Project with supporting NEPA studies has been completed. CEQA actions for a future RUWAP Phase 2 expansion have not been initiated.
   - The CEQA EIR for the Pure Water Monterey Project with supporting NEPA studies has been completed.
   - The project pump stations and pipelines are outside the Coastal Zone and therefore a Coastal Commission Permit is not required.
   - Encroachment permits and easements for pipeline construction have been coordinated with the City of Marina, the City of Seaside, CSU Monterey Bay, Monterey Peninsula Unified School District and the Presidio of Monterey (Ord Military Community).
   - A Monterey County Conditional Use Permit was obtained for the pipeline crossing agricultural land (Armstrong Ranch).
   - M1W has obtained a Water System Permit with the California State Water Resources Control Board, Division of Drinking Water for the advanced treated water system.
   - MCWD has obtained a Recycled Water System Permit with the California State Water Resources Control Board, Division of Drinking Water.

Appendix B: Desalination Project Details

In 2004-2005, the District prepared engineering studies for the Regional Urban Water Augmentation Project (RUWAP). This project was intended to develop 2,400 AFY of additional water supply for the Ord Community, to meet projected demands identified in the Fort Ord Base Reuse Plan. The RUWAP has two components, urban use of recycled water and a desalination facility. The final capacity of the two components may be adjusted during final design, but the total amount of new supply will be 2,400 AFY.

The Desalination Project was originally studied as a stand-alone facility, located at the former Fort Ord Wastewater Treatment Plant. In 2008, the District began working cooperatively with California American Water, which was planning a larger desalination facility to serve their Monterey Service Area (adjacent to the Ord Community). The two agencies jointly planned a Regional Desalination Facility to be located in North Marina adjacent to the MRWPCA Regional Wastewater Treatment Plant. This location facilitated the use of the existing wastewater outfall pipeline for brine disposal from the desalination plant. In 2011, the agreement between MCWD, American Water and Monterey County Water Resources Agency was terminated by CAWC. MCWD is now pursuing a smaller desalination facility, as sized in the RUWAP EIR, located on the North Marina site.

The following details are provided as required per Water Code §10911.

1. Source of Supply: Seawater-intruded groundwater in the 180-foot aquifer of the Salinas Valley Groundwater Basin, Pressure Sub-Area. Source wells will capture seawater within the aquifer which is currently migrating inland.

2. Expected Supply Capability: 1,500 AFY (average annual yield). Of this total, 1,200 AFY would be for the Ord Community, and 300 AFY would replace the capacity of the District's existing pilot desalination plant, which would then be retired.

3. Project Facilities:
    - Source wells in the intruded portion of the 180-ft aquifer
    - A reverse-osmosis desalination plant located in North Marina,
    - Product water pipeline from the plant to the MCWD service area,
    - Brine disposal pipeline from the plant to the Monterey One Water effluent disposal pipeline (deep ocean outfall)
    - Water storage tanks within the MCWD service area
4. Historical Record:

- MCWD constructed a pilot desalination plant in Marina in 1996.
- MCWD prepared engineering studies for the Regional Urban Water Augmentation Project (RUWAP), which included a seawater desalination component.
- The District approved the CEQA EIR for the RUWAP in 2005, and amended the findings in 2006 and 2007 as detailed planning progressed.
- CAWC prepared engineering studies for the Coastal Water Project (CWP) in 2005-2008, which included a seawater desalination facility, and submitted a CEQA EIR to the California Public Utilities Commission in 2009.
- MCWD and CAWC worked cooperatively to develop a regional desalination facility as an alternative to two separate facilities, as reflected in the CWP EIR.
- The CPUC approved the CWP EIR in 2010.
- The Water Purchase Agreement was terminated by CAWC in September 2011.
- MCWD issued an RFQ for Design-Build Services for the RUWAP Desalination Project in September 2012, but did not award a contract. The project was placed on hold to focus on the recycled water project.

5. Written Contracts and Agreements:
   - MCWD entered into an agreement with the Fort Ord Reuse Authority in 2005 to develop the RUWAP water supplies.
   - MCWD entered into an option agreement with the Armstrong Family Trust in 1998 to purchase land for a future water facility. The District executed that option in 2010 for the Regional Desalination Facility site.
   - MCWD entered into an agreement with MRWPCA in 2009 for shared use of the effluent disposal pipeline.
   - MCWD, CAWC and MCWRA entered in the Water Purchase Agreement in 2010. This agreement established project responsibilities between the three agencies. This agreement was terminated by CAWC in September 2011.
6. Estimated Costs and Financing: The RUWAP Desalination Project was estimated to cost approximately $80 million. The original project planning included a $37 million contribution to the RUWAP from the Fort Ord Reuse Authority. That agency will sunset on 6/30/2020. The District will pursue State and Federal grants for portions of the project cost.
7. Timeframe: Preliminary studies are complete. Assuming a traditional design-bid-build delivery model, it would take from 4 to 6 years to complete design, permitting and construction.
8. Federal, State and Local Permits for Construction:
   - The project is subject to the California Environmental Quality Act (CEQA) and also the National Environmental Policy Act (NEPA) because the facility may be partially funded by the U.S. Department of the Interior, Bureau of Reclamation. CEQA EIRs

with supporting NEPA studies for the RUWAP Desalination Project and for the Regional Desalination Project have been completed. The RUWAP EIR must be amended to reflect the new MCWD facility location and brine disposal method.

- A Coastal Development Permit from the California Coastal Commission may be required for some project facilities if brackish water source wells are located in the Coastal Zone.
- Encroachment permits for pipelines will be required from Monterey County, City of Marina, and possibly CALTRANS.
- MCWD must amend their Water System Permit with the California Department of Public Health to add the desalination facility as a new source of supply before the system can be placed into operation.
- A Regional Water Quality Control Board discharge permit (NPDES) for the desalination plant will be required.
- A Monterey County Building Permit will be required for the desalination plant
- A permit from the Monterey Bay Unified Air Pollution Control District will be required for the desalination facility
- Monterey County Environmental Health must approve permits for (1) construction of the groundwater wells, and (2) construction of the desalination facility

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Appendix D: Board Resolution Approving the Water Supply Assessment

April 20, 2020

Resolution No. 2020-21
Resolution of the Board of Directors
Marina Coast Water District
Approving the Water Supply Assessment for the
Marina Downtown Vitalization Specific Plan

RESOLVED by the Board of Directors ("Directors") of the Marina Coast Water District ("District," "MCWD"), at a meeting duly called and held on April 20, 2020, via a videoconference pursuant to Gov. Newsom's Executive Order N-29-20, as follows:

WHEREAS, the City of Marina is the lead agency for preparation of the Downtown Vitalization Specific Plan EIR, a project requiring a Water Supply Assessment; and,

WHEREAS, the project is located within the portion of the City of Marina known as the Central Marina service area; and,

WHEREAS, the City of Marina is required to produce a water supply assessment (Water Code section 10910 et. seq.) as part of the approval process for the Downtown Vitalization Specific Plan EIR; and,

WHEREAS, the City of Marina requested that MCWD, as the public water supplier for the area of development, analyze the available supplies and produce the required assessment and written verification of supply; and,

WHEREAS, the District completed the requested water supply assessment which concluded, pursuant to Section 10910 of the California Water Code, that the District's water supplies allocated for Central Marina are currently sufficient to meet the increase in water demand of 1,016.9-acre-feet-per-year associated with the Marina Downtown Vitalization Specific Plan development area in addition to other existing and previously approved development demands expected by MCWD in the Central Marina service area as described in MCWD's Urban Water Management Plan during normal, single-dry and multiple dry years within a twenty-year projection; and,

WHEREAS, the District has planned the Regional Urban Water Augmentation Project to develop additional water supply for the Central Marina service area (in conjunction with the Ord Community service area), and has certified a CEQA Environmental Impact Report for the Project; and,

WHEREAS, the District is currently constructing the recycled water portion of the Regional Urban Water Augmentation Project to deliver non-potable water, a portion of which may be used by the City of Marina for the Downtown Vitalization Specific Plan project area; and,

WHEREAS, the Water Supply Assessment is confirmation of the availability of a reliable water supply for the project, based on the "Agreement between the United States of America and Monterey County Water Resources Agency Concerning Annexation of Fort Ord into Zones 2 and 2A of the Monterey County Water Resources Agency" dated September 21, 1993.

NOW, THEREFORE, BE IT RESOLVED, that the Board of Directors of the Marina Coast Water District does hereby approve the Water Supply Assessment for the Downtown Vitalization Specific Plan.

PASSED AND ADOPTED on April 20, 2020, by the Board of Directors of the Marina Coast Water District by the following roll call vote:

Ayes: Directors Cortez, Zefferman, Shriner, Moore

Noes: Directors Le

Absent: Directors None

Abstained: Directors None

Thomas P. Moore, President

ATTEST:

Keith Van Der Maaten, Secretary

CERTIFICATE OF SECRETARY

The undersigned Secretary of the Board of the Marina Coast Water District hereby certifies that the foregoing is a full, true and correct copy of Resolution No. 2020-21 adopted April 20, 2020.

Keith Van Der Maaten, Secretary

Appendix G

Noise Measurement Data

Rincon Consultants, Inc.
Environmental Scientists Planners Engineers
www.rinconconsultants.com

Ambient Noise Survey Data Sheet

Instructions: Document noise measurement locations with a photo of the site, including the noise meter. Additionally, take notes on general and secondary noise sources, including the instantaneous noise level if possible. As a reminder, A/C weighting should be set to "A" and generally response time should be set to "fast." For additional information, please review the *Noise Measurement Protocol* in the pelican case.

BVSP Downtown Vitalization Specific Plan

Project Name: ~~American Canyon~~ **Job Number:** 19-07378

Date: 6/18/19 **Operator Name:** Christy B Saldoor Karli Grigsby

Measurement #1

Location: Lake Drive and Hwy. 1 **Begin time:** 10:30 AM **Finish time:** 10:45 AM

Measurement No.: ST2 (#1) **Wind (mph):** 3 gusts up to 10 **Direction:** ~~SE~~ ~~Southeast~~ WNW

Cloud Cover Class: Overcast (>80%) Light (20-80%) Sunny (<20%)

Calibration (dB): Start: 94 End: 94

Primary Noise Sources: wind, highway traffic **Distance:** 50ft. from roadway centerline

Secondary Noise Sources: birds, kids outside school, wind chimes, dog barking

Notes:

Traffic Count: Passenger Cars: 11 (2)

Medium to Heavy Duty Trucks (3 axles): _____ Heavy Duty Trucks (4+ axles): _____

Instantaneous Noise Sources/Levels (e.g., airplane, bus airbrake, etc.):

~~Either~~

Leq: 59.5 **SEL:** 89.0 **Lmax:** 69.0 **Lmin:** 45.1 **PK:** ← Pk: 112.5

L(05): 63.3 **L(10):** 62.3 **L(50):** 58.5 **L(90):** 54.2 **L(95):** 53.0

Response: Slow Fast Peak Impulse

Measurement #2

Location: _____ **Begin time:** _____ **Finish time:** _____

Measurement No.: _____ **Wind (mph):** _____ **Direction:** _____

Cloud Cover Class: Overcast (>80%) Light (20-80%) Sunny (<20%)

Calibration (dB): Start: _____ End: _____

Primary Noise Sources: _____ **Distance:** _____

Secondary Noise Sources: _____

Notes: _____

Traffic Count: Passenger Cars: _____

Medium to Heavy Duty Trucks (3 axles): _____ Heavy Duty Trucks (4+ axles): _____

Instantaneous Noise Sources/Levels (e.g., airplane, bus airbrake, etc.): _____

Leq: _____ **SEL:** _____ **Lmax:** _____ **Lmin:** _____ **PK:** _____

L(05): _____ **L(10):** _____ **L(50):** _____ **L(90):** _____ **L(95):** _____

Response: Slow Fast Peak Impulse

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Ambient Noise Survey Data Sheet

Instructions: Document noise measurement locations with a photo of the site, including the noise meter. Additionally, take notes on general and secondary noise sources, including the instantaneous noise level if possible. As a reminder, A/C weighting should be set to "A" and generally response time should be set to "fast." For additional information, please review the *Noise Measurement Protocol* in the pelican case.

DVSP Downtown Vitalization Specific Plan

Project Name: ~~American Tin Cannery~~ **Job Number:** 19-07378

Date: 6/18/19 **Operator Name:** Christy Sabdo + Karli Grigsby

Measurement #1

Location: Del Monte blvd. + Palm Ave. **Begin time:** 10:56 AM **Finish time:** 11:11 AM

Measurement No.: ST3 (#2) **Wind (mph):** 3 mph **Direction:** WNW

Cloud Cover Class: Overcast (>80%) Light (20-80%) Sunny (<20%)

Calibration (dB): Start: 94 End: 94

Primary Noise Sources: ~~roadway traffic~~ **Distance:** 50 feet

Secondary Noise Sources: people talking at 7-11 gas station + bus stop, wind, birds, fire station - fire truck backing up

Notes:

Traffic Count: Passenger Cars: |||| |||| |||| |||| |||| + approx. 300 = 335

Medium to Heavy Duty Trucks (3 axles): 11 Heavy Duty Trucks (4+ axles): |||| |

Instantaneous Noise Sources/Levels (e.g., airplane, bus airbrake, etc.):

Leq: 70.0 **SEL:** 99.5 **Lmax:** 83.6 **Lmin:** 50.8 **PK:** 111.1 (PK)

L(05): 74.1 **L(10):** 72.8 **L(50):** 63.4 **L(90):** 55.2 **L(95):** 53.5

Response: Slow Fast Peak Impulse

Measurement #2

Location: **Begin time:** **Finish time:**

Measurement No.: **Wind (mph):** **Direction:**

Cloud Cover Class: Overcast (>80%) Light (20-80%) Sunny (<20%)

Calibration (dB): Start: End:

Primary Noise Sources: **Distance:**

Secondary Noise Sources:

Notes:

Traffic Count: Passenger Cars:

Medium to Heavy Duty Trucks (3 axles): Heavy Duty Trucks (4+ axles):

Instantaneous Noise Sources/Levels (e.g., airplane, bus airbrake, etc.):

Leq: **SEL:** **Lmax:** **Lmin:** **PK:**

L(05): **L(10):** **L(50):** **L(90):** **L(95):**

Response: Slow Fast Peak Impulse

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Ambient Noise Survey Data Sheet

Instructions: Document noise measurement locations with a photo of the site, including the noise meter. Additionally, take notes on general and secondary noise sources, including the instantaneous noise level if possible. As a reminder, A/C weighting should be set to "A" and generally response time should be set to "fast." For additional information, please review the *Noise Measurement Protocol* in the pelican case.

DVSP Downtown Visitation Specific Plan

Project Name: American Tin Cannery **Job Number:** 19-07378

Date: 6/18/19 **Operator Name:** Christy Salado + Karli Quigley

Measurement #1

Location: Reservation Rd. + Mortimer Lane **Begin time:** 11:20 AM **Finish time:** 11:35 AM

Measurement No.: ST4 (#3) **Wind (mph):** 3 **Direction:** WNW

Cloud Cover Class: Overcast (>80%) Light (20-80%) Sunny (<20%)

Calibration (dB): Start: 94 End: 94

Primary Noise Sources: roadway traffic. **Distance:** 50 ft from centerline of Reservation Road

Secondary Noise Sources: birds, people talking/wind, Marina Drive, doctors on duty + KFC parking lot

Notes:

Traffic Count: Passenger Cars: 268

Medium to Heavy Duty Trucks (3 axles): IIII III Heavy Duty Trucks (4+ axles): III II

Instantaneous Noise Sources/Levels (e.g., airplane, bus airbrake, etc.):

Leq: 70.0 **SEL:** 99.5 **Lmax:** 79.5 **Lmin:** 47.6 **PK:** 111.7 (PH)

L(05): 74.3 **L(10):** 72.9 **L(50):** 64.3 **L(90):** 51.1 **L(95):** 49.2

Response: (Slow) Fast Peak Impulse

Measurement #2

Location: **Begin time:** **Finish time:**

Measurement No.: **Wind (mph):** **Direction:**

Cloud Cover Class: Overcast (>80%) Light (20-80%) Sunny (<20%)

Calibration (dB): Start: End:

Primary Noise Sources: **Distance:**

Secondary Noise Sources:

Notes:

Traffic Count: Passenger Cars:

Medium to Heavy Duty Trucks (3 axles): Heavy Duty Trucks (4+ axles):

Instantaneous Noise Sources/Levels (e.g., airplane, bus airbrake, etc.):

Leq: **SEL:** **Lmax:** **Lmin:** **PK:**

L(05): **L(10):** **L(50):** **L(90):** **L(95):**

Response: Slow Fast Peak Impulse

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Ambient Noise Survey Data Sheet

Instructions: Document noise measurement locations with a photo of the site, including the noise meter. Additionally, take notes on general and secondary noise sources, including the instantaneous noise level if possible. As a reminder, A/C weighting should be set to "A" and generally response time should be set to "fast." For additional information, please review the *Noise Measurement Protocol* in the pelican case.

DVSP

Project Name: ~~American Tin Cannery~~ **Job Number:** 19-07378

Date: 5/18/19 **Operator Name:** Christy Sabdo + Karli Grigsby

Measurement #1

Location: Reservation Rd. & De Forest Rd **Begin time:** 11:54 AM **Finish time:** 12:14 PM

Measurement No.: ST5 (#4) **Wind (mph):** 3 **Direction:** WNW

Cloud Cover Class: Overcast (>80%) Light (20-80%) (Sunny) (<20%)

Calibration (dB): Start: 94 End: 94.3

Primary Noise Sources: roadway traffic, wind **Distance:** 30 & 150 ft. from centerline

Secondary Noise Sources: bus transit exchange station, people biking + skateboarding

Notes:

Traffic Count: Passenger Cars: 287

Medium to Heavy Duty Trucks (3 axles): 11 Heavy Duty Trucks (4+ axles): 𝍸 𝍸 III

Instantaneous Noise Sources/Levels (e.g., airplane, bus airbrake, etc.):

Leq: 59.9 **SEL:** 89.4 **Lmax:** 74.8 **Lmin:** 49.7 **PK:** 110.5 (P#)

L(05): 63.8 **L(10):** 62.5 **L(50):** 57.6 **L(90):** 53.0 **L(95):** 51.7

Response: (Slow) Fast Peak Impulse

Measurement #2

Location: **Begin time:** **Finish time:**

Measurement No.: **Wind (mph):** **Direction:**

Cloud Cover Class: Overcast (>80%) Light (20-80%) Sunny (<20%)

Calibration (dB): Start: End:

Primary Noise Sources: **Distance:**

Secondary Noise Sources:

Notes:

Traffic Count: Passenger Cars:

Medium to Heavy Duty Trucks (3 axles): Heavy Duty Trucks (4+ axles):

Instantaneous Noise Sources/Levels (e.g., airplane, bus airbrake, etc.):

Leq: **SEL:** **Lmax:** **Lmin:** **PK:**

L(05): **L(10):** **L(50):** **L(90):** **L(95):**

Response: Slow Fast Peak Impulse

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Ambient Noise Survey Data Sheet

Instructions: Document noise measurement locations with a photo of the site, including the noise meter. Additionally, take notes on general and secondary noise sources, including the instantaneous noise level if possible. As a reminder, A/C weighting should be set to "A" and generally response time should be set to "fast." For additional information, please review the *Noise Measurement Protocol* in the pelican case.

DVSP

Project Name: ~~American Tin Cannery~~ **Job Number:** 19-07378

Date: 6/18/19 **Operator Name:** Christy Sabdo & Karli Grigsby

Measurement #1

Location: Reservation Rd. + ~~Business~~ Bayfront St. **Begin time:** 12:30 PM **Finish time:** 12:45 PM

Measurement No.: ST6 (#5) **Wind (mph):** 9 **Direction:** WNW

Cloud Cover Class: Overcast (>80%) Light (20-80%) Sunny (<20%)

Calibration (dB): Start: 94 End: 94.2

Primary Noise Sources: roadway traffic, wind, **Distance:** 100 ft. from centerline

Secondary Noise Sources: flag & flagpole, children in apts. nearby

Notes:

Traffic Count: Passenger Cars: 239

Medium to Heavy Duty Trucks (3 axles): IIII Heavy Duty Trucks (4+ axles): IIII

Instantaneous Noise Sources/Levels (e.g., airplane, bus airbrake, etc.):

Leq:	70.0	**SEL:**	99.5	**Lmax:**	82.4	**Lmin:**	48.1	**PK:**	111.7 (PH)
L(05):	77.0	**L(10):**	75.6	**L(50):**	69.2	**L(90):**	55.9	**L(95):**	52.5

Response: (Slow) Fast Peak Impulse

Measurement #2

Location: **Begin time:** **Finish time:**

Measurement No.: **Wind (mph):** **Direction:**

Cloud Cover Class: Overcast (>80%) Light (20-80%) Sunny (<20%)

Calibration (dB): Start: End:

Primary Noise Sources: **Distance:**

Secondary Noise Sources:

Notes:

Traffic Count: Passenger Cars:

Medium to Heavy Duty Trucks (3 axles): Heavy Duty Trucks (4+ axles):

Instantaneous Noise Sources/Levels (e.g., airplane, bus airbrake, etc.):

Leq:		**SEL:**		**Lmax:**		**Lmin:**		**PK:**	
L(05):		**L(10):**		**L(50):**		**L(90):**		**L(95):**	

Response: Slow Fast Peak Impulse

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Ambient Noise Survey Data Sheet

Instructions: Document noise measurement locations with a photo of the site, including the noise meter. Additionally, take notes on general and secondary noise sources, including the instantaneous noise level if possible. As a reminder, A/C weighting should be set to "A" and generally response time should be set to "fast." For additional information, please review the *Noise Measurement Protocol* in the pelican case.

DVSP

Project Name: American Tin Cannery **Job Number:** 19-07378

Date: 6-18-2019 **Operator Name:** Christy Sabdo + Karli Grigsby

Measurement #1

Location: Seacrest Ave. **Begin time:** 1:04 PM **Finish time:** 1:19 PM

Measurement No.: ST8 (#6) **Wind (mph):** 9 **Direction:** WNW

Cloud Cover Class: ~~Overcast (>80%)~~ Light (20-80%) Sunny (<20%)

Calibration (dB): Start: 94 End: ~~94~~ 93.8

Primary Noise Sources: roadway traffic **Distance:** 50 ft. from centerline

Secondary Noise Sources: car stereo, leaf blower, pedestrian walking, child on bike

Notes:

Traffic Count: Passenger Cars: 95

Medium to Heavy Duty Trucks (3 axles): 1 Heavy Duty Trucks (4+ axles):

Instantaneous Noise Sources/Levels (e.g., airplane, bus airbrake, etc.):

Leq: 61.5 **SEL:** 91.0 **Lmax:** 75.9 **Lmin:** 49.0 **PK:** 109.7 (PH)

L(05): 66.2 **L(10):** 65.3 **L(50):** 58.4 **L(90):** 51.5 **L(95):** 50.2

Response: (Slow) Fast Peak Impulse

Measurement #2

Location: **Begin time:** **Finish time:**

Measurement No.: **Wind (mph):** **Direction:**

Cloud Cover Class: Overcast (>80%) Light (20-80%) Sunny (<20%)

Calibration (dB): Start: End:

Primary Noise Sources: **Distance:**

Secondary Noise Sources:

Notes:

Traffic Count: Passenger Cars:

Medium to Heavy Duty Trucks (3 axles): Heavy Duty Trucks (4+ axles):

Instantaneous Noise Sources/Levels (e.g., airplane, bus airbrake, etc.):

Leq: **SEL:** **Lmax:** **Lmin:** **PK:**

L(05): **L(10):** **L(50):** **L(90):** **L(95):**

Response: Slow Fast Peak Impulse

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Ambient Noise Survey Data Sheet

Instructions: Document noise measurement locations with a photo of the site, including the noise meter. Additionally, take notes on general and secondary noise sources, including the instantaneous noise level if possible. As a reminder, A/C weighting should be set to "A" and generally response time should be set to "fast." For additional information, please review the *Noise Measurement Protocol* in the pelican case.

DVSP

Project Name: American Tin Cannery **Job Number:** 19-07378

Date: 6/18/19 **Operator Name:** Christy Sabdo + Karli Grigsby

Measurement #1

Location: Carmel Avenue **Begin time:** 1:32 PM **Finish time:** 1:47 PM

Measurement No.: ST87 (#1) **Wind (mph):** 9 **Direction:** WNW

Cloud Cover Class: Overcast (>80%) Light (20-80%) Sunny (<20%)

Calibration (dB): Start: 94 End: 94.2

Primary Noise Sources: ~~roadway traffic~~, birds **Distance:** 50 ft. from centerline

Secondary Noise Sources: truck backing up

Notes:

Traffic Count: Passenger Cars: 66

Medium to Heavy Duty Trucks (3 axles): 1 Heavy Duty Trucks (4+ axles): 1

Instantaneous Noise Sources/Levels (e.g., airplane, bus airbrake, etc.):

Leq: 60.8 **SEL:** 90.3 **Lmax:** 74.8 **Lmin:** 47.3 **PK:** 113.9 (PH)

L(05): 65.9 **L(10):** 64.8 **L(50):** 57.0 **L(90):** 50.3 **L(95):** 49.0

Response: (Slow) Fast Peak Impulse

Measurement #2

Location: **Begin time:** **Finish time:**

Measurement No.: **Wind (mph):** **Direction:**

Cloud Cover Class: Overcast (>80%) Light (20-80%) Sunny (<20%)

Calibration (dB): Start: End:

Primary Noise Sources: **Distance:**

Secondary Noise Sources:

Notes:

Traffic Count: Passenger Cars:

Medium to Heavy Duty Trucks (3 axles): Heavy Duty Trucks (4+ axles):

Instantaneous Noise Sources/Levels (e.g., airplane, bus airbrake, etc.):

Leq: **SEL:** **Lmax:** **Lmin:** **PK:**

L(05): **L(10):** **L(50):** **L(90):** **L(95):**

Response: Slow Fast Peak Impulse

LT San Pablo Ct. Msmt.
~12:[illegible] PM
52
6-20-2019 Karli Grigsby

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Ambient Noise Survey Data Sheet

Instructions: Document noise measurement locations with a photo of the site, including the noise meter. Additionally, take notes on general and secondary noise sources, including the instantaneous noise level if possible. As a reminder, A/C weighting should be set to "A" and generally response time should be set to "fast." For additional information, please review the *Noise Measurement Protocol* in the pelican case.

DVSP

Project Name: ~~American Tin Cannery~~ **Job Number:** 19-07378

Date: ~~6/18/19~~ 6-20-2019 **Operator Name:** Karli Grigsby

Measurement #1

Location: San Pablo Ct. **Begin time:** 12:58 PM **Finish time:** 1:13 PM

Measurement No.: ST1 (#1) **Wind (mph):** 11 **Direction:** W

Cloud Cover Class: (Overcast (>80%)) Light (20-80%) Sunny (<20%)

Calibration (dB): Start: 94 End: 94

Primary Noise Sources: ~~roadway traffic~~, birds **Distance:** 200 ft. from Hwy. 1

Secondary Noise Sources: dog barking

Notes:

Traffic Count: Passenger Cars: IIII (4)

Medium to Heavy Duty Trucks (3 axles): _____ Heavy Duty Trucks (4+ axles): _____

Instantaneous Noise Sources/Levels (e.g., airplane, bus airbrake, etc.):

Leq: 58.0 **SEL:** 87.5 **Lmax:** 62.9 **Lmin:** 53.4 **PK:** —

L(05): — **L(10):** — **L(50):** — **L(90):** — **L(95):** —

Response: (Slow) Fast Peak Impulse

Measurement #2

Location: _____ **Begin time:** _____ **Finish time:** _____

Measurement No.: _____ **Wind (mph):** _____ **Direction:** _____

Cloud Cover Class: Overcast (>80%) Light (20-80%) Sunny (<20%)

Calibration (dB): Start: _____ End: _____

Primary Noise Sources: _____ **Distance:** _____

Secondary Noise Sources: _____

Notes: _____

Traffic Count: Passenger Cars: _____

Medium to Heavy Duty Trucks (3 axles): _____ Heavy Duty Trucks (4+ axles): _____

Instantaneous Noise Sources/Levels (e.g., airplane, bus airbrake, etc.): _____

Leq: _____ **SEL:** _____ **Lmax:** _____ **Lmin:** _____ **PK:** _____

L(05): _____ **L(10):** _____ **L(50):** _____ **L(90):** _____ **L(95):** _____

Response: Slow Fast Peak Impulse

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Notes: DVSP

6-20-2019 Karli Grigsby

Lake Ct. Start: 1:22 PM End: 1:37 PM

ST2 (#2) wind 11 mph W

Calibration: 94 (start) (end)

overcast >80%

Distance: 50 ft. from Lake Ct. centerline

primary noise: roadway traffic secondary: children outside at school

Leq: 61.9 SEL: 91.4 Lmax: 67.5 Lmin: 55.9

response: slow

passenger cars: NN

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 6/19/2019
Case Description: Marina DVSP

				---- Receptor #1 ----
		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Residential	Residential	60	60	60

			Equipment			
			Spec	Actual	Receptor	Estimated
	Impact		Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Excavator	No	40		80.7	50	0
Dump Truck	No	40		76.5	50	0
Front End Loader	No	40		79.1	50	0

Results

Calculated (dBA)

Equipment		*Lmax	Leq
Excavator		80.7	76.7
Dump Truck		76.5	72.5
Front End Loader		79.1	75.1
	Total	80.7	79.9

*Calculated Lmax is the Loudest value.

Report date: 6/19/2019
Case Description: Marina DVSP

				---- Receptor #1 ----
		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Residential	Residential	60	60	60

			Equipment			
			Spec	Actual	Receptor	Estimated
	Impact		Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Excavator	No	40		80.7	500	0
Dump Truck	No	40		76.5	500	0
Front End Loader	No	40		79.1	500	0

		Results	
		Calculated (dBA)	
Equipment		*Lmax	Leq
Excavator		60.7	56.7
Dump Truck		56.5	52.5
Front End Loader		59.1	55.1
	Total	60.7	59.9

*Calculated Lmax is the Loudest value.

OPERATION AIR QUANTITY LIMITS

48PG03-14 Vertical and Horizontal Units

UNIT 48PG	COOLING (cfm)		HEATING (cfm)*	
	Min	Max	Min	Max
03	600	1000	600	1680
04 (Low Heat)	900	1500	600	1680
04 (Med Heat)	900	1500	940	2810
04 (High Heat)	900	1500	1130	2820
05 (Low Heat)	1200	2000	600	1680
05 (Med Heat)	1200	2000	940	2810
05 (High Heat)	1200	2000	1130	2820
06 (Low Heat)	1500	2500	940	2810
06 (Med Heat)	1500	2500	1130	2820
06 (High Heat)	1500	2500	1510	2520
07 (Low Heat)	1800	3000	940	2810
07 (Med Heat)	1800	3000	1130	2820
07 (High Heat)	1800	3000	1510	2520
08 (Low Heat)	2250	3750	2060	5160
08 (Med Heat)	2250	3750	2110	6870
08 (High Heat)	2250	3750	2450	4900
09 (Low Heat)	2550	4250	2060	5160
09 (Med Heat)	2550	4250	2110	6870
09 (High Heat)	2550	4250	2450	4900
12 (Low Heat)	3000	5000	2110	6870
12 (Med Heat)	3000	5000	2450	4900
12 (High Heat)	3000	5000	3150	6300
14 (Low Heat)	3750	6250	2110	6870
14 (Med Heat)	3750	6250	2450	4900
14 (High Heat)	3750	6250	3150	6300

*Consult tables on pages 8 and 9 if using a stainless steel heat exchanger.

Outdoor Sound Power (Total Unit)

UNIT 48PG	A–WEIGHTED* (dB)	OCTAVE BAND LEVELS dB							
		63	125	250	500	1000	2000	4000	8000
03	75.0	82.6	79.9	75.7	73.3	70.0	64.3	58.4	50.5
04	73.2	79.8	77.2	74.1	70.1	68.0	63.6	58.4	51.9
05	71.9	79.7	79.6	72.6	69.6	66.0	61.4	56.4	48.5
06	78.5	82.2	82.6	79.5	75.7	73.9	68.6	64.0	56.3
07	78.5	87.5	83.0	78.5	76.3	73.8	68.4	63.8	56.5
08	80.0	91.7	83.6	81.0	77.9	75.0	69.9	66.0	59.3
09	79.9	89.1	82.7	80.0	77.7	75.0	70.2	66.3	57.8
12	80.0	90.4	83.1	80.9	77.8	75.2	70.0	66.1	57.6
14	83.3	86.4	85.9	85.3	81.8	78.2	72.2	67.9	59.9

LEGEND

dB – Decibel

***** Sound Rating AHRI or tone Adjusted, A–Weighted Sound Power Level in dB. For sizes 03–12, the sound rating is in accordance with AHRI Standard 270–1995. For sizes 14, the sound rating is in accordance with AHRI 370–2010.

FHWA RD-77-108

Traffic Noise Prediction Model

Data Input Sheet

Project Name : Marina DVSP
Project Number : 19-07378
Modeled Condition : Existing

Surface Refelction: Ldn
Assessment Metric: Soft
Peak ratio to ADT: 10.00
Traffic Desc. (Peak or ADT) : Peak

Segment	Roadway	Segment From	Segment To	Traffic Vol.	Speed (Mph)	Distance to CL	% Autos	%MT	% HT	Day %	Eve %	Night %	K-Factor
1	Del Monte Blvd	HW1 to Reindollar Ave		2,135	35	50	96.00	2.00	2.00	84.00	0.00	16.00	
2		Reindollar Ave to Palm Ave		1,663	35	50	96.00	2.00	2.00	84.00	0.00	16.00	
3		Palm Ave to Reservation Rd		1,510	35	50	96.00	2.00	2.00	84.00	0.00	16.00	
4	Reservation Rd	Del Monte Blvd to Vista Del Camino		1,763	35	50	96.00	2.00	2.00	84.00	0.00	16.00	
5		Vista Del Camino Cir to Seacrest Ave		1,759	35	50	96.00	2.00	2.00	84.00	0.00	16.00	
6		Seacrest Ave to De Forest Rd		1,696	35	50	96.00	2.00	2.00	84.00	0.00	16.00	
7		De Forest Rd to Crescent Ave		1,720	35	50	96.00	2.00	2.00	84.00	0.00	16.00	
8		Crescent Ave to California Ave		1,669	40	50	96.00	2.00	2.00	84.00	0.00	16.00	
9		California Ave to Salinas Ave		1,515	40	50	96.00	2.00	2.00	84.00	0.00	16.00	
10		Salinas Ave to out of DVSP		1,518	40	50	96.00	2.00	2.00	84.00	0.00	16.00	
11	Reindollar Ave	Del Monte Blvd to east		678	25	50	98.50	1.00	0.50	84.00	0.00	16.00	
12	Cypress Ave	Del Monte Blvd to east		177	25	50	98.50	1.00	0.50	84.00	0.00	16.00	
13	Palm Ave	Del Monte Blvd to east		177	25	50	98.50	1.00	0.50	84.00	0.00	16.00	
14	Carmel Ave	Del Monte Blvd to east		678	25	50	98.50	1.00	0.50	84.00	0.00	16.00	
15	Mortimer Ln	Del Monte Blvd to east		177	25	50	98.50	1.00	0.50	84.00	0.00	16.00	
16	Vista Del Camino Cir	Reservation Road to north		584	25	50	98.50	1.00	0.50	84.00	0.00	16.00	
17	Seacrest Ave	Reservation Road to south		550	25	50	98.50	1.00	0.50	84.00	0.00	16.00	
18	De Forest Rd	Reservation Road to north		225	25	50	98.50	1.00	0.50	84.00	0.00	16.00	
19	Crescent	Reservation Road to north		203	25	50	98.50	1.00	0.50	84.00	0.00	16.00	
20		Reservation Road to south		422	25	50	98.50	1.00	0.50	84.00	0.00	16.00	
21	California Ave	Reservation Road to south		378	35	50	98.50	1.00	0.50	84.00	0.00	16.00	
22	Lynscott Dr	Reservation Road to south		378	25	50	98.50	1.00	0.50	84.00	0.00	16.00	
23	Bayer St	Reservation Road to south		378	25	50	98.50	1.00	0.50	84.00	0.00	16.00	
24	Salinas Ave	Reservation Road to south		34	25	50	98.50	1.00	0.50	84.00	0.00	16.00	
25	Sunset Avenue	Reindollar Ave to Carmel Ave		177	25	50	98.50	1.00	0.50	84.00	0.00	16.00	
26	Hillcrest Ave	End of street towards Zanetta Drive		177	25	50	98.50	1.00	0.50	84.00	0.00	16.00	

FHWA RD-77-108

Traffic Noise Prediction Model

Predicted Noise Levels

Project Name : Marina DVSP
Project Number : 19-07378
Modeled Condition : Existing
Assessment Metric: Soft

		Segment		Noise Levels, dBA Soft				Distance to Traffic Noise Level Contours, Feet					
Segment	Roadway	From	To	Auto	MT	HT	Total	75 dB	70 dB	65 dB	60 dB	55 dB	50 dB
1	Del Monte Blvd	HW1 to Reindollar Ave		67.5	60.4	65.6	70	24	51	109	236	508	1,094
2		Reindollar Ave to Palm Ave		66.4	59.3	64.5	69	20	43	92	199	429	924
3		Palm Ave to Reservation Rd		66.0	58.9	64.0	69	19	40	87	187	403	869
4	Reservation Rd	Del Monte Blvd to Vista Del Camino		66.6	59.5	64.7	69	21	45	97	208	449	967
5		Vista Del Camino Cir to Seacrest Ave		66.6	59.5	64.7	69	21	45	97	208	449	967
6		Seacrest Ave to De Forest Rd		66.5	59.4	64.6	69	20	44	94	202	435	938
7		De Forest Rd to Crescent Ave		66.5	59.4	64.6	69	21	44	95	205	442	953
8		Crescent Ave to California Ave		68.1	60.2	65.0	70	24	52	113	243	524	1,128
9		California Ave to Salinas Ave		67.7	59.8	64.6	70	23	49	106	229	492	1,061
10		Salinas Ave to out of DVSP		67.7	59.8	64.6	70	23	49	106	229	492	1,061
11	Reindollar Ave	Del Monte Blvd to east		58.4	50.1	54.7	60	5	11	25	53	115	247
12	Cypress Ave	Del Monte Blvd to east		52.6	44.3	48.9	55	2	5	10	21	46	100
13	Palm Ave	Del Monte Blvd to east		52.6	44.3	48.9	55	2	5	10	21	46	100
14	Carmel Ave	Del Monte Blvd to east		58.4	50.1	54.7	60	5	11	25	53	115	247
15	Mortimer Ln	Del Monte Blvd to east		52.6	44.3	48.9	55	2	5	10	21	46	100
16	Vista Del Camino Cir	Reservation Road to north		57.8	49.4	54.1	60	5	10	22	48	103	222
17	Seacrest Ave	Reservation Road to south		57.5	49.2	53.8	60	5	10	21	46	100	215
18	De Forest Rd	Reservation Road to north		53.6	45.3	49.9	56	3	5	12	25	55	118
19	Crescent	Reservation Road to north		53.2	44.8	49.5	55	2	5	11	24	51	109
20		Reservation Road to south		56.3	48.0	52.6	58	4	8	18	39	83	179
21	California Ave	Reservation Road to south		60.1	49.8	52.0	61	6	13	27	58	126	271
22	Lynscott Dr	Reservation Road to south		55.9	47.5	52.2	58	4	8	17	36	77	166
23	Bayer St	Reservation Road to south		55.9	47.5	52.2	58	4	8	17	36	77	166
24	Salinas Ave	Reservation Road to south		45.4	37.1	41.7	47	1	2	3	7	16	34
25	Sunset Avenue	Reindollar Ave to Carmel Ave		52.6	44.3	48.9	55	2	5	10	21	46	100
26	Hillcrest Ave	End of street towards Zanetta Drive		52.6	44.3	48.9	55	2	5	10	21	46	100

FHWA RD-77-108

Traffic Noise Prediction Model

Data Input Sheet

Project Name : Marina DVSP
Project Number : 19-07378
Modeled Condition : Future

Surface Refelction: Ldn
Assessment Metric: Soft
Peak ratio to ADT: 10.00
Traffic Desc. (Peak or ADT) : Peak

Segment	Roadway	Segment From	Segment To	Traffic Vol.	Speed (Mph)	Distance to CL	% Autos	%MT	% HT	Day %	Eve %	Night %	K-Factor
1	Del Monte Blvd	HW1 to Reindollar Ave		2,493	35	50	96.00	2.00	2.00	84.00	0.00	16.00	
2		Reindollar Ave to Palm Ave		1,959	35	50	96.00	2.00	2.00	84.00	0.00	16.00	
3		Palm Ave to Reservation Rd		1,714	35	50	96.00	2.00	2.00	84.00	0.00	16.00	
4	Reservation Rd	Del Monte Blvd to Vista Del Camino		2,139	35	50	96.00	2.00	2.00	84.00	0.00	16.00	
5		Vista Del Camino Cir to Seacrest Ave		2,018	35	50	96.00	2.00	2.00	84.00	0.00	16.00	
6		Seacrest Ave to De Forest Rd		1,995	35	50	96.00	2.00	2.00	84.00	0.00	16.00	
7		De Forest Rd to Crescent Ave		1,993	35	50	96.00	2.00	2.00	84.00	0.00	16.00	
8		Crescent Ave to California Ave		1,917	40	50	96.00	2.00	2.00	84.00	0.00	16.00	
9		California Ave to Salinas Ave		1,840	40	50	96.00	2.00	2.00	84.00	0.00	16.00	
10		Salinas Ave to out of DVSP		1,880	40	50	96.00	2.00	2.00	84.00	0.00	16.00	
11	Reindollar Ave	Del Monte Blvd to east		945	25	50	98.50	1.00	0.50	84.00	0.00	16.00	
12	Cypress Ave	Del Monte Blvd to east		248	25	50	98.50	1.00	0.50	84.00	0.00	16.00	
13	Palm Ave	Del Monte Blvd to east		248	25	50	98.50	1.00	0.50	84.00	0.00	16.00	
14	Carmel Ave	Del Monte Blvd to east		945	25	50	98.50	1.00	0.50	84.00	0.00	16.00	
15	Mortimer Ln	Del Monte Blvd to east		248	25	50	98.50	1.00	0.50	84.00	0.00	16.00	
16	Vista Del Camino Cir	Reservation Road to north		757	25	50	98.50	1.00	0.50	84.00	0.00	16.00	
17	Seacrest Ave	Reservation Road to south		774	25	50	98.50	1.00	0.50	84.00	0.00	16.00	
18	De Forest Rd	Reservation Road to north		322	25	50	98.50	1.00	0.50	84.00	0.00	16.00	
19	Crescent	Reservation Road to north		246	25	50	98.50	1.00	0.50	84.00	0.00	16.00	
20		Reservation Road to south		584	25	50	98.50	1.00	0.50	84.00	0.00	16.00	
21	California Ave	Reservation Road to south		547	35	50	98.50	1.00	0.50	84.00	0.00	16.00	
22	Lynscott Dr	Reservation Road to south		547	25	50	98.50	1.00	0.50	84.00	0.00	16.00	
23	Bayer St	Reservation Road to south		547	25	50	98.50	1.00	0.50	84.00	0.00	16.00	
24	Salinas Ave	Reservation Road to south		136	25	50	98.50	1.00	0.50	84.00	0.00	16.00	
25	Sunset Avenue	Reindollar Ave to Carmel Ave		248	25	50	98.50	1.00	0.50	84.00	0.00	16.00	
26	Hillcrest Ave	End of street towards Zanetta Drive		248	25	50	98.50	1.00	0.50	84.00	0.00	16.00	

FHWA RD-77-108

Traffic Noise Prediction Model

Predicted Noise Levels

Project Name : Marina DVSP
Project Number : 19-07378
Modeled Condition : Future
Assessment Metric: Soft

		Segment		Noise Levels, dBA Soft				Distance to Traffic Noise Level Contours, Feet					
Segment	Roadway	From	To	Auto	MT	HT	Total	75 dB	70 dB	65 dB	60 dB	55 dB	50 dB
1	Del Monte Blvd	HW1 to Reindollar Ave		68.2	61.0	66.2	71	26	57	122	262	565	1,218
2		Reindollar Ave to Palm Ave		67.1	60.0	65.2	70	22	48	103	222	477	1,029
3		Palm Ave to Reservation Rd		66.5	59.4	64.6	69	21	44	95	205	442	953
4	Reservation Rd	Del Monte Blvd to Vista Del Camino		67.5	60.4	65.6	70	24	51	109	236	508	1,094
5		Vista Del Camino Cir to Seacrest Ave		67.2	60.1	65.3	70	23	49	106	229	492	1,061
6		Seacrest Ave to De Forest Rd		67.2	60.1	65.3	70	23	48	104	225	485	1,045
7		De Forest Rd to Crescent Ave		67.2	60.1	65.3	70	23	48	104	225	485	1,045
8		Crescent Ave to California Ave		68.7	60.8	65.6	71	27	57	124	266	574	1,237
9		California Ave to Salinas Ave		68.5	60.6	65.4	71	26	56	120	258	557	1,199
10		Salinas Ave to out of DVSP		68.6	60.7	65.5	71	26	57	122	262	565	1,218
11	Reindollar Ave	Del Monte Blvd to east		59.8	51.5	56.1	62	7	14	31	66	142	306
12	Cypress Ave	Del Monte Blvd to east		54.0	45.7	50.3	56	3	6	13	27	58	126
13	Palm Ave	Del Monte Blvd to east		54.0	45.7	50.3	56	3	6	13	27	58	126
14	Carmel Ave	Del Monte Blvd to east		59.8	51.5	56.1	62	7	14	31	66	142	306
15	Mortimer Ln	Del Monte Blvd to east		54.0	45.7	50.3	56	3	6	13	27	58	126
16	Vista Del Camino Cir	Reservation Road to north		58.9	50.6	55.2	61	6	12	27	57	124	266
17	Seacrest Ave	Reservation Road to south		59.0	50.7	55.3	61	6	12	27	57	124	266
18	De Forest Rd	Reservation Road to north		55.2	46.9	51.5	57	3	7	15	32	69	149
19	Crescent	Reservation Road to north		54.0	45.7	50.3	56	3	6	13	27	58	126
20		Reservation Road to south		57.8	49.4	54.1	60	5	10	22	48	103	222
21	California Ave	Reservation Road to south		61.7	51.4	53.6	63	7	16	35	75	161	346
22	Lynscott Dr	Reservation Road to south		57.5	49.2	53.8	59	5	10	21	46	98	212
23	Bayer St	Reservation Road to south		57.5	49.2	53.8	59	5	10	21	46	98	212
24	Salinas Ave	Reservation Road to south		51.4	43.1	47.7	53	2	4	8	18	39	84
25	Sunset Avenue	Reindollar Ave to Carmel Ave		54.0	45.7	50.3	56	3	6	13	27	58	126
26	Hillcrest Ave	End of street towards Zanetta Drive		54.0	45.7	50.3	56	3	6	13	27	58	126

Appendix H

VMT Analysis

Kimley»Horn

Memorandum

To: **Guido F. Persicone**
Community Development Director
City of Marina

From: Chris Gregerson, P.E., T.E., PTOE, PTP
Tyler Mickelson, EIT

Re: DRAFT Vehicle Miles Traveled (VMT) Analysis
City of Marina Housing Overlay Zone

Date: August 31, 2022

This memorandum documents a SB 743 compliant analysis completed for the proposed Housing Overlay Zone (HOZ) also known as the Affordable Housing Overlay (AHO) in the City of Marina, CA (City). The AHO serves to implement Housing Element programs and address housing needs within the City of Marina by encouraging the development of very low income and low-income affordable housing and new multi-family residential development. With the passage of SB 743, Vehicle Miles Travelled (VMT) has become an important indicator for determining if new development will result in a "significant transportation impact" under the California Environmental Quality Act (CEQA). This memorandum summarizes the VMT analysis and resultant findings for the proposed AHO.

Methodology and Assumptions

The residential land use policy of the proposed AHO was analyzed per the City of Marina's Draft SB 743 Guidelines (December 2020) to determine whether the zoning overlay affecting 23 parcels will result in transportation related significant impacts. As the overlay zone encompasses multiple parcels across the City, each parcel was analyzed separately to determine impacts for the AHO as a whole. According to the City's Guidelines, each parcel in the AHO was screened to determine the need for detailed VMT analysis per the following criteria:

- Map Based Screening
- Proximity to High Quality Transit

If a parcel was not able to be screened out from a VMT analysis based on the screening criteria listed above, then project specific features were considered to perform a more detailed screening analysis based on the following additional criteria:

- Affordable Housing
- Increased Residential Density

Analysis

The following sections detail the analysis completed:

Map Based Screening

The City of Marina Residential VMT per Capita screening map included as part of the City's SB 743 analysis Guidelines was overlaid with the 23 AHO parcels to determine if any of the parcels are located in a Traffic Analysis Zone (TAZ) that is anticipated to produce VMT per capita below the City's threshold. **Exhibit 1** shows the results of this overlay. As shown in **Exhibit 1**, there are two parcels located in TAZ 824, which

has a VMT per capita below the City's threshold. Therefore, these two parcels presumed to have VMT per capita below the City's threshold and therefore result in a less than significant impact:

- 032-291-053-000
- 032-291-054-000

Proximity to High Quality Transit

The City's implementation guidelines state that projects within half-mile of an existing major transit stop (maintaining a service interval frequency of 15 minutes or less during the morning and afternoon commute peaks) can be presumed to result in a less-than significant transportation impact. High quality transit provides a viable option for many to replace automobile trips with transit trips resulting in an overall reduction in VMT.

The Marina Transit Exchange located at 280 Reservation Road was identified as a high-quality transit stop with service intervals during the peak commute periods of 15 minutes or less. **Exhibit 2** shows the location of the Marina Transit Exchange, as well as a half-mile buffer around the station. **Exhibit 2** also identifies the 23 AHO parcels overlaid on the Transit exchange half-mile buffer. The following 16 parcels were identified as being located within the half-mile buffer of the Marina Transit Exchange and therefore presumed to result in a less than significant VMT impact:

- 032-121-006-000
- 032-121-018-000
- 032-121-019-000
- 032-121-020-000
- 032-121-024-000
- 032-121-025-000
- 032-192-051-000
- 032-201-003-000
- 032-201-004-000
- 032-201-005-000
- 032-201-031-000
- 032-212-016-000
- 032-291-053-000
- 032-291-054-000
- 032-303-015-000
- 032-303-039-000

Note that the 2 parcels screened out from map-based screening are also listed here and identified as being with a half-mile of quality transit.

Project Specific Features

After performing the map based and transit proximity screening analysis, 7 out of the 23 parcels in the AHO require additional analysis and the incorporation of project-specific features into the analysis. One the assumptions associated with the map-based screening is that a project's VMT per capita is reflected by the average of a given TAZ within the travel demand model which can encompass a much larger area than just a single project. However, not all project-specific features are able to be incorporated into the travel demand model and require additional off-model analyses for a project's VMT per capita to be fully analyzed. To that end, there are two specific characteristics of the AHO that are not accounted for in the model. First, the AHO parcels will be developed with a minimum of 12-percent affordable housing and second, the AHO will significantly increase allowed density of residential units for each of the parcels included in the AHO. The inclusion of an affordable housing component and increased residential density are both recognized project characteristics that are VMT reducing and thus may allow for the remaining 7 parcels to be presumed to have a less than significant impact on VMT.

Affordable Housing

This analysis used the average VMT per capita from a parcel's TAZ and then calculated an estimated reduction in that VMT based on 12-percent affordable housing, as shown in **Table 1**. The resulting reduced VMT per capita was then compared to the City's threshold of 10.9 VMT per capita. As shown in **Table 1**, the following 3 parcels are presumed to have a less than significant impact based on the 12 percent VMT reduction from the affordable housing component of the AHO:

- 032-141-029-000
- 032-141-030-000
- 032-421-014-000

Table 1 – Affordable Housing VMT Reduction Calculation

APN	TAZ	Existing VMT/Capita	Affordable Housing Reduction (12%)	Adjusted VMT/Capita	VMT Status (City Threshold = 10.9)
032-141-029-000	873	11.19	-1.34	9.85	Below Threshold
032-141-030-000	873	11.19	-1.34	9.85	Below Threshold
032-421-014-000	812	11.64	-1.40	10.24	Below Threshold

Increased Residential Density

For the four parcels that still have VMT per capita above the City's threshold after incorporating the affordable housing reduction, the increased residential density features associated with the AHO were incorporated into the analysis to further reduce the parcel's VMT per capita. This analysis used the average VMT per capita from a parcel's TAZ and the associated reduction for affordable housing before then calculating an estimated reduction in that VMT based on an increase in residential density. The California Air Pollution Control Officers Association (CAPCOA) has defined the following relationship between an increase in residential density and a reduction in VMT[1]:

$$A = \frac{B - C}{C} \times D$$

Where:

A is the percent reduction in VMT (capped at 30 percent per CAPCOA guidance)
B is the new/proposed residential density of a project (du/acre)
C is the old/existing residential density (or US average of 9.1 du/acre)
D is the elasticity of VMT with respect to residential density (D=-0.22)

Each parcel was analyzed individually based on its existing density and proposed density as summarized in **Table 2**. As shown in **Table 2**, the calculated percent reduction far exceeds the maximum reduction of 30% for all four parcels. Therefore, the reduction applied to the VMT per capita for each of the four parcels was 30%.

[1] *Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health Equity (December 2021) Measure T-1 p.85*

Table 2 – Increased Residential Density VMT Reduction Calculation Values

APN	Proposed Density (B)	Existing Density (C)	Elasticity	Calculated Percent Reduction	Assumed Percent Reduction
032-121-042-000	50	13.9	-0.22	-57.1%	-30%
032-312-014-000	50	5.2	-0.22	-189.5%	-30%
032-312-019-000	35	3.5	-0.22	-198%	-30%
032-312-032-000	35	3.5	-0.22	-198%	-30%

Using the assumed 30% reduction associated with each of the four parcels, the adjusted VMT per capita was calculated, and the results are summarized in **Table 3.** As shown in **Table 3**, with this expected reduction in VMT from increased residential density, the following remaining 4 parcels of the AHO are presumed to result in a less than significant impact on VMT:

- 032-121-042-000
- 032-312-014-000
- 032-312-019-000
- 032-312-032-000

Note that if the average U.S. home density of 9.1 du/acre was used instead of existing densities, as well as the minimum density of 30 du/acre for each of the 23 parcels identified in the AHO instead of the proposed densities identified in **Table 2**, a 30% reduction of VMT per capita would still have been applied.

Table 3 – Increased Residential Density VMT Reduction Calculation

APN	TAZ	Average VMT/Capita	Affordable Housing Reduction[1]	Residential Density Reduction[2]	Adjusted VMT/Capita	VMT Status (City Threshold = 10.9)
032-121-042-000	856	13.68	-1.64	-4.10	7.93	Below Threshold
032-312-014-000	817	16.87	-2.02	-5.06	9.78	Below Threshold
032-312-019-000	817	16.87	-2.02	-5.06	9.78	Below Threshold
032-312-032-000	817	16.87	-2.02	-5.06	9.78	Below Threshold

1. The affordable housing reduction, calculated at 12% of the existing VMT/capita was also applied to these parcels.
2. The residential density reduction is based off existing densities of 13.9, 5.2, 3.5, and 3.5 du/acre and future max density of 50, 50, 35, 35 du/acre for each parcel, respectively. Using the average U.S. home density of 9.1 du/acre instead of existing densities would still result in a 30% reduction of VMT.

Findings

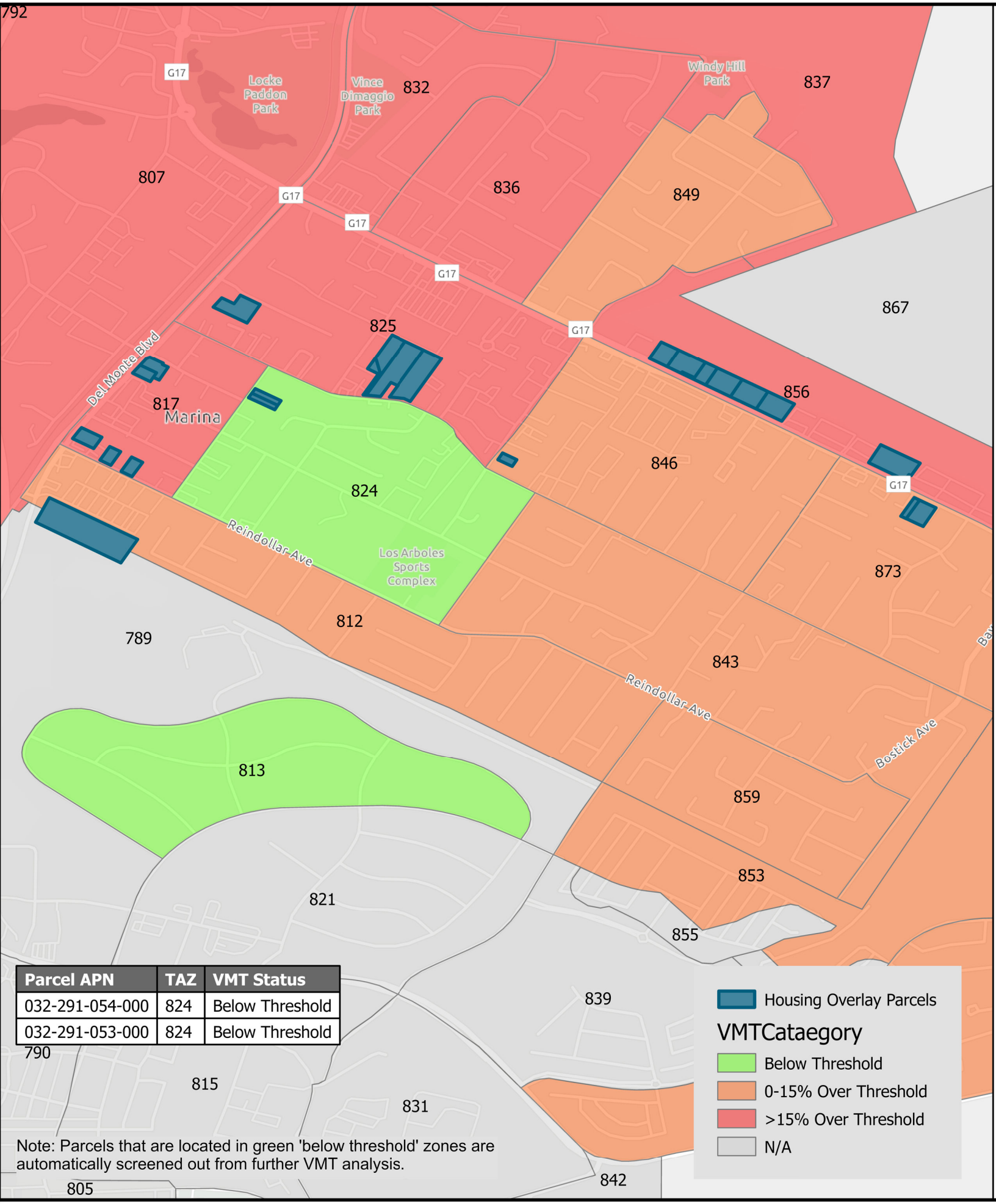
Based on the results of this analysis, the following findings are made regarding the VMT impact of the 23 AHO parcels:

- 2 parcels were screened out based on map-based screening
- 14 additional parcels were screened out based on their proximity to high quality transit
- Of the remaining seven parcels, 3 are presumed to result in a less than significant transportation impact after a 12-percent affordable housing reduction was applied to their existing VMT per capita of their respective model TAZs
- The four remaining parcels are presumed to result in a less than significant transportation impact after applying an additional VMT per capita reduction associated with the increased residential density in addition to the affordable housing reduction based on the CAPCOA guidance.
- Therefore, all 23 parcels included in the AHO for the City of Marina are presumed to result in a less than significant transportation impact

Attachments:

Exhibit 1 – Map Based Screening Analysis
Exhibit 2 – Parcel Proximity to High Quality Transit

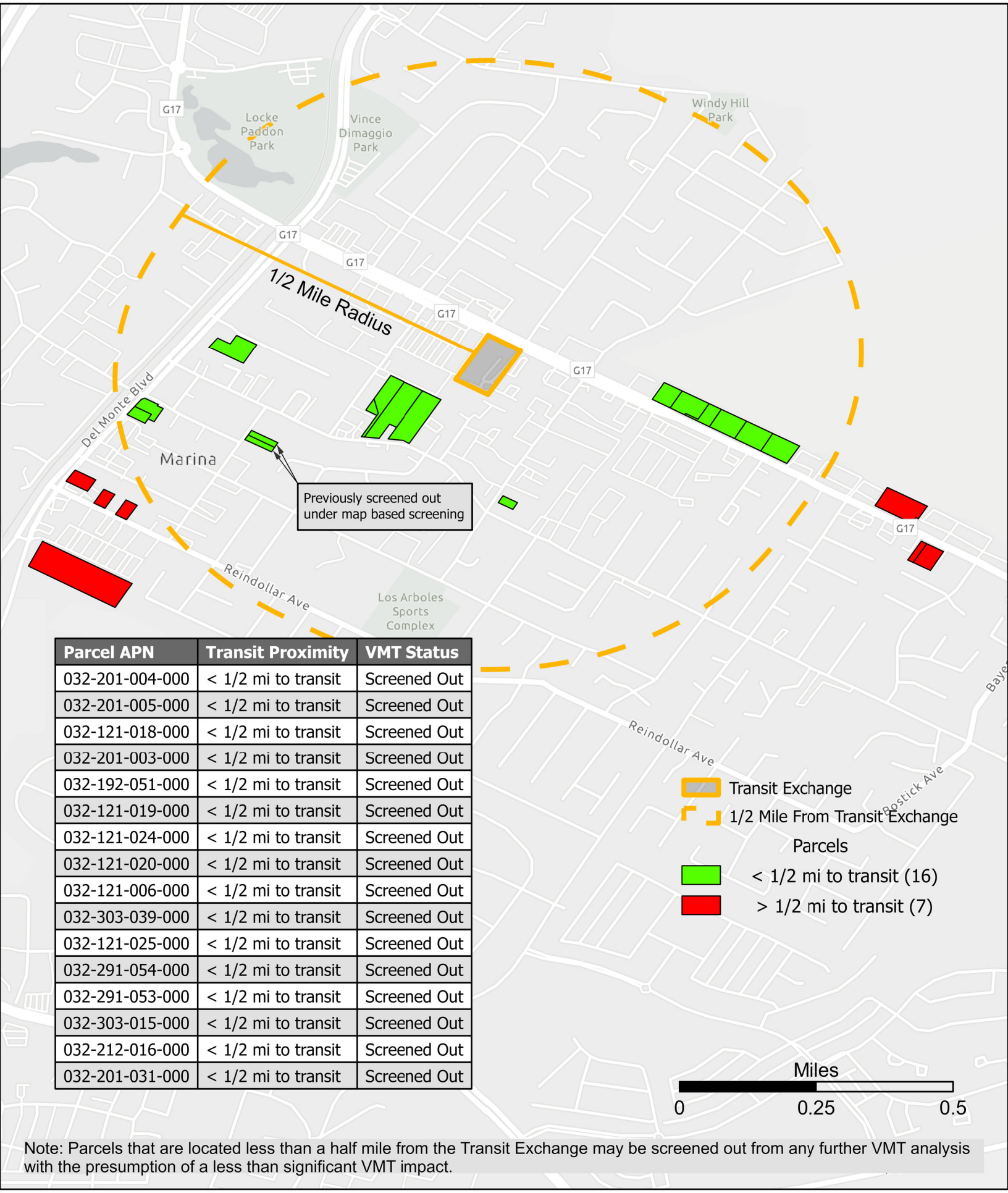
City of Marina Housing Overlay Zone VMT Analysis



Kimley»Horn

Exhibit 1: Map Based Screening Analysis

City of Marina Housing Overlay Zone VMT Analysis



Parcel APN	Transit Proximity	VMT Status
032-201-004-000	< 1/2 mi to transit	Screened Out
032-201-005-000	< 1/2 mi to transit	Screened Out
032-121-018-000	< 1/2 mi to transit	Screened Out
032-201-003-000	< 1/2 mi to transit	Screened Out
032-192-051-000	< 1/2 mi to transit	Screened Out
032-121-019-000	< 1/2 mi to transit	Screened Out
032-121-024-000	< 1/2 mi to transit	Screened Out
032-121-020-000	< 1/2 mi to transit	Screened Out
032-121-006-000	< 1/2 mi to transit	Screened Out
032-303-039-000	< 1/2 mi to transit	Screened Out
032-121-025-000	< 1/2 mi to transit	Screened Out
032-291-054-000	< 1/2 mi to transit	Screened Out
032-291-053-000	< 1/2 mi to transit	Screened Out
032-303-015-000	< 1/2 mi to transit	Screened Out
032-212-016-000	< 1/2 mi to transit	Screened Out
032-201-031-000	< 1/2 mi to transit	Screened Out

Note: Parcels that are located less than a half mile from the Transit Exchange may be screened out from any further VMT analysis with the presumption of a less than significant VMT impact.

Appendix I

Sacred Lands File Search Results

NATIVE AMERICAN HERITAGE COMMISSION

CHAIRPERSON
Laura Miranda
Luiseño

VICE CHAIRPERSON
Reginald Pagaling
Chumash

PARLIAMENTARIAN
Russell Attebery
Karuk

SECRETARY
Sara Dutschke
Miwok

COMMISSIONER
William Mungary
Paiute/White Mountain Apache

COMMISSIONER
Isaac Bojorquez
Ohlone-Costanoan

COMMISSIONER
Buffy McQuillen
Yokayo Pomo, Yuki, Nomlaki

COMMISSIONER
Wayne Nelson
Luiseño

COMMISSIONER
Stanley Rodriguez
Kumeyaay

EXECUTIVE SECRETARY
Raymond C. Hitchcock
Miwok/Nisenan

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

October 4, 2022

James Williams
City of Marina

Via Email to: jwilliams@rinconconsultants.com

Re: Native American Consultation, Pursuant to Senate Bill 18 (SB18), Government Codes §65352.3 and §65352.4, as well as Assembly Bill 52 (AB52), Public Resources Codes §21080.1, §21080.3.1 and §21080.3.2, City of Marina Affordable Housing Overlay Project, Monterey County

Dear Mr. Williams:

Attached is a consultation list of tribes with traditional lands or cultural places located within the boundaries of the above referenced counties or projects.

Government Codes §65352.3 and §65352.4 require local governments to consult with California Native American tribes identified by the Native American Heritage Commission (NAHC) for the purpose of avoiding, protecting, and/or mitigating impacts to cultural places when creating or amending General Plans, Specific Plans and Community Plans.

Public Resources Codes §21080.3.1 and §21080.3.2 requires public agencies to consult with California Native American tribes identified by the Native American Heritage Commission (NAHC) for the purpose of avoiding, protecting, and/or mitigating impacts to tribal cultural resources as defined, for California Environmental Quality Act (CEQA) projects.

The law does not preclude local governments and agencies from initiating consultation with the tribes that are culturally and traditionally affiliated within your jurisdiction. The NAHC believes that this is the best practice to ensure that tribes are consulted commensurate with the intent of the law.

Best practice for the AB52 process and in accordance with Public Resources Code §21080.3.1(d), is to do the following:

Within 14 days of determining that an application for a project is complete or a decision by a public agency to undertake a project, the lead agency shall provide formal notification to the designated contact of, or a tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, which shall be accomplished by means of at least one written notification that includes a brief description of the proposed project and its location, the lead agency contact information, and a notification that the California Native American tribe has 30 days to request consultation pursuant to this section.

The NAHC also recommends, but does not require that lead agencies include in their notification letters, information regarding any cultural resources assessment that has been completed on the area of potential affect (APE), such as:

1. The results of any record search that may have been conducted at an Information Center of the California Historical Resources Information System (CHRIS), including, but not limited to:

    - A listing of any and all known cultural resources have already been recorded on or adjacent to the APE, such as known archaeological sites;
    - Copies of any and all cultural resource records and study reports that may have been provided by the Information Center as part of the records search response;
    - Whether the records search indicates a low, moderate or high probability that unrecorded cultural resources are located in the APE; and
    - If a survey is recommended by the Information Center to determine whether previously unrecorded cultural resources are present.

2. The results of any archaeological inventory survey that was conducted, including:

    - Any report that may contain site forms, site significance, and suggested mitigation measures.

      All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum, and not be made available for public disclosure in accordance with Government Code Section 6254.10.

3. The result of the Sacred Lands File (SFL) check conducted through the Native American Heritage Commission was negative.

4. Any ethnographic studies conducted for any area including all or part of the potential APE; and

5. Any geotechnical reports regarding all or part of the potential APE.

Lead agencies should be aware that records maintained by the NAHC and CHRIS is not exhaustive, and a negative response to these searches does not preclude the existence of a tribal cultural resource. A tribe may be the only source of information regarding the existence of a tribal cultural resource.

This information will aid tribes in determining whether to request formal consultation. In the event, that they do, having the information beforehand well help to facilitate the consultation process.

If you receive notification of change of addresses and phone numbers from tribes, please notify the NAHC. With your assistance we can assure that our consultation list remains current.

If you have any questions, please contact me at my email address:

Cody.Campagne@nahc.ca.gov.

Sincerely,

Cody Campagne

Cody Campagne
Cultural Resources Analyst

Attachment

Native American Heritage Commission
Tribal Consultation List
Monterey County
10/4/2022

Amah Mutsun Tribal Band
Valentin Lopez, Chairperson
P.O. Box 5272
Galt, CA, 95632
Phone: (916) 743 - 5833
vlopez@amahmutsun.org

Costanoan
Northern Valley Yokut

Amah MutsunTribal Band of Mission San Juan Bautista
Irene Zwierlein, Chairperson
3030 Soda Bay Road
Lakeport, CA, 95453
Phone: (650) 851 - 7489
Fax: (650) 332-1526
amahmutsuntribal@gmail.com

Costanoan

Costanoan Rumsen Carmel Tribe
Tony Cerda, Chairperson
244 E. 1st Street
Pomona, CA, 91766
Phone: (909) 629 - 6081
Fax: (909) 524-8041
rumsen@aol.com

Costanoan

Esselen Tribe of Monterey County
Tom Little Bear Nason, Chairman
P. O. Box 95
Carmel Valley, CA, 93924
Phone: (831) 659 - 2153
Fax: (831) 659-0111
TribalChairman@EsselenTribe.org

Costanoan
Esselen

Indian Canyon Mutsun Band of Costanoan
Ann Marie Sayers, Chairperson
P.O. Box 28
Hollister, CA, 95024
Phone: (831) 637 - 4238
ams@indiancanyons.org

Costanoan

Indian Canyon Mutsun Band of Costanoan
Kanyon Sayers-Roods, MLD Contact
1615 Pearson Court
San Jose, CA, 95122
Phone: (408) 673 - 0626
kanyon@kanyonkonsulting.com

Costanoan

Ohlone/Costanoan-Esselen Nation
Louise Miranda-Ramirez, Chairperson
P.O. Box 1301
Monterey, CA, 93942
Phone: (408) 629 - 5189
ramirez.louise@yahoo.com

Costanoan
Esselen

Wuksache Indian Tribe/Eshom Valley Band
Kenneth Woodrow, Chairperson
1179 Rock Haven Ct.
Salinas, CA, 93906
Phone: (831) 443 - 9702
kwood8934@aol.com

Foothill Yokut
Mono

Kakoon Ta Ruk Band of Ohlone-Costanoan Indians of the Big Sur Rancheria
Isaac Bojorquez, Chairman
PO Box 541
Esparto, CA, 95627
Phone: (530) 723 - 2380
Ohlone_1@yahoo.com

Ohlone

Rumsen Am:a Tur:ataj Ohlone
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Costanoan

This list is current only as of the date of this document and is based on the information available to the Commission on the date it was produced. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is applicable only for consultation with Native American tribes under Government Code Sections 65352.3, 65352.4 et seq. and Public Resources Code Sections 21080.3.1 for the proposed City of Marina Affordable Housing Overlay Project, Monterey County.