Seaside 2040

Draft Environmental Impact Report
SCH#2017071021

prepared by

City of Seaside
Community and Economic Development Department
440 Harcourt Avenue
Seaside, California 93955
Contact: Andrew Myrick, CEcD, EDFP,
Economic Development and Community Planning Manager

prepared with the assistance of

Rincon Consultants, Inc.
80 Garden Court, Suite 240
Monterey, California 93940

Oc**tober 2023**

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Acronyms and Abbreviations

AAQS	Ambient Air Quality Standards
AB	California Assembly Bill
ADU	Accessory Dwelling Unit
ALP	Airport Layout Plan
AMBAG	Association of Monterey Bay Area Governments
AMP	Airport Master Plan
APCDs	Air Pollution Control Districts
ASR	Aquifer Storage and Recovery
ATP	Active Transportation Plan
AWSC	All-Way Stop-Controlled
BMPs	Best Management Practices
BRP	Fort Ord Base Reuse Plan
BRT	Bus Rapid Transit
BTP	Bicycle Transportation Plan
Btu	British Thermal Units
CAA	Federal Clean Air Act
CAAQS	California Ambient Air Quality Standards
CalEPA	California Environmental Protection Agency
CAL-FIRE	California Department of Forestry and Fire Protection
California Register	California Register of Historical Resources
Caltrans	California Department of Transportation
CALUP	Comprehensive Airport Land Use Plans
CARB	California Air Resources Board
CASGEM	California Statewide Groundwater Elevation Monitoring
CAT	Climate Action Team
CCA	California Coastal Act
CDFA	California Department of Food and Agriculture
CDFW	California Department of Fish and Wildlife
CDPH	California Department of Public Health
CEC	California Energy Commission
CEQA	California Environmental Quality Act

CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CERS	California Environmental Reporting System
CESA	California Endangered Species Act
CFGC	California Fish and Game Code
CFR	Code of Federal Regulations
CGS	California Geological Survey
CH_4	Methane
CIP	Capital Improvement Plan
CKH Act	Cortese Knox Hertzberg Local Government Reorganization Act of 2000
CNDDB	California Natural Diversity Data Base
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CO	Carbon Monoxide
CPI	Capital Improvements Plan
CPRC	California Public Resources Code
CRHR	California Register of Historical Resources
CRMP	Coordinated Resource Management Planning program
CSUMB	California State University Monterey Bay
CUPA	Certified Unified Program Agency
CWA	Clean Water Act
dBA	Decibels with an A weighted measure
DOC	California Department of Conservation
DOF	California Department of Finance
DPR	California Department of Pesticide Regulations
DTSC	Department of Toxic Substances Control
DWR	California Department of Water Resources
EDC	Economic Development Conveyance
EDD	California Employment Development Department
EIR	Environmental Impact Report
EMS	Emergency Medical Services
ESA	Endangered Species Act
ESCA	Environmental Services Cooperative Agreement
ESCP	Erosion and Sediment Control Plan

FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FFA	Federal Facilities Agreement
FHWA	Federal Highway Administration
FIFRA	Federal Insecticide, Fungicide, and Rodenticide Act
FIRM	Flood Insurance Rate Map
FPM	Fine Particulate Matter (PM_{10} and $PM_{2.5}$)
FORA	Fort Ord Reuse Authority
FORTAG	Fort Ord Regional Trail and Greenway
FRA	Federal Railroad Administration
GHG	Green House Gas
GWh	Gigawatt-hours
HCP	Habitat Conservation Plan
HFC	Hydroflourocarbons
HMMS	Hazardous Materials Management Services
HMP	Habitat Management Plan
HSWA	Hazardous and Solid Waste Act
HUD	United States Housing and Urban Development
HWCL	California Hazardous Waste Control Law
ICS	Incident Command Services
LACM	Los Angeles County Museum
LAFCO	Local Agency Formation Commission
LAX	Los Angeles International Airport
LBP	Lead-Based Paint
LCP	Local Coastal Plan
Ldn	Day-Night average level
LHMP	Local Hazards Mitigation Plan
LID	Low Impact Development
LOS	Level of Service
LUST	Hazards regarding cleanup sites
MBARD	Monterey Bay Air Resources District
MBUAPCD	Monterey Bay Unified Air Pollution Control District

MCCWPP	Monterey County Community Wildfire Protection Plan
MCE	Maximum Credible Earthquake
MCWD	Marina Coast Water District
MEC	Army Munitions and Explosives of Concern
MMAA	Master Mutual Aid Agreement
MMT	Million Metric Tons
MPO	Metropolitan Planning Organization
MPRECC	Monterey Peninsula Regional Emergency Coordination Center
MPREOC	Monterey Peninsula Regional Emergency Operations Center
MPWMD	Monterey Peninsula Water Management District
MRWPCA	Monterey Regional Water Pollution Control Agency
MST	Monterey-Salinas Transit
MTP	Metropolitan Transportation Plan
N_2O	Nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NCCAB	North Central Coast Air Basin
NCP	National Contingency Plan
NEPA	National Environmental Policy Act
NEPA	National Environmental Protection Act
NHPA	National Historic Preservation Act
NOAA	National Oceanic Atmospheric Administration
NOP	Notice of Preparation
NO_x	Nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
NPPA	Native Plant Protection Act
NPS	National Park Service
NRHP	National Register of Historic Places
NWIC	Northwest Information Center
O_3	Ozone
OES	Office of Emergency Services
OSHA	Occupational Health and Safety Administration

Pb	Lead
PFC	Perfluorocarbons
PG&E	Pacific Gas and Electric
POST	California Commission on Peace Officer Standards and training
PPV	Peak Particle Velocity
PSD	Prevention of Significant Deterioration
RA-ROD	Remedial Action ROD
RCRA	Resource Conservation and Recovery Act
RIDES	American Disabilities Act Paratransit Program
RIDES	Paratransit
RMS	Root mean square
ROG	Reactive organic gases
ROW	Rail-right-of-way
RTP/SCS	Regional Transportation Plan Sustainable Communities Strategy
RUDG	Regional Urban Design Guidelines
RWQCB	Central Coast Regional Water Quality Control Board
SARA	Superfund Amendments and Reauthorization Act
SB	Senate Bill
SCS	Sustainable Communities Strategy
SEMS	Standardized Emergency Management System
SF_6	Sulfur hexafluoride
SFBAAB	San Francisco Bay Area Air Basin
SFD	Seaside Fire Department
SHMP	State Multi-Hazard Mitigation Plan
SOHP	State Office of Historic Preservation
SLF	Sacred Lands File
SLOAPCD	San Luis Obispo Air Pollution Control District
SMC	Seaside Municipal Code
SMWS	Seaside Municipal Water System
SO_2	Sulfur Dioxide
SOC	Statement of Overriding Considerations
SSC	Species of Special Concern
STIP	Statewide Transportation Improvement Plan

SUV	Sports Utility Vehicle
SWPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	Toxic Air Contaminant
TAMC	Transportation Agency for Monterey
TDM	Transportation Demand Management
TIS	Transportation Impact Studies
TWSC	Two-Way Stop-Controlled
UCMP	University of California Museum of Paleontology
USACE	United States Army Corps of Engineers
USDA NRCS	United States Department of Agriculture, Natural Resource Conservation Service
USDA	United States Department of Agriculture
USDOT	United States Department of Transportation
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geographical Survey
UST	Underground Storage Tank
VdB	Vibration decibels
VMT	Vehicle Miles Traveled
WSA	Water supply assessment

Executive Summary

This section summarizes the characteristics of Seaside's general plan update (also referenced as "Seaside 2040" or "proposed project") as well as the environmental impacts, project alternatives, recommended mitigation measures, and areas of controversy/issues to be resolved for Seaside 2040.

Project Synopsis

Lead Agency/Applicant Contact Person

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Project Description

Seaside 2040 is a comprehensive update of the City's 2004 General Plan and established the community's vision for future development of the City through 2040. Pursuant to Government Code Section 65302, the State of California requires that General Plans contain specific elements, including Land Use, Circulation, Housing, Conservation, Open Space, Noise, Safety, and Environmental Justice. As part of the general plan process, Seaside 2040 has been reorganized and reformatted, with updated goals and policies that reflect the community vision of Seaside. The City's General Plan Land Use Map has also been updated to reflect the community's vision and guiding principles that thread through Seaside 2040:

- An inclusive city for all
- One city; a destination
- A city where economic prosperity is shared by all
- An economically diverse city
- A city that celebrates and learns from its history
- A city with a downtown; a city with distinct and complete neighborhoods; a city with a range of housing options
- A city with affordable housing
- An active city
- A city with supportive services
- A healthy city
- A city with a focus on active transportation
- A safe city; a creative city
- A sustainable, resilient city; an environmentally-sensitive city
- A responsible, transparent, and responsive city

Growth in the City of Seaside would occur regardless of the proposed General Plan Update. Seaside 2040 has also identified a series of major strategies and improvements that should occur over the planning horizon to better focus and address this anticipated growth.

The growth and development of Seaside would be guided by the 2040 General Plan. The 2040 General Plan would support thoughtful, planned growth and well-designed neighborhoods that

respect and complement the natural environment. Growth within the City limits supported by the 2040 General Plan with consideration of the ability to provide public services, fiscal impacts, and infrastructure capacity including water and wastewater capacity and transportation. Development under the 2040 Plan would encourage a broad mix of uses that creates an inviting and dynamic Downtown Seaside; allow limited neighborhood-oriented retail or offices, maintain and enhance existing residential neighborhoods; encourage and incentivize the renovation of older multi-family buildings to more contemporary standards; encourage new infill housing in multifamily residential areas that would be integrated with older development nearby to expand the diversity of housing; promote a variety of building types to serve a broad cohort of the City and region's population; continue the continued operation and success of the Auto Center; and carefully integrating open space into project design and support innovative, publicly-accessible park design in Downtown.

The General Plan Update is organized into 13 Chapters, including an introduction, vision and guiding principles setting, and 11 General Plan Chapters: Land Use and Community Design, Economic Development, Housing, Mobility, Parks and Open Space, Conservation, Healthy and Sustainable Community, Community Facilities and Infrastructure, Safety, Noise, and Implementation.

Project Objectives

Seaside 2040 describes the vision laid out by the community for Seaside through 2040. Section 2, *Project Description*, includes complete vision provided in Seaside 2040. A summary of this 2040 Vision is provided below:

- Create a vibrant Downtown Seaside
- Transform Fremont Boulevard into a mixed-use corridor
- Enhance the Auto Center for diverse employment
- Preserve established neighborhoods
- Renovate multifamily areas with a greater diversity of housing
- Build Campus Town adjacent to CSUMB
- Develop a mixed-use gateway at "Main Gate"
- Create entryways to the City's key amenities and destinations
- Develop Seaside East with sustainable neighborhoods and the preservation of natural areas
- Construct new and enhance existing parks
- Create an active trail network
- Preserve habitat
- Create a multimodal network of complete streets
- Construct a complete bicycle network
- Ensure a sustainable water supply to support economic development

In order to achieve the realization of the vision for Seaside, the City will focus on following 19 guiding principles, as summarized in Chapter 2, Vision and Guiding Principles, of the draft General Plan.

Required Discretionary Approvals

With recommendations from the City's Planning Commission, the Seaside City Council will need to take the following discretionary actions in conjunction with the proposed project:

- Certification of the Final EIR
- Approval of the proposed Seaside 2040

Seaside 2040 includes an update to the City's current Housing Element, under another cover. The Housing Element must be updated on a regular basis and more frequently than the balance of the General Plan and is currently in its 6th Cycle.

Areas of Controversy/Issues to be Resolved

The City issued a Notice of Preparation on July 12, 2017 and held a scoping meeting on July 26, 2017. The scoping period for this EIR was between July 12, 2017 and August 11, 2017, during which interested agencies and the public could submit responses about the scope and contents of the EIR for the proposed project. The responses received focused on the following issues in the bullet points below, which the City considered in the process of preparing the EIR. Additional details on these and other NOP responses are available for review in Appendix A of the Draft EIR.

- Caltrans: Supports local development that is consistent with State planning priorities intended to promote equity, strengthen the economy, protect the environment, and promote public health and safety. Projects that support smart growth principles which include improvements to pedestrian, bicycle, and transit infrastructure (or other key Transportation Demand Strategies) are supported by Caltrans and are consistent with our mission, vision, and goals.
- Caltrans: Seeks to reduce vehicle trips and new vehicle miles traveled associated with the development by appropriate measures that avoid, minimize, or mitigate impacts through smart mobility community design and multimodal demand strategies.
- Caltrans: Supports payment of the adopted TAMC development impact fees as required to mitigate any cumulative impacts for future development projects.
- Caltrans: Commends the Seaside General Plan's guiding principles with a focus on Active Transportation. Supports six smart mobility principles of location efficiency, reliable mobility, health and safety, environmental stewardship, social equity, and robust economy.
- County of Monterey Health Department PEP Unit: Any traffic circulation analysis should assess provisions for safe and adequate pedestrian and bicycle routes for the community which specifically provide safe routes to schools for children and link up effectively with existing or future, regional assets for walking and biking.
- County of Monterey Health Department PEP Unit: Residents should have easy access to stores that sell healthy food. Traffic circulation analysis should assess current and proposed commercial parcels where grocery stores are likely to be located to ensure they are easily accessible by pedestrians, cyclists, as well as local vehicle traffic.
- County of Monterey Health Department PEP Unit: We encourage Seaside to size and site parks, recreation, and open space elements to be adequate and distributed throughout the community so they are accessible to all residents.

- County of Monterey Health Department PEP Unit: Crime Prevention Through Environmental Design is a strategy for environmental and building design that can improve safety and result in crime prevention.
- California Department of Conservation (DOC), Division of Oil, Gas, and Geothermal Resources-District 3: Possesses records regarding oil and gas wells drilled and operated in the State of California. The Division has record of two wells that are located within the plan boundary. The wells may have been plugged to meet the standards applicable at the time of abandonment, however, may not meet current Division regulations. The Division does not recommend that any structures be built that would impede access to plugged and abandoned wells. It is suggested that the wells be unearthed, their locations GPS and that information be supplied to the Division, and the wells be tested for leakage.
- Access to Healthy Food: Raised issue of access to Healthy Foods, including access outside of the Fremont Corridor
- Affordable Housing should be provided
- Alternatives: Include any other alternative scenarios (such as growth of CSUMB) that could provide a similar opportunity for economic growth without disturbing or developing former Fort Ord land, between the S Boundary Road and Gigling Road east of General Jim Moore Boulevard.
- Land Use: Explore options that focus on connecting parks, including the use of alleyways and public spaces that can be utilized for more than one purpose.
- Land Use: Explain any legal requirements associated with the closure of Fort Ord that would require the development of land between the S Boundary Road and Giggling Road east of General Jim Moore Boulevard.
- Regional Hydrology and Water Supply: The environmental analysis should respond to the following question: "What are the short term and long term effects on the regional hydrology and water supply, particularly given the complex arrangement of Seaside water providers?"
- Transportation/Circulation: Circulation as a whole be reviewed; specifically, impacts associated with CSUMB restricting or forcing traffic off-campus and into the City of Seaside
- Transportation/Circulation: Include a minimum Class II bikeway from north Fremont Boulevard up Broadway Avenue to General Jim Moore Boulevard then along General Jim Moore Boulevard to CSUMB. There are approximately six schools along that route and multiple locations where a cyclist is pushed directly into lanes of traffic by the loss of even a shoulder to cycle on.
- Transportation/Circulation: Potential policies that may help provide options to address the high amount of on street parking as well as the inability of a wheelchair or stroller to travel on sidewalks.
- Walkability: Raised issue of walkability in the core of Seaside
- Fort Ord Reuse Authority (FORA) Base Reuse Plan: Include a consistency review of the 2040 General Plan with the FORA Base Reuse Plan[1]
- Visual Resources: Requested the EIR consider viewscapes
- Visual Resources: The environmental analysis should address the question: "Where are popular and valuable public places to look out over the natural landscapes of the Monterey Bay and Monterey Peninsula region, and how would the project change the views from these places?"

[1] Please note that FORA was legislatively terminated on June 30, 2020, and responsibilities for land management transferred to the City of Seaside, among other public agencies.

The analytic elements and procedures, as well as the level of rigor, are applicable to this EIR and should be included in the same.

The decision to approve, approve with modifications (including mitigation measures), or deny the proposed project or one of the alternatives will be made by the City of Seaside decision makers after certification of the Final EIR. Such decisions will include whether to approve Alternative 1 (No Project/Continue using 2004 General Plan under 2040 Buildout Conditions), Alternative 2 (Proposed Seaside 2040 with Reduced Density), Alternative 3 (Multi-Family Residential Focused), Alternative 4 (Increased Residential and Commercial Density) or some variation thereof. The EIR has proposed several potentially feasible mitigation measures, as summarized in Table ES-1 below, and detailed in the individual resource chapters of this EIR. The City's decision makers will have to determine whether such mitigation measures are feasible. If such mitigation measures are determined to be infeasible, and no additional mitigation is identified, such impacts would remain significant and unavoidable.

Alternatives

As required by Section 15126 (d) of the State CEQA Guidelines, this EIR examines a reasonable range of alternatives to the 2040 General Plan. The alternatives studied in the EIR include the following:

- Alternative 1: No Project/Continue using 2004 General Plan under 2040 Buildout Conditions
- Alternative 2: Proposed Seaside 2040 with Reduced Density
- Alternative 3: Multi-Family Residential Focused
- Alternative 4: Increased Residential and Commercial Density

The California Environmental Quality Act (CEQA) requires that an environmentally superior alternative be identified among those analyzed. When taking into account the individual resource areas, Alternative 3 is the environmentally superior alternative, followed by Alternative 2. However, as discussed in Section 6, *Alternatives*, there are different tradeoffs for each alternative, which are dependent upon the specific resource area. Individuals and the decision-makers may weigh these resources areas differently.

Summary of Impacts and Mitigation Measures

Table ES-1 lists the environmental impacts of Seaside 2040, the proposed mitigation measures, and residual impacts or significance after mitigation. Impacts are defined as significant, unavoidable adverse impacts; significant, adverse impacts that can be feasibly mitigated to less than significant levels; adverse impacts that are less than significant; and no impact.

Table ES-1 Summary of Environmental Impacts and Mitigation Measures

Impact	Mitigation Measure(s)	Significance
Aesthetics		
Impact AES-1. Implementation of Seaside 2040 would facilitate the development of new structures that could affect scenic vistas in the General Plan area. However, compliance with policies in Seaside 2040, the Seaside Municipal Code, and Seaside's LCP would ensure the protection of scenic vistas. Therefore, impacts would be less than significant.	None required.	Less than significant.
Impact AES-2. Development facilitated by Seaside 2040 would result in the loss of scenic mature trees in Seaside and could involve demolition or alteration of historic buildings with scenic value. The impact related to scenic resources would be less than significant with compliance with Seaside 2040 policies and mitigation incorporated to study and protect historic resources. Compliance with policies in Seaside 2040, the Seaside Municipal Code, and Seaside's LCP would help ensure protection of scenic resources along a state-scenic highway. Therefore, impacts would be less than significant.	Refer to Impact CR-1, below, for Mitigation Measure CR-1.	Less than significant.
Impact AES-3. Seaside 2040 emphasizes reuse of existing urbanized lands, infill development on vacant parcels, and new development on urban fringe parcels. The development of such areas would change the visual character of the community, including the scale of the built environment. It would also introduce new visual elements including styles of architecture, landscaping, gateway features, and public art. The changes would, however, be guided by the Seaside 2040 intention to foster a visually coherent, vital, high quality development that increases the vitality of the city overall. Adherence to the Seaside 2040 policies, Seaside 2040 implementation programs, the City's Municipal Code Coastal Implementation Plan, and the design guidelines provided in approved specific plans, old areas will be revitalized and new areas will cohere visually with the older develop. Therefore, impacts that would occur from development on the visual character or quality of the General Plan area and its surroundings would be less than significant.	None required.	Less than significant.

Impact	Mitigation Measure(s)	Significance
Impact AES-4. Development that could be facilitated by Seaside 2040 would introduce new sources of light. However, the City's Zoning Ordinance Code regulates lighting throughout the city. Therefore, potential impacts on daytime or nighttime views resulting from the introduction of new light sources would be less than significant.	None required.	Less than significant.
Impact AQ-1. Projected growth under Seaside 2040 would exceed growth forecasts used to develop the MBARD AQMP. However, future growth forecasts would be updated to reflect the Seaside 2040 land use scenario and Seaside 2040 includes policies to reduce emissions associated with development. In addition, buildout of Seaside 2040 would reduce regional VMT. Therefore, impacts would be less than significant.	None required.	Less than significant.
Impact AQ-2. Implementation of the proposed project would generate additional vehicle trips associated with operation of new development or redevelopment. However, the proposed project would not generate volumes of traffic that would create or contribute to the creation of a CO Hotspot. Localized impacts to air quality would be less than significant.	None required.	Less than significant.
Impact AQ-3. Buildout of Seaside 2040 would result in short-term emission of criteria pollutants. Depending on the time and intensity of construction activities, construction emissions from future projects in the General Plan Area may have a cumulative impact on air quality. Compliance with Seaside 2040 policies would reduce impacts to less than significant.	None required.	Less than significant.
Impact AQ-4. Implementation of Seaside 2040 would not create objectionable odors that would impact a substantial number of people. Impacts related to odors would be less than significant.	None required.	Less than significant.
Impact BIO-1. With implementation of the goals and policies in Seaside 2040 to reduce direct and indirect impacts to listed special-status species and sensitive natural communities, impacts would be avoided and minimized. Impacts would therefore be less than significant.	None required.	Less than significant.

Impact	Mitigation Measure(s)	Significance
Impact BIO-2. While Seaside 2040 would not facilitate development that would directly impact wetland habits, there would be potential for adverse indirect impacts from such development on wetlands and waters under the jurisdiction of the CDFW, RWQCB and/or USACE, as well as for the City's Coastal Zone and therefore subject to the CCA. However, compliance with existing regulations and implementation of 2040 General Plan policies would protect and restore wetlands and waters. Impacts would therefore be less than significant.	None required.	Less than significant.
Impact BIO-3. Development carried out under Seaside 2040 would largely avoid impacts to wildlife movement corridors by conservation of natural areas and linkages contained in policies of Seaside 2040. Impacts would be less than significant.	None required.	Less than significant.
Impact BIO-4. Development proposed by Seaside 2040 would conform with applicable local policies protecting biological resources and underscore their importance with strengthened policy statements. Impacts would be less than significant.	None required.	Less than significant.
Impact BIO-5. The Plan Area includes lands governed by the Fort Ord Installation-wide HMP. Impacts to areas identified in the HMP would be protected by conservation strategies contained in goals and policies of Seaside 2040. Impacts would be less than significant.	None required.	Less than significant.
Impact CR-1. Development facilitated by Seaside 2040 has the potential to impact historical resources. Impacts would be significant and unavoidable despite the implementation of Mitigation Measure CR-1.	**CR-1: Historical Resource Policies and Implementation Programs** The City shall add the following policy and requirement to the General Plan and Zoning Ordinance, as applicable, prior to adoption. The following Policy shall be added to the Conservation Element under Goal C-7: **Historic Resources**. If determined necessary based on preliminary review conducted by City staff, require an historic resource evaluation at the time of project application for projects that would include demolition, relocation, or substantial alteration of buildings, structures, objects, sites, landscape/site plans, or other features that are 45 years of age or older and which have the potential to qualify as historic resources. The following requirement shall be added to the City's Zoning Ordinance: **Historic Resource Evaluations**. Historic Resource Evaluations (as required by Goal C-7 Historic Resources Policy of the	Significant and unavoidable.

Impact	Mitigation Measure(s)	Significance
	General Plan) will meet the following standards: ▪ **Preliminary Review.** If a project involves a built environment resource which is over the age of 45 years old, the Community, Housing, and Economic Development Director or their designee, supported by an architectural historian as needed, shall make a preliminary determination as to whether the building qualifies as a historic resource. "Historic resource" shall mean a property listed or found eligible for listing in the National Register of Historic Places or the California Register of Historical Resources. A property that is eligible for listing in the National Register of Historic Places or the California Register of Historical Resources must retain its historic integrity and meet one of the following eligibility criteria: ▫ Is associated with events that have made a significant contribution to the broad patterns of our history. ▫ Is associated with the lives of persons significant in our past. ▫ Embodies the distinctive characteristics of a type, period or method of construction, or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components may lack individual distinction. ▫ Has yielded, or may be likely to yield, information important in history or prehistory. If the Community, Housing, and Economic Development Director or their designee determines the built environment resource may have to potential to qualify as a historic resource, then a historic resources evaluation shall be required. ▪ **Qualified Historian**. The evaluation will be prepared by a qualified architectural historian or historian who meets the Secretary of the Interior's Professional Qualifications Standards (PQS) in architectural history or history. ▪ **Guidelines for Preparation**. The qualified architectural historian or	

Impact	Mitigation Measure(s)	Significance
	historian will conduct an intensive-level evaluation in accordance with the guidelines and best practices promulgated by the State Office of Historic Preservation to identify any potential historical resources within the proposed project area. All properties 45 years of age or older will be evaluated within their historic context and documented in a technical report. All evaluated properties will be documented on Department of Parks and Recreation Series 523 Forms. The report will be submitted to the City for review. ▪ **Mitigation**. If historical resources are identified in the project site for the proposed development, efforts will be made to ensure that impacts are mitigated to the extent feasible. ▪ Application of mitigation will generally be overseen by a qualified architectural historian or historic architect meeting the PQS, unless unnecessary in the circumstances (e.g., preservation in place). In conjunction with any development application that may affect the historical resource, a report identifying and specifying the treatment of character-defining features and construction activities will be provided to the City for review. ▪ Mitigation measures may include, but are not limited to, compliance with the Secretary of the Interior's Standards for Treatment of Historic Properties and documentation of the historical resource in the form of a Historic American Building Survey (HABS)-Like report. The HABS report will comply with the Secretary of the Interior's Standards for Architectural and Engineering Documentation and will generally follow the HABS Level III requirements, including digital photographic recordation, detailed historic narrative report, and compilation of historic research. The documentation will be completed by a qualified architectural historian or historian who meets the PQS and submitted to the City prior to issuance of any permits for demolition or alteration of the historical resource.	

Impact	Mitigation Measure(s)	Significance
Impact CR-2. Development facilitated by Seaside 2040 has the potential to impact historical and unique archaeological resources. Impacts would be Significant and unavoidable despite the implementation of Mitigation Measure CR-2.	**CR-2: Archaeological Resource Policies and Implementation Programs** The City shall add the following policy and requirement to the General Plan and Zoning Ordinance, as applicable, prior to adoption. The following Policy shall be added to the Conservation Element under Goal C-7: **Archaeological Resources**. If determined necessary based on preliminary review conducted by City staff, require project applicants to complete a cultural resources assessment at the time of project application for all projects with the potential for encountering archaeological or tribal cultural resources, such as those that involve grading, trenching, or other ground disturbance in native soil. The following requirement shall be added to the City's Zoning Ordinance: **Archaeological Resources**. The Community, Housing, and Economic Development Director will conduct a preliminary review to determine whether a project has the potential to encounter archaeological resources by considering and assessing the following: ▪ Archaeological sensitivity of the project area based on the City's Archaeological Sensitivity Map (2004). ▪ Proposed project description, including the nature and depth of ground disturbance. ▪ Past ground disturbance that has occurred in the project area as identified through a review of information that may include but would not be limited to: City records, existing conditions of the project area, or historical aerial imagery. ▪ Documentation of non-native fill, if applicable and available. ▪ Previous archaeological resources studies in the area and records of known archaeological resources, if available. When there is potential to encounter archaeological resources, required cultural Resource Assessments shall meet the following standards: ▪ Cultural resource assessments may include an archaeological pedestrian survey of the development site, if possible, and sufficient background archival research and field sampling to	Significant and unavoidable.

Impact	Mitigation Measure(s)	Significance
	determine whether subsurface prehistoric or historic remains may be present. Archival research should include a records search conducted at the Northwest Information Center (NWIC) and a Sacred Lands File (SLF) search conducted with the Native American Heritage Commission (NAHC). ▪ Cultural resources assessments must be completed by archaeologists meeting the Secretary of the Interior (SOI) standards in archaeology. ▪ Identified prehistoric, or historic archaeological, or tribal cultural remains will be avoided and preserved in place where feasible. Where preservation is not feasible, the significance of each resource will be evaluated for significance and eligibility for listing in the California Record of Historical Resources (CRHR) according to CRHR criteria. A Phase 2 evaluation will 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 will be processed and analyzed in the laboratory according to standard archaeological procedures. The age of the materials will be determined using radiocarbon dating and/or other appropriate procedures; lithic artifacts, faunal remains, and other cultural materials will be identified and analyzed according to current professional standards. The significance of the sites will be evaluated according to the criteria of the CRHR. The results of the investigations will be presented in a technical report following the standards of the California Office of Historic Preservation publication "Archaeological Resource Management Reports: Recommended	

Impact	Mitigation Measure(s)	Significance
	Content and Format" (1990 or latest edition)" (http://ohp.parks.ca.gov/pages/1054/files/armr.pdf). Upon completion of the evaluation work, all artifacts, other cultural remains, records, photographs, tribal cultural resources, and other documentation will be curated an appropriate curation facility. If the resources meet the definitions of "historical resources" or "unique archaeological resources," the City will ensure that all feasible recommendations for mitigation of archaeological impacts are incorporated into the final design and permits issued for development. All fieldwork, analysis, report production, and curation will be fully funded by the applicant. ▪ If the resources meet the definitions of "historical resources" or "unique archaeological resources," the City will ensure that all feasible recommendations for mitigation of archaeological impacts are incorporated into the final design and permits issued for development. Necessary Phase 3 data recovery excavation, conducted to exhaust the data potential of significant archaeological sites, will be carried out by a qualified archaeologist meeting the SOI 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, or Phase 3 Data Recovery reports will be submitted to the City prior to issuance of construction permit. Recommendations contained therein will be implemented throughout all ground-disturbance activities.	

Impact	Mitigation Measure(s)	Significance
Impact CR-3. Ground-disturbing activities associated with development under Seaside 2040 could result in damage to or destruction of human burials. Impacts would be less than significant.	None required.	Less than significant.
Impact E-1. The development and population growth facilitated by Seaside 2040 would result in an increase of overall consumption of energy compared to existing conditions. However, Seaside 2040 goals and policies would ensure that development would not result in wasteful, inefficient, or unnecessary consumption. Impacts would be less than significant.	None required.	Less than significant.
Impact E-2. Seaside 2040 would be consistent with energy efficiency goals, policies, and strategies contained in Seaside's 2004 General Plan and AMBAG's 2045 MTP/SCS. Construction and operation of projects facilitated by Seaside 2040 would additionally comply with relevant provisions of the State's CALGreen and Title 24 of the California Energy Code. Impacts would be less than significant.	None required.	Less than significant.
Impact GEO-1. Construction and occupancy of new buildings would adhere to the requirements of the California Building Code and implementation of the goals and policies of Seaside 2040 which would ensure impacts associated with loss, injury, or death following a seismic event and geologic hazards would be less than significant.	None required.	Less than significant.
Impact GEO-2. Construction of new development under Seaside 2040 would include ground disturbance such as excavation and grading. However, this development would comply with the Construction General Permit and Municipal Code. This, in addition to implementation of the goals and policies of Seaside 2040, would ensure impacts would be less than significant.	None required.	Less than significant.
Impact GEO-3. Development facilitated by Seaside 2040 may result in the construction of structures on expansive soils. However, all new development would be required to comply with the standards of the California Building Code, which would ensure that expansive soils are remediated or that foundations and structures are engineered to withstand the forces of expansive soil. Compliance with the requirements of the California Building Code would ensure this impact would be less than significant.	None required.	Less than significant.

Impact	Mitigation Measure(s)	Significance
Impact GEO-4. New septic tanks are prohibited in the Seaside Municipal Code. Therefore, new development facilitated by Seaside 2040 would occur where either existing sewer systems are in place and or where the existing sewer systems would be expanded. Therefore, new development under Seaside 2040 would not require the use of septic tanks or alternative wastewater disposal systems. No Impact would occur.	None required.	No impact.
Impact GEO-5. Development facilitated by Seaside 2040 has the potential to impact unique paleontological resources. Impacts would be less than significant with mitigation.	**GEO-5: Paleontological Resource Policies and Implementation Programs** The City shall add the following policies and implementation programs to the General Plan prior to adoption. The following Policy shall be added to the Conservation Element under Goal C-7: **Paleontological Resource Studies.** Require avoidance and/or mitigation for potential impacts to paleontological resources for any development that occurs within high sensitivity geologic units and in areas that have not previously been developed with urban uses, or when excavation depths exceed those previously attained. The following Implementation Program shall be added to the Implementation Chapter: **Paleontological Resource Studies**. The City will require the following measures for projects that could disturb geologic units with high paleontological sensitivity: 1. **Retain a Qualified Paleontologist**. Prior to initial ground disturbance, the applicant will retain a qualified professional paleontologist to direct all mitigation measures related to paleontological resources and design a Paleontological Mitigation and Monitoring Program (PMMP) for the project. 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. **Paleontological Worker Environmental Awareness Program (WEAP).** Prior to the start of construction, the Qualified Paleontologist or his or her designee	Less than significant with mitigation.

Impact	Mitigation Measure(s)	Significance
	will conduct training for construction personnel regarding the appearance of fossils and the procedures for notifying paleontological staff should fossils be discovered by construction staff. The WEAP will be fulfilled at the time of a preconstruction meeting at which a Qualified Paleontologist will attend. 3. **Paleontological Monitoring**. Paleontological monitoring should be conducted as follows for ground disturbing construction activities (including grading, trenching, foundation work, and other excavations) in previously undisturbed sediments according to their paleontological sensitivities: a. **High Sensitivity Sediments**. High sensitivity sediments may be impacted by ground-disturbing activities when they are present at the surface or at depth within a proposed project site. Therefore, full-time monitoring is recommended for construction activities in High sensitivity sediments (Older Stabilized Dune Sand, Qos; Aromas Sand; Qar; Dissected Older Alluvium, Qoa; Monterey Formation, Tm). b. **Low-to-High Sensitivity Sediments**. Low-to-High sensitivity sediments have low paleontological sensitivity in the surficial and shallow layers, but overlie high sensitivity sediments at depth. Therefore, monitoring is only recommended for projects that extend beneath the low sensitivity surficial sediments and into the deeper sediments. The depth at which this occurs will be determined on a project-specific basis by the Qualified Paleontologist, and may be informed by local geotechnical analyses. 4. **Qualified Paleontological Monitor**. If paleontological monitoring is recommended by the Qualified Paleontologist, it will be conducted by a qualified paleontological monitor, who is defined as an individual who has experience with collection and salvage of paleontological resources and meets the minimum standards of	

Impact	Mitigation Measure(s)	Significance
	the SVP (2010) for a Paleontological Resources Monitor. The duration and timing of the monitoring will be determined by the Qualified Paleontologist and the location and extent of proposed ground disturbance. 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. **Fossil Discoveries**. In the event of a fossil discovery by the paleontological monitor or construction personnel, all work in the immediate vicinity of the find will cease. A Qualified Paleontologist will 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 will complete the following conditions to mitigate impacts to significant fossil resources: a. **Salvage of Fossils**. If fossils are discovered, all work in the immediate vicinity will be halted to allow the paleontological monitor, and/or lead paleontologist to evaluate the discovery and determine if the fossil may be considered significant. If the fossils are determined to be potentially significant, the qualified paleontologist (or paleontological monitor) will recover them following standard field procedures for collecting paleontological as outlined in the PMMP prepared for the project. Typically, fossils can be safely salvaged quickly by a single paleontologist and not disrupt construction activity. In some cases, larger fossils (such as complete skeletons or large mammal fossils) require more extensive excavation and longer salvage periods. In this case the paleontologist should have the authority to temporarily direct, divert or halt construction activity to ensure that the fossil(s) can be	

Impact	Mitigation Measure(s)	Significance
	removed in a safe and timely manner. If fossils are discovered, the Qualified Paleontologist (or Paleontological Monitor) will recover them as specified in the project's PMMP. b. **Preparation and Curation of Recovered Fossils**. Once salvaged, significant fossils will be identified to the lowest possible taxonomic level, prepared to a curation-ready condition, and curated in a scientific institution with a permanent paleontological collection (such as the UCMP or LACM), along with all pertinent field notes, photos, data, and maps. Fossils of undetermined significance at the time of collection may also warrant curation at the discretion of the Qualified Paleontologist. 6. **Final Paleontological Mitigation Report**. Upon completion of ground disturbing activity (and curation of fossils if necessary) the Qualified Paleontologist will prepare a final mitigation and monitoring report outlining the results of the mitigation and monitoring program. The report will include discussion of the location, duration and methods of the monitoring, stratigraphic sections, any recovered fossils, and the scientific significance of those fossils, and where fossils were curated.	
Impact GHG-1. Buildout of the project would generate GHG emissions. However, Seaside 2040 establishes policies to reduce project GHG emissions, including setting reduction targets consistent with Statewide reduction targets, and requiring the preparation of a Climate Action Plan (CAP). Policies and programs of Seaside 2040 would facilitate development of a CAP and would ensure the project's GHG emissions would be reduced to a less than significant level.	None required.	Less than significant.
Impact GHG-2. Policies contained in Seaside 2040 would ensure project consistency with applicable state and regional plans and policies adopted for the purpose of reducing GHG emissions. There would be no impact.	None required.	Less than significant.

Impact	Mitigation Measure(s)	Significance
Impact HAZ-1. Implementation of Seaside 2040 would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials, nor through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. Impacts would be less than significant.	None required.	Less than significant.
Impact HAZ-2. Implementation of Seaside 2040 could result in hazardous emissions or handling of hazardous or acutely hazardous materials, substances, or waste within ¼ mile of an existing or proposed school, but compliance with existing regulatory requirements would minimize risks to schools and students, resulting in a less than significant impact.	None required.	Less than significant.
Impact HAZ-3. Implementation of Seaside 2040 could result in development on sites contaminated with hazardous materials, especially in the former Fort Ord. Compliance with applicable regulations relating to site cleanup and 2040 General Plan policies would minimize impacts from development on listed contaminated sites. Impacts would be less than significant.	None required.	Less than significant.
Impact HAZ-4. Portions of the General Plan Area are located inside an Airport Influence Area but outside noise contours associated with nearby airports. Impacts would be less than significant.	None required.	Less than significant.
Impact HAZ-5. Proposed policies and mapped evacuation routes in Seaside 2040 would ensure effective emergency response following a natural or human-caused disaster. Therefore, the proposed project would not result in interference with these types of adopted plans. Impacts would be less than significant.	None required.	Less than significant.
Impact HYD-1. Development envisioned under Seaside 2040 could result in an increase in pollutants in stormwater and wastewater. Compliance with the Clean Water Act and NPDES permits, Seaside Municipal Code, and implementation of 2040 General Plan goals and policies would prevent substantial discharges of pollutants and adverse changes to water quality. Water quality standards and waste discharge requirements would not be violated. Impacts would be less than significant.	None required.	Less than significant.

Impact	Mitigation Measure(s)	Significance
Impact HYD-2. Structural foundations and infrastructure constructed below ground surface for development facilitated by Seaside 2040 could displace groundwater storage capacity in groundwater aquifers. However, the displaced volume would not be substantial relative to the storage volume of the aquifers in the Seaside and Monterey Subbasins. Development would increase impervious surface in the General Plan Area, but compliance with the Seaside Municipal Code and the Central Coast RWQCB's post-construction requirements for stormwater management would maximize on-site infiltration of runoff. Thus, buildout of the general plan would not substantially interfere with groundwater recharge. Impacts would be less than significant.	None required.	Less than significant.
Impact HYD-3. Development facilitated by Seaside 2040 would alter drainage patterns in the General Plan Area. Compliance with the Seaside Municipal Code, NPDES MS4 General Permit, and Construction General Permit, including implementation of a SWPPP and BMPS would prevent substantial erosion and siltation during construction activities. Similarly, required compliance with the Seaside Municipal Code and NPDES MS4 General Permit would prevent substantial erosion and siltation during operation. Seaside 2040 also includes goals and policies that are intended to promote infiltration of stormwater runoff, which would reduce the potential substantial siltation on-site and off-site. Impacts would be less than significant.	None required.	Less than significant.
Impact HYD-4. Development envisioned in Seaside 2040 would alter existing drainage patterns by incrementally increasing the total impervious surface area and generating more stormwater runoff. Adherence to the requirements of the City of Seaside Municipal Code and Central Coast RWQCB post-construction requirements for stormwater management would maximize the on-site infiltration capacity for new development and redevelopment projects. Goals and policies of the 2040 General Plan would require that new development and redevelopment projects to provide adequate stormwater infrastructure for flood control. Impacts would be less than significant.	None required.	Less than significant.

Impact	Mitigation Measure(s)	Significance
Impact HYD-5. Seaside 2040 envisions the possibility for live-work uses in an area mapped as a 100-year floodplain. Mandatory compliance with the Seaside Municipal Code would require live-work structures to be designed and constructed to minimize the risk and damage of flooding. This development would generally be infill development, and not a substantial increase in the number of new structures or barricades to the flow of flood waters. Additionally, the Seaside Municipal Code requires either preventing or regulating barricades to flood water movement. Impacts would be less than significant.	None required.	Less than significant.
Impact HYD-6. Mandatory compliance with the Seaside Municipal Code would require development proposed within an area that is subject to flood hazard, tsunami, and seiche to be sited, designed and constructed to minimize risks to life and property over the development's lifetime. Additionally, Seaside 2040 envisions park and open space land uses in most areas subject to tsunami or seiche, with limited infill development. Seaside 2040 includes goals and policies to reduce hazards associated with geologic and seismic events, which would reduce the risk of release of pollutants due to project inundation. impacts would be less than significant.	None required.	Less than significant.
Impact HYD-7. Development envisioned under Seaside 2040 would affect water quality and groundwater supply. However, compliance with the Seaside Municipal Code and Seaside 2040 goals and policies would ensure that development would not conflict with or obstruct implementation of a water quality control plan. Adherence to Mitigation Measure UTIL-1 would help to ensure that development envisioned under Seaside 2040 would not conflict with sustainable groundwater management planning efforts. Impacts would be less than significant.	None required.	Less than significant.
Impact LU-1. Implementation of the proposed 2040 General Plan would provide for orderly development in the City of Seaside and would not physically divide an established community. Impacts would be less than significant.	None required.	Less than significant.
Impact LU-2. Implementation of the proposed project would be consistent with applicable regional land use plans, policies, or regulations. Impacts would be less than significant.	None required.	Less than significant.

Impact	Mitigation Measure(s)	Significance
Impact N-1. Construction of individual projects facilitated by Seaside 2040 would temporarily produce high noise levels, potentially affecting nearby noise-sensitive land uses. Operation of development facilitated by Seaside 2040 would also increase on-site noise levels and transportation noise. Impacts would be less than significant with mitigation.	**N-1: Construction Noise Policies and Implementation Programs** The following Policy shall be added to the Noise Element under Goal N-1: **Construction noise and vibration**. Protect noise sensitive land uses or sensitive receptors from excessive noise and vibration resulting from construction, including mobile and stationary equipment. The following Implementation Program shall be added to the Implementation Chapter: The following noise control measures should be included as standard conditions of approval for projects involving construction: ▪ Properly muffle and maintain all construction equipment powered by internal combustion engines. ▪ Prohibit unnecessary idling of combustion engines. ▪ Locate all stationary noise-generating construction equipment such as air compressors as far as practical from existing nearby residences and other noise-sensitive land uses. Such equipment should also be acoustically shielded. ▪ Select quiet construction equipment, particularly air compressors, whenever possible. Fit motorized equipment with proper mufflers in good working order. ▪ Residences adjacent to project sites shall be notified in advance by writing of the proposed construction schedule before construction activities commence. ▪ The project applicant should designate a "noise disturbance coordinator" responsible for responding to any local complaints about construction noise. The disturbance coordinator shall determine the cause of any noise complaint (e.g., starting too early, bad muffler, etc.) and should require that reasonable measures be implemented to correct the problem. A telephone number for the disturbance coordinator should be posted at the construction site.	Less than significant with mitigation.

Impact	Mitigation Measure(s)	Significance
Impact N-2. Construction of individual projects facilitated by Seaside 2040 could temporarily generate groundborne vibration, potentially affecting adjacent sensitive land uses. Impacts would be less than significant with mitigation.	**N-2: Construction Vibration Implementation Programs** The following Implementation Programs shall be added to the Implementation Chapter: **Construction Vibration Control Measures**. The following measures to minimize exposure to construction vibration should be included as standard conditions of approval for applicable projects involving construction: ▪ Avoid the use of vibration-intensive construction equipment that generate 94 VdB or 0.20 PPV at 25 feet or greater (such as vibratory rollers) within 50 feet of buildings that are extremely susceptible to damage from vibration or non-engineered timber and masonry buildings, as defined by the FTA (2006 Transit Noise and Vibration Impact Assessment). ▪ Schedule construction activities with the highest potential to produce vibration to hours with the least potential to affect nearby institutional, educational, and office uses that the Federal Transit Administration identifies as sensitive to daytime vibration. **Construction Vibration Notification**. Developers should notify neighbors of scheduled construction activities that would generate vibration.	Less than significant with mitigation.
Impact N-3. Seaside 2040 would facilitate new development that would be exposed to aircraft noise associated with Monterey Regional Airport and Marina Municipal Airport. However, noise-sensitive land uses in Seaside would be located outside of noise contours associated with nearby airports. Implementation of policies in Seaside 2040 would provide for consistency with future changes to airport land use planning documents. Therefore, the impact related to aircraft noise would be less than significant.	None required.	Less than significant.
Impact PH-1. Full implementation of Seaside 2040 would accommodate an estimated 12,555 new residents, 4,050 new housing units, and 4,604 new jobs in the City, when compared to 2010. This would exceed the 2022 AMBAG RGF; however, Seaside 2040 is intended to accommodate regional housing needs and includes policies to manage new development and limit growth in such a way to	None required.	Less than significant.

Impact	Mitigation Measure(s)	Significance
minimize environmental impacts. Therefore, impacts would be less than significant.		
Impact PH-2. Implementation of Seaside 2040 would not displace substantial numbers of existing housing or people, necessitating the construction of replacement housing elsewhere. Impacts would be less than significant.	None required.	Less than significant.
Impact PS-1. Development facilitated by Seaside 2040 would increase the City's population. This would increase demand for fire, police, or other service facilities. However, goals and policies of Seaside 2040 would help manage growth and would reduce impacts related to the construction of fire and police facilities to a less than significant level.	None required.	Less than significant.
Impact PS-2. Development facilitated by Seaside 2040 would increase the City's population. This would increase demand for school and library services and potentially create the need for new school or library facilities. However, compliance with policies in Seaside 2040 would reduce impacts related to the construction of school, library, or public other facilities to a less than significant level.	None required.	Less than significant.
Impact PS-3. Development facilitated by the proposed 2040 General Plan would increase the City's population with commensurate increases in demand for parks and recreation facilities. The current inventory of parks would not meet the City's target of 12 acres of active parkland per 1,000 residents. However, the development of new park sites identified under Seaside 2040 would provide sufficient park acreage to meet the City's target. Impacts would be less than significant.	None required.	Less than significant.
Impact T-1. Seaside 2040 proposes a greater emphasis on bicycling, walking and transit, consistent with the Monterey County Regional Transportation Plan goals and policies. Seaside 2040 would also be consistent with the Regional Transportation Plan bikeway network and roadway network goals. Impacts would be less than significant.	None required.	Less than significant.
Impact T-2. Seaside 2040 would generate additional VMT associated with population and job growth. Increased residential and employment-based VMT would be below thresholds consistent with statewide goals aimed at reducing VMT and impacts would be less than significant. The project would not be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b), and impacts would be less than significant.	None required.	Less than significant.

Impact	Mitigation Measure(s)	Significance
Impact T-3. Seaside 2040 is a program-level planning effort that does not directly address project-level design features. Roadway improvements and site access measures would be designed and reviewed in accordance with the Seaside Public Works Department standards. Impacts would be less significant.	None required.	Less than significant.
Impact T-4. Seaside 2040 is a program-level planning effort that does not directly address project-level design features. Roadway improvements and site access measures would be designed and reviewed in accordance with the Seaside Public Works Department standards. Impacts would be less significant.	None required.	Less than significant.
Impact TC-1. Development facilitated by Seaside 2040 may involve surface excavation, which has the potential to impact previously unidentified tribal cultural resources. Impacts to tribal cultural resources would be significant and unavoidable despite the implementation of Mitigation Measure TC-1.	**TC-1: Tribal Cultural Resources Avoidance and Minimization** The City shall add the implementation program to the General Plan prior to adoption. The following Implementation Program shall be added to the Implementation Chapter: **Tribal Cultural Resources**. The City shall comply with AB 52, which may require formal tribal consultation on a project-by-project basis. If the City determines that a project may cause a substantial adverse change to a tribal cultural resource, they shall implement mitigation measures identified in the consultation process required under PRC Section 21080.3.2, or shall implement the following measures where feasible to avoid or minimize the project-specific significant adverse impacts: ▪ Avoidance and preservation of the resources in place, including, but not limited to: planning and construction to avoid the resources and protect the cultural and natural context, or planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria. ▪ Treating the resource with culturally appropriate dignity taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following: 1. Protecting the cultural character and integrity of the resource 2. Protecting the traditional use of the resource 3. Protecting the confidentiality of the resource	Significant and unavoidable.

Impact	Mitigation Measure(s)	Significance
	▪ Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places. ▪ Native American monitoring by the appropriate tribe for all projects in areas identified as sensitive for potential tribal cultural resources and/or in the vicinity (within 100 feet) of known tribal cultural resources. ▪ If potential tribal cultural resources are encountered during ground-disturbing activities; work in the immediate area must halt and the appropriate tribal representative(s), the implementing agency, and an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for archaeology (National Park Service [NPS] 1983) must be contacted immediately to evaluate the find and determine the proper course of action.	
Impact UTIL-1. Development facilitated by Seaside 2040 would increase the demand for local infrastructure. Local infrastructure in the General Plan Area would be upgraded as development projects are implemented. There is adequate regional wastewater, stormwater drainage, electric power, natural gas, and telecommunications infrastructure to serve development facilitated by Seaside 2040. However, the City of Seaside does not have sufficient existing water supply to achieve the complete build-out of Seaside 2040. Mitigation Measure UTIL-1 would require applicants to provide water verification reports from the local water supplier and/or the City of Seaside prior to issuance of any final map. Therefore, project implementation under Seaside 2040 would be prohibited until sufficient water supplies are secured. With mitigation, impacts related to water supply sufficiency would be less than significant.	**UTIL-1: Water Verification Report** The City shall not approve individual projects envisioned under Seaside 2040 until proof of water supply availability is provided. Any future project proposed under Seaside 2040 that meets the definition of a "Project" under California Water Code Section 10912 will be required to prepare a Water Supply Assessment prior to project implementation. For those individual projects that are subject to California Water Code Section 10910, the City will use the prepared WSA (Appendix F to this Draft EIR) to assess water supply sufficiency. Any future project proposed under Seaside 2040 that does not meet the definition of a "Project" under California Water Code Section 10912 will be required to provide the City a Water Verification Report from the local water supplier. The City shall prohibit applicants from proceeding with project implementation activities until a Water Verification Report has been issued.	Less than significant with mitigation.
Impact UTIL-2. Development facilitated by Seaside 2040 would increase the amount of solid waste that is transported to and disposed of at the Monterey Peninsula Landfill. At full buildout of Seaside 2040, solid waste generated from uses within the General Plan Area would have capacity for the development envisioned in Seaside 2040. Additionally, goals and policies in Seaside 2040 would increase the	None required.	Less than significant.

Impact	Mitigation Measure(s)	Significance
amount of waste that is diverted from the landfill and encourage reuse and recycling. These goals and policies alongside the City's ongoing recycling program would assist the City in complying with statutes and regulations related to solid waste. Impacts would be less than significant.		
Impact WFR-1. Seaside 2040 General Plan policies address emergency access, response, and preparedness and maintaining an emergency management plan. However, Seaside 2040 would facilitate development within a Very High Fire Hazard Severity Zone, an area for which emergency response plans and evacuation routes have not been established. Therefore, Seaside 2040 would potentially impair an emergency response plan or emergency evacuation plan. Impacts are conservatively concluded as significant and unavoidable.	None available.	Significant and unavoidable.
Impact WFR-2. The project would exacerbate wildfire risks and expose people and structures to risk involving wildland fires. Impacts would be significant and unavoidable.	None available.	Significant and unavoidable.
Impact WFR-3. Seaside 2040 would facilitate growth in the Seaside East area, which would require installation of infrastructure in fire-prone areas. However, Existing regulations and Seaside 2040 policies would ensure that this infrastructure would not exacerbate fire risk and impacts would be less than significant.	None required.	Less than significant.
Impact WFR-4. If a severe wildfire were to occur in the former Fort Ord area, structures downslope would be at risk of flooding or landslides. However, Seaside 2040 policies would reduce the potential for wildfire in the hillside area. Therefore, impacts would be less than significant.	None required.	Less than significant.

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1 Introduction

This Environmental Impact Report (EIR) examines the potential environmental effects of Seaside's general plan update (also referenced as "Seaside 2040" or "proposed project" for purposes of this environmental review). The environmental review process for the proposed project, and legal basis for preparing an EIR, are described below.

1.1 Environmental Impact Report Background

This document is a Draft EIR that evaluates the potential environmental impacts associated with implementation of the City of Seaside General Plan Update. The General Plan Update establishes the community's vision for the future development of the city and provides comprehensive polices for the entire city relating to land use and community design, economic development, housing, mobility, parks and open space, sustainability, quality of life, resources, services and infrastructure, and health and safety.

This section:

1. Provides an overview of the background behind the General Plan Update;
2. Describes the purpose of and legal authority of the EIR;
3. Summarizes the scope and content of the EIR;
4. Lists lead, responsible, and trustee agencies for the EIR;
5. Describes the intended uses of the EIR;
6. Provides a synopsis of the environmental review process required under CEQA.

The contents of other EIR sections are as follows:

- Section 2, *Project Description*, provides a detailed discussion of the proposed project.
- Section 3, *Environmental Setting*, describes the general environmental setting for the City of Seaside.
- Section 4*, Environmental Impact Analysis*, describes the potential environmental effects associated with development facilitated by the proposed project.
- Section 5*, Other CEQA Required Sections*, discusses issues such as growth inducement, significant irreversible environmental effects, and cumulative impacts.
- Section 6, *Alternatives*, discusses alternatives to the proposed project, including the CEQA-required "no project" alternative.
- Section 7, *References and Report Preparers*, lists informational sources for the EIR and persons involved in the preparation of the document.

1.2 Overview of Seaside 2040

State law (Government Code Sections 65300 et seq.) requires that each city and county adopt a comprehensive general plan. The last comprehensive update of the City's General Plan was adopted by the City Council on August 5, 2004. The City is proposing a new comprehensive plan update of the General Plan that requires review and recommendation for adoption by the City's Planning

Commission, and the discretionary approval by the City Council. The City of Seaside 2040 General Plan Update is a comprehensive effort to update the existing 2004 General Plan and responds to current local and regional conditions, as well as changes in State law that may not have been in effect when the General Plan was last updated.

Seaside 2040 has been organized into twelve chapters: including an introduction, vision and guiding principles, and 10 General Plan Chapters, and a chapter the General Plan implementation actions. The 10 General Plan Chapters include: Land Use and Community Design; Economic Development; Housing; Mobility; Parks and Open Space; Conservation; Healthy and Sustainable Community; Community Facilities and Infrastructure; Safety; and Noise. As shown in Table 2-1 in Section 2, *Project Description*, the 10 General Plan Chapters cover all of the topics that are required to be included in a General Plan under State law, which are Land Use, Open Space, Conservation, Housing, Circulation, Safety, Noise, and Environmental Justice; and includes three additional optional chapters, Economic Development, Healthy and Sustainable Community, Community Facilities and Infrastructure, and Implementation.

The General Plan Housing Element has been updated as part of the 2040 General Plan, and comprises one of the nine General Plan Chapters**.** The Housing Element was last updated in December 2019, covering the period 2015-2023. The sixth cycle Housing Element update is occurring separately but concurrently with this 2040 General Plan Update.

The General Plan defines the policy framework by which the City's physical and economic resources are to be managed and used over the next 20 plus years. In preparing for the challenges and opportunities ahead, the Seaside community has developed a General Plan that reflects the unique local identity and generation of new land uses, educational and economic opportunities. City decision-makers will use the 2040 General Plan as a roadmap to help guide future development in the City and position itself to generate new opportunities for economic development, while ensuring the protection of open space and improved quality of life for all residents.

The 2040 General Plan contains goals, policies, and implementation programs to implement the City's overarching vision and guiding principles. Goals are statements that provide direction and state the desired end condition. Policies establish basic courses of action to achieve these goals, and directly guide the response of elected and appointed officials to development proposals and related community actions. Implementation programs are specific actions, procedures, standards or techniques that the City must take to help achieve a specified goal or implement an adopted policy.

The original draft General Plan for the Seaside 2040 update is dated November 2017. An updated draft of the General Plan has been prepared and is the subject of the analysis in this EIR.

1.3 Purpose and Legal Authority

This EIR has been prepared in accordance with CEQA and the *CEQA Guidelines*. In accordance with Section 15121 (a) of the *CEQA Guidelines* (California Code of Regulations, Title 14, Division 6, Chapter 3), the purpose of an EIR is to:

> Inform public agency decision-makers and the public generally of the significant environmental effects of a project, identify possible ways to minimize the significant effects, and describe reasonable alternatives to the project.

This EIR fulfills the requirements for a Program EIR. Although the legally required contents of a Program EIR are the same as those of a Project EIR, Program EIRs are by necessity more conceptual and may contain a more general discussion of impacts, alternatives, and mitigation measures than a Project EIR. As discussed by the Court of Appeal "a first-tier EIR may contain generalized mitigation criteria and policy-level alternatives." (*Koster v. County of San Joaquin* (1996) 47 Cal.App.4th 29.) As provided in Section 15168 of the *CEQA Guidelines*, a Program EIR may be prepared on a series of actions that may be characterized as one large project. Use of a Program EIR provides the City (as Lead Agency) with the opportunity to consider broad policy alternatives and program-wide mitigation measures and provides the City with greater flexibility to address environmental issues on a comprehensive basis. Agencies generally prepare Program EIRs for programs or a series of related actions that are linked geographically, are logical parts of a chain of contemplated events, rules, regulations, or plans that govern the conduct of a continuing program, or are individual activities carried out under the same authority and having generally similar environmental effects that can be mitigated in similar ways. By its nature, a Program EIR considers the broad effects associated with implementing a program (such as a General Plan) and does not, and is not intended to, examine the specific environmental effects associated with specific projects that may be accommodated by the provisions of General or Specific Plans.

Once a Program EIR has been prepared, subsequent activities within the program must be evaluated to determine what, if any, additional CEQA documentation needs to be prepared. If the Program EIR addresses the program's effects as specifically and comprehensively as possible, many subsequent activities could be found to be within the Program EIR scope and additional environmental documentation may not be required (*CEQA Guidelines* Section 15168[c]). If a subsequent activity would have effects not contemplated or not within the scope of the Program EIR, the Lead Agency must prepare a new Initial Study leading to a Negative Declaration, Mitigated Negative Declaration, or a project level EIR. In this case, the Program EIR still serves a valuable purpose as the first-tier environmental analysis.

This EIR has been prepared to analyze potentially significant environmental impacts associated with future development resulting from implementation of the 2040 General Plan, and also addresses appropriate and feasible mitigation measures or project alternatives that would minimize or eliminate these impacts. Additionally, this EIR will provide the primary source of environmental information for the City of Seaside, which is the Lead Agency, to use when considering the proposed project.

This EIR is intended to provide decision-makers and the public with information that enables intelligent consideration of the environmental consequences of the proposed project. This EIR identifies significant or potentially significant environmental effects, as well as ways in which those impacts can be reduced to less-than-significant levels, whether through the incorporation of mitigation measures or through the implementation of specific alternatives to the proposed project. In a practical sense, this document functions as a tool for fact-finding, allowing concerned citizens and agency staff an opportunity to collectively review and evaluate baseline conditions and project impacts through a process of full disclosure.

1.4 Scope and Content

In accordance with the *CEQA Guidelines,* a Notice of Preparation (NOP) of a Draft EIR was circulated to potentially interested parties on July 12, 2017. In accordance with the NOP, the following resource areas aree discussed in this EIR:

- Aesthetics
- Air Quality
- Biological Resources
- Cultural Resources
- Energy
- Geology and Soils
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Noise
- Population and Housing
- Public Services and Recreation
- Transportation
- Tribal Cultural Resources
- Utilities and Service Systems
- Wildfire

The City received five written responses to the NOP. The responses, included in Appendix A, were considered in preparation of the EIR. The City also held an EIR Scoping Meeting on July 26, 2017 at the Seaside City Hall Council Chambers.

1.5 Intended Uses of the EIR

This EIR is as an informational document for use in the City's review and consideration of Seaside 2040. This document is a Program EIR. CEQA Guidelines Section 15168(a) states that:

A Program EIR is an EIR which may be prepared on a series of actions that can be characterized as one large project and are related either: (1) geographically; (2) as logical parts in a chain of contemplated actions; (3) in connection with issuance of rules, regulations, plans, or other general criteria, to govern the conduct of a continuing program; or (4) as individual activities carried out under the same authorizing statutory or regulatory authority and having generally similar environmental effects which can be mitigated in similar ways.

As a programmatic document, this EIR presents and discloses a region-wide assessment of the environmental impacts of the 2040 General Plan. The information and analysis in this EIR will be used by the Seaside Planning Commission and City Council, trustee agencies, and the general public.

Seaside 2040 will guide subsequent actions taken by the City in its review of new development projects and the establishment of new and/or revised City-wide or area-specific programs. This program EIR serves as a first-tier environmental document under CEQA, supporting second-tier environmental documents for projects with detailed designs that have been developed for implementation within the City. Individual and specific environmental analysis of each project will be undertaken as necessary in the future by the City prior to each project being considered for approval. Therefore, the City, acting as the Lead Agency, would be able to prepare subsequent environmental documents that incorporate by reference the appropriate information from this Program EIR regarding secondary effects, cumulative impacts, broad alternatives, and other relevant factors. If the City finds that implementation of a later activity would have no new effects and that no new mitigation measures would be required, that activity would require no additional CEQA

review. Where subsequent environmental review is required, such review would focus on significant effects specific to the project, or its site that have not been considered in this Program EIR.

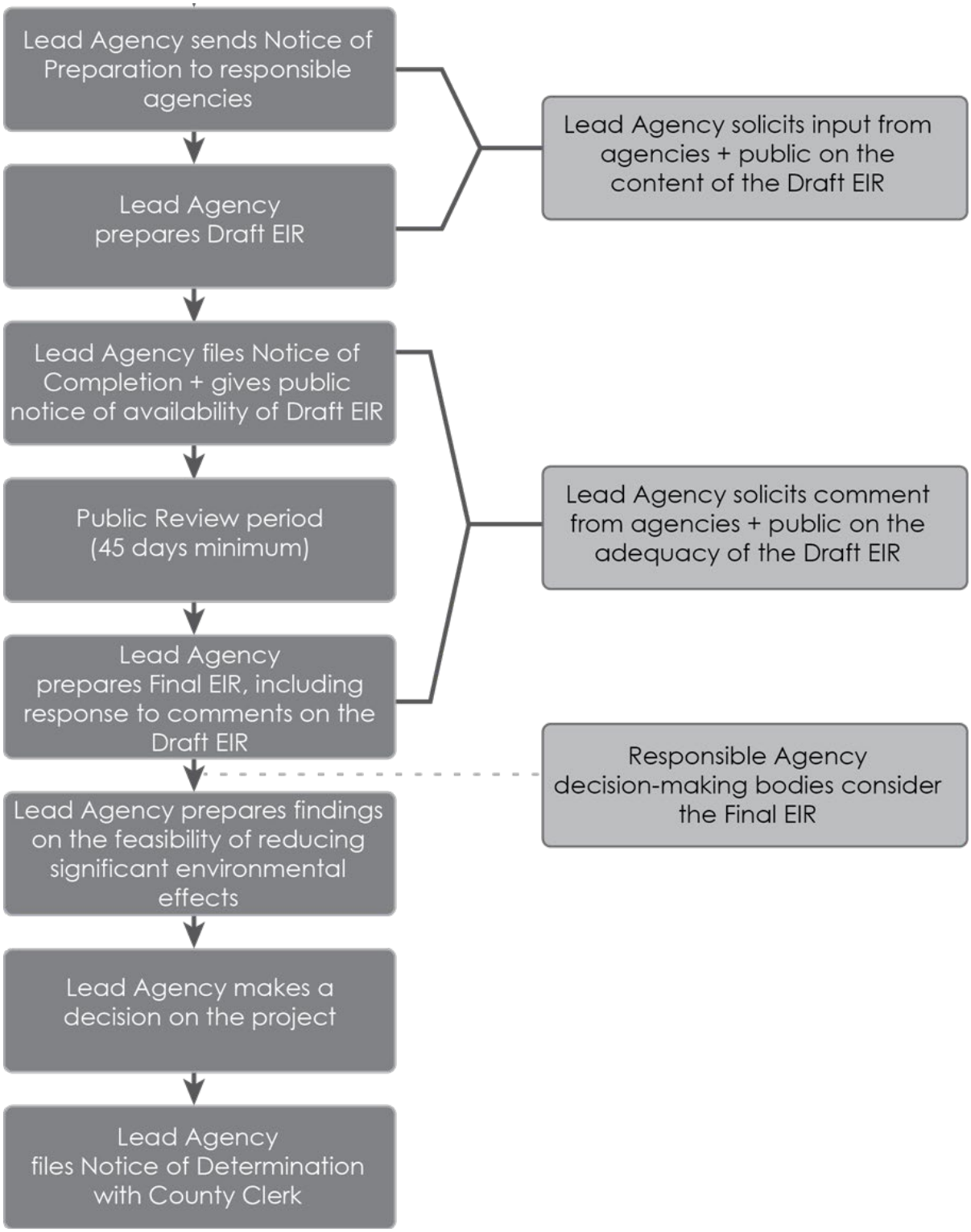
1.6 Environmental Review Process

The environmental impact review process required under CEQA is summarized below and in Figure 1-1. The steps appear in sequential order.

1. **Notice of Preparation (NOP) Distributed.** Immediately after deciding that an EIR is required, the lead agency must file a NOP soliciting input on the EIR scope to "responsible," "trustee," and involved federal agencies; to the State Clearinghouse, if one or more state agencies is a responsible or trustee agency; and to parties previously requesting notice in writing. A scoping meeting to solicit public input on the issues to be assessed in the EIR is not required, but may be conducted by the lead agency. The NOP public comment period for the Seaside 2040 EIR was from July 12, 2017 to August 11, 2017, and a scoping meeting was held on July 26, 2017. Public comments were received in response to the NOP and scoping process.
2. **Draft EIR Prepared.** The Draft EIR contains: a) table of contents or index; b) executive summary; c) project description; d) environmental setting; e) analysis of significant impacts (direct, indirect, cumulative, growth inducing and unavoidable impacts); f) alternatives; g) any proposed mitigation measures; and h) analysis of irreversible changes.
3. **Public Notice and Review.** A lead agency must prepare a Public Notice of Availability of an EIR (NOA).
4. **Notice of Completion.** A lead agency must file a Notice of Completion with the State Clearinghouse as soon as it completes a Draft EIR.
5. **Final EIR.** A Final EIR must include: a) any revisions to the Draft EIR; b) copies of comments received during public review; c) list of persons and entities commenting; and d) responses to comments.
6. **Certification of Final EIR.** The lead agency shall certify that: a) the Final EIR has been completed in compliance with CEQA; b) the Final EIR was presented to the decision-making body of the lead agency; and c) the decision-making body reviewed and considered the information in the Final EIR prior to approving a project.
7. **Lead Agency Project Decision.** A lead agency may: a) disapprove a project; b) require changes to a project, including modifications to reduce or avoid significant environmental effects; or c) approve a project despite its significant environmental effects, if the proper findings and statement of overriding considerations are adopted.
8. **Findings/Statement of Overriding Considerations.** For each significant impact of the project identified in the EIR, the lead or responsible agency must find, based on substantial evidence, that: a) the project has been changed to avoid or substantially reduce the magnitude of the impact; b) changes to the project are within another agency's jurisdiction and such changes have or should be adopted; or c) specific economic, social, or other considerations make the mitigation measures or project alternatives infeasible. If an agency approves a project with unavoidable significant environmental effects, it must prepare a written Statement of Overriding Considerations that set forth the specific social, economic or other reasons supporting the agency's decision.

9. **Mitigation Monitoring Reporting Program.** When an agency makes findings on significant effects identified in the EIR, it must adopt a Mitigation Monitoring or Reporting Program (MMRP)for mitigation measures that were adopted or made conditions of project approval to mitigate significant effects. For General Plans, such monitoring programs can be accomplished through the statutory annual review procedures under Government Code Section 65400 (CEQA Guidelines Section 15097(b).)
10. **Notice of Determination (NOD).** An agency must file a Notice of Determination after deciding to approve a project for which an EIR is prepared. A local agency must file the Notice with the County Clerk.

Figure 1-1 Environmental Review Process



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2 Project Description

The project analyzed in this EIR is the proposed City of Seaside general plan update, also known as, "Seaside 2040" or the "proposed project." This section of the EIR describes the key characteristics of Seaside 2040, including the project proponent/lead agency, the geographic extent of the plan area, project objectives, required approvals and types and extent of development forecasted under Seaside 2040. The draft General Plan was originally released in November 2017. An updated draft of the General Plan has been prepared and is the subject of the analysis in this EIR.

2.1 Seaside 2040

Seaside 2040 is a comprehensive update of the City's 2004 General Plan and establishes the community's vision for future development that would be implemented through 2040. As part of the general plan process, Seaside 2040 has been reorganized and reformatted, with updated goals, policies, and actions that reflect the community's unique local identity, generation of new economic opportunities, and desire to protect the coastal system and preserve the natural habitat that extends beyond the City's boundaries. Equity, sustainability, collaboration, and innovation are centrally embedded in the General Plan goals, policies, and actions. The City's General Plan Land Use Map has also been updated to reflect the identified major strategies and physical improvements, including neighborhood enhancement strategies, addressing circulation and parking issues, and long-term transformations of different areas of the City associated with the West Broadway, Campus Town, and future Seaside East Specific Plans.

Seaside 2040 provides the guidance for the City's growth and development over the planning horizon. In Seaside, steady population growth and demographic changes have shifted social and economic dynamics across the City.

Once home to a military community of 36,000, the City's employment base has evolved and will continue to evolve with the emergence of new businesses and retail opportunities on one hand, and the retention of existing businesses, some of which cater to a growing university and health care community, that will play an important role in shaping community character on the other.

While some areas of the City may experience change during the planning horizon, Seaside 2040's concerted effort to coordinate land use and transportation decisions in the City will help strategically guide future development. Embracing its small-town feel, the City will continue to enhance and revitalize existing Seaside neighborhoods. These changes will help the City position itself to generate new opportunities for economic development while ensuring the formal protection and enhancement of open space systems, ensuing in a better quality of life for City residents and visitors. The vision of Seaside 2040 is intended to be a guide for well-planned, phased growth and development.

State law (Government Code Sections 65300 et seq.) sets forth the requirement for each municipality to adopt and periodically update portions of its General Plan, and sets the requirement that a General Plan include the following eight mandatory subject areas, or "elements": Land Use, Circulation, Housing, Open Space, Conservation, Noise, Safety, and Environmental Justice. State law also allows for optional elements that can be organized or combined at the City's discretion. As described in the Section 2.4.2 below, Seaside 2040 includes the eight required elements: Land Use, Circulation, Housing, Open Space, Conservation, Noise, Safety, and Environmental Justice; and three

optional elements: Healthy and Sustainable Community, Economic Development, and Implementation.

2.2 Project Proponent/Lead Agency

The City is both the project proponent and the lead agency for the proposed general plan update, Seaside 2040. The City's Community and Economic Development Department, which is located at 440 Harcourt Avenue, Seaside, California 93955, prepared this EIR with the assistance of Rincon Consultants, Inc.

2.3 Project Location

The City of Seaside is located along the Pacific Ocean just north of the Monterey Peninsula, approximately 115 miles south of San Francisco. The City encompasses 7.94 square miles (5,082 acres) and is the second largest city in Monterey Bay in terms of land area. The City is bounded on the south by the cities of Monterey and Del Rey Oaks, on the west by Sand City, and by Marina to the north. Figure 2-1 depicts a regional map of the City's relationship to nearby cities, communities, and the state highway system.

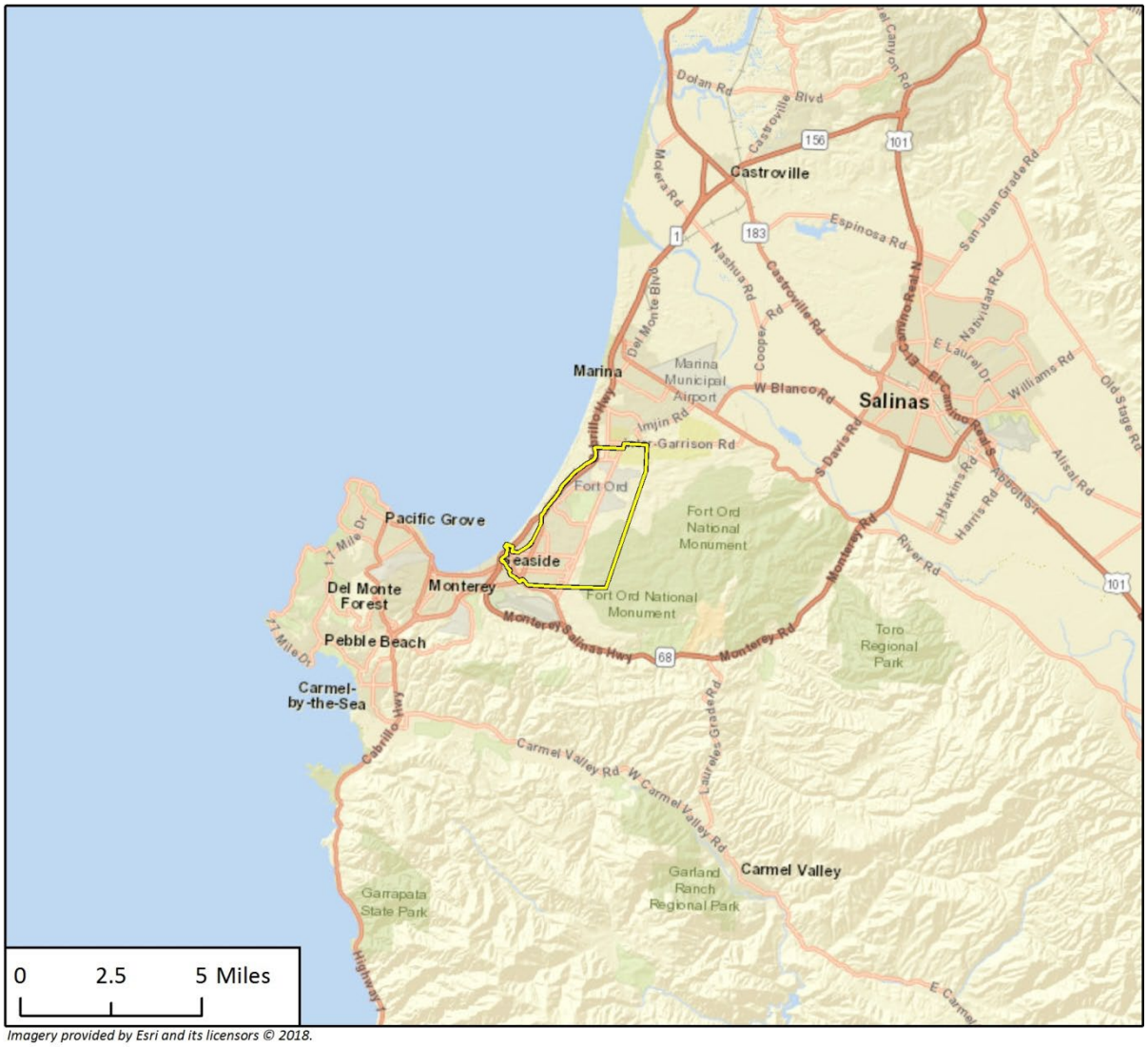
Regional access to the Seaside area is provided by State Route 1, the primary regional motor-vehicle facility that follows the Pacific coastline from Dana Point in Orange County to Leggett in Mendocino County near the Oregon border. The segment of State Route 1 abutting Seaside is a four-lane divided highway connecting Seaside with the adjacent cities of Monterey and Marina. State Route 1 connects with other regional facilities including State Routes 68, 218, 156, and 183 that provide vehicular access to US 101, Salinas, the San Francisco Bay Area, and other destinations.

Within the City limits, vehicular circulation is provided for by the City's 130-mile street network. Major streets in Seaside include Broadway Avenue, Canyon del Rey Boulevard (State Route 218), Del Monte Avenue, Fremont Boulevard, and General Jim Moore Boulevard. Seaside's bicycle route network is comprised of approximately 10 miles of bicycle routes, including those along portions of major streets as well as segments of the Monterey Peninsula Recreational Trail. These routes provide options for regional north-south connectivity between the cities of Monterey and Marina, but minimal east-west connectivity (City of Seaside 2017a).

Monterey-Salinas Transit (MST) provides bus transit service. The most heavily used bus service routes are MST Jazz Routes A, B, and C that operate between the Sand City Transit Station and Monterey. ADA-compliant Paratransit (RIDES) is offered by MST and provides transportation services for people with disabilities. The closest Amtrak station to Seaside is located in Salinas, and service between the Amtrak station and Seaside's MST network is provided via Route 55 (City of Seaside 2017a).

With an estimated 2022 population of 32,068, Seaside is the second most populous of Monterey County's 12 cities after Salinas (DOF 2022). The Depression in the 1930s brought new populations to the Seaside area from the Dust Bowl. Other newcomers came from Italy and other parts of Southern Europe, who found work in the Monterey-area canneries. Seaside became a multicultural enclave, housing many of the cannery workers who could not afford to live in Monterey. New homes were built, and small businesses were established to serve the new population.

Figure 2-1 Regional Location



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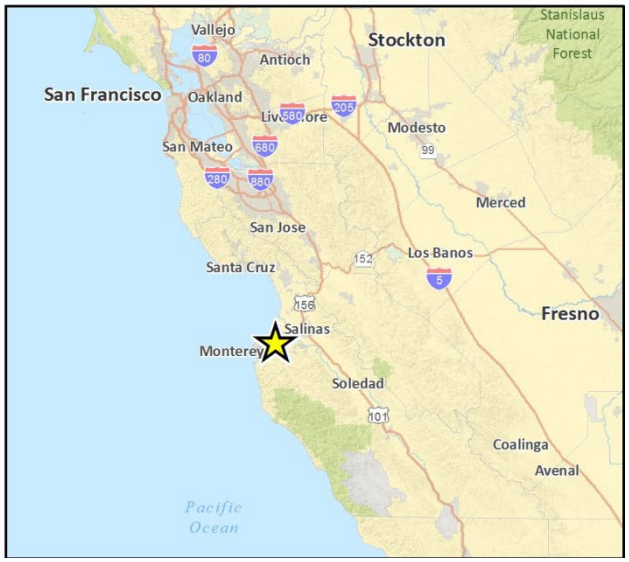
Project Location

N



EIRFig 1 Regional Loc_v2

The full operation of Fort Ord in the early 1940s, during World War II, brought new military-related population growth to Seaside. Following the incorporation of the City in 1954, Fort Ord expanded, creating another surge in population. With the closure of Fort Ord as an active-duty military base, between 1991 and 1994, Seaside's population declined. Today, Seaside is a fairly mature community with almost three-quarters of its housing stock developed more than 30 years ago. Approximately 77 percent of units in the City were built before 1980, including 38 percent that were built before 1960 (City of Seaside 2017b).

Presently, the City is comprised of two adjacent and interrelated entities: the existing Seaside neighborhoods, the original area before base annexation, which is largely built out; and the former Fort Ord Army base lands, which stretch northward and eastward from the City's existing neighborhoods and which are essentially underdeveloped apart from remnants of the base with notable exceptions of the CSUMB campus and Seaside Highlands. Urban land uses predominate the City proper, while open space and former military uses largely exist to the north and east of the City (City of Seaside 2023).

The area within the existing City limits is identified in this EIR as the "General Plan Area." There are no annexations or Sphere of Influence changes included with Seaside 2040. Figure 2-2 illustrates the General Plan Area used for analysis within this EIR. The General Plan Area is coterminous with Seaside's City limits and the City's Sphere of Influence affirmed by the (LAFCO) on January 31, 2011, except where the City limits extend northwest from the shoreline 7,000 feet into the Pacific Ocean (LAFCO 2017). The proposed General Plan goals, policies and implementation programs as well as proposed land use changes apply within the existing City limits, and the EIR evaluates the physical changes anticipated to occur under build-out of Seaside 2040 as well as those goal and policies that have the potential to result in physical environmental effects.

2.4 Components of the Proposed General Plan Update

Seaside 2040 is a comprehensive update of the City's 2004 General Plan. The 2004 General Plan is made up of eight mandatory elements: Land Use, Circulation, Housing, Open Space, Conservation, Noise, Safety, and Environmental Justice; and three optional elements: Healthy and Sustainable Community, Economic Development, and Implementation. The land use plan from the 2004 General Plan specifies 14 separate land use designations and one overlay. These land use designations define the basic categories of land use allowed in the City, and are implemented through the City's Zoning Ordinance and Zoning Map, which contain more specific regulations and standards governing development on individual properties (City of Seaside 2004). Under State law, a property's zoning is required to be consistent with its General Plan land use designation (Government Code Section 65860). Section 65860(c) of the Government Code requires that when a General Plan is amended in a way that makes the Zoning Ordinance inconsistent with the General Plan, "the zoning ordinance shall be amended within a reasonable time so that it is consistent with the general plan as amended."

2.4.1 Purpose and Objectives of the General Plan Update

The fundamental purpose of the General Plan update is to function as a policy document to guide land use decisions within the City's planning area through the year 2040. The vision for the City through 2040 was developed with extensive community input. Based on this input and in recognition of the state's planning priorities, a vision for the community was developed.

Figure 2-2 General Plan Area

Imagery provided by Google and its licensors © 2017.

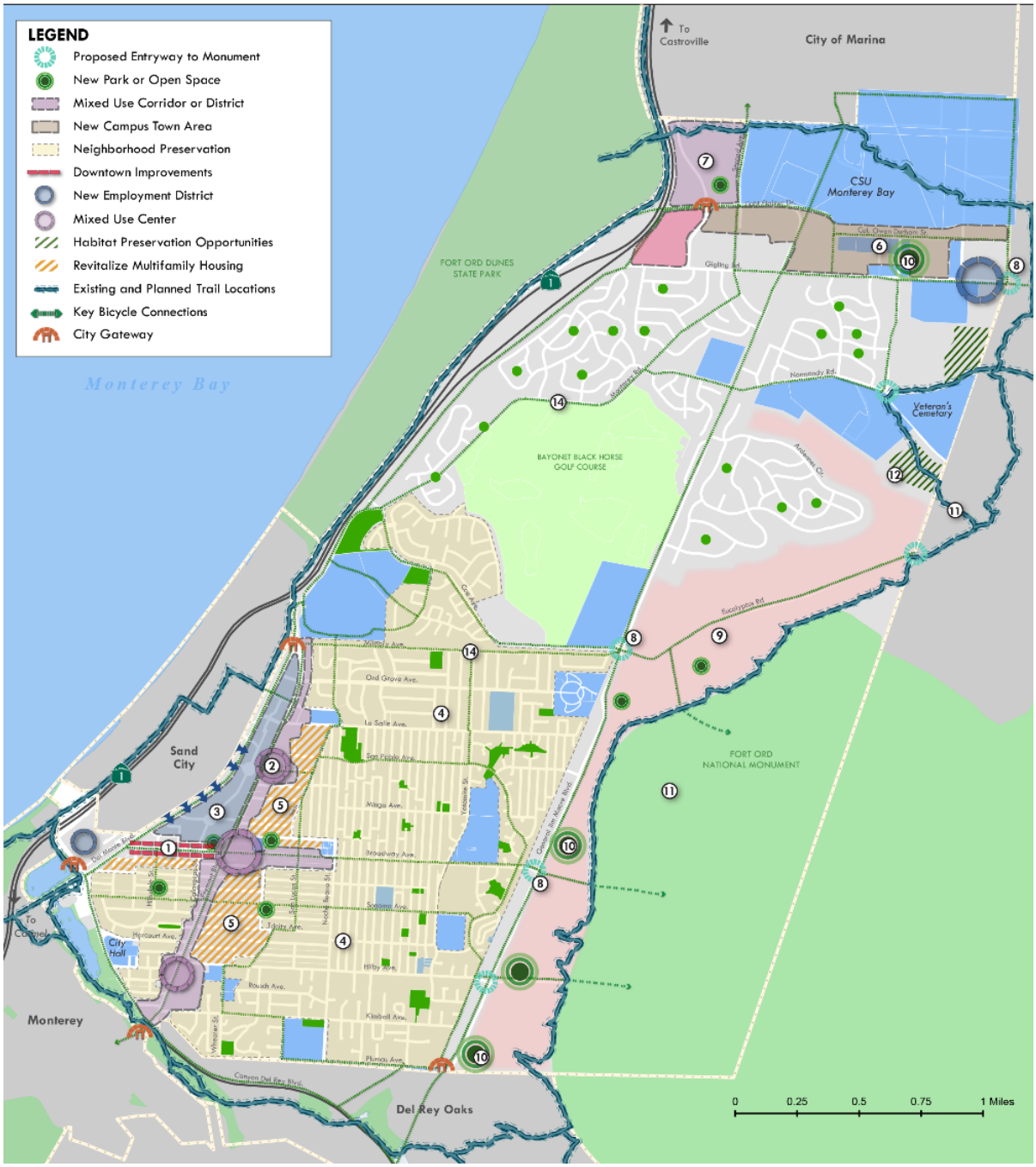
The major strategies of Seaside 2040 are contained in Chapter 2, Vision and Guiding Principles, of the draft General Plan, and are provided below.

Project Objectives (Major Strategies)

Seaside 2040 has identified a series of major strategies and physical improvements that should occur through 2040. These strategies, also identified in the Seaside 2040 Land Use Map, include neighborhood enhancement strategies, addressing parking and circulation issues, and long-term transformations of different areas of the City associated with the West Broadway, Campus Town, and future Seaside East Specific Plans, as illustrated in Figure 2-3. The project objectives/major strategies are listed below.

1. **Create a vibrant Downtown Seaside.** The General Plan and West Broadway Urban Village Specific Plan envision a walkable, pedestrian-oriented streetscape with buildings placed close to the sidewalk, ground-floor retail, and new residential units along West Broadway Avenue. Active ground-floor retail will be focused in the centers to create a lively shopping experience. East Broadway Avenue will be transformed into a mixed-use corridor with higher-intensity mixed-use centers at Fremont Boulevard and San Lucas Street.
2. **Transform Fremont Boulevard into a mixed-use corridor.** Fremont Boulevard will be transformed from an auto-oriented corridor characterized by low density uses into a beautiful mixed-used corridor with higher-intensity mixed-use centers at Hilby Avenue, Broadway Avenue, and Echo Avenue.
3. **Enhance the Auto Center for diverse employment.** Maintain the Seaside Auto Center as a vibrant center for employment, supporting a diverse mix of companies, jobs, and makerspaces, while creating more walkable blocks.
4. **Preserve established neighborhoods.** The priority is to preserve and enhance existing low-density neighborhoods by maintaining the overall scale and character, while improving current issues, such as lack of parking access to recreational parks and open spaces, and improving the bicycle network.
5. **Renovate multifamily areas with a greater diversity of housing.** The city's mixed-density neighborhoods adjacent to Fremont Boulevard present an ideal opportunity to expand affordable housing choices, which will benefit many, including young professionals looking to remain or relocate in Seaside, first-time homebuyers, or seniors looking to downsize, among others. The General Plan promotes a diverse mix of building types and unit sizes, encourages, new deed-restricted affordable housing, and incentivizes the renovation of redevelopment of older multi-family buildings.
6. **Build Campus Town adjacent to CSUMB.** A long-term opportunity exists to capitalize on the adjacency of CSUMB by providing campus-supporting uses for the University student and faculty population and the broader Seaside community. The Campus Town Specific Plan, adopted in early 2020, provides a framework for the development of a new neighborhood with a diversity of land uses, new community parks, and safe and convenient walking and biking paths with easy access to CSUMB.
7. **Develop a mixed-use gateway at "Main Gate."** Located immediately to the east of State Route 1, the General Plan envisions this area will transform into a mixed-use center with retail, residential, and entertainment uses. This area can also service as an entryway to the Fort Ord National Monument and Fort Ord Dunes State Park with appropriate signage and monument-supporting uses.

Figure 2-3 Major Strategies of Seaside 2040



8. **Create entryways to the City's key amenities and destinations.** To draw regional tourism, there will be visitor-serving uses at identified entrances at the Fort Ord monument and the Dunes State Park. Appropriate uses might include cafes, restaurants, and other food retail, recreational services (bicycle shops, kayaking, etc.), arts and entertainment, and lodging.
9. **Develop Seaside East with sustainable neighborhoods and the preservation of natural areas.** Seaside East, one of the city's potential future growth areas, will be developed in a way that balances new diverse neighborhoods and mixed-use retail areas with the preservation of significant natural resources. New development will be clustered into traditional, walkable neighborhoods with a diversity of low and moderate density housing types, including "neighborhood centers" that provide retail, services and amenities for residents. Significant natural areas, habitat corridors and buffers to the National Monument will be developed to enhance the city's open spaces. Significant new recreational facilities will be developed to provide much-needed sports and athletic facilities. Finally, new office and R&D uses will be included to diversify the city's economic base.
10. **Construct new and enhance existing parks.** Anticipated population and employment growth in the city will increase demand for new park and recreational facilities. Former Fort Ord lands, including Seaside East, Campus Town, and Main Gate will provide new neighborhood, community, and recreational commercial areas. Adding innovative green spaces, re-programming unused spaces for public use, and improving pedestrian and bicycle connections to existing parks and open space within existing Seaside neighborhoods can improve park access for residents in the Terrance West, Terrace East, Noche Buena, Rousch, and Olympia neighborhoods, who are living greater than one-half mile walking distance from a park.
11. **Create an active trail network.** Seaside will continue on its path to create a regional network of active open space trails and bicycle facilities that improve access to the Fort Ord National Monument, Dunes State Park, Seaside Beach, open space, and other neighborhood and community parks, Trails will connect to formal and informal trailheads in the National Monument and link to tother current and proposed recreational trails and greenways connecting communities to open space, including the Fort Ord Regional Trail and Greenway (FORTAG).
12. **Preserve habitat.** As future development occurs on former Fort Ord lands and within existing Seaside neighborhoods, the City will require new development to protect sensitive habitats and preserve the extensive natural resources in Seaside. In particular, new growth in Seaside East will be accompanied by active open space corridors with trails that support natural vegetation communities, scenic vistas, sensitive habitats, and connections to the National Monument and FORTAG. Important oak woodlands and oak linkages will be protected and managed, and an open space buffer between future development and the National Monument will be created.
13. **Create a multimodal network of complete streets.** The General Plan envisions a citywide network of "Complete Streets" that meet the needs of all users, including bicyclists, children, persons with disabilities, drivers, movers of commercial goods, pedestrians, public transportation, and seniors. Street standards ensure all travel modes are accommodated on new streets and street retrofit projects. The General Plan calls for "road diets" on East Broadway, Del Monte Boulevard, and Fremont Boulevard to reduce the number of motor vehicle traffic lanes to allow for a reallocation of roadway space on segments of key commercial streets with excess capacity.

14. **Construct a complete bicycle network.** The General Plan builds on the existing regional and local planned bikeway network, identifying new on-street bike lanes, off-street bike paths, and separated cycle tracks to increase the convenience and use of cycling as a daily form of transportation. By increasing cycling in Seaside, the community will realize a number of community benefits, including improved health, reduced traffic, less need for costly roadway improvement projects, and improved air quality.
15. **Ensure a sustainable water supply to support economic development.** Seaside faces water supply limitations that may affect existing residents and future growth. Developing a strong framework of policies and practices that encourage sustainable water management is a critical step to strengthen the local (and regional) economy. These actions include: promoting water conservation and efficiency in existing buildings, increasing the City's recycled water supply, optimizing groundwater recharge, and supporting a portfolio of new water sources under development by California American Water (Cal-Am), Marina Coast Water District (MCWD), Monterey Regional Water Pollution Control Agency (MRWPCA) and Monterey Peninsula Water Management District (MPWMD). Once this occurs, intensification and redevelopment can occur in areas such as Downtown Seaside and Fremont Boulevard (City of Seaside 2023).

2.4.2 General Plan Organization

State law (Government Code Section 65302) requires a General Plan, a city policy document, to include the following eight mandatory subject areas, or "elements": Land Use, Circulation, Housing, Open Space, Conservation, Noise, Environmental Justice, and Safety. State law also allows for optional "elements" that can be organized or combined at the City's discretion. As shown on Table 2-1, below, Seaside 2040 includes the eight required elements and three optional elements where the required General Plan chapters are addressed in the General Plan Update. The General Plan Update is organized into twelve Chapters, including an introduction, vision and guiding principles setting, and nine General Plan Chapters, and a chapter the General Plan implementation actions. The nine General Plan Chapters encompass all of the elements required by California General Plan law.

A description of each chapter is provided below:

- **Chapter 1 – Introduction.** This chapter presents a picture of Seaside's transformation, identifies changes to the natural and urban landscape, provides a brief history of Seaside, provides a summary of issues and opportunities facing the City, and concludes with a description of the purpose of the General Plan.
- **Chapter 2 – Vision and Guiding Principles.** This chapter includes a vision, guiding principles, and major strategies for the City intended to be a guide for well-planned phased growth and development.
- **Chapter 3 – Land Use and Community Design.** This element presents the approach to land use and urban design, providing clear parameters for future development and change in the City. Within this element are the distribution of existing land uses and detailed General Plan land use designations for each sub-area. Finally, this element includes a designation map and goals and policies describing the community's preferences and priorities for the character and appearance of the City. Specific land use designations in the Land Use and Design Element are summarized in Table 2-3 below.

- **Chapter 4 – Economic Development.** This element presents a summary of existing economic and market conditions, in addition to providing goals and policies related to: 1) business attraction and retention, and 2) jobs and workforce development. It highlights the City's unique economic position and addresses the potential for economic growth, new jobs, and the need for fiscal stability.
- **Chapter 5 – Housing.** The City's Housing Element is undergoing an update to meet the December 2023 deadline for adoption. The City is processing the Housing Element update separate from Seaside 2040; therefore, Seaside 2040 includes the existing Housing Element. The Housing Element must be updated on a regular basis and more frequently than the balance of the General Plan and is currently in its 6th Cycle. The Housing Element addressees: maintenance and preservation of housing and neighborhoods, provisions for a diverse housing inventory to meet changing socio and economic needs; housing affordability and protections from the risks of household displacement; housing opportunities for special needs residents; public/private partnerships and regional collaboration to address housing issues; and community involvement in housing policies and programs.
- **Chapter 6 – Mobility.** This element presents the approach to mobility, addressing the circulation system, complete streets, and coordination with land use decisions in the City. Included in this element are descriptions of street types and the circulation network map as well as goals and policies addressing existing and future transportation facilities in Seaside for pedestrians, bicycles, and transit.
- **Chapter 7 – Parks and Open Space.** This element presents the community's desire for safe, accessible, high-quality green spaces, including parks, open spaces, and recreational facilities. Within this element are the distribution of existing park and recreational areas, including details on facility types and needs. The element additionally provides information on recreational programming, environmentally-sensitive habitat, and scenic and visual resources in the City. Finally, this element identifies goals and policies describing the community's preferences and priorities for park, open space, and recreational facilities in the City.
- **Chapter 8 – Conservation.** This element addresses the conservation, development, and sustainable use of Seaside's natural resources, including, but not limited to, environmentally sensitive species, habitat areas, and scenic and visual resources. Strategies to manage the adverse impacts of stormwater runoff and climate change are also discussed. In addition, this element provides guidance to enhance and protect cultural and historic resources, including tribal cultural resources, former Fort Ord sites, and significant people, places, and events in the City.
- **Chapter 9 – Healthy and Sustainable Community.** This element presents the community's vision for promoting a healthy and sustainable environment in Seaside. It acts as the City's environmental justice element, identifying disadvantaged populations and establishing goals and policies related to health care access, neighborhood design and safety, workforce training, community engagement, and healthy food access, among others. It also includes goals and policies that address greenhouse emissions, renewable energy, conservation, and green waste and recycling.
- **Chapter 10– Community Facilities and Infrastructure.** This element presents the community's interest in maintaining efficient and well-managed community facilities and infrastructure, including water, energy, waste, and telecommunications networks. The element also includes goals and policies that address the provision of public facilities and services, including city

facilities and schools. Finally, it addresses coordinating efforts and strategies with CSUMB's future expansion.

- **Chapter 11– Safety.** This element presents public safety challenges in the City, including emergency services, seismic hazards, flooding, wildfire, climate change, and hazardous materials. This chapter also includes identifies potential risks and describes how climate change will alter that risk profile. The element contains goals and policies that will help guide the City's decisions related to new development and minimize risks to the health, safety, and welfare of the community resulting from local hazards.
- **Chapter 12 – Noise.** This element addresses the approach for minimizing noise levels in the City and contributing to a higher quality of life for the community. The element analyzes and quantifies existing and future noise levels. It includes maps summarizing the results, and presents goals and policies for managing exposure to excessive noise through enforcement of noise standards, land use planning, site design, and innovative building technology.
- **Chapter 13 –Implementation.** This chapter contains a list of specific actions with a brief description, level of priority, timeframe for accomplishing each identified task, and the responsible party or parties for each action.

Table 2-1 General Plan Elements and State Required Elements

	State Required Elements								
	Land Use	Open Space	Circulation	Conservation	Noise	Safety	Housing	Environmental Justice	Not Required
Seaside 2040 General Plan Chapters									
Land Use & Community Design	☒	☒	☒	☒			☒		
Economic Development	☒						☒		☒
Housing							☒		
Mobility			☒						
Parks and Open Space		☒						☒	
Conservation				☒					
Healthy and Sustainable Community						☒		☒	☒
Community Facilities and Infrastructure[1]								☒	☒
Safety				☒		☒			
Noise					☒				
Implementation Actions	☒	☒	☒	☒	☒	☒	☒	☒	☒

[1] The State of California does not require a Community Facilities and Infrastructure Element, but does require the topic of facilities and infrastructure to be addressed. State law requires capital facilities to be consistent with the general plan (*Friends of B Street v. City of Hayward (1980) 106 Cal.App.3d 988*).

Each chapter contains information describing the current conditions in Seaside and discusses what the City needs to do to accomplish during the time horizon of the General Plan. Each chapter includes a setting, a summary of statutory requirements, key issues and opportunities, and goals and policies focused on achieving the vision statement of the General Plan Update. Government Code Section 65301 allows the general plan to "be adopted in any format deemed appropriate or

convenient by the legislative body, including the combining of elements." Consequently, while Table 2-1 outlines the primary chapters utilized for statutory compliance, the City may still rely upon language in other portions of the General Plan not listed in Table 2-1 in fulfilling the individual element's statutory requirements.

2.4.3 General Plan Goals

Based on the vision statement, guiding principles, identified major strategies and physical improvements, and input from the community, Seaside 2040 includes goals in each chapter to address a specific need, concern, opportunity, or desire. Goals are broad in both purpose and aim, but are designed specifically to establish positions or directions. The goals in each chapter are listed in Table 2-2.

Table 2-2 General Plan Goals

General Plan Chapter	Goals	
Land Use & Community Design	**Goal LUD-1**	An urban form and structure that enhances the quality of life of residents, meets the community's vision for the future, and weaves new growth areas together with long-established Seaside neighborhoods.
	Goal LUD-2	Increased employment opportunities in Seaside to meet the needs of existing and future residents.
	Goal LUD-3	New retail and commercial activity in the city to meet the needs of residents and create regional destinations.
	Goal LUD-4	Revitalized and improved existing commercial areas.
	Goal LUD-5	Visitor-serving amenities that support and strengthen the City's relationship to the Fort Ord National Monument and the Dunes State Park.
	Goal LUD-6	A safe urban environment oriented and scaled to pedestrians and bicyclists.
	Goal LUD-7	A city with beautiful and vibrant architecture and building design that reflects the culture and character of Seaside.
	Goal LUD-8	A network of pedestrian-oriented, human-scale and well-landscaped streetscapes throughout Seaside.
	Goal LUD-9	Maintain and enhance existing residential neighborhoods.
	Goal LUD-10	Preserve and improve the quality, diversity, and affordability of existing single-family neighborhoods.
	Goal LUD-11	High-quality multi-family neighborhoods with a mixture of well-designed building types for a diversity of households.
	Goal LUD-12	Create a pedestrian-oriented Downtown along Broadway Avenue and Del Monte Boulevard that is a local and regional-serving mixed-use district.
	Goal LUD-13	Transform Fremont Boulevard into a distinct, visually-consistent mixed-use commercial boulevard with neighborhood and regionally-serving centers.
	Goal LUD-14	Maintain the auto center as a critical economic engine for Seaside while allowing for the gradual transformation of the area.
	Goal LUD-15	Abundant and high-quality natural open space on former Fort Ord lands.
	Goal LUD-16	Design new Seaside neighborhoods on former Fort Ord lands sustainably by linking land use, transportation, and infrastructure development to increase non-automobile travel, protect sensitive habitat, and reduce infrastructure costs.
	Goal LUD-17	Seamlessly connect new growth areas on former Fort Ord lands with the rest of the City.
	Goal LUD-18	New development supports the preservation or enhancement of the city's natural resources.
	Goal LUD-19	Resilient neighborhoods on former Fort Ord lands.

General Plan Chapter	Goals	
	Goal LUD-20	Balanced, diverse, and sustainable growth.
	Goal LUD-21	Transform Seaside's northern area into a mixed-use, economically-vibrant Campus Town that serves a student population and leverages its geographic adjacency to CSUMB.
	Goal LUD-22	Transform the "Main Gate" area into a mixed-use center with retail, residential, and entertainment.
Economic Development	**Goal ED-1**	A healthy business climate that supports the growth and prosperity of businesses that are beneficial to the community.
	Goal ED-2	A strengthened and diversified economy, with additional employment opportunities brought by the attraction and expansion of local and regional businesses.
	Goal ED-3	Industries that supply markets outside of the region are attracted and expanded to create a more stable, diversified local economy and additional employment opportunities.
	Goal ED-4	Seaside's labor force is highly utilized and recognized as an economic development asset.
	Goal ED-5	Regional institutions of higher learning are key partners, contributors and beneficiaries to Seaside's local economy.
Housing	**Goal H-1**	Well-maintained neighborhoods and housing conditions support an improved quality of life.
	Goal H-2	Neighborhoods with a range of housing opportunities to meet the existing and projected needs of all socioeconomic segments of the community.
	Goal H-3	Ample new housing affordable available to extremely low, very low, low, and moderate-income households in Seaside.
	Goal H-4	A streamlined development process to encourage housing production and reduce the costs of development.
	Goal H-5	A City that preserves and enhances housing affordability in the community, with an emphasis on promoting affordable housing for extremely low, low, and moderate income households.
	Goal H-6	A City that protects Seaside households from the risks of displacement.
	Goal H-7	A diverse housing stock that meets the unique housing needs of special needs groups in Seaside, including seniors, persons with disabilities, homeless, at-risk youth, and veterans, among others.
	Goal H-8	The City of Seaside is a leader seeking regional solutions to housing issues in the Monterey Bay area.
	Goal H-9	An open process that facilitates community involvement in the development of housing policies and programs and enhance accountability.
Mobility	**Goal M-1**	A citywide network of "complete streets" that meets the needs of all users, including bicyclists, children, persons with disabilities, motorists, movers of commercial goods, pedestrians, public transportation, and seniors.
	Goal M-2	Mobility options that serve the multi-modal access and travel needs generated by new development in a manner suitable to the local context.
	Goal M-3	Pedestrian facilities that connect land uses, address safety concerns, and support land use and urban design goals.
	Goal M-4	Accessible regional connections to parks, recreational facilities, and open space.
	Goal M-5	A citywide bicycle network that connects residential, commercial, educational and recreational uses, and earns Seaside the reputation of a bicycle-friendly city.
	Goal M-6	Transit service that is frequent and convenient, and maximizes ridership potential for residents, employees and visitors.

General Plan Chapter	Goals	
	Goal M-7	A safe transportation system that eliminates traffic-related fatalities and reduces non-fatal injury collisions.
	Goal M-8	Well-managed commercial parking that supports Seaside's businesses and limits impacts on adjacent residential neighborhoods.
	Goal M-9	Minimize the impact of motor vehicle parking on residential neighborhoods.
	Goal M-10	Environmentally sustainable transportation.
	Goal M-11	Integrate Seaside's circulation system with the larger regional transportation system to ensure the economic well-being of the community.
Parks and Open Space	**Goal PO-1**	Park and recreational facilities to serve Seaside.
	Goal PO-2	Natural open space on former Fort Ord lands.
	Goal PO-3	Well-maintained and safe parks, recreational facilities, and open spaces.
	Goal PO-4	Accessible connections to parks, recreational facilities, and open space.
	Goal PO-5	The coast is easily accessible from existing Seaside neighborhoods and former Fort Ord lands by different transportation modes.
	Goal PO-6	Partnerships and agreements that improve park access.
	Goal PO-7	Environmental sustainability and awareness at new and existing park and recreational facilities.
Conservation	**Goal C-1**	Sensitive species and habitat protected on former Fort Ord lands.
	Goal C-2	New development supports the preservation or enhancement of the city's natural resources.
	Goal C-3	A City that protects, conserves, and enhances the natural beauty and resources within the coastal zone.
	Goal C-4	Pollutant discharge managed to minimize adverse impacts on water quality in the Monterey Bay, Robert's Lake, Laguna Grande and other bodies of water.
	Goal C-5	An abundant, robust urban forest that contributes to Seaside's quality of life as it combats the effects of climate change.
	Goal C-6	Scenic vistas, views, and highways are protected and enhanced.
	Goal C-7	Visible and strong arts and cultural identity in Seaside.
	Goal C-8	A strong sense of cultural and historic heritage.
Healthy and Sustainable Community	**Goal HSC-1**	A City that supports health equity of all residents by promoting access to affordable, quality health care, mental health care, and social services.
	Goal HSC-2	Neighborhoods designed to encourage a healthy lifestyle for people of all ages, abilities, income levels, and cultural backgrounds.
	Goal HSC-3	Healthy and affordable food available to all residents.
	Goal HSC-4	Neighborhoods that enhance the safety and welfare of all residents, employers, and tourists in the City of Seaside.
	Goal HSC-5	A community that actively participates and engages in decision-making processes.
	Goal HSC-6	High-quality educational and expanded workforce opportunities for all Seaside residents.
	Goal HSC-7	Citywide greenhouse gas emissions that meet State reduction targets.
	Goal HSC-8	Buildings and landscapes that promote water conservation and efficiency and the increased use of recycled water.
	Goal HSC-9	Energy efficient buildings that use energy from renewable sources.
	Goal HSC-10	A City that supports programs and partnerships that address the diverse childcare needs of its community.
	Goal HSC-11	New construction that meets a high-level of environmental performance.
	Goal HSC-12	A zero-waste program that increases recycling and reduces food scraps and green waste sent to the Regional Waste Management District.

General Plan Chapter	Goals	
Community Facilities and Infrastructure	**Goal CFI-1**	City-wide infrastructure to support existing development and future growth.
	Goal CFI-2	A sustainable water supply that supports existing community needs and long-term growth.
	Goal CFI-3	Clean and sustainable groundwater.
	Goal CFI-4	Well-maintained water and sewer systems that meets the City's current and future needs.
	Goal CFI-5	Safe and environmentally-sustainable stormwater management.
	Goal CFI-6	A flexible and effective system that reduces solid waste and waste resources.
	Goal CFI-7	City-wide access to high-quality energy utility and telecommunication services.
	Goal CFI-8	High-quality community facilities and services that meet the needs and preferences of all residents in the City.
	Goal CFI-9	Access to high-quality education and community services for all residents.
	Goal CFI-10	An integrated and well-planned expansion of CSUMB.
	Goal CFI-11	Leader in technology-driven innovation in government.
Safety	**Goal S-1**	A high standard of police services with a focus on community-based crime prevention.
	Goal S-2	Effective emergency response following a natural or human-caused disaster.
	Goal S-3	Protection from the effects of earthquakes, landslides, tsunamis, and other natural disasters.
	Goal S-4	Safeguarding of vulnerable community members, natural resources, buildings and facilities, and services and infrastructure from inland flooding.
	Goal S-5	Safeguarding of vulnerable community members, natural resources, buildings and facilities, and services and infrastructure from sea level rise, and associated hydrological and erosion hazards.
	Goal S-6	Minimization of risk of fire hazards in the City and wildfire hazards on former Fort Ord lands through fire prevention design and fuel reduction strategies.
	Goal S-7	Strong coordination with regulatory agencies to ensure safe and effective remediation of hazardous and toxic materials.
	Goal S-8	A resilient community that is prepared for the potential impacts of drought.
	Goal S-9	A resilient built and natural environment, service lines, and community that is prepared for the potential impacts of extreme heat.
	Goal S-10	A resilient community that is prepared for the potential impacts of climate change.
	Goal S-11	Integration of relevant plants into the Safety Element Goals and Actions.
Noise	**Goal N-1**	Appropriate noise environments that are compatible with existing and proposed land uses based on guidelines provided in the Noise Element.
	Goal N-2	Minimal transportation-related noise impacts.

Source: City of Seaside 2023

2.4.4 General Plan Land Use Map

The purpose of the General Plan Land Use Map is to guide the general distribution, location, and extent of the various types of land uses in the City. Figure 2-4 depicts the land use designations from the 2004 General Plan. Figure 2-5 depicts the proposed Seaside 2040 designations map which includes 15 designations. Similar to the 2004 General Plan land use designations, each of the 2040 General Plan designations includes the allowed maximum density or intensity of development. The Seaside 2040 designations differ by providing specific guidance on the intended physical character of future development, including building placement on a lot, lot coverage, floor area ratios, dwelling units per acre, building frontage, streetscape character, and parking location and access. Table 2-3 provides a brief description of the Seaside 2040 designations. If Seaside 2040 is adopted, the City would subsequently review its Zoning Ordinance and Zoning Map, to ensure they are consistent with the new General Plan.

Figure 2-4 2004 General Plan Land Use Map

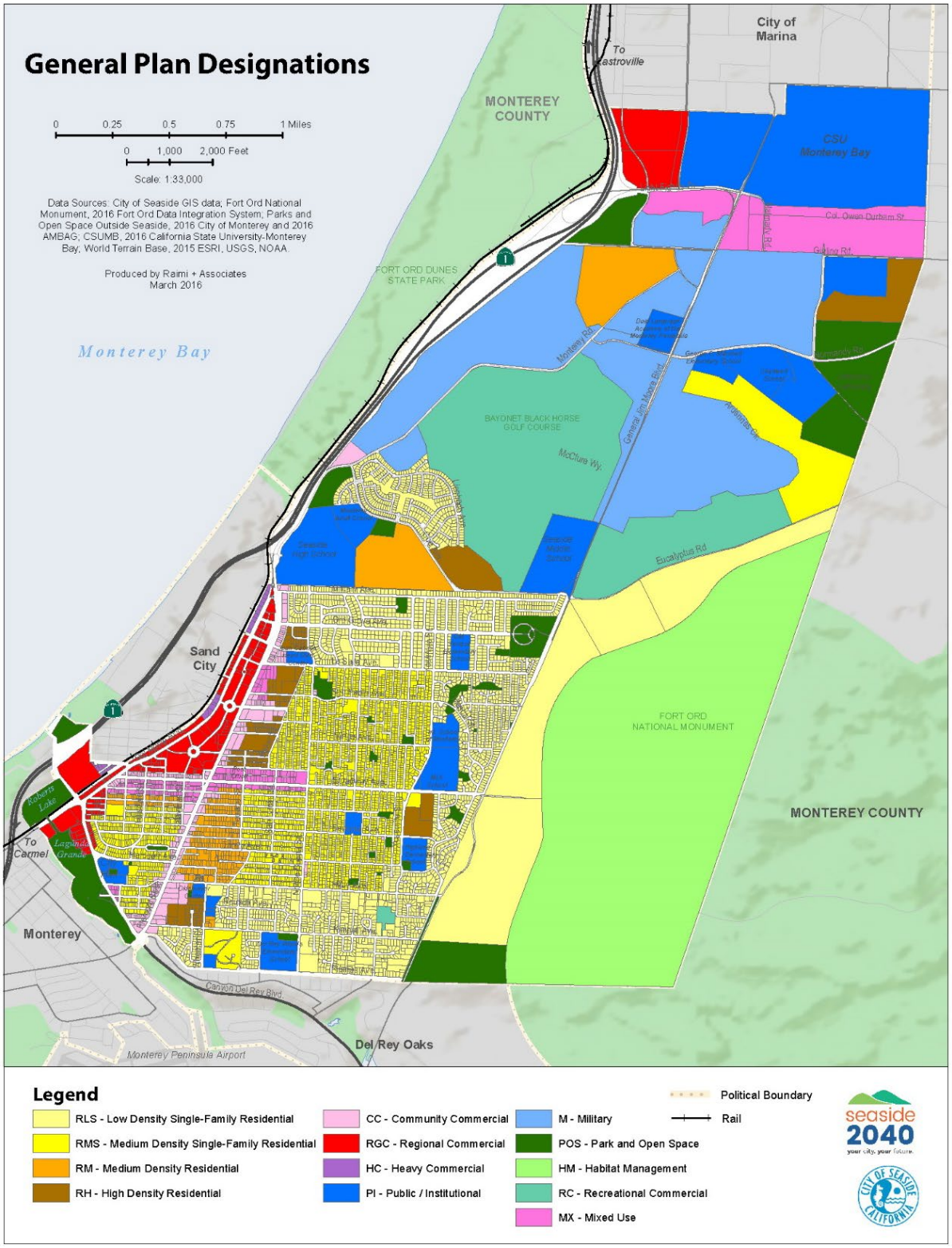


Figure 2-5 Proposed Project Site and Seaside 2040 Proposed Land Use Map

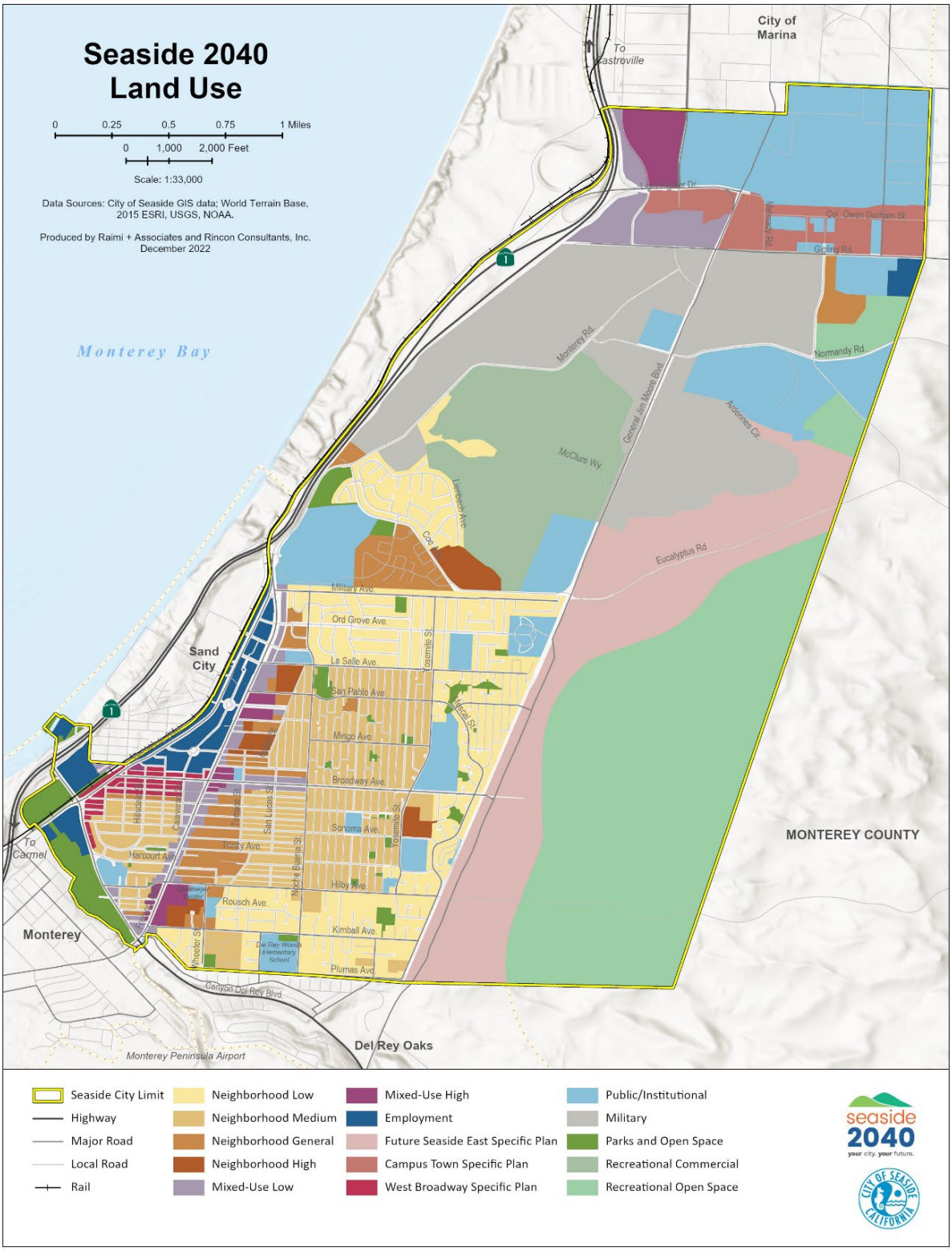


Table 2-3 Proposed Seaside 2040 Land Use Designations

Land Use Designation	Description	Allowed Intensity: Maximum Density/FAR
Residential		
Neighborhood Low (NL)	This land use designation provides for the retention, maintenance, and development of existing single-family residential neighborhoods. Neighborhood low allows one unit per lot, plus a secondary unit as applicable.	8 du/acre *(1 unit per parcel, plus second unit where allowed)* Up to two stories or 24 feet. Up to 24 persons/square mile.
Neighborhood Medium (NM)	This land use designation provides for the development of low- and moderate-density living accommodations, including attached and detached single-family buildings.	15 du/acre Up to two stories or 28 feet. Up to 45 persons/square mile.
Neighborhood General (NG)	This land use designation allows a variety of residential buildings that coexist in close proximity to one another, from single-family to low-rise multifamily buildings.	30 du/acre Up to three stories or 36 feet. Up to 90 persons/square mile.
Neighborhood High (NH)	This land use designation allows for multifamily residences at a range of densities from townhomes to four-story apartment buildings.	45 du/acre Up to four stories or 48 feet. Up to 135 persons/square mile.
Commercial & Mixed-Use		
Employment (EMP)	This designation provides for a range of employment uses to expand and diversify the City's economy.	Ranges up to 2.5 FAR (including residential dwelling unit floor area). Hotels are allowed up to 4.0 FAR. Mixed-use developments can have up to 30 du/acre or 90 persons/square mile (whichever is greater).
Mixed Use Low (MUL)	This designation provides for areas with a wide variety of existing residential and commercial uses. Provides for additional housing and expansion of neighborhood-serving retail and commercial uses.	2.5 FAR Up to four stories (50 feet). 45 du/acre or up to 135 persons/square mile (whichever is greater).
Mixed Use High (MUH)	This designation supports new lively, thriving areas in the City by accommodating multi-story mixed-use buildings at higher intensities. Provides for vertical and horizontal mixed-use development.	3.0 FAR (including residential dwelling unit floor area). Up to five stories (60 feet). 60 du/acre or up to 180 persons/square mile (whichever is greater).
Planned		
West Broadway Urban Village Specific Plan (WBUV)	This designation implements the vision of the West Broadway Urban Village Specific Plan, for a well-designed, family-focused and pedestrian-oriented Downtown. Allowed land uses, intensity and physical character are regulated by the Specific Plan. This Specific Plan allowed the following population densities and building intensities (1) Mixed Use (MX) designation allowed densities ranging from 30 to 60 dwelling units per gross acre (Commercial/residential=3.0:1 FAR and Commercial/office = 2.5:1 FAR), (2) High Density Residential/Mixed Use (RH/MX) designation allowed densities from 20 to 30 dwelling units per acre and FAR = 2.5:1, (3) Medium Density Residential (RM) designation allowed	Regulated by the Specific Plan

Land Use Designation	Description	Allowed Intensity: Maximum Density/FAR
	densities from 10 to 20 dwelling units per acre and FAR = 2.5:1, (4) Parks and Open Space (POS) designation allowed intensities of 0.01:1. This Specific Plan also assumed 2.5 persons per equivalent dwelling unit.	
Campus Town Specific Plan (CTSP)	The Campus Town Specific Plan, covering approximately 120 acres, is an infill project to replace a dilapidated portion of the former Fort Ord Army Base near the freeway interchange at Lightfighter Avenue and Highway 1. The Specific Plan permits development of 1,485 housing units, 250 hotel rooms, 150,000 square feet of retail dining, and entertainment and 50,000 square feet of office, flex, makerspace and light industrial, as well as park, recreational areas and supporting infrastructure. The Specific Plan regulates residential and commercial density and intensity through the implementation of a series of building types and form-based standards by sub-area within Campus Town. This Specific Plan assumed 3.3 persons per equivalent dwelling unit.	Regulated by the Specific Plan
Future Seaside East Specific Plan (SESP)	This designation establishes the intent to prepare a Specific Plan for Seaside East to determine neighborhood character intensities. Allowed land uses, intensity and physical character will be defined through a future Specific Plan process. Future plans will include a mix of Land Use Designations as consistent with the densities defined by the General Plan, including: Employment designation up to 2.5 FAR, Mixed Use High allows densities up to 60 du/ac or 3.0 FAR, Mixed Use Low allowed densities up to 45 du/ac or 2.5 FAR, Neighborhood High allows 30 to 45 du/ac, Neighborhood General allows 15 to 30 du/ac, Neighborhood Medium allows 8 to 15 du/ac, Neighborhood Low allows up to 8 du/ac, Parks and Open Space allows up to 0.01 FAR, Recreation-Open Space allows up to 0.005, Recreation-Commercial allows up to 0.2, and Public/Institutional allows up to 0.4 FAR.	Regulated by the Specific Plan
Public		
Parks and Open Space (POS)	This designation preserves natural resources and provides for public open space.	0.01 FAR
Recreation – Open Space (R-OS)	This designation protects open space and natural resources on former Fort Ord lands. Habitat management, passive recreation, trails/paths, restoration, ecotourism activities, and environmental education activities.	0.005 FAR
Recreation – Commercial (R-C)	This designation provides for outdoor recreational facilities with limited amounts of residential and/or convenience retail.	Established through developer agreements
Military (M)	This designation is for lands retained by the United States Armed Forces for ongoing military-related activities within the former Fort Ord Base boundary. These areas are wholly under the jurisdiction of the US Armed Forces. Existing uses are primarily residential.	N/A
Public/Institutional (PI)	This designation reserves areas for public, educational, and institutional uses.	0.4 FAR or as determined by Council. Up to 60 du/ac.

Source: City of Seaside 2023

2.4.5 Key Updates

Seaside 2040 has coordinated land use and transportation decisions in the City to help strategically guide future development. Seaside 2040 would help the City position itself to generate new opportunities for economic development, while ensuring the protection of open space and a better quality of life for all residents. Adoption of the General Plan is unlikely to have immediate effects. Land use change would gradually occur over time.

The general character of most Seaside neighborhoods, particularly the existing residential neighborhoods such as most of the Del Monte Heights neighborhood, would remain the same and are not anticipated to see much growth. As shown on Figure 2-3, neighborhoods such as Del Monte Heights are identified a neighborhood preservation strategy, meaning preservation of the neighborhood, generally, is a strategy of Seaside 2040. However, these neighborhoods would be maintained and enhanced through improvements to the public realm, the addition of a second story to a single-story home, or the addition of community facilities or neighborhood-serving retail uses.

Other areas, such as Downtown Seaside (West Broadway Avenue), Fremont Boulevard, Main Gate, Campus Town, and Seaside East would see more change and growth. West Broadway would be established as the City's pedestrian-oriented Downtown. The creation of a Campus Town would enhance and strengthen the relationship of the area to California State University-Monterey Bay (CSUMB). Main Gate would introduce a new regional center including retail, housing, and entertainment uses. In Seaside East, Seaside 2040 would balance new mixed use and mixed-housing neighborhoods with habitat protection and recreational area access facilities. Seaside 2040 focuses on enhancing the visitor experience for both residents and tourists.

To achieve integration of the complete streets policy in the City, Seaside 2040 would also encourage important land use changes and infrastructure improvements. Seaside 2040 would facilitate a transportation system that serves the needs of all users and provides safe facilities to promote walking, biking, and transit use, as well as driving by allocating right-of-way space for all users, ensuring connectivity across neighborhoods and access to diverse recreational opportunities, and encouraging the implementation of new transit, bike, and pedestrian infrastructure.

Climate change would also impact the City, increasing the number of high heat days, raising sea levels, intensifying coastal flooding, and increasing wildfire risk. Seaside 2040 addresses the protection of the unique characteristics that make Seaside home, from the diversity of trees and parks to the City's tight-knit neighborhoods and larger community (City of Seaside 2023).

2.4.6 City Growth/General Plan Buildout

The City of Seaside has development limits that can accommodate new development within Seaside 2040. For Seaside 2040 growth projections, the City of Seaside considered census data, knowledge of the Seaside market and development community, staff recommendations, and Association of Monterey Bay Area Governments (AMBAG) regional growth projections. The growth projections do not use a maximum theoretical buildout approach, which would have assumed the development of every parcel with the maximum amount of development allowed under the General Plan. Actual development is typically less than the theoretical limit of development; therefore, a reasonable worst-case scenario was developed. As outlined in the Seaside General Plan Update (Seaside 2040) Growth Projection Memorandum (Appendix B, Section 5), buildout within the City of Seaside can be affected by a variety of factors, consequently this methodology is considered conservative.
Table 2-4 summarizes Seaside 2040 growth projections as compared to 2040 AMBAG projections. AMBAG estimates growth from 2010 to 2040.

Consistent with the 2040 growth assumptions described above, Seaside's population is estimated to be approximately 46,297 people in 2040. This represents an increase of approximately 12,115 people (35 percent) from the 2015 AMBAG population estimate as shown in Table 2-4, and an increase of approximately 11,996 (35 percent) from the 2020 AMBAG population estimate as shown in Table 2-5.

Table 2-4 Seaside 2040 Growth Forecast

Seaside	2015	2040	Compound Annual Growth	Population Growth (2015-2040)[1]	Change Over Forecast Period (2015-2040)
Population	34,185	46,297	1.0%	**12,112**	35%
Housing	10,913	14,143	0.8%	**3,230**	30%
Employment	9,650	12,394	0.7%	**2,744**	28%

[1] Assumed 3.1 people per housing unit, consistent with AMBAG 2018 Regional Growth Forecast (https://ambag.org/sites/default/files/documents/2018_Regional_Growth_Forecast.pdf).

Source: Appendix B

Table 2-5 2020 Population Estimate Compared to Seaside 2040 Growth Forecast

2020 Estimated Population	Projected 2040 Population	Compound Annual Growth	Population Growth (2020-2040)	Change Over Forecast Period (2020-2040)
34,301	46,297	1.4%	11,996	35%

Source: Appendix B

The methodology for the 2040 projections are organized into three cateories:

- **Accessory Dwelling Units (ADU) Only.** The Neighborhood Low designation is the only land use designation without an intensity change. Given the scarcirty of existing ADUs in Seaside as well as the relatively small lot size of many parcels with this land use designation, the rate used for ADU development was 1 percent of all Neighborhood Low parcels (Appendix B).
- **Parcel-by-Parcel Analysis.** A parcel-by-parcel analysis was conduced for designations with intensity change, including: Neighborhood General, Neighborhood Medium, Neighborhood High, Mixed-Use Low, and Mised-Use High, and Employment designations. The analysis assumed a realistic growth assumption of 10 percent for Neighborhood General, Neighborhood Medium, and Mixed-Use High; 40 percent for Neighborhood High; 15 percent for Mixed-Use Low; and 20 to 30 percent for Employment designations (Appendix B).
- **Incorporation of Specific Plan Area or Existing Projects.** A buildout projection was estimated for the Campus Town Specific Plan, Main Gate Specific Plan, West Broadway Urban Village Specific Plan, Luxury Auto Mall, Bayonet Blackhorse Golf Course Expansion, existing military housing renovations/duplexing (not under the planning jurisdiction of the City of Seaside), and future Seaside East Specific Plan area. One hundred percent buildout was assumed for all areas, except Seaside East where it was assumed that 35 percent the area would be built out by 2040.

As shown in Table 2-6, under full buildout of Seaside 2040, an estimated 4,050 new dwelling units would be added to Seaside. This residential growth is anticipated to result in up to 1,651 new single-family residences and 2,398 new multi-family housing units. Approximately 59 percent of the forecast residential growth is in the form of multi-family units.

Table 2-6 Forecast Demand for New Development through 2040

Land Use	Demand for New Development
Single-family residential	1,651 dwelling units
Multi-family residential	2,398 dwelling units
Total residential units	**4,050 dwelling units**
Retail space	690,851 square feet
Service industry (Commercial Office) space	1,084,691 square feet
Industrial space	657,971 square feet
Public space	213,195 square feet
Total employment space	**2,646,708 square feet**
Hotels	1,670 rooms

Source: Appendix B

Future housing growth would either occur on infill sites or within future Specific Plan areas; for example, the West Broadway Urban Village Specific Plan, adopted in 2010 to revitalize the City of Seaside's West Broadway Avenue, anticipates 410 multi-family units, 52 retail jobs, 97 service jobs, and 250 hotel rooms.

The increased land uses are anticipated to generate 4,571 new jobs in the City by 2040 in the retail, service (includes office uses), industrial, and public divisions. Assuming a 100 percent buildout by 2040[1], the Specific Plan areas or existing projects are anticipated to generate 3,211 new jobs in the City in the retail, service, industrial, and public jobs divisions (Appendix B). Approximately 2.7 million square feet of employment space would be associated with the increase in employment. The employment growth areas are: 1) Auto Center; 2) Del Monte Boulevard redevelopment area (adjacent to Sand City); and 3) new growth areas on former Fort Ord lands (south of Gigling Road and north of Parker Flats Cut Off Road). Certain assumptions were assigned to each growth area to project the aforementioned jobs that would be created in Seaside by 2040. The Seaside 2040 General Plan Growth Projections memorandum, which is included as Appendix B to this EIR, describes the assumptions that were used in projecting future employment in Seaside.

Buildout of Seaside 2040 is inclusive of related infrastructure, which has been analyzed as part of the Proposed Project.

[1] The Specific Plan area for Seaside East assumes a 35 percent buildout by 2040. All other Specific Plan areas assume a 100 percent buildout.

2.5 Required Discretionary Approvals and Consultation Procedures

With recommendations from the City's Planning Commission, the Seaside City Council would need to take the following discretionary actions in conjunction with the proposed project:

- Certification of the Final EIR
- Adoption of the proposed General Plan, Seaside 2040

The City's zoning may also be subsequently updated to implement the General Plan amendments, consistent with the procedures outlined in Government Code 65850 et seq., including Section 65860(c).

General Plan adoption procedures also provide for consultation/coordination with several other agencies. These agencies and their roles are summarized below.

- The State Geologist is responsible for the review of the City's program for minimizing exposure to geologic hazards and for regulating surface mining activities.
- The California Department of Transportation (Caltrans) has responsibility for approving future improvements to the state highway system, including Highway 1 (State Route 1) and State Route 218.
- The California Department of Fish and Wildlife (CDFW) has responsibility for issuing take permits and streambed alteration agreements for any projects with the potential to affect plant or animal species listed by the State of California as rare, threatened, or endangered or that would disturb waters of the State.
- Consultation and coordination procedures outlined in Government Code Sections 65300 et seq.
- Any other public agencies which may own land within City boundaries.

Trustee agencies have jurisdiction over certain resources held in trust for the people of California, but do not have a legal authority over approving or carrying out the project. *State CEQA Guidelines* Section 15386 designates four agencies as trustee agencies: CDFW with regards to fish and wildlife, native plants designated as rare or endangered, game refuges, and ecological reserves; the State Lands Commission, with regard to state-owned "sovereign" lands, such as the beds of navigable waters and State school lands; the California Department of Parks and Recreation, with regard to units of the State park system; and, the University of California, with regard to sites within the Natural Land and Water Reserves System.

3 Environmental Setting

This section provides a general overview of the traditional environmental setting (or "baseline") for the Proposed Project. For a typical EIR, the environmental setting is controlled by *CEQA Guidelines* Section 15125, which states in part:

> An EIR must include a description of the physical environmental conditions in the vicinity of the project. This environmental setting will normally constitute the baseline physical conditions by which a lead agency determines whether an impact is significant. The description of the environmental setting shall be no longer than is necessary to provide an understanding of the significant effects of the proposed project and its alternatives. The purpose of this requirement is to give the public and decision makers the most accurate and understandable picture practically possible of the project's likely near-term and long-term impacts. (1) Generally, the lead agency should describe physical environmental conditions as they exist at the time the notice of preparation is published, or if no notice of preparation is published, at the time environmental analysis is commenced, from both a local and regional perspective. Where existing conditions change or fluctuate over time, and where necessary to provide the most accurate picture practically possible of the project's impacts, a lead agency may define existing conditions by referencing historic conditions, or conditions expected when the project becomes operational, or both, that are supported with substantial evidence. In addition, a lead agency may also use baselines consisting of both existing conditions and projected future conditions that are supported by reliable projections based on substantial evidence in the record.

The *CEQA Guidelines* and case law recognize that the date for establishing an environmental baseline cannot be rigid. (See *CEQA Guidelines* Sections 15146, 15151, 15204.) In some instances, information is presented in the environmental setting which differs from the precise time of the NOP. This information is considered representative of baseline conditions. Furthermore, environmental conditions may vary from year to year, and in some cases it is necessary to consider conditions over a range of time periods.

In order to fulfill this requirement, and to inform the reader of the context in which Seaside 2040 would be carried out, this section describes current environmental conditions in and around Seaside. More detailed setting information is included within the impact analysis for each issue area.

3.1 Regional Setting

Seaside is located in northern Monterey County in the Monterey Bay Area, situated adjacent to the Pacific Ocean. The General Plan Area is roughly bounded by the City of Marina to the north; the City of Del Rey Oaks and City of Monterey to the south; State Route 1, the City of Sand City, and Monterey Bay to the west; and Monterey County and the Fort Ord National Monument to the east. Urban land uses predominate the City, while open space and former military lands also exist to the north and east of the City.

The City of Seaside contains approximately 7.94 square miles of land. The Planning Area and Sphere of Influence for the General Plan is defined by the Seaside city limits. The elevation in the City of Seaside ranges from approximately mean sea level at the southwest corner of the City of Seaside to approximately 560 feet in the hills to the east in the former Fort Ord area. The topography in Seaside generally slopes west toward the Pacific Ocean at the Monterey Bay. Before construction of

State Route 1, Roberts Lake and Laguna Grande was a tidal estuary complex but development and fill for the highway cut off ocean influence (City of Seaside 2017). Both of these waterbodies now function as small lakes. Vantage points from the surrounding hillsides to the east provide views of the City, these lakes, and the Monterey Bay. The Mediterranean climate of the region and coastal influence produce moderate temperatures year round. Marine breezes cause winds from the northwest and west, which are strongest and most persistent in the spring and summer months. Most rainfall in the city occurs between November and March, with an average annual rainfall of approximately 20 inches. The region is subject to various natural hazards; including, earthquakes, drought, fault rupture, flooding, subsidence, and wildfires.

3.2 Physical Setting

3.2.1 General Geographic Setting

Seaside is situated adjacent to the Pacific Ocean along the Monterey Peninsula. The coastal sand dunes, the City of Sand City, and State Route 1 are located along the western boundary of the City. Seaside is bordered by the City of Marina to the north, Sand City to the west, and the City of Monterey to the south. Surrounding hillsides to the south and east provide a backdrop for the City and offer scenic views of Monterey Bay and the peninsula, and the Laguna Grande/Roberts Lake environment also provide a unique identity to the City. Geologic hazards associated with this setting include soils limitations, erosion, seismic activity, and tsunamis and seiches. The City lies within the Coast Range Geomorphic Province. The province is bordered on the west by the Pacific Ocean, and the coastline is uplifted, terraced, and wave-cut. In Monterey County, the uplift that formed the Coast Ranges was much more rapid than in other parts of the state. The cliffs of the Big Sur Coast and slopes of the Santa Lucia Mountains are products of this rapid uplift during the Pliocene epoch, more than a million years ago (County of Monterey 2008). The Gabilan Mountain ranges also exist approximately 20 miles to the east of the Monterey Bay, and the Santa Cruz mountains exist approximately 30 miles to the north.

State Route 1 borders the western edge of the City and runs north to south, providing regional access to the City and connecting the City to the San Francisco Bay metropolitan area. State Route 1 separates the beach from Robert's Lake and the Southern Pacific Railroad right-of-way separates Robert's Lake from Laguna Grande. Figure 2-1 in Section 2.3, *Project Location*, shows the City's regional location. Monterey-Salinas Transit (MST) provides transit services in the City. As of February 2023, six MST routes have stops in Seaside.

Seaside is a growing residential community. Approximately one-third, or 33 percent (1,722 acres) of the land area within the City limits is occupied by residential uses, predominantly single-family (758 acres) and military housing (734 acres). The remainder of residential uses includes multi-family and mobile homes. However, the most common existing land use category within the City Limits is undeveloped. Undeveloped uses make up 39 percent (2,037 acres) of the City Limits. Just under one-quarter (22 percent) of the undeveloped land includes former Fort Ord land that is earmarked for conservation. Former Fort Ord lands that are planned for growth (15.9 percent) equates to 830 developable acres of land. Public lands account for about one-quarter, or 23.8 percent (1,239 acre) of the total land area within the City limits, and consists of institutional or public facilities, and parks and recreational facilities. Commercial uses make up 4.1 percent (214 acres) of the City limits, and consist predominantly of retail and commercial uses (186 acres) with some office, lodging, and light industrial.

3.2.2 Topography and Drainage

As mentioned above, the City of Seaside lies within the Coast Range Geomorphic Province. The Gabilan Mountain ranges also exist approximately 20 miles to the east of the Monterey Bay, and the Santa Cruz Mountains exist approximately 30 miles to the north. Topography in Seaside slopes generally west, toward the Pacific Ocean at the Monterey Bay. According to the U.S. Geological Survey (2017), there are no streams that flow within the City. However, a network of storm drains and drainage ditches do cross the City. Water flow in these drainage ditches is correlated with stormwater runoff, and generally limited to periods during and following precipitation events. All stormwater drainage ditches and storm drains in the City discharge to the Pacific Ocean (City of Seaside 2014).

The City of Seaside lies within the Central Coast Hydrologic Region, a large coastal watershed in central California that consists of approximately 7.22 million acres (California DWR 2004). The Hydrologic Region includes all of Santa Cruz, Monterey, San Luis Obispo, and Santa Barbara counties, most of San Benito County, and parts of San Mateo, Santa Clara, and Ventura counties. Major drainages in the Central Coast Hydrologic Region include the Salinas, Cuyama, Santa Ynez, Santa Maria, San Antonio, San Lorenzo, San Benito, Pajaro, Nacimiento, Carmel, and Big Sur rivers (California DWR 2004).

3.2.3 Climate

The climate of Seaside is of a cool Mediterranean type, characterized by dry, mild summers and moderately moist, cool winters. The Western Regional Climate Center maintains a weather monitoring station in the City of Monterey, just south of the City. According to data collected at this weather station (Western Regional Climate Center 2016), average summer temperatures in degrees Fahrenheit in the area are in the high 50's, with highs in the mid 60's and morning lows in the low 50's. Average winter temperatures are in the low 50's, with daytime highs in the low 60's and morning lows in the mid 40's. Most rainfall occurs between November and March, with an average annual rainfall of approximately 20 inches. The wettest months of the year are December, January, and February, with an average rainfall of 3.32, 4.46, and 3.32 inches, respectively (Western Regional Climate Center 2016).The average relative humidity in Seaside is 74 percent in summer and 66 percent in winter. Fog and low status clouds moving inland from the ocean are fairly frequent, especially on summer mornings. These summer fogs and stratus clouds generally dissipate before noon.

3.3 Cumulative Project Setting

CEQA defines cumulative impacts as "two or more individual effects which, when considered together, are considerable, or which can compound or increase other environmental impacts." Section 15130 of the *CEQA Guidelines* requires that an EIR evaluate potential environmental impacts that are individually limited but cumulatively considerable. These impacts can result from the proposed project alone, or together with other projects. The *CEQA Guidelines* state: "The cumulative impact from several projects is the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects" (*CEQA Guidelines*, Section 15355). A cumulative impact of concern under CEQA occurs when the net result of combined individual impacts compounds or increases other overall environmental impacts (*CEQA Guidelines*, Section 15355). In other words, cumulative impacts can result from individually minor but collectively significant projects taking

place over a period of time. CEQA does not require an analysis of incremental effects that are not cumulatively considerable nor is there a requirement to discuss impacts which do not result in part from the project evaluated in the EIR.

Because the proposed project is a General Plan Update, cumulative impacts are treated somewhat differently than would be the case for a project-specific development. Section 15130 of the *CEQA Guidelines* provides the following direction relative to cumulative impact analysis:

> Impacts should be based on a summary of projections contained in an adopted general plan or related planning document, or in a prior environmental document which has been adopted or certified, which described or evaluated regional or areawide conditions contributing to the cumulative impact.

By its nature, a general plan considers cumulative impacts insofar as it considers cumulative development that could occur within a city's plan area. Therefore, cumulative impacts are considered as a result of development in the region, not limited to the City limits. Such impacts are discussed in Section 5, *Other CEQA-Required Discussions*, of this EIR.

The level of development evaluated in the Seaside 2040 Environmental Impact Report is based upon reasonable worst-case assumptions for development activity up to the 2040 horizon year of this general plan update. Actual development in any city or county is typically less than the theoretical limit of development allowed under the population density and building intensity standards of the General Plan and may be less than the reasonable worst-case assumptions contained herein. Buildout in any jurisdiction is only partially controlled by the General Plan and land use regulations. Most growth is market driven and dependent upon a number of factors, including population growth (including birth rates, death rates, and immigration rates), availability of resources (e.g. water), other federal, state, and local regulations, economic forces, and the intent of individual property owners.

For Seaside 2040 EIR growth projections, the City of Seaside considered census data, historic growth data, knowledge of the Seaside market and development community, staff recommendations, and regional growth projections from the Association of Monterey Bay Area Governments (AMBAG). Refer to the Seaside 2040 Growth Project Memorandum (Appendix B of the EIR) or on the City's website: http://seaside2040.com/.

4 Environmental Impact Analysis

This section discusses the possible environmental effects of the proposed project for the specific issue areas that have been identified as having the potential to experience significant impacts. The assessment of each issue area begins with an introduction summarizing the environmental effects considered for that issue area. This is followed by the setting and impact analysis. Within the impact analysis, the first subsection identifies the methodologies used and the "significance thresholds", which are those criteria utilized by the City for this project to determine whether potential effects are significant. The next subsection describes each impact of the proposed project, mitigation measures for significant impacts, and the level of significance after mitigation. Each effect under consideration for an issue area is separately listed in bold text, with the discussion of the effect and its significance following. Each bolded impact listing also contains a statement of the significance determination for the environmental impact as follows:

- **Unavoidably Significant.** An impact that cannot be reduced to below the significance threshold level with implementation of reasonably available and feasible mitigation measures. Such an impact requires a Statement of Overriding Considerations to be issued if the project is approved per Section 15093 of the *CEQA Guidelines*.
- **Significant but Mitigable.** An impact that can be reduced to below the significance threshold level with implementation of reasonably available and potentially feasible mitigation measures. Such an impact requires findings to be made under Section 15091 of the *CEQA Guidelines*.
- **Not Significant, or "Less Than Significant," or "Less Than Significant Without Mitigation."** An impact that may be adverse, but does not exceed the significance threshold levels and does not require mitigation measures.
- **No Impact or Beneficial.** No impact would occur or the project would have a beneficial effect.

Following each environmental effect discussion is a listing of recommended mitigation measures (if required) and the residual effects or level of significance remaining after the implementation of the measures. In those cases where the mitigation measure for an impact could have a significant environmental impact in another issue area, this impact is discussed as a residual effect, but at a lesser level of detail. The impact analysis concludes with a discussion of cumulative effects, which evaluates the impacts associated with the proposed project in conjunction with other future development in the area.

Please refer to the Executive Summary section of this EIR for a summary of all impacts and mitigation measures that apply to the project.

Because the proposed project is a General Plan Update, cumulative impacts are treated somewhat differently than would be the case for a project-specific development. As outlined above in Section 3.3, *Cumulative Project Setting*, Section 15130 of the *CEQA Guidelines* provides the following direction relative to cumulative impact analysis:

> Impacts should be based on a summary of projections contained in an adopted general plan or related planning document, or in a prior environmental document which has been adopted or certified, which described or evaluated regional or areawide conditions contributing to the cumulative impact.

By its nature, a General Plan considers cumulative impacts insofar as it considers cumulative development that could occur within a city's plan area. Therefore, cumulative impacts are considered as a result of development in the region, not limited to the City limits. Such impacts are discussed in Section 5, *Other CEQA-Required Discussions*, of this EIR.

4.1 Aesthetics

The analysis in this section describes the current visual conditions in and around Seaside and evaluates the potential aesthetic and visual impacts of buildout under Seaside 2040, including potential impacts on scenic vistas, scenic resources, and visual character and quality, as well as impacts related to light and glare.

4.1.1 Setting

a. Existing Visual Conditions

The city is located adjacent to the Pacific Ocean just north of the Monterey Peninsula. Views west of State Route 1 (SR 1) include the Monterey Bay and its beaches, the coastal sand dunes of Fort Ord Dunes State Park, and cityscapes of the Monterey Peninsula. East of SR 1, the surrounding hillsides provide a backdrop for Seaside. Laguna Grande Regional Park, Laguna Grande Lake, and Roberts Lake can be seen from Del Monte Boulevard, Canyon Del Rey Boulevard (SR 218), and SR 1, providing a viewshed and gateway into the city. As depicted in Figure 4.1-1**,** most of the scenic views and vistas in Seaside are oriented toward Monterey Bay and do not include former Fort Ord lands east of General Jim Moore Boulevard. As depicted in Figure 4.1-2, views typically include a cityscape with the Monterey Bay in the background and are either seen from General Jim Moore Boulevard or from westward-oriented streets that provide a direct line of sight to the Monterey Bay.

Seaside increases in elevation from approximately mean sea level at the southwest corner of the city to approximately 560 feet in the hills to the east in the former Fort Ord area, providing views of the Monterey Bay from the eastern half of Seaside. There is an expansive view near the top of Broadway Avenue, looking downhill from General Jim Moore Boulevard. Similar open views of the Monterey Bay are visible to the west from General Jim Moore Boulevard, in addition to open views of Fort Ord lands to the east. Those golfing or dining at Bayonet and Black Horse public golf course also have views of Monterey Bay. Several views are shown in Figure 4.1-2.

The city contains large areas of former Fort Ord lands that are currently not in active use. Much of the former Fort Ord lands exist as permanent open space for conservation and recreation, while some parts are undeveloped lands that are slated for future development or contain decommissioned military barracks and related facilities that can be redevelopment in the future (City of Seaside 2017). Future areas for development and redevelopment in Seaside include Main Gate, Surplus II, and Concours Luxury Auto Mall. Decommissioned military barracks and other deteriorated military structures within the Surplus II area generally detract from the visual quality of surround open space.

Scenic Resources and Vistas

Although the perception of what is considered “scenic” may vary according to the environmental setting, the Seaside Municipal Code Section 18.04.010 defines visual resources (i.e., scenic and visual qualities) as those areas within the public viewshed that provide scenic value. Monterey Bay, the beach, lakes, and other coastal areas are considered visual resources that shall be protected as a resource of public importance (City of Seaside 2023a). Scenic resources also potentially include natural open spaces, unique mature trees, unique topographic formations, natural landscapes, and aspects of the built environment such as parks, trails, cultural resources, and architecturally significant buildings.

The **viewshed** is defined as the limits of what the viewer can see looking out from the limits of the proposed project. For the purposes of this programmatic EIR, viewsheds are understood to comprise the perspective of the viewer from public areas looking toward or from within these resources is considered the viewshed. Using key features of the landscape as framing devices, viewsheds provide examples of what the viewer might see from anywhere within the scenic resource and are representative of what might be affected by a given project when the General Plan is implemented. For example, an area's topography can contribute to aesthetic value through the creation of view corridors and/or scenic vistas consisting of ridgelines and mountains that can form a community's visual backdrop. Viewsheds can also include a range of resources (including natural and/or man-made elements) and thus natural and man-made environments can be considered important scenic resources.

Although the central core of Seaside is primarily developed, Seaside's location places it at the center of three regional parks and open spaces that provide public access to scenic resources: the Fort Ord National Monument east of General Jim Moore Boulevard and the Fort Ord Dunes State Park and Monterey Bay shoreline west of SR 1. Created in 2012, the Fort Ord National Monument, located on the former Fort Ord military base, comprises 14,600 acres, including 918 acres in Seaside. The National Monument and other former Fort Ord lands in eastern Seaside include natural open space with chaparral, coastal sage scrub, and coast live oak habitat. Seaside shares much of its western border with the Fort Ord Dunes State Park. The park area includes approximately 990 acres of state parkland with a boardwalk, a four-mile path with beach access, and interpretive exhibits. Visitors can enjoy views of the coastal landscape by bike or foot from these paths. Fort Ord Dunes is dominated by a continuous coastal sand dune formation and remnants from former Fort Ord's military history.

South of the Fort Ord Dunes State Beach, Seaside Beach serves as a gateway to more than 21 miles of coastline on the Monterey Bay, linking six contiguous beachfront parks: Monterey State Beach, Fort Ord Dunes Park, Marina State Beach, Salinas River State Beach, Moss Landing State Beach, and Zmudowski State Beach. The Monterey Bay Coastal Trail these parks together and connects to Monterey in the south and Marina in the north, and extends to Pacific Grove and to just south of Castroville. The trail is paved, provides access to cyclists and runners/walkers, and offers coastal views and access to the beach, natural habitat, and some of the highest dunes on California's central coast. In addition, the Fort Ord Regional Trail and Greenway (FORTAG), a community-proposed 30-mile regional network of paved recreational trails and greenways connecting communities to open space, is anticipated to run through the Seaside section of the National Monument. The FORTAG project was included in the Transportation Agency for Monterey Transportation Safety and Investment Plan (Measure X), authorized by the County and approved by the voters in 2016.

Seaside's coastal zone, as identified by the Seaside Local Coastal Plan (LCP), includes approximately 90 acres of land that extend from the Pacific Ocean to the terminus of the Canyon Del Rey Creek on the southeastern portion of Laguna Grande. The coastal zone includes approximately 500 feet of beach frontage along the Pacific Ocean, a beach visitor parking lot and the Monterey Bay Trail system. Vegetation in this coastal zone includes wetland habitat and scattered mature trees. The coastal zone is part of a former estuarine complex, composed of Robert's Lake at the center and Laguna Grande to the south. SR 1 separates the beach from Robert's Lake and the Southern Pacific Railroad right-of-way separate Robert's Lake from Laguna Grande (City of Seaside 2013).

Figure 4.1-1 Important Viewsheds and Scenic Highway

Figure 4.1-2 Existing Views in Seaside

Photo 1: View from General Jim Moore Boulevard above Martin Luther King Jr. School

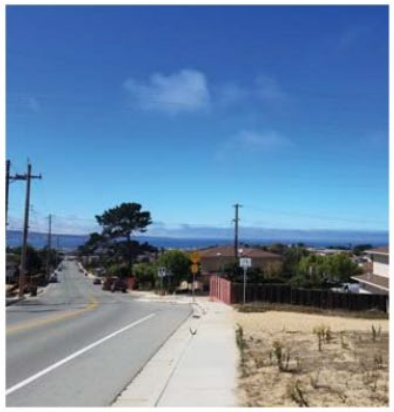


Photo 2: View from General Jim Moore Boulevard and Ord Grove Avenue

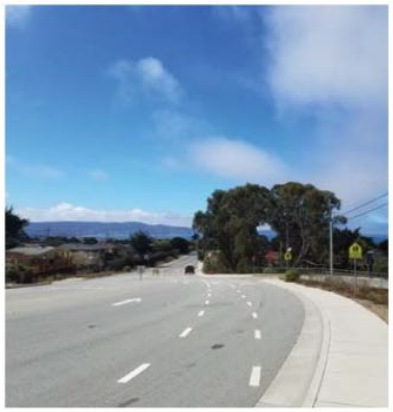


Photo 3: View from General Jim Moore Boulevard and Coe Avenue

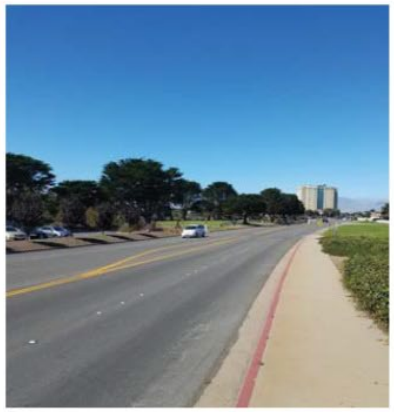


Photo 4: View from Canyon Del Rey Boulevard looking Northwest

Photo 5: View from General Jim Moore Boulevard overlooking the Bayonet and Black Horse Gold Course

Photo 6: View from Overlook on Skyview Drive

Seaside's LCP identifies scenic and visual resources of public importance as lakes and coastal areas, including Roberts Lake, Laguna Grande, the coastal sand dunes, and Monterey Bay/Pacific Ocean, including from SR 1. Scenic resources identified in Seaside's LCP, shown on Figure 4.1-3, represent a preliminary mapping of visually sensitive areas. Other scenic resources may be identified to be present based on existing conditions at the time proposed development is considered. Views from each of these areas are described below:

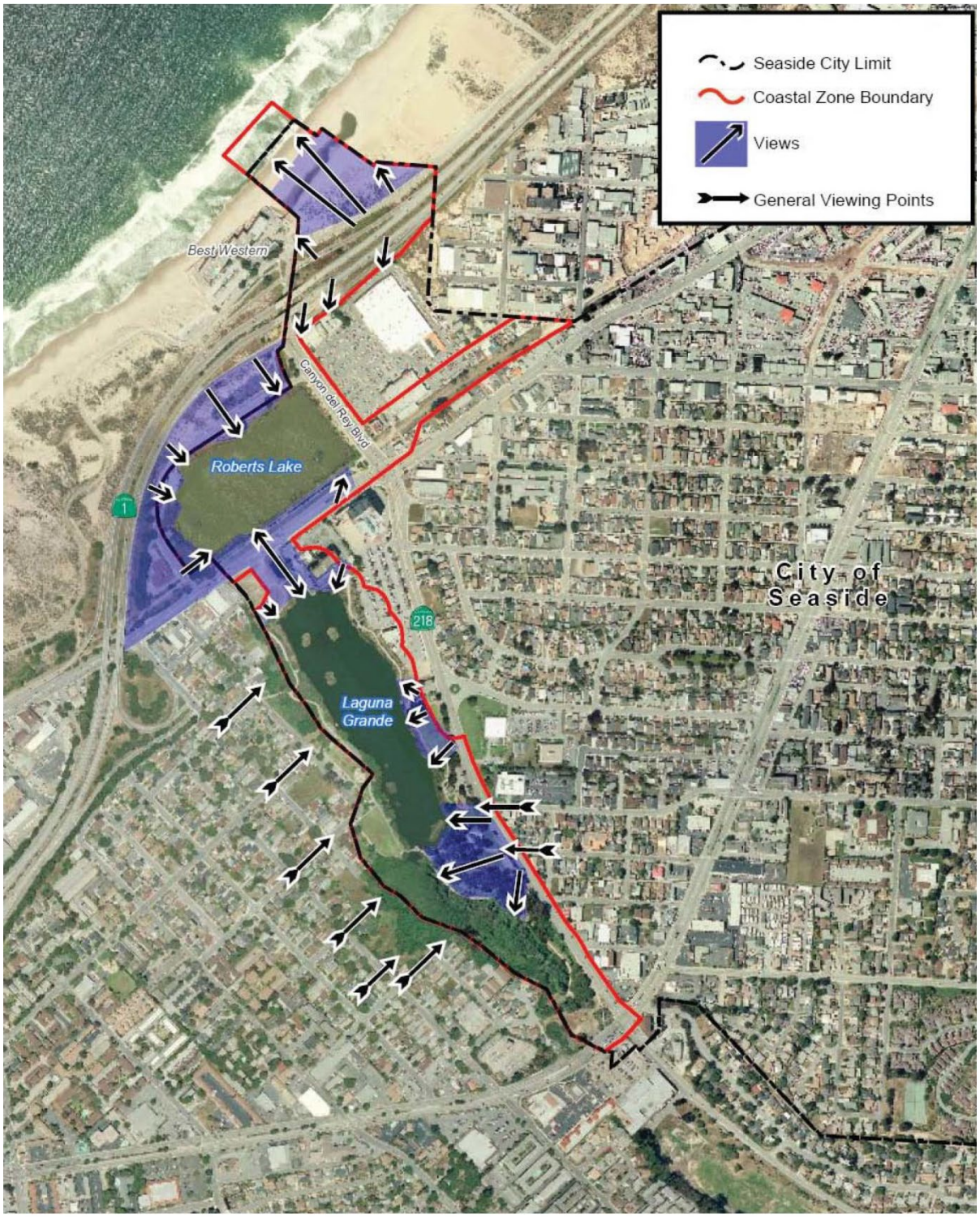
- **Coastal Zone.** Views include Roberts Lake and Laguna Grande, coastal sand dunes, and Monterey Bay.
- **Laguna Grande Subarea/Regional Park.** This subarea comprises approximately 42 acres of land which extends from Del Monte Boulevard to Fremont Avenue on the southwestern portion of Laguna Grande. The subarea primarily serves as a city park as well as a regional park for the Monterey Peninsula. Natural vegetation at Laguna Grande largely consists of a riparian woodland and forested wetland, coast live oak woodland, emergent wetlands on the shore of the lake, and ruderal vegetation. A system of public use trails provides access throughout this area.
- **Roberts Lake Subarea.** This subarea is an approximately 21-acre area located in the central portion of Seaside's coastal zone across from the Embassy Suite and Holiday Inn Express hotels. The majority of the park area of this subarea is paved visitor parking. A trail system that connects to the Monterey Bay Coastal Recreational Trail (Monterey Bay Coastal Trail) makes up the perimeter of the Roberts Lake Subarea. Vegetation includes dune scrub, riparian woodland and forested wetland, and ice plant mats.
- **Beach Subarea.** This subarea consists of approximately 500 feet of beach frontage along the Pacific Ocean, and is bordered by the Pacific Ocean to the north and west and four paved areas to the south and east: the beach visitor parking lot, the Monterey Bay Trail system, Sand Dunes Drive, which run parallel to SR 1 and other dune scrub habitat adjacent to the Beach Subarea. The unique and valued qualities of this subarea include coastal strand and foredune vegetation, and views of the Monterey Bay and California Coast, including from the SR 1 corridor.
- **Del Monte Subarea.** This subarea encompasses roughly 9 acres of urban area along Del Monte Boulevard from its intersection with Canyon Del Rey Boulevard (SR 218) to its intersection with West Broadway Avenue to the northeast. Views include the surrounding hills of Monterey Bay, Roberts Lake, and Laguna Grande. This subarea includes commercial and light industrial uses. The unique and valued qualities of this subarea include its location to the downtown area of the city as well as its proximity to coastal resources. (City of Seaside 2013)

Scenic views and their associated viewsheds contribute to aesthetic value, as they establish the context in which scenic resources may be observed. They are typically defined by physical features that frame one or more scenic resources.

Scenic Corridors

Scenic vistas are further defined by and experienced by means of scenic corridors, linear paths or roadways that grant the public an opportunity to take advantage of the natural environment's aesthetic value. Scenic corridors typically pertain to roadways and visible lands outside the roadway right-of-way. California's Scenic Highway Program designates scenic highways with the intention of protecting their corridors from change that would diminish the aesthetic value of adjacent lands.

Figure 4.1-3 Views and Viewsheds to Visual Resources in the Seaside Coastal Zone



Source: City of Seaside, Local Coastal Plan, 2013

SR 1 (often called Highway 1 in Seaside 2040 and elsewhere) is an officially designated state scenic highway (Caltrans 2019). It traverses over two miles of the city's western boundary and provides major access to other regional freeways throughout the Monterey Peninsula. Views of the coastal dunes within Seaside, Monterey Bay, and the Peninsula are visible from SR 1, as well as the surrounding hillsides to the east, and the wetlands and channels of Laguna Grande Park and Roberts Lake (City of Seaside 2017). Because several of the scenic vistas in Seaside are accessed while driving on SR 1 or from one of the trails described above, scenic corridors are considered part of this evaluation.

As described in the Chapter 7, *Parks and Open Space,* of Seaside 2040 and shown on Figure 4.1-1, the City has identified scenic viewsheds of the Monterey Bay and the surrounding hillsides. Listed below are the important view corridors in the City of Seaside:

- **Canyon Del Rey Boulevard/SR 218.** This is an important scenic resource providing public vantage points and direct views into the City.
- **Broadway Avenue.** Views down this roadway include expansive views of the ocean and Monterey Bay as well as residential and some institutional uses.
- **SR 1.** Views west of SR 1 include Monterey Bay and shoreline, coastal sand dunes of Fort Ord Dunes State Park, coastal mountains, and city views of the Monterey Peninsula. Views east of SR 1 include Laguna Grande Regional Park and Robert's Lake.
- **Laguna Grande Regional Park and Robert's Lake.** Views of Laguna Grande Lake and Robert's Lake and the emergent wetland and riparian vegetation along their shores are visible from Del Monte Boulevard, SR 218/Canyon Del Rey Boulevard, and SR 1.
- **Bayonet and Black Horse public golf courses.** Views looking west from the golf course include Monterey Bay, coastal mountains, and city views.
- **Ridgeline along and west of General Jim Moore Boulevard.** Views of the Monterey Bay, coastal mountains, and city views are prominent along the ridgeline west of General Jim Moore Boulevard at the top of Broadway Avenue, San Pablo Avenue, La Salle Avenue, Ord Grove Avenue, and Coe Avenue. East of General Jim Moore Boulevard, views of the former Fort Ord lands and the surrounding mountains are available.
- **CSUMB campus.** Perched upon a former military base site, the University offers views of open space in Seaside to the south and east and expansive views of the Monterey Bay to the west.

Visual Character of the Setting

The natural landscape of the former Fort Ord lands east of General Jim Moore Boulevard contribute to the overall visual character of the city. This land is largely made up of chaparral and coastal scrub, most of which is protected habitat under the control of the Bureau of Land Management. The undeveloped portions of land north of Military Avenue contain patches of grassland; areas of northeast Seaside contain coastal live oak woodland and savanna resources.

The majority of existing development in Seaside is situated in the southwest portion of the city, often referred to as the historic core area. The majority of Seaside's single-family residential neighborhoods were developed relatively quickly in the 1950s and 1960s. As the Fort Ord Military Base was expanded between 1968 and 1978, additional residential and commercial development occurred to meet the housing demands and service needs of the military personnel and their families. These intense periods of development created residential neighborhoods and commercial districts that, due to their age, original construction quality, and design, now require revitalization.

Existing residential neighborhoods in Seaside's historic core vary between small blocks less than two acres in the older, central areas of the historic city, to moderate blocks of five to 25 acres in the suburban expansions of the city core. Super blocks larger than 50 acres are found on the former Fort Ord lands, with an average block size of 35 acres. Residential blocks in military areas are typically 10 to 12 acres in size (City of Seaside 2023b).

Seaside 2040 notes that "older residential neighborhoods surrounding the retail core of the city are generally more diverse in terms of residential types than the newer neighborhoods," meaning there is a mix of single-family and duplex-style housing in the neighborhoods developed during the 1950s and 1960s (City of Seaside 2023b). The General Plan also notes that newer developments, from the late sixties to the late 1970s, are more uniform in their design and tend to be segregated from the commercial areas. Higher density residential areas include those with multi-family units, duplexes, and single-family homes on smaller lots with minimal setbacks, are concentrated in the area adjacent to Fremont Boulevard, behind commercial properties. The outer residential areas are less intensely developed, with most properties under eight dwelling units per acre (du/ac). The General Plan Land Use Designations for residential development range from 0 to 8 du/ac to 30 to 45 du/ac in multi-family residential development, in four-story apartment buildings (City of Seaside 2023b: Table 2).

Heights of existing residential buildings are one to two stories on average, up to 24 feet in height. The General Plan update indicates residential buildings can range from 24 feet to 48 feet in height, depending upon the use designation (City of Seaside 2023b: 49-52). Seaside's commercial corridors, including Fremont Boulevard, Del Monte Boulevard, and East Broadway Avenue are developed in a strip commercial development style with parking lots in the front and around the sides. They are typically one to two stories and are separated from residential uses.

The only large building footprints in the city are schools and institutions scattered throughout, and the hotels and big box retail around the intersection of Canyon Del Rey and Del Monte Avenue. Building heights of one to two-stories are common along the commercial corridor, but increase up to approximately 31 feet for big box retail and 82 feet for hotels (based on an estimated three and eight stories, respectively at 10.25 feet per story) (Chun and Goldman 2012).

Images that represent typical Seaside development are shown in Figure 4.1-4, Figure 4.1-5, and Figure 4.1-6.

Figure 4.1-4 Representative Single-family Residence Style from Older Neighborhood

Figure 4.1-5 Representative Single-family Residence Style from Newer Neighborhood

Figure 4.1-6 Example of Commerical Building Styles Currently in Seaside

Existing Commercial on Fremont Boulevard and Broadway Avenue

Existing Commercial on Broadway Avenue

Gateways

Gateways are aesthetic markers that visually define the entrance points to the city. They can include details specific to the city such as monuments, art works, or signs that announce the key points of ingress and egress, usually on major roadways. In Seaside, three types of gateways are identified in the General Plan: strong, weak, and no (meaning an opportunity exists to visually enhance this entry point).

Gateways are important for a community as they help create a sense of place by visually and aesthetically calling attention to important events, persons, and places that speak to the sense of the city's identity by visual means. Seven gateways into the city include the following intersections, which are mapped on Figure 4.1-7.

- **East of SR 1 on Lightfighter Drive.** This gateway is mostly undeveloped with views of open space and the Monterey Cypress tree groves that characterize the area. There are presently no gateways features
- **General Jim Moore Boulevard and Lightfighter Drive.** The primary gateway feature is the CSUMB monument sign at the northeast corner of this intersection.
- **Gigling Road at the City's eastern boundary.** This gateway is primarily undeveloped but includes a large parking lot on the northeast corner and buildings on the northwest corner. There are presently no gateway features.
- **Fremont Boulevard and Del Monte.** This gateway contains a stone retaining wall, landscaping, and three large flags.
- **Del Monte Avenue between Roberts Lake and Laguna Grande Lake.** This includes views of both lakes on either side of Del Monte Avenue. The southwest corner of Del Monte Avenue and Canyon Del Rey Boulevard/SR 218 is marked with a Seahorse sculpture.
- **Fremont Boulevard and Canyon Del Rey Boulevard/SR 218.** This southern gateway is largely a commercial intersection. There is a small stone retaining wall labeled "City of Seaside" on Fremont Boulevard just past Portola Drive, visible from (but not part of) the main intersection. There is no gateway on the Canyon Del Rey Boulevard travel way near this intersection.
- **General Jim Moore Boulevard at Plumas Avenue.** This southern gateway is largely undeveloped, open area. There are presently no gateway features.

Consistent with Goal LUD-1, gateways add to the city structure and provide one approach to reflecting the City's vision for a cohesive visual relationship among the landscape, long-established neighborhood development, and new housing, employment, retail, recreation, arts, and other uses for residents and visitors alike.

Light and Glare Conditions

Existing development and motor vehicles in Seaside produce light and glare. Primary sources of light in Seaside are streetlights, parking lot lights, and automotive headlights. Other sources of light include advertising, commercial properties, offices, light industrial sites, and illumination for sporting events. General sources of glare in Seaside include reflected sunlight from the windows of buildings, from automobiles, and from glass building facades.

Figure 4.1-7 Gateways

4.1.2 Regulatory Setting

a. State

California Coastal Act

Section 30251, *Scenic and Visual Qualities,* of the California Coastal Act (CCA) mandates that scenic and visual qualities of coastal areas that shall be considered and protected as a resource of public importance. Permitted development shall be sited and designed to protect views to and along the ocean and scenic coastal areas, to minimize the alteration of natural land forms, to be visually compatible with the character of surrounding areas, and where feasible, to restore and enhance visual quality in visually degraded areas. New development in highly scenic areas such as those designated in the California Coastline Preservation and Recreation Plan prepared by the Department of Parks and Recreation and by local government is required to be subordinate to the character of its setting.

Caltrans Scenic Highways

The California Department of Transportation (Caltrans) defines a scenic highway as any freeway, highway, road, or other public right-of-way, that traverses an area of exceptional scenic quality. Suitability for designations as a State scenic highway is based on the vividness, intactness, and unity of their view corridors, as described in Caltrans' Scenic Highway Guidelines (Caltrans 2008):

- Vividness is the extent to which the landscape is memorable. This is associated with the distinctiveness, diversity, and contrast of visual elements. A vivid landscape makes an immediate and lasting impression on the viewer.
- Intactness is the integrity of visual order in the landscape and the extent to which the natural landscape is free from visual intrusions (e.g., buildings, structures, equipment, grading).
- Unity is the extent to which development is sensitive to and visually harmonious with the natural landscape.

As will be discussed further under Impact AES-1, SR 1 is the only State-designed scenic highway within the General Plan Area.

SB 743 Statutory Aesthetics Exemptions

Under Public Resources Code Section 21099(d)(1) "Aesthetic and parking impacts of a residential, mixed-use residential, or employment center project on an infill site within a transit priority area shall not be considered significant impacts on the environment." A "transit priority area" (TPA) is one within 0.5 mile of an existing or planned major transit stop, if the planned stop is scheduled to be completed within the planning horizon included in a Transportation Improvement Program adopted pursuant to Section 450.216 or 450.322 of Title 23 of the Code of Federal Regulations. "Employment Center Project" is a one on property zoned for commercial uses with a floor area ratio of no less than 0.75, within a transit priority area. An "infill site" is a lot located in a previously developed urban area, or a vacant site where at least 75 percent of the perimeter adjoins parcels developed with qualified urban uses, or is separated from them, only by an improved public right-of-way.

As noted in Sections 2.4.5 and 2.4.6, the majority of new development is likely to occur in Downtown Seaside (West Broadway Avenue), Fremont Boulevard, Main Gate, Campus Town, and Seaside East. Many of these areas are likely to meet the definition of a TPA. As shown in Figure 4.1-8, AMBAG identifies Opportunity Areas, places in the region with the highest chance for successful sustainable growth in the future; they are generally located where TPAs and Economic Development Areas (EDAs) within the AMBAG region overlap. This effort also identified TPAs as locations that have both supportive land use densities and high quality transit service/connections for each Opportunity Area. Opportunity Areas are used to identify a set of potential Transit Priority Projects that supports the AMBAG RTP/SCS. This is discussed in more detail in Section 4.1.3, Impact Analysis. Furthermore, much of the new development that may occur in the city will include residential, mixed-use, and employment center development that could exceed a floor area ratio of 0.75. Consequently, aesthetics may not be considered a significant impact for many of the projects implemented under buildout of Seaside 2040.

b. Local

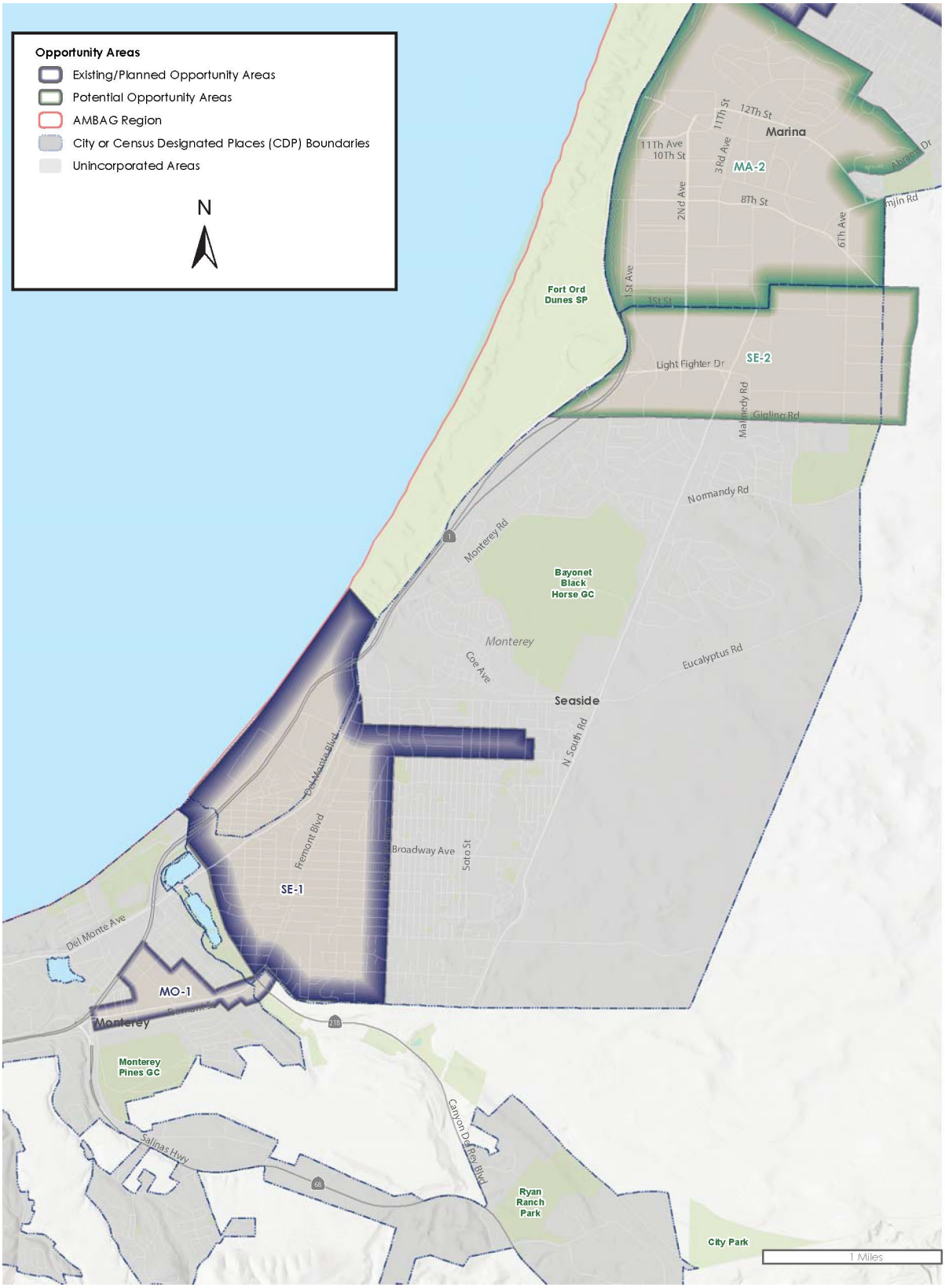
Local Coastal Program

The General Plan update does not propose to amend the Local Coastal Program (LCP). Nevertheless, LCP policies related to aesthetics have been summarized here. In accordance with the CCA, Seaside adopted its LCP Land Use Plan in 2013. The Seaside LCP identifies the coastal zone as approximately 90 acres of land that extend from the Pacific Ocean to the terminus of the Canyon Del Rey Creek on the southeastern portion of Laguna Grande. The coastal zone includes a beach visitor parking lot and the Monterey Bay Trail system, in addition to access to Sand Dunes Drive and SR 1. The area also includes approximately 500 feet of beach frontage along the Pacific Ocean. Below are policies found within the City's LCP Land Use Plan that focus on protecting visual resources in the coastal zone:

Policy NCR-CZ 2.1.A Designation of Visual Resources

The scenic and visual qualities of lakes and coastal areas, including Roberts Lake, Laguna Grande, the coastal sand dunes, and Monterey Bay/Pacific Ocean, including from State Highway 1, shall be considered visual resources of public importance. Scenic resources identified on Figure 2-4 (City of Seaside 2013: 48) shall represent a preliminary mapping of visually sensitive areas. Other scenic resources may be identified to be present based on existing conditions at the time proposed development is considered.

Figure 4.1-8 Opportunity Areas in Seaside



Source: AMBAG 2022

Policy NCR-CZ 2.1.B Protection of Visual Resources

I. Coastal visual resources shall be protected as a resource of public importance.

II. Visual resources and important view corridors shall be preserved. Figure 2-4 [in the LCP LUP] shall be used to assist the City in identifying significant public views of visual resources, view corridors, viewshed enhancement areas, and visually sensitive areas where height and bulk limits shall be required to preserve visibility.

III. Development determined to have a significant adverse effect on a visual resource or substantially limit visibility of visual resource shall not be allowed.

IV. Public trails, recreation areas, and public viewing areas shall be developed adjacent and/or accessible to scenic view corridors, where feasible.

V. New development shall be sited and designed to protect visual resources, minimize the alteration of natural land forms, preserve view corridors, be visually compatible with the character of surrounding areas, and, where feasible, restore and enhance visual quality in visually degraded areas.

VI. Views of the Seaside coastal zone from State Highway 1 shall be protected and enhanced through regulation of siting, design, and landscaping of all new development.

VII. New structures shall be sited and designed to harmonize with the natural setting and to not be visually intrusive. Structures, including fences, shall be subordinate to and blended into the environment, which may be accomplished through use of appropriate materials that will achieve that effect. Where necessary, modification shall be required for siting, structural design, shape, lighting, color, texture, building materials, access, and screening to protect public views. When structures cannot be sited outside of common public viewing areas, structures in scenic areas shall provide screening, which may be accomplished through the use of non-invasive native vegetation and topography to help provide visual compatibility.

Policy LUD-CZ 3.2.A Considerations for Visual Resources

I. Proposals for new development shall include a map and visual analysis prepared by a qualified professional identifying the development's visual impacts, including potential impacts on scenic views and viewsheds.

II. Development shall be sited and designed to protect, and where feasible enhance, public views to Roberts Lake, Laguna Grande, Monterey Bay, and the Pacific Ocean, including from Highway 1, which may be accomplished by minimizing the alteration of the natural land forms and by designing development to be visually compatible with the character of the surrounding areas.

III. Where feasible, development shall restore and enhance visual quality in visually degraded areas.

IV. Landscaping shall be sited and installed to screen parking and utility areas from public view (including views from the water and other recreation areas), provided such landscaping itself also protects and does not degrade views.

V. Outdoor lighting and signs shall be designed to protect sensitive habitats, public recreation areas, public vies, and night sky from intrusion, including by prohibiting signs with moving parts or flashing lights, minimizing glare, and shielding and directing lighting within the development areas.

Seaside Municipal Code

Seaside Municipal Code (SMC) Section 17.22.040 includes a Highway 1 (H1) Design Overlay Zone that provides enhanced design standards and development limitations to protect the viewshed of Highway 1. The H1 Overlay is based on the Fort Ord Reuse Authority (FORA) Highway 1 Design Guidelines; although FORA was legislatively terminated in 2020, the City will continue to implement these design guidelines as they have been adopted into the City's municipal code, Section 17.22.040. The H1 overlay is applied to areas of former Fort Ord lands within 500 feet of the Highway 1 right-of-way, or the edge of the Highway 1 viewshed, whichever is greater. Development standards apply to proposed development and new lands uses, including setbacks from Highway 1, landscape requirements, view protection, building design, and alternative transportation. Specifically view protection standards require proposed structures do not block public views of the Monterey Bay from scenic road turnouts or public vista points; and to the greatest extent feasible, fit the natural topography and features of the site (including streams and mature trees) with minimal grading, cutting or filling. Seaside Municipal Code Chapter 17.30.070 also functions as a "dark sky ordinance," such that the maximum height, position and direction, and maximum illumination of outdoor lighting fixtures are limited with the intent of reducing impacts to nighttime views and other impacts related to lighting and glare. Limiting outdoor lighting below the horizontal will protect the dark skies for the general public and the Monterey Institute for Research in Astronomy.

4.1.3 Impact Analysis

a. Methodology and Significance Thresholds

Methodology

The assessment of aesthetic impacts involves qualitative analysis that is informed by the goals of the General Plan and generally accepted, industry-wide design standards. Different viewers react to views and aesthetic conditions differently, and this analysis considers the existing character of the city and the goal to weave together the visual character of the landscape, the current development, and new development to account for the visual aspects of Seaside that make it a unique and draw residents and visitors. This section evaluates the anticipated changes to the city's visual environment that could result from buildout of Seaside 2040, based on the goals, policies, and characterizations of aesthetic resources in the General Plan. It is important to underscore that the proposed Seaside 2040 does not contain specific development proposals, but sets goals and policies that will guide projects as they are conceived, proposed, and implemented. This analysis therefore focuses on land use changes envisioned under Seaside 2040, and the aesthetic impacts on the city in terms of the arrangement of built and open space, density and intensity of development, and height, massing, and other key aspects that define aesthetic environmental concerns, according to the thresholds of significance discussed below. Site visits by Rincon Consultants staff documented the existing visual character and context of the project area; these are shown in Figure 4.1-4, Figure 4.1-5, and Figure 4.1-6.

Significance Thresholds

The following thresholds of significance are based on Appendix G to the *State CEQA Guidelines*. For purposes of this EIR, implementation of Seaside 2040 may have a significant adverse impact if it would do any of the following:

1. Have a substantial adverse effect on a scenic vista
2. Substantially damage scenic resources, including, but not limited to, unique mature trees, unique rock outcroppings, and historic buildings within a State scenic highway
3. Substantially degrade the existing visual character or quality of public views of the site and its surroundings (Public views are those that experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?
4. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area

b. Project Impacts and Mitigation Measures

Threshold 1:	Would the project have a substantial adverse effect on a scenic vista?

Impact AES-1 IMPLEMENTATION OF SEASIDE 2040 WOULD FACILITATE THE DEVELOPMENT OF NEW STRUCTURES THAT COULD AFFECT SCENIC VISTAS IN THE GENERAL PLAN AREA. HOWEVER, COMPLIANCE WITH POLICIES IN SEASIDE 2040, THE SEASIDE MUNICIPAL CODE, AND SEASIDE'S LCP WOULD ENSURE THE PROTECTION OF SCENIC VISTAS. THEREFORE, IMPACTS WOULD BE LESS THAN SIGNIFICANT.

New development under buildout of Seaside 2040 could be visible from scenic view corridors and the vistas they provide, as discussed in detail in Section 4.1.1, *Setting*. These corridors include SR 1, a state-designated scenic highway, and several other City-designated view corridors:

- Canyon Del Rey Boulevard/SR 218
- Broadway Avenue
- Laguna Grande Regional Park and Robert's Lake
- Bayonet and Black Horse public golf courses
- The ridgeline along and west of General Jim Moore Boulevard
- The CSUMB campus

Seaside 2040 would permit higher intensity land uses including new residential, commercial, institutional, and mixes of these uses. The new development has the potential to disrupt public and private views of scenic resources such as Monterey Bay, Roberts Lake, and the Pacific Ocean. It could include proposals to remove mature trees and other vegetation that contributes to the visual character of the area. This has the potential to introduce a significant impact without mitigation. Build-out of the General Plan will require adherence to the current City of Seaside Municipal Code, Title 18.10, Coastal Implementation Plan, Part D. Visually Sensitive Areas. This includes design review that assesses the extent to which the proposed development project considers and protects visual resources. Specifically, subsection D.2.b requires that projects be sited so they enhance, rather than detract from or block, "public views to Roberts Lake, Laguna Grande, Monterey Bay, and the Pacific Ocean." Finally, subsection D.2.e states that "development determined to have an adverse effect on a visual resource shall not be allowed."

The Seaside Municipal Code, including the Highway 1 Design Guidelines adopted therein, provides guidance on the types and style of signage that may accompany development in the city, along with criteria for color, design, materials, and structure design. These guidelines would apply to gateway markers that may occur along view corridors (e.g., General Jim Moore Boulevard; City of Seaside 2013). Finally, Title 18.10.H.2 of the City's Municipal Code requires that new development retains or provides public access to various natural resource areas, such as wetlands and the seaside, in a way that maximizes public trail access connectivity and utility. This is discussed in more detail in Section 4.3, *Biological Resources*.

Although Seaside 2040 has the potential to introduce future development that may affect scenic vistas in Seaside, existing regulations and proposed Seaside 2040 policies would ensure protection of scenic vistas. Applicable goals and policies pertinent to aesthetic resources in Seaside 2040 follow.

Goal PO-2: Natural open space on former Fort Ord lands.

Intent: As former Fort Ord lands redevelop, this goal aims to create a high-quality and well-connected series of natural open spaces that support expanded recreational opportunities. Open space corridors include trails connecting to the Fort Ord National Monument, parks, and other destinations. It also includes passive corridors to preserve habitat.

Policies: **Active open space corridors and trails.** In partnership with regional and local agencies, develop active open space corridors that support natural vegetation communities, scenic vistas, and sensitive habitats within former Fort Ord lands. Open space corridors should connect to formal and informal trailheads in the National Monument where possible.

Goal C-3: A city that protects, conserves, and enhances the natural beauty and resources within the coastal zone.

Intent: Seaside's coastal zone provides important habitat for special status species. Habitat areas and wildlife can be negatively affected by certain types of development and human activity, as well as an erosion from sea level rise. This goal aims to preserve and protect natural resources in the coastal zone through careful management, including eradication of non-native vegetation and restoration of native vegetation.

Policies: **Highway 1.** Preserve the unique public views visible from Highway 1 corridor between Fremont Boulevard and the northern boundary of the city. Adhere to Municipal Code Section 17.22.040.

Goal C-6: Scenic vistas, views, and highways are protected and enhanced.

Intent: Views and scenic vistas help define the scenic value of Seaside. This goal seeks to protect important viewsheds in Seaside by protecting views, supporting the enhancement of natural resources, and landscape design.

Policies: **Views.** Protect public views of significant natural features, such as the Monterey Bay, the Pacific Ocean, the surrounding mountains, and other important prominent viewsheds identified in Figure 5 of Seaside 2040. Review all major redevelopment projects to ensure they will not significantly obstruct views from the public right-of-way of these major scenic resources.

Landscape design. Require new public and private landscape installations to consider access to vistas from the public realm and encourage landscape design that protects or enhances those views.

Signage and infrastructure. Encourage signage, infrastructure, and utilities that do not block or detract from views of scenic vistas.

These goals and policies in Seaside 2040 would help preserve scenic vistas by clustering development and, in some cases, requiring new development to incorporate design features that protect or enhance existing scenic views and vistas. For example, the landscape design policy under Goal C-6 requires the landscaping accompanying new development to protect or enhance with any scenic view of which the new development would become a part. This requirement would be achieved through the design review and permitting processes.

Specific impacts to important viewsheds and scenic vistas would be analyzed on a project-by-project basis, as new development or redevelopment occurs through implementation of Seaside 2040. Some of this would also be governed by specific plans for the particular area (e.g., Campus Town, Main Gate, and other former Fort Ord lands development projects) and the associated EIR developed for those projects.

Compliance with the aforementioned Seaside LCP policies, Seaside 2040 policies, and the Seaside Municipal Code would protect aesthetic resources in the City of Seaside from potential impacts resulting from future development. As a result, impacts to scenic vistas would be less than significant.

Mitigation Measure

No additional policy-oriented mitigation would be required to address this impact. As individual development projects are considered for construction, separate environmental review may be required, which could result in the implementation of project-specific mitigation measures.

Significance After Mitigation

Impacts would be less than significant without policy-level mitigation.

Threshold 2:	Would the project substantially damage scenic resources, including but not limited to, unique mature trees, unique rock outcroppings, and historic buildings within a state scenic highway?

Impact AES-2 DEVELOPMENT FACILITATED BY SEASIDE 2040 WOULD RESULT IN THE LOSS OF SCENIC MATURE TREES IN SEASIDE AND COULD INVOLVE DEMOLITION OR ALTERATION OF HISTORIC BUILDINGS WITH SCENIC VALUE. THE IMPACT RELATED TO SCENIC RESOURCES WOULD BE LESS THAN SIGNIFICANT WITH COMPLIANCE WITH SEASIDE 2040 POLICIES AND MITIGATION INCORPORATED TO STUDY AND PROTECT HISTORIC RESOURCES. COMPLIANCE WITH POLICIES IN SEASIDE 2040, THE SEASIDE MUNICIPAL CODE, AND SEASIDE'S LCP WOULD HELP ENSURE PROTECTION OF SCENIC RESOURCES ALONG A STATE-SCENIC HIGHWAY. THEREFORE, IMPACTS WOULD BE LESS THAN SIGNIFICANT.

Seaside's primary scenic resources are the Monterey Bay, beaches, lakes, natural open spaces and landscapes, mature trees, and architecturally significant buildings. The Seaside 2040 General Plan also states that knitting together new development in the former Fort Ord base lands and the historic city core as a principal objective of the General Plan update. This includes careful

consideration of project implementation that retains the unique character of historic structures and the scenic landscape throughout the city and along the Highway 1 corridor that traverses Seaside. Development facilitated by Seaside 2040 could result in the incremental loss of natural open space areas and mature trees. Section 4.4, *Cultural Resources*, redevelopment also could involve the demolition or alteration of historic buildings.

Proposed land use designations intended to protect natural open space and policies in Seaside 2040 would minimize the loss of scenic resources to future development. Adherence to the design guidelines presented in the Municipal Code Coastal Implementation Plan and discussed under Impact AES-1, key viewsheds toward the Pacific Ocean and other natural features from all new development would be protected by means of design review.

Seaside 2040 contains the following goals and policies specifically designed to protect scenic resources:

Goal LUD-17: Abundant and high-quality natural open space on former Fort Ord lands.

Intent: To leverage the undeveloped Fort Ord lands to provide new active and passive open space for the Seaside community. To create connected open space habitat corridors that maximize ecological quality.

Policies: **Open space corridors.** Balance the need to create more housing, employment, retail, and entertainment uses on former Fort Ord lands with open space corridors that support natural vegetation communities, scenic vistas, and sensitive habitats within new growth areas. Open space corridors should connect to formal and informal trailheads in the National Monument, where possible.

Goal LUD-19: Seamlessly connect new growth areas on former Fort Ord lands with the rest of the City.

Intent: To create a unified city where eastward growth does not diminish or ignore the existing city fabric, but rather reinforces and expands upon it.

Policies: **Visual connections.** Provide visual connections, including wayfinding, between existing development and new development, and between open space on former Fort Ord lands. Ensure consistency with the former FORA Regional Urban Design Guidelines emphasizing :

- **Connections.** Ensure signage provides guidance for seamless connections to centers of activity, public open spaces, and educational institutions, locations of interest, transit facilities, and trails.
- **Coordinated.** Coordinate wayfinding sign design to incorporate regional wayfinding standards and allow for unique jurisdiction and community identity.
- **Consistent.** Ensure wayfinding signage is consistent with Monterey County Bicycle and Pedestrian Wayfinding Signage Design standards. When applicable use internationally standardized imagery.
- **Legible.** Ensure wayfinding signage is clear and readable to the intended audience (i.e., pedestrians, cyclists, equestrians and motorists).
- **Safety.** Ensure signage is safely located.

- **Physical connections.** Require future development projects to better integrate with existing development by physically connecting new development on former Fort Ord lands with frequent streets, transit, bicycle, and pedestrian connections to ensure easy access from historic Seaside.
- **Prioritization.** Prioritize City programs and capital projects that actively work to integrate historic Seaside with new development on former Fort Ord lands.
- **Contiguous expansion.** Locate initial new development on former Fort Ord lands adjacent to Seaside's built environment and CSUMB to create a contiguous expansion of the city.

Goal C-1: Sensitive species and habitat protected on former Fort Ord lands.

Intent: The Fort Ord HMP provides a frameworks for permittees, including the City of Seaside, to conserve and manage special status species, animal communities, and habitat areas on former Fort Ord lands. This goal aims to implement those plans locally, identifying and managing habitat areas and species.

Policies: **Habitat management areas.** Continue to protect habitat management areas on former Fort Ord land, identifying habitat areas, planning carefully to avoid significant impacts, and implementing more restrictive development standards adjacent to these areas.

Oak woodlands. Continue to partner with regional and local agencies to designate oak woodlands and linkages, encourage the preservation and management, of oak woodland and linkages, and connect them to other parks, open spaces, and active open space corridors. The City shall actively manage and monitor the oak woodlands area.

Habitat restoration. Restore habitat areas where habitat has been disturbed by activities within the plan area of the FORA HMP in development of a future Seaside East Specific Plan.

Zoning. During development of Specific Plans within the FORA HMP and HMP areas, map and designate habitat management areas to be protected from future development, where appropriate.

Goal C-2: New development supports the preservation or enhancement of the city's natural resources.

Intent: This goal fosters sustainable development practices that provide protection to sensitive habitats and species and accessible resources for the enrichment of residents.

Policies: **Clustered development.** Cluster new development on former Fort Ord lands to minimize impacts, preserve habitat management areas, and protect high-visibility ridgelines, steep slopes, wetlands, and waterways. Standards to cluster development should be developed as part of a future Seaside East Specific Plan.

Integrating oak woodland. Work with developers to promote an understanding of existing oak trees and previously identified oak woodland linkages as they design new developments. Encourage compliance with the state and county regulations as part of the development review process.

Hillside protection. When grading is necessary, encourage grading for new development that complements the surrounding natural features.

Habitat protection area. Establish a habitat protection area, including criteria for defining the area, during the creation of a specific plan for Seaside East.

Goal C-3: A City that protects, conserves, and enhances the natural beauty and resources within the coastal zone.

Intent: Seaside's coastal zone provides important habitat for special status species. Habitat areas and wildlife can be negatively affected by certain types of development and human activity, as well as erosion from sea level rise. This goal aims to preserve and protect natural resources in the coastal zone through careful management, including eradication of non-native vegetation, and restoration of native vegetation.

Policies: **Highway 1.** Preserve the unique public views visible from the Highway 1 corridor between Fremont Boulevard and the northern boundary of the city. Adhere to Municipal Code Section 17.22.040.

Goal C-5: An abundant, robust urban forest that contributes to Seaside's quality of life as it combats the effects of climate change.

Intent: Urban forestry is essential to the city's path towards greater sustainability. Seaside's urban forest enhances its environmental quality and the mental and physical health of its residents, while bringing significant economic benefits through increased property values. Urban forestry will make the city more resilient to the impacts of extreme heat associated with climate change.

Policies: **Protected tree species.** Preserve protected tree species (e.g., native oaks) wherever possible during site redevelopment.

Goal C-6: Scenic vistas, views, and highways are protected and enhanced.

Intent: Views and scenic vistas help define the scenic value of Seaside. This goal seeks to protect important viewsheds in Seaside by protecting views, supporting the enhancement of natural resources, and landscape design.

Policies: **Views**. Protect public views of significant natural features, such as the Monterey Bay, the Pacific Ocean, the surrounding mountains, and other important viewsheds, as identified in Figure 5. Review all major redevelopment projects to ensure they will not significantly obstruct views from the public right-of-way of these major scenic resources.

Landscape design. Require new public and private landscape installations to consider access to vistas from the public realm and encourage landscape design that protects or enhances those views.

Signage and infrastructure. Encourage signage, infrastructure, and utilities that do not block or detract from views of scenic vistas.

Goal C-7: A strong sense of cultural and historic heritage.

Intent: To help preserve, conserve, enhance, and educate the public about Seaside's cultural and historical assets. To achieve this, the City will promote educational resources and integrate cultural and historical resources as part of coordinating land use and community design decisions.

Policies: **Cultural and historic resources.** Establish a known list of cultural and historic resources in the city.

Historic preservation. Work with State and Federal agencies, such as California Historical Resources, to administer federally and state mandated historic preservation programs that further the identified evaluation registration and protection of Seaside's irreplaceable resources. Support efforts to memorialize significant people, places, and events in the history of Seaside through public art and plaques. Consider the creation of a Historic Context Statement document.

Cultural Tourism. Promote historic places and cultural tourism as an economic development strategy and way to bolster of civic pride.

Historical resource development. Work with local organizations to continue to document and education the public about the history of Seaside.

Implementation of proposed policies under goals LUD-17, LUD-19, C-1, and C-2 ensure visual resources would preserve natural open space and oak woodlands, cluster development away from natural habitats, and minimize degradation of scenic hillsides from grading activities in former Fort Ord lands. In Seaside's coastal zone, implementation of policies under Goal C-3 would protect and enhance the visual quality of natural resources including beach habitat. In addition, policies under goals C-5 and C-6 would apply throughout Seaside to protect scenic trees like native oaks and protect public views of scenic resources such as the Monterey Bay and the Pacific Ocean. Furthermore, adherence to the Seaside 2040 Implementation Program C1 concerning the adoption of a Tree Preservation Ordinance, and the Seaside Municipal Code Coastal Implementation Plan would minimize adverse effects on natural scenic resources. Project-specific environmental resources may require specific analysis to determine the best practices to protect these resources. Preservation of the historic built environment would include Seaside 2040 policies, including those associated with Goal C-7, that protect historic architecture through a review process that would facilitate preservation to the extent possible (see Section 4.4, *Cultural Resources*). Since proposed policies in Seaside 2040 would not necessarily prevent demolition or alteration of historic structures with scenic value, the impact to historic resources is potentially significant. Implementation of the historic resource implementation programs and policies, required by Mitigation Measure CR-1 (refer to Section 4.4, *Cultural Resources*), would reduce this effect on resources 45 years or older, on a project-by-project basis. Therefore, impacts would be less than significant with mitigation.

Mitigation Measure

Implement Mitigation Measure CR-1 (refer to Section 4.4, *Cultural Resources*).

Significance After Mitigation

Impacts would be less than significant and further reduced by policy-level mitigation.

Threshold 3:	Would the project substantially degrade the existing visual character or quality of public views of the site and its surroundings? If the project is an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?

Impact AES-3 SEASIDE 2040 EMPHASIZES REUSE OF EXISTING URBANIZED LANDS, INFILL DEVELOPMENT ON VACANT PARCELS, AND NEW DEVELOPMENT ON URBAN FRINGE PARCELS. THE DEVELOPMENT OF SUCH AREAS WOULD CHANGE THE VISUAL CHARACTER OF THE COMMUNITY, INCLUDING THE SCALE OF THE BUILT ENVIRONMENT. IT WOULD ALSO INTRODUCE NEW VISUAL ELEMENTS INCLUDING STYLES OF ARCHITECTURE, LANDSCAPING, GATEWAY FEATURES, AND PUBLIC ART. THE CHANGES WOULD, HOWEVER, BE GUIDED BY THE SEASIDE 2040 INTENTION TO FOSTER A VISUALLY COHERENT, VITAL, HIGH QUALITY DEVELOPMENT THAT INCREASES THE VITALITY OF THE CITY OVERALL. ADHERENCE TO THE SEASIDE 2040 POLICIES, SEASIDE 2040 IMPLEMENTATION PROGRAMS, THE CITY'S MUNICIPAL CODE COASTAL IMPLEMENTATION PLAN, AND THE DESIGN GUIDELINES PROVIDED IN APPROVED SPECIFIC PLANS, OLD AREAS WILL BE REVITALIZED AND NEW AREAS WILL COHERE VISUALLY WITH THE OLDER DEVELOP. THEREFORE, IMPACTS THAT WOULD OCCUR FROM DEVELOPMENT ON THE VISUAL CHARACTER OR QUALITY OF THE GENERAL PLAN AREA AND ITS SURROUNDINGS WOULD BE LESS THAN SIGNIFICANT.

Seaside 2040 would facilitate the development and redevelopment of lands inside the Seaside city limits. Development would include reuse of existing urbanized lands, infill development on vacant parcels, and new development on the urban fringe. The most important change in visual character would occur on the former Fort Ord lands in Seaside East, where existing open space would be developed with residential neighborhoods. Development in Seaside East would expand the urban envelope of Seaside eastward from General Jim Moore Boulevard, toward Fort Ord National Monument. Campus Town, a mixed-use development adjacent to CSUMB, includes construction of higher-density housing, research and development areas, retail and entertainment uses, and student services, converting open space and old military buildings into a higher-density area in northern Seaside. Near Campus Town and adjacent to segments of Fremont Boulevard, Seaside 2040 would also establish a Mixed-Use High land use designation that allows the development of mixed-use centers with buildings up to five stories, or 60 feet tall. The General Plan would also facilitate conversion of Fremont Boulevard from an auto-oriented corridor to a mixed-use corridor. These physical changes would expand the geographic area of development in Seaside, intensify its urban character, and result in the loss of open space near CSUMB and in Seaside East.

The 2040 General Plan states that its principal goal is to seamlessly knit together the older existing development and the new specific plan areas described above. This includes single-family and multi-family residential development, mixed-use development, and commercial development throughout the city. While the character of new projects would differ somewhat from older, existing development, the design and style would be in keeping with various ordinances and design guidelines that regulate urban design in the community. These address massing, scale, architectural style, signage, setbacks, and other areas important to the visual quality of the project. Along with new commercial and mixed-use developments, the General Plan contains policies to update older commercial developments to improve their appearance and quality, toward providing "attractive neighborhood meeting and shopping centers."

Despite intensifying the urban character of Seaside, new development facilitated by Seaside 2040 would not have a substantial adverse effect on visual character or quality. To the contrary, it would support enhancements to the built environment in keeping with the existing character, that would

ultimately make Seaside a more vital, beautiful place, with considerable opportunities for placemaking and supporting its rich history and heritage through the visual environment. Moreover, it is anticipated that the gradual redevelopment of older commercial districts would improve the visual quality of the built environment, especially along Fremont Boulevard, Del Monte Boulevard, and Broadway Avenue. These corridors have a mix of older and newer commercial buildings, the older buildings mainly one-story with varying architectural styles and height. Through implementation of landscaping and parking amenities that include murals and other design features, and the provision for a mix of integrated architectural styles that enhance community image and encourage pedestrian and bicycle circulation, the General Plan will provide ample opportunities for placemaking that encourages vitality and coherence. Finally, the General Plan seeks to enhance recognizable city entrances through the addition or enhancement of gateways at key places that will add to the unique sense of place in Seaside.

Some Seaside 2040 goals and policies follow that aim to improve the visual quality of the City in areas much like these.

Goal LUD-6: Visible and strong arts and culture identity in Seaside.

Intent: To foster the distinctive character that enriches the city's image and identity, and to support and empower the artist community. To leverage public art for new projects and create destinations.

Policies: **Art in public places.** Promote art that celebrates Seaside's natural environment by increasing art installations in public spaces and by using art as a teaching opportunity related to the natural environment.

Decorative gateways. Celebrate gateways to Seaside, Downtown, the National Monument, and other prominent destinations by enhancing them with the work of local artists.

Art in development projects. Promote the creation and/or funding of public art as part of new development and redevelopment projects.

Goal LUD-8: A safe urban environment oriented and scaled to pedestrians and bicyclists.

Intent: To foster a welcoming urban environment that promotes health, equity, prosperity, and well-being. To support and increase non-motorized activity and walkability throughout the city.

Policies: **Pedestrian-supportive building design.** Require new and substantially rehabilitated/removed commercial and mixed-use projects to follow best practices for pedestrian-supportive design:

- Require parking internal to buildings that face primary arterials or side streets to use appropriate design (such as faux facades, green walls, public murals, etc.) to minimize its visual impact.

Goal LUD-9: A city with beautiful and vibrant architecture and building design that reflects the culture and character of Seaside.

Intent: To beautify the city, enhance the image of the community, and encourage integrated urban design.

Policies: **Articulation.** Articulate residential building façades with smaller-scale increments than office building façades.

Building entrances. Use visual and physical design cues within a building's design and entries to emphasize the building entrance and connections to public spaces.

Iconic design. Allow iconic and memorable building designs, particularly on larger non-residential properties in the Main Gate and Campus Town areas.

Natural areas. Design sites and buildings adjacent to natural areas with transparent design elements. Employ bird-safe design practices near habitat areas or migratory routes.

Goal LUD-13: High-quality multifamily neighborhoods with a mixture of well-designed building types for a diversity of households.

Intent: To promote a variety of building types in the Neighborhood General and High designations, in order to serve the housing needs of a broad cohort of the city and region's population

Policies: **Design of new multifamily buildings.** Design new multifamily housing in a way that creates attractive, quality-living environments for a variety of household types and contributes to the overall visual quality of the city.

Integration of new and old. Promote new multifamily developments that are integrated with older development nearby, using transitions in scale, building proportions, and articulation and texture to reduce their apparent size.

Renovation. Encourage and incentivize the renovation of older multi-family buildings to more contemporary standards.

Common open spaces. Require apartment and townhouse property management companies to improve the safety, lighting, and landscaping of common private and semi-private open spaces.

Minimum open space. Require a minimum amount of open space in higher density residential and mixed-use projects. Carefully and deliberately integrate these spaces into project design and require maintenance by the property management organization.

Goal LUD-15: Transform Fremont Boulevard into a distinct, visually-consistent, mixed-use commercial boulevard with neighborhood and regionally serving centers.

Intent: To attract a variety of residential, office and retail uses that are higher in intensity and quality than current development.

Policy: **Architecture and building appearance.** Encourage and allow a variety of architectural styles, building forms, and building heights along Fremont Boulevard. Encourage façade and building improvements that improve the appearance and quality of commercial areas.

Goal LUD-19: Seamlessly connect new growth areas on former Fort Ord lands with the rest of the city.

Intent: To create a unified city where eastward growth does not diminish or ignore the city fabric, but rather reinforces and expands upon it

Policy: **Visual connections.** Provide visual connections, including wayfinding, between existing development and new development, and between open spaces on former Fort Ord lands. Ensure consistency with the former FORA Regional Urban Design Guidelines emphasizing:

- **Connections.** Ensure signage provides guidance for seamless connections to centers of activity, public open spaces, and educational institutions, locations of interest, transit facilities, and trails.
- **Coordinated.** Coordinate way finding sign design to incorporate regional wayfinding standards and allow for unique jurisdiction and community identity.
- **Consistent.** Ensure wayfinding signage is consistent with Monterey County Bicycle and Pedestrian Wayfinding Signage Design standards. When applicable, use internationally standardized imagery.
- **Legible.** Ensure wayfinding signage is clear and readable to the intended audience (i.e., pedestrians, cyclists, equestrians and motorists).

Goal LUD-22: Balanced, diverse, and sustainable growth.

Intent: To guide development toward a diverse community that balances habitat and wilderness with new low-impact residential development clustered around neighborhood centers, supporting public use, and employment districts.

Policies: **Gateways.** Provide ample gateways to the National Monument, through formal and informal entryways to trailheads. Provide distinctive signage and gateway elements at entryways.

FORTAG trail. Support implementation of the FORTAG regional trail. Coordinate with FORTAG about trail design and connectivity, including opportunities for:

- Art installation

Goal LUD-23: Transform Seaside's northern area into a mixed-use, economically-vibrant Campus Town that serves the student population and leverages its geographic adjacency to CSUMB.

Intent: To build a stronger rapport with CSUMB by housing and servicing its students, improving physical connections to the University, establishing areas for high-tech research and development, and redeveloping old derelict military areas into a higher and better use.

Policies: **FORTAG trail.** Support implementation of the FORTAG regional trail and coordinate with FORTAG about trail design and connectivity, and art opportunities.

Gateway points. Signage and gateway elements should be implemented by new development to draw visitors to the Dunes State Beach and the National Monument. At these entry points, visitor-serving amenities, such as restaurants, bike and water sport rentals, and lodging are encouraged.

Goal PO-1: Park and recreational facilities to serve Seaside.

Intent: Close proximity to parks, open space, and recreational facilities encourages use, but can also facilitate opportunities to engage in physical exercise. Creating new parks in areas with limited access to park space is particularly important. Incorporating the principles of active design can help improve health and promote civic engagement. This goal seeks to increase the amount and availability of park and recreational facilities for all Seaside residents and future residents. Figure 37 illustrates a complete vision for the proposed additions to Seaside's open space network.

Policies: **Art in public spaces.** Ensure new park facilities have adequate spaces and equipment for active and passive recreation as well as public art.

Implementation of the above goals and policies would conserve and enhance the city's overall visual character as development and revitalization projects are implemented through 2040. For instance, Goal LUD-13 and the associated policies would promote development of multi-family buildings that contribute to the overall visual quality of the city, while integrating new and old development by using transitions in scale, building proportions, and articulation and texture. Similarly, Goal LUD-15 aims to discourage conflicting or competing architectural styles for new development along Fremont Boulevard, which would improve the general visual unity of the corridor. Goal LUD-19 would promote visual connections between existing development and new development, and between open spaces on former Fort Ord lands. Goals C-7, LUD-8, LUD-9, LUD-22, LUD-23, and PO-1 and associated policies encourage the inclusion of public art as part of trails, parks, new construction, and gateway enhancements will contribute to the unique sense of place in Seaside and to the general goal of enhancing Seaside's visual character and vitality.

Implementation of Seaside 2040 would result in visual changes to the community, but development and redevelopment that may occur during the lifetime of Seaside 2040 would be governed by the policies in the General Plan, the Seaside Municipal Code, Seaside's LCP, and specific plans developed for new project areas. These plans and community standards work together to maintain Seaside's visual character, while providing visual enhancements across the city by many different means, with the end result that visual quality would be improved. Impacts would be less than significant.

Mitigation Measure

No additional policy-oriented mitigation would be required to address this impact. As individual development projects are considered for construction, separate environmental review may be required that could result in the implementation of project-specific mitigation measures.

Significance After Measure

Impacts would be less than significant without mitigation.

Threshold 4:	Would the project create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area?

Impact AES-4 DEVELOPMENT THAT COULD BE FACILITATED BY SEASIDE 2040 WOULD INTRODUCE NEW SOURCES OF LIGHT. HOWEVER, THE CITY'S ZONING ORDINANCE CODE REGULATES LIGHTING THROUGHOUT THE CITY. THEREFORE, POTENTIAL IMPACTS ON DAYTIME OR NIGHTTIME VIEWS RESULTING FROM THE INTRODUCTION OF NEW LIGHT SOURCES WOULD BE LESS THAN SIGNIFICANT.

Seaside 2040 would facilitate new development that increases ambient nighttime lighting in Seaside. New sources of ambient lighting would include streetlights, parking lot lights, signage on business establishments, exterior building lights, and illumination from interior lights. Increased glare could potentially occur from of building materials, roofing materials and windows reflecting sunlight. Areas that would experience the greatest potential for increased lighting are those areas likely to experience the greatest development potential.

Although Seaside 2040 encourages infill development and redevelopment, locations that could see the greatest increase in development when compared to existing conditions would be in the former Fort Ord lands along General Jim Moore Boulevard's eastern edge and the portion of the city north of Gigling Avenue and west of General Jim Moore Boulevard. The development of residential neighborhoods and supporting land uses in Seaside East would introduce a substantial amount of new light sources and glare-inducing building materials as the area is largely undeveloped and open space. In this future growth area under Seaside 2040, the potential types, densities, and intensities of new development are not yet determined. Subsequently, any specific plan or project proposed for this area would require an environmental review that may result in area- or project-specific mitigation measures to mitigate light and glare impacts.

The area north of Gigling Avenue and west of General Jim Moore Boulevard that is designated for mixed use could also see an increase in light and glare resulting from development and redevelopment of the area. Other areas throughout the city are anticipated to experience relatively minimal development because Seaside 2040 intends to preserve established neighborhoods while renovating multi-family areas. Furthermore, the policies found in Seaside 2040 that specifically address potential lighting and glare impacts from new development are listed below:

Goal PO-3: Well-maintained and safe parks, recreational facilities, and open spaces.

Intent: Safe and well-maintained parks encourage greater community use. Improving infrastructure around parks, implementing safer park design, and ensuring adequate staff and resources support active and passive recreational opportunities for existing and future residents.

Policy: **Lighting.** Provide appropriate lighting and visibility in park facilities while minimizing adverse impacts to adjacent properties.

Goal C-2: New development supports the preservation or enhancement of the city's natural resources.

Intent: This goal fosters sustainable development practices that provide protection to protect sensitive habitats and species and accessible resources for the enrichment of residents.

Policies: **Development near habitat management areas.** Require new development adjacent to habitat management areas to minimize new impervious surface, minimize light pollution, and emphasize native landscaping.

Dark sky lighting standards. Require new construction or modifications to existing development and public facilities to adhere to dark sky lighting standards or the control of outdoor lighting sources by shielding light in the downward direction and limiting bright white lighting and glare.

Dark sky education. Promote dark sky education in the community to promote responsible lighting and dark sky stewardship.

Goal C-6: Scenic vistas, views, and highways are protected and enhanced.

Intent: Views and scenic vistas help define the scenic value of Seaside. This goal seeks to protect important viewsheds in Seaside by protecting views, supporting the enhancement of natural resources, and landscape design.

Policy: **Light pollution.** Preserve skyward nighttime views and lessen glare by minimizing lighting levels along the shoreline by continuing to follow dark sky guidelines.

Goal HSC-9: Energy efficient buildings that use energy from renewable sources.

Intent: To improve energy efficiency and encourage renewable energy that will lower greenhouse gas emissions, support green job creation, and create a more resilient community. To achieve this, the City will improve community-wide access to renewable energy in a way that meets community needs while positioning the community for a sustainable energy future.

Policy: **Dark sky.** Partner with PG&E to retrofit street lights with LEDs that comply with Dark Sky standards.

Goal LUD-20: New development supports the preservation or enhancement of the city's natural resources.

Intent: To protect the most valuable natural areas and species in former Fort Ord lands.

Policy: **Development adjacent to habitat.** Require new construction adjacent to habitat management areas to minimize new impervious surface, minimize light pollution, and emphasize native landscaping.

Notably, policies under Goal C-2 would require new development to adhere to dark sky lighting standards, which would minimize light spillover to surrounding properties. In addition to the guidance provided by the above Seaside 2040 policies, the City's Zoning Ordinance (Municipal Code Chapter 17.30, *Standards for all Development and Land* Uses) regulates the maximum height, energy efficiency, position, maximum illumination, and other parameters of lighting fixtures throughout the city. Currently, the City requires outdoor lighting on the site of a multi-family or nonresidential structure or use, which shall comply with the requirements described in Seaside Municipal Code Chapter 17.30.070, *Outdoor Lighting*. The outdoor lighting chapter in the City's Zoning Ordinance includes requirements pertaining to the maximum height; energy efficiency; position; maximum illumination; backlighting, uplighting, and glare; and intensity of lighting fixtures on multi-family and non-residential structures, among other features.

Additionally, the City's condition of approval system requires the applicant for any project, except as specified in Chapter 17.72, to submit evidence that the proposed work will comply with the code (City of Seaside Zoning Ordinance Code Section 17.30.010[A]). This review process determines the light and glare effects, among other impacts, on adjacent uses and protects the character of the City of Seaside from inappropriate levels of lighting. Furthermore, any proposed development that would be facilitated by Seaside 2040 would require an independent environmental review when subject to a discretionary permit that would determine the project-specific impacts in regard to light and glare and subsequent mitigation measures, if necessary. As a result, Seaside 2040 would have a less than significant impact related to the introduction of light and glare.

Mitigation Measure

No additional mitigation would be required beyond compliance with Seaside 2040 policies. As individual development projects are considered for construction, separate environmental review may be required, which could result in the implementation of project-specific mitigation measures.

Significance After Measure

Impacts would be less than significant without mitigation.

4.2 Air Quality

This section analyzes the effects of Draft Seaside 2040 on air pollutant emissions and the associated air quality impacts. This section considers both temporary air quality impacts relating to construction activity and long-term air quality impacts associated with operation of development under the proposed General Plan buildout. Greenhouse gas emissions and global climate change impacts are discussed in Section 4.7, *Greenhouse Gas Emissions*.

4.2.1 Setting

a. Regional Climate and Meteorology

Air quality is affected by the rate and location of pollutant emissions and by climatic conditions that influence the movement and dispersion of pollutants. Atmospheric conditions, such as wind speed, wind direction, and air temperature gradients, along with local and regional topography, influence the relationship between air pollutant emissions and air quality.

The project site is located within the North Central Coast Air Basin (NCCAB), which includes Monterey, San Benito, and Santa Cruz counties. The NCCAB, which is the geographic scope for this analysis, includes an area of approximately 5,159 square miles along the central coast of California. The Diablo Range marks the northeastern boundary and, together with the southern extent of the Santa Cruz Mountains, forms the Santa Clara Valley, which extends into the northeastern tip of the NCCAB. Further south, the Santa Clara Valley transitions into the San Benito Valley, which runs northwest to southeast and has the Gabilan Range as its western boundary. To the west of the Gabilan Range is the Salinas Valley, which extends from Salinas at its northwestern end to King City at its southeastern end. The western side of the Salinas Valley is formed by the Sierra de Salinas, which also forms the eastern side of the smaller Carmel Valley. The coastal Santa Lucia Range defines the western side of the Carmel Valley (Monterey Bay Air Resources District [MBARD] 2008). The General Plan Area is located near the coast in the central portion of the NCCAB.

Climate, or the average weather condition, affects air quality in several ways. Wind patterns can remove or add air pollutants emitted by stationary or mobile sources. Inversion, a condition where warm air traps cooler air underneath it, can hold pollutants near the ground by limited upward mixing or dilution. Topography also plays a part because valleys often trap emissions by limiting lateral dispersion.

The semi-permanent high-pressure cell in the eastern Pacific is the basic controlling factor in the climate of the NCCAB. In the summer, the high-pressure cell is dominant and causes persistent west and northwest winds over the entire California coast. Air descends in the Pacific High-pressure cell, forming a stable temperature inversion of hot air over a layer of cool coastal air. The onshore air currents pass over cool ocean waters to bring fog and relatively cool air into the coastal valleys. The warmer air loft acts as a lid to inhibit vertical air movements (MBARD 2008).

The generally northwest to southeast orientation of mountainous ridges tends to restrict and channel the summer onshore air currents. Surface heating in the interior portion of the Salinas and San Benito Valleys creates a weak low pressure system which intensifies the onshore air flow during the afternoon and evening. In the fall, the surface winds become weak, and the marine layer grows shallow, dissipating altogether on some days. The air flow is occasionally reversed in a weak offshore movement, and the relatively stationary air mass is held in place by the Pacific High-

pressure cell, which allows pollutants to build up over a period of a few days. It is most often during this season that north or east winds develop to transport pollutants from either the San Francisco Bay Area or the Central Valley into the NCCAB (MBARD 2008).

During the winter, the Pacific High-pressure cell migrates southward and has less influence on the NCCAB. Air frequently flows in a southeasterly direction out of the Salinas and San Benito Valleys, especially during night and morning hours. Northwest winds are nevertheless still dominant in winter, but easterly flow is more frequent. The general absence of deep, persistent inversions and the occasional storm systems usually result in good air quality for the NCCAB in winter and early spring (MBARD 2008). The General Plan Area is positioned east of Monterey Bay, a 25-mile wide inlet that allows marine air at low levels to penetrate the interior.

Temperatures in the General Plan Area range from the mid-40s to the low 70s (Fahrenheit) and precipitation averages approximately 19.73 inches per year (1906-2016) (WRCC 2016). August, September, and October are typically the warmest months of the year.

b. Air Pollutants of Primary Concern

Primary criteria pollutants are emitted directly from a source (e.g., vehicle tailpipe, an exhaust stack of a factory, etc.) into the atmosphere. Primary criteria pollutants include carbon monoxide (CO), reactive organic gases (ROG), nitrogen dioxide (NO_2), fine particulate matter (PM_{10} and $PM_{2.5}$), sulfur dioxide (SO_2), and lead (Pb). Ozone (O_3) is considered a secondary criteria pollutant because it is created by atmospheric chemical and photochemical reactions between reactive organic gases (ROG) and nitrogen oxides (NO_X). The characteristics, sources, and health and atmospheric effects of critical air contaminants are described below. As noted under Section 4.2.1(c), *Air Quality Standards*, the national ambient air quality standards (NAAQS) established at the federal level are designed to be protective of public health within an adequate margin of safety. To derive these standards, the United States Environmental Protection Agency (USEPA) reviews data from integrated science assessments and risk/exposure assessments to determine the ambient pollutant concentrations at which human health impacts occur, then reduces these concentrations to establish an adequate margin of safety that is protective of those segments of the public most susceptible to respiratory distress, such as children under the age of 14, the elderly (over the age of 65), persons engaged in strenuous work or exercise, and people with cardiovascular and chronic respiratory diseases. As a result, human health impacts caused by the following pollutants generally affect people at the concentrations established by the NAAQS, which are discussed in further detail under Section 4.2.1(c), *Air Quality Standards*.

Ozone

Ozone is a colorless gas with a pungent odor. Most ozone in the atmosphere is formed as a result of the interaction of ultraviolet light, reactive organic gases (ROG), and oxides of nitrogen (NO_X). ROG (the organic compound fraction relevant to O_3 formation, which is sufficiently equivalent for the purposes of this analysis to volatile organic compounds [VOC]) is composed of non-methane hydrocarbons (with some specific exclusions). NO_X is made of different chemical combinations of nitrogen and oxygen, mainly nitric oxide (NO) and nitrogen dioxide (NO_2). As a highly reactive molecule, O_3 readily combines with many different components of the atmosphere. Consequently, high levels of O_3 tend to exist only when high ROG and NO_X levels are present to sustain the O_3 formation process. Once the precursors have been depleted, O_3 levels rapidly decline. Because these reactions occur on a regional rather than local scale, O_3 is considered a regional pollutant. Ozone has direct human health effects. Short-term effects include eye irritation, shortness of

breath, asthma attacks, and respiratory irritation that can increase risk of respiratory infection, and susceptibility to pulmonary inflammation. Long-term exposure can increase the risk of mortality and increase the incidence of asthma and cardiovascular harm (e.g., heart attacks, heart disease, strokes) among populations (USEPA 2013a). Groups most sensitive to O_3 include children, the elderly, people with respiratory disorders, and people who exercise strenuously outdoors. Specifically, children and people who exercise strenuously outdoors are more sensitive to O_3 because they spend more time outdoors and inhale at a more rapid rate than the average adult (California Air Resources Board 2019). More information on the health impacts of O_3 is available from the USEPA at the link below, which is incorporated by reference into this document.[1]

Carbon Monoxide

Carbon monoxide is an odorless, colorless gas that causes a number of health problems including fatigue, headache, confusion, and dizziness. The incomplete combustion of petroleum fuels in on-road vehicles and at power plants is a major cause of CO. Elevated concentrations, therefore, are usually only found near areas of high traffic volumes. The use of wood stoves and fireplaces in the winter can also be a significant local source of CO emissions. CO tends to dissipate rapidly into the atmosphere; consequently, violations of the State CO standards are generally associated with major roadway intersections during peak-hour traffic conditions.

Localized CO "hotspots" can occur at intersections with heavy peak-hour traffic. Specifically, hotspots can be created at intersections where traffic levels are sufficiently high such that the local CO concentration exceeds the National Ambient Air Quality Standards (NAAQS) of 35.0 parts per million (ppm) or the California Ambient Air Quality Standards (CAAQS) of 20.0 ppm. The health effects of CO are related to its affinity for hemoglobin in the blood. At high concentrations, CO reduces the amount of oxygen in the blood, causing heart difficulties in people with chronic diseases, reduced lung capacity, and impaired mental abilities.

Nitrogen Dioxide

Nitrogen dioxide is a by-product of fuel combustion, with the primary source being motor vehicles and industrial boilers and furnaces. The principal form of NO_2 is produced by combustion of NO, but NO reacts rapidly to form NO_2, creating the mixture of NO and NO_2 commonly referred to as NO_X. NO_2 is an acute irritant and can increase the risk of acute and chronic respiratory diseases, particularly asthma. Long-term exposures to NO_2 can increase the incidence of asthma and susceptibility to respiratory infections. Nitrogen dioxide absorbs blue light and causes a reddish-brown cast to the atmosphere and reduced visibility. It can also contribute to the formation of particulate matter no more than 10 microns in diameter (PM_{10}) and acid rain.

Sulfur Dioxide

SO_2 is a colorless, pungent, irritating gas formed primarily by the combustion of sulfur-containing fossil fuels. When SO_2 oxidizes in the atmosphere, it forms sulfur trioxide (SO_3). Collectively, these pollutants are referred to as sulfur oxides (SO_X). In humid atmospheres, SO_2 can also form sulfuric acid mist, which can eventually react to produce sulfate particulates that can inhibit visibility. Fuel combustion is the major source, while chemical plants, sulfur recovery plants, and metal processing are minor contributors. At sufficiently high concentrations, SO_2 irritates the upper respiratory tract.

[1] USEPA Integrated Science Assessment (ISA) of Ozone and Related Photochemical Oxidants (2013) available at: https://cfpub.epa.gov/ncea/isa/recordisplay.cfm?deid=247492

At lower concentrations, when in conjunction with particulates, SO_2 appears to do still greater harm by injuring lung tissues. This compound also constricts the breathing passages, especially in people with asthma and people involved in moderate to heavy exercise. Sulfur dioxide causes respiratory irritation, including wheezing, shortness of breath, and coughing. Long-term SO_2 exposure has been associated with increased risk of mortality from respiratory or cardiovascular disease. Sulfur oxides, in combination with moisture and oxygen, can yellow leaves on plants, dissolve marble, and eat away iron and steel.

Suspended Particulates

Suspended particulates are mostly dust particles, nitrates, and sulfates. They are a by-product of fuel combustion and wind erosion of soil and unpaved roads and are directly emitted into the atmosphere through these processes. Suspended particulates are also created in the atmosphere through chemical reactions. PM_{10} is small particulate matter measuring no more than 10 microns in diameter, while $PM_{2.5}$ is fine particulate matter measuring no more than 2.5 microns in diameter. Ultrafine particles are particles that are 0.1 micron or less in diameter. These particles have the potential to be more easily inhaled and can be deposited deeper into the lungs. Because of their size, they can rapidly penetrate into lung tissue and other organs in the body. Ultrafine particles are associated with death from heart disease caused by blocked arteries (California Office of Environmental Health Hazard Assessment 2015). Ultrafine particles are not currently monitored or considered a criteria air pollutant because they are a subsection of $PM_{2.5}$ and are therefore accounted for in the $PM_{2.5}$ monitoring.

PM_{10} consists of particulate matter emitted directly into the air (e.g., fugitive dust, soot, and smoke from mobile and stationary sources, construction operations, fires, and natural windblown dust) and particulate matter formed in the atmosphere by condensation and/or transformation of SO_2 and ROG. $PM_{2.5}$ can also be formed through secondary processes such as airborne reactions with certain pollutant precursors, including ROGs, ammonia (NH_3), NO_X, and SO_X. Emissions of $PM_{2.5}$ are generally associated with combustion processes as well as formation in the atmosphere as a secondary pollutant through chemical reactions. Traffic generates particulate matter emissions through entrainment of dust and dirt particles that settle onto roadways and parking lots. PM_{10} and $PM_{2.5}$ are also emitted by burning wood in residential wood stoves and fireplaces and open agricultural burning.

Fine particulate matter is more likely to penetrate deep into the lungs and poses a serious health threat to all groups, but particularly to the elderly, children, and those with respiratory problems. More than half of the small and fine particulate matter that is inhaled into the lungs remains there, which can cause permanent lung damage. These materials can damage health by interfering with the body's mechanisms for clearing the respiratory tract or by acting as carriers of an absorbed toxic substance. Acute and chronic health effects associated with high particulate levels include the aggravation of chronic respiratory diseases, heart and lung disease, and coughing, bronchitis and respiratory illnesses in children. Recent mortality studies have shown an association between morbidity and mortality and daily concentrations of particulate matter in the air.

Lead

Lead (Pb) is a metal found naturally in the environment, as well as in manufacturing products. Lead occurs in the atmosphere as particulate matter. The major sources of Pb emissions historically have been mobile and industrial sources. In the early 1970s, the USEPA set national regulations to gradually reduce the Pb content in gasoline. In 1975, unleaded gasoline was introduced for motor

vehicles equipped with catalytic converters. The USEPA completed the ban prohibiting the use of leaded gasoline in highway vehicles in December 1995. As a result of the USEPA's regulatory efforts to remove Pb from gasoline, atmospheric Pb concentrations have declined substantially over the past several decades. The most dramatic reductions in Pb emissions occurred prior to 1990 due to the removal of Pb from gasoline sold for most highway vehicles. Lead emissions were further reduced substantially between 1990 and 2008, with reductions occurring in the metals industries at least in part as a result of national emissions standards for hazardous air pollutants (USEPA 2013b). As a result of phasing out leaded gasoline, metal processing currently is the primary source of Pb emissions. The highest level of Pb in the air is generally found near lead smelters. Other stationary sources include waste incinerators, utilities, and lead-acid battery manufacturers. Lead may cause a range of health effects, including anemia, kidney disease, and neuromuscular and neurological dysfunction (in severe cases). Lead has been well below federal and state standards for decades and, as discussed under *Current Air Quality* below, is still below ambient air standards in the General Plan Area. Demolition of buildings containing lead-based paint is regulated by existing laws and regulations, including California Code of Regulations Title 17, Division 1, Chapter 8 and Senate Bill 460, to reduce or eliminate the risk to nearby receptors. Furthermore, the General Plan land use map does not designate any areas for heavy industrial use and therefore would not include stationary sources of Pb emissions. Therefore, buildout of the General Plan would not result in substantial emissions of Pb, and this pollutant is not discussed further in this analysis.

Toxic Air Contaminants

Public exposure to toxic air contaminants (TAC) is a significant environmental health issue in California. The California Health and Safety Code defines a TAC as "an air pollutant which may cause or contribute to an increase in mortality or in serious illness, or which may pose a present or potential hazard to human health." The majority of the estimated health risks from TACs can be attributed to relatively few compounds, the most important being particulate matter from diesel-fueled engines. According to the California Air Resources Board (CARB), diesel engine emissions are believed to be responsible for about 70 percent of California's estimated known cancer risk attributable to toxic air contaminants and comprise about eight percent of outdoor $PM_{2.5}$ (CARB 2016).

c. Air Quality Standards

The federal and State governments have authority under the federal and State Clean Air Acts to regulate emissions of airborne pollutants and have established ambient air quality standards (AAQS) for the protection of public health. The USEPA is the federal agency designated to administer air quality regulation, while the CARB is the state equivalent in California. Federal and State AAQS have been established for six criteria pollutants: O_3, CO, NO_2, SO_2, PM_{10}, $PM_{2.5}$, and Pb. AAQS are designed to protect those segments of the public most susceptible to respiratory distress, such as children under the age of 14, the elderly (over the age of 65), persons engaged in strenuous work or exercise, and people with cardiovascular and chronic respiratory diseases.

Depending on whether the standards are met or exceeded, the local air basin is classified as in "attainment" or "non-attainment" for each criteria pollutant. Some areas are unclassified, which means no monitoring data are available. Unclassified areas are considered to be in attainment. Table 4.2-1 lists the current federal and State standards for each of these pollutants as well as the attainment status of the NCCAB. California air quality standards are identical to or stricter than

Table 4.2-1 Ambient Air Quality Standards and Basin Attainment Status

Pollutant	Averaging Time	California Standards		Federal Standards		Pollutant Health Effects
		Concentration	Attainment Status	Concentration	Attainment Status	
Ozone	1-Hour	0.09 ppm	N/T	–		Respiratory and eye irritation, changes in lung function, increased incidence of asthma and cardiovascular harm
	8-Hour	0.070 ppm	N/T	0.070 ppm	A	
Carbon Monoxide	8-Hour	9.0 ppm	A	9.0 ppm	A	Fatigue, headache, confusion, dizziness, eye irritation, airway constriction, heart difficulties in people with chronic diseases, reduced lung capacity, impaired mental abilities
	1-Hour	20.0 ppm	A	35.0 ppm	A	
Nitrogen Dioxide	Annual	0.030 ppm	A	0.053 ppm	A	Respiratory irritation, increased incidence of asthma and susceptibility to respiratory infections
	1-Hour	0.18 ppm	A	0.100 ppm	A	
Sulfur Dioxide	Annual	–		–		Airway constriction, shortness of breath, coughing, increased risk of mortality from respiratory or cardiovascular disease
	24-Hour	0.04 ppm	A	–		
	1-Hour	0.25 ppm	A	0.075 ppm	A	
PM_{10}	Annual	20 µg/m³	N	–		Lung damage; aggravation of chronic and respiratory diseases, heart and lung disease; coughing, bronchitis, and respiratory illnesses in children
	24-Hour	50 µg/m³	N	150 µg/m³	A	
PM_{25}	Annual	12 µg/m³	A	12 µg/m³	A	
	24-Hour	–		35 µg/m³	A	
Lead	30-Day Average	1.5 µg/m³	A	–		Anemia, kidney disease, neuromuscular and neurological dysfunction
	3-Month Average	–		0.15 µg/m³	A	

ppm = parts per million; µg/m³ = micrograms per cubic meter; A = Attainment; N = Non-attainment; and N/T = Non-attainment-Transitional.

Source: MBARD 2017

federal standards for all criteria pollutants. The NCCAB is currently designated nonattainment-transitional for the state ozone standards and nonattainment for the state PM_{10} standard, but is in attainment for all other federal and State standards.[2]

Local control in air quality management is provided by CARB through county-level or regional (multi-county) Air Pollution Control Districts (APCDs). CARB establishes statewide air quality standards and is responsible for control of mobile emission sources, while the local APCDs are responsible for enforcing standards and regulating stationary sources. CARB has established 15 air basins statewide. The City of Seaside is located in Monterey County, which is under MBARD jurisdiction. MBARD was formerly called the Monterey Bay Unified Air Pollution District (MBUAPCD); documents authored by the MBUAPCD are cited as authored by MBARD in this document.

d. Current Air Quality

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. MBARD operates seven monitoring stations in the NCCAB. The closest MBARD-operated monitoring station to the General Plan Area is the Salinas #3 Monitoring Station, located approximately 9.6 miles to the northeast, which is considered representative of conditions at the General Plan Area. Table 4.2-2 summarizes the representative annual air quality data from this monitoring station between 2019 and 2021 for all available criteria pollutants except PM_{10} which is not monitored at this station. Data for PM_{10} is sourced from the closest station that monitors this pollutant, the Hollister-Fairview Road Monitoring Station, which is located approximately 27 miles northeast of the General Plan Area, and which is considered representative of conditions at the Plan Area. As shown in Table 4.2-2, the $PM_{2.5}$ standard was exceeded one time in 2019 and nine times in 2020, and the PM_{10} State standard was exceeded five times in 2021 and the federal standard was exceeded one time in 2020. No other State or federal standards were exceeded at the monitoring station in the past three years.

Ambient air monitoring for CO has not occurred in the NCCAB since 2012 due to low background concentrations. The maximum 8-hour average CO concentration reported at the Salinas #3 monitoring station in 2012 was 1.39 ppm, which is well below the state standard of 9.0 ppm. Similarly, ambient air monitoring for SO_2 has not occurred in the NCCAB since 2009 due to low background concentrations. The most recently reported maximum 24-hour average SO_2 concentration, reported at the former Davenport monitoring station in 2009, was 0.004 ppm, which is well below the state 24-hour average SO_2 standard of 0.04 ppm (CARB 2023). No monitoring stations within the NCCAB report ambient lead concentrations. The nearest station that monitors lead is located in San Jose and is maintained by USEPA. In 2021, this station reported a maximum 3-month average of 0.08 $\mu g/m^3$, which is well below the federal 3-month average lead standard of 0.15 $\mu g/m^3$ (USEPA 2023).

[2] Areas are designated as nonattainment-transitional for ozone if no monitoring location in the nonattainment area has recorded more than three exceedance days during the previous calendar year (California Code Section 70303.5).

Table 4.2-2 Ambient Air Quality Data

Pollutant	Standard	2019	2020	2021
Ozone (ppm), Worst 1-Hour		0.072	0.073	0.064
Number of days of State exceedances	0.09 ppm	0	0	0
Ozone (ppm), 8-Hour Average		0.063	0.057	0.057
Number of days of State exceedances	0.07 ppm	0	0	0
Number of days of Federal exceedances	0.07 ppm	0	0	0
Carbon Monoxide (ppm), Highest 8-Hour Average		*	*	*
Number of days of above State or Federal standard	9.0 ppm	*	*	*
NO_2 (ppm), Worst Hour[1]		0.030	0.032	0.027
Number of days of state exceedances	0.18 ppm	0	0	0
Number of days of federal exceedances	0.10 ppm	0	0	0
SO_2 (ppm), Worst Hour[2]		*	*	*
Number of days of state exceedances	0.25 ppm	*	*	*
Number of days of federal exceedances	0.075 ppm	*	*	*
Particulate Matter <10 microns ($\mu g/m^3$), Worst 24 Hours		130.7	159.0	128.8
Number of days above State standard	50 $\mu g/m^3$	*	*	5
Number of days above Federal standard	150 $\mu g/m^3$	0	1	0
Particulate Matter <2.5 microns ($\mu g/m^3$), Worst 24 Hours		53.0	87.1	19.7
Number of days above Federal standard	35 $\mu g/m^3$	1	9	0
Lead ($\mu g/m^3$), 3-Month Average				
Number of days above Federal standard	0.15 $\mu g/m^3$	*	*	*

Notes: ppm = parts per million; $\mu g/m^3$ = micrograms per cubic meter

* No data was available for the NCCAB to determine the value.

Source: CARB 2023

Air Quality Trends

As discussed in the Section 3.3 of the 2012-2015 AQMP, although the population trends have increased slightly under cumulative conditions, the number of exceedance days for the state ozone standard has continued to decline during the past 10 years. Only one exceedance of the one-hour ozone standard has occurred since the 2008 Basin Complex wildfire even though population slightly increased during this period. Exceedances of the eight-hour standard have also dropped from a high of approximately 26 per year in 2008 to typically less than five per year. This illustrates a key relationship between population growth and air pollution control. More stringent and protective emissions standards for automobiles, power plants and other sources of ozone precursors have outpaced population growth such that air quality has improved despite increases in population growth. The 2012-2015 AQMP provides a list of programs and rules, which MBARD anticipates will further reduce emissions despite cumulative population increases.

The 2012-2015 AQMP also provides an overview of cumulative emission inventory trends for ozone precursors NO_X and ROG. NO_X emissions are projected to decline substantially through 2035 due to

an increase in cleaner on-road vehicles that emit fewer pollutants. ROG emissions are also projected to decline through 2035 due to a decrease in mobile source emissions; however, the reduction in ROG emissions is not as substantial as that of NO_X emissions because an increase in stationary and area source ROG emissions due to solvent evaporation-related processes is projected to partially offset the decrease in mobile source ROG emissions (MBARD 2017).

Since 2000, one exceedance of the federal PM_{10} standard occurred in the NCCAB in 2020. The federal $PM_{2.5}$ standard was exceeded one day in 2019 and nine days in 2020 (CARB 2023). The high number of $PM_{2.5}$ exceedances in 2020 was likely the result of the Dolan Fire, which took place in the summer of 2020 and burned in the Los Padres National Forest. As discussed above, ambient concentrations of CO, NO_2, SO_2, and lead have been well below AAQS for the past decade.

Growth Projections

Appendix A of the 2012-2015 AQMP provides a table of regional population growth forecasts for each jurisdiction within MBARD's planning area. From 2010 to 2035, population is projected to increase by 18 percent in Monterey County. The population of jurisdictions neighboring Seaside are projected to increase by 10 percent in Monterey, 114 percent in Del Rey Oaks, 364 percent in Sand City, and 15 percent in Marina (MBARD 2017).

e. Sensitive Receptors in the Plan Area

Air quality is of particular concern to that segment of the public most susceptible to respiratory distress, such as children under 14, the elderly over 65, persons engaged in strenuous work or exercise, and people with cardiovascular and chronic respiratory diseases. The majority of sensitive receptor locations are therefore residences, schools, and hospitals. In its guiding document, *CEQA Air Quality Guidelines*, MBARD defines a sensitive receptor as any residence, education resources, daycare centers, health care facilities, or other facilities with live-in housing (MBARD 2008).

Sensitive receptors also include disadvantaged communities, defined by SB 535 as areas disproportionately affected by environmental pollution and other hazards that can lead to negative public health effects, exposure, or environmental degradation and areas with high concentrations of people that are of low-income, high unemployment, low levels of home ownership, high rent burden, sensitive populations, or low levels of educational attainment. Considering this guidance, California Environmental Protection Agency has identified disadvantaged communities as the highest scoring 25 percent of census tracts from CalEnviroScreen 3.0 in addition to 22 census tracts that score in the highest 5 percent of CalEnviroScreen's Pollution Burden category but do not have an overall CalEnviroScreen score due to a lack of reliable socioeconomic or health data (California Environmental Protection Agency 2017). There are no disadvantaged communities in the city of Seaside; however, census tract 6053014102, located immediately north of the city of Seaside in the city of Marina is a designated disadvantaged community. The second closest disadvantaged community is census tract 6053014500, located approximately eight miles to the east in the city of Salinas.

4.2.2 Regulatory Setting

The federal Clean Air Act (CAA) governs air quality in the United States. In addition to being subject to federal requirements, air quality in California is also governed by more stringent regulations under the California CAA. At the federal level, the USEPA administers the CAA. Both CAAs are

administered by CARB at the State level and at the regional and local levels by the AQMDs. MBARD regulates air quality at the regional level for Monterey, Santa Cruz, and San Benito Counties.

a. Federal

USEPA is responsible for enforcing the Federal CAA. USEPA is also responsible for establishing the National Ambient Air Quality Standards (NAAQS), which are a requirement under the 1977 CAA and subsequent amendments. USEPA regulates emission sources that are under the exclusive authority of the federal government, such as aircraft, ships, and certain types of locomotives. The agency has jurisdiction over emission sources outside state waters (e.g., beyond the outer continental shelf) and establishes various emission standards, including those for vehicles sold in states other than California. Automobiles sold in California must meet the stricter emission standards established by CARB.

Construction Equipment Fuel Efficiency Standard

USEPA sets emission standards for construction equipment. The first federal standards (Tier 1) were adopted in 1994 for all off-road engines over 50 horsepower (hp) and were phased in by 2000. A new standard was adopted in 1998 that introduced Tier 1 for all equipment below 50 hp and established the Tier 2 and Tier 3 standards. The Tier 2 and Tier 3 standards were phased in by 2008 for all equipment. The current iteration of emissions standards for construction equipment are the Tier 4 efficiency requirements are contained in 40 Code of Federal Regulations Parts 1039, 1065, and 1068 (originally adopted in 69 Federal Register 38958 [June 29, 2004], and most recently updated in 2014 [79 Federal Register 46356]). Emissions requirements for new off-road Tier 4 vehicles were completely phased in by the end of 2015.

Corporate Average Fuel Economy Standards

The Corporate Average Fuel Economy (CAFE) standards are federal rules established by the National Highway Traffic Safety Administration (NHTSA) that set fuel economy and greenhouse gas (GHG) emissions standards for all new passenger cars and light trucks sold in the United States. The CAFE standards become more stringent each year, reaching an estimated 38.3 miles per gallon for the combined industry-wide fleet for model year 2020 (77 Federal Register 62624 et seq. [October 15, 2012 Table I-1). It is, however, legally infeasible for individual municipalities to adopt more stringent fuel efficiency standards. The CAA (42 United States Code [USC] Section 7543[a]) states that “no state or any political subdivision therefore shall adopt or attempt to enforce any standard relating to the control of emissions from new motor vehicles or new motor vehicle engines subject to this part.” In August 2016, the USEPA and NHTSA announced the adoption of the phase two programs related to the fuel economy and GHG standards for medium- and heavy-duty trucks. The phase two program will apply to vehicles with model year 2018 through 2027 for certain trailers, and model years 2021 through 2027 for semi- trucks, large pickup trucks, vans, and all types and sizes of buses and work trucks. The final standards are expected to lower CO_2 emissions by approximately 1.1 billion MT of CO_2 and reduce oil consumption by up to two billion barrels over the lifetime of the vehicles sold under the program (NHSTA 2019).

As of April 2020, the NHSTA and the USEPA finalized amendments carbon dioxide and fuel economy standards for vehicle model years 2021 and after to establish the Safer Affordable Fuel Efficient (SAFE) Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks (SAFE Vehicles Rule). The SAFE Vehicles Rule amends the existing CAFE standards such that the requirements for model years 2021 through 2026 are lowered to the 2020 standards of 43.7 miles per gallon (mpg)

and 204 grams of CO_2 per mile for passenger cars and 31.3 mpg and 284 grams of CO_2 per mile for light duty trucks (USEPA 2020).

Clean Water Act Section 402

In California, the National Pollutant Discharge Elimination System (NPDES) program is administered by the State Water Resources Control Board (SWRCB) through the Regional Water Quality Control Board (RWQCBs) and requires municipalities to obtain permits that outline programs and activities to control wastewater and stormwater pollution. The SWRCB is the permitting authority in California and adopted an NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit) (Order 2009-0009,[3] as amended by Orders 2010-0014-DWQ[4] and 2012-006-DWQ[5]). The Order applies to construction sites that include one or more acre of soil disturbance and, among other requirements, requires preparation of a stormwater pollution prevention plan (SWPPP), and signed certification statement.

The SWPPP must include, among other elements, site Best Management Practices (BMPs) that reduce or eliminate pollutants in stormwater discharges and authorized non-stormwater discharges, and that reduce or eliminate pollutants after construction are completed and maintained. Although intended to reduce pollutants in stormwater runoff, these construction BMPs also serve to reduce fugitive dust emissions during construction activities.

b. State

In California, CARB is responsible for meeting the state requirements of the Federal CAA, administering the California CAA, and establishing the California Ambient Air Quality Standards (CAAQS). The California CAA, as amended in 1992, requires all air districts in the state to endeavor to achieve and maintain the CAAQS. The CAAQS are generally more stringent than the corresponding federal standards and incorporate additional standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility reducing particles. CARB regulates mobile air pollution sources, such as motor vehicles. The agency is responsible for setting emission standards for vehicles sold in California and for other emission sources, such as consumer products and certain off-road equipment. CARB established passenger vehicle fuel specifications, which became effective on March 1996. CARB oversees the functions of local air pollution control districts and air quality management districts, which in turn administer air quality activities at the regional and county level.

CARB adopted exhaust emissions standards in 1990 for small off-road engines (spark-ignition engines rated at or less than 19 kilowatts), such as those used in lawn and garden equipment, outdoor power equipment, and specialty vehicles. Over time, the small off-road engines program has been strengthened for exhaust emission standards and expanded to include evaporative emission requirements.

CARB established passenger vehicle fuel specifications, which became effective in March 1996. CARB sets vehicle tailpipe emission standards, under waiver from the federal CAA by the USEPA, through its Low Emission Vehicle (LEV) program. The LEV program sets vehicle emission standards

[3] More details on SWRCB Order 2009-0009 are available online at: https://www.waterboards.ca.gov/water_issues/programs/stormwater/docs/constpermits/wqo_2009_0009_complete.pdf

[4] More details on SWRCB Order 2010-0014-DWQ are available online at: https://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2010/wqo2010_0014dwq.pdf

[5] More details on SWRCB Order 2012-006-DWQ are available online at: https://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2012/wqo2012_0006_dwq.pdf

that increase in stringency over time. CARB administers a program for reducing evaporative and refueling emissions from on-road motor vehicles. In addition to on-road motor vehicles, CARB also administers programs aimed at reducing air emissions from off-road and on-road heavy-duty vehicles, cargo handling equipment, commercial harbor craft, ground support equipment, locomotives, commercial marine vessels, and recreational marine vessels.

In 1998, CARB identified particulate emissions from diesel-fueled engines (diesel PM) as a TAC and developed diesel risk reduction plans. This led to the creation of Airborne Toxic Control Measures (ATCMs) for stationary and portable diesel engines that apply statewide. CARB maintains a statewide Portable Equipment Registration Program that allows owners and operators to register their equipment (powered by diesel engines rated at 50 brake horse power [bhp] or larger) to operate throughout California without having to obtain individual permits from local air districts.

CARB established the Large Spark-Ignition Engine Fleet Requirements Regulation in 2006 that applies to operators of forklifts, sweeper/scrubbers, industrial tow tractors, and airport ground support equipment to achieve fleet average emission level standards that become more stringent over time.

CARB also adopts regulatory requirements for chemically-formulated consumer products, fuel containers, and indoor air cleaning products to reduce VOC, TAC, and GHG emissions. The Consumer Products Regulatory Program establishes regulations for chemically-formulated consumer products such as detergents, cleaning products, polishes, floor finishes, and aerosol paints.

c. Regional

Monterey Bay Air Resources District

MBARD is responsible for assuring that the federal and State ambient air quality standards are attained and maintained in the NCCAB. The agency is also responsible for adopting and enforcing rules and regulations concerning air pollutant sources, issuing permits for stationary sources of air pollutants, inspecting stationary sources of air pollutants, responding to citizen complaints, monitoring ambient air quality and meteorological conditions, awarding grants to reduce motor vehicle emissions, conducting public education campaigns, and other activities.

In March 2017, MBARD adopted the *2012-2015 Air Quality Management Plan* (2015 AQMP) as an update to the 2012 AQMP. The 2015 AQMP assesses and updates elements of the 2012 AQMP, including ambient air quality data, emission inventory trends, information on ozone transport, control measures, mobile source programs, emission reduction strategies, and growth forecasts. The 2015 AQMP only addresses attainment of the State 8-hour ozone standard because in 2012, the USEPA designated the NCCAB as in attainment for the current national 8-hour ozone standard of 0.075 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 are the most pertinent MBARD rules that would limit emissions of air pollutants from development facilitated by the proposed General Plan. However, this list is not comprehensive, and MBARD also promulgates rules applicable to numerous other activities, including light and heavy industrial operations.[6]

[6] MBARD Rules available online at: https://www.arb.ca.gov/DRDB/MBU/

- **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 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 ROGs 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).** The purpose of this rule is to prevent the emission of TACs into the atmosphere within MBARD, which may cause or contribute to an increase in mortality or an increase in serious illness, or which may pose a present or potential hazard to human health.

d. Local

Seaside Municipal Code

Section 17.30.080(E) of the Seaside Municipal Code requires that dust emissions from construction, grading, commercial gardening, and similar operations must be limited beyond the project site boundary to the maximum extent feasible via the following methods:

- Grading shall be designed and grading activities shall be scheduled to ensure that repeat grading will not be required, and that completion of dust-generating activity (e.g., construction, paving, or plating) will occur as soon as possible.
- Clearing, earth-moving, excavation operations or grading activities shall cease when the wind speed exceeds 25 miles per hour averaged over one hour.
- The area disturbed by clearing, demolition, earth-moving, excavation operations, or grading shall be minimized at all times.

- Dust emissions shall be controlled by watering a minimum of two times each day, paving, or other treatment of permanent on-site roads and construction roads, the covering of trucks carrying loads with dust content, and/or other dust-preventive measures (e.g., hydroseeding).
- Graded areas shall be revegetated as soon as possible, but within no longer than 30 days, to minimize dust and erosion. Disturbed areas of the construction site that are to remain inactive longer than three months shall be seeded and watered until grass cover is grown and maintained.
- Appropriate facilities shall be constructed to contain dust within the site as required by the Zoning Administrator.

4.2.3 Impact Analysis

a. Methodology

Section 7.8 of the *CEQA Air Quality Guidelines* includes specific instructions for what a programmatic EIR should include in its evaluation of air quality impacts (MBARD 2008):

- Focus on the project's cumulative air quality impact on regional ozone. A project's cumulative impact should be analyzed by determining its consistency with the AQMP (per Section 5.5 of the *CEQA Air Quality Guidelines*).
- A project's localized impact should be assessed by determining whether buildout would create or substantially contribute to carbon monoxide "hotspots" where federal or state AAQS are exceeded (per Section 5.4 of the *CEQA Air Quality Guidelines*).
- Unknown impacts should be deferred for subsequent environmental review.

b. Significance Thresholds

The proposed project would have a significant impact to air quality if the project would:

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

MBARD's guidance document, *CEQA Air Quality Guidelines*, does not establish quantitative significance thresholds for plan-level air quality impacts with the exception of the Level of Significance (LOS) screening thresholds for CO, which can be used to evaluate the potential for localized CO impacts resulting from plan implementation (Section 7.8 of the MBARD *CEQA Air Quality Guidelines*). A localized CO impact may occur if buildout of the General Plan causes one of the following to occur:

- LOS at an intersection/road segment to degrade from D or better to E or F
- V/C ratio at an intersection/road segment at LOS E or F to increase by 0.05 or more
- Delay at an intersection at LOS E or F to increase by 10 seconds or more
- Reserve capacity at an unsignalized intersection at LOS E or F to decrease by 50 or more

The CO thresholds provided by MBARD are designed to screen out from further analysis projects that would have a less than significant impact to CO; however, projects that exceed these 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. The Bay Area Air Quality Management District (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). This threshold is applied in the following impact analysis if the project exceeds MBARD screening thresholds presented above to determine whether the project would result in an exceedance of CO standards.

c. Project Impacts and Mitigaiton Measures

Threshold 1:	Would the project conflict with or obstruct implementation of the applicable air quality plan?
Threshold 2:	Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or State ambient air quality standard?

Impact AQ-1 PROJECTED GROWTH UNDER SEASIDE 2040 WOULD EXCEED GROWTH FORECASTS USED TO DEVELOP THE MBARD AQMP. HOWEVER, FUTURE GROWTH FORECASTS WOULD BE UPDATED TO REFLECT THE SEASIDE 2040 LAND USE SCENARIO AND SEASIDE 2040 INCLUDES POLICIES TO REDUCE EMISSIONS ASSOCIATED WITH DEVELOPMENT. IN ADDITION, BUILDOUT OF SEASIDE 2040 WOULD REDUCE REGIONAL VMT. THEREFORE, IMPACTS WOULD BE LESS THAN SIGNIFICANT.

Long-term criteria pollutant emissions (i.e., ROG, NO_X, CO, SO_2, PM_{10}, and $PM_{2.5}$) associated with future development in Seaside in accordance with the General Plan are those associated with mobile sources (vehicle trips) and stationary sources (electricity and natural gas). Emissions associated with individual projects, depending on project type and size, could exceed project-specific thresholds established by MBARD. However, such projects will be required to undergo independent, project-level CEQA review and include mitigation measures, if necessary, to address potentially significant impacts. Therefore, the discussions that follows address General Plan consistency with the growth and emissions forecasts upon which the AQMP is based as well as the General Plan's impact on regional VMT.

MBARD uses growth forecasts provided by the Association of Monterey Bay Area Governments (AMBAG) to project population-related emissions, which are used in developing the AQMP for the NCCAB. In turn, AMBAG population forecasts are largely based on the land use assumptions presented in the existing general plans of local governments within the Basin. When a general plan is updated, land uses are also updated to accommodate future growth projected based on recent population growth trends. Consequently, an updated general plan prepared for a local jurisdiction experiencing a higher rate of population growth than assumed in the previous general plan would have projected growth exceeding previous general plan projections and also exceeding AMBAG projections. As shown in Table 4.2-3, this is the case for Seaside. Population, housing, and employment growth under Seaside 2040 would exceed AMBAG projections for 2040, which were

based on land use assumptions in the existing general plan adopted in 2004. However, future AMBAG growth projections would incorporate Seaside 2040 land use assumptions and would inform future air quality management in the Basin. Furthermore, the 2012-2015 AQMP provides Emission Reduction Strategies in Section 9.1, which include land use "planning efforts such as 'The Sustainable Communities and Climate Protection Act of 2008 (Sustainable Communities Act, SB 375…which supports the State's climate action goals to reduce GHG emissions through coordinated transportation and land use planning with the goal of developing more sustainable communities.'"

Table 4.2-3 Comparison of AMBAG and Proposed Project Growth Projections

Year	2040 Growth Projections for Seaside	
	AMBAG	Proposed Project
Population	36,582	46,297[1]
Housing Units	12,604	14,143
Employment	11,290	12,394

[1] Source: AMBAG 2022

[1] Assumes 3.1 people per housing unit, consistent with AMBAG projections

While Seaside 2040 would result in projected growth exceeding current population forecasts that inform the MBARD AQMP, Seaside 2040 includes a number of goals and policies that would reduce population-related emissions, primarily by promoting alternatives to personal vehicle use. Some of the most salient of these goals and policies include the following:

Land Use + Community Design Element

Goal LUD-1: An urban form and structure that enhances the quality of life of residents, meets the community's vision for the future, and weaves new growth areas together with long-established Seaside neighborhoods.

Intent: To provide an appropriate mix of housing, employment, retail/services, recreation, arts, education and entertainment for the city's residents and businesses. To grow responsibly and sustainably in a manner which benefits the community now and into the future.

Policies: **Walkable neighborhoods.** Enhance existing neighborhoods with walkable streets, a diverse mix of housing types, and neighborhood services (such as stores, recreational facilities, and childcare) within walking distance.

Goal LUD-8: A safe urban environment oriented and scaled to pedestrians and bicyclists.

Intent: To foster a welcoming urban environment that promotes health, equity, prosperity, and well-being. To support and increase non-motorized activity and walkability throughout the city.

Policies: **Streetscape design.** Create pedestrian-oriented streetscapes by establishing a unified approach to street tree planting, sidewalk dimensions and maintenance, pedestrian amenities, and high-quality building frontages.

Bicycle parking. Provide safe and accessible bicycle parking that enhances the streetscape and is designed to meet the needs of employees, visitors, and shoppers.

Pedestrian-supportive building design. Require new and substantially rehabilitated/renovated commercial and mixed-use projects to follow best practices for pedestrian-supportive design:

- Ensure pedestrian orientation of ground floor uses in new development.
- Place primary building facades and entrances near the front property line or back of sidewalk. In limited cases, allow small plazas and active landscaped areas for social gathering between the building and sidewalk.
- Scale building elements to pedestrian scale.
- Design new buildings along corridors to provide for a rear building transition between the primary arterials and any adjacent lowdensity residential neighborhoods.
- Require parking internal to buildings that face primary arterials or side streets to use appropriate design (such as faux facades, green walls, public murals, etc) to minimize its visual impact.
- Require that new development include wide sidewalks, trees, pedestrian furniture, safe pedestrian crossings and direct connections to the front entrances of retail and services.
- Encourage new commercial developments to have common driveways to minimize the number of curb cuts along any given block to improve pedestrian safety.

Goal LUD-10: A network of pedestrian-oriented, human-scale and well-landscaped streetscapes throughout Seaside.

Intent: To encourage a vibrant public realm and to promote walking as a safe, comfortable, healthy, and viable mode of transportation.

Policies: **Pedestrian amenities.** Use high-quality and attractive pedestrian amenities, including planters, bicycle racks, bus shelters, benches, trash cans, and other similar amenities in commercial areas.

Multimodal streets. Design regional streets, including Fremont Boulevard, Del Monte Boulevard, Gigling Road, and Broadway Avenue, to balance regional travel needs with pedestrian and bicycle travel needs.

Improved connections. Improve pedestrian and bicycle mobility by identifying opportunistic connections within the city's neighborhoods to increase access to local parks, open space, schools, neighborhood centers, and neighborhood gathering spaces.

Goal LUD-13: High-quality multifamily neighborhoods with a mixture of well-designed building types for a diversity of households.

Intent: To promote a variety of building types in the Neighborhood General and High designations, in order to serve the housing needs of a broad cohort of the city and region's population.

Policy: **Infill housing.** Encourage new infill housing in residential areas of the city and on public/institutional sites to expand the amount and diversity of housing.

Goal LUD-15: Transform Fremont Boulevard into a distinct, visually-consistent, mixed-use commercial boulevard with neighborhood and regionally-serving centers.

Intent: To attract a variety of residential, office and retail uses that are higher in intensity and quality than current development.

Policy: **Mixed-use boulevard.** Establish Fremont Boulevard as a dynamic mixed-use boulevard with an enhanced pedestrian experience and improved transit facilities and traffic circulation. Explore reconfiguring or narrowing parts of the Fremont Boulevard right-of-way to make it more attractive and pedestrian and bicycle-friendly. Require new projects to follow best practices for pedestrian-supportive design. Consider future Monterey-Salinas Transit plans for Fremont Boulevard to increase regional connections.

Goal LUD-18: Design new Seaside neighborhoods on former Fort Ord lands sustainably by linking land use, transportation, and infrastructure development to increase non-automobile travel, protect sensitive habitat, and reduce infrastructure costs.

Intent: To expand the city in a sustainable, smart growth manner that minimizes the carbon footprint of new development, while also benefiting the existing community.

Policy: **Expanded mobility.** Ensure new development supports non-automobile mobility by providing safe, comfortable, and convenient well-connected pathways for pedestrians and bicyclists and waiting areas for transit.

Links to CSUMB. Create strong physical linkages from villages in the Campus Town and Main Gate areas to CSUMB.

Goal LUD-22: Balanced, diverse, and sustainable growth.

Intent: To guide development towards a diverse community that balances habitat and wilderness with new low-impact residential development clustered around neighborhood centers, supporting public use, and employment districts.

Policy: **Balanced land use mix**. Create a complete community in Seaside East with a mix of parks, recreation, employment, retail and services, and housing. Specifically, the eventual build-out of the area will include all of the following, in the approximate quantities specified in Table 3. Additional analysis will be completed with any future specific plan in the area:

- A range of park types and community recreation facilities, including a regional recreation area with multipurpose athletic fields, courts, and other park uses.
- Visitor-serving amenities (retail and services) at primary National Monument access points.
- New office, research and development (R&D), and/or flex space to increase employment in the area as required as a condition of the City's acquisition of the land.
- Traditional, walkable residential neighborhoods with a diversity of low and moderate-density housing types built around "neighborhood centers' with a mix of retail, services, parks and other amenities for residents.
- New schools, public facilities, and a Civic Campus to support the expected population and worker growth in the area.

Walkable grid. Plan new streets to form an interconnected grid of street and greenway circulation within the subarea. Design street and block patterns to provide safe, convenient, and comfortable circulation for pedestrians and bicyclists.

Mobility Element

Goal M-1: A citywide network of "complete streets" that meets the needs of all users, including bicyclists, children, persons with disabilities, motorists, movers of commercial goods, pedestrians, public transportation, and seniors.

Intent: To make travel safe for users, including bicyclists, pedestrians, motorists, and transit vehicles, and access for riders and people of all ages and abilities. Complete Streets principles are incorporated into the General Plan, consistent with the California Complete Streets Act (AB 1358).

Policies: **Planning for all modes and transportation/land use integration.** Design streets holistically, using a complete streets approach, which considers pedestrians, bicyclists, motorists, transit users, and other modes together to adequately serve future land uses.

Reallocate space for Complete Streets. Reallocate roadway space to allow complete streets improvements on streets with excess traffic capacity, including implementation of the following "road diets".

- Broadway Avenue: reduce to one motor vehicle lane per direction to provide space for bicycle lanes and wider sidewalks.
- Fremont Boulevard: reduce to one southbound motor vehicle lane, to provide space for bicycle lanes and wider sidewalks while retaining on-street parking where desired.
- Del Monte Boulevard: reduce to one northbound lane, to provide space for bicyle lanes and wider sidewalks while retaining on-street parking where desired.

Goal M-2: Mobility options that serve the multi-modal access and travel needs generated by new development in a manner suitable to the local context.

Intent: To ensure new development includes multi-modal transportation components, and provide mechanisms for new development to pay its fair share of the cost of transportation improvements.

Policies: **Greenhouse gas emissions and vehicle miles traveled (VMT) reductions.** Support development and transportation improvements that help reduce greenhouse gas emissions and VMT in line with AMBAG targets for the Sustainable Communities Strategy. Strive to reduce VMT below regional averages on a "per resident" and "per employee" basis.

Multi-modal connectivity. Promote pedestrian and bicycle improvements that improve connectivity between existing and new development.

Pedestrian amenities. Require new development and redevelopment to increase connectivity through direct and safe pedestrian connections to public amenities, neighborhoods, shopping and employment destinations throughout the City.

Car sharing and bike sharing in commercial areas. Explore car-sharing and bicycle-sharing opportunities throughout the City.

Goal M-3: Pedestrian facilities that connect land uses, address safety concerns, and support land use and urban design goals.

Intent: To prioritize the provision of pedestrian improvements and ensure that adequate pedestrian access is provided to land uses and destinations.

Goal M-5: A citywide bicycle network that connects residential, commercial, educational and recreational uses, and earns Seaside the reputation of a bicycle-friendly city.

Intent: To prioritize completion of the citywide bikeway network and ensure that adequate bicycle circulation and access is provided throughout Seaside and to/from regional designations.

Policies: **Bikeway network completion.** Strive to complete the citywide bicycle network to create a full network of bicycle facilities throughout Seaside.

Funding for bikeway Improvements. Increase the share of bicycle facility improvements included in the City's Capital Improvement Program.

Bicycle encouragement and events. Encourage bicycling by sponsoring and/or supporting community outreach events that promote bicycling, such as Bike Month, Bike to Work/School Events, and the Safe Routes to School Program.

Bicycle facilities and commercial areas. Install bicycle amenities, including bicycle lanes, parking and storage, and wayfinding and signage throughout Seaside's commercial areas as appropriate.

Bicycling and law enforcement. Ensure bicycle-friendly laws and ordinances are in place and enforced by law enforcement.

Bicycle parking requirements for new development. Ensure future development meets Seaside Municipal Code requirements for bicycle parking spaces.

Bicycle parking requirements for existing development. Develop a retrofit program to make it easier to add bicycle parking to existing buildings. This could include example layouts and simplifying the permitting process.

Bicycle commute programs. Encourage employers to provide shower and locker facilities for bicycle commuters.

Goal M-6: Transit service that is frequent and convenient, and maximizes ridership potential for residents, employees and visitors.

Intent: To enhance local support for transit improvements and efforts to increase service frequency and ridership, anticipate future transit opportunities, and consider measures to enhance transit-operating speeds on priority transit corridors.

Goal M-10: Environmentally sustainable transportation.

Intent: To augment the complete streets goals and policies with mobility policies focused on sustainability components.

Policies: **Car sharing and neighborhood electric vehicles.** Promote car-sharing, alternative fuel vehicles, and neighborhood electric vehicles to reduce traffic.

Electric vehicle charging stations. Support the development of a network of electric vehicle charging stations throughout Seaside.

Preferential parking for carpools, vanpools and electric vehicles. Encourage commercial, office, and flex development to provide preferred parking for carpools, vanpools, and electric vehicles.

Healthy and Sustainability Community Element

Goal HSC-1: A City that supports health equity for all residents by promoting access to affordable, quality health care, mental health care, and social services.

Intent: To promote community health programs and services, including access to medical care and social and economic opportunities. To achieve this, the City will collaborate with Monterey County agencies, the Monterey Peninsula Unified School District, and community-based organizations to improve health outcomes by expanding and leveraging resources, capacity, and programs that promote health equity.

Policies: **Regional presence as sustainability partner.** Play an active role in AMBAG and the development and implementation of the Sustainable Communities Strategy. Encourages land use patterns that encourage walking, conserve land, energy, and water resources, support active transportation, reduce vehicle trips, and improve air quality.

Goal HSC-7: Citywide greenhouse gas emissions that meet State reduction targets.

Intent: To meet greenhouse gas reduction targets set by the State. To achieve this, the City will quantify total emissions produced by Seaside and formalize strategies in a Climate Action Plan for reducing greenhouse gas emissions.

Policies: **Reduction measures.** Implement greenhouse gas reduction measures to achieve greenhouse gas reduction targets through the development of a Climate Action Plan or similar.

Although Seaside 2040 would increase the development capacity of Seaside, and thus, increase the city's projected population beyond current AMBAG forecasts, goals and policies contained in Seaside 2040 would ensure that development occurs primarily within mixed-use areas. Developing mixed-use areas allows for mobility between different land uses, such as home and retail shopping, by active transportation modes. By facilitating active transportation modes, such as walking and bicycling, fewer trips are made or required in personal vehicles, resulting in fewer vehicle miles traveled (VMT). As described in Section 4.14, *Transportation*, the proposed 2040 General Plan would reduce the forecasted rate of vehicle miles traveled (VMT) per capita for the three-county AMBAG region in 2040. Reducing VMT per capita would equate to a reduction in the emissions of pollutants associated with vehicle travel in the region, such as CO in vehicle exhaust and PM_{10} in brake dust.

The MBARD *CEQA Air Quality Guidelines* (2008) have no plan-level significance thresholds for operational air pollutant emissions. However, future projects in the General Plan Area would be required to undergo individual environmental review. Projects would be evaluated for consistency with the AQMP and cumulative air quality impacts in accordance with MBARD's *CEQA Air Quality*

Guidelines and would be required to incorporate mitigation to reduce impacts to regional air quality, if warranted. Therefore, Seaside 2040 would be consistent with the MBARD AQMP, and operation of future development would not result in a cumulatively considerable net increase in criteria pollutants for which the MBARD region is in non-attainment (i.e., ozone and PM_{10}). Impacts would be less than significant.

Mitigation Measures

Because impacts would be less than significant, mitigation is not required.

Significance After Mitigation

Impacts would be less than significant without mitigation.

Threshold 2:	Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or State ambient air quality standard?
Threshold 3:	Would the project expose sensitive receptors to substantial pollutant concentrations?

Impact AQ-2 IMPLEMENTATION OF THE PROPOSED PROJECT WOULD GENERATE ADDITIONAL VEHICLE TRIPS ASSOCIATED WITH OPERATION OF NEW DEVELOPMENT OR REDEVELOPMENT. HOWEVER, THE PROPOSED PROJECT WOULD NOT GENERATE VOLUMES OF TRAFFIC THAT WOULD CREATE OR CONTRIBUTE TO THE CREATION OF A CO HOTSPOT. LOCALIZED IMPACTS TO AIR QUALITY WOULD BE LESS THAN SIGNIFICANT.

General Plan buildout 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 high 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. A project's localized air quality impact would be significant if it caused CO concentrations to exceed these standards.

As discussed above in Section 4.3.3(b), *Methodology*, 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. Consequently, the 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). Del Monte Boulevard would have the greastest daily traffic volume of all studied road segmentswith 43,212 trips per day (Hexagon Transportation Consultants, Inc. 2022). Thus, all of the studied road segments would have *daily* traffic volumes below 44,000 vehicles. Therefore, the project would not result in volumes of traffic that would create, or substantially contribute to, the exceedance of State and federal AAQS for CO. This impact would be less than significant.

In addition, as discussed under Impact AQ-1, Seaside 2040 includes a number of goals and policies intended to decrease vehicle use, which would lower VMT per capita and related CO emissions associated with the proposed project.

Toxic Air Contaminants

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.

Land uses facilitated by the General Plan include regional commercial, heavy commercial, and mixed use. If individual projects constructed under the General Plan propose the use of stationary sources with the potential to emit TACs, project applicants and/or tenants would be required to obtain an Authority to Construct and/or Permit to Operate from MBARD pursuant to Rule 1000 and conduct a risk assessment of associated TAC emissions. As part of the permit process, tenants would be required to demonstrate compliance with the following requirements, which are designed to prevent TAC emissions from causing or contributing to an increase in mortality or an increase in serious illness or from posing a present or potential hazard to human health:

- The acute and chronic hazard indices for any target organ or organ system due to TAC emissions do not exceed 1.0 at any receptor location; and
- The cancer risk due to TAC emissions does not exceed 10 in one million at any receptor location.

Other sources of potential air toxics associated with General Plan buildout include DPM from delivery trucks for commercial/retail uses (e.g., truck traffic on local streets and idling on adjacent streets) and the use of household hazardous materials such as cleaning solvents, paints, and landscape pesticides. However, these activities, and the land uses associated with the General PLan, are not considered 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 individual residents and commercial 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. In the event that future tenants of commercial land uses utilize substantial quantities of hazardous substances, they would be subject to the requirements of the California Accidental Release Program and would be required to develop and implement a Risk Management Plan that would minimize the accidental release of hazardous substances and associated TAC emissions. Because stationary TAC sources in Seaside would be required to comply with MBARD Rule 1000 and buildout of the General Plan would not otherwise result in substantial TAC sources, the General Plan would not result in the exposure of sensitive receptors to significant amounts of carcinogenic or toxic air contaminants. Therefore, impacts related to TAC emissions from stationary sources would be less than significant.

High-Volume Roadways

CEQA does not generally require an agency to consider the effects of existing environmental conditions on a proposed project's future users or residents. Consequently, impacts related to TACs generated by vehicular traffic on high-volume roadways would only be considered significant if the General Plan risks exacerbating those existing environmental conditions. CARB's *Air Quality and*

Land Use Handbook: A Community Health Perspective (2005) provides guidance for evaluating projects near high-traffic freeways and roadways and recommends against siting sensitive receptors within 500 feet of a freeway, urban roads with 100,000 vehicles per day, or rural roads with 50,000 vehicles per day (CARB 2005). The CARB Handbook states that its "recommendations are advisory. Land use agencies have to balance other considerations, including housing and transportation needs, economic development priorities, and other quality of life issues" (CARB 2005). The freeways analyzed in the CARB Handbook are the I-710 and I-405 in Southern California, both of which are very high traffic freeways. The primary concern with respect to nearby-traffic roadway adjacency is the long-term effect of TACs, such as diesel exhaust particulates, on sensitive receptors. The primary source of diesel exhaust particulates is heavy-duty trucks on freeways and high-volume arterial roadways.

Major roadways in Seaside include General Jim Moore Boulevard, Canyon Del Ray Boulevard, Fremont Boulevard, and Broadway Avenue. Del Monte Boulevard would experience the highest average daily traffic volumes of 43,212 vehicles under General Plan buildout conditions (Hexagon Transportation Consultants, Inc. 2022). Therefore, Seaside 2040 would not introduce sensitive receptors within 500 feet of an urban road with 100,000 vehicles per day and would not exacerbate existing conditions such that on-site or off-site sensitive receptors would be exposed to substantial pollutant concentrations resulting from TAC emissions along high-volume roadways. Impacts related to TAC emissions from mobile sources would be less than significant.

Mitigation Measures

Because impacts would be less than significant, mitigation is not required.

Significance After Mitigation

Impacts would be less than significant without mitigation.

Threshold 2:	Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or State ambient air quality standard?
Threshold 3:	Would the project expose sensitive receptors to substantial pollutant concentrations?

Impact AQ-3 BUILDOUT OF SEASIDE 2040 WOULD RESULT IN SHORT-TERM EMISSION OF CRITERIA POLLUTANTS. DEPENDING ON THE TIME AND INTENSITY OF CONSTRUCTION ACTIVITIES, CONSTRUCTION EMISSIONS FROM FUTURE PROJECTS IN THE GENERAL PLAN AREA MAY HAVE A CUMULATIVE IMPACT ON AIR QUALITY. COMPLIANCE WITH SEASIDE 2040 POLICIES WOULD REDUCE IMPACTS TO LESS THAN SIGNIFICANT.

As discussed in Section 4.2.1(c), *Air Quality Standards*, the NCCAB is currently designated nonattainment-transitional for the State ozone standards and nonattainment for the State PM_{10} standard, but is in attainment for all other Federal and State standards.[7] Therefore, this analysis focuses on air quality impacts related to those criteria pollutants for which the Plan Area region is nonattainment, which are ozone and PM_{10}.

[7] Areas are designated as nonattainment-transitional for ozone if no monitoring location in the nonattainment area has recorded more than three exceedance days during the previous calendar year (California Code Section 70303.5).

Buildout of Seaside 2040 would result in temporary emissions associated with construction activities, such as construction worker travel to and from project sites, delivery and hauling of construction supplies and debris, and fuel combustion by on-site construction equipment. These construction activities would temporarily create emissions of dust, equipment exhaust, and other air contaminants, particularly during site preparation and grading. Construction activities would generate emissions of ozone precursors (ROG and NO_X), CO, and dust (PM_{10} and $PM_{2.5}$). The extent of daily emissions generated by construction equipment, particularly ROG and NO_X emissions, would depend largely on the quantity of equipment used and the hours needed to complete each phase of construction. The extent of $PM_{2.5}$ and PM_{10} emissions would depend largely upon the following factors: 1) the amount of disturbed soils; 2) the length of disturbance time; 3) whether existing structures are demolished; 4) whether excavation is involved; and 5) whether transporting excavated materials off-site is necessary. Dust emissions can lead to both nuisance and health impacts.

MBARD does not provide specific criteria to analyze construction emissions on a programmatic level, and, in fact, indicates that unknown impacts should be deferred for subsequent environmental review. Because construction emissions depend largely on project-specific details (e.g., the types of construction equipment used, construction schedule, export and import fill volumes), quantification of plan-level construction emissions would be speculative. Therefore, potential air quality impacts due to construction emissions are discussed qualitatively, acknowledging that this impact is being largely deferred to project-level analysis.

According to MBARD guidelines, construction projects that temporarily emit precursors of ozone (i.e., ROG or NO_X) 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 AAQS. MBARD guidelines have an exception if a project uses "non-typical equipment, e.g., grinders, and portable equipment." Construction activities facilitated by Seaside 2040 would be anticipated to use typical construction equipment; therefore, ozone precursor emissions from project construction 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).

According to MBARD's *CEQA Air Quality 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. Projects that emit more than 82 pounds per day of PM_{10} would be required to incorporate mitigation to reduce emissions below this threshold for impacts to be considered less than significant. As noted above, the existing SWPPP requirements help address fugitive dust emissions during construction. SWPPP construction BMPs include material storage including covering of stockpiles during the day particularly during rain and wind events, silt fencing, straw wattles, stabilized construction entrances, routine cleaning, equipment lubricant drip pans, dust control measures including watering trucks to stabilize soil. Furthermore, as explained above in Section 4.2.2, *Regulatory Setting*, construction fleet emissions will be reduced in comparison to the existing construction vehicles, as a greater portion of the construction fleet mix is replaced with more efficient Tier 4 construction equipment.

As previously noted, the timing of future construction under buildout of Seaside 2040 is not currently known. Because the NCCAB is designated nonattainment-transitional for the state ozone standards and nonattainment for the PM_{10} standard, any increase in emissions above the thresholds due to construction activities is considered significant and mitigation is required. As development proposals occur, a project-level construction analysis will need to be performed using project-

specific details. It is likely that some construction projects built under Seaside 2040 would have significant emissions; therefore, the impact would be potentially significant.

Goal HSC-11 of Seaside 2040 would ensure that construction-related PM_{10} emissions are reduced below the MBARD significance threshold of 82 pounds per day. If PM_{10} emissions from individual project construction activity would exceed 82 pounds per day, the project developer shall implement measures including but not limited to watering active construction areas at least twice daily, prohibiting grading activities during high wind, applying chemical soil stabilizers, and covering inactive materials storage piles. Implementation of this policy would reduce potentially significant impacts to criteria pollutants and exposing sensitive receivers to substantial pollutant concentrations to a less than significant level.

Mitigation Measure

None required beyond compliance with Seaside 2040 polices.

Significance After Mitigation

Impacts would be less than significant without mitigation.

Threshold 4:	Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Impact AQ-4 IMPLEMENTATION OF SEASIDE 2040 WOULD NOT CREATE OBJECTIONABLE ODORS THAT WOULD IMPACT A SUBSTANTIAL NUMBER OF PEOPLE. IMPACTS RELATED TO ODORS WOULD BE LESS THAN SIGNIFICANT.

Land uses typically producing objectionable odors include agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding (MBARD 2008). The proposed project does not specifically involve development of new heavy industrial and/or agricultural uses that would potentially produce objectionable odors during operation. In addition, the 2040 Seaside General Plan includes a policy to discourage development of new industrial uses that would potentially generate objectionable odors:

Land Use + Community Design Element

Goal LUD-2: Increased employment opportunities in seaside to meet the needs of existing and future residents.

Intent: To ameliorate the jobs-housing balance by expanding current and attracting new businesses in the community, especially those offering high-quality jobs in new, cutting-edge industries.

Policy: **Non-polluting industries.** Promote development of non-polluting industries that are not major sources of air, water pollution, or greenhouse gas emissions.

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 to the persons or public, with the exception of odors from agricultural activities. Therefore, buildout of Seaside 2040 is not expected to result in significant impacts related to objectionable odors.

Mitigation Measures

Because impacts would be less than significant, mitigation is not required.

Significance After Mitigation

Impacts would be less than significant without mitigation.

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4.3 Biological Resources

This section addresses the existing environmental conditions in the General Plan Area and provides an assessment of the potential for direct and indirect impacts to special-status biological resources, sensitive natural communities, special-status species, regulated waterways and wetlands, sensitive habitat and mature native trees, and wildlife movement corridors. Background technical documents were prepared in support of the evaluation of impacts for biological resources and have been referenced in this section as applicable.

4.3.1 Setting

The City of Seaside is located along the California coast on the southern coast of Monterey Bay, northeast of the City of Monterey. The General Plan Area consists of a variety of land use types including residential and commercial areas and open undeveloped space consisting of native vegetation communities that occur predominantly in the former Fort Ord, at Laguna Grande and along Canyon Del Rey Creek.

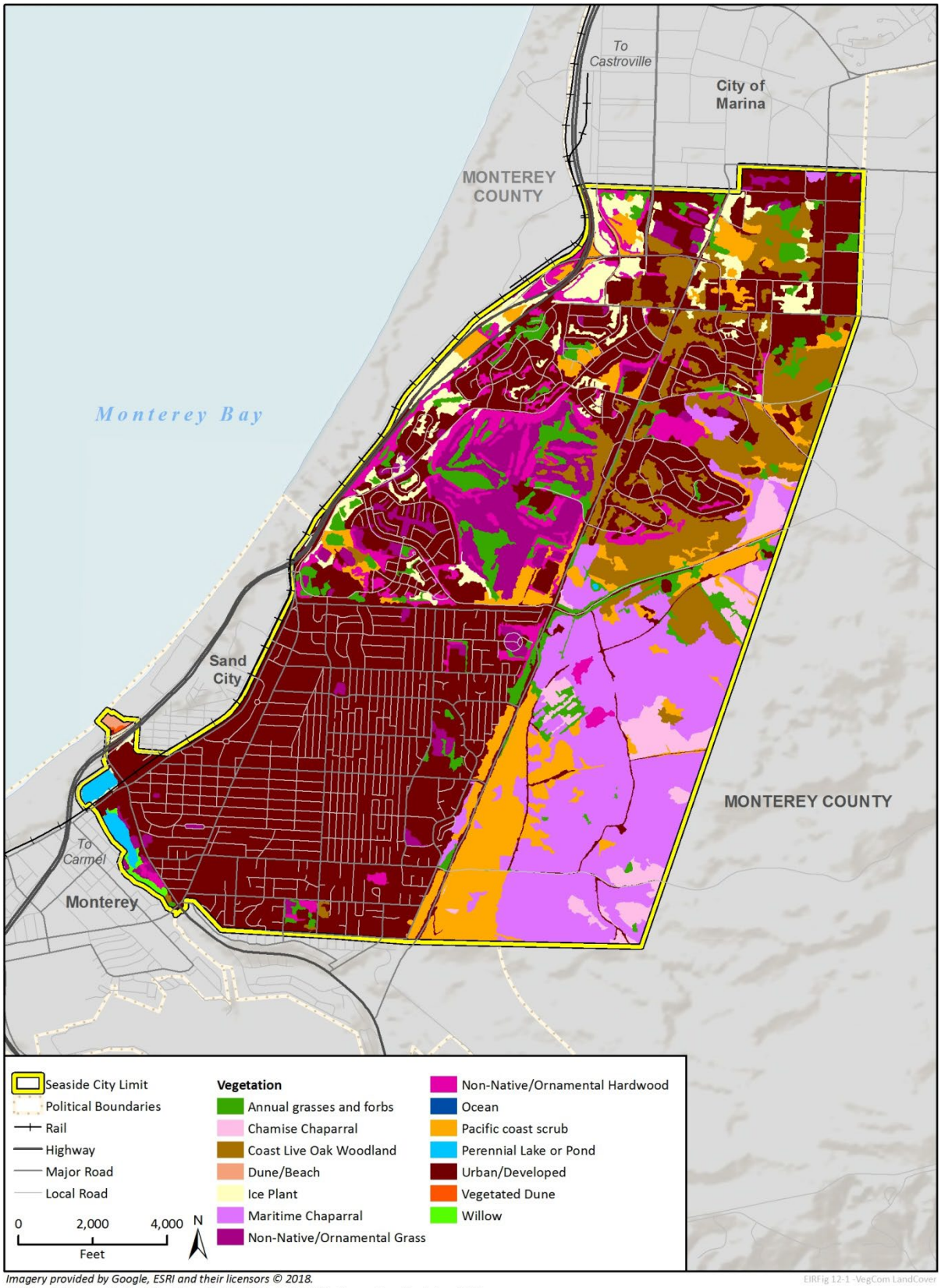
a. Vegetation Communities and Land Cover Types

Vegetation communities and land cover types occurring within the Plan Area were developed based on aerial imagery and data from the City of Seaside, the former Fort Ord, California State University Monterey Bay, USGS, NOAA, and the US Forest Service (Figure 4.3-1). Fourteen vegetation communities and land cover types were identified; ranging from developed areas to native chaparral and woodlands. The fourteen vegetation communities are described below. One non-vegetated land cover type was mapped within the plan area; Urban/Developed. This type includes patches of bare ground and developed areas, primarily within the City proper.

Annual Grasses and Forbes

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. Rapid land use change during the mid- to late-1800s, along with other interacting factors, accelerated the invasion of California's native grassland by species of European origin. The intensification of livestock grazing both brought in new species for livestock forage, and prompted the spread of invasive species in California grasslands (Caziarc, 2012). Non-native species include annual grasses such as wild oats (*Avena fatua*), ripgut brome (*Bromus diandrus*), red brome (*Bromus madritensis* ssp. *rubens*), rattail fescue (*Festuca myuros*), Italian rye (*Festuca perennis*), and foxtail barley (*Hordeum murinum* var. *leporinum*). Native plant species include common yarrow (*Achillea millefolium*), blow wives (*Achyrachaena mollis*), mountain dandelion (*Agoseris grandiflora*), golden stars (*Bloomeria crocea*), golden Brodiaea (*Triteleia ixioides*), soap plant (*Chlorogalum pomeridianum*), purple clarkia (*Clarkia purpurea*), Jeffrey's shooting star (*Primula jeffreyi*), blue wildrye (*Elymus glaucus*), valley wild rye (*Leymus triticoides*), California fescue (*Festuca californica*), California melicgrass (*Melica californica*), narrow leaved owl's clover (*Castilleja attenuata*), and pine bluegrass (*Poa secunda*).

Figure 4.3-1 Vegetation Communities



Imagery provided by Google, ESRI and their licensors © 2018.
Additonal data provided by City of Seaside GIS, 2016; USFS, 2018; Rincon Consultants Inc, 2018.

EIRFig 12-1 -VegCom LandCover

Chamise Chaparral

This community is considered chaparral, and consists of a shrub layer with few trees and an open canopy. Chamise is dominant, with Eastwood manzanita (*Arctostaphylos glandulosa*), whiteleaf manzanita (*Arctostaphylos manzanita*), California lilac (*Ceanothus* spp.), sticky monkey flower (*Mimulus aurantiacus*), California buckwheat, oaks (*Quercus* spp.), toyon (*Heteromeles arbutifolia*), sage (*Salvia* spp.), and poison oak.

Coast Live Oak Woodland

Holland (1986) and Sawyer et al. (2009) describe this community as singularly dominated by coast live oak (*Quercus agrifolia*) with an open underdeveloped understory, consisting of poison oak, grassland, or chaparral species such as black sage, chamise, coyote brush, and California sagebrush. Oak woodlands and savannas support the greatest species richness of any vegetation type in the state and are considered important habitats (Barbour et al., 2007).

Dune/Beach

This land cover type consists of unvegetated sand, between the foredunes and ocean.

Vegetated Dune

Partially stabilized dunes occur northwest of State Route 1, near Roberts Lake. Some sparse vegetation occurs on the foredune, including sea rocket (*Cakile maritima*) and saltscales (*Atriplex* spp., *Extriplex* spp.). Native second dune species include coast buckwheat (*Eriogonum parvifolium*), bush lupine (*Lupinus chamissonis*), deerweed (Acmispon glaber), beach primrose (*Camissoniopsis cheiranthifolia*), and coastal sagewort (*Artemisia pycnocephala*). Ice plant (*Carpobrotus chilensis*, and *C. edulis*) is also present in low quantities, but not dominant.

Ice Plant

Ice plants are non-native invasive species, originally planted in the 1940s and 50s 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. Within this community some native species, ornamental plantings, and bare patches may occur.

Maritime Chaparral

Maritime chaparral occurs on sandy soils within the coastal fog zone. This community is primarily found the eastern side of Seaside, on former Fort Ord lands. Maritime chaparral is a fairly open fire dependent community, dominated by Woollyleaf manzanita (*Arctostaphylos tomentosa*), with black sage, coyote brush, Toro manzanita (*Arctostaphylos montereyensis*), sand mat manzanita (*Arctostaphylos pumila*), Hooker’s manzanita (*Arctostaphylos hookeri*), toyon, and ceanothus spp.

Non-Native/Ornamental Grass

This land cover type consists of managed fields and lawns. Species are typically turf grasses and nonnative species such as kikuyu grass (*Pennisetum clandestinum*), hairy crabgrass (*Digitaria sanguinalis*), and English daisy (*Bellis perennis*).

Non-Native/Ornamental Hardwood

This community consists of primarily non-native species in ornamental plantings. Tree species found in this community are highly variable, and typically non-native or not occurring as a natural community woodland, and include Monterey cypress (*Hesperocyparis macrocarpa*), eucalyptus (*Eucalyptus* spp.), Monterey pine (*Pinus radiata*), eastern redbud (*Cercis canadensis*), California sycamore (*Platanus racemosa*), and American sweetgum (*Liquidambar styraciflua*). Bushes and shrubs in this community are variable by occurrence and may include oleander (*Nerium oleander*), lantanas (*Lantana* spp.), juniper (*Juniperus* spp.), and California lilac.

Pacific Coast Scrub

This community is comprised of northern California coastal scrub and southern California coastal scrub communities. Northern California coastal scrub is restricted to coastal plateaus and lower slopes of the Coast Ranges where precipitation range from 50-200 centimeters (approximately 20-80 inches) annually. These communities are dominated by evergreen, microphyllous-leaved or hemi-sclerophyllous shrub taxa; drought-deciduous species are unimportant or absent in this system. Dense shrublands typically include a well-developed woody and herbaceous understory. Characteristic species of northern California coastal scrub include coyote brush, yellow bush lupine (*Lupinus arboreus*), blueblossom (*Ceanothus thyrsiflorus*), seaside golden yarrow (*Eriophyllum staechadifolium*), sticky monkeyflower, poison oak, California blackberry (*Rubus ursinus*), thimbleberry (*Rubus parviflorus*), salmon berry (*Rubus spectabilis*), California coffeeberry (*Frangula californica*), ocean spray (*Holodiscus discolor*), salal (*Gaultheria shallon*), common cow parsnip (*Heracleum maximum*), and sword fern (*Polystichum munitum*). In some areas this community is dominated by California Sagebrush (*Artemisia californica*) or coyote brush (*Baccharis pilularis*),

Ocean

This land cover type consists of open waters of the Pacific Ocean, on the south western edge of the City of Seaside.

Perennial Lake or Pond

Freshwater habitats occur at Roberts Lake and Laguna Grande. Originally a seasonal estuarine body of water, the Laguna Grande and Roberts Lake complex is now a freshwater marsh and two lakes. It is a portion of the Canyon Del Rey Creek that drains the 13.5 square mile Canyon Del Rey Creek watershed to the southeast. The creek flows through Laguna Grande, then into Roberts Lake, and finally into Monterey Bay. Despite the past disturbance to these wetland, coastal strand and associated communities, these habitats continue to support a variety of vegetation and wildlife. Because of this unusual setting, these coastal zone habitats are biologically and physically significant as a whole in that they represent a unique example of coastal zone plant and wildlife communities. From the sandy beach and dunes of the coastal strand along the edge of Monterey Bay, to the marsh and riparian habitats adjacent to Roberts Lake and Laguna Grande, the open water community contains a transect of coastal zone resources. Both coastal water bodies are frequent foraging and resting sites for resident and migrating water fowl. The freshwater marshes in this area consist of large emergent herbaceous wetland species, including tule (*Schoenoplectus californicus*) and cattails (*Typha* spp.), which grow in a discontinuous band along the margins of both lakes in shallow waters. Soils are saturated or inundated for many weeks each year. This community also includes patches of other emergent herbaceous wetland vegetation, in which other, smaller emergent species such as rushes (*Juncus* spp.), pennywort (*Hydrocotyle ranunculoides*), spikerush

(*Eleocharis macrostachya*), loosestrife (*Lythrum hyssopifolia*), rabbitsfoot grass (*Polypogon monspeliensis*), and brass buttons (*Cotula coronopifolia*) are intermixed in saturated soils at the edges of the lakes and stream.

Urban/Developed

This community consists of areas that have been modified such that most or all vegetation has been removed or only small areas of landscape vegetation are present. Parking lots, roads, sidewalks, structures, paved and unpaved pathways are included within this community. In some cases vegetation from adjacent areas may overhang. Playgrounds, picnic areas, gravel areas, roadside pullouts, and areas of urban-related bare soil are included in this land cover type.

Willow

This community occurs primarily along the margins of Canyon Del Rey Creek, portions of Laguna Grande, and portions of Roberts Lake, dominated by arroyo willow (*Salix lasiolepis*) in tree form. Other trees in this community include blackwood acacia (*Acacia melanoxylon*) and occasional coast live oak trees. The understory is mixed. In some areas close to the lake edge where soils remain moist year round, native emergent wetland species including horsetails (*Equisetum* spp.), tule, cattails, and rushes are present; these areas are sometimes called forested wetlands. In drier areas, poison oak and California blackberry are present in the riparian community. Infestations of Himalayan blackberry (*Rubus armeniacus*), English ivy, German ivy (*Delairea odorata*) and garden nasturtium (*Tropaeolum majus*) are also present.

b. Sensitive Biological Resources

The term sensitive biological resources includes sensitive natural communities (see subsection (c)), special-status plants and wildlife (see subsection (d)), and other sensitive biological resources that are governed under federal, state, and local laws and regulations. Information regarding the occurrences of special-status species in the vicinity of the General Plan Area was obtained from reviewing background literature and agency database sources, including California Department of Fish and Wildlife (CDFW) California Natural Diversity Data Base (CNDDB) (CDFW 2017) and Biogeographic Information and Observation System (CDFW 2023a); the U.S. Fish and Wildlife Service (USFWS) Critical Habitat Portal (USFWS 2017a), National Wetlands Inventory Wetlands Mapper (USFWS 2017b), and Information, Planning and Conservation System (USFWS 2017a); the United States Department of Agriculture, Natural Resource Conservation Service Web Soil Survey (USDA NRCS 2017); and the California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants of California (CNPS 2017).

Plants catalogued by CNPS with a California Rare Plant Rank (CRPR) of 1A are presumed extirpated or extinct because they have not been seen or collected in the wild in California for many years. A plant is extinct if it no longer occurs anywhere. A plant that is extirpated from California has been eliminated from California but may still occur elsewhere in its range. Plants with a CRPR of 1B are rare throughout their range with the majority of them endemic to California. Most of the plants that are ranked 1B have declined substantially over the last century. CRPR 1B plants constitute the majority of taxa in the CNPS Inventory, with more than 1,000 plants assigned to this category of rarity. Plants with a CRPR of 2A are presumed extirpated because they have not been observed or documented in California for many years. This list only includes plants that are presumed extirpated in California, but more common elsewhere in their range. Plants with a CRPR of 2B meet the requirements of 1B ranking within California but are common in other states or countries.

Other sources of information about the General Plan Area included aerial photographs, topographic maps, geologic maps, climatic data, and project plans. Previous biological studies for projects occurring in the region, including the *Seaside General Plan Update Existing Conditions Report* (Raimi + Associates, et al., 2018), *Seaside Local Coastal Program* (City of Seaside 2013), *City of Seaside Local Coastal Program Biological Inventory Report* (PCM 2009), *Flora and Fauna Baseline Study of Fort Ord, California* (United States Army Corps of Engineers [USACE] 1992), *Installation-wide Multispecies Habitat Management Plan for Former Fort Ord, California* (HMP) (USACE 1997), and *Fort Ord Reuse Plan; Final Environmental Impact Report* (FORA 1997) were reviewed for pertinent information of special-status biological resources and existing conditions occurring in the region.

Queries of the CNDDB and the CNPS online Inventory of Rare and Endangered Plants of California included the *Seaside* and *Marina*, U. S. Geological Survey (USGS) 7.5-minute topographic quadrangles, and surrounding eight quadrangles; *Monterey*, *Soberanes Point, Mt. Carmel, Carmel Valley, Spreckels, Salinas, Prunedale,* and *Moss Landing*. The results of these scientific database queries were presented as an appendix (Appendix A) to the Biological Resources Assessment (BRA) (Rincon 2017) prepared for this Seaside General Plan EIR. The BRA and appendices thereto are included as Appendix D of this EIR. The special-status species occurrence map presented in Figure 4.3-2 is based on a five-mile radius CNDDB/CNPS search to show those occurrences in the immediate General Plan Area; as such the map may not show all special-status species that were evaluated in this EIR. For a complete listing of all species evaluated, refer to Appendix D.

c. Sensitive Natural Communities

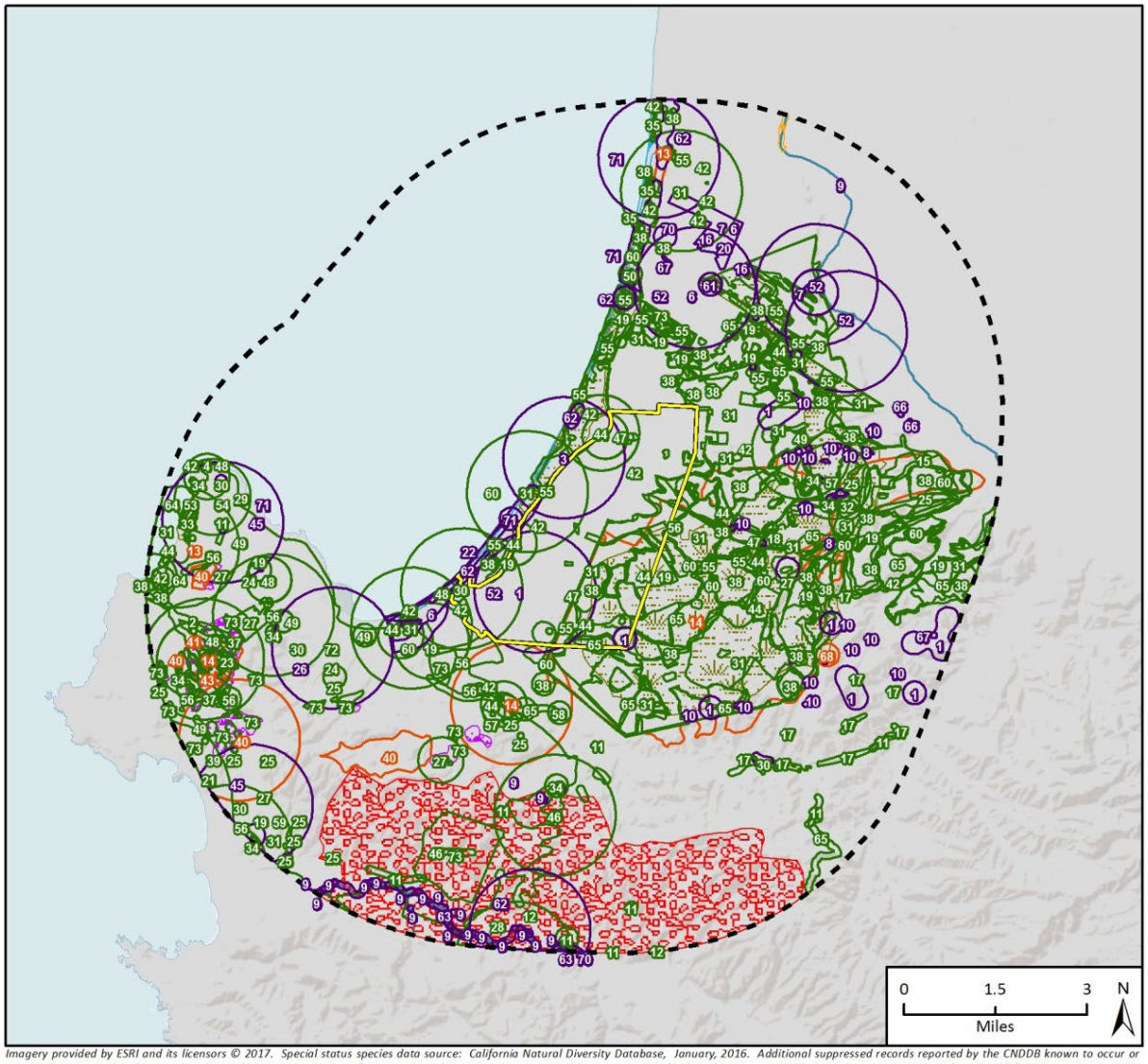
Sensitive natural communities are vegetation types, associations, or sub-associations that support concentrations of special-status plant and/or wildlife species, are of relatively limited distribution, and/or are of particular value to wildlife.

According to the CDFW Vegetation Program, Alliances with State ranks of S1-S3 are considered imperiled, and thus, potentially of special concern.

Sensitive natural communities that are present, or may be present within the General Plan Area would be restricted to undeveloped areas of the former Fort Ord and in the Laguna Grande and Robert's Lake open space areas. The sensitive natural communities evaluated in this EIR include the following:

- Central dune scrub
- Central maritime chaparral
- Coastal and valley freshwater marsh
- Coastal brackish marsh
- Monterey cypress forest
- Monterey pine forest
- Monterey pygmy cypress forest
- Monterey spineflower
- Northern bishop pine forest
- Valley needlegrass grassland

Figure 4.3-2 Special-Status Species and Natural Communities Reported by the California Natural Diversity Database



Imagery provided by ESRI and its licensors © 2017. Special status species data source: California Natural Diversity Database, January, 2016. Additional suppressed records reported by the CNDDB known to occur or potentially occur within this search radius include: Monarch Butterfly. For more information please contact the Department of Fish and Game. Critical habitat data source: U.S. Fish and Wildlife Service, March, 2016. Final critical habitat acquired via the USFWS Critical Habitat Portal. It is only a general representation of the data and does not include all designated critical habitat. Contact USFWS for more specific data.

City of Seaside
5-Mile Buffer

CNDDB

Animals
Plants
Natural Communities

Critical Habitat

California red-legged frog
Monterey spineflower
Tidewater goby
Western snowy plover
Yadon's piperia
Steelhead

1 - American badger
2 - angel's hair lichen
3 - bank swallow
4 - beach layia
5 - black legless lizard*
6 - burrowing owl
7 - California horned lark
8 - California linderiella
9 - California red-legged frog
10 - California tiger salamander
11 - Carmel Valley bush-mallow
12 - Carmel Valley malacothrix
13 - Central Dune Scrub
14 - Central Maritime Chaparral
15 - Choris' popcornflower
16 - coast horned lizard
17 - Congdon's tarplant
18 - Contra Costa goldfields
19 - Eastwood's goldenbush
20 - ferruginous hawk
21 - fragrant fritillary
22 - globose dune beetle
23 - Gowen cypress
24 - Hickman's cinquefoil
25 - Hickman's onion
51 - prairie falcon*
52 - Salinas harvest mouse
53 - saline clover
54 - San Francisco collinsia
55 - sand-loving wallflower
56 - sandmat manzanita
57 - Santa Cruz clover
58 - Santa Cruz microseris
59 - Santa Lucia bush-mallow
60 - seaside bird's-beak
61 - silvery legless lizard
62 - Smith's blue butterfly
63 - steelhead - south-central California coast DPS
64 - Tidestrom's lupine
65 - Toro manzanita
66 - Townsend's big-eared bat
67 - tricolored blackbird
68 - Valley Needlegrass Grassland
69 - vernal pool bent grass
70 - western pond turtle
71 - western snowy plover
72 - woodland woollythreads
73 - Yadon's rein orchid
*Record supressed
26 - hoary bat
27 - Hooker's manzanita
28 - Hospital Canyon larkspur
29 - Hutchinson's larkspur
30 - Jolon clarkia
31 - Kellogg's horkelia
32 - legenere
33 - maple-leaved checkerbloom
34 - marsh microseris
35 - Menzies' wallflower
36 - monarch - California overwintering population*
37 - Monterey clover
38 - Monterey gilia
39 - Monterey pine
40 - Monterey Pine Forest
41 - Monterey Pygmy Cypress Forest
42 - Monterey spineflower
43 - Northern Bishop Pine Forest
44 - northern curly-leaved monardella
45 - obscure bumble bee
46 - Pacific Grove clover
47 - Pajaro manzanita
48 - pine rose
49 - pink Johnny-nip
50 - Point Reyes horkelia

Central Dune Scrub

This community, described by Holland (1986) and Sawyer et al. (2009), is dominated in the shrub canopy by California goldenbush and dune lupine. Other species associated with this community include; California sagebrush, beach sagewort (*Artemisia pycnocephala*), Menzies' goldenbush (*Isocoma menziesii*), coastal bush lupine (*Lupinus arboreus*), and poison oak. Within the General Plan Area, Central Dune Scrub is most likely to occur near the ocean, in undisturbed areas.

Central Maritime Chaparral

Maritime chaparral is known to occur in the General Plan Area, and has been characterized as the dominant vegetation type on the former Fort Ord (USACE 1992). Species likely to occur in this community include: Toro manzanita (dominant), Chamise (*Adenostoma fasciculatum*), sandmat manzanita, Monterey spineflower, Seaside bird's-beak, and sand gilia. This community is fire dependent.

Coastal and Valley Freshwater Marsh

Freshwater mashes occur where wetlands are regularly to permanently flooded. Typically dominated by hydrophytic species such as cattails (*Typha* spp.) and bulrushes (S*choenoplectus* spp.). These communities may occur as small isolated wetlands on former Fort Ord land, or in association with the Laguna Grande Roberts Lake complex.

Coastal Brackish Marsh

Brackish marsh occurs where saline waters mix with freshwaters, resulting in defined tidal zones. Species typically found in brackish marsh include; pickleweeds, bulrushes, and cordgrass. Because the mouth of Canyon Del Ray Creek has been diverted into a box culvert and inlet weir, saline waters are unlikely to enter Roberts Lake except during storm events.

Monterey Cypress Forest

Stands of Monterey cypress may be dominant or codominant with Monterey pine. Only two native stands are known to exist in Monterey; Cypress Point at Pebble Beach and Point Lobos State Reserve. Monterey cypress has been widely planted as an ornamental tree or wind break, in some cases becoming invasive (Sawyer et al., 2009).

Monterey Pine Forest

This plant community is characterized by a Monterey pine overstory and a dominant native shrub understory. Shrubs commonly found in this community included manzanita species (*Arctostaphylos* spp.), California huckleberry (*Vaccinium ovatum*), sticky monkeyflower, poison oak, and California coffeeberry. Forb species may include Douglas' iris (*Iris douglasiana*), Monterey sedge (*Carex harfordii*), and Pacific peavine (*Lathyrus vestitu*s).

Monterey Pygmy Cypress Forest

The dominant species found in Monterey pygmy cypress forest is Gowen cypress. Bishop pine and Monterey pine may also occur in the tree canopy, with Hooker's manzanita (*Arctostaphylos hookeri*), woolly leaf manzanita (*Arctostaphylos tomentosa*), coast rhododendron (*Rhododendron macrophyllum*), and California huckleberry in the understory. Monterey pygmy cypress forest occurs on shallow acidic soils, which cause Gowen cypress to grow significantly shorter than on deep fertile

soils. Typically 164 feet at mature height, dwarfed Gowen cypress may only grow to 16 feet (Sawyer et al. 2009).

Northern Bishop Pine Forest

This plant community is characterized by a Bishop pine (*Pinus muricata*) overstory, with grand fir (*Abies grandis*), Pacific madrone (*Arbutus menziesii*), pygmy cypress (*Hesperocyparis pigmaea*), tanoak (*Notholithocarpus densiflorus*), Bolander pine (*Pinus contorta* ssp. *bolanderi*), Monterey pine, Douglas fir (*Pseudotsuga menziesii*), coast live oak, California redwood, and California bay laurel.

Valley Needlegrass Grassland

This community is characterized by purple needlegrass (*Nassella pulchra*) in the herbaceous layer, with other perennial grasses and herbs such as; slender oats, wild oats, soft chess brome, foxtail brome (*Bromus madritensis* ssp. *rubens*), native lilies (*Calochortus* spp.), bindweed (*Convolvulus arvensis*), turkey-mullein (*Croton setiger*), blue wildrye, stork's-bill (*Erodium* spp.), and California fescue.

Monterey Spineflower Designated Critical Habitat

Critical habitat for the Monterey Spineflower occurs on the east side of the General Plan Area (unit 8, former fort Ord). This unit includes maritime chaparral and oak woodland habitats which can support tens of thousands of individuals in some years (USFWS 2008). Within the Plan Area this unit is limited to the Fort Ord National Monument, which is not proposed for development.

Western Snowy Plover Designated Critical Habitat

Critical habitat for the western snowy plover occurs in the small strip of beach within City limits below Roberts Lake (Unit CA 22 Monterey to Moss Landing). This beach is heavily used for recreation and therefore disturbance may be high. However, it does contain primary constituent elements such as; sandy beach above and below the high-tide line, tidal debris supporting invertebrate prey, and barren to sparsely vegetated terrain.

d. Special-status Species

Federal, State, and local authorities under a variety of legislative acts share regulatory authority over biological resources. The CDFW has direct jurisdiction under law for biological resources through the State Fish and Game Code and under the California Endangered Species Act (CESA). The Federal Endangered Species Act (FESA) also provides direct regulatory authority over specially designated species and their habitats to the USFWS. These acts specifically regulate listed and candidate endangered and threatened species, which are defined as:

- **Endangered Species**. Any species that is in danger of extinction throughout all or a significant portion of its range.
- **Threatened Species.** Any species that is likely to become an endangered species within the foreseeable future throughout all or a significant part of its range.

There is potential for special-status species protected under the federal Endangered Species Act, the California Endangered Species Act, and other federal and state statutes and regulations to occur in the General Plan Area. The potential for special-status species to occur in the General Plan Area and therefore be subject to significant impacts under CEQA is discussed here, based on more detailed

information in the supporting BRA (Appendix D). Updated queries of the CNDDB (CDFW 2023a), Special Animals List (CDFW 2023b), CNPS Inventory of Rare and Endangered Plants of California (CNPS 2023), and Information, Planning and Conservation System (USFWS 2023) were conducted in January 2023, and resulted in the addition of two species that were designated as special-status species after 2017.

e. Special Status Plants

Based on the database and literature review, 44 special-status plant species are known to occur or have at least a moderate potential to occur within the vicinity of the General Plan Area (Appendix A of Appendix D, *Biological Resources Assessment*, prepared for this EIR) for a table outlining the potential for occurrence in the General Plan Area for each of these 44 species. Federal and/or State listed plant species with at least a moderate potential to occur in the City of Seaside include: seaside bird's-beak (*Cordylanthus rigidus* ssp. *littoralis*), Monterey gilia (*Gilia tenuiflora* ssp. *arenaria*), Menzies' wallflower (*Erysimum menziesii*), Gowen cypress (*Hesperocyparis goveniana*), Contra Costa goldfields (*Lasthenia conjugens*), Tidestrom's lupine (*Lupinus tidestromii*), Yadon's rein orchid (*Piperia yadonii*), Hickman's cinquefoil (*Potentilla hickmanii*), Monterey clover (*Trifolium trichocalyx*), beach layia (*Layia carnosa*), and Monterey spineflower (*Chorizanthe pungens* var. *pungens*).

Twelve (12) special-status plant species are presumed to be present based on the potential presence of suitable habitat and/or recorded occurrences.

- Pajaro manzanita (*Arctostaphylos pajaroensis*) – CRPR 1B.1
- Monterey spineflower – Federally Threatened, CRPR 1B.2
- Jolon clarkia (*Clarkia jolonensis*) – CRPR 1B.2
- Seaside bird's-beak – State Endangered, CRPR 1B.1
- Eastwood's goldenbush (*Ericameria fasciculate*) – CRPR 1B.1
- Sand-loving wallflower (*Erysimum ammophilum*) – CRPR 1B.2
- Monterey gilia – Federally Endangered, State Threatened, CRPR 1B.2
- Monterey cypress (*Hesperocyparis macrocarpa*) – CRPR 1B.2
- Kellogg's horkelia (*Horkelia cuneata* var. *sericea*) – CRPR 1B.1
- Northern curly-leaved monardella (*Monardella sinuata* ssp. *nigrescens*) – CRPR 1B.2
- Monterey Pine (*Pinus radiate*) – CRPR 1B.1
- Pine rose (*Rosa pinetorum*) – CRPR 1B.2

The majority of these plant species are associated with coastal dune and maritime chaparral habitats. Therefore, special-status plants are most likely to occur along the west side of the General Plan Area near the ocean, or on former Fort Ord land to the east. A comparison of special-status plant species and their potential to occur in vegetation communities and land cover types mapped within the General Plan Area is provided in Table 4.3-1.

Table 4.3-1 Special-status Plant Species and Vegetation Communities

Species	Vegetation Communities and Potential to Occur												
	Annual Grasses and Forbs	Chamise Chaparral	Coast Live Oak	Dune/Beach	Vegetated Dune	Ice Plant	Maritime Chaparral	Non-Native/Ornamental Grass	Non-Native/Ornamental Hardwood	Pacific Coast Scrub	Perennial Lake or Pond	Urban/Development	Willow
Pajaro manzanita		X					X			X			
Monterey spineflower	X	X			X		X			X		X	
Jolon clarkia	X	X					X			X		X	
Seaside bird's-beak		X	X				X		X	X	X	X	X
Eastwood's goldenbush							X			X			
Sand-loving wallflower		X					X			X		X	
Monterey gilia	X	X	X		X	X	X			X		X	
Menzies' wallflower					X	X				X		X	
Gowen cypress	X						X		X				
Contra Costa goldfields	X						X	X					
Tidestrom's lupine					X	X				X		X	
Yadon's rein orchid							X		X	X			
Hickman's cinquefoil										X	X		X
Monterey clover	X						X		X			X	
Beach layia					X					X		X	
Monterey cypress							X		X				
Kellogg's horkelia		X			X	X	X			X		X	
Northern curly-leaved monardella		X			X	X	X			X		X	
Monterey Pine							X		X			X	
Pine rose			X						X				

f. Special-Status Wildlife

Based on the database and literature review, 23 special-status wildlife species are known, or have at least a moderate potential to occur within the General Plan Area (Appendix A of Appendix D, *Biological Resources Assessment*, prepared for this EIR). Federal and/or state listed species with at least a moderate potential to occur in the City of Seaside include: tricolored blackbird (*Agelaius tricolor*), western snowy plover (*Charadrius alexandrinus nivosus*), bank swallow (*Riparia riparia*), California tiger salamander (*Ambystoma californiense*), Smith's blue butterfly (*Euphilotes enoptes smithi*), Crotch's bumble bee (*Bombus crotchii),* and western bumble bee *(Bombus occidentalis*) (CDFW 2023a, 2023b).

Eighteen species (18) have a high potential to occur, or are presumed to be present based on the potential presence of suitable habitat and known occurrences.

- Monterey dusky-footed woodrat (*Neotoma macrotis luciana*) – State Species of Special Concern (SSC)
- American Badger (*Taxidea taxus*), – SSC
- Burrowing owl (*Athene cunicularia*) – SSC
- Western snowy plover (*Charadrius nivosus nivosus)* – Federally Threatened, SSC
- California horned lark (*Eremophila alpestris actia*) – Watch list (WL)
- Prairie falcon (*Falco mexicanus*) – WL
- American peregrine falcon (*Falco peregrinus anatum*) – State Fully protected (FP)
- California brown pelican (*Pelecanus occidentalis californicus*), foraging only – FP
- Bank swallow (*Riparia riparia)* – State Threatened
- California tiger salamander (*Ambystoma californiense)*– State Threatened, Federally Threatened, WL
- Northern California legless lizard (*Anniella pulchra*) – SSC
- Western pond turtle (*Emys marmorata*) – SSC
- Coast horned lizard (*Phrynosoma blainvillii*) – SSC
- Two-striped gartersnake (*Thamnophis hammondii*) – SSC
- Monarch butterfly (*Danaus plexippus*), California overwintering population – Federal Candidate
- Smith's blue butterfly (*Euphilotes enoptes smithi)*– Federally Endangered
- Crotch's bumble bee (*Bombus crotchii)* – State Candidate Endangered (SCE)
- Western bumble bee *(Bombus occidentalis*) – SCE

Generally, special-status species are most likely to occur in undeveloped areas on former Fort Ord lands and within the Robert's Lake and Laguna Grande open space areas. There is potential for some species to occur on the west edge of the General Plan Area near the ocean, and a limited number of species to occur within developed areas of the City. The dunes along the west side of the General Plan Area may provide habitat for northern California legless lizard, Smith's blue butterfly, and western snowy plover. The proximity of the General Plan Area to western snowy plover designated critical habitat also increases the likelihood of this species occurring. Some buildings within developed areas provide suitable nesting and foraging sites for American peregrine falcon, particularly near Laguna Grande and Roberts Lake. Laguna Grande and Roberts Lake also provide foraging habitat for California brown pelican and bank swallow, and suitable habitat for western

pond turtle. There are also large eucalyptus trees in the developed area, which may provide suitable overwintering habitat for monarch butterflies.

California red-legged frog (*Rana draytonii*) have a low potential to occur in the Laguna Grande/Roberts Lake complex due to known occurrences within five miles, however repeated surveys of this area and nearby Frog Pond Wetland Preserve were negative (Anderson 2016). California red legged frog also have a low potential to occur in undeveloped areas on the former Fort Ord, but are not expected to occur in developed areas of the City.

On the former Fort Ord, coast live oak woodland and savanna may provide habitat for California tiger salamander, burrowing owl, American badger, California horned lark, prairie falcon, Crotch's bumble bee, and western bumble bee. Maritime chaparral communities may also support coast horned lizard and Monterey dusky-footed woodrat. A comparison of special-status animal species and their potential to occur in vegetation communities and land cover types mapped within the Plan Area is provided in Table 4.3-2 below.

Table 4.3-2 Special-status Animal Species and Vegetation Communities

	Vegetation Communities and Potential to Occur													
Species	Annual Grasses and Forbs	Chamise Chaparral	Coast Live Oak	Dune/Beach	Vegetated Dune	Ice Plant	Maritime Chaparral	Non-Native/Ornamental Grass	Non-Native/Ornamental Hardwood	pacific Coast Scrub	Perennial Lake or Pond	Urban/Development	Willow
Monterey dusky-footed woodrat			X						X	X			X
American Badger	X		X				X			X			
Burrowing owl	X	X	X				X	X	X	X		X	
Western snowy plover					X								
California horned lark	X	X	X				X			X	X		
Prairie falcon	X	X	X				X			X	X		
American peregrine falcon	X	X	X				X	X	X	X	X	X	X
California brown pelican											X		
Bank swallow											X		X
California tiger salamander	X		X				X			X	X		
Northern California legless lizard	X	X	X		X	X	X	X	X	X	X	X	
Western pond turtle			X								X	X	X
Coast horned lizard	X	X	X		X	X	X	X	X	X	X	X	

Species	Vegetation Communities and Potential to Occur												
	Annual Grasses and Forbs	Chamise Chaparral	Coast Live Oak	Dune/Beach	Vegetated Dune	Ice Plant	Maritime Chaparral	Non-Native/Ornamental Grass	Non-Native/Ornamental Hardwood	pacific Coast Scrub	Perennial Lake or Pond	Urban/Development	Willow
Two-striped gartersnake											X	X	X
Monarch butterfly									X				
Smith's blue butterfly	X	X			X	X	X			X			
Tricolored blackbird	X							X			X		X
Crotch's bumble bee	X	X	X		X		X	X		X			X
Western bumble bee	X							X			X		X

f. Jurisdictional Waters and Wetlands

The General Plan Area is located within the Carmel and Alisal-Elkhorn Sloughs watersheds (Hydrologic Unit Codes: 18060012, and 18060011, respectively).

According to the National Wetlands Inventory (NWI) (USFWS, 2017b), known jurisdictional wetlands and waters within the City of Seaside include: estuarine and marine wetlands, estuarine and marine deepwater, freshwater emergent wetlands, freshwater forested/shrub wetlands, riverine, lake, and freshwater ponds (Appendix D, Figure 4). Primarily located within the former Fort Ord and adjacent to Laguna Grande, these wetlands and non-wetland waters are typically subject to USACE jurisdiction under the Clean Water Act (CWA), RWQCB jurisdiction under the CWA and Porter-Cologne, and CDFW jurisdiction under the California Fish and Game Code (CFGC).

Canyon Del Rey Creek, an ephemeral stream, is the only stream in the General Plan Area. The Canyon Del Rey Creek watershed flows into the Pacific Ocean and drains an area of 16.8 square miles (Balance Hydrologics, Inc. and Whitson Engineers 2014). The creek flows into Laguna Grande and Roberts Lake, before discharging into the ocean west of Roberts Lake through concrete box culverts under Roberts Avenue and State Route (SR) 1 (Balance Hydrologics, Inc. and Whitson Engineers 2014). This watershed has been highly developed within the General Plan Area.

Within the former Fort Ord, vernal pools have been documented outside the General Plan Area on land designated for conservation. If vernal pools exist within the Plan Area they may support special-status species and may be considered jurisdictional by USACE, RWQCB and/or CDFW.

g. Wildlife Corridors

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. Typically 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 (CEHCP) 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). The Plan Area is located west of two CEHCP natural landscape blocks: near Jacks Peak, and Pilarcitos Canyon on the east side of the former Fort Ord. A CEHCP essential connectivity area linking these blocks overlaps the south east corner of the General Plan Area. Approximately 422 acres of the General Plan Area is within the CEHCP connectivity area; however, only 33 of those acres are part of the General Plan Area planned for development. Essential connectivity areas are rated based on the permeability of the landscape to wildlife movements, and the section within the General Plan Area is rated as the least permeable. It is likely wildlife use natural habitats in this area as a corridor. This connectivity area is largely part of areas designated for preservation on the Fort Ord National Monument.

Additionally, the riparian area along Canyon Del Rey Creek and the Laguna Grande/Lake Roberts complex provides a corridor for wildlife movement. However, this corridor is highly disturbed by recreational use and homeless encampments within the Plan Area.

h. Coastal Zone

The Coastal Zone crosses the General Plan Area twice and includes the Laguna Grande/Roberts Lake complex and a narrow band that runs along SR 1 between the northern boundary of Seaside and Sand City (Appendix D). Vegetation with the southern coastal zone area ranges from developed areas and landscaped, maintained parklands to native tule thickets, herbaceous wetlands, dune scrub, and willow riparian woodlands (Appendix D). Development in the Coastal Zone is controlled by the existing Local Coastal Program, which is not being amended as part of this project.

4.3.2 Regulatory Setting

The following is a summary of the regulatory context under which biological resources are regulated at the federal, State, and local level. Agencies and regulatory documents pertaining to the protection of biological resources within the General Plan Area include:

- U.S. Fish and Wildlife Service (federally listed species and migratory birds)
- U.S. Army Corps of Engineers (USACE; wetlands and other waters of the United States)

- California Department Fish and Wildlife (waters of the State, state listed and fully protected species, and other sensitive plants and wildlife)
- Central Coast Regional Water Quality Control Board (RWQCB; waters of the State)
- City of Seaside Municipal Code (Chapter 8.54, Trees)
- City of Seaside Municipal Code Title 18 Coastal Zoning
- City of Seaside Local Coastal Program (LCP) (2013)
- Fort Ord Habitat Management Plan (HMP) (1997)

The following discussion provides a summary of those laws that are most relevant to biological resources in the vicinity of the General Plan Area.

a. Federal

U.S. Fish and Wildlife Service

The USFWS implements the Migratory Bird Treaty Act (MBTA; 16 United States Code (USC) Sections 703-712) and the Bald and Golden Eagle Protection Act (BGEA; 16 USC Sections 668-668d). The USFWS shares responsibility for implementation of the Endangered Species Act (ESA; 16 USC Section 1531) with the National Marine Fisheries Service (National Oceanic and Atmospheric Administration [NOAA Fisheries]). The USFWS generally implements the ESA for land and freshwater species, while NOAA Fisheries implements the FESA for marine and anadromous species. Projects that would result in take of any federally listed threatened or endangered species are required to obtain permits from the USFWS or NOAA Fisheries through either Section 7 (interagency consultation with a federal nexus) or Sections 9 and 10 (incidental take permit/Habitat Conservation Plan) of ESA, depending on the involvement by the federal government in permitting or funding the project.

The ESA prohibits the unpermitted take of federally listed threatened or endangered species. "Take" under federal definition means to "harass, harm, 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 ESA; however, the USFWS and NOAA Fisheries advise project applicants that they could be elevated to listed status at any time.

The MBTA, as amended in 1972, protects nesting migratory birds by making it unlawful to "take" (kill, harm, harass, etc.) any migratory bird listed in 50 CFR 10, including their nests, eggs, or products. Migratory birds include geese, ducks, shorebirds, raptors, songbirds, and many other species.

U.S. Army Corps of Engineers

Under Section 404 of the CWA and Section 10 of the Rivers and Harbors Act, the USACE has authority to regulate activity that could discharge fill or dredge material or otherwise adversely modify wetlands or other waters of the United States. Perennial and intermittent creeks and adjacent wetlands are considered waters of the United States and are within the regulatory jurisdiction of the USACE. The USACE implements the federal policy embodied in Executive Order 11990, which, when implemented, is intended to result in no net loss of wetland values or acres. In achieving the goals of the CWA, the Corps seeks to avoid adverse impacts and to offset unavoidable adverse impacts on existing aquatic resources. Any fill or adverse modification of waters of the U.S., including wetlands, would require a permit from the Corps prior to the start of work. Typically, permits issued by the Corps are a condition of a project as mitigation.

b. State

State law regulating biological resources include the California Endangered Species Act (CESA), the CFGC and the California Native Plant Protection Act (CNPPA), each of which is described below.

California Endangered Species Act

The California Endangered Species Act establishes State policy to conserve, protect, restore, and enhance species or habitat listed under CESA as threatened or endangered. For projects that would affect species that are on the federal and State lists, compliance with the federal ESA satisfies CESA if the CDFW determines that the federal incidental take authorization is consistent with CESA under California Fish and Game Code Section 2080.1. For projects that would result in take of species that are only State listed, the project proponent must apply for an incidental take permit under Section 2081(b) of the California Fish and Game Code in order to take those listed species.

California Native Plant Protection Act

The California Native Plant Protection Act of 1977 prohibits importation of rare and endangered plants into California, "take" of rare and endangered plants, and sale of rare and endangered plants.

California Department of Fish and Wildlife & California Fish and Game Code

The CDFW derives its authority from the CFGC. The CESA (Fish and Game Code Section 2050 et seq.) prohibits take of state listed species, including candidates for listing. Take under CESA is restricted to direct mortality of a listed species and does not expressly prohibit indirect harm by way of habitat modification. The CDFW prohibits take for species designated as Fully Protected under the CFGC. California Fish and Game Code Sections 3503, 3503.5, and 3511 describe unlawful take, possession, or destruction of birds, nests, and eggs. Section 3503 prohibits the take of nests or eggs of any bird. Section 3503.5 protects all birds-of-prey and their eggs and nests against take. Section 3513 prohibits the take of migratory nongame birds as designated in the MBTA except as provided by the MBTA.

Species of Special Concern (SSC) is a category used by the CDFW for those species, which are considered indicators of regional habitat changes or are considered potential future protected species. Species of Special Concern do not have any special legal status except that which may be afforded by the CFGC as noted above. The SSC category is intended by the CDFW for use as a management tool to include these species into special consideration when decisions are made concerning the development of natural lands.

The CDFW also has authority to administer the California Native Plant Protection Act (CNPPA) (Fish and Game Code Section 1900 et seq.). The CNPPA requires the CDFW to establish criteria for determining if a species, subspecies, or variety of native plant is endangered or rare. Under Section 1913(c) of the CNPPA, the owner of land where a rare or endangered native plant is growing is required to notify the department at least 10 days in advance of changing the land use to allow for salvage of the plant(s).

Perennial and intermittent streams and associated riparian vegetation, when present, also fall under the jurisdiction of the CDFW. Section 1600 et seq. of the CFGC (Lake and Streambed Alteration Agreements) gives the CDFW regulatory authority over work within the stream zone (which could extend on either side of the stream bank to the 100-year flood plain) consisting of, but not limited to, the diversion or obstruction of the natural flow or changes in the channel, bed, or bank of any river, stream or lake.

Regional Water Quality Control Board

In addition, the State Water Resources Control Board (SWRCB) and each of nine local Regional Water Quality Control Boards (RWQCB) are responsible for upholding state water quality standards. Pursuant to Section 401 of the CWA, projects that apply for a USACE permit for discharge of dredge or fill material must obtain water quality certification under Section 401 from the RWQCB.

The SWRCB and each of the RWQCBs also have jurisdiction over "waters of the State" pursuant to the Porter-Cologne Water Quality Control Act. Waters of the State "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 for certain projects (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 local RWQCB administers 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 CWA for waters subject to federal jurisdiction. To assure uniformity in RWQCB procedures, in April 2019 the SWRCB adopted new regulations defining California wetlands and other waters of the State subject to state regulation, and new procedures for reviewing and approving discharges of dredged or fill materials in these wetlands and waters.

The CWA and associated federal regulations (Title 40 of the *Code of Federal Regulations* [CFR] 123.25(a)(9), 122.26(a), 122.26(b)(14)(x) and 122.26(b)(15)) require nearly all construction site operators engaged in clearing, grading, and excavating activities that disturb one acre or more, including smaller sites in a larger common plan of development or sale, to obtain coverage under a National Pollutant Discharge Elimination System (NPDES) permit for their stormwater discharges, and develop a Storm Water Pollution Prevention Plan (SWPP). The NPDES Program is a federal program which has been delegated to the State of California for implementation through SWRCB and RWQCBs.

c. Regional

Fort Ord Habitat Management Plan (HMP)

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 (USACE 1997). The HMP covers eight special-status species that were federally listed or proposed for listing when USFWS Biological Opinion was issued in 1993. The HMP provides the management requirements for parcels designated for conservation and development through the process of disposal and transfer. 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.

d. Local

City of Seaside Local Coastal Program

Under the California Coastal Act (CCA), the City is responsible for the development and implementation of a Local Coastal Program (LCP) through review and approval of Coastal Development Permit applications.

Seaside Municipal Code

The Seaside Municipal Code Title 18 Coastal Zoning, Chapter 18.02.070 Special development standards, establishes requirements for development within the coastal zone and evaluation of potential Environmentally Sensitive Habitat Areas (ESHA), biological resources and sensitive habitats. Applications for development are required to provide a biological report prepared by a qualified biologist.

The Seaside Municipal Code Title 8 Health and Safety, Chapter 8.54 Trees provides standards for the removal, protection and preservation of trees. The ordinance requires a tree removal permit and replacement plantings for any tree to be removed during project construction. In addition to requiring tree removal permits, the ordinance also requires measures to protect existing trees during project construction.

4.3.3 Impact Analysis

a. Methodology and Significance Thresholds

Methodology

This impact analysis is based on available literature regarding existing biological resources within the General Plan Area. The potential for the implementation of Seaside 2040 to result in impacts to special status or sensitive biological resources was evaluated based on the existing biological setting in the context of the significance thresholds outlined below.

Project impacts to flora and are focused upon rare, threatened, endangered species, as defined under *CEQA Guidelines* Section 15380. A substantial adverse effect as defined under Threshold 1 to Federal or State listed, or fully protected species would be considered significant if any individual animal or plant would be affected. A substantial adverse effect as defined under Threshold 1 to CRPR 1B and 2B plants are generally considered significant under CEQA if the loss of individuals on represented a population-level impact that resulted in a loss of a local or regional population or risked the long-term viability of a local or regional population.

Significance Thresholds

Environmental impacts relative to biological resources have been assessed using impact significance criteria based upon Appendix G of the *CEQA Guidelines*:

1 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, regulations, or by CDFW or USFWS, or as defined under CEQA Guidelines Section 15380

2 Have a substantial adverse effect) on any riparian habitat or other sensitive natural community identified in local or regional plans, policies regulations, or by the CDFW or USFWS

3 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, or hydrological interruption, or other means

4 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

5 Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance

6. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan

b. Project Impacts and Mitigation Measures

Threshold 1:	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, regulations, or by CDFW or USFWS, or as defined under CEQA Guidelines Section 15380?
Threshold 2:	Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies regulations, or by the CDFW or USFWS?

Impact BIO-1 WITH IMPLEMENTATION OF THE GOALS AND POLICIES IN SEASIDE 2040 TO REDUCE DIRECT AND INDIRECT IMPACTS TO LISTED SPECIAL-STATUS SPECIES AND SENSITIVE NATURAL COMMUNITIES, IMPACTS WOULD BE AVOIDED AND MINIMIZED. IMPACTS WOULD THEREFORE BE LESS THAN SIGNIFICANT.

As described in greater detail in Section 4.3.1 above, state and/or federally listed animal species with the potential to occur in the General Plan Area include tricolored blackbird, western snowy plover, bank swallow, California red-legged frog, California tiger salamander, and Smith's blue butterfly (Figure 4.3-2). State and/or federally listed plant species with the potential to occur in the General Plan Area include seaside bird's-beak, Monterey gilia, Menzies' wallflower, Gowen cypress, Contra Costa goldfields, Tidestrom's lupine, Yadon's rein orchid, Hickman's cinquefoil, Monterey clover, beach layia, and Monterey spineflower (Figure 4.3-1). Sensitive plant communities documented within the General Plan Area include central maritime chaparral; however central dune scrub, coastal and valley freshwater marsh, coastal brackish marsh, Monterey cypress forest, Monterey pine forest, Monterey pygmy cypress forest, northern bishop pine forest, and valley needlegrass grassland also have the potential to occur. While Designated Critical Habitat for the Monterey spineflower occurs in the General Plan Area, it is limited to the Fort Ord National Monument, which is not proposed for development. Critical habitat for the western snowy plover occurs in the small strip of beach within City limits below Roberts Lake (Unit CA 22 Monterey to Moss Landing). This beach is heavily used for recreation and therefore disturbance may be high.

The goals, policies, and implementation actions of Seaside 2040 support growth and redevelopment within the General Plan Area; as well as on undeveloped former Fort Ord lands. As discussed in Draft EIR Section 2.4.6, buildout under the General Plan would include construction (including grading and excavation) and operation of up to 4,050 new housing units, as well as new retail, service industry, industrial, public space, and hotels. Locations for buildout and the associated uses are provided in the land use designations in Figure 6 of the Project Description. Development of these types of uses in general can result in direct or indirect impacts to special-status species and sensitive natural communities as ground disturbance and vegetation removal occurs to prepare a site for development. Direct impacts result from the actual removal of habitat, plants, and animals from the site through grading, brushing, clearing, and construction. These direct impacts are considered permanent, because they result in an irreversible conversion of habitats to developed areas. Indirect impacts also affect habitats, plants, and/or animals residing on or near the project site.

These are not the direct result of grading or development. Examples of indirect impacts include introduction of exotic species that may crowd out or compete with native species, human or pet intrusions into natural areas, lighting, traffic, and noise. Indirect impacts are often called "edge effects."

In general, impacts to special-status species and sensitive habitats as a result of development under Seaside 2040 would be concentrated along the eastern edge of the City on undeveloped maritime chaparral habitat. Maritime chaparral habitat is suitable for numerous special-status plant and wildlife species, such as Monterey spineflower, Monterey pine, prairie falcon, and California tiger salamander (Table 4.3-1 and Table 4.3-2).

Critical Habitat for Western snowy plover within the City is limited to the small strip of beach within City limits below Roberts Lake (Unit CA 22 Monterey to Moss Landing). This beach is heavily used for recreation, representing an area of intense and ongoing use and disturbance. Seaside 2040 does not envision new development or changes to land use in this beach area. Therefore, buildout of the development envisioned in Seaside 2040 would not impact Critical Habitat for Western snowy plover within the City.

Smaller areas of dune and iceplant habitat in the northwest corner of the City also provide habitat for special-status species. Areas within the LCP are limited to a narrow strip of primarily dune, iceplant, and ruderal habitat along the SR 1 corridor between Divarty Street and Freemont Boulevard; and wetland habitats at the Laguna Grande/Roberts lake complex and Seaside Beach. However, development in the Coastal Zone is controlled by the existing LCP, which is not being amended as part of Seaside 2040.

Seaside 2040 is designed to be consistent with the LCP. New development on former Fort Ord lands would incorporate open space corridors with trails that support natural vegetation communities, sensitive habitats, and connections to the Fort Ord National Monument and Fort Ord Regional Trail and Greenway (FORTAG). Major strategies of Seaside 2040 include the development of Seaside East with sustainable neighborhoods and the preservation of natural areas, including sensitive habitats such as oak woodlands. In addition, all development under Seaside 2040 would be subject to the provisions of the various federal and State natural resources regulations (discussed in subsection 4.3.2, *Regulatory Setting*) and their respective permitting processes. Further, Seaside 2040 goals and policies would encourage the conservation and protection of open space and natural resources within the General Plan Area, thus protecting special-species to the greatest extent possible.

The goals and policies of Seaside 2040 that support listed special-status species and sensitive habitats in the General Plan Area, include:

Land Use and Urban Design Element Goals, Policies, and Implementation Programs

Goal LUD-9: A city with beautiful and vibrant architecture and building design that reflects the culture and character of Seaside.

Intent: To beautify the city, enhance the image of the community, and encourage integrated urban design.

Policy: **Natural areas.** Design sites and buildings adjacent to natural areas with transparent design elements. Employ bird-safe design practices near habitat areas or migratory routes.

Goal LUD-17: Abundant and high-quality natural open space on former Fort Ord lands.

Intent: To leverage the undeveloped Fort Ord lands to provide new active and passive open space for the Seaside community. To create connected open space and habitat corridors that maximize ecological quality.

Policies: **Open space corridors.** Balance the need to create more housing, employment, retail, and entertainment uses on former Fort Ord lands with open space corridors that support natural vegetation communities, scenic vistas, and sensitive habitats within new growth areas. Open space corridors should connect to formal and informal trailheads in the National Monument, where possible.

Open space buffer. Provide an open space buffer/fuel break between new development and habitat areas.

Park and open space plans. During the creation of specific plans, master plans, or other similar area planning processes, create a park and open space plan that shows the location and extent of future parks, open space, and recreation-open space areas. Develop a comprehensive and connected network of trails and non-auto circulation that improve access to parks, open space, and other community areas.

Regional efforts. Participate in regional programs and in partnership with land trusts and conservancies to seek funding to preserve, maintain, and acquire open space as opportunities allow.

Goal LUD-18: Design new Seaside neighborhoods on former Fort Ord lands sustainably by linking land use, transportation, and infrastructure development to increase non-automobile travel, protect sensitive habitat, and reduce infrastructure costs.

Intent: To expand the city in a sustainable, smart-growth manner that minimizes the carbon footprint of new development, while also benefiting the existing community.

Policies: **Diverse neighborhoods.** Create diverse mixed-income neighborhoods with a range of residential housing types for different economic levels, household sizes, and age groups.

Access to amenities. Strive to create development patterns such that the majority of residents are within one-half mile walking distance of a variety of neighborhood-serving uses, such as parks, grocery stores, restaurants, churches, cafes, dry cleaners, laundromats, banks, hair care, pharmacies, civic uses, and similar uses.

New urban spaces. Require new developments to provide public parks, plazas and squares that provide interesting urban spaces in planned districts and neighborhoods. Require project developers to establish mechanisms, such as a Community Facilities District or impact fees, to adequately maintain new parks and recreational facilities.

Expanded mobility. Ensure new development supports non-automobile mobility by providing safe, comfortable, and convenient well-connected pathways for pedestrians and bicyclists and waiting areas for transit.

Internal connectivity. Require development projects to have a high-level of internal connectivity (minimum 150 intersections per square mile) and to be well-connected to the surrounding area.

Military designated lands. Seek partnership opportunities with the federal government to increase transportation and open space access within and through military (M-designated) lands.

Traffic modeling. Ensure future traffic study methodologies balance automobile, transit, walk, and bike mode shares.

Goal LUD-20: New development supports the preservation or enhancement of the city's natural resources.

Intent: To protect the most valuable natural areas and species in former Fort Ord lands.

Policies: **Clustered development.** Cluster new development on former Fort Ord lands, as feasible, to minimize impacts on sensitive habitat.

Development adjacent to habitat. Require new construction adjacent to habitat management areas to minimize new impervious surface, minimize light pollution, and emphasize native landscaping.

Habitat protection area. Establish a habitat protection area, including criteria for defining the area, during the creation of a specific plan for Seaside East.

Low-impact development. Require new construction and redevelopment projects to use low-impact development techniques to improve stormwater quality and reduce run-off quantity.

On-site stormwater infiltration. Require on-site stormwater collection and infiltration according to C3 requirements.

Steep slopes. Preserve areas with steep slopes greater than 40 percent by prohibiting commercial and residential development. Open space and trails may be allowed in these areas.

Native species. Encourage new development to support a diversity of native species and manage invasive species.

Goal LUD-22: Balanced, diverse, and sustainable growth.

Intent: To guide development towards a diverse community that balances habitat and wilderness with new low-impact residential development clustered around neighborhood centers, supporting public use, and employment districts.

Policy: **Habitat preservation.** Working with CSUMB and the City of Marina to minimize the impacts of land uses at the western entrance of the CSUMB campus, support the preservation of open space and sensitive habitat including:

- Oak woodlands and linkages.
- An open space buffer between future development and the National Monument.
- Open space corridors that support natural vegetation communities, scenic vistas, and sensitive habitats.

Land Use and Urban Design Implementation Programs

Implementation Program LUD 4: Specific Plans

Create and implement Specific Plans to bridge the policies of the General Plan with the standards of the zoning code for subareas of the city. Plans should address key opportunities for the area and include the following:

- The location, phasing, and amount of designated land uses, including parks and recreational uses
- Objective urban design standards
- Circulation network, including a comprehensive and connected active transportation and trails plan
- Open space and sensitive habitat
- Demand for new infrastructure and utility services
- An implementation program for public and private development

Plans should include a broad community engagement process tailored to surrounding neighbors, property owners, businesses, tenants, and other key community members and stakeholders. New Specific Plans should be created for Seaside East, Main Gate, and Fremont Boulevard.

Parks and Open Space Element Goals, Policies, and Implementation Programs

Goal PO-2: Natural open space on former Fort Ord lands.

Intent: As former Fort Ord lands redevelop, this goal aims to create a high-quality and well-connected series of natural open spaces that support expanded recreational opportunities. Open space corridors include trails connecting to the Fort Ord National Monument, parks, and other destinations. It also includes passive corridors to preserve habitat.

Policies: **Active open space corridors and trails**. In partnership with regional and local agencies, develop active open space corridors that support natural vegetation communities, scenic vistas, and sensitive habitats within former Fort Ord lands. Open space corridors should connect to formal and informal trailheads in the National Monument where possible.

Open space buffer. Provide an open space buffer/fuel break consistent with the BRP, HMP and potential HCP between future development in Seaside East and the National Monument.

Partner with outside agencies. Participate in regional and federal programs and partner with land trusts or other nonprofits to seek funding to preserve, maintain, and manage natural open space.

Educational opportunities. Promote educational opportunities to emphasize the need to maintain and manage biological resources to maintain the uniqueness and biodiversity of the former Fort Ord.

FORTAG trail. Coordinate trail design and connectivity of parks and other open spaces with the FORTAG regional trail.

Conservation Element Goals, Policies, and Implementation Programs

Goal C-1: Sensitive species and habitat protected on former Fort Ord lands.

Intent: The Fort Ord HMP provides frameworks for permittees, including the City of Seaside, to conserve and manage special-status species, animal communities, and habitat areas on former Fort Ord lands. This goal aims to implement those plans locally, identifying and managing habitat areas and species.

Policies: **Habitat Management Plan.** Continue to partner with local, regional, and federal agencies to implement the programs outlined by the HMP. Provide BLM evidence of habitat protection measures for lands not under HMP resource conservation or management requirements.

Interpretive signage. In coordination with the BLM and other partners, incorporate interpretive signage in habit management areas that educate community members and visitors about the unique biological resources on former Fort Ord lands.

Loss of sensitive species. Minimize the loss of sensitive species and critical habitat areas in areas planned for future development.

Habitat management areas. Continue to protect habitat management areas on former Fort Ord land, identifying habitat areas, planning carefully to avoid significant impacts, and implementing more restrictive development standards adjacent to these areas.

Oak woodlands. Continue to partner with regional and local agencies to designate oak woodlands and linkages, encourage the preservation and management of oak woodland and linkages, and connect them to other parks, open spaces, and active open space corridors. The City shall actively manage and monitor the oak woodlands area.

Habitat restoration. Restore habitat areas where habitat has been disturbed by activities within the plan area of the FORA HMP in development of the future Seaside East Specific Plan.

Inland water resources. Protect and enhance creeks, lakes, and adjacent wetlands by eradicating non-native vegetation and restoring native vegetation.

Zoning. During development of Specific Plans within the FORA HMP area, map and designate habitat management areas to be protected from future development, where appropriate.

Wetlands. The City shall preserve, enhance and protect wetland areas, and evaluate areas proposed for new development during the site planning process to determine whether wetlands or other jurisdictional waters occur. In the event that wetlands are present, the City shall require that they either be avoided or compensatory mitigation implemented so that there is no net loss to wetland resources as a result of development on the site. Wetland mitigation plans on Former Fort Ord lands should be coordinated through the Coordinated Resource Management Planning program (CRMP) as required by the HMP where applicable.

Interpretative Signage. To promote awareness of biological resources on the former Fort Ord, interpretative signs will be developed for placement in habitat management areas. Signs will be designed to educate the public on the importance of conservation and the sensitive species and habitats present on former Fort Ord lands.

Goal C-2: New development supports the preservation or enhancement of the city's natural resources.

Intent: This goal fosters sustainable development practices that provide protection to sensitive habitats and species and accessible resources for the enrichment of residents.

Policies: **Clustered development.** Cluster new development on former Fort Ord lands to minimize impacts, preserve habitat management areas, and protect high-visibility ridgelines, steep slopes, wetlands, and waterways. Standards to cluster development should be developed as part of a future Seaside East Specific Plan.

Habitat protection area. Establish a habitat protection area, including criteria for defining the area, during the creation of a specific plan for Seaside East.

Integrating oak woodland. Work with developers to promote an understanding of existing oak trees and previously-identified oak woodland linkages as they design new developments. Encourage compliance with state and county regulations as part of the development review process.

Development review. When projects are adjacent to or contain natural habitat or undeveloped area, require projects to submit analysis showing the existing habitat on the proposed plan, potential impacts to special-status species and sensitive natural communities or other biological resources (including nesting birds), and measures to avoid, minimize, and/or mitigate impacts, as necessary.

Development near habitat management areas. Require new development adjacent to habitat management areas to minimize new impervious surface, minimize light pollution, and emphasize native landscaping.

Hillside protection. When grading is necessary, encourage grading for new development that complements the surrounding natural features.

Dark sky lighting standards. Require new construction or modifications to existing development and public facilities to adhere to dark sky lighting standards or the control of outdoor lighting sources by shielding light in the downward direction and limiting bright white lighting and glare.

Dark sky education. Promote dark sky education in the community to promote responsible lighting and dark sky stewardship.

Native species. Encourage new development to support a diversity of native species and manage invasive species.

Invasive species. Prohibit the planting of plant species on the California Invasive Plant Inventory.

Low-impact development. Require new construction and redevelopment projects to use low-impact development techniques to improve stormwater quality and reduce run-off quantity.

Stormwater area and wetlands. Incorporate wetland features into stormwater control facilities to the extent practicable.

Water quality. Incorporate water quality and habitat enhancement in new flood management facilities.

Goal C-3: A City that protects, conserves, and enhances the natural beauty and resources within the coastal zone.

Intent: Seaside's coastal zone provides important habitat for special-status species. Habitat areas and wildlife can be negatively affected by certain types of development and human activity, as well as erosion from sea level rise. This goal aims to preserve and protect natural resources in the coastal zone through careful management, including eradication of non-native vegetation, and restoration of native vegetation.

Policies: **Partnerships.** Promote local and regional cooperation and partnership, including the US Army, Caltrans, and California State Parks, to help protect and manage Seaside's natural resources in the coastal zone.

Protect critical habitats. Preserve, protect, and improve open space areas to the greatest extent possible to improve on existing limited habitats outlined by the Local Coastal Plan.

Beach habitat. Work with local and regional agencies to ensure beaches can function as a quality habitat for permanent and migratory species.

Coastal zone. Protect the coastal zone west of State Highway 1 from habitat degradation due to increased access, erosion, and pollution due to remnant outfall pipes.

Riparian Corridors. Encourage the restoration and protection of riparian corridors at Laguna Grande and Roberts Lake.

Goal C-4: Pollutant discharge managed to minimize adverse impacts on water quality in the Monterey Bay, Roberts Lake, Laguna Grande and other bodies of water.

Intent: To reduce the negative environmental impacts of storm water runoff on the Monterey Bay, Roberts Lake, Laguna Grande, and other bodies of water improves local habitat.

Policies: **Low-impact development practices.** Require new construction and redevelopment projects to use low-impact development techniques to improve stormwater quality and reduce run-off quantity, including improving soil health, providing soil cover and

water-wise planting and irrigation, installing permeable pavements, building bio-retention areas to reduce runoff quantity.

Storm water runoff. Enforce the reduction of stormwater runoff consistent with local storm water permits.

Storm water facilities. Incorporate stormwater facilities into the design of parks and open spaces, using natural processes to capture, treat, and infiltrate stormwater to the extent feasible.

Goal C-5: An abundant, robust urban forest that contributes to Seaside's quality of life as it combats the effects of climate change.

Intent: Urban forestry is essential to the city's path towards greater sustainability. Seaside's urban forest enhances its environmental quality and the mental and physical health of its residents, while bringing significant economic benefits through increased property values. Urban forestry will make the city more resilient to the impacts of extreme heat associated with climate change.

Policies: **Protected tree species.** Preserve protected tree species, (e.g. native oaks) whenever possible during site redevelopment.

Select planting. Encourage the planting of native, non-invasive, and drought-tolerant landscaping and trees. Encourage landscape plantings to use tree species native to an area when adjacent to natural plant communities and habitat management areas.

Sustainability in forest management. Manage urban trees to achieve the City's environmental sustainability goals for water and energy conservation, stormwater management, habitat protection, and climate resilience.

Conservation Implementation Programs

Programs

- **C 1. Tree Preservation Ordinance.** Adopt an ordinance specifically addressing the preservation of oak trees. At a minimum, this ordinance shall include restrictions for the removal of oaks of a certain size, permit requirements for removing oaks of the size defined, and specifications for relocation or replacement of oaks removed.
- **C 2. Habitat Management Plan.** Continue to partner with local, regional, and federal agencies to implement the programs outlined by the HCP and HMP.
- **C 3. Seaside Habitat Management Plan.** As funding becomes available, develop a Seaside Habitat Management Plan that outlines the habitat management protection measures not already addressed in the Fort Ord HMP and HCP to protect habitat and species specific to Seaside and for areas outside the Plan Area of the FORA HCP. The Seaside Habitat Management Plan should include roles and responsibilities and identify funding or financing mechanisms to implement the plan. The Seaside Habitat Management Plan should be consistent with the Fort Ord HMP and HCP.
- **C 4. Fort Ord Regional Habitat Cooperative.** Be a cooperative member of the Fort Ord Regional Habitat Cooperative (Joint Powers Authority), and coordinate with FORA and the other cooperating members to finalize the HCP Plan and Implementing Agreement.

- **C 5. Dark Sky Lighting Ordinance.** Prepare a Dark Sky Ordinance to regulate outdoor lighting through the adoption of comprehensive citywide outdoor lighting standards.

As referenced above, Goals LUD-17, LUD-20, and LUD-22, aim to balance habitat preservation and development on former Fort Ord lands, which would minimize the loss of sensitive habitats and habitat linkages. Goals PO-2, C-1, and C-2 would also address habitat preservation on former Fort Ord lands. Goal PO-2 aims to maintain high-quality well-connected habitats and open space corridors. Special-status species protection is addressed in Goal C-1, which includes a policy for the continued partnership with local, regional, and federal agencies, and continued implementation of the Fort Ord HMP. Goal C-2 addresses clustering of development, limiting of impervious surfaces, future project impact analysis, and limiting the use of invasive plants in landscaping. Additionally, Goal C-3 provides protection for habitat in the coastal zone, including critical habitat and habitat for permanent and migratory species. It also would provide protection from habitat degradation in the coastal zone due to increased access.

Goal C-5 includes policies to protect native trees (including oaks), and encourages the planting of native, non-invasive species as landscaping. Goal C-1 includes policies to protect and sensitive species and habitats including oak woodlands. Implementation action C 1 for the adoption of a tree protection ordinance would specifically address oak trees. This ordinance would include restrictions for the removal of oaks of a certain size, permit requirements for removing oaks, and specifications for relocation or replacement of oaks.

Additionally, short-term habitat management plans are required to address the current state of all natural lands on the former Fort Ord within the General Plan Area, including parcels designated for development.

These goals to limit habitat loss, maintain habitat integrity and connectivity, and protect special-status species would minimize, and sometimes avoid, impacts from potential direct and indirect effects to special-status species and sensitive habitats, but implementation of Seaside 2040 would result in impacts to such resources. Therefore, potentially significant impacts would occur but would be less than significant with implementation of Seaside 2040 policies.

Goal LUD-9 includes a policy to employ bird-safe design practices near natural habitats and migratory routes, which would limit direct impacts to adult migratory birds. However, with revisions to Seaside 2040 policies to include measures to avoid and/or minimize impacts to special-status species, sensitive communities, and other biological resources listed below, direct and indirect impacts to nesting birds would be less than significant. The potential for impacts to nesting birds would be addressed through typical project-level mitigation measures such as preconstruction nesting bird surveys and active nest buffers to avoid disturbance of nesting birds.

Mitigation Measures

No mitigation is required.

Significance After Mitigation

Impacts would be less than significant without mitigation.

Threshold 3:	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, or hydrological interruption, or other means?

Impact BIO-2 WHILE SEASIDE 2040 WOULD NOT FACILITATE DEVELOPMENT THAT WOULD DIRECTLY IMPACT WETLAND HABITS, THERE WOULD BE POTENTIAL FOR ADVERSE INDIRECT IMPACTS FROM SUCH DEVELOPMENT ON WETLANDS AND WATERS UNDER THE JURISDICTION OF THE CDFW, RWQCB AND/OR USACE, AS WELL AS FOR THE CITY'S COASTAL ZONE AND THEREFORE SUBJECT TO THE CCA. HOWEVER, COMPLIANCE WITH EXISTING REGULATIONS AND IMPLEMENTATION OF 2040 GENERAL PLAN POLICIES WOULD PROTECT AND RESTORE WETLANDS AND WATERS. IMPACTS WOULD THEREFORE BE LESS THAN SIGNIFICANT.

Wetlands in the General Plan Area include estuarine and marine wetlands, estuarine and marine deepwater, freshwater emergent wetlands, freshwater forested/shrub wetlands, riverine, lake, and freshwater ponds. Laguna Grande and Roberts Lake are two freshwater lakes, fed by Canyon Del Rey Creek. The Pacific Ocean (marine habitat) occurs at the far southwest edge of the General Plan Area. The remaining freshwater ponds and marshes occur primarily on former Fort Ord lands. Additional wetlands may be discovered during site specific surveys for individual development projects. Additionally, some wetland features, such as freshwater seeps and springs, are generally not identified as part of the NWI because of the general scale of the mapping effort. Detailed wetland delineations would be needed to determine the extent of any jurisdictional wetlands and other jurisdictional waters at specific development locations.

Wetlands and waters may be subject to USACE, RWQCB and/or CDFW jurisdiction(s), as well as subject to the CCA. Compliance with the requirements of the CWA, Porter-Cologne, CFGC, and CCA would be required for any project proposed under Seaside 2040. In addition, the following goals and policies from the Parks, Open Space, and Conservation Goals and Policies presented below would reduce impacts to jurisdictional wetlands and waters through preservation and enhancement of wetland and waters. Additionally, the City of Seaside Municipal Code Title 18 Coastal Zoning, Chapter 18.02.070 establishes requirements for development within the coastal zone including; setbacks, lighting requirements, and vegetation plans for development adjacent to wetlands.

The policies contained within Goals C-1, C-2, C-4, C-5, and the Parks and Open Space implementation programs would require a detailed inventory of sensitive habitats prior to new development, and protection of sensitive habitats that have been inventoried. Additionally, 2040 General Plan goals and policies would require preservation of wetlands and waters, compliance with the LCP, the HMP, State and federal wetland regulations, and protection of water quality.

The goals and policies of Seaside 2040 that support preservation and restoration of wetlands and jurisdictional waters in the General Plan Area include:

Conservation Element Goals, Policies, and Implementation Programs

Goal C-1: Sensitive species and habitat protected on former Fort Ord lands.

Intent: The Fort Ord HMP provides frameworks for permittees, including the City of Seaside, to conserve and manage special-status species, animal communities, and habitat areas on former Fort Ord lands. This goal aims to implement those plans locally, identifying and managing habitat areas and species.

Policies: **Inland water resources**. Protect and enhance creeks, lakes, and adjacent wetlands by eradicating non-native vegetation and restoring native vegetation.

Zoning. During development of Specific Plans on former Fort Ord Lands, map and designate habitat management areas to be protected from future development, where appropriate.

Interpretive signage. In coordination with the BLM and other partners, incorporate interpretive signage in habitat management areas that educate community members and visitors about the unique biological resources on former Fort Ord lands.

Wetlands. The City shall preserve, enhance and protect wetland areas, and evaluate areas proposed for new development during the site planning process to determine whether wetlands or other jurisdictional waters occur. In the event that wetlands are present, the City shall require that they either be avoided or compensatory mitigation implemented so that there is no net loss to wetland resources as a result of development on the site. Wetland mitigation plans on Former Fort Ord lands should be coordinated through the Coordinated Resource Management Planning program (CRMP) as required by the HMP where applicable.

Goal C-2: New development supports the preservation or enhancement of the city's natural resources

Intent: This goal fosters sustainable development practices that provide protection to sensitive habitats and species and accessible resources for the enrichment of residents.

Policies: **Clustered development.** Cluster new development on former Fort Ord lands to minimize impacts, preserve habitat management areas, and protect high-visibility ridgelines, steep slopes, wetlands, and waterways. Standards to cluster development should be developed as part of a future Seaside East Specific Plan.

Development review. When projects are adjacent to or contain natural habitat or undeveloped area, require projects to submit analysis showing the existing habitat on the proposed plan, potential impacts to special-status species and sensitive natural communities or other biological resources (including nesting birds), and measures to avoid, minimize, and/or mitigate impacts, as necessary.

Stormwater area and wetlands. Incorporate wetland features into stormwater control facilities to the extent practicable.

Water quality. Incorporate water quality and habitat enhancement in new flood management facilities.

Low-impact development. Require new construction and redevelopment projects to use low-impact development techniques to improve stormwater quality and reduce run-off quantity.

Habitat protection area. Establish a habitat protection area, including criteria for defining the area, during the creation of a specific plan for Seaside East.

Goal C-4: Pollutant discharge managed to minimize adverse impacts on water quality in the Monterey Bay, Roberts Lake, Laguna Grande and other bodies of water.

Intent: To reduce the negative environmental impacts of storm water runoff on the Monterey Bay, Roberts Lake, Laguna Grande, and other bodies of water improves local habitat.

Policies: **Low-impact development practices.** Require new construction and redevelopment projects to use low-impact development techniques to improve stormwater quality and reduce run-off quantity, including improving soil health, providing soil cover and water-wise planting and irrigation, installing permeable pavements, and building bio-retention areas to reduce runoff quantity.

Storm water runoff. Enforce the reduction of stormwater runoff consistent with local stormwater permits.

Storm water facilities. Incorporate stormwater facilities into the design of parks and open spaces, using natural processes to capture, treat, and infiltrate stormwater to the extent feasible.

Mitigation Measures

No mitigation would be required.

Significance After Mitigation

Impacts would be less than significant without mitigation.

Threshold 4:	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?

Impact BIO-3 DEVELOPMENT CARRIED OUT UNDER SEASIDE 2040 WOULD LARGELY AVOID IMPACTS TO WILDLIFE MOVEMENT CORRIDORS BY CONSERVATION OF NATURAL AREAS AND LINKAGES CONTAINED IN POLICIES OF SEASIDE 2040. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

The General Plan Area is located west of Fort Ord National Monument and natural habitat in the Santa Lucia mountain range. An essential connectivity area was mapped east of the General Plan Area, connecting several smaller natural landscape blocks south of Salinas and the Monterey Peninsula with a large natural landscape block stretching from Big Sur south through Los Padres National Forest. A small section of this essential connectivity area occurs along the southeast edge of the General Plan Area on former Fort Ord lands. Approximately 420 acres of the General Plan Area fall within a CEHCP connectivity area; wildlife may use much of this natural habitat area as a local movement corridor. Of these 420 acres, 33 acres occur within the area planned for development on former Fort Ord lands. This connectivity area covers most of the Fort Ord National Monument, and removal of a small area at the margin of the CEHCP area located at the urban interface would not significantly impact wildlife movement on the former Fort Ord because there remained of the area would remain unaffected.

The riparian area along Canyon Del Rey Creek and the Laguna Grande-Robert's Lake complex also provides a small local corridor for wildlife movement. This corridor is highly disturbed by recreational use and homeless encampments. No development is proposed for Canyon Del Rey

Creek and the Laguna Grande-Robert's Lake complex; therefore, impacts would be less than significant with mitigation.

One of the goals of Seaside 2040 is to preserve sensitive habitats and habitat linkages, particularly oak woodlands. Implementation of Seaside 2040 would preserve open space within the General Plan Area and protect sensitive habitats, thus preserving existing corridors used by wildlife through the Goals LUD-22, C-1, and C-2. Seaside 2040 policies, below, would preserve open space and protect sensitive habitats resulting in the protection of wildlife movement corridors. Impacts would be less than significant.

Land Use and Community Design Element Goals, Policies, and Implementation Programs

Goal LUD-22: Balanced, diverse, and sustainable growth.

Intent: To guide development towards a diverse community that balances habitat and wilderness with new low-impact residential development clustered around neighborhood centers, supporting public use, and employment districts.

Policies: **Habitat preservation.** Working with CSUMB and the City of Marina to minimize the impacts of land uses at the western entrance of the CSUMB campus, support the preservation of open space and sensitive habitat including:

- Oak woodlands and linkages.
- An open space buffer between future development and the National Monument.
- Open space corridors that support natural vegetation communities, scenic vistas, and sensitive habitats.

Conservation Element Goals, Policies, and Implementation Programs

Goal C-1: Sensitive species and habitat protected on former Fort Ord Lands.

Intent: The Fort Ord HMP provides frameworks for permittees, including the City of Seaside, to conserve and manage special-status species, animal communities, and habitat areas on former Fort Ord lands. This goal aims to implement those plans locally, identifying and managing habitat areas and species.

Policies: **Habitat Management Plan.** Continue to partner with local, regional, and federal agencies to implement the programs outlined by the HMP. Provide BLM evidence of habitat protection measures for lands not under HMP resource conservation or management requirements.

Interpretive signage. In coordination with the BLM and other partners, incorporate interpretive signage in habitat management areas that educate community members and visitors about the unique biological resources on former Fort Ord lands.

Loss of sensitive species. Minimize the loss of sensitive species and critical habitat areas in areas planned for future development.

Habitat management areas. Continue to protect habitat management areas on former Fort Ord land, identifying habitat areas, planning carefully to avoid significant impacts, and implementing more restrictive development standards adjacent to these areas.

Oak woodlands. Continue to partner with regional and local agencies to designate oak woodlands and linkages, encourage the preservation and management, of oak woodland and linkages, and connect them to other parks, open spaces, and active open space corridors. The City shall actively manage and monitor the oak woodlands area.

Habitat restoration. Restore habitat areas where habitat has been disturbed by activities within the plan area of the FORA HMP in development of the future Seaside East Specific Plan.

Inland water resources. Protect and enhance creeks, lakes, and adjacent wetlands by eradicating non-native vegetation and restoring native vegetation.

Zoning. During development of Specific Plans within the FORA MHP area, map and designate habitat management areas to be protected from future development, where appropriate.

Goal C-2: New development supports the preservation or enhancement of the City's natural resources

Intent: This goal fosters sustainable development practices that provide protection to sensitive habitats and species and accessible resources for the enrichment of residents.

Policies: **Clustered development.** Cluster new development on former Fort Ord lands to minimize impacts, preserve habitat management areas, and protect high-visibility ridgelines, steep slopes, wetlands, and waterways. Standards to cluster development should be developed as part of a future Seaside East Specific Plan.

Habitat protection area. Establish a habitat protection area, including criteria for defining the area, during the creation of a specific plan for Seaside East.

Integrating oak woodland. Work with developers to promote an understanding of existing oak trees and previously-identified oak woodland linkages as they design new developments. Encourage compliance with State and County regulations as part of the development review process.

Development review. When projects are adjacent to or contain natural habitat or undeveloped area, require projects to submit analysis showing the existing habitat on the proposed plan, potential impacts to special-status species and sensitive natural communities or other biological resources (including nesting birds), and measures to avoid, minimize, and/or mitigate impacts, as necessary.

Development near habitat management areas. Require new development adjacent to habitat management areas to minimize new impervious surface, minimize light pollution, and emphasize native landscaping.

Hillside protection. When grading is necessary, encourage grading for new development that complements the surrounding natural features.

Dark sky lighting standards. Require new construction or modifications to existing development and public facilities to adhere to dark sky lighting standards or the control of outdoor lighting sources by shielding light in the downward direction and limiting bright white lighting and glare.

Dark sky education. Promote dark sky education in the community to promote responsible lighting and dark sky stewardship.

Native species. Encourage new development to support a diversity of native species and manage invasive species.

Invasive species. Prohibit the planting of plant species on the California Invasive Plant Inventory.

Low-impact development. Require new construction and redevelopment projects to use low-impact development techniques to improve stormwater quality and reduce run-off quantity.

Stormwater area and wetlands. Incorporate wetland features into stormwater control facilities to the extent practicable.

Conservation Implementation Programs

Programs:

- **C 1. Tree Preservation Ordinance.** Adopt an ordinance specifically addressing the preservation of oak trees. At a minimum, this ordinance shall include restrictions for the removal of oaks of a certain size, permit requirements for removing oaks of the size defined, and specifications for relocation or replacement of oaks removed.
- **C 2. Habitat Management Plan.** Continue to partner with local, regional, and federal agencies to implement the programs outlined by the HCP and HMP.
- **C 3. Seaside Habitat Management Plan.** As funding becomes available, develop a Seaside Habitat Management Plan that outlines the habitat management protection measures not already addressed in the Fort Ord HMP and HCP to protect habitat and species specific to Seaside and for areas outside the Plan Area of the FORA HCP. The Seaside Habitat Management Plan should include roles and responsibilities and identify funding or financing mechanisms to implement the plan. The Seaside Habitat Management Plan should be consistent with the Fort Ord HMP and HCP.
- **C 4. Fort Ord Regional Habitat Cooperative.** Be a cooperative member of the Fort Ord Regional Habitat Cooperative (Joint Powers Authority), and coordinate with FORA and the other cooperating members to finalize the HCP Plan and Implementing Agreement.
- **C 5. Dark Sky Lighting Ordinance.** Prepare a Dark Sky Ordinance to regulate outdoor lighting through the adoption of comprehensive citywide outdoor lighting standards.

Mitigation Measures

No mitigation would be required.

Significance After Mitigation

Impacts would be less than significant without mitigation.

Threshold 5:	Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

Impact BIO-4 DEVELOPMENT PROPOSED BY SEASIDE 2040 WOULD CONFORM WITH APPLICABLE LOCAL POLICIES PROTECTING BIOLOGICAL RESOURCES AND UNDERSCORE THEIR IMPORTANCE WITH STRENGTHENED POLICY STATEMENTS. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

Implementation of Seaside 2040 would be subject to all applicable local policies and regulations related to the protection of important biological resources. Specifically, development under Seaside 2040 would be required to comply with the Seaside Municipal Code and Seaside Local Coastal Program. Seaside Municipal Code Chapter 8.54, Trees, provides standards for the removal, protection, preservation, and if necessary the replacement of trees. The ordinance requires a tree removal permit and replacement plantings for any tree to be removed during project construction. In addition to requiring tree removal permits, the ordinance also requires measures to protect existing trees during project construction. 2040 General Plan policies under Goal C-1 and implementation program C 1, provide protection for protected trees, a specific ordinance for the protection of oak woodlands, and encourages the use of native species for landscaping. Goal C-1 also provides protections for oak woodlands.

Therefore, Seaside 2040 would comply with applicable local regulations and impacts would be less than significant.

Mitigation Measures

No mitigation would be required.

Significance After Mitigation

Impacts would be less than significant without mitigation.

Threshold 6:	Would the project conflict with the provisions of an adopted Habitat Preservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

Impact BIO-5 THE PLAN AREA INCLUDES LANDS GOVERNED BY THE FORT ORD INSTALLATION-WIDE HMP. IMPACTS TO AREAS IDENTIFIED IN THE HMP WOULD BE PROTECTED BY CONSERVATION STRATEGIES CONTAINED IN GOALS AND POLICIES OF SEASIDE 2040. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

Development under Seaside 2040 would be required to comply with Fort Ord HMP. Seaside 2040 Goal C-1 requires the continued partnership with local, regional, and federal agencies to implement the programs outlined by the HMP. Additionally, implementation program C 2 would require the City to establish a Seaside Habitat Management Plan that outlines habitat management protection measures to address the interim management of natural lands, includes roles and responsibilities, and identifies the funding or financing to implement the plan. Implementation program C 4 would require coordination with Fort Ord Regional Habitat Cooperative (Joint Powers Authority), and other

agencies to preserve and restore natural habitats on the former Fort Ord Lands. Therefore, conflicts with the Fort Ord HMP would be less than significant.

Conservation Element Goals, Policies, and Implementation Programs

Goal C-1: Sensitive Species and Habitat Protected on Former Fort Ord Lands.

Intent: The Fort Ord HMP provides frameworks for applicants, including the City of Seaside, to conserve and manage special-status species, animal communities, and habitat areas on former Fort Ord lands. This goal aims to implement those plans locally, identifying and managing habitat areas and species.

Policies: **Habitat Management Plan.** Continue to partner with local, regional, and federal agencies to implement the programs outlined by the HMP. Provide BLM evidence of habitat protection measures for lands not under HMP resource conservation or management requirements.

Interpretive signage. In coordination with the BLM and other partners, incorporate interpretive signage in habitat management areas that educate community members and visitors about the unique biological resources on former Fort Ord lands.

Loss of sensitive species. Minimize the loss of sensitive species and critical habitat areas in areas planned for future development.

Habitat management areas. Continue to protect habitat management areas on former Fort Ord land, identifying habitat areas, planning carefully to avoid significant impacts, and implementing more restrictive development standards adjacent to these areas.

Oak woodlands. Continue to partner with regional and local agencies to designate oak woodlands and linkages, encourage the preservation and management, of oak woodland and linkages, and connect them to other parks, open spaces, and active open space corridors. The City shall actively manage and monitor the oak woodlands area.

Habitat restoration. Restore habitat areas where habitat has been disturbed by activities within the plan area of the FORA HMP in development of the future Seaside East Specific Plan.

Inland water resources. Protect and enhance creeks, lakes, and adjacent wetlands by eradicating non-native vegetation and restoring native vegetation.

Zoning. During development of Specific Plans within the FORA HMP area, map and designate habitat management areas to be protected from future development, where appropriate.

Conservation Implementation Programs

Programs:

- **C 1. Tree Preservation Ordinance.** Adopt an ordinance specifically addressing the preservation of oak trees. At a minimum, this ordinance shall include restrictions for the removal of oaks of a certain size, permit requirements for removing oaks of the size defined, and specifications for relocation or replacement of oaks removed.

- **C 2. Habitat Management Plan.** Continue to partner with local, regional, and federal agencies to implement the programs outlined by the HCP and HMP.
- **C 3. Seaside Habitat Management Plan.** As funding becomes available, develop a Seaside Habitat Management Plan that outlines the habitat management protection measures not already addressed in the Fort Ord HMP and HCP to protect habitat and species specific to Seaside and for areas outside the Plan Area of the FORA HCP. The Seaside Habitat Management Plan should include roles and responsibilities and identify funding or financing mechanisms to implement the plan. The Seaside Habitat Management Plan should be consistent with the Fort Ord HMP and HCP.
- **C 4. Fort Ord Regional Habitat Cooperative.** Be a cooperative member of the Fort Ord Regional Habitat Cooperative (Joint Powers Authority), and coordinate with FORA and the other cooperating members to finalize the HCP Plan and Implementing Agreement.

Mitigation Measures

No mitigation would be required.

Significance After Mitigation

Impacts would be less than significant without mitigation.

4.4 Cultural Resources

The analysis considers potential impacts to archaeological, historic resources, and human remains. This section includes a brief summary of cultural resources background information and a review of known archaeological and built environment resources as well as the General Plan's potential impacts on these resources. This analysis is based in part on the Cultural Resources Assessment Report prepared by Rincon Consultants, included as Appendix E to this EIR. Potential impacts to tribal resources are addressed in Section 4.15, *Tribal Cultural Resources*. Potential impacts to paleontological resources are addressed in Section 4.6, *Geology and Soils*.

4.4.1 Setting

a. Cultural Setting

Regional Prehistory

The City of Seaside lies in what is generally described as the Central Coast Archaeological Region, one of eight organizational divisions of the state (Moratto 1984**)**. This region extends from Monterey Bay to Morro Bay, and includes all of Monterey County.

Several chronological sequences have been devised to understand cultural changes within the Central Coast Region from the Milling Stone period to contact. Jones (1993) and Jones and Waugh (1995) presented a Central Coast sequence that integrated the data results of cultural resource management since the 1980s. Three periods are presented in their prehistoric sequence subsequent to the Milling Stone period: Early, Middle, and Late periods. More recently, Jones and Ferneau (2002:213) updated the sequence following the Milling Stone period as follows: Early, Early-Middle Transition, Middle, Middle-Late Transition, and Late periods. The archaeology of the Central Coast Region subsequent to the Milling Stone period is distinct from that of the Bay Area and Central Valley, although the region has more in common with the Santa Barbara Channel area during the Middle and Middle-Late Transition periods, but few similarities during the Late period (Jones & Ferneau 2002:213).

Paleo-Indian Period (ca. 10,000 to 6000 BCE)

When Wallace developed the Early Man horizon in the 1950s, little evidence of human presence was known for the southern California coast prior to 6000 BCE. Archaeological work in the intervening years has identified numerous sites older than this date, including coastal and Channel Islands sites (e.g., Erlandson 1991; Johnson et al. 2002; Moratto 1984). The earliest accepted dates for occupation are from two of the Northern Channel Islands, located off the coast from Santa Barbara. On San Miguel Island, Daisy Cave clearly establishes the presence of people in this area approximately 10,000 years ago (Erlandson 1991:105). On Santa Rosa Island, human remains have been dated from the Arlington Springs site to approximately 13,000 years ago (Johnson et al. 2002).

Only a few archaeological sites within the Central Coast Region are documented prior to 6,000 years ago. It is likely that most earlier coastal sites are presently under water because it is estimated that 10,000 years ago sea levels were 15 – 20 meters lower than today (Bickel 1978:7). Estimates place the early Holocene shore in central and southern California at approximately 10 kilometers farther west than today's coastline (Breschini and Haversat 1991:126).

Recent data from Paleo-Indian sites in southern California indicate that the economy was a diverse mixture of hunting and gathering, with a major emphasis on aquatic resources in many coastal areas (e.g., Jones et al. 2002) and on Pleistocene lake shores in eastern California (Moratto 1984:90–92).

Milling Stone Period (6000 to 3000 BCE)

The Milling Stone horizon of Wallace (1955, 1978) is characterized by an ecological adaptation to collecting, and by the dominance of the principal ground stone implements generally associated with the horizontal motion of grinding small seeds; namely, milling stones (metates, slabs) and hand stones (manos, mullers), which are typically shaped (Wallace 1955, 1978; Warren 1968). Milling stones occur in large numbers for the first time in the region's archaeological record, and are even more numerous near the end of this period. As testified by their toolkits and shell middens in coastal sites, people during this period practiced a mixed food procurement strategy. Subsistence patterns varied somewhat as groups became better adapted to their regional or local environments.

Early Period and Early-Middle Transition Period (3000 to 600 BCE)

Although Jones and Ferneau (2002:213) have distinguished an Early-Middle Transition period, it is not well defined and is difficult to observe. Thus the transition phase is included in the following discussion of the sites and characteristics recognized for the Early Period in the Central Coast Region.

An extensive series of shoreline midden deposits are within the Central Coast Region during the Early period, signifying an increase in occupation of the open coast (Jones and Waugh 1995, 1997). These include estuarine sites such as CA-SLO-165 in Estero Bay and open-coast sites near Monterey, including CA-MNT-73, CA-MNT-108, and CA-MNT-1228. Lithic artifact assemblages from these sites include Central Coast Stemmed Series and side-notched projectile points. Square-stemmed and side-notched points have also been found in deposits at Willow Creek in Big Sur (CA-MNT-282), and Little Pico II on the San Luis Obispo coast (CA-SLO-175) (Jones and Ferneau 2002). However, these sites are not within the City of Seaside.

The material culture recovered from Early period sites within the Central Coast Region provides evidence for continued exploitation of inland plant and coastal marine resources. Artifacts include milling slabs and handstones, as well as mortars and pestles, which were used for processing a variety of plant resources. Bipointed bone gorge hooks were used for fishing. Assemblages also include a suite of *Olivella* beads, bone tools, and pendants made from talc schist. Square abalone shell (*Haliotis* spp.) beads have been found in Monterey Bay, but not yet in the Big Sur or San Luis Obispo areas (Jones and Waugh 1997:122).

Shell beads and obsidian are hallmarks of the trade and exchange networks of the central and southern California coasts. The archaeological record indicates that there was a substantial increase in the abundance of obsidian at Early period sites in the Monterey Bay and San Luis Obispo areas (Jones and Waugh 1997:124–126). Obsidian trade continued to increase during the following Middle period.

Middle Period (600 BCE to 1000 CE)

A pronounced trend toward greater adaptation to regional or local resources occurred during the Middle period. For example, the remains of fish, land mammals, and sea mammals are increasingly abundant and diverse in archaeological deposits along the coast. Chipped stone tools used for hunting were more abundant and diversified, and shell fishhooks became part of the toolkit during

this period. Large knives, a variety of flake scrapers, and drill-like implements are common during this period. Projectile points include large side-notched, stemmed, and lanceolate or leaf-shaped forms. Bone tools, including awls, are more numerous than in the preceding period, and the use of asphaltum adhesive became common.

Complex maritime technology also proliferated during this period. Notable introductions included circular shell fishhooks between 1000 and 500 BCE. (Jones and Klar 2005:466), and the appearance of compound bone fishhooks between 300 and 900 CE (Arnold 1995; Jones and Klar 2005:466; Kennett 1998:357; King 1990:87–88; Rick et al. 2002). The introduction of shell fishhooks and plank canoes in the southern portion of the region and tule reed or balsa rafts in the north, their subsequent modifications, and the increased use of other capture devices such as nets appear to have led to a substantial focus on fishing in most coastal areas. A seasonal round settlement pattern was still followed; however, large, permanently occupied settlements, particularly in coastal areas, appear to have been the norm by the end of the period (Kennett 1998).

Middle to Late Transition Period (1000 to 1250 CE)

The Middle-Late Transition period is marked by relative instability and change, with major changes in diet, settlement patterns, and interregional exchange. The Middle period shell midden sites found along the Central Coast were abandoned by the end of the Middle-Late Transition period, so most Transition period and Late period sites were first occupied during those periods (Jones and Ferneau 2002:213, 219).

During the Middle to Late Transition period, projectile points diagnostic of both the Middle and Late periods are found within the Central Coast Region (Jones and Ferneau 2002:217). These points include large, contracting-stemmed types typical of the Middle period, as well as Late period small, leaf-shaped points, which likely reflect the introduction of the bow and arrow.

Late Period (1250 CE to European Contact)

As noted above, Late period sites are marked by small, finely worked projectile points, as well as temporally diagnostic shell beads. The small projectile points are associated with bow and arrow technology. Although shell beads were typical of coastal sites, trade brought many of these maritime artifacts to inland locations, especially during the latter part of the Late period.

Unlike the large Middle period shell middens, Late period sites are more frequently single-component deposits. There are also more inland sites, with fewer and less visible sites along the Pacific shore during the Late period. The settlement pattern and dietary reconstructions indicate a lesser reliance on marine resources than observed for the Middle and Middle-Late Transition periods, as well as an increased preference for mammal food sources such as cottontail rabbits, which have been identified in faunal assemblages from sites dating to this period (Jones et al. 2007). An increase in sites with bedrock mortars during the Late period further suggests that nuts and seeds began to take on a more significant dietary role.

Ethnographic Background

The City of Seaside is located in a region historically occupied by the Ohlone (named Costanoan, for “coast,” by the Spanish) (Kroeber 1925). The term Costanoan is a modern linguistic designation for populations that spoke one of eight related languages in the Bay Area region. These languages are part of the hypothesized Penutian language family. Linguistic research has grouped the Ohlone languages into four branches: 1) Karkin (far northern, located in the Carquinez Strait area);

2) Chochenyo, Ramaytush, Tamyen, and Awaswas (the northern branch); 3) Chalon (far southern branch); and 4) Rumsen and Mutsun (the southern branch) (Mithun 2001:535).

The pre-contact Ohlone were semi-sedentary, with a settlement system characterized by base camps of tule reed houses and seasonal specialized camps (Skowronek 1998). Villages were divided into small polities, each of which was governed by a chief responsible for settling disputes, acting as a war leader (general) during times of conflict, and supervising economic and ceremonial activities (Skowronek 1998, Kroeber 1925:468). Social organization appeared flexible to ethnographers and any sort of social hierarchy was not apparent to mission priests (Skowronek 1998).

The Ohlone were organized into numerous tribelets. Each tribelet's territory contained a main village and smaller satellite villages. The villages were typically situated along a river or stream for easy access to water (Levy 1978:487). The tribelet's functioned as political units that were structured by similarities in language and ethnicity, each holding claim to a designated portion of territory. Milliken (1995:229) was able to conduct a detailed examination of mission records, marriage patterns, and dialect variation seen in personal names and delineated 43 separate political entities (tribelets) in the San Francisco Bay, Santa Cruz, and inland area, with another six or so tribelets in the south Monterey Bay and Carmel Valley region. In general, Ohlone territory extended between the Carquinez Strait and San Pablo Bay on the north, southward along the coast beyond Monterey Bay to Carmel Valley, and inland to the coast range (Levy 1978:485). Neighboring groups included the Coast Miwok to the north, the Miwok and Northern Valley Yokuts to the east, and the Salinan and Esselen to the south.

Ohlone subsistence was based on hunting, gathering, and fishing (Kroeber 1925:467, Skowronek 1998). Mussels were a particularly important food resource (Kroeber 1925:467). Sea mammals were also important; sea lions and seals were hunted and beached whales were exploited (Kroeber 1925:467). Like the rest of California, the acorn was an important staple and was prepared by leaching acorn meal both in openwork baskets and in holes dug into the sand (Kroeber 1925:467). The Ohlone also practiced controlled burning to facilitate plant growth (Kroeber 1925:467; Skowronek 1998).

Ohlone groups came into contact with European culture at the beginning of Spain's land exploration and settlement of Alta California in 1769. During the late 1700's and early 1800's, traditional lifeways were drastically altered when the Spanish placed their capital at Monterey, built forts at Monterey and San Francisco, and established seven Franciscan missions to convert native peoples to Christianity and the European way of life. During this time, large-scale epidemics swept through the mission population and remaining Ohlone villages (Milliken 1995). It is estimated that the combined Ohlone population decreased from a pre-contact total of 10,000 down to 2,000 by the end of the mission period in 1834 (Levy 1978:486). During the mission period, the dwindling Ohlone population also intermarried with other interior tribes at the missions, mixing their cultural identities.

During the late 1800s, several multi-ethnic Native American communities began to appear in Ohlone territory. The best known of these were located in Pleasanton, Monterey, and San Juan Bautista. However, even these groups continued to shrink as young people married into other groups and moved away. Estimates of the total remaining population of people with recognizable Ohlone descent were fewer than 300 in 1973 (Levy 1978:487).

Descendants of the Ohlone united in 1971 to form a corporate entity known as the Ohlone Indian Tribe. This entity was successful in obtaining title to the Ohlone Indian Cemetery where their ancestors who died at Mission San José are buried (Levy 1978:487). Since that time, other

descendants of Ohlone tribelets, notably the Rumsen and Mutsun groups, have organized political and cultural heritage organizations that are active locally and statewide. All are concerned with revitalizing aspects of their culture, learning the language through notes collected by anthropologist John Harrington, and preserving the natural resources that played a vital role in traditional culture.

In addition, some Ohlone groups (namely the Amah-Mutsun Band of Mission Indians, Costanoan Band of Carmel Mission Indians, Costanoan Rumsen Carmel Tribe, the Indian Canyon Mutsun Band of Costanoan, and the Muwekma Ohlone Tribe) are seeking federal recognition of their tribe, petitioning the Bureau of Indian Affairs with reconstructed tribal histories and genealogies.

Regional History

The Monterey County coast was first visited by Europeans in 1542 with the expedition of Juan Rodriguez Cabrillo and later in 1602 by Sebastian Vizcaino (Hoover et al. 2002:225; Gudde 1998: 246). The Spanish presidio and mission were established in Monterey in 1770, and served as the capital of the California missions until 1803 (California Department of Parks and Recreation nd). In 1791, Comandante General Pedro de Nava authorized the establishment of presidial pueblos (civilian lands around military forts) with detailed regulations for their organization (Crane 1991). The Pueblo of Monterey, whose lands included the future city of Seaside, grew in population as Spanish soldiers married and raised families, or retired to this location.

In 1822 California received word of Mexico's independence from Spain. At this time, the Pueblo of Monterey had a population of several hundred and the newly established Mexican government decreed the California ports open to increased trade with foreigners under the constitution of 1824 (Bean 1968; Crane 1991). Hallmarks of the Mexican Period in California are the secularization of mission lands, which was fully accomplished by 1836, and the issuance of large and numerous land grants to soldiers and prominent citizens. During the Mexican Period the present city of Seaside was within the Pueblo Lands of Monterey.

The Treaty of Guadalupe Hidalgo was signed in 1848, ending the Mexican-American War and officially making California a territory of the United States. U.S. jurisdiction over California had really begun two years earlier, when on July 7, 1846, Commodore John D. Sloat raised the U.S. flag after the "Battle of Monterey," after 50 U.S. Marines and 100 Navy sailors landed unopposed and captured the city without firing a shot (Crane 1991). The Gold Rush brought a multitude of new settlers to California in 1848 and the construction of the transcontinental railroad in 1869 contributed further to California's population boom.

Since that time, California has experienced tremendous growth to become one of the dominant economies in the world. Monterey County is a popular tourist destination, famous for its golf courses, resorts, the Monterey Bay Aquarium, and Cannery Row, which was made famous by John Steinbeck in his titular novel. Monterey County has remained largely agricultural and the Salinas Valley has been called the "Salad Bowl of the World."

City of Seaside

Dr. John L.D. Roberts planned the Seaside subdivision in 1888 following the purchase of 160-acres of land where Seaside and Sand City are currently located. The subdivision was marketed as a shoreline resort and tourist destination due to its close proximity to the Hotel Del Monte, now known as Hermann Hall, a resort that largely served as a catalyst for tourism for the Monterey peninsula. While the small subdivision was initially referred to as East Monterey, the subdivision

quickly grew to take the name Seaside and by 1891 had established a post office. The City of Seaside was officially incorporated in 1954.

In 1917, the United States Army acquired land, known initially as Camp Gigling, to use as training ground for artillery and cavalry training for troops stationed at Monterey Presidio. Permanent improvements to the facility did not begin until the 1930s with the construction of administrative buildings, barracks, mess halls, tent pads, and a sewage treatment plant (Rughe 2016). In 1938 the facility was expanded after the purchase of additional lands and a land donation for the development of the Main Garrison. The facility was officially designated as Camp Ord in 1939 and in 1940 the camp was designated as Fort Ord (Rughe 2016). Following the end of World War II the Fort was used as a basic training center until 1975 after which, the 7th Infantry (light) Division became the main occupants of the Fort.

The expansion of Fort Ord led to an increased demand for housing during the 1960s and 1970s spurring growth in Seaside. During this period State Route 1 was constructed as well as a high school, and a new city hall designed by Edward Durell Stone. Within the city, existing infrastructure that was considered to be substandard was demolished and new buildings were constructed to meet the needs of the growing city.

The U.S. government began the process of shutting down Fort Ord as an active-duty military base in 1991 and it was officially closed in 1994. Following the closure, the land was transferred to the City of Seaside. California State University Monterey Bay opened on former Fort lands and the Fort Ord National Monument was established. The land transfer also opened up new areas for community growth and development.

Cultural Resources

Archaeological and Historic Resources

According to the records maintained at the Northwest Information Center (NWIC) at Sonoma State University, a total of six potential cultural resources have been identified within the City of Seaside, including two prehistoric archaeological sites (P-27-000385, P-27-000777), one historic building (P-27-003433), and three historic engineering structures (P-27-002717, P-27-002923, P-27-003383). Resources P-27-000385 and P-27-000777 each consist of a prehistoric habitation site. Resource P-27-000385 is described as previously located somewhere on former Fort Ord, with no specific location given, and has been completely destroyed. Resource P-27-003433 consists of the Seaside First Baptist Church (1949 Waring St.). Resource P-27-002717 consists of a historic water tank. Resource P-27-003383 consists of an electric transmission tower. Resources P-27-003433 and P-27-003383 have not been evaluated for listing in the California Register of Historic Resources (CRHR) or National Register of Historic Places (NRHP). Resource P-27-0002717 was previously evaluated for the NRHP and given a status code of 6Y: Determined ineligible for NR[HP] by consensus through Section 106 process.

Resource P-27-002923 consists of the Monterey Branch of the Southern Pacific Railroad. According to the Office of Historic Preservation, the Southern Pacific Railroad, partially located within the City of Seaside, is listed on the CRHR. The Monterey Branch of the Southern Pacific Railroad (SPRR) was constructed in 1879 to replace the previous narrow-gauge Monterey-Salinas railroad that occupied the same corridor (Jones and Arrellano 2008). Starting in 1880, the Monterey Branch ran the Del Monte Express which serviced the Hotel Del Monte and City of Monterey until the spring of 1971 when passenger service to Monterey ceased. It branched from the Southern Pacific Coast Line main line that extended from Castroville to San Francisco. It extended generally south and west, and

served the US Army's Fort Ord, the canneries and packing houses of Monterey and Seaside, and a lumber yard in Pacific Grove (Hambleton et al.). The railroad generally follows the western border of the City of Seaside along Highway 1 and Del Monte Boulevard (Figure 4.4-1). The rail line is currently owned by the Transportation Agency for Monterey County (TAMC), although the tracks have deteriorated significantly with time, with some portions buried, or covered by Monterey Bay Coastal Trail, and other portions still visible. Only the visible, above-ground portions of the line have been recorded.

No resources listed on the National Register of Historic Places, California Historical Landmarks list, or the California Points of Historical Interest list are located within the City of Seaside (OHP 2017).

The following areas have been identified as archaeologically sensitive: the drainage area along the southern border of Seaside (leading to and including Laguna del Rey), the area of active sand dunes along the coast, and lands east of General Jim Moore Boulevard, within the former Fort Ord (Figure 4.4-2). These areas have been identified as containing land forms and/or natural resources that increase the general likelihood of aboriginal occupation. However, many existing developed sites within the City's boundaries have been subject to grading, excavation, and artificial fill, which reduce site-specific archaeological sensitivity, depending upon the specific parcel.

4.4.2 Regulatory Setting

Cultural resources, including built environment and archaeological resources, may be designated as historic by National, State or local authorities. In order for a resource to qualify for listing in the NRHP, the CRHR or as a locally significant resource, it must meet one or more identified criteria of significance. The resource must also retain sufficient historic integrity, defined in *National Register Bulletin 15* as the "ability of a property to convey its significance" (National Park Service [NPS] 1990). An explanation of these designations are included in the regulatory setting discussion that follows.

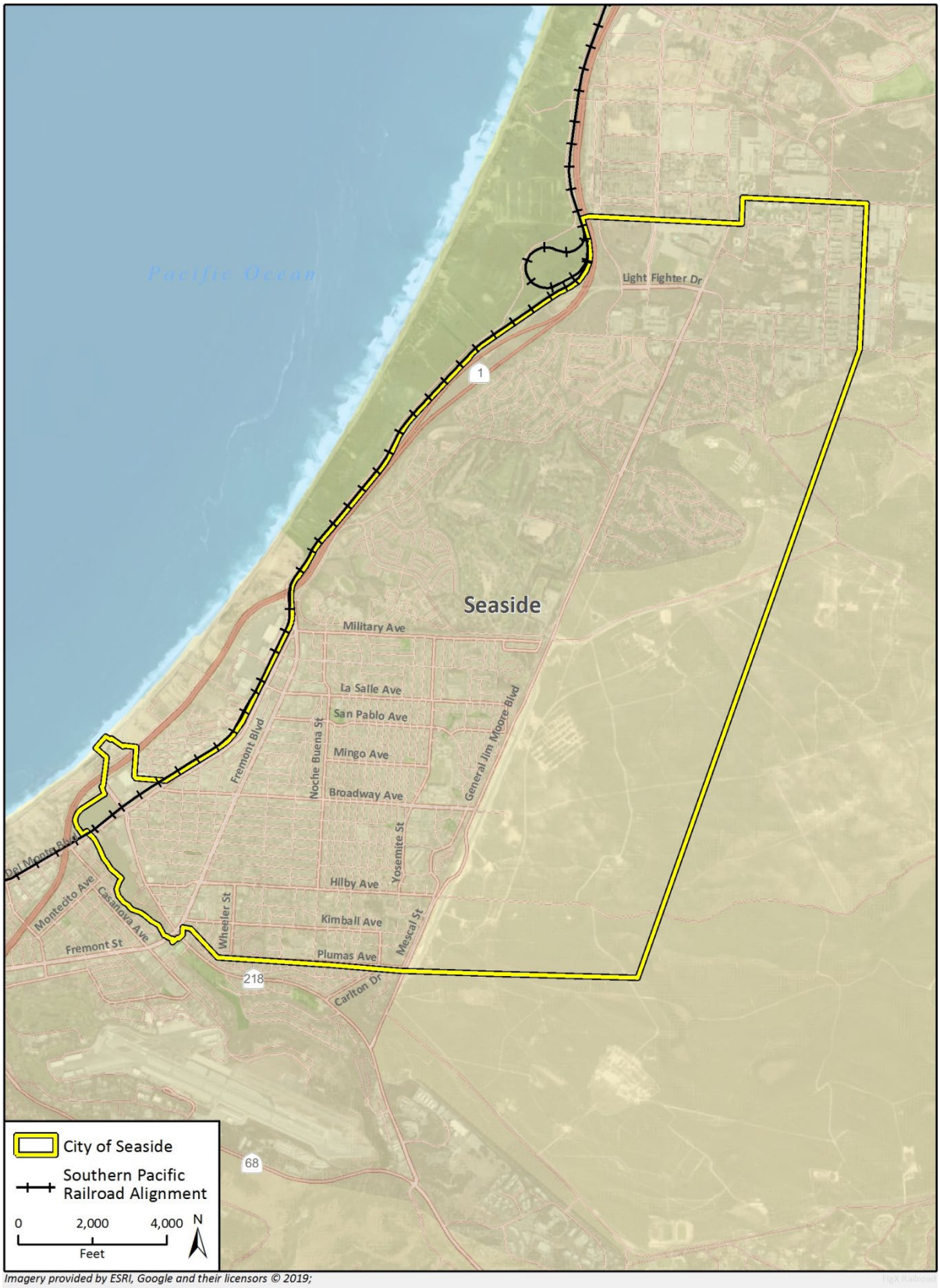
a. Federal

National Historic Preservation Act

The National Historic Preservation Act of 1966 (NHPA) deals with historic preservation. One of the most important provisions of the NHPA is the establishment of the NRHP, the official federal designation of historical resources. Districts, sites, buildings, structures and objects are eligible for listing in the NRHP. Nominations are determined eligible for listing if they are significant in American history, architecture, archeology, engineering and/or culture. The NRHP is administered by the National Park Service. To be eligible for the NRHP, a property must be significant under the criteria enumerated in the statute, which include, among other things, having an association with historical events or significant historical persons, embodying certain design characteristics, or being likely to yield important historical information (36 Code of Federal Regulations [CFR] § 60.4).

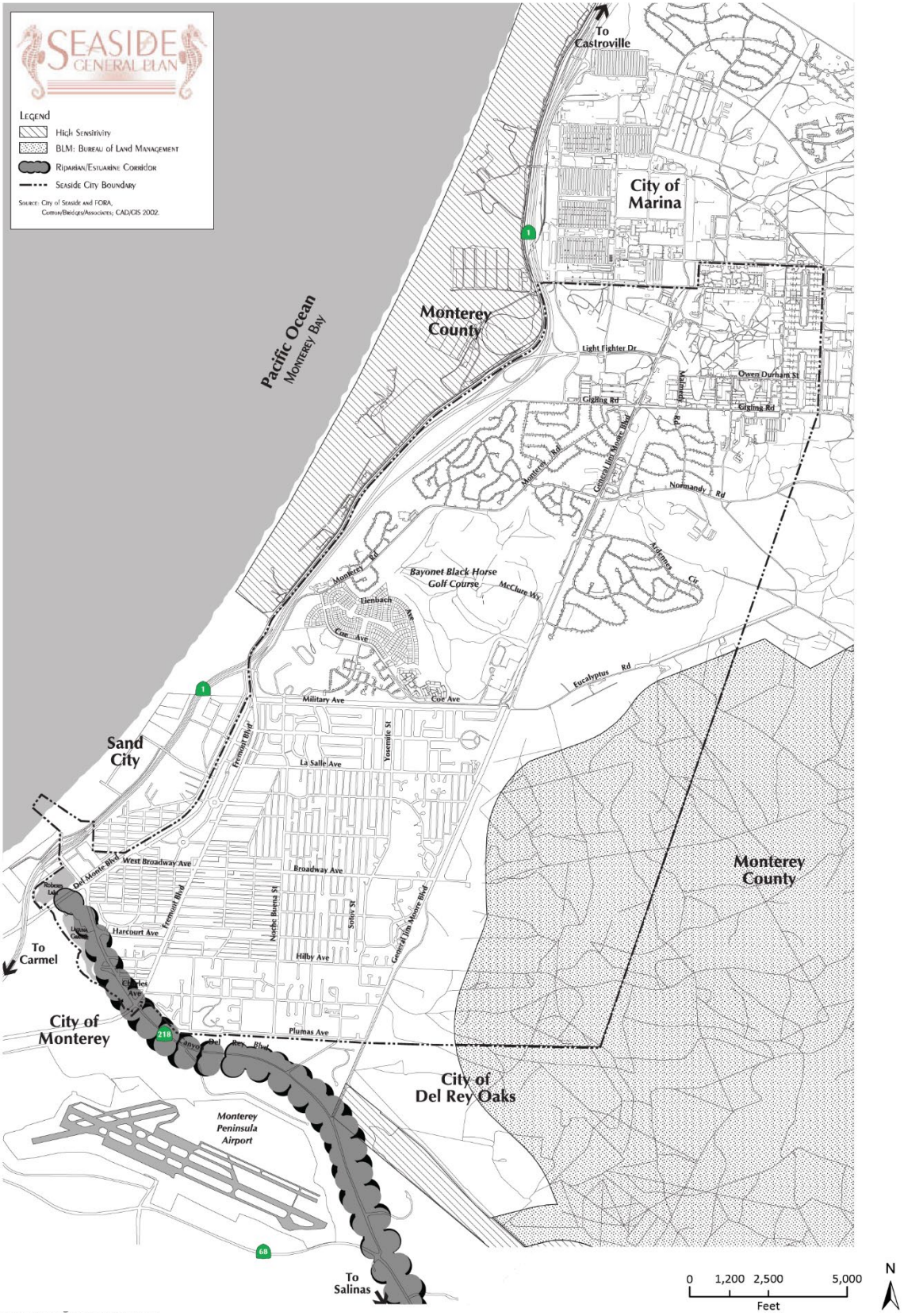
Listing in the NRHP does not entail specific protection or assistance for a property, but it does guarantee recognition in planning for federal or federally-assisted projects (46 United States Code [U.S.C.] § 470f [Section 106 of the NHPA]), eligibility for federal tax benefits and qualification for federal historic preservation assistance. The NRHP is influential beyond its statutory role because it achieves uniform standards of documentation and evaluation.

Figure 4.4-1 Southern Pacific Railroad Alignment near the City of Seaside



Imagery provided by ESRI, Google and their licensors © 2019;
Additional data provided by Monterey County, 2019.

Figure 4.4-2 Existing General Plan Archaeological Sensitivity Map



Source: Seaside 2004

b. State

California Environmental Quality Act

CEQA requires a lead agency to analyze whether historic, and archaeological resources may be adversely impacted by a proposed project. Under CEQA, a "project that may cause a substantial adverse change in the significance of a historic resource is a project that may have a significant effect on the environment" (California Public Resources Code [PRC] Section 21084.1). Answering this question is a two-part process: first, the determination must be made as to whether or not the proposed project involves cultural resources; second, if cultural resources classified as historical or archaeological resources are present, the proposed project must be analyzed for a potential "substantial adverse change in the significance" of the resource. Discretionary projects within the City's borders would be required to analyze site specific historic and archaeological resource impacts under CEQA and mitigate any impacts if feasible.

California Register of Historical Resources

The CRHR establishes a list of those properties that are to be protected from substantial adverse change (PRC Section 5024.1). A historical resource may be listed in the CRHR if it meets any of the following criteria:

1. It is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
2. It is associated with the lives of persons important in California's past.
3. It 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 value.
4. It has yielded or is likely to yield information important in prehistory or history.

The CRHR includes properties that are listed or have been formally determined to be eligible for listing in the NRHP, State Historical Landmarks and eligible Points of Historical Interest. Other resources require nomination for inclusion in the Register. These may include resources contributing to the significance of a local historic district, individual historical resources, historical resources identified in historic resource surveys conducted in accordance with State Historic Preservation Office (SHPO) procedures, historic resources or districts designated under a local ordinance consistent with State Historic Resources Commission procedures, and local landmarks or historic properties designated under local ordinance.

Two other programs are administered by the state: California Historical Landmarks and California "Points of Historical Interest." California Historical Landmarks are buildings, sites, features, or events that are of statewide significance and have anthropological, cultural, military, political, architectural, economic, scientific or technical, religious, experimental, or other historical value. California Points of Historical Interest are buildings, sites, features, or events that are of local (city or county) significance and have anthropological, cultural, military, political, architectural, economic, scientific or technical, religious, experimental, or other historical value.

Department of Parks and Recreation (Office of Historic Preservation)

The Office of Historic Preservation has drafted a series of forms (DPR 523 series) which are used for recording and evaluating resources and for nominating properties as California Historical Landmarks, California Points of Historical Interest, and to the California Register of Historical Resources. These forms are available online at: http://ohp.parks.ca.gov/?page_id=28351.

Codes Governing Human Remains

The disposition of human remains is governed by Health and Safety Code Section 7050.5 and PRC Sections 5097.5, 5097.94 and 5097.98. If human remains are discovered, the County Coroner must be notified within 48 hours and there should be no further disturbance to the site where the remains were found. If the remains are determined by the coroner to be Native American, the coroner is responsible for contacting the Native American Heritage Commission (NAHC) within 24 hours. The NAHC, pursuant to PRC Section 5097.98, will immediately notify those persons it believes to be most likely descended from the deceased Native Americans so they can inspect the burial site and make recommendations for treatment or disposal. Section 5097.5 of the Code states the following:

> A person shall not knowingly and willfully excavate upon, or remove, destroy, injure or deface any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological site, including fossilized footprints, inscriptions made by human agency, or any other archaeological, paleontological or historical feature, situated on public lands, except with the express permission of the public agency having jurisdiction over the lands...(c) A violation of this section is a misdemeanor…

As used in this section, “public lands” means lands owned by, or under the jurisdiction of, the State or any city, county, district, authority or public corporation, or any agency thereof. Consequently, the City of Seaside is required to comply with Public Resource Code Section 5097.5 for its activities on publicly-owned land.

Section 5097.993 sets requirements for the unlawful and malicious excavation, removes, destruction, injury, or defacing of a Native American historic, cultural, or sacred site, that is listed or may be eligible for listing in the CRHR.

d. Local

Seaside Municipal Code

Seaside’s Municipal Code (SMC) Chapter 17.68, Historic and Cultural Resource Preservation, is intended to protect sites and structures identified by the community as culturally and/or historically significant, that contribute to the City’s character and identity, and that should be preserved and/or restored.

The intent under this Chapter is to protect sites and structures identified by the community as culturally and/or historically significant, that contribute to the City’s character and identity, and that should be preserved and/or restored.

The SMC Chapter 2.16 defines the duties of their Art and History Commission. One of the Art and History Commission’s duties is to make recommendations to the City Council and advise the Council to designate, protect, preserve, enhance and perpetuate structures and areas of historical, architectural and engineering significance.

4.4.3 Impact Analysis

a. Methodology and Significance Thresholds

Impacts related to cultural resources from the proposed project would be significant if the project would:

1. Cause a substantial adverse change in the significance of an historical resource pursuant to Section 15064.5
2. Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5
3. Disturb any human remains, including those interred outside of dedicated cemeteries

The significance of a cultural resource and subsequently the significance of any impact is determined by among other things, consideration of whether or not that resource can increase our knowledge of the past. The determining factors are site content and degree of preservation. A finding of archaeological significance follows the criteria established in the *CEQA Guidelines*.

CEQA Guidelines Section 15064.5 (Determining the Significance of Impacts to Archaeological Resources) states:

> (a)(3) […] Generally, a resource shall be considered by the lead agency to be "historically significant" if the resource meets the criteria for listing on the CRHR (Pub. Res. Code, § 5024.1, Title 14 CCR, Section 4852)...
>
> (a)(4) The fact that a resource is not listed in, or determined to be eligible for listing in the CRHR, not included in a local register of historical resources (pursuant to section 5020.1(k) of the Public Resources Code), or identified in an historical resources survey (meeting the criteria in section 5024.1(g) of the Public Resources Code) does not preclude a lead agency from determining that the resource may be an historical resource as defined in Public Resources Code sections 5020.1(j) or 5024.1.
>
> (b) A project with an effect that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment.

A substantial adverse change in the significance of a historical resource means demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of the historical resource would be materially impaired. Generally, impacts to historical resources can be mitigated to below a level of significance by following the Secretary of the Interior's Guidelines for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings or the Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings [Guidelines § 15064.6(b)]. In some circumstances, documentation of an historical resource by way of historic narrative photographs or architectural drawings will not mitigate the impact of demolition below the level of significance [Guidelines § 15126.4(b)(2)].

Preservation in place is the preferred form of mitigation for archaeological resources as it retains the relationship between artifact and context, and may avoid conflicts with groups associated with the site [Guidelines § 15126.4 (b)(3)(A)].

b. Project Impacts and Mitigation Measures

Threshold 1:	Would the project cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines §15064.5?

Impact CR-1 DEVELOPMENT FACILITATED BY SEASIDE 2040 HAS THE POTENTIAL TO IMPACT HISTORICAL RESOURCES. IMPACTS WOULD BE SIGNIFICANT AND UNAVOIDABLE DESPITE THE IMPLEMENTATION OF MITIGATION MEASURE CR-1.

Future development activities that could be facilitated by adoption of Seaside 2040 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, the CRHR, or the local register of historical resources. 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 Seaside 2040, implementation of the plan would guide development in the General Plan Area though 2040. General areas proposed for future development under Seaside 2040 include locations of known resources. According to the NWIC results, the only designated historical resource within the City of Seaside is the Southern Pacific Railroad (P-27-002923). The Southern Pacific Railroad is listed on the CRHR and is generally located along the western border of the City. As discussed above, the Railroad generally follows the western border of the City, except in the southern portion of the City. While the railroad is currently owned and controlled by TAMC, portions of the right-of-way in the City have been used by neighboring property owners, and could be utilized by similar adjacent uses in the future, which may result in removal or damage to the existing tracks.

Resource P-27-002717, a water tank, has previously been determined ineligible for listing in the NRHP. The resource has not been evaluated for listing on the CRHR or local listing. Because the tank has not been formally evaluated for the CRHR or local listing, it conservatively is assumed to be a historical resource for the purposes of this analysis. The water tank (P-27-002717) is located in an area designated as Medium-Density Single-Family Residential in the existing General Plan and as Future Specific Plan in the proposed General Plan. Although the underlying land use of the tank site would change under the proposed General Plan, the tank is under the jurisdiction of the Marina Coast Water District, not the City of Seaside, and is therefore unlikely to be impacted by the implementation of Seaside 2040.

Other historic-age built-environment resources recorded in the City of Seaside include the Seaside First Baptist Church (P-27-003433) and a PG&E transmission tower (P-27-003383). Because these resources have not been formally evaluated for NRHP, CRHR, or local listing, they conservatively are assumed to be historical resources for the purposes of this analysis. The Seaside First Baptist Church (P-27-003433) is designated as neighborhood low density under the existing and proposed General Plan. The PG&E transmission tower (P-27-003383) is designated as Military under the existing and proposed General Plan. Because the land use of each resource will not change, they are unlikely to be impacted by Seaside 2040.

In addition to the structures identified above, as-yet unidentified historical resources may be present throughout the rest of the City of Seaside or may become historical resources with the passage of time. Development under the proposed General Plan could affect the Southern Pacific

Railroad or other known, or presently unknown historical resources through demolition, construction, and reconstruction activities associated with buildout. Impacts to historical resources would be significant. The General Plan, however, includes policies and implementation programs requiring that development proposals be assessed for impacts to cultural resources and appropriate measures to address potential impacts applied. In addition, future discretionary developments would be subject to the California Environmental Quality Act, which includes environmental review of specific development projects within the City's borders, and mitigation to the extent feasible.

Conservation Element Goals, Policies, and Implementation Programs

Goal C-7: A strong sense of cultural resources and historical places.

Intent: To help preserve, conserve, enhance, and educate the public about Seaside's cultural and historical assets. To achieve this, the City will promote educational resources and integrate cultural and historical resources as part of coordinating land use and community design decisions.

Policies: **Cultural and historic resources.** Establish a known list of cultural and historic resources in the city.

Historic preservation. Work with State and Federal agencies, such as the State Office of Historic Preservation, to administer federally and state mandated historic preservation programs that further the identified evaluation registration and protection of Seaside's irreplaceable resources. Support efforts to memorialize significant people, places, and events in the history of Seaside through public art and plaques. Consider the creation of a Historic Context Statement document.

Cultural Tourism. Promote historic places and cultural tourism as an economic development strategy and way to bolster of civic pride.

Wayfinding. Increase historical and cultural facility visibility through signage and wayfinding.

Historical resource development. Work with local organizations to continue to document and educate the public about the history of Seaside.

Implementation Programs

Programs:

- **C 6. Archaeological Sensitivity Map.** Develop a Cultural Resource Sensitivity Map based upon field and literature surveys identifying the locations of known cultural resources and areas of archaeological sensitivity within the City and its Sphere of Influence.
- **C 7. Historic Context Statement.** Prepare a historic context statement to form the basis of evaluating significance and integrity of historic resources.
- **C 8. Historic Resource Survey.** Use the Historic Context Statement to guide, establish, and maintain a historic resource survey for Seaside.

The goal, policies, and implementation programs listed above would aid in reducing potential impacts to historical resources. Additionally, Mitigation Measure CR-1 includes policies and programs that would require the addition of an implementation program to address potential impacts to historical resources and mitigate impacts to the extent feasible by requiring the

identification of historical resources and an assessment of impacts to those resources on a project-by-project basis within Seaside. Where impacts are identified, the proposed implementation programs will include measures to avoid or mitigate impacts to the greatest extent feasible through compliance with the Secretary of the Interior's Standards for the Treatment of Historic Properties (Standards) or Historic American Building Survey (HABS) documentation. Although HABS documentation would reduce impacts to the greatest extent feasible in cases where compliance with the Standards or avoidance is not possible, legal precedent has established that such a measure cannot mitigate impacts to a level of less than significant, because the loss of historical fabric cannot be readily compensated for by commemorative mitigation.[1] Therefore, construction-related impacts to historical resources stemming from Seaside 2040 would be significant and unavoidable with mitigation.

Mitigation Measures

The following mitigation measure is proposed to reduce potential impacts to historical resources to the extent feasible.

CR-1 Historical Resource Policies and Implementation Programs

The City shall add the following policy and requirement to the General Plan and Zoning Ordinance, as applicable, prior to adoption. The following Policy shall be added to the Conservation Element under Goal C-7:

> **Historic Resources**. If determined necessary based on preliminary review conducted by City staff, require a historic resource evaluation at the time of project application for projects that would include demolition, relocation, or substantial alteration of buildings, structures, objects, sites, landscape/site plans, or other features that are 45 years of age or older and which have the potential to qualify as historic resources.

The following requirement shall be added to the City's Zoning Ordinance:

> **Historic Resource Evaluations**. Historic Resource Evaluations (as required by Goal C-7 Historic Resources Policy of the General Plan) will meet the following standards:
>
> - **Preliminary Review.** If a project involves a built environment resource which is over the age of 45 years old, the Community, Housing, and Economic Development Director or their designee, supported by an architectural historian as needed, shall make a preliminary determination as to whether the building qualifies as a historic resource. "Historic resource" shall mean a property listed or found eligible for listing in the National Register of Historic Places or the California Register of Historical Resources. A property that is eligible for listing in the National Register of Historic Places or the California Register of Historical Resources must retain its historic integrity and meet one of the following eligibility criteria:
>   - Is associated with events that have made a significant contribution to the broad patterns of our history.
>   - Is associated with the lives of persons significant in our past.
>   - Embodies the distinctive characteristics of a type, period or method of construction, or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components may lack individual distinction.

[1] *League for Protection of Oakland's etc. Historic Resources v. City of Oakland* (1997) 52 Cal.App.4th 896

- Has yielded, or may be likely to yield, information important in history or prehistory.

If the Community, Housing, and Economic Development Director or their designee determines the built environment resource may have to potential to qualify as a historic resource, then a historic resources evaluation shall be required.

- **Qualified Historian**. The evaluation will be prepared by a qualified architectural historian or historian who meets the Secretary of the Interior's Professional Qualifications Standards (PQS) in architectural history or history.
- **Guidelines for Preparation**. The qualified architectural historian or historian will conduct an intensive-level evaluation in accordance with the guidelines and best practices promulgated by the State Office of Historic Preservation to identify any potential historical resources within the proposed project area. All properties 45 years of age or older will be evaluated within their historic context and documented in a technical report. All evaluated properties will be documented on Department of Parks and Recreation Series 523 Forms. The report will be submitted to the City for review.
- **Mitigation**. If historical resources are identified in the project site for the proposed development, efforts will be made to ensure that impacts are mitigated to the extent feasible.

  Application of mitigation will generally be overseen by a qualified architectural historian or historic architect meeting the PQS, unless unnecessary in the circumstances (e.g., preservation in place). In conjunction with any development application that may affect the historical resource, a report identifying and specifying the treatment of character-defining features and construction activities will be provided to the City for review.
- Mitigation measures may include, but are not limited to, compliance with the Secretary of the Interior's Standards for Treatment of Historic Properties and documentation of the historical resource in the form of a Historic American Building Survey (HABS)-Like report. The HABS report will comply with the Secretary of the Interior's Standards for Architectural and Engineering Documentation and will generally follow the HABS Level III requirements, including digital photographic recordation, detailed historic narrative report, and compilation of historic research. The documentation will be completed by a qualified architectural historian or historian who meets the PQS and submitted to the City prior to issuance of any permits for demolition or alteration of the historical resource.

Significance After Mitigation

Compliance with Seaside 2040 policies and Mitigation Measure CR-1 would reduce impacts to historical resources to the maximum extent feasible; however, demolition of historically significant built environment resources cannot be mitigated to below a level of significance and it cannot be guaranteed that no historical resource demolition will occur as a result of the implementation of Seaside 2040. No mitigation is available that would reduce impacts to a less than significant level. Therefore, impacts related to historical resources would remain significant and unavoidable.

Threshold 2:	Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines §15064.5?

Impact CR-2 DEVELOPMENT FACILITATED BY SEASIDE 2040 HAS THE POTENTIAL TO IMPACT HISTORICAL AND UNIQUE ARCHAEOLOGICAL RESOURCES. IMPACTS WOULD BE SIGNIFICANT AND UNAVOIDABLE DESPITE THE IMPLEMENTATION OF MITIGATION MEASURE CR-2.

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 Seaside 2040, particularly in areas that have not previously been developed with urban uses, in areas with known resources and/or identified as archaeologically sensitive, or when excavation depths exceed those previously attained, have the potential to damage or destroy known and unknown historic or prehistoric archaeological resources that may be present on or below the ground surface.

Resource P-27-000777 is located on land designated as Parks and Open Space in the existing General Plan and as Parks and Open Space and Employment in the proposed General Plan. The change to include Employment in this area likely reflects the presence of an existing hotel, rather than proposed new development; thus buildout of the General Plan is not likely to impact P-27-000777.

As discussed above, areas with General Plan boundaries are archaeologically sensitive, including the drainage area along the southern border of Seaside (leading to and including Laguna del Rey), the area of active sand dunes along the coast, and lands east of General Jim Moore Boulevard, within the former Fort Ord (Figure 4.4-2). These areas have been identified as containing land forms and/or natural resources that increase the general likelihood of aboriginal occupation. However, many existing developed sites within the City's boundaries have been subject to grading, excavation, and artificial fill, which reduce site-specific archaeological sensitivity, depending upon the specific parcel. Damage to or destruction of previously-unknown archaeological resources could occur as a result of development under the proposed General Plan. Given the potential to encounter archaeological resources during buildout of the General Plan impacts are considered significant.

As discussed under Threshold 1 above, Seaside 2040 includes a goal that is aimed at protecting cultural resources and historical sites by requiring consideration of cultural, archaeological, and historical resources in land use decisions (Goal C-7). The General Plan further requires the identification of cultural resources by requiring the development of a sensitivity map and the establishment of an archaeological and historic resources database (Implementation Program C 6 and C 8). Additionally, future discretionary developments would be subject to the California Environmental Quality Act, which includes environmental review of specific development projects within the City's borders, and mitigation to the extent feasible.

Mitigation Measure CR-2 requires the addition of an implementation program to address potential impacts to archaeological resources, including the known resources described above in the Setting and unknown resources that have not yet been recorded, on a project-by-project basis within Seaside, which would further reduce potential impacts to archaeological resources to the extent feasible. However, ground-disturbing construction associated with projects facilitated by Seaside 2040 may still materially alter the context of archaeological resources, which is necessary to convey significance. There is no feasible mitigation that would reduce impacts to less than significant levels.

Mitigation Measures

The following mitigation measure is proposed to reduce potential impacts to archaeological resources to the extent feasible.

CR-2 Archaeological Resource Policies and Implementation Programs

The City shall add the following policy and requirement to the General Plan and Zoning Ordinance, as applicable, prior to adoption. The following Policy shall be added to the Conservation Element under Goal C-7:

> **Archaeological Resources**. If determined necessary based on preliminary review conducted by City staff, require project applicants to complete a cultural resources assessment at the time of project application for all projects with the potential for encountering archaeological or tribal cultural resources, such as those that involve grading, trenching, or other ground disturbance in native soil.

The following requirement shall be added to the City's Zoning Ordinance:

> **Archaeological Resources**. The Community, Housing, and Economic Development Director will conduct a preliminary review to determine whether a project has the potential to encounter archaeological resources by considering and assessing the following:
>
> - Archaeological sensitivity of the project area based on the City's Archaeological Sensitivity Map (2004).
> - Proposed project description, including the nature and depth of ground disturbance.
> - Past ground disturbance that has occurred in the project area as identified through a review of information that may include but would not be limited to: City records, existing conditions of the project area, or historical aerial imagery.
> - Documentation of non-native fill, if applicable and available.
> - Previous archaeological resources studies in the area and records of known archaeological resources, if available.
>
> When there is potential to encounter archaeological resources, required cultural resource assessments shall meet the following standards:
>
> - Cultural resource assessments may 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 should include a records search conducted at the Northwest Information Center and a Sacred Lands File search conducted with the Native American Heritage Commission.
> - Cultural resources assessments must be completed by archaeologists meeting the Secretary of the Interior standards in archaeology.
> - Identified prehistoric, or historic archaeological, or tribal cultural remains will be avoided and preserved in place where feasible. Where preservation is not feasible, the significance of each resource will be evaluated for significance and eligibility for listing in the California Record of Historical Resources (CRHR) according to CRHR criteria. A Phase 2 evaluation will 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 will be processed and analyzed in the laboratory according to standard archaeological procedures. The age of the materials will be determined using radiocarbon dating and/or other appropriate procedures; lithic artifacts, faunal remains, and other cultural materials will be identified and analyzed according to current professional standards. The significance of the sites will be evaluated according to the criteria of the CRHR. The results of the investigations will 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 evaluation work, all artifacts, other cultural remains, records, photographs, tribal cultural resources, and other documentation will be curated an appropriate curation facility. If the resources meet the definitions of "historical resources" or "unique archaeological resources," the City will ensure that all feasible recommendations for mitigation of archaeological impacts are incorporated into the final design and permits issued for development. All fieldwork, analysis, report production, and curation will be fully funded by the applicant.
- If the resources meet the definitions of "historical resources" or "unique archaeological resources," the City will ensure that all feasible recommendations for mitigation of archaeological impacts are incorporated into the final design and permits issued for development. Necessary Phase 3 data recovery excavation, conducted to exhaust the data potential of significant archaeological sites, will be carried out by a qualified archaeologist meeting the Secretary of the Interior 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, or Phase 3 Data Recovery reports will be submitted to the City prior to issuance of construction permit. Recommendations contained therein will be implemented throughout all ground-disturbance activities.

Significance After Mitigation

Implementation of Mitigation Measure CR-2 and compliance with Seaside 2040 would reduce impacts to archaeological resources to the maximum extent feasible; however, it cannot be guaranteed that the policies and implementation programs included in Seaside 2040 will reduce impacts to archaeological resources to less than significant in all cases. Ground disturbance associated with projects facilitated by Seaside 2040 may still materially alter archaeological resources by impairing their depositional context and spatial relationships, which are necessary to convey significance. Therefore, impacts related to archaeological resources would remain significant and unavoidable.

Threshold 3:	Would the project disturb any human remains, including those interred outside of dedicated cemeteries?

Impact CR-3 GROUND-DISTURBING ACTIVITIES ASSOCIATED WITH DEVELOPMENT UNDER SEASIDE 2040 COULD RESULT IN DAMAGE TO OR DESTRUCTION OF HUMAN BURIALS. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

There are several cemeteries in the City of Seaside, including the Seaside Funeral Home at Mission Memorial Park and the California Central Coast Veterans Cemetery. Human burials outside of formal cemeteries often occur in prehistoric archeological contexts, and the potential exists for these resources to be present in areas where development has not yet occurred. Excavation during construction activities in the City would have the potential to encounter these resources, including Native American burials.

Human burials, in addition to being potential archaeological resources, are subject to specific regulatory requirements, including PRC Section 5097. The California Health and Safety Code (Sections 7050.5, 7051, and 7054) also has specific provisions for the protection of human burial remains. California Health and Safety Code Section 7050.5 requires that in the event of discovery or recognition of any human remains, there shall be no further excavation until the coroner has made recommendations concerning the treatment and disposition of the human remains to the person responsible. If the coroner determines that the remains are not subject to his or her authority and has reason to believe that they are those of a Native American, he or she shall contact the NAHC within 24 hours. Development under the General Plan would comply with provisions of state law regarding discovery of human remains, and impacts relating to the disturbance of human remains would be less than significant.

Existing statutes and regulations also address the illegality of interfering with human burial remains, and protects them from disturbance, vandalism, or destruction, and established procedures to be implemented if Native American skeletal remains are discovered. PRC Section 5097.98 also addresses the disposition of Native American burials, protects such remains, and established the NAHC to resolve any related disputes.

All development facilitated by Seaside 2040 would be required to adhere to existing regulations regarding the treatment of human remains. Thus, impacts would be less than significant.

Mitigation Measures

Impacts would be less than significant.

Significance After Mitigation

Impacts would be less than significant without mitigation.

4.5 Energy

This section analyzes the energy impacts resulting from implementation of the proposed 2040 General Plan ("Seaside 2040"). This analysis follows the guidance for evaluation of energy impacts contained in Appendix F and Appendix G of the State CEQA Guidelines.

4.5.1 Setting

Energy use relates directly to environmental quality, since it can adversely affect air quality and can generate greenhouse gas (GHG) emissions that contribute to climate change. Fossil fuels are burned to create electricity that powers residences and commercial/industrial buildings, heats and cools buildings, and powers vehicles. Transportation energy use is related to the fuel efficiency of cars, trucks, and public transportation; choice of different travel modes such as auto, carpool, and public transit; and miles traveled by these modes. Construction and routine operation and maintenance of transportation infrastructure also consume energy.

a. Energy Supply

Petroleum

California

California is one of the top producers of petroleum in the nation, with drilling operations occurring throughout the state. A network of crude oil pipelines connects production areas to oil refineries in the Los Angeles area, the San Francisco Bay area, and the Central Valley. California oil refineries also process Alaskan and foreign crude oil received in ports in Los Angeles, Long Beach, and the San Francisco Bay area. Crude oil production in California and Alaska is in decline, and California refineries have become increasingly dependent on foreign imports (California Energy Commission [CEC] 2018a). Led by Saudi Arabia and Ecuador, foreign suppliers produce over half of the crude oil refined in California (CEC 2018b). According to the United States Energy Information Administration (EIA), California's field production of crude oil totaled approximately 135 million barrels in 2021 (EIA 2021).

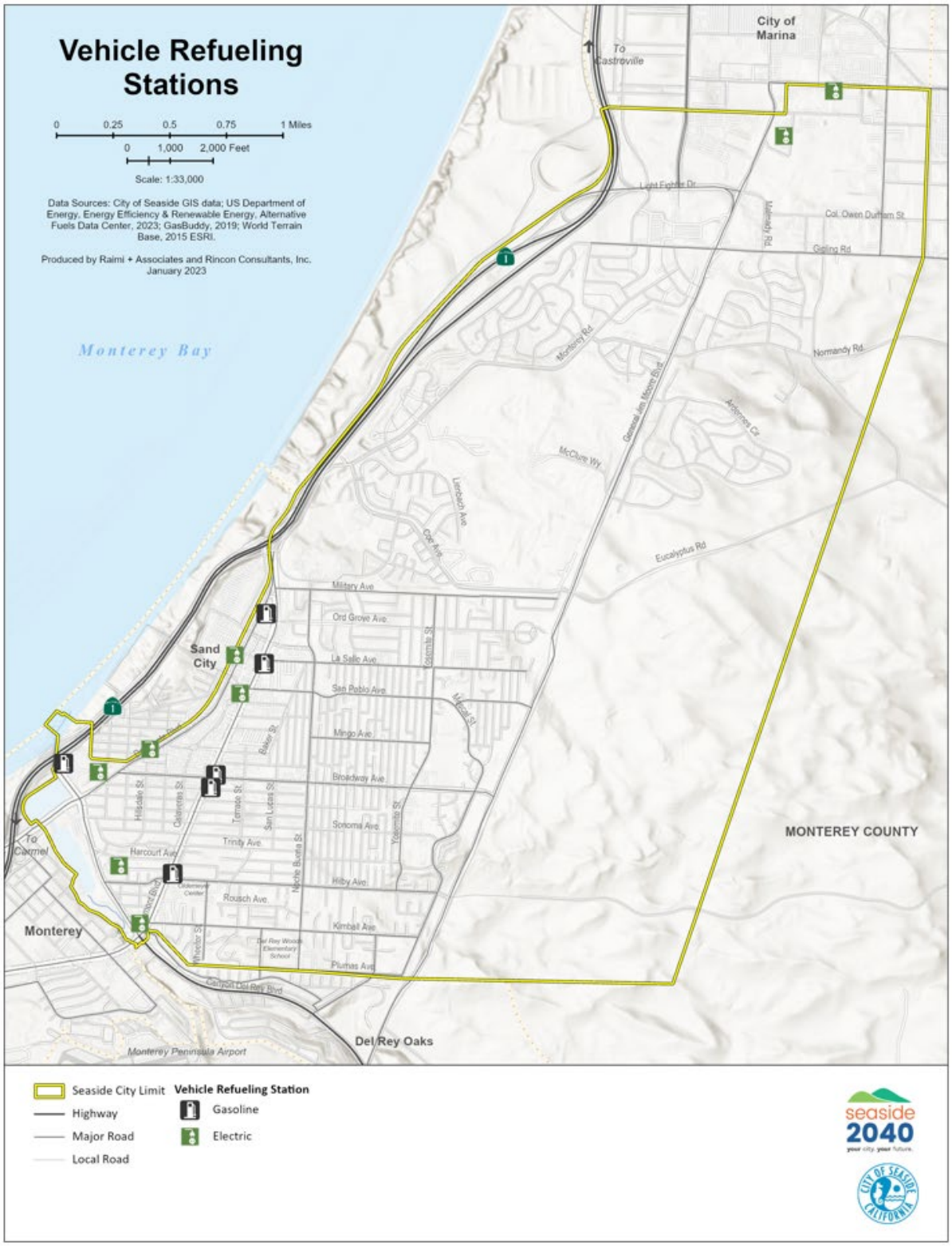
City of Seaside

Petroleum fuels are generally purchased by individual users such as residents and employees. As shown in Figure 4.5-1, while no petroleum refineries are located in the city (EIA 2018b), seven gasoline stations are present in the city. According to the California Department of Conservation (DOC), Geologic Energy Management Division (CalGEM), no orphaned or operating oil wells exist in the city; however, one plugged well is present in the city (Abel 2017).

ALTERNATIVE FUELS

A variety of alternative fuels are used to reduce petroleum-based fuel demand. The use of these fuels is encouraged through various statewide regulations and plans, such as the Low Carbon Fuel Standard and Senate Bill 32. Conventional gasoline and diesel may be replaced, depending on the capability of the vehicle, with transportation fuels including hydrogen, biodiesel, and electricity. Currently, there are 62 hydrogen refueling stations in California; however, none are in the city (CEC 2023). Currently, 10 biodiesel refueling stations are in California; none of which are in the city (DOE 2023a).

Figure 4.5-1 Vehicle Refueling Stations



ELECTRIC VEHICLES

Electricity can be used to power electric and plug-in hybrid electric vehicles directly from the power grid. Electricity used to power vehicles is generally provided by the electricity grid and stored in the vehicle's batteries. Fuel cells are being explored to use electricity generated onboard the vehicle to power electric motors. Currently, 10 electric vehicle charging stations are in the city (DOE 2023b).

Electricity

California

According to the California Energy Commission (CEC), California generated approximately 277,764 gigawatt-hours (GWh) of electricity in 2021. Approximately 37.9 percent of this electricity was sourced from natural gas, 33.6 percent from renewable sources, 9.3 percent from nuclear, 9.2 percent from large hydroelectric sources, and the remaining 10 percent was sourced from coal, oil, other and unspecified sources. Specifically, the 33.6 percent of California's 2021 retail electric sales that were served by renewable resources included sources from wind, solar, geothermal, biomass, and small hydroelectric (CEC 2022a).

Central Coast Community Energy

The Central Coast Community Energy (3CE) Implementation Plan outlines 3CE's plans to implement the voluntary community choice energy model for electric customers within the jurisdictional boundaries of its member agencies. The 3CE program enables customers within 3CE's service area to take advantage of the opportunities granted by Assembly Bill 17, the Community Choice Aggregation Law. 3CE's primary objectives in implementing this program are to reduce electric sector greenhouse gas emissions, stimulate renewable energy development, promote energy efficiency and demand reduction programs, and sustain competitive electric rates for participating residents and businesses over the long-term (3CE 2017a). The 3CE Implementation Plan forecasts electricity demand in its service area from 2018 through 2027, during which time Monterey, San Benito, and Santa Cruz Counties are anticipated to see an increase in annual electricity demand from 2,567 gigawatt-hours (GWh) to 3,827 GWh. During that same time, 3CE anticipates increasing the proportion of electricity generated from renewable sources from approximately 27.3 percent in 2018 to approximately 42.4 percent in 2027 (3CE 2017a).

City of Seaside

Until 2018, Seaside was served solely by Pacific Gas & Electric (PG&E) to meet power demands; however, in Spring 2018, PG&E customers in Monterey, San Benito, and Santa Cruz counties were automatically enrolled with the 3CE community choice energy model. The 3CE model enables communities to choose clean-sourced power at a cost equivalent to PG&E while retaining PG&E's role in maintaining power lines and providing customer service. Available PG&E programs, such as the California Alternative Rates for Energy Program and Family Electric Rate Assistance Program, will continue to be accessible to 3CE customers (3CE 2019).

While 3CE assumes responsibility for electric power procurement and the purchase of clean, carbon-free electricity for homes and businesses in the Monterey Bay area, PG&E retains responsibility for providing customer billing, receiving payments, performing power line maintenance, and resolving outages (3CE 2019). The power system that PG&E is responsible for maintaining is one of the nation's largest and includes 106,681 circuit miles of electric distribution lines and 18,466 circuit miles of interconnected transmission lines (PG&E 2023).

Natural Gas

California

Natural gas continues to play an important and varied role in California. The state's net natural gas production for 2021 was 140.6 billion cubic feet (EIA 2022).

City of Seaside

No orphaned or active natural gas wells are located within City limits and the City does not produce any natural gas; however, one plugged well is in Seaside (Abel 2017). As shown in Figure 4.5-2, one natural gas transmission pipeline is in Seaside (National Pipeline Mapping System [NPMS] 2023).

b. Energy Demand

Petroleum

California

According to the EIA, transportation accounted for nearly 34 percent of California's total energy demand, amounting to approximately 2,356 trillion Btu in 2020 (EIA 2020). The CEC produces the California Annual Retail Fuel Outlet Report, which is a compilation of gasoline and diesel fuel sales data from across the state available at the county level. According to the CEC, California's 2022 fuel sales totaled 13.8 billion gallons of gasoline and 4,966 million gallons of diesel (CEC 2022a).

Monterey County

The smallest scale at which gasoline and diesel fuel sales information is readily available is the county level. Therefore, fuel sales in Monterey County is used herein to characterize the City's existing gasoline and diesel fuel consumption. As shown in Table 4.5-1, Monterey County consumed an estimated 162 million gallons of gasoline and 27 million gallons of diesel fuel in 2021 (CEC 2021). As Monterey County had a 2021 population of 435,721, the County's annual per capita fuel consumption in 2021 consisted of 371.8 gallons of gasoline and 62.0 gallons of diesel fuel.

Table 4.5-1 2021 Annual Gasoline and Diesel Consumption

Fuel Type	Monterey County (million gallons)	California (million gallons)	Proportion of Statewide Consumption	County per Capita Consumption (gallons)[1]
Gasoline	162	13,818	1.2%	371.8
Diesel	27	1,756	1.5%	62.0
Total	**189**	**15,574**	**1.2%**	**396.3**

Notes: Diesel and gasoline volumes are expressed in gallons while Btu volumes are expressed in millions of Btu (MMBtu).

[1] Based on a Monterey County population of 435,721 and a California population of 39,303,157 as of January 2022 (DOF 2022).

Source: CEC 2021

Figure 4.5-2 Gas Transmission Pipelines

California

According to the CEC, California consumed approximately 280,738 gigawatt hours (GWh) in 2021, or approximately 9,579 billion Btu (CEC 2022b). According to the CEC's Energy Consumption Database, residential electricity demand accounted for approximately 21.8 percent of California's electricity consumption in 2021 while non-residential demand account for approximately 78.2 percent (CEC 2022b).

Monterey County

The smallest scale at which electricity consumption information is readily available is the county level. Therefore, electricity consumption in Monterey County is used herein to characterize the City's existing electricity consumption. According to the CEC, Monterey County consumed approximately 2,530 GWh in 2021, or approximately 8,632 billion Btu (CEC 2022b). Table 4.5-2 illustrates the County's 2021 electricity consumption in comparison to statewide consumption and displays the County's equivalent per capita energy consumption from its electricity demand. With a population of 435,721 in 2021, Monterey County's 2021 per capita electricity consumption was approximately 5,800 kWh, or 19.8 million Btu.

Table 4.5-2 2021 Annual Electricity Consumption

Energy Type	Monterey County (GWh)	California (GWh)	Proportion of Statewide Consumption	County per Capita Consumption (kWh)[1]	County per Capita Consumption (MMBtu)
Electricity (GWh)	2,530	280,738	0.9%	5,800	19.8

Notes: Electricity consumption volumes for Monterey County and California are expressed in megawatt-hours (MWh) while County per capita consumption is expressed in kilowatt-hours (kWh) and millions of Btu (MMBtu).

[1] Based on a Monterey County population of 435,721 and a California population of 39,303,157 as of January 2022 (DOF 2022).

Source: CEC 2022b

Natural Gas

California

In 2021, California consumed a total of 11,922 million therms of natural gas (CEC 2022c). According to the CEC's Energy Consumption Database, residential natural gas demand accounted for approximately 38.5 percent of California's total natural gas demand while non-residential natural gas demand accounted for approximately 61.5 percent (CEC 2022c).

Monterey County

The smallest scale at which natural gas consumption information is available is the county level; therefore, natural gas consumption in Monterey County is used herein to characterize the City's existing natural gas consumption. According to the CEC, Monterey County consumed approximately 115 million U.S. Therms of natural gas in 2021, or approximately 11,500 billion Btu (CEC 2022d). Table 4.5-3 illustrates the County's2021 natural gas consumption in comparison to statewide consumption and displays the County's equivalent per capita energy consumption from its natural gas demand. With a population of 435,721 in 2021, Monterey County's 2021 per capita natural gas consumption was approximately 264 therms, or approximately 26.4 million Btu.

Table 4.5-3 2021 Annual Natural Gas Consumption

Energy Type	Monterey County (U.S. therms)	California (U.S. therms)	Proportion of Statewide Consumption	County per Capita Consumption (U.S. therms)	County per Capita Consumption (MMBtu)
Natural Gas	114,954,974	11,922,710,000	0.96%	264	26.4

Notes: Natural gas consumption volumes for Monterey County and California are expressed in U.S Therms while County per capita consumption is expressed in therms and millions of Btu (MMBtu).

Source: CEC 2022c, 2022d

4.5.2 Regulatory Setting

Federal

Energy Independence and Security Act of 2007

The Energy Independence and Security Act, enacted by Congress in 2007, is designed to improve vehicle fuel economy and help reduce the United States dependence on foreign oil. It expands the production of renewable fuels, reducing dependence on oil, and confronting climate change. Specifically, it does the following:

- Increases the supply of alternative fuel sources by setting a mandatory Renewable Fuel Standard, requiring fuel producers to use at least 36 billion gallons of biofuel in 2022, which represents a nearly five-fold increase over current levels; and
- Reduces United States demand for oil by setting a national fuel economy standard of 35 miles per gallon (mpg) by 2020 – an increase in fuel economy standards of 40 percent.

Energy Policy and Conservation Act

Enacted in 1975, the Energy Policy and Conservation Act established fuel economy standards for new light-duty vehicles sold in the United States. The law placed responsibility on the National Highway Traffic and Safety Administration (NHTSA), a part of the United States Department of Transportation (USDOT), for establishing and regularly updating vehicle standards. The United States Environmental Protection Agency (USEPA) administers the Corporate Average Fuel Economy (CAFE) program, which determines vehicle manufacturers' compliance with existing fuel economy standards. In 2012, the USEPA and NHTSA established final passenger car and light truck CAFE standards for model years 2017-2021, which will require in model year 2021, on average, a combined fleet-wide fuel economy of 40.3-41.0 mpg (USDOT 2014).

Energy Star Program

In 1992, the USEPA introduced Energy Star© as a voluntary labeling program designed to identify and promote energy-efficient products to reduce GHG emissions. The program applies to major household appliances, lighting, computers, and building components such as windows, doors, roofs, and heating and cooling systems. Under this program, appliances that meet specification for maximum energy use established under the program are certified to display the Energy Star© label. In 1996, the USEPA joined with the Energy Department to expand the program, which now also includes qualifying commercial and industrial buildings, as well as homes.

State

California Energy Plan

The CEC is responsible for preparing the California Energy Plan, which identifies emerging trends related to energy supply, demand, conservation, public health and safety, and the maintenance of a healthy economy. The 2008 California Energy Plan calls for the state to assist in the transformation of the transportation system to improve air quality, reduce congestion, and increase the efficient use of fuel supplies with the least environmental and energy costs. To further this policy, the plan identifies several strategies, including assistance to public agencies and fleet operators in implementing incentive programs for zero-emission vehicles and addressing their infrastructure needs, as well as encouragement of urban designs that reduce vehicle miles travelled (VMT) and accommodate pedestrian and bicycle access.

Assembly Bill 2076: Reducing Dependence on Petroleum

Pursuant to Assembly Bill (AB) 2076 (Chapter 936, Statutes of 2000), the CEC and the California Air Resources Board (CARB) prepared and adopted a joint-agency report, *Reducing California's Petroleum Dependence,* in 2003. Included in this report are recommendations to increase the use of alternative fuels to 20 percent of on-road transportation fuel use by 2020 and 30 percent by 2030, significantly increase the efficiency of motor vehicles, and reduce per capita VMT. One of the performance-based goals of AB 2076 is to reduce petroleum demand to 15 percent below 2003 demand. Furthermore, in response to the CEC's 2003 and 2005 *Integrated Energy Policy Reports*, the Governor directed the CEC to take the lead in developing a long-term plan to increase alternative fuel use.

Integrated Energy Policy Report

Senate Bill 1389 (Chapter 568, Statutes of 2002) required the CEC to conduct assessments and forecasts of all aspects of energy industry supply, production, transportation, delivery and distribution, demand, and prices. The CEC uses these assessments and forecasts to develop energy policies that conserve resources, protect the environment, ensure energy reliability, enhance the state's economy, and protect public health and safety. The most recent assessment, the *2022 Integrated Energy Policy Report*, contains two volumes. Volume I highlights the implementation of California's innovative policies and the role they have played in establishing a clean energy economy. Volume II provides more detail on several key energy issues and will encompass new analyses, as well as significant opportunities for public participation (CEC 2022).

Senate Bill 375

Adopted on September 30, 2008, SB 375 establishes mechanisms to develop regional targets for reducing GHG emissions from passenger vehicles. On September 23, 2010, CARB adopted the vehicular GHG emissions reduction targets that were developed in consultation with metropolitan planning organizations (MPO) across the state. SB 375 recognizes the importance of achieving significant GHG reductions by working with cities and counties to change land use patterns and improve transportation alternatives. Through the SB 375 process, MPOs, such as the Association of Monterey Bay Area Governments (AMBAG), work with local jurisdictions in the development of sustainable communities strategies (SCS) designed to integrate development patterns and the transportation network in a way that reduces GHG emissions while meeting housing needs and other regional planning objectives. AMBAG's reduction target for per capita GHG emissions is a

three percent per capita reduction by 2020 and a six percent per capita reduction by 2040 (CARB 2018).

In June 2022, the AMBAG adopted the 2045 Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS). The primary goal of the 2045 MTP/SCS is to reduce GHG emissions from transportation sources to comply with SB 375, improve public health, and meet the National Ambient Air Quality Standards (NAAQS) as set forth by the federal Clean Air Act. The key goal of the MTP/SCS is to achieve GHG emission reduction targets through integrated land-use and transportation strategies. The focus of achieving these reductions is on implementing transportation and land-use strategies that influence vehicle travel and subsequent fuel consumption (AMBAG 2022).

Senate Bill 1078: California Renewables Portfolio Standard Program

Senate Bill 1078 (Chapter 516, Statutes of 2002), expanded under SB 2, established the RPS for electricity supply. The RPS requires that retail sellers of electricity, including investor-owned utilities and community choice aggregators, provide 20 percent of their supply from renewable sources by 2017. Senate Bill 2 expanded this law and required procurement from eligible renewable energy resources to 33 percent by 2020. In addition, electricity providers subject to the RPS must increase their renewable share by at least one percent each year.

Senate Bill X1-2: California Renewable Energy Portfolio Standard

In 2011, the Governor signed SB X1-2, which requires retail sellers of electricity, including investor-owned utilities and community choice aggregators, to provide at least 33 percent of their electricity supply from renewable sources by 2020. The CPUC and CEC jointly implement the statewide RPS program through rulemakings and monitoring the activities of electric energy utilities in the state.

Senate Bill 350: Clean Energy and Pollution Reduction Act of 2015

The Clean Energy and Pollution Reduction Act of 2015 (SB 350) requires the amount of electricity generated and sold to retail customers per year from eligible renewable energy resources to be increased to 50 percent by December 31, 2030. This act also requires doubling of the energy efficiency savings in electricity and natural gas for retail customers through energy efficiency and conservation by December 31, 2030.

Senate Bill 100: California Renewable Energy Portfolio Standard Program: Emissions of Greenhouse Gases

Adopted on September 10, 2018, SB 100 supports the reduction of GHG emissions from the electricity sector by accelerating the State's Renewables Portfolio Standard Program, which was last updated by SB 350 in 2015. SB 100 requires 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. 3CE's default electricity service includes energy sourced from 31 percent eligible renewables; 3CE plans to increase the proportion of renewable energy provided in its default service to 60 percent by 2025 and 100 percent by 2030. 3CE currently offers electricity service sourced from 100 percent clean energy for an additional cost (3CE 2022). PG&E's default power mix offers 29 percent renewable, and they offer customers options for 64 percent or 100 percent renewable power mixes.

Assembly Bill 1493: Reduction of Greenhouse Gas Emissions

Assembly Bill 1493 (Chapter 200, Statutes of 2002), known as the Pavley bill, amended Health and Safety Code sections 42823 and 43018.5 requiring CARB to develop and adopt regulations that achieve maximum feasible and cost-effective reduction of GHG emissions from passenger vehicles, light-duty trucks, and other vehicles used for noncommercial personal transportation in California.

Implementation of new regulations prescribed by AB 1493 required that the state apply for a waiver under the federal Clean Air Act. Although the USEPA initially denied the waiver in 2008, the USEPA approved a waiver in June 2009, and in September 2009, CARB approved amendments to its initially adopted regulations to apply the Pavley standards that reduce GHG emissions to new passenger vehicles in model years 2009 through 2016. According to CARB, implementation of the Pavley regulations is expected to reduce fuel consumption while also reducing GHG emissions.

Energy Action Plan

In the October 2005, the CEC and CPUC updated their energy policy vision by adding some important dimensions to the policy areas included in the original Energy Action Plan (EAP), such as the emerging importance of climate change, transportation-related energy issues. and research and development activities. The CEC adopted an update to the EAP II in February 2008 that supplements the earlier EAPs and examines the State's ongoing actions in the context of global climate change.

Assembly Bill 1007: State Alternative Fuels Plan

Assembly Bill 1007 (Chapter 371, Statutes of 2005) required the CEC to prepare a plan to increase the use of alternative fuels in California. The CEC prepared the State Alternative Fuels Plan in partnership with CARB and in consultation with other federal, state, and local agencies. The State Alternative Fuels Plan presents strategies and actions California must take to increase the use of alternative non-petroleum fuels in a manner that minimizes costs to California and maximizes the economic benefits of in-state production. The State Alternative Fuels Plan assessed various alternative fuels and developed fuel portfolios to meet California's goals to reduce petroleum consumption, increase alternative fuels use, reduce GHG emissions, and increase in-state production of biofuels without causing a significant degradation of public health and environmental quality.

Bioenergy Action Plan, Executive Order S-06-06

Executive Order (EO) S-06-06, April 25, 2006, establishes targets for the use and production of biofuels and biopower, and directs state agencies to work together to advance biomass programs in California while providing environmental protection and mitigation. The EO establishes the following target to increase the production and use of bioenergy, including ethanol and biodiesel fuels made from renewable resources: produce a minimum of 20 percent of its biofuels in California by 2010, 40 percent by 2020, and 75 percent by 2050. Executive Order S-06-06 also calls for the state to meet a target for use of biomass electricity. The 2011 Bioenergy Action Plan identifies those barriers and recommends actions to address them so that the state can meet its clean energy, waste reduction, and climate protection goals. The 2012 Bioenergy Action Plan updates the 2011 Plan and provides a more detailed action plan to achieve the following goals:

- Increase environmentally and economically sustainable energy production from organic waste
- Encourage development of diverse bioenergy technologies that increase local electricity generation, combined heat and power facilities, renewable natural gas, and renewable liquid fuels for transportation and fuel cell applications;
- Create jobs and stimulate economic development, especially in rural regions of the state; and
- Reduce fire danger, improve air and water quality, and reduce waste.

Title 24, California Code of Regulations

California Code of Regulations, Title 24, Part 6, is California's Energy Efficiency Standards for Residential and Non-residential Buildings. The CEC established Title 24 in 1978 in response to a legislative mandate to create uniform building codes to reduce California's energy consumption and provide energy efficiency standards for residential and nonresidential buildings. The standards are updated on an approximately three-year cycle to allow consideration and possible incorporation of new efficient technologies and methods. In August 2021, the CEC updated Title 24 standards with more stringent requirements effective January 1, 2023, referred to herein as the 2022 standards. All buildings for which an application for a building permit is submitted on or after January 1, 2023, must follow the 2022 standards. Energy efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases GHG emissions. The building efficiency standards are enforced through the local plan check and building permit process. Local government agencies may adopt and enforce additional energy standards for new buildings as reasonably necessary due to local climatologic, geologic, or topographic conditions, provided these standards exceed those provided in Title 24.

California Green Building Standards Code (2016), California Code of Regulations Title 24, Part 11

California's Green Building Code, referred to as CALGreen, was developed to provide a consistent approach to green building in the State. Having taken effect in January 2020, the most recent version of CALGreen lays out the minimum requirements for newly constructed residential and nonresidential buildings to reduce GHG emissions through improved energy efficiency and process improvements. It also includes voluntary tiers to further encourage building practices that improve public health, safety, and general welfare by promoting a more sustainable design.

Senate Bill 1020

Senate Bill 1020 (SB 1020), signed into law on September 16, 2022, requires renewable energy and zero-carbon resources to supply 90 percent of all retail electricity sales by 2035, 95 percent by 2040, and 100 percent by 2045. All State agencies facilities must be served by 100 percent renewable and zero-carbon resources by 2030. SB 1020 also requires the Public Utilities Commission, Energy Commission, and CARB to issue a joint progress report outlining the reliability of the electrical grid with a focus on summer reliability and challenges and gaps. Additionally, SB 1020 requires the Public Utilities Commission to define energy affordability and use energy affordability metrics to develop protections, incentives, discounts, or new programs for residential customers facing hardships due to energy or gas bills.

Local

2004 Seaside General Plan

The current City of Seaside General Plan was adopted by City Council Resolution 04-59 on August 5, 2004. Energy resources are addressed in the Conservation/Open Space Element. The goals, policies, and implementation plans include encouraging energy conservation through enforcing Title 24 of the California Building Code, implementing energy conservation measures in public buildings, and supporting building designs that incorporate sustainability principles and green building materials.

Seaside Municipal Code

Seaside's Municipal Code (SMC) Chapter 15.04, California Building Codes Adopted, mandates the implementation of the California Energy Code, which has specific requirements for building design to reduce energy consumption. Some of the measures in the California Energy Code include the use of certain building materials to ensure a greater degree of energy efficiency during building operation and construction and energy efficiency standards for appliances, lighting amenities, and water fixtures, among other project components.

In addition, Seaside Municipal Code Sections 13.18.010 et seq. require the installation of low water-use plumbing fixtures and low water-use landscape material as part of new construction, the installation of low water-use plumbing fixtures in existing hotels and motels, and the retrofitting of plumbing fixtures in all existing residential buildings at the time of change of ownership or physical expansion, or, in the case of commercial property, at the time of change of ownership or change or expansion of use. For all new construction where landscape approval is required, low water-use or native plant material and low precipitation sprinkler heads, bubblers, and/or drip irrigation systems and timing devices shall be included as part of the exterior landscape development. Before any permit may be issued for such new construction, the applicant shall submit a landscape plan for review and approval by the board of architectural review in conformity with this chapter and landscaping guidelines.

4.5.3 Impact Analysis

a. Significance Thresholds

Based on Appendix G of the *CEQA Guidelines,* impacts related to energy would be significant if the Seaside 2040 would:

- Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation
- Conflict with or obstruct a State or local plan for renewable energy or energy efficiency

b. Methodology

Energy consumption is analyzed herein in terms of construction and operational energy. Construction energy demand accounts for anticipated energy consumption during construction of development facilitated by the proposed plan, such as fuel consumed by construction equipment and construction workers' vehicles traveling to and from the construction site. Operational energy demand accounts for the anticipated energy consumption during operation of the development facilitated by the proposed plan, such as fuel consumed by cars, trucks, and public transit; natural gas consumed for on-site power generation and heating building spaces; and electricity consumed

for building power needs, including, but not limited to lighting, water conveyance, and air conditioning. This analysis considers the equipment and processes employed during construction and operation of development facilitated under Seaside 2040 to qualitatively determine whether energy consumed during construction and operation would be wasteful, inefficient, or unnecessary. In addition, the proposed plan is qualitatively compared to applicable plans adopted for the purpose of reducing non-renewable and overall energy consumption.

c. Project Impacts and Mitigation Measures

Threshold 1:	Would the General Plan result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

Impact E-1 THE DEVELOPMENT AND POPULATION GROWTH FACILITATED BY SEASIDE 2040 WOULD RESULT IN AN INCREASE OF OVERALL CONSUMPTION OF ENERGY COMPARED TO EXISTING CONDITIONS. HOWEVER, SEASIDE 2040 GOALS AND POLICIES WOULD ENSURE THAT DEVELOPMENT WOULD NOT RESULT IN WASTEFUL, INEFFICIENT, OR UNNECESSARY CONSUMPTION. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

Development facilitated by Seaside 2040 would involve the use of energy during construction and operation. Energy use during construction would be primarily in the form of fuel consumption to operate heavy equipment, light-duty vehicles, machinery, and generators for lighting. Temporary grid power may also be provided to construction trailers or electric construction equipment. Long-term operation of development projects would require permanent grid connections for electricity and natural gas service to power interior and exterior building lighting and heating and cooling systems. In addition, the increase in vehicle trips and VMT associated with potential development would increase fuel consumption.

Construction and maintenance of future land use development envisioned under Seaside 2040 would result in short-term consumption of energy resulting from the use of construction equipment and processes. CALGreen includes specific requirements related to recycling, construction materials, and energy efficiency standards that would apply to construction of future development envisioned by Seaside 2040 and would minimize wasteful, inefficient, and unnecessary energy consumption. Construction and operation of projects facilitated by Seaside 2040 would be required to comply with relevant provisions of CALGreen and Title 24 of the California Energy Code, as well as the City's Water Efficiency Landscaping and Construction and Demolition Debris Recycling Ordinances, which would further avoid wasteful, inefficient, and unnecessary energy consumption.

Daily operation of the regional transportation system uses energy in the form of fuel consumed by passenger vehicles, transit vehicles, and shipping vehicles. Fuel consumption is closely associated with VMT. Essentially, the more miles a vehicle travels, the more fuel that is required and consumed by that vehicle. As described in Section 4.14, *Transportation*, VMT per capita in 2040 in the region (Monterey, San Benito, and Santa Cruz counties) would increase above existing VMT per capita regardless of the potential adoption and implementation of Seaside 2040. However, fuel consumption resulting from Seaside 2040 would be consistent with regional trends and would not be wasteful or inefficient. Seaside 2040 places emphasis on transit, bicycling and pedestrian transportation, which would help to reduce fuel consumption in the city. Environmental impacts associated with fuel consumption are generally related to air quality and GHG emissions. Potential air quality impacts resulting from Seaside 2040 are discussed in Section 4.2, *Air Quality*, and

potential impacts resulting from GHG emissions are discussed in Section 4.7, *Greenhouse Gas Emissions*. Operation of the development facilitated by Seaside 2040 would consume natural gas and electricity for building heating and power, lighting, and water conveyance, among other operational requirements. Increasingly efficient building fixtures and automobile engines, as well as implementation of policies included in the City's 2040 General Plan, would offset some of the overall energy demand facilitated by buildout under the proposed 2040 General Plan. Moreover, the development projects facilitated by Seaside 2040 would be subject to the energy conservation requirements of the California Energy Code (Title 24, Part 6, of the California Code of Regulations, *California's Energy Efficiency Standards for Residential and Nonresidential Buildings)* and the California Green Building Standards Code (Title 24, Part 11 of the California Code of Regulations). The California Energy Code provides energy conservation standards for all new and renovated commercial and residential buildings constructed in California.

The Energy Code applies to the building envelope, space-conditioning systems, and water-heating and lighting systems of buildings and appliances. The Energy Code also provides guidance on construction techniques to maximize energy conservation. Minimum efficiency standards are given for a variety of building elements, including: appliances; water and space heating and cooling equipment; and insulation for doors, pipes, walls and ceilings. The Energy Code emphasizes saving energy at peak periods and seasons and improving the quality of installation of energy efficiency measures. In addition, the California Green Building Standards Code sets targets for: energy efficiency; water consumption; dual plumbing systems for potable and recyclable water; diversion of construction waste from landfills; and use of environmentally sensitive materials in construction and design, including ecofriendly flooring, carpeting, paint, coatings, thermal insulation, and acoustical wall and ceiling panels.

In 2018, the California Building Standards Commission adopted additional modifications to Title 24, which require solar photovoltaic (PV) panels to be installed on new low-rise residential buildings starting January 1, 2020. Low-rise residential buildings include single-family homes and multi-family buildings of three stories or less; therefore, apartments and condos are included in the new standards. Additionally, the latest iteration of the California Energy Code, effective January 2023, requires all single-family homes to be "electric-ready," or built to use all electric appliances. As this standard would apply to new applicable residential development between 2020 and 2040, the operational energy demand from residential development facilitated by Seaside 2040 would be supplemented with renewable energy sources to a greater degree. Therefore, residential development facilitated by Seaside 2040 would in general be less dependent on fossil fuels than previous development.

Moreover, a greater proportion of electricity supplied for operational power needs in Seaside through 2040 would be sourced from renewables. Established in 2002 under SB 1078, and accelerated by SB 107 and SB 2, California's Renewable Portfolio Standard obligates investor-owned utilities, energy service providers, and community choice aggregators to procure 33 percent of their electricity from renewable energy sources by 2020. The State legislature recently updated this requirement to 50 percent renewables by the year 2030. The California Public Utilities Commission (CPUC) and the California Energy Commission are jointly responsible for implementing the program. Electricity in the City of Seaside is currently provided by PG&E and 3CE. In 2016, PG&E's power mix included 33 percent renewable energy sources (PG&E 2017). 3CE achieved approximately 31 percent of renewable energy sources in 2022 and anticipates increasing this renewable energy generation to 100 percent by 2030 (3CE 2022). With the adoption of SB 100, the 100 Percent Clean Energy Act of 2018, the RPS goals increased to 50 percent renewable resources target by December

31, 2026, and to achieve a 60 percent target by December 31, 2030. SB 100 also states "that it is the policy of the state that eligible renewable energy resources and zero-carbon resources supply 100% of retail sales of electricity to California end-use customers and 100 percent of electricity procured to serve all state agencies by December 31, 2045." Renewable energy sources generally result in reduced long-term environmental impacts compared with nonrenewables because renewable sources do not require combustion of coal or natural gas to generate electricity, which avoids environmental impacts associated with air pollution and GHG emissions.

Seaside 2040 contains goals and policies in the Land Use and Community Development Element; Economic Development Element; Housing Element; Parks and Open Space Element; and Healthy and Sustainable Community Element that would help minimize the occurrence of inefficient, wasteful, and unnecessary energy consumption during construction and operation of development facilitated by Seaside 2040. Seaside 2040 goals and policies that present the greatest potential for reducing wasteful, inefficient, and unnecessary energy consumption are as follows:

Goal LUD-21: Resilient neighborhoods on former Fort Ord lands.

Intent: To ensure new development is not unduly threatened by natural hazards and the worsening impacts of climate change.

Policies: **Resource efficiency.** Provide incentives to encourage new development to be more water and energy efficient and use fewer natural resource to increase long-term neighborhood resilience.

Goal ED-2: A strengthened and diversified economy, with additional employment opportunities brought by the attraction and expansion of local and regional businesses.

Intent: The City of Seaside currently relies heavily on several revenue sources to sustain operations, and most residents travel outside of the City for employment. This goal aims to expand revenue sources for the City, to stabilize the service industry during off-peak seasons by attracting new, diverse service-oriented businesses, and to provide existing and future residents with a diversity of consistent employment opportunities (from entry level to head-of-household jobs).

Policies: **Expansion of potentially growing industry sectors.** Support the expansion of sectors with a strong potential for growth, such as alternative energy, applied robotics, ag-tech, advanced manufacturing, computer hardware, software, networking and data services, scientific research, and cannabis research and testing.

Goal H-1: Well-maintained neighborhoods and housing conditions support an improved quality of life.

Policies: **Resource conservation.** Offer incentives to promote the use of energy-efficient and water-conserving features and materials for residential rehabilitation projects.

Goal PO-7: Environmental sustainability and awareness at new and existing park and recreational facilities.

Intent: Reducing energy and water use, diverting solid waste from the landfill, and capturing stormwater onsite can improve the environmental sustainability of Seaside's parks and open spaces. This goal seeks to increase the City's sustainability efforts in parks,

using these actions as an opportunity to educate the community about sustainability.

Policies: **Conservation and efficiency.** Increase energy and water conservation and efficiency at new and existing park and recreation facilities.

Goal HSC-1: A City that supports health equity for all residents by promoting access to affordable, quality health care, mental health care, and social services.

Intent: To promote community health programs and services, including access to medical care and social and economic opportunities. To achieve this, the City will collaborate with Monterey County agencies, the Monterey Peninsula Unified School District, and community-based organizations to improve health outcomes by expanding and leveraging resources, capacity, and programs that promote health equity.

Policies: **Regional presence as sustainability partner.** Play an active role in AMBAG and the development and implementation of the Sustainable Communities Strategy. Encourage land use patterns that encourage walking, conserve land, energy, and water resources, support active transportation, reduce vehicle trips, and improve air quality.

Goal HSC-9: Energy efficient buildings that use energy from renewable sources.

Intent: To improve energy efficiency and encourage renewable energy that will lower greenhouse gas emissions, support green job creation, and create a more resilient community. To achieve this, the City will improve community-wide access to renewable energy in a way that meets community needs while positioning the community for a sustainable energy future.

Policies: **Net zero buildings.** Explore a requirement for all new residential buildings to use net zero energy by 2030 and all new commercial buildings by 2040, consistent with State goals.

Energy efficiency education. Increase educational and outreach efforts to residential, commercial, and institutional building owners to increase awareness of PG&E, EnergyWatch, and Central Coast Community Power programs, rebates, and incentives to improve energy efficiency.

Funding sources. Support and implement third-party programs and financing sources, such as PACE program and CalSolar, to improve energy and water efficiency of existing buildings and to generate renewable energy locally.

Efficiency upgrades. Promote energy efficiency upgrades, such as weatherization and lighting retrofits for qualified households.

Renewable energy. Encourage the installation of renewable energy generation sources in the design and development of new development to reduce energy costs and support resource conservation.

Central Coast Community Power. Continue to participate as a member of Central Coast Community Power to provide cleaner and more cost-effective electricity to Seaside residents and businesses.

Goal HSC-11: New construction that meets a high-level of environmental performance.

Intent: To ensure that new homes and businesses in Seaside supports healthy environment design. To achieve this, the City will promote efficient use of energy and water resources, reduce waste and pollution, and protect health. Buildingscan create healthy living and working conditions and meet a high-level of environmental performance.

Policies: **CALGreen.** Ensure future development meets the mandatory elements of CALGreen.

Sustainable building practices. Encourage innovative sustainable building practices when homes are renovated, and new buildings are constructed.

Solar-ready buildings. Require commercial, mixed-use, and multifamily buildings to be solar ready by providing a solar zone and infrastructure such as solar panel standoffs and conduit.

Passive solar techniques. Encourage new development to reduce building energy use by:

- Maximizing interior daylighting.
- Using cool exterior siding, roofing, and pacing materials with relatively high solar reflectivity to reduce solar heat gain.
- Planting shade trees on south- and west-facing sides of new buildings to reduce energy loads.

In addition to the above goals and policies, Seaside 2040 encourages infill and transit-oriented development and active transportation to reduce overall energy consumption and result in greater energy efficiency throughout the city. For example, Seaside 2040 contains mixed-use land-use strategies to encourage the development of a pedestrian-oriented downtown area along Broadway Avenue and Del Monte Boulevard. In addition, Seaside 2040 identifies the Fremont Corridor as a central location for developing a mixed-use center with enhanced pedestrian mobility and improved transit facilities and transit circulation. Mixed-use, transit-oriented, and higher-density development improve energy efficiency as it places City residents closer to places of employment, businesses those residents patronize, and public transit facilities.

Implementation of Seaside 2040 goals and policies listed above, as well as other policies contained in Seaside 2040 that would result in indirect energy conservation, such as the promotion of alternative transportation, water conservation, and waste reduction, would promote greater energy efficiency in municipal and community operations and development. Seaside 2040 contains a land-use strategy that actively promotes infill mixed-use and transit-oriented development, which would result greater energy efficiency overall for City residents, businesses, and City operations. The physical environmental impacts associated with the generation of electricity and burning of fuels for heating and transportation have been accounted for in Sections 4.2, *Air Quality*, and 4.7, *Greenhouse Gas Emissions*. Seaside 2040 would not result in potentially significant environmental effects from wasteful, inefficient, or unnecessary consumption of energy. This impact would be less than significant.

Mitigation Measures

Mitigation is not required.

Significance After Mitigation

Impacts would be less than significant without mitigation.

Threshold 2:	Would the General Plan conflict with or obstruct a State or local plan for renewable energy or energy efficiency?

Impact E-2 SEASIDE 2040 WOULD BE CONSISTENT WITH ENERGY EFFICIENCY GOALS, POLICIES, AND STRATEGIES CONTAINED IN SEASIDE'S 2004 GENERAL PLAN AND AMBAG'S 2045 MTP/SCS. CONSTRUCTION AND OPERATION OF PROJECTS FACILITATED BY SEASIDE 2040 WOULD ADDITIONALLY COMPLY WITH RELEVANT PROVISIONS OF THE STATE'S CALGREEN AND TITLE 24 OF THE CALIFORNIA ENERGY CODE. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

As discussed in Section 4.5.2, *Regulatory Setting*, the City's adopted 2004 General Plan includes energy conservation and energy efficiency strategies. In addition, the City of Seaside is a member of AMBAG, which is charged with preparing an SCS pursuant to SB 375 to achieve certain goals for the reduction of GHG emissions from automobiles and light trucks. The energy conservation and efficiency strategies contained in Seaside's 2004 General Plan and AMBAG's 2045 MTP/SCS are intended to enable local achievement of GHG reduction goals in-line with statewide GHG reduction goals. Specifically, the 2004 General Plan includes Goal COS-7 and subsequent policies and implementation plans which encourage energy conservation during both construction and operation of new and existing development. The 2045 MTP/SCS includes various strategies that leverage energy efficiency programs and land-use strategies to reduce GHG emissions. As shown in Table 4.5-4, Seaside 2040 would be consistent with the energy conservation and efficiency goals, policies, and strategies contained in Seaside's 2004 General Plan and AMBAG's 2045 MTP/SCS.

Table 4.5-4 Seaside 2040 Consistency with Applicable Energy Efficiency Strategies

Energy Efficiency Goal, Policy, or Strategy	Proposed Project Consistency
Seaside 2004 General Plan	
Implementation Plan COS-7.1.1 Title 24 Construction Standards: Enforce State Title 24 building construction requirements and apply standards that promote energy conservation.	**Consistent**. Development facilitated by Seaside 2040 would be required to comply with Seaside's Municipal Code Chapter 15.04, which mandates the implementation of Title 24 of the California Building Code, the California Energy Code.
Implementation Plan COS-7.1.2 Energy Conservation in Public Buildings: Implement energy conservation measures in public buildings through the following actions: ▪ Promote energy efficient buildings and site design for all new public buildings during the site development process; and ▪ Install energy saving devices in new public buildings and retrofit existing public buildings.	**Consistent.** Seaside 2040 contains policies that promote energy efficiency, such as employing weatherization and lighting retrofits of existing buildings, as well as encouraging new development to reduce building energy use by maximizing interior daylighting, using building materials with high solar reflectivity, and planting shade trees to reduce energy load.
Implementation Plan COS-7.1.3 Energy Efficiency Building Design: Support building design that incorporates the principles of Sustainable Development, Transit Oriented Development and Environmentally Friendly Building Design, including using "green" building material and energy conservation measures of the Leadership in Energy and Environmental Design (LEED) certification program.	**Consistent**. The land use scenario envisioned by and to be implemented under Seaside 2040 would locate residences and commercial/retail land-uses, which would provide opportunities for employment, near one another with an emphasis on mixed-use land uses. By co-locating these different uses, Seaside 2040 would minimize the travel distance required for residents to travel to work and encourage alternative modes of transportation, such as bicycling or walking. In addition, Seaside 2040 contains policies that promote energy efficiency, such as employing weatherization and lighting

Energy Efficiency Goal, Policy, or Strategy	Proposed Project Consistency
	retrofits of existing buildings, as well as encouraging new development to reduce building energy use by maximizing interior daylighting, using building materials with high solar reflectivity, and planting shade trees to reduce energy load.
AMBAG 2045 MTP/SCS	
Alternative Fuels. The 2045 MTP/SCS recognizes that the transportation of people and goods is the single largest source of GHG emissions in the region and encourages local agencies to improve access to alternative fuels for transportation, such as electricity.	**Consistent.** As illustrated by Goal M-10 and subsequent policies, Seaside 2040 encourages the use of car sharing and neighborhood electric vehicles, installation of electric vehicle charging stations, and utilization of preferential parking for carpools, vanpools, and electric vehicles.
Land-Use Scenario. The 2045 MTP/SCS encourages local agencies to use planning strategies that locate residences and employment in close proximity and increase mixed-use, infill, and high-density development.	**Consistent.** Seaside 2040 has identified Del Monte Boulevard, Fremont Boulevard, and Broadway Avenue as opportunities for encouraging greater volumes of mixed-use, infill, and high-density development, which co-locates residences and employment for Seaside residents. By co-locating residences and employment, Seaside will minimize the distance of travel for those who live and work in those areas and encourages the use of active transportation.

Development facilitated by Seaside 2040 would be required to comply with applicable Title 24 standards as well as the polices, implementation plans, and strategies listed above to reduce construction and operational energy use. For instance, the Net Zero Buildings policy under Goal HSC-9 would help Seaside contribute to achieving the State's future goals of reducing energy consumption and improving energy efficiency. Similarly, compliance with policies such as CALGreen and Passive Solar Techniques under Seaside 2040 Goal HSC-11 would help ensure compliance with applicable CALGreen standards and encourage energy savings through building design. In addition, the Expansion of Growing Industry Sectors policy under Seaside 2040 Goal ED-2 and the Solar-Ready Buildings policy under Goal HSC-11 would help the City position itself for greater energy efficiency in the future. As a result, the development facilitated by Seaside 2040 would not increase reliance on fossil fuels, nor would it decrease reliance on renewable energy sources.

As illustrated in Table 4.5-4, Seaside 2040 would be consistent with the energy efficiency strategies contained in the City's 2004 General Plan and AMBAG's 2045 MTP/SCS. As described in Impact E-1, construction and operation of projects facilitated by Seaside 2040 would be required to comply with relevant provisions of CALGreen and Title 24 of the California Energy Code. Therefore, this impact would be less than significant, and no mitigation is required.

Mitigation Measures

Mitigation is not required.

Significance After Mitigation

Impacts would be less than significant without mitigation.

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4.6 Geology and Soils

This section of the EIR analyzes the physical environmental effects related to seismic hazards, underlying soil characteristics, slope stability, erosion, and paleontological resources within the City of Seaside from implementation of the proposed Seaside 2040.

4.6.1 Setting

a. Regional Geology

The General Plan Area is located in the Coastal Ranges Geomorphic Province, one of 11 major provinces in the state (California Geological Survey [CGS] 2002). 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. This province is characterized by parallel northwest trending mountain ranges formed over the past 10 million years or less by active uplift related to complex tectonics of the San Andreas fault/plate boundary system. The province is bordered on the west by the Pacific Ocean, and the coastline is uplifted, terraced, and wave-cut. The Coast Ranges are composed of thick Mesozoic and Cenozoic sedimentary strata, and north of the San Francisco Bay are dominated by irregular, knobby, landslide-topography of the Franciscan Complex (CGS 2002).

In Monterey County, the uplift that formed the Coast Ranges was more rapid than in other parts of the state. The cliffs of the Big Sur Coast and slopes of the Santa Lucia Mountains are products of this rapid uplift during the Pliocene epoch, more than a million years ago (County of Monterey 2008). Monterey Bay is an almost crescentic bay and a large embayment along an otherwise straight coastline. The Gabilan Mountain ranges exists approximately 20 miles to the east and Santa Cruz Mountains exist approximately 30 miles north of Seaside. Monterey Bay was formed during a time of sea level fluctuation, when the sea returned to submerge the Monterey Canyon. The deep submarine canyon is responsible for the biodiversity of the bay (County of Monterey 2008).

The Coast Ranges Province is divided into two subprovinces—the ranges south of San Francisco Bay to Santa Barbara County and the ranges north of the bay. This subdivision coincides with the northern ranges located east of the San Andreas Fault zone and the southern ranges mostly to the west (Norris and Webb 1990). The southern Coast Ranges, where the General Plan Area is located, are lower in elevation with less rainfall than the northern Coast Ranges, and consequently have less vegetation. The General Plan Area is located on the southern half of Monterey Bay, and has hilly terrain.

b. Local Geologic Setting

The elevation in the City of Seaside ranges from approximately mean sea level on the coast to approximately 560 feet in the foothills on the eastern edge of the City (USGS, Seaside Quadrangle, 1947, photo revised 1983). Seaside is primarily underlain by Quaternary age older surficial sediments described as dissected older alluvium. Some alluvial gravel, sand and silt/clay of valley areas and flood plains have been mapped on the southern portion of Seaside. A small pocket of Quaternary age Aromas Sand has also been mapped on the southeastern portion of Seaside, described as wind-deposited, yellowish-brown to reddish brown fine sand (USGS 2007a, 2007b). Porphyritic Granodiorite of Monterey was encountered in exploratory wells in the Seaside area at nearly 600 m below sea level. The San Andreas Fault and the San Gregorio fault zone mark the

northeastern and southwestern boundaries, respectively, of the Salinian block, with a crystalline basement of granitic and regionally metamorphosed rocks. A series of high-angle faults trend northwestward within the Salinian block (California Department of Conservation [DOC] 1997).

Geologic Units

The General Plan Area includes four (4) geologic units mapped at the surface (Figure 4.6-1): Beach sand (Qs), Loose dune sand (Qd), older stabilized dune sand (Qos), and Aromas Sand (Qar) (Dibblee and Minch 2007a, 2007b). Each of these units is discussed in more detail below.

Beach Sand (Qs)

Beach sand is found on the shores of Monterey Bay, and is only present in a small portion of the southwestern-most City limits (Dibblee and Minch 2007a, 2007b). These sediments are recent in age and therefore are unlikely to preserve fossil resources. However, they increase in age with depth and may overlie older, paleontologically sensitive units at unknown depths.

Loose Dune Sand (Qd)

Loose dune sand is composed of loose beach sands that drift back from the shoreline and forms dunes, and is present east of the beach sand (Qs) deposits in the southwestern-most City limits (Dibblee and Minch 2007a, 2007b). Like beach sands, dune sands are recent in age and therefore are unlikely to preserve fossil resources. However, they may overlie older, paleontologically sensitive units at unknown depths.

Older Stabilized Dune Sand (Qos)

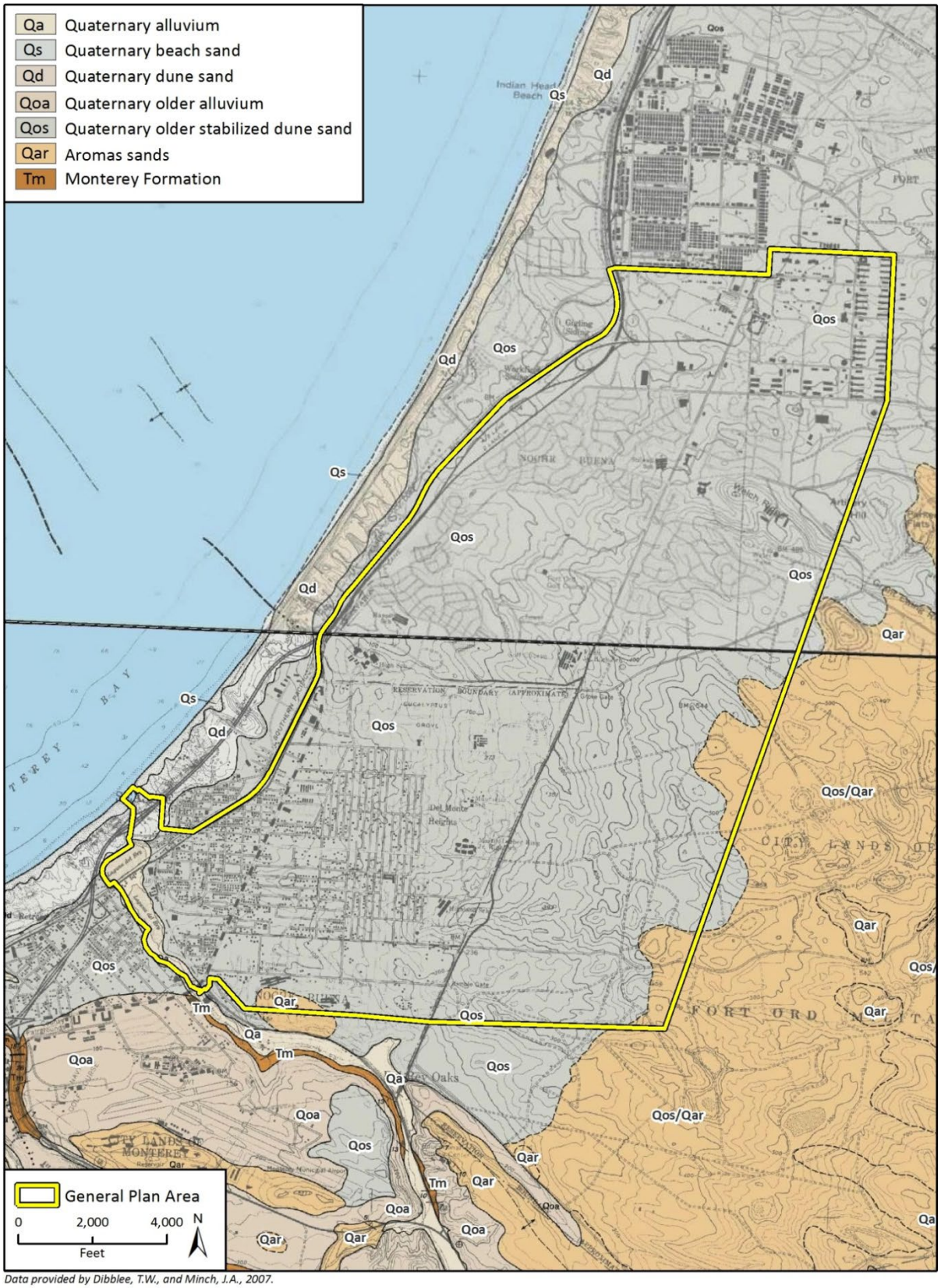
Older stabilized dune sands make up the majority of the surficial geology of the City of Seaside (Dibblee and Minch 2007a, 2007b). These sediments date to the late Holocene or early Pleistocene, and consist of dune sand that has been stabilized through erosional action and soil formation. Because of the age of these sediments, it is possible they can preserve fossil resources, particularly at depth (McLeod 2017). Some of the Pleistocene fossils at the University of California Museum of Paleontology (UCMP; discussed below) may be from sediments similar to these. Furthermore, these sediments may overlie other units at unknown depths that may also preserve fossil resources.

Aromas Sand (Qar)

The Aromas Sand is present primarily in the western-most portion of the City limits, with a small outcrop along the southern City limit boundary. The Aromas Sand dates to the Pleistocene and consists of wind-deposited, yellowish-brown to reddish-brown fine sands that are weakly indurated in some places (Dibblee and Minch 2007a, 2007b). These sediments are of an age and lithology to preserve fossil resources, particularly at depth (McLeod 2017). Some of the Pleistocene fossils at the UCMP (discussed above) may be from sediments similar to these. Furthermore, these sediments may overlie other units that may also preserve fossil resources.

In addition to these surficial units, two other units crop out just to the south of the City limits and may, therefore, be present at an undetermined depth in the City, beneath the surficial units discussed above.

Figure 4.6-1 Geologic Map of the General Plan Area



Data provided by Dibblee, T.W., and Minch, J.A., 2007.

Dissected Older Alluvium (Qoa)

Dissected older alluvium dates to the late Holocene or early Pleistocene and crops out just to the south of the City limits, around the Monterey Regional Airport (Dibblee and Minch 2007a). Dissected older alluvium consists of alluvial sediments of silt, sand, and, gravel deposited by streams from the erosion of highlands to the south and east that has been eroded in recent times by streams cutting across the deposits. Older alluvium is well-known throughout California, including the Monterey Bay area, for preserving classic Ice Age fossils, such as mammoths, ground sloths, horses, and camels (e.g., Axelrod 1983; Jefferson 1991a, 1991b; Hoppe et al. 2003; UCMP 2017).

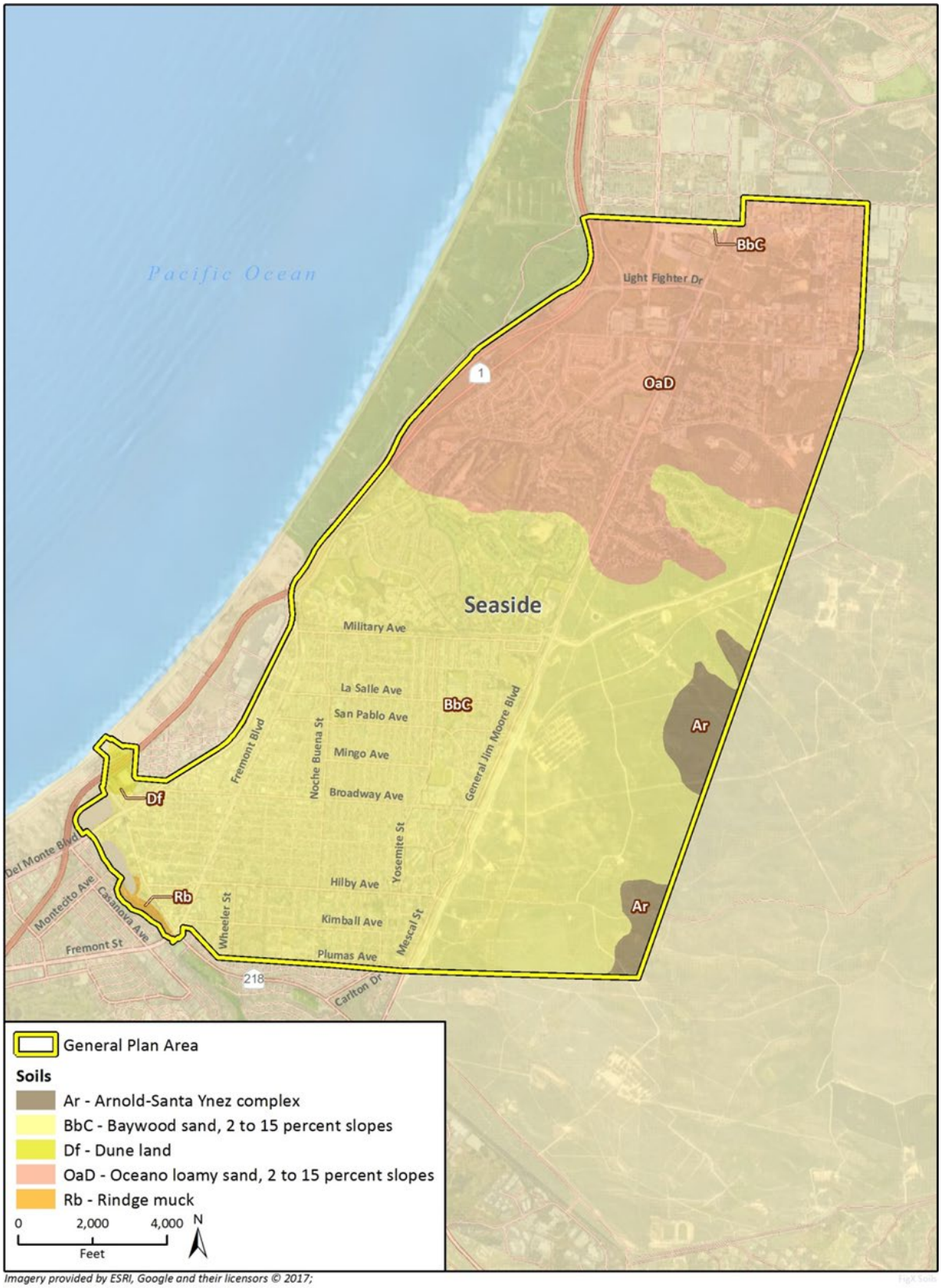
Monterey Formation (Tm)

The Monterey Formation dates to the Miocene and has large outcrops to the south of the City limits, the closest of which is at Work Memorial Park (Dibblee and Minch 2007a). The Monterey Formation records the filling of a deep marine basin formed by tectonism along the California margin (Pisciotto and Garrison 1981), constitutes one of the major elements of California geology, and can range up to several thousands of feet thick (DePaolo and Finger 1991). The Monterey Formation found near Seaside consists of a white-weathering, siliceous shale assigned to the Aquajito Shale Member that dates to the Mohnian stage of the upper Miocene (Dibblee and Minch 2007a). In addition to the fossils in the collection of the UCMP from the region (see above), the scientific literature reveals that the Monterey Formation has yielded a diverse fauna consisting of mollusks (Bramlette 1946) and common fish skeletons (Bramlette 1946), and the remains of larger marine macrofauna such as whales (Pyenson and Haasl 2007) and the giant extinct Desmostylus (Hannibal 1922), as well as birds (Fisher 1967; Warheit 1992), crocodiles (Barboza et al. 2017; Boessenecker 2013) and rare land organisms such as horse and land plants (Bramlette 1946).

Soil Groups

As shown on in Figure 4.6-2, the most abundant soil groups in Seaside are Baywood Sand and Oceano Loamy Sand, both described as very deep and excessively drained coarse textured soils formed from eolian sand deposits. There are also smaller outcrops of Arnold-Santa Ynez Complex along the eastern portion of Seaside, and rapidly permeable soils formed from weathered softer sandstone Dune Land and Rindge Muck are present on the southwestern portion of Seaside. The Rindge Series consists of very deep, very poorly drained organic soils with rapid permeability formed in fresh water areas such as marshes, sloughs, river channels and deltas. Dune Land consists of loose, shifting sand used primarily for recreational purposes (USDA 1978).

Figure 4.6-2 Soil Types



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Additional data provided by USDA NRCS SSURGO, 2014.

c. Seismic Hazards

Monterey County is one of the most seismically active regions in the world. Two earthquakes have caused tsunami run-up heights that exceeded 1-meter in Monterey County. The 1960 Chilean Earthquake, the largest earthquake ever recorded with a 9.5 magnitude, caused a 1.1 meter run-up and killed one person. The 1964 Alaska earthquake, with a recorded magnitude of 9.2, caused a 1.4-meter run-up, significantly damaging boats in the harbors of Monterey Bay. The San Andreas Fault and the San Gregorio Fault are the two faults considered active in Monterey County. Ten earthquakes have affected Monterey County from 1901 to the most recent in 2004. Earthquake damage has resulted from some of these historical earthquakes. Five earthquakes were recorded in Parkfield in 1901, 1922, 1934, 1966 and 2004 at magnitudes measured from 6.0 to 6.6. One earthquake was recorded in San Francisco in 1906 at an 8.3 magnitude, the highest recorded in Monterey County. Earthquakes have also been recorded in Coalinga, Morgan Hill, Loma Prieta and San Simeon from 1983 through 2003, ranging from 6.1 to 7.1 magnitudes (County of Monterey 2010).

Ongoing tectonic activity within the Monterey area is reflected by historic large earthquakes (1906 San Francisco, 1989 Loma Prieta), microseismicity, and Quaternary displacements along faults. Holocene age displacements have also been documented on the San Andreas and San Gregorio Faults and are associated with youthful geomorphic features of tectonic origin. In comparison with other cities along the coast of California, the Monterey area has experienced a relatively lower level of historic seismic activity. Seismic activity has been concentrated along the San Andreas Fault (USGS 2017), located 12 miles from the eastern end of the General Plan Area. While the recurrence interval of earthquakes can vary considerably, large earthquakes on the San Andreas occur approximately every 130 years (City of Seaside 2017). According to CGS regulatory maps, Seaside is not located in an Earthquake Fault Zone defined by the Alquist-Priolo Earthquake Hazards Act of 1972 (CGS 2015). Figure 4.6-3 shows the location of faults in Seaside and the surrounding area. Similar to most cities in the region, Seaside is subject to risks associated with potentially destructive earthquakes. The type and magnitude of seismic hazards with the potential to affect Seaside are dependent on the distance to the epicenter of the earthquake, the nature of the fault, on which the earthquake is located, and the intensity and magnitude of the seismic event.

Faults

CGS establishes criteria for classification of faults as active, potentially active, or inactive. Active faults are those that show evidence of surface displacement within the last 11,700 years (Holocene period). Potentially active faults are those that demonstrate displacement within the past 1.6 million years (Quaternary period). Faults showing no evidence of displacement within the last 1.6 million years are considered inactive.

Active faults in the project vicinity are not considered to be part of the San Andreas Fault System, which delineates the interaction between the Pacific and North American tectonic plates. Faults in the General Plan Area considered active or potentially active include Ord Terrace Fault, Seaside Fault, and Chupines Fault. Other notable less active faults south of the General Plan Area include Palo Colorado/Garrapata, Cypress Point, Hatton Canyon, Cachagua, Tularcitos-Navy, Laureles, and the Reliz fault north of the General Plan Area. They have lower slip rates, longer recurrence intervals, and lower Maximum Credible Earthquake (MCE) magnitudes than the main faults (USGS 2017).

Figure 4.6-3 Regional Fault Zones

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Additional data provided by U.S Geological Survey, 2010.

There are also faults in the surrounding region that could lead to ground shaking in Seaside. These include the following: San Andreas Fault, Monterey Bay / Navy / Tularcitos Fault Zone, Sylvan, Hatton Canyon, and Berwick Canyon faults, San Gregorio-Palo Colorado Fault Zone, King City-Reliz-Rinconada Fault Zone, and Zayante-Vergeles Fault Zone.

As shown in Figure 4.6-3, three of the less active local faults mentioned above, the Old Terrace, Seaside, and Chupines Faults, transect the southern portion of the City, running southeast to northwest. The Ord Terrace Fault is a steeply southwest-dipping reverse fault separating Monterey Formation from Pleistocene continental deposits. It extends 7 km southeastward into the Laguna Seca area, and appears to merge with the Chupines fault. Logs indicate the faults offsets the Monterey Formation by 198 m (DOC 1997).

The Chupines Fault is comprised of several discontinuous northwest-striking faults. The fault runs from offshore and trends northwestward from the Sierra de Salinas and extends beneath alluvial deposits near the coast. The fault is well defined in the mountains, and exhibits a vertical separation of about 300 m, upthrown to the southwest. It is thought to be approximately 26 km in length (USGS 1977). Minimum vertical displacement in this fault zone is estimated between 200 and 300 m, and appears to be primarily strike slip (DOC 1997).

The Seaside Fault is a steeply southwest-dipping reverse fault that separates Monterey Formation from Pleistocene continental deposits. The Seaside fault appears to continue southeastward to connect with a northwest-striking splinter of the Chupines fault. Logs indicate the fault vertically offsets the Monterey Formation by 133 m (DOC 1997).

Ground Shaking and Surface Rupture

In general terms, an earthquake is caused when strain energy in rocks is suddenly released by movement along a plane of weakness. Faults generally produce damage in two ways: ground shaking and surface rupture. Seismically-induced ground shaking covers a wide area and is greatly influenced by the magnitude of the earthquake, the distance to the fault displacement, soil and bedrock conditions, and depth to groundwater. The energy released during an earthquake propagates in the form of seismic waves. The resulting strong ground motion from the seismic wave propagation can cause substantial damage to structures. Intensity is usually greater in areas underlain by unconsolidated material than in areas underlain by more competent rock. Earthquakes are characterized by moment magnitude, which is a quantitative measure of the strength of the earthquake based on strain energy released during the event.

Seaside lies within the peninsular area from Carmel to the Santa Cruz County line, which is one of three areas that have the highest susceptibility to ground shaking in Monterey County. Approximately 93% of the city's residents as well as a number of critical facilities, highways, and bridges are located in a high shaking hazard area. Relative seismic shaking hazards in Seaside are mainly 45%g, which equates to severe shaking potential that could generate moderate to heavy damage (City of Seaside 2017).

In some cases, fault movement propagates upward through subsurface materials and causes displacement at the ground surface as a result of differential movement. Surface rupture is limited to areas very near the fault. Surface rupture usually occurs along traces of known or potentially active faults, although many historic events have occurred on faults not previously known to be active.

Secondary Seismic Effects

In general, potential hazards resulting from the secondary effects of ground-shaking include: liquefaction, subsidence, and earthquake-induced landslides.

Liquefaction

Soil liquefaction results from the temporary buildup of excess pore pressures, which can result in a condition of near zero effective stress and temporary loss of strength. Several factors influence a soil's potential for liquefaction during an earthquake. These factors include: magnitude and proximity of the earthquake; duration of shaking; soil types; grain size distribution; clay fraction content; density; angularity; effective overburden; location of groundwater table; cyclic loading; and soil stress history. Liquefaction is more likely in poorly-graded, saturated, low-density sands. With increasing overburden, density and increasing clay-content, the likelihood of liquefaction decreases. The CGS does not map Earthquake Zones of Required Investigation, which are areas of identified seismic hazard, associated with liquefaction within or near Seaside. However, the USGS does provide information on the potential for liquefaction within the City. As shown on Figure 4.6-4, the majority of Seaside has a low-relative liquefaction susceptibility, while the beach area of the City has a moderate to high susceptibility. The southern portion of Seaside, near Roberts Lake and Laguna Grande Lake, has a moderate, high, and/or variable liquefaction risk (City of Seaside 2017).

Subsidence

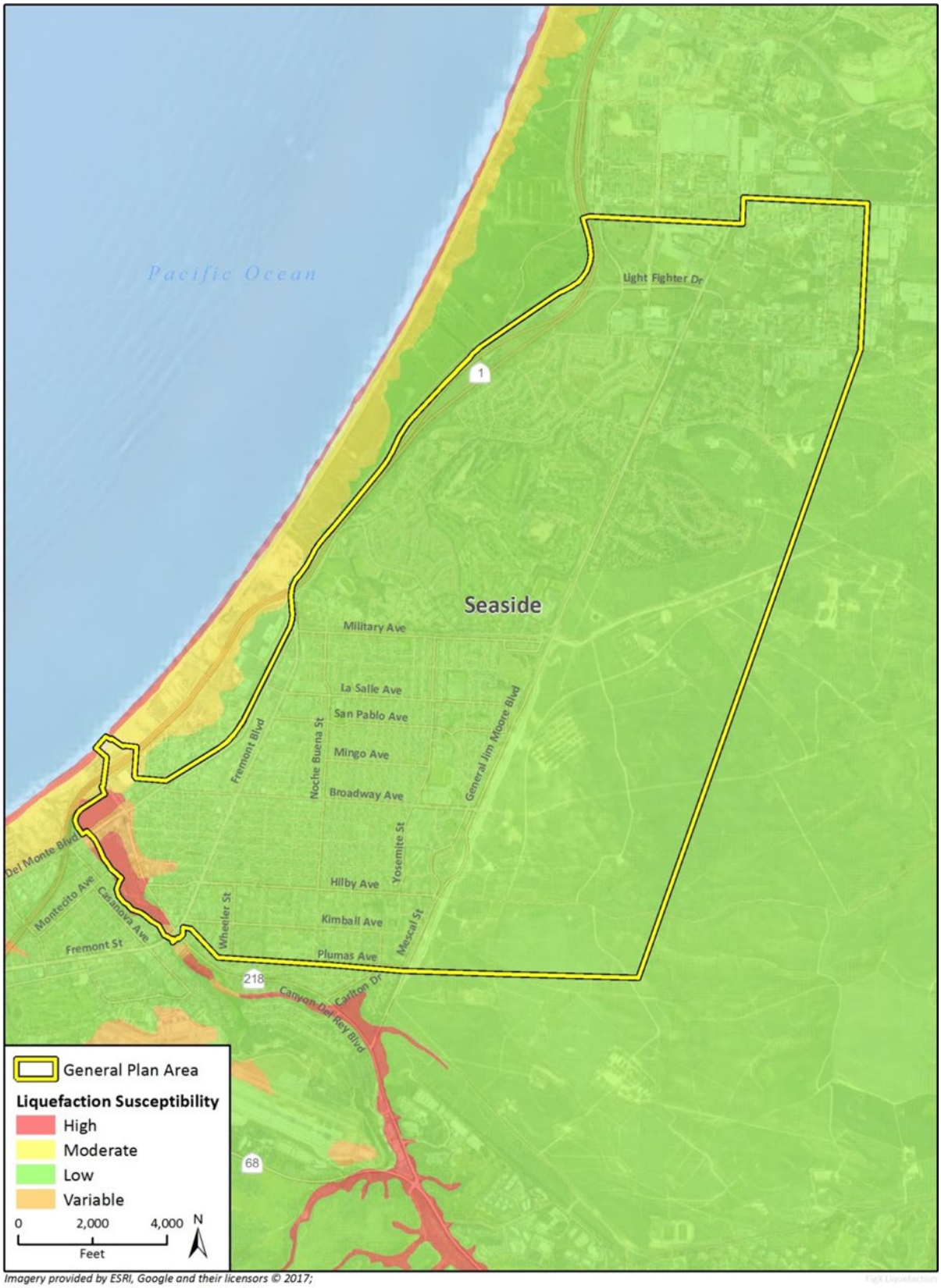
Subsidence is the sinking of the ground surface caused by the compression of soil layers. This compression can be caused by deep-seated settlement of these soil layers, which in turn may be caused by human activities or natural effects such as extraction of groundwater, oil and gas withdrawal, oxidation of organics, and the placement of additional fill over compressible layers. Seismically-induced subsidence generally occurs in loose to medium density unconsolidated soils above groundwater. These soil types can compress when subject to seismic shaking, causing subsidence. This subsidence can be exacerbated by increased loading, such as from the construction of structures onsite.

Landslides and Slope Instability

Seismic ground shaking can also result in landslides and other slope instability. Landslides occur when slopes become unstable and masses of earth material move downslope. Landslides are usually rapid events, often triggered during periods of rainfall or by earthquakes. Mudslides and slumps are a more shallow type of slope failure. They typically affect the upper soil horizons rather than bedrock features. Usually mudslides and slumps occur during or soon after periods of rainfall, but they can be triggered by seismic shaking.

The CGS does not map Earthquake Zones of Required Investigation, which are areas of identified seismic hazard, associated with landslides within or near Seaside (CGS 2015). However, the USGS does provide information on the potential for landslides within the City. Seaside has a low susceptibility to landslides, as it has minimal hillside areas and lacks steep bluffs. Landslides are common in other portions of Monterey County due to the combination of the rapidly uplifting mountains, locally fractured and weak rocks, and sometimes intense rainfall along the coast. Landslides and surficial slope failure are most likely to occur in areas of greater than 25 percent slope (hillside areas) and along steep bluffs (County of Monterey 2010). Further, the Monterey Peninsula has a low susceptibility to earthquake-induced landslides, which generally do not occur.

Figure 4.6-4 Liquefaction Risk



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Additional data provided by Monterey County, 2015.

However, other portions of the County outside the City of Seaside can experience significant landsliding events during strong El Nino years (every 5 to 7 years) or during a large earthquake event (County of Monterey 2015).

Soil Hazards

Some of the soil hazards discussed above, such as subsidence, landslides and slope instability, can be triggered by or occur independently of seismic events. Others, such as expansive soils and erosion, occur independently of seismic events.

Expansive Soils

Expansive soils swell or heave with increases in moisture content and shrink with decreases in moisture content. These soils usually contain high clay content. Foundations for structures constructed on expansive soils require special design considerations. Because expansive soils can expand when wet and shrink when dry, they can cause foundations, basement walls and floors to crack, causing substantial structural damage. As such, structural failure due to expansive soils near the ground surface is a potential hazard. The soils in Seaside are predominantly a sandy texture (i.e., low clay content); therefore, there are little to no expansive soils in Seaside (CGS 2002; USGS 2023). See Figure 4.6-2, Soil Types, above.

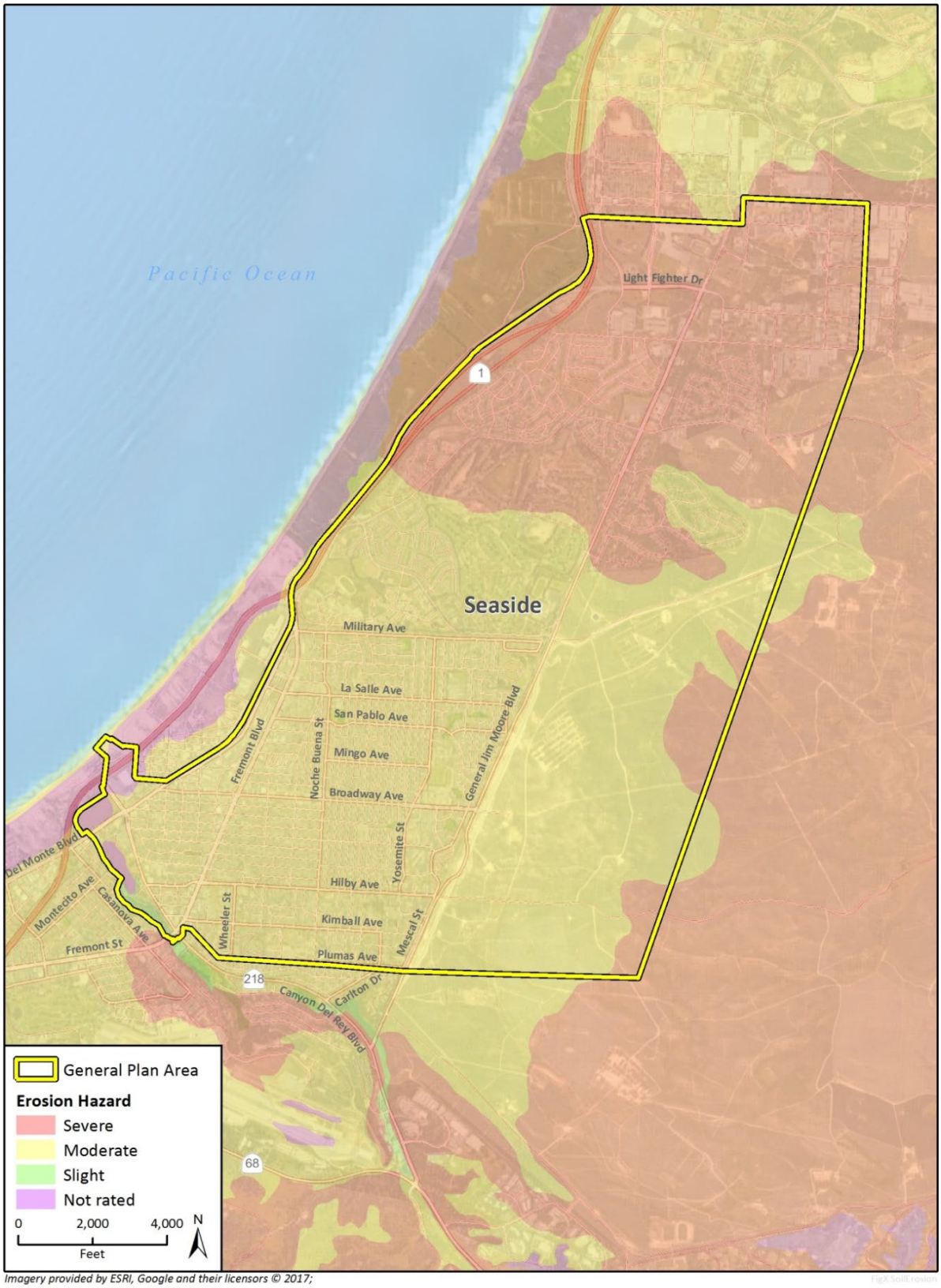
Soil Erosion

Erosion refers to the removal of soil by water or wind. Factors that influence erosion potential include the amount of water, rainfall and wind, the length and steepness of the slope, and the amount and type of vegetative cover.

Coastal erosion of dunes, cliffs, and bluffs is a serious problem in Monterey County. There are locally severe erosion problems in the south Monterey Bay area, mainly due to highly erosive windblown sand and particularly in Sand City west of Seaside. Most of the erosion is caused by the movement of unstable windblown sand—especially where vegetation has not been established. Erosion and other coastal hazards are expected to worsen as sea levels rises (County of Monterey 2008).

As shown on Figure 4.6-5, the potential for soil erosion hazards to occur in Seaside are severe within the northern one-third of the City and moderate within the southern two-thirds of the City. Coastal erosion also occurs along the coast, and is primarily attributed to sea-level rise, wave patterns, and the coastal geography of Monterey Bay. The coastal erosion rate has accelerated in this century from about 1.5 feet per year up to more than 7 feet per year. This increase has resulted from reduced sediment supply, sand mining along the coast, sediment trapping in reservoirs in the Salinas River watershed, and loss of vegetation in the shoreline dunes (City of Seaside 2017). Major retreat of the beach, 6 to 8 feet per year on average between 1956 and 1975, has also occurred in the Sand City area, west of Seaside where the beach has retreated. Some of this has been attributed to sand mining operations (County of Monterey 2008).

Figure 4.6-5 Soil Erosion Hazards



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Additional data provided by SSURGO, 2014.

d. Paleontological Resources

Paleontological resources (fossils) are the remains and/or traces of prehistoric life. Fossils are typically preserved in layered sedimentary rocks and the distribution of fossils is a result of the sedimentary history of the geologic units within which they occur. Fossils occur in a non-continuous and often unpredictable distribution within some sedimentary units, and the potential for fossils to occur within sedimentary units depends on a number of factors. Although it is not possible to determine whether a fossil will occur in any specific location, it is possible to evaluate the potential for geologic units to contain scientifically significant paleontological resources, and therefore evaluate the potential to encounter those resources.

A search of the paleontological locality records at the Los Angeles County Museum (LACM) paleontological collection resulted in no previously recorded fossil localities within the General Plan Area (McLeod 2017). However, fossil localities are recorded near Seaside in similar geologic units to some of those within the City. These, as well as fossil localities recorded in the UCMP online database, are discussed below.

The LACM has one record of a fossil locality north-northeast of the City of Seaside in the San Benito Valley, where fossil specimens of horse (Equus), pronghorn antelope (Antilocapridae), and deer (Cervidae) were recovered from fine-grained sands similar to the Aromas Sands. While the UCMP does not list any fossils from the Aromas Sands specifically, they have records of Pleistocene-aged fossils from throughout Monterey County, some of which may be from similar sediments to the deeper layers of the Aroma Sands (see Qoa, Table 4.6-1).

Table 4.6-1 Geologic Units within the General Plan Area

Geologic Unit	Map Symbol	Age	Paleontological Sensitivity (SVP)
Beach Sand	Qs	Recent (Holocene)	Low-to-High, increasing with depth
Loose Dune Sand	Qd	Recent (Holocene)	Low-to-High, increasing with depth
Older Stabilized Dune Sand	Qos	Late Holocene or early Pleistocene	High
Aromas Sand	Qar	Pleistocene	High
Dissected Older Alluvium	Qoa	Late Holocene or early Pleistocene	High
Monterey Formation	Tm	Miocene	High

Source: Dibblee and Minch 2007a, 2007b

While the LACM does not have any records of fossils from Pleistocene-aged alluvium in or around Seaside, elsewhere in Monterey County and throughout California Ice Age fossils from similar geologic sediments are common. The UCMP has records of seventeen fossils 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 Seaside (UCMP 2017). Other Pleistocene-aged fossils recovered from Monterey County horses (Equus), ground sloth (Glossotherium), and bison (Bison), among others (Hoppe et al. 2003; UCMP 2017).

The LACM did not report any records of fossils from the Miocene-aged Monterey Formation in or around Seaside, elsewhere in Monterey County and throughout California marine fossils are commonly found in this unit. The UCMP has records of 140 specimens of plant, invertebrate, and vertebrate fossils from the Monterey Formation in Monterey County, and an additional 15 specimens that are from indeterminate Miocene-aged sediments in Monterey County. Most of these specimens (133) are invertebrates such as crabs, gastropods, and bivalves that were found at

two localities along Rancho Fiesta Road, southeast of Seaside and just outside of Rancho Tierro Grande. Two other Monterey Fossil localities are somewhat further to the southeast, outside of Carmel Valley where several invertebrate fossils and a fossil seal were recovered. Just to the northeast of Seaside, in Salinas Valley, the UCMP has a fossil locality where a number of sea snails were recovered from indeterminate Miocene-aged beds. Additional undetermined Miocene-aged localities include two in Monterey where fish fossils were recovered and two in Carmel where a shark and an unidentified mammal were collected (UCMP 2017).

Geological units mapped at the surface or likely present in the subsurface in the City of Seaside range in paleontological sensitivity from low to high. As detailed in the records search of the LACM, the online databases of the UCMP, and the review of scientific literature presented above, some of these units are well-known for the preservation of scientifically significant fossil resources ranging from invertebrates to vertebrate macrofauna. As such, these formations (Qos, Qar, Qoa, Tm) have been assigned a paleontological sensitivity of High (SVP 2010). Those sediments (Qs, Qd) that are too young at the surface to preserve fossil resources generally have low sensitivity. However, they increase in age with depth, and may overlie high sensitivity units at unknown depths. As such, these units have been assigned a paleontological sensitivity of Low-to-High (Figure 4.6-6). While Figure 4.6-6, provides an overview of the underlying paleontological sensitivity based upon the underlying mapped geologic units, many existing developed sites within the City's boundaries have been subject to grading, excavation, and artificial fill, which reduces the site-specific paleontological sensitivity at the surface and to various depths in those locations. Paleontological sensitivity applies only to previously undisturbed, native geologic units.

4.6.2 Regulatory Setting

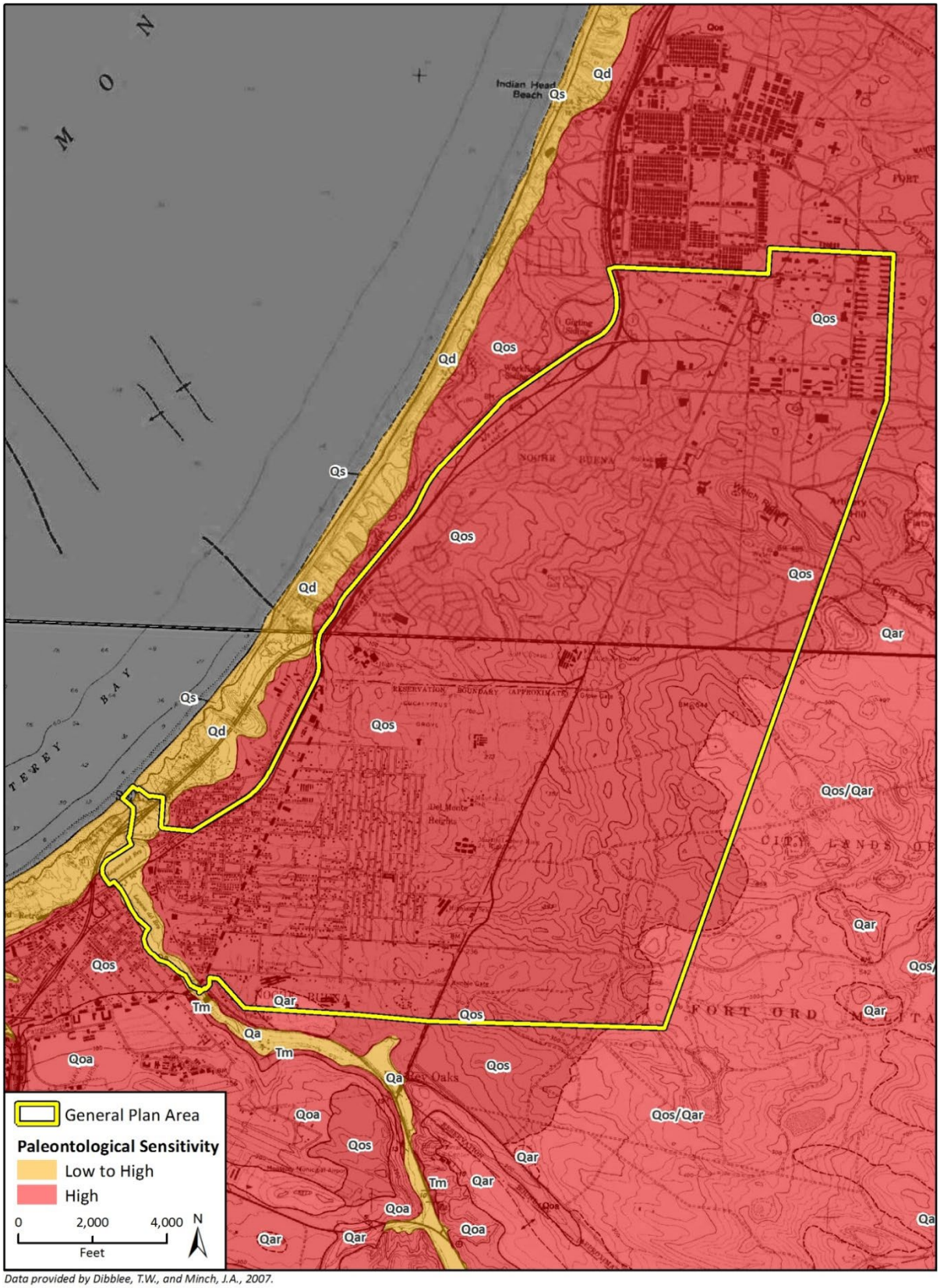
a. Federal

Clean Water Act

Congress enacted the Clean Water Act (CWA), formerly the Federal Water Pollution Control Act of 1972, with the intent of restoring and maintaining the chemical, physical, and biological integrity of the waters of the United States. The CWA requires states to set standards to protect, maintain, and restore water quality through the regulation of point source and non-point source discharges to surface water. Those discharges are regulated by the National Pollutant Discharge Elimination System (NPDES) permit process (CWA Section 402). NPDES permitting authority is administered by the California State Water Resources Control Board (SWRCB) and its nine Regional Water Quality Control Boards (RWQCBs).

Seaside is within a watershed administered by the North Coast RWQCB. Individual projects within the City that disturb more than one acre would be required to obtain NPDES coverage under the California General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit). The Construction General Permit requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP) describing Best Management Practices (BMPs) the discharger would use to prevent and retain storm water runoff and to prevent soil erosion.

Figure 4.6-6 Paleontological Sensitivity



Data provided by Dibblee, T.W., and Minch, J.A., 2007.

The Monterey Regional Stormwater Management Program is an entity that has developed BMPs for Construction Site Best Management Practices within the City of Seaside.[1] Such Construction BMPs include material storage including covering of stockpiles during the day, and particularly during rain and wind events, silt fencing, straw wattles, stabilized construction entrances, routine cleaning, equipment lubricant drip pans, dust control measures including water trucks.

Disaster Mitigation Act of 2000

Congress passed the Disaster Mitigation Act of 2000 to amend the Robert T. Stafford Disaster Relief and Emergency Assistance Act by invoking new and revitalized approaches to mitigation planning. Section 322 of the Act emphasized the need for state and local government entities to closely coordinate on mitigation planning activities, and makes the development of a hazard mitigation plan a specific eligibility requirement for any local government applying for federal mitigation grant funds. Communities with an adopted and federally-approved hazard mitigation plan thereby become pre-positioned and more apt to receive available mitigation funds before and after the next declared disaster.

To implement the new Stafford Act provisions, FEMA published requirements and procedures for local hazard mitigation plans in the Code of Federal Regulations (CFR) at Title 44, Chapter 1, Part 201.6. These regulations specify minimum standards for developing, updating, and submitting local hazard mitigation plans for FEMA review and approval at least once every five years.

b. State

California Building Code

The California Building Code (Title 24, Cal. Code Regs.) is an area of law heavily regulated by the California Building Standards Commission who reviews and updates the Code every three years. (Health & Safety Code § 18949.6). The CBC, Title 24, Part 2 provides building codes and standards for the design and construction of structures in California. The California Building Code is based on the International Building Code with the addition of more extensive structural seismic provisions. Chapter 16 of the California Building Code contains definitions of seismic sources and the procedure used to calculate seismic forces on structures.

The purpose of the CBC is to establish minimum standards to safeguard the public health, safety, and general welfare through structural strength, means of egress, and general stability by regulating and controlling the design, construction, quality of materials, use and occupancy, location, and maintenance of all building and structures within its jurisdiction. In addition, the CBC contains necessary California amendments, which are based on the American Society of Civil Engineers (ASCE) Minimum Design Standards 7-05. ASCE 7-05 provides requirements for general structural design and includes means for determining earthquake loads as well as other loads (flood, wind, etc.) for inclusion into building codes. The provisions of the CBC apply to the construction, alteration, movement, replacement, and demolition of every building or structure or any appurtenances connected or attached to such buildings or structures throughout California.

The earthquake design requirements of the CBC take into account the occupancy category of the structure, site class, soil classifications, and various seismic coefficients, which are used to determine a Seismic Design Category (SDC) for a project. The SDC is a classification system that

[1] Monterey Regional Storm Water Management Program SWPPP construction provisions are available online at: http://montereysea.org/docs/brochures/2014%20Construction%20Site%20BMP.pdf

combines the occupancy categories with the level of expected ground motions at the site and ranges from SDC A (very small seismic vulnerability) to SDC E/F (very high seismic vulnerability and near a major fault). Design specifications are then determined according to the SDC. Projects implemented under Seaside 2040 would be required to comply with the CBC, including Part 2, Volume 2, Chapter 18, Soils and Foundations, which outlines the minimum standards for structural design and construction. This includes geotechnical evaluations, which among other requirements, includes a record of the soil profile, regulation of active faults in the area, recommendations for foundation type and design criteria that address issues, as applicable, such as (but not limited to) bearing capacity of soils, provisions to address expansive soils, settlement, and varying soil strength. If a building department or other appropriate enforcement agency, determines that recommended action(s) presented in the geotechnical evaluations are likely to prevent structural damage, the approved recommended action(s) must be made a condition to the building permit (Section 1803.1.1.3 of Chapter 18).

The CBC provides standards for various aspects of construction, including but not limited to excavation, grading, earthwork, construction, preparation of the site prior to fill placement, specification on fill materials and fill compaction and field testing, retaining wall design and construction, foundation design and construction, and seismic requirements. It includes provisions to address issues such as (but not limited to) construction on expansive soils and soil strength loss. In accordance with California law, projects implemented under Seaside 2040 would be required to provide project-level design and construction that complies with the provisions of the CBC.

California Public Resources Code

Section 5097.5 of the Public Resources Code states the following:

> No person shall knowingly and willfully excavate upon, or remove, destroy, injure or deface any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological site, including fossilized footprints, inscriptions made by human agency, or any other archaeological, paleontological or historical feature, situated on public lands, except with the express permission of the public agency having jurisdiction over such lands. Violation of this section is a misdemeanor.

As used in this section, “public lands” means lands owned by, or under the jurisdiction of, the State or any city, county, district, authority or public corporation, or any agency thereof. Consequently, the City of Seaside is required to comply with Public Resource Code Section 5097.5 for its activities on publicly-owned land.

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act of 1972 was passed into law following the destructive February 9, 1971, magnitude 6.6 San Fernando earthquake. The Act provides a mechanism for reducing losses from surface fault rupture on a statewide basis. The intent of the Act is to ensure public safety by prohibiting the siting of most structures for human occupancy across traces of active faults that constitute a potential hazard to structures from surface faulting or fault creep. This Act groups faults into categories of active, potentially active, and inactive. Historic and Holocene age faults are considered active, Late Quaternary and Quaternary age faults are considered potentially active, and pre-Quaternary age faults are considered inactive.

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act (SHMA) of 1990 was passed into law following the destructive October 17, 1989, magnitude 6.9 Loma Prieta earthquake. SHMA directs the CGS to delineate Seismic Hazard Zones. The purpose of SHMA is to reduce the threat to public health and safety and to minimize the loss of life and property by identifying and mitigating seismic hazards. Cities, counties, and State agencies are directed to use seismic hazard zone maps developed by CGS in their land-use planning and permitting processes. SHMA requires that site-specific geotechnical investigations be performed prior to permitting most urban development projects within seismic hazard zones.

c. Local

Seaside Municipal Code

Seaside Municipal Code Section 15.04.020 adopts by reference the 2019 California Building Code. Section 15.04.034 amends Section 1905.1.8 of Chapter 19 of the California Building Code with regard to structures assigned to Seismic Design Category C, D, E or F. Structures assigned to Seismic Design Category C, D, E, or F shall not have elements of plain concrete with some exceptions. Section 15.04.041 amends Section R403.1.3 of the California Residential Code related to seismic reinforcing. Section 15.04.042 amends Section R602.10.4 and Table R602.10.3 of the California Residential Code related to Seismic Design Categories D0, D1, and D2. The Seaside Municipal Code Section 15.32.180 contains design standards for erosion and sediment control related to slopes, runoff control, building site runoff, vegetation removal, vegetation disposal, topsoil, temporary vegetation, winter operations, dust, erosion control coordination with project installation, livestock, and maintenance. Section 15.32.090 requires either a soil engineering report or engineering geology report for excavation, grading, filling, clearing, and/or erosion control work permits which are required to include recommendations for seismic and erosion control. Section 15.32.070 requires permit applications to include vegetation erosion control and revegetation measures for all surfaces exposed or expected to be exposed during grading activities as part of overall erosion and sediment control plans (City of Seaside 2017).

For sites requiring a Grading or Building Permit that result in at least 500 square feet of soil disturbance or 50 cubic yards (cut + fill) of soil disturbance or as deemed necessary by the Building Official, the City requires an Erosion and Sediment Control Plan (ESCP) or SWPPP. The ESCP is required to contain site-specific Best Management Practices (BMPs) such as vegetation preservation, catch basins/inlet protection, silt fencing, and stockpile management (City of Seaside 2017). For construction sites that disturb more than one acre, in addition to BMPs similar to those listed above the developer must prepare a SWPPP in accordance with the requirements of the Construction General Permit 2009-0009-DWQ (CalEPA 2023).

Multi-Jurisdictional Hazard Mitigation Plan

As of 2013, the City of Seaside is a participant in the Monterey County Multi-jurisdictional Hazard Mitigation Plan. The Monterey County Multi-Jurisdictional Hazard Mitigation Plan, most recently updated in September 2022, incorporates hazard mitigation principles and practices into the routine government activities and functions of the County and twelve municipalities (including Seaside) participating in the Plan. The Plan recommends specific actions that are designed to protect people and community assets from losses to those hazards that pose the greatest risk. Chapter 7, Mitigation Strategy, provides a blueprint for reducing the potential losses identified in the

vulnerability analysis. Such measures include local plans and regulations, structure and infrastructure projects, natural systems protection, education and awareness programs, and other activities (County of Monterey 2022).

4.6.3 Impact Analysis

a. Methodology and Significance Thresholds

Methodology

This section describes the potential environmental impacts of the proposed project relevant to geology and soils. The impact analysis is based on an assessment of baseline conditions for the proposed General Plan Area, including topography, geologic and soil conditions, and seismic hazards, as described above under the Subsection 4.6.1, *Setting*. This analysis identifies impacts based on the predicted interaction between the affected environment and construction, operation, and maintenance activities related to development predicted to occur under the proposed project. This section describes impacts in terms of location, context, duration, and intensity, and recommends mitigation measures, when necessary, to avoid or minimize impacts.

Paleontological Resources

Paleontological sensitivity refers to the potential for a geologic unit to produce scientifically significant fossils. Direct impacts to paleontological resources occur when earthwork activities, such as grading or trenching, cut into the geologic deposits (formations) within which fossils are buried and physically destroy the fossils. Since fossils are the remains of prehistoric animal and plant life, they are considered to be nonrenewable. Such impacts have the potential to be significant and, under the CEQA guidelines may require mitigation. Sensitivity is determined by rock type, past history of the geologic unit in producing significant fossils, and fossil localities recorded from that unit. Paleontological sensitivity is derived from the known fossil data collected from the entire geologic unit, not just from a specific survey.

The discovery of a vertebrate fossil locality is of greater significance than that of an invertebrate fossil locality, especially if it contains a microvertebrate assemblage. The recognition of new vertebrate fossil locations could provide important information on the geographical range of the taxa, their radiometric age, evolutionary characteristics, depositional environment, and other important scientific research questions. Vertebrate fossils are almost always significant because they occur more rarely than invertebrates or plants. Thus, geological units having the potential to contain vertebrate fossils are considered the most sensitive.

The SVP outlines in its Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources (SVP 2010) guidelines for categorizing paleontological sensitivity of geologic units within a project area. The SVP (2010) describes sedimentary rock units as having a high, low, undetermined, or no potential for containing significant nonrenewable paleontological resources. This criterion is based on rock units within which vertebrates or significant invertebrate fossils have been determined by previous studies to be present or likely to be present. Significant paleontological resources are fossils or assemblages of fossils, which are unique, unusual, rare, uncommon, diagnostically or stratigraphically, taxonomically, or regionally. Rincon has evaluated the paleontological sensitivity of the General Plan Area according to the following SVP (2010) categories; the results are discussed below.

High Potential (Sensitivity)

Rock units from which significant vertebrate or significant invertebrate fossils or significant suites of plant fossils have been recovered are considered to have a high potential for containing significant non-renewable fossiliferous resources. These units include but are not limited to, sedimentary formations and some volcanic formations which contain significant nonrenewable paleontological resources anywhere within their geographical extent, and sedimentary rock units temporally or lithologically suitable for the preservation of fossils. Sensitivity comprises both (a) the potential for yielding abundant or significant vertebrate fossils or for yielding a few significant fossils, large or small, vertebrate, invertebrate, or botanical and (b) the importance of recovered evidence for new and significant taxonomic, phylogenetic, ecologic, or stratigraphic data. Areas which contain potentially datable organic remains older than recent, including deposits associated with nests or middens, and areas that may contain new vertebrate deposits, traces, or trackways are also classified as significant.

Low Potential (sensitivity)

Sedimentary rock units that are potentially fossiliferous, but have not yielded fossils in the past or contain common and/or widespread invertebrate fossils of well documented and understood taphonomic, phylogenetic species and habitat ecology. Reports in the paleontological literature or field surveys by a qualified vertebrate paleontologist may allow determination that some areas or units have low potentials for yielding significant fossils prior to the start of construction. Generally, these units will be poorly represented by specimens in institutional collections and will not require protection or salvage operations.

Undetermined Potential (sensitivity)

Specific areas underlain by sedimentary rock units for which little information is available are considered to have undetermined fossiliferous potentials.

No Potential

Rock units of metamorphic or igneous origin are commonly classified as having no potential for containing significant paleontological resources.

Significance Thresholds

The purposes of this EIR, implementation of the proposed project may have a significant adverse impact if it would do any of the following:

1. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:
    a. 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;
    b. Strong seismic ground shaking;
    c. Seismic-related ground failure, including liquefaction;
    d. Landslides
2. Result in substantial soil erosion or the loss of topsoil

3. 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, lateralspreading, subsidence, liquefaction or collapse
4. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property
5. Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water
6. Directly or indirectly destroy a unique paleontological resource or site or unique geologic features

b. Project Impacts and Mitigation Measures

Threshold 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; strong seismic ground shaking; seismic-related ground failure, including liquefaction; or landslides?
Threshold 3:	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?

Impact GEO-1 CONSTRUCTION AND OCCUPANCY OF NEW BUILDINGS WOULD ADHERE TO THE REQUIREMENTS OF THE CALIFORNIA BUILDING CODE AND IMPLEMENTATION OF THE GOALS AND POLICIES OF SEASIDE 2040 WHICH WOULD ENSURE IMPACTS ASSOCIATED WITH LOSS, INJURY, OR DEATH FOLLOWING A SEISMIC EVENT AND GEOLOGIC HAZARDS WOULD BE LESS THAN SIGNIFICANT.

As discussed above in Subsection 4.6.1, *Setting*, Seaside is not located in an Alquist-Priolo Earthquake Fault Zone. Smaller, less active local faults of the Monterey Bay fault zone and near the General Plan Area have lower slip rates, longer recurrence intervals, and lower Maximum Credible Earthquake (MCE) magnitudes than the main faults (USGS 2017). Consequently, the General Plan Area is less susceptible to seismic hazards than other portions of the state. There are no Earthquake Zones of Required Investigation associated with liquefaction or earthquake-induced landslides within or near Seaside. Also, the majority of Seaside has a low-relative liquefaction susceptibility. However, the beach area and the southern portion of Seaside, near Roberts Lake and Laguna Grande Lake, has a moderate, high, and/or variable liquefaction risk. Liquefaction can cause lateral spreading, which is when a mass of soil moves horizontally relative to surrounding soil (County of Monterey 2022). Lateral spreading can occur on flat ground, but most commonly occurs on or around slopes and waterways. Because the majority of Seaside has a low-relative liquefaction susceptibility, the risk for lateral spreading is also low in Seaside. Seaside, like the rest of the Monterey Peninsula, has a low risk of landslides (County of Monterey 2022). Due to the alluvial nature of soils underlying the General Plan Area, seismically-induced subsidence could occur in loose sands mapped within the General Plan Area, which include Baywood sand, Dune land, Oceano loamy sand, and Rindge muck soil types (Figure 4.6-2). However, this hazard is routinely addressed by building standards prior to development through removal and re-compaction of loose soils.

Development under Seaside 2040 would allow additional residential and nonresidential development within the City, including development of structures that would be built on steep slopes (i.e., greater than 25 percent). New structures built under Seaside 2040 could also potentially experience substantial damage during seismic groundshaking events, since Seaside lies within is one

of three areas that have the highest susceptibility to ground shaking in Monterey County (City of Seaside 2017). Fault rupture is unlikely to affect new or existing structures, because Seaside is not located in an Alquist-Priolo Earthquake Fault Zone where fault rupture is more likely.

Seaside 2040 would also encourage infill development, which would in many cases replace older buildings subject to seismic damage with newer structures built to current seismic standards that could better withstand the adverse effects of strong ground shaking. These new buildings would be constructed under the latest iteration of the California Building Code and would therefore be safer than most existing buildings. Pursuant to Title 15 of the Municipal Code, Buildings and Construction, the City of Seaside must enforce the California Building Code (CBC) in all new construction and renovations. Section 1613 of the CBC requires all structures to be designed and constructed to resist the effects of earthquake motions in accordance with Standards ASCE 7 (Minimum Loads for Buildings and Other Structures). Structural damage and the exposure of people to the risk of injury or death from structural failure would be minimized by compliance with California Building Code engineering design and construction measures. Foundations and other structural support features would be designed to resist or absorb damaging forces from strong ground shaking and liquefaction.

In addition to compliance with mandatory California Building Code requirements, implementation of several 2040 General Plan goals and policies would further reduce the potential for loss, injury, or death following a seismic event. Implementation of the following 2040 General Plan goals and policies would help to avoid seismic hazards, prevent the adverse effects of seismic events and unstable geologic units, maintain adequate resources to respond to a seismic event, and educate the public about the dangers of and appropriate response to a seismic event:

Safety Element Goals and Policies

Goal S-1: A high standard of police services with a focus on community-based crime prevention.

Intent: To provide high-quality police services, including traditional law enforcement services and community partnership and engagement. The result will improve safety, health, peace of mind, and quality of life through excellent police services and planning.

Policies: **Assess critical facilities.** Identify and inventory critical facilities and establish guidelines for the operation of such facilities during emergencies.

Goal S-2: Effective emergency response following a natural or human-caused disaster.

Intent: To increase the safety of residents. To achieve this, the City will implement emergency preparedness planning and outreach, maintain sufficient service levels, and prepare for the potential impacts of climate change.

Policies: **Service levels.** Maintain sufficient levels of fire protection and emergency services to support existing residents and future growth.

Preparedness programs. Promote community-based, emergency preparedness programs and disaster education awareness, including the City's annual emergency system training and evacuation trainings.

Emergency evacuation. Maintain emergency procedures for the evacuation and control of population in identified floodplain areas in accordance with Section 8589.5 of the California Government Code. Inform residents and visitors about alternate

routes in case of coastal flooding and tsunamis. Design evacuation maps to minimize and mitigate exposure to flood hazards to the maximum extent possible.

Partnership. Continue to work with the Monterey County Hazard Mitigation Planning Team, as the Monterey County Multi-Jurisdictional Hazard Mitigation Plan is updated, to incorporate climate change and sea level rise into the comprehensive mitigation strategy.

Climate change risks. Re-evaluate existing plans to incorporate climate change hazards, sea level rise, and the populations and infrastructure vulnerable to climate change.

Goal S-3: Protection from the effects of earthquakes, landslides, tsunamis, and other natural disasters.

Intent: To lessen the impacts of earthquakes, geologic threats, tsunami and other natural disasters on City residents and structures. To achieve this, the City will regularly update and assess risks and assess risks and hazards, examine mitigation strategies, and raise public awareness around disasters.

Policies: **Identify earthquake risks and mitigation.** Coordinate with the National Earthquake Hazard Reduction Program of the Federal Emergency Management Agency (FEMA) to identify earthquake risks and available mitigation techniques.

Update seismic and geologic hazard maps. Proactively seek compliance with the Alquist-Priolo Fault Zoning Act by coordinating with the California Geological Survey and the United States Geological Survey (USGS) to establish and maintain maps within the City boundaries, former Fort Ord lands, and Sphere of Influence.

Update building codes and development reviews. Reduce the risk of impacts from seismic and geologic hazards through land use planning, updated building codes, and the development review process. Ensure new development meets building code requirements.

Seismic upgrades. Examine necessity of seismic upgrades to existing public facilities as well as existing multifamily housing constructed prior to 1971.

Public awareness. Promote greater public awareness of earthquake hazards with incentives and assistance to help property owners make their homes and businesses more earthquake-safe.

Health and Sustainable Communities Element Goals and Policies

Goal HSC-4: Neighborhoods that enhance the safety and welfare of all residents, employers, and tourists in the City of Seaside.

Intent: To promote safe, clean, and attractive healthy communities with active neighborhoods, parks, and streets supported by good environmental design. To achieve this, the City will promote programs, partnerships, and community design to improve community safety. Additional public safety policies are included in the Safety Element.

Policy: **Recreational facilities.** Encourage the location of recreational centers in areas not subject to environmental hazards and in areas where they are easily accessible by public transportation.

Community Facilities and Infrastructure Goals and Policies

Goal CFI-1: City-wide infrastructure to support existing development and future growth.

Intent: To plan new and improved city-wide infrastructure that supports future growth and sustainable infrastructure best practices. To achieve this, the City will consider strategic approaches to mitigate the cost of services and utilities, while meeting the needs of current and future residents.

Policy: **Aging infrastructure.** Continue to manage and upgrade the City's aging infrastructure, as funds allow and leverage funds whenever possible.

Maintenance schedule. Use a routine maintenance schedule for infrastructure that does not require resident complaints or calls.

Land Use and Community Design Element Goals and Policies

Goal LUD-21: Resilient neighborhoods on former Fort Ord lands.

Intent: To ensure new development is not unduly threatened by natural hazards and the worsening impacts of climate change.

Policy: **Seismic setbacks.** Reduce the impact of future seismic hazards by incorporating seismic setback standards for new development into the zoning code. The City may designate these setback areas as open space.

Implementation of these goals and policies would result in the avoidance of siting critical facilities or other structures within areas susceptible to fault rupture. They would require more detailed review of design and construction plans and incorporation of additional structural safety features, as necessary, for structures that would be located on steep slopes (slopes greater than 25 percent) or in areas subject to seismic hazards such as extreme ground shaking or liquefaction. They would reduce the risk of impacts from seismic and geologic hazards through land use planning, updated building codes, and the development review process. They would also ensure that adequate emergency response is available during an earthquake and would educate the public on earthquake preparedness. Furthermore, they would require the zoning code to be updated to incorporate seismic setback standards for new development on former Fort Ord lands. Implementation of these goals and policies, in addition to compliance with applicable laws and regulations, would minimize the potential for loss, injury, or death following a seismic event and geologic event and ensure impacts are less than significant.

Mitigation Measures

No mitigation measures are required.

Significance After Mitigation

Impacts would be less than significant without mitigation.

Threshold 2:	Would the project result in substantial soil erosion or the loss of topsoil?

Impact GEO-2 CONSTRUCTION OF NEW DEVELOPMENT UNDER SEASIDE 2040 WOULD INCLUDE GROUND DISTURBANCE SUCH AS EXCAVATION AND GRADING. HOWEVER, THIS DEVELOPMENT WOULD COMPLY WITH THE CONSTRUCTION GENERAL PERMIT AND MUNICIPAL CODE. THIS, IN ADDITION TO IMPLEMENTATION OF THE GOALS AND POLICIES OF SEASIDE 2040, WOULD ENSURE IMPACTS WOULD BE LESS THAN SIGNIFICANT.

Most soil groups in Seaside have a moderate to severe susceptibility to erosion (City of Seaside 2017). Seaside is also near the coast therefore, due to soil susceptibility and sea level rise, potential for soil erosion is high (County of Monterey 2008). Development under Seaside 2040 would involve construction activities such as stockpiling, grading, excavation, paving, and other earth-disturbing activities. Loose and disturbed soils are more prone to erosion and loss of topsoil by wind and water.

Construction activities that disturb one or more acres of land surface are subject to the NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Order No. 2012-0006-DWQ) adopted by the SWRCB. Compliance with the permit requires each qualifying development project to file a Notice of Intent with the SWRCB. Permit conditions require development of a SWPPP, which must describe the site, the facility, erosion and sediment controls, runoff water quality monitoring, means of waste disposal, implementation of approved local plans, control of construction sediment and erosion control measures, maintenance responsibilities, and non-storm water management controls. Inspection of construction sites before and after storms is also required to identify storm water discharge from the construction activity and to identify and implement erosion controls, where necessary. Compliance with the Construction General Permit is reinforced through Seaside Municipal Code, which requires the development of an erosion and sediment control plan that is equivalent to the required SWPPP.

The Seaside Municipal Code also requires an ESCP or SWPPP for construction sites that result in at least 500 square feet of soil disturbance or 50 cubic yards (cut + fill) of soil disturbance or as deemed necessary by the Building Official. The ESCP is required to contain site-specific Best Management Practices (BMPs) such as vegetation preservation, catch basins/inlet protection, silt fencing, and stockpile management. The Seaside Municipal Code Section 15.32.090 also requires a soil engineering report for excavation, grading, filling, clearing, and/or erosion control work permits which are required to include recommendations for seismic and erosion control. Adherence to the requirements of the Seaside Municipal Code would reduce the potential for new construction under Seaside 2040 to cause erosion or the loss of topsoil by ensuring proper management of loose and disturbed soil.

In addition to compliance with mandatory Clean Water Act and Seaside Municipal Code requirements, implementation of 2040 General Plan goals and policies would further reduce the potential erosion and loss of topsoil from construction-related soil disturbance. Development in the Coastal Zone is controlled by the existing Local Coastal Program, which is not being amended as part of Seaside 2040. Implementation of the following 2040 General Plan goals and policies would minimize the potential for erosion and loss of topsoil:

Community Facilities and Infrastructure Goals and Policies

Goal CFI-5: Safe and environmentally-sustainable stormwater management.

Intent: To ensure that future development and redevelopment complies with best management practices to capture and treat stormwater. To achieve this, the City will work to reduce peak stormwater flow, minimize pollutant and trash migration, and provide flood control, reducing the need to expand the City's existing stormwater system capacity.

Policies: **Requirements for new development.** Require new development and redevelopment projects to meet federal, state, regional, and local stormwater requirements, including site design, stormwater treatment, stormwater infiltration, peak flow reduction, and trash capture.

Stormwater capture. Optimize stormwater capture and treatment through implementation of low-impact design techniques, stormwater treatment and infiltration in open spaces, and implementation of green streets.

Flood control. Require new development and redevelopment projects to provide adequate stormwater infrastructure for flood control.

Conservation Goals and Policies

Goal C-4: Pollutant discharge managed to minimize adverse impacts on water quality in the Monterey Bay, Robert's Lake, Laguna Grande and other bodies of water.

Intent: To reduce the negative environmental impacts of storm water runoff on the Monterey Bay, Robert's Lake, Laguna Grande, and other bodies of water improves local habitat.

Policies: **Low-impact development practices.** Require new construction and redevelopment projects to use low-impact development techniques to improve stormwater quality and reduce run-off quantity, including improving soil health, providing soil cover and water-wise planting and irrigation, installing permeable pavements, and building bio-retention areas to reduce runoff quantity.

Storm water runoff. Enforce the reduction of stormwater runoff consistent with local stormwater permits.

Storm water facilities. Incorporate stormwater facilities into the design of parks and open spaces, using natural processes to capture, treat, and infiltrate stormwater to the extent feasible.

Land Use and Community Design Goals and Policies

Goal LUD-20: New development supports the preservation or enhancement of the city's natural resources.

Intent: To protect the most valuable natural areas and species in former Fort Ord lands.

Policies: **Low-impact development.** Require new construction and redevelopment projects to use low-impact development techniques to improve stormwater quality and reduce run-off quantity.

Steep slopes. Preserve areas with steep slopes greater than 40 percent by prohibiting commercial and residential development. Open space and trails may be allowed in these areas.

On-site stormwater infiltration. Require on-site stormwater collection and infiltration according to C3 requirements.

Erosion Control. For all development in former Fort Ord, require the implementation of adequate erosion control measures on lands with a prevailing slope above 30% consistent the City's Municipal Code Erosion and sediment control Design Standards.

Implementation of these goals and policies would ensure that Seaside requires implementation of adequate erosion control measures on former Fort Ord lands with a prevailing slope above 30% and that development in the City would be prohibited on steep slopes, which would also minimize local erosion. Implementation of these goals and policies, in addition to compliance with applicable laws and regulations, would ensure the potential for erosion and loss of topsoil would be a less-than-significant impact.

Mitigation Measures

No mitigation measures are required.

Significance After Mitigation

Impacts would be less than significant without mitigation.

Threshold 4:	Would the project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?

Impact GEO-3 DEVELOPMENT FACILITATED BY SEASIDE 2040 MAY RESULT IN THE CONSTRUCTION OF STRUCTURES ON EXPANSIVE SOILS. HOWEVER, ALL NEW DEVELOPMENT WOULD BE REQUIRED TO COMPLY WITH THE STANDARDS OF THE CALIFORNIA BUILDING CODE, WHICH WOULD ENSURE THAT EXPANSIVE SOILS ARE REMEDIATED OR THAT FOUNDATIONS AND STRUCTURES ARE ENGINEERED TO WITHSTAND THE FORCES OF EXPANSIVE SOIL. COMPLIANCE WITH THE REQUIREMENTS OF THE CALIFORNIA BUILDING CODE WOULD ENSURE THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

Most soil in Seaside is composed of sand soil types, which are not expansive, and therefore, the probability of development on expansive soil is low (CGS 2002; USGS 2023). However, if new development is constructed on expansive soils, the California Building Code includes requirements to address soil-related hazards such as expansive soils. Typical measures under the California Building Code to treat hazardous soil conditions involve removal, proper fill selection, and compaction. In cases where soil remediation is not feasible, the California Building Code requires structural reinforcement of foundations to resist the forces of expansive soils. Seaside Municipal Code Section 15.32.090 also requires a soil engineering report and/or an engineering geology report for excavation, grading, filling, clearing, and/or erosion control work permits which are required to include recommendations for seismic control. Compliance with the requirements of the California Building Code and the Municipal Code would ensure impacts related to expansive soils are less than significant.

Mitigation Measures

No mitigation measures are required.

Significance After Mitigation

Impacts would be less than significant without mitigation.

Threshold 5:	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 waste water?

Impact GEO-4 NEW SEPTIC TANKS ARE PROHIBITED IN THE SEASIDE MUNICIPAL CODE. THEREFORE, NEW DEVELOPMENT FACILITATED BY SEASIDE 2040 WOULD OCCUR WHERE EITHER EXISTING SEWER SYSTEMS ARE IN PLACE AND OR WHERE THE EXISTING SEWER SYSTEMS WOULD BE EXPANDED. THEREFORE, NEW DEVELOPMENT UNDER SEASIDE 2040 WOULD NOT REQUIRE THE USE OF SEPTIC TANKS OR ALTERNATIVE WASTEWATER DISPOSAL SYSTEMS. NO IMPACT WOULD OCCUR.

Seaside 2040 encourages growth management and development within city limits, specifically in already urban areas and on former Fort Ord lands, identified as Seaside East in the General Plan. In general, new development under Seaside 2040 would occur where existing roads, water, and sewer systems are in place and in a manner that minimizes the impact of development associated with infrastructure and services. Some of the development, however, would occur in Seaside East which is undeveloped and contains some areas that are not currently served by the City's existing wastewater system. Because Seaside Municipal Code Section 13.04.040 prohibits the installation of new septic tanks, any new development in undeveloped areas would require expansion of the City's existing wastewater system to serve that area and no use of septic tanks or alternative wastewater disposal systems would occur. Therefore, because no septic tanks are permitted and the location and timing of growth in Seaside will be planned, taking into consideration infrastructure capacity, public service availability, and fiscal impacts, no impact would occur.

Mitigation Measures

No mitigation measures are required.

Significance After Mitigation

No impact would occur.

Threshold 6:	Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Impact GEO-5 DEVELOPMENT FACILITATED BY SEASIDE 2040 HAS THE POTENTIAL TO IMPACT UNIQUE PALEONTOLOGICAL RESOURCES. IMPACTS WOULD BE LESS THAN SIGNIFICANT WITH MITIGATION.

Paleontological resources may be present in fossil-bearing sediments and geologic units either at or below the ground surface. Development allowed under the General Plan would include ground-disturbing activities, including grading and excavation, in geologic units with high paleontological sensitivity, and would have the potential to damage or destroy unique paleontological resources that may be present. Therefore, activities resulting from implementation of the proposed General

Plan, including construction-related and earth-disturbing actions, could damage or destroy fossils in these geologic units, therefore impacts are considered significant without mitigation.

Effects on paleontological resources are highly dependent on both the individual project site conditions (in this case, the geologic setting) and the characteristics of the proposed ground-disturbing activity. Ground-disturbing activities associated with development facilitated by Seaside 2040, particularly in areas that have not previously been developed with urban uses, or when excavation depths exceed those previously attained, have the potential to damage or destroy unique paleontological resources that may be present on or below the ground surface, especially in areas mapped as high paleontological sensitivity. Consequently, damage to or destruction of fossils could occur as a result of development under Seaside 2040. Impacts are potentially significant, and mitigation would be required.

Mitigation Measures

The following mitigation measure is proposed to reduce potential impacts to paleontological resources to the extent feasible.

GEO-5 Paleontological Resource Policies and Implementation Programs

The City shall add the following policies and implementation programs to the General Plan prior to adoption. The following Policy shall be added to the Conservation Element under Goal C-7:

> **Paleontological Resource Studies**. Require avoidance and/or mitigation for potential impacts to paleontological resources for any development that occurs within high sensitivity geologic units and in areas that have not previously been developed with urban uses, or when excavation depths exceed those previously attained.

The following Implementation Program shall be added to the Implementation Chapter:

> **Paleontological Resource Studies**. The City will require the following measures for projects that could disturb geologic units with high paleontological sensitivity:
>
> 1. **Retain a Qualified Paleontologist.** Prior to initial ground disturbance, the applicant will retain a qualified professional paleontologist to direct all mitigation measures related to paleontological resources and design a Paleontological Mitigation and Monitoring Program (PMMP) for the project. 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. **Paleontological Worker Environmental Awareness Program (WEAP).** Prior to the start of construction, the Qualified Paleontologist or his or her designee will conduct training for construction personnel regarding the appearance of fossils and the procedures for notifying paleontological staff should fossils be discovered by construction staff. The WEAP will be fulfilled at the time of a preconstruction meeting at which a Qualified Paleontologist will attend.
> 3. **Paleontological Monitoring.** Paleontological monitoring should be conducted as follows for ground disturbing construction activities (including grading, trenching, foundation work, and other excavations) in previously undisturbed sediments according to their paleontological sensitivities:

a. **High Sensitivity Sediments**. High sensitivity sediments may be impacted by ground-disturbing activities when they are present at the surface or at depth within a proposed project site. Therefore, full-time monitoring is recommended for construction activities in High sensitivity sediments (Older Stabilized Dune Sand, Qos; Aromas Sand; Qar; Dissected Older Alluvium, Qoa; Monterey Formation, Tm).

b. **Low-to-High Sensitivity Sediments**. Low-to-High sensitivity sediments have low paleontological sensitivity in the surficial and shallow layers, but overlie high sensitivity sediments at depth. Therefore, monitoring is only recommended for projects that extend beneath the low sensitivity surficial sediments and into the deeper sediments. The depth at which this occurs will be determined on a project-specific basis by the Qualified Paleontologist, and may be informed by local geotechnical analyses.

4. **Qualified Paleontological Monitor**. If paleontological monitoring is recommended by the Qualified Paleontologist, it will be conducted by a qualified paleontological monitor, who is defined as an individual who has experience with collection and salvage of paleontological resources and meets the minimum standards of the SVP (2010) for a Paleontological Resources Monitor. The duration and timing of the monitoring will be determined by the Qualified Paleontologist and the location and extent of proposed ground disturbance. 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. **Fossil Discoveries**. In the event of a fossil discovery by the paleontological monitor or construction personnel, all work in the immediate vicinity of the find will cease. A Qualified Paleontologist will 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 will complete the following conditions to mitigate impacts to significant fossil resources:

a. **Salvage of Fossils**. If fossils are discovered, all work in the immediate vicinity will be halted to allow the paleontological monitor, and/or lead paleontologist to evaluate the discovery and determine if the fossil may be considered significant. If the fossils are determined to be potentially significant, the qualified paleontologist (or paleontological monitor) will recover them following standard field procedures for collecting paleontological as outlined in the PMMP prepared for the project. Typically, fossils can be safely salvaged quickly by a single paleontologist and not disrupt construction activity. In some cases, larger fossils (such as complete skeletons or large mammal fossils) require more extensive excavation and longer salvage periods. In this case the paleontologist should have the authority to temporarily direct, divert or halt construction activity to ensure that the fossil(s) can be removed in a safe and timely manner. If fossils are discovered, the Qualified Paleontologist (or Paleontological Monitor) will recover them as specified in the project's PMMP.

b. **Preparation and Curation of Recovered Fossils**. Once salvaged, significant fossils will be identified to the lowest possible taxonomic level, prepared to a curation-ready condition, and curated in a scientific institution with a permanent paleontological collection (such as the UCMP or LACM), along with all pertinent field notes, photos, data, and maps. Fossils of undetermined significance at the time of collection may also warrant curation at the discretion of the Qualified Paleontologist.

6. **Final Paleontological Mitigation Report**. Upon completion of ground disturbing activity (and curation of fossils if necessary) the Qualified Paleontologist will prepare a final mitigation and monitoring report outlining the results of the mitigation and monitoring program. The report will include discussion of the location, duration and methods of the monitoring, stratigraphic sections, any recovered fossils, and the scientific significance of those fossils, and where fossils were curated.

Significance After Mitigation

Mitigation Measure GEO-5 would ensure that impacts to paleontological resources are less than significant and would reduce impacts to these resources through the recovery, identification, and curation of previously unrecovered fossils.

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4.7 Greenhouse Gas Emissions

This section discusses the potential for Seaside 2040 to result in impacts related to climate change.

4.7.1 Setting

a. Climate Change and Greenhouse Gases

The Earth's atmosphere plays an important role in regulating planetary climate by mediating the amount of radiation that enters and leaves the Earth's surface. A specific class of atmospheric gases, referred to as greenhouse gases (GHGs), play a particularly important role in this process. Due to the chemical properties of GHGs, they absorb little of the solar radiation coming through the atmosphere, and more of the longer wavelength radiation emitted from the Earth's surface. By letting radiation in, but reducing its ability to escape out, GHGs act like the glass ceiling of a greenhouse, trapping heat below. Without the natural heat trapping effect of GHGs, it is estimated that Earth's surface would be about 34° C cooler (California Environmental Protection Agency 2006).

While GHGs are generated by natural processes, such as aerobic respiration, volcanic eruptions, and decomposition, human activities since the Industrial Revolution have increasingly contributed to the annual mass of GHGs being emitted to the atmosphere. Examples of human activities that produce GHGs include fossil fuel burning (e.g., coal, oil, and natural gas for heating and electricity, gasoline and diesel for transportation), methane generated by landfill wastes and raising livestock, deforestation activities, and some agricultural practices. These activities produce such GHGs as carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFC), perfluorocarbons (PFC), and sulfur hexafluoride (SF_6).

The rapid increase in atmospheric GHGs resulting from human activities has resulted in a shift in Earth's long-term average temperature and precipitation, a phenomenon referred to as climate change. Impacts of climate change are felt on a global scale and are expected to manifest in different ways in different locations depending on local and regional factors, such as topography, regional climate, ocean circulation, and land uses. In California, climate change is forecasted to result in the following effects (California Air Resources Board [CARB] 2014):

- Reduction in water supply and significant loss of snow pack;
- Sea level rise resulting in coastal erosion and seawater intrusion;
- Increased average temperatures including more extreme heat days per year;
- Exacerbation of air quality problems including more high ozone days;
- Increased vulnerability of forests due to pest infestation and higher temperatures;
- More large forest fires;
- More drought years;
- Increased challenges for the State's important agricultural industry due to water shortages, increasing temperatures, and saltwater intrusion into the Delta;
- Increased electricity demand, particularly in the hot summer months;
- Damage to marine ecosystems and the natural environment including acidification of the oceans due to increased CO_2 levels (including coral bleaching); and
- Increased incidences of infectious diseases, asthma, and other human health related problems.

b. Greenhouse Gas Emissions Inventory

State

Based on the California Air Resource Board's (CARB) California Greenhouse Gas Inventory for 2000-2020 (2022 edition), California produced 369.2 MMT of CO_2e in 2020 (CARB 2022). The major source of GHGs in California is associated with transportation, contributing 38 percent of the state's total GHG emissions. The industrial sector is the second largest source, contributing 23 percent of the state's GHG emissions, and electric power accounted for approximately 16 percent (CARB 2022). California emissions are due in part to its large size and large population compared to other states. However, a factor that reduces California's per capita fuel use and GHG emissions, as compared to other states, is its relatively mild climate. In 2016, the State of California achieved its 2020 GHG emission reduction targets as emissions fell below 431 MMT of CO_2e (CARB 2022).

4.7.2 Regulatory Setting

a. Federal

In *Massachusetts et al. v. Environmental Protection Agency et al.* ([2007] 549 U.S. 05-1120), the U.S. Supreme Court held that the USEPA has the authority to regulate motor-vehicle GHG emissions under the federal Clean Air Act. USEPA issued a Final Rule for mandatory reporting of GHG emissions in October 2009. This Final Rule applies to fossil fuel suppliers, industrial gas suppliers, direct GHG emitters, and manufacturers of heavy-duty and off-road vehicles and vehicle engines, and requires annual reporting of emissions. In 2012, the USEPA issued a Final Rule that establishes the GHG permitting thresholds that determine when Clean Air Act (CAA) permits under the New Source Review Prevention of Significant Deterioration (PSD) and Title V Operating Permit programs are required for new and existing industrial facilities.

In 2014, the U.S. Supreme Court held that USEPA may not treat GHGs as an air pollutant for purposes of determining whether a source is a major source required to obtain a PSD or Title V permit (*Utility Air Regulatory Group v. EPA* [134 S. Ct. 2427]). The Court also held that PSD permits that are otherwise required (based on emissions of other pollutants) may continue to require limitations on GHG emissions based on the application of Best Available Control Technology (BACT).

Federal Fuel Efficiency Standards (CAFE)

Under the Clean Air Act, corporate average fuel economy (CAFE) standards have been set for passenger cars and light trucks. The State of California has traditionally had a waiver to set its own more stringent fuel efficiency standards. However, on August 2, 2018, the NHTSA and US EPA, operating under the direction of the Trump Administration, proposed the Safer Affordable Fuel-Efficient Vehicles Rule (SAFE Rule). This rule addresses emissions and fuel economy standards for motor vehicles and is separated in two parts as described below.

- Part One, "One National Program" (84 FR 51310) revokes a waiver granted by US EPA to the State of California under Section 209 of the CAA to enforce more stringent emission standards for motor vehicles than those required by US EPA for the explicit purpose of GHG reduction, and indirectly, criteria air pollutants and ozone precursor emission reduction. This revocation became effective on November 26, 2019, potentially restricting the ability of CARB to enforce more stringent GHG emission standards for new vehicles and set zero emission vehicle mandates in California.

- Part Two addresses CAFE standards for passenger cars and light trucks for model years 2021 to 2026. This rulemaking proposes new CAFE standards for model years 2022 through 2026 and would amend existing CAFE standards for model year 2021. The proposal would retain the model year 2020 standards (specifically, the footprint target curves for passenger cars and light trucks) through model year 2026. The proposal addressing CAFE standards was jointly developed by NHTSA and US EPA, with US EPA simultaneously proposing tailpipe CO_2 standards for the same vehicles covered by the same model years.

Construction Equipment Fuel Efficiency Standard

USEPA sets emission standards for construction equipment. The first federal standards (Tier 1) were adopted in 1994 for all off-road engines over 50 horsepower (hp) and were phased in by 2000. A new standard was adopted in 1998 that introduced Tier 1 for all equipment below 50 hp and established the Tier 2 and Tier 3 standards. The Tier 2 and Tier 3 standards were phased in by 2008 for all equipment. The current iteration of emissions standards for construction equipment are the Tier 4 efficiency requirements are contained in 40 Code of Federal Regulations Parts 1039, 1065, and 1068 (originally adopted in 69 Federal Register 38958 [June 29, 2004], and most recently updated in 2014 [79 Federal Register 46356]). Emissions requirements for new off-road Tier 4 vehicles were to be completely phased in by the end of 2015.

Energy Independence and Security Act of 2007

The Energy Independence and Security Act of 2007 sets energy efficiency standards for lighting (specifically light bulbs) and appliances. Development would also be required to install photosensors and energy-efficient lighting fixtures consistent with the requirements of 42 USC Section 17001 et seq.

b. State

CARB is responsible for the coordination and oversight of State and local air pollution control programs in California. California has numerous regulations aimed at reducing the State's GHG emissions. These initiatives are summarized below.

California Advanced Clean Car Standards

Assembly Bill (AB) 1493 (2002), California's Advanced Clean Cars (referred to as "Pavley"), requires CARB to develop and adopt regulations to achieve "the maximum feasible and cost-effective reduction of GHG emissions from motor vehicles" (CARB 2017b). On June 30, 2009, USEPA granted the waiver of Clean Air Act preemption to California for its greenhouse gas emission standards for motor vehicles beginning with the 2009 model year. Pavley I regulates model years from 2009 to 2016 and Pavley II, which is now referred to as "LEV (Low Emission Vehicle) III GHG" regulates model years from 2017 to 2025. The clean car standards are now grouped under the CARB's Advanced Clean Cars program, which was adopted by CARB in 2012 (CARB 2017b). The program, developed in coordination with USEPA and National Highway Traffic Safety Administration (NHTSA), establishes emission requirements for passenger vehicles, model years 2015 through 2025, and manufacturer requirements to provide Zero Emissions Vehicles (ZEV).

Executive Order S-3-05

In 2005, in recognition of California's vulnerability to the effects of climate change, Governor Schwarzenegger established Executive Order S-3-05, which set forth a series of target dates by which statewide emissions of GHGs would be progressively reduced, as follows:

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

Executive Order B-30-15

In 2015, the governor issued Executive Order (EO) B-30-15 to establish a GHG reduction target of 40 percent below 1990 levels by 2030. These orders are only applicable to "state agencies with jurisdiction over sources of greenhouse gas emissions" (Order 4-29-2015 Section 2). The City of Seaside (City) does not fall within the definition of a state agency. Furthermore, there is currently no implementation strategy for these Executive Orders (i.e., a plan, similar to the AB 32 Scoping Plan, which apportions GHG reductions by economic sector/activity/region).

Senate Bill 97

SB 97, signed in August 2007, acknowledges that climate change is an environmental issue that requires analysis in CEQA documents. In March 2010, the California Resources Agency (Resources Agency) adopted amendments to the State CEQA Guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions. The adopted guidelines give lead agencies the discretion to set quantitative or qualitative thresholds for the assessment and mitigation of GHG and climate change impacts.

Senate Bill 375

Adopted on September 30, 2008, SB 375 establishes mechanisms to develop regional targets for reducing GHG emissions from passenger vehicles. On September 23, 2010, CARB adopted the vehicular GHG emissions reduction targets that were developed in consultation with metropolitan planning organizations (MPOs) across the state. SB 375 recognizes the importance of achieving significant GHG reductions by working with cities and counties to change land use patterns and improve transportation alternatives. Through the SB 375 process, MPOs, such as the Association of Monterey Bay Area Governments (AMBAG), work with local jurisdictions in the development of sustainable communities strategies (SCS) designed to integrate development patterns and the transportation network in a way that reduces GHG emissions while meeting housing needs and other regional planning objectives. AMBAG's reduction target for per capita GHG emissions is a three percent per capita reduction by 2020 and a six percent per capita reduction by 2040 (CARB 2018b).

In June 2022, the AMBAG adopted the 2045 Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS). The primary goal of the 2045 MTP/SCS is to reduce GHG emissions from transportation sources to comply with SB 375, improve public health, and meet the National Ambient Air Quality Standards (NAAQS) as set forth by the federal Clean Air Act. The key goal of the MTP/SCS is to achieve GHG emission reduction targets through integrated land use and transportation strategies. The focus of achieving these reductions is on implementing transportation and land use strategies that influence vehicle travel (AMBAG 2022).

Senate Bill 1383

Adopted in September 2016, SB 1383 requires CARB to approve and begin implementing a comprehensive strategy to reduce emissions of short-lived climate pollutants. The bill requires the strategy to achieve the following reduction targets by 2030:

- Methane: 40% below 2013 levels
- Hydrofluorocarbons: 40% below 2013 levels
- Anthropogenic black carbon: 50% below 2013 levels

The bill also requires CalRecycle, in consultation with the State board, to adopt regulations that achieve specified targets for reducing organic waste in landfills.

California Renewable Portfolio Standard and Senate Bill 100

Established in 2002 under SB 1078, and accelerated by SB 107 (2006), SB X 1-2 (2011), and SB 100 (2018), California's Renewable Portfolio Standard (RPS) obligates investor-owned utilities, energy service providers, and community choice aggregators to procure 33 percent total retail sales of electricity from renewable energy sources by 2020, 60 percent by 2030, and 100 percent by 2045. SB 100 also states "that it is the policy of the state that eligible renewable energy resources and zero-carbon resources supply 100% of retail sales of electricity to California end-use customers and 100% of electricity procured to serve all state agencies by December 31, 2045." The California Public Utilities Commission (CPUC) and the California Energy Commission (CEC) are jointly responsible for implementing the program. Electricity in the city of Seaside is currently provided by Pacific Gas & Electric (PG&E) and Central Coast Community Energy (3CE). In 2019, PG&E's power mix included 73 percent carbon-free sources (PG&E 2019). The State's three largest investor-owned utilities, including PG&E, are on track to achieve a 50 percent RPS by 2020 (CARB 2017a).

Executive Order B-55-18

On September 10, 2018, the governor issued EO B-55-18, establishing a state goal to achieve carbon neutrality no later than 2045, and achieve and maintain net negative emissions thereafter. This executive order directs CARB to work with state agencies to develop a framework for implementation and accounting that tracks progress for this goal and to include measures in the next Scoping Plan update to achieve carbon neutrality by 2045. This goal is in addition to the existing statewide GHG reduction targets established by SB 375, SB 32, SB 1383, and SB 100.

California Global Warming Solutions Act of 2006 (Assembly Bill 32, and Senate Bill 32, and Assembly Bill 1279)

The "California Global Warming Solutions Act of 2006," (AB 32), outlines California's major legislative initiative for reducing GHG emissions. AB 32 codifies the statewide goal of reducing GHG emissions to 1990 levels by 2020 and requires CARB to prepare a Scoping Plan that outlines the main state strategies for reducing GHG emissions to meet the 2020 deadline. In addition, AB 32 requires CARB to adopt regulations to require reporting and verification of statewide GHG emissions. Based on this guidance, CARB approved a 1990 statewide GHG level and 2020 target of 431 MMT CO2e, which was achieved in 2016. CARB approved the Scoping Plan on December 11, 2008, which included GHG emission reduction strategies related to energy efficiency, water use, and recycling and solid waste, among others (CARB 2008). Many of the GHG reduction measures

included in the Scoping Plan (e.g., Low Carbon Fuel Standard, Advanced Clean Car standards, and Cap-and-Trade) have been adopted since the Scoping Plan's approval.

The CARB approved the 2013 Scoping Plan update in May 2014 (CARB 2014). The update defined the CARB's climate change priorities for the next five years, set the groundwork to reach post-2020 statewide goals, and highlighted California's progress toward meeting the "near-term" 2020 GHG emission reduction goals defined in the original Scoping Plan. It also evaluated how to align the state's longer term GHG reduction strategies with other state policy priorities, including those for water, waste, natural resources, clean energy, transportation, and land use (CARB 2014).

On September 8, 2016, the governor signed Senate Bill (SB) 32 into law, extending the California Global Warming Solutions Act of 2006 by requiring the state to further reduce GHG emissions to 40 percent below 1990 levels by 2030 (the other provisions of AB 32 remain unchanged). On December 14, 2017, the CARB adopted the 2017 Scoping Plan, which provides a framework for achieving the 2030 target. The 2017 Scoping Plan relies on the continuation and expansion of existing policies and regulations, such as the Cap-and-Trade Program, and implementation of recently adopted policies and legislation, such as SB 1383 and SB 100 (discussed later). The 2017 Scoping Plan also puts an increased emphasis on innovation, adoption of existing technology, and strategic investment to support its strategies. As with the 2013 Scoping Plan update, the 2017 Scoping Plan does not provide project-level thresholds for land use development. Instead, it recommends that local governments adopt policies and locally appropriate quantitative thresholds consistent with statewide per capita goals of six MT CO2e by 2030 and two MT CO2e by 2050 (CARB 2017). As stated in the 2017 Scoping Plan, these goals may be appropriate for plan-level analyses (city, county, sub-regional, or regional level), but not for specific individual projects because they include all emissions sectors in the state (CARB 2017).

AB 1279, "The California Climate Crisis Act," was passed on September 16, 2022 and declares the State would achieve net zero GHG emissions as soon as possible, but no later than 2045, and to achieve and maintain net negative GHG emissions thereafter. In addition, the bill states that the State would reduce GHG emissions by 85 percent below 1990 levels no later than 2045. The 2022 Scoping Plan lays out a path to achieve AB 1279 targets (CARB 2022). The actions and outcomes in the 2022 Scoping Plan would achieve significant reductions in fossil fuel combustion by deploying clean technologies and fuels, further reductions in short-lived climate pollutants, support for sustainable development, increased action on natural and working lands to reduce emissions and sequester carbon, and the capture and storage of carbon.

California Code, Title 24

Updated every three years through a rigorous stakeholder process, Title 24 of the California Code of Regulations requires California homes and businesses to meet strong energy efficiency measures, thereby lowering their energy use. Title 24 contains numerous subparts, including Part 1 (Administrative Code), Part 2 (Building Code), Part 3 (Electrical Code), Part 4 (Mechanical Code), Part 5 (Plumbing Code), Part 6 (Energy Code), Part 8 (Historical Building Code), Part 9 (Fire Code), Part 10 (Existing Building Code), Part 11 (Green Building Standards Code), Part 12 (Referenced Standards Code).

Part 6 (Building Energy Efficiency Standards)

Part 6 of Title 24 contains the 2022 Building Energy Efficiency Standards for new residential and non-residential buildings, which went into effect on January 1, 2023. Part 6 requires the design of building shells and building components to conserve energy. The standards are updated periodically

to allow for consideration and possible incorporation of new energy efficiency technologies and methods. The 2022 Standards improve upon the previous 2019 Standards for new construction of and additions and alterations to residential and nonresidential buildings. The 2022 Standards improve upon the previous 2019 Standards for new construction of, and additions and alterations to, residential and nonresidential buildings. Part 6 also provides for the installation of cool roofs in Sections 140.3(a)(1), 141.0(b)(2)(B), and 141.0(b)(3). Although the 2016 Standards do not achieve zero-net energy, they make substantial progress toward the state's goal and take important steps toward changing residential building practices in California.

The 2022 Standards move toward cutting energy use in new homes by more than 50 percent and will require installation of solar photovoltaic systems for single-family homes and multifamily buildings of three stories and less. The 2022 Standards focus on four key areas: 1) smart residential photovoltaic systems; 2) updated thermal envelope standards (preventing heat transfer from the interior to exterior and vice versa); 3) residential and nonresidential ventilation requirements; 4) and nonresidential lighting requirements (CEC 2022a). Over 30 years, the 2022 Standards are estimated to provide $1.5 billion in consumer benefits and reduce 10 million metric tons of GHG emissions, which is equivalent to taking approximately 2.2 million cars off the road for one year (CEC 2022b).

Part 11 (CALGreen)

On July 17, 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code (24 CCR, Part 11, known as "CALGreen") was adopted as part of the California Building Standards Code. CALGreen established planning and design standards for sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and internal air contaminants. The mandatory provisions of the CALGreen became effective January 1, 2011 and were updated in 2016. The 2016 Standards, which became effective on January 1, 2017, establish green building criteria for residential and nonresidential projects.

In 2018, the California Building Standards Commission adopted additional modifications to Title 24, which require solar photovoltaic (PV) panels to be installed on new low-rise residential buildings beginning January 1, 2020. Low-rise residential buildings include single family homes and multi-family buildings of three stories or less; therefore, condominiums and some apartment buildings are covered by the new standards.

California Environmental Quality Act

The adopted CEQA Guidelines provide general regulatory guidance on the analysis and mitigation of GHG emissions in CEQA documents, while giving lead agencies the discretion to set quantitative or qualitative thresholds for the assessment and mitigation of GHGs and climate change impacts. Subsequent discretionary projects will be subject to CEQA, including consideration of GHG impacts and associated mitigation measures and alternatives.

4.7.3 Impact Analysis

a. Methodology

Seaside 2040 would update the City's land use designations to provide clear parameters for future development and change in the city. Because project-level details associated with buildout of the

envisioned land uses are not known at this time, quantification of project emissions would be speculative. Therefore, Seaside 2040's GHG emission impacts are addressed qualitatively based on the following approach: potential sources of GHG emissions associated with the project are identified and policies included in Seaside 2040 are evaluated to determine whether they would be sufficient to reduce GHG emissions from implementation of Seaside 2040 to a less than significant level.

b. Significance Thresholds

Based on Appendix G of the *CEQA Guidelines*, impacts related to GHG emissions would be significant if the project would:

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

The vast majority of individual projects do not generate sufficient GHG emissions to directly influence climate change. However, project emissions can contribute incrementally to cumulative effects that are significant, even if individual changes resulting from a project are limited. Thus, the issue of climate change typically involves an analysis of whether a project's contribution towards an impact is cumulatively considerable. "Cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, other current projects, and probable future projects (CEQA Guidelines, Section 15064[h][1]).

c. Project Impacts and Mitigation Measures

Threshold 1:	Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Impact GHG-1 BUILDOUT OF THE PROJECT WOULD GENERATE GHG EMISSIONS. HOWEVER, SEASIDE 2040 ESTABLISHES POLICIES TO REDUCE PROJECT GHG EMISSIONS, INCLUDING SETTING REDUCTION TARGETS CONSISTENT WITH STATEWIDE REDUCTION TARGETS, AND REQUIRING THE PREPARATION OF A CLIMATE ACTION PLAN (CAP). POLICIES AND PROGRAMS OF SEASIDE 2040 WOULD FACILITATE DEVELOPMENT OF A CAP AND WOULD ENSURE THE PROJECT'S GHG EMISSIONS WOULD BE REDUCED TO A LESS THAN SIGNIFICANT LEVEL.

Buildout envisioned by Seaside 2040 would generate GHG emissions. Construction required for buildout would require the use of heavy machinery, such as dump trucks, dozers, and excavators. This machinery uses internal combustion engines, which generate exhaust and emit GHG. Operation of the development would also generate GHG emissions. For example, many land uses, such as residential and commercial development, would generate solid waste that is ultimately disposed of and transported to either landfills or recycling centers. Transport of solid waste would require the use of trucks, which would generate GHG emissions. As discussed in Section 4.16, *Utilities and Service Systems*, regulations policies would minimize the amount of waste that is disposed of at area landfills. The consumption of electricity and natural gas to operate land uses, such as residences and office buildings, would also generate GHG emissions. The California Building Code would require

certain types of residential development to include solar power, reducing the use of power from nonrenewable sources. This would result in reduced GHG emissions.

Seaside 2040 establishes policies to reduce GHG emissions from future development in Seaside. These include policies previously listed in Section 4.2, *Air Quality*, that would reduce mobile source emissions by promoting mixed-use and infill development and supporting bike, pedestrian, and mass transit; additional 2040 General Plan policies that would reduce GHG emissions are listed below.

Importantly, policies under Goal HSC-6 establish GHG reduction targets for the City of 1990 levels by 2020, 40 percent below 1990 levels by 2030, and 60 percent below 1990 levels by 2040, which is consistent with SB 32 and California's long-term reduction goal of 80 percent below 1990 levels by 2050 set in Executive Order S-3-05. Goal HSC 6 of Seaside 2040 would also facilitate development of a CAP for reducing GHG emissions. In addition, Seaside 2040 would include Implementation Program HSC 4, *Climate Action and Adaptation Plan,* which would further facilitate development of a CAP that establishes GHG reduction targets in alignment with state goals. Policies and programs of Seaside 2040, listed below, would minimize GHG emissions that may have a significant impact on the environment. Impacts would be less than significant.

Land Use + Community Design Element

Goal LUD-21: Resilient neighborhoods on former Fort Ord lands.

Intent: To ensure new development is not unduly threatened by natural hazards and the worsening impacts of climate change.

Policy: **Resource efficiency.** Provide incentives to encourage new development to be more water and energy efficient and use fewer natural resources to increase long-term neighborhood resilience.

Goal LUD-24: Transform the "Main Gate" area into a mixed-use center with retail, residential, institutional/public, and entertainment.

Intent: To create a regional destination that capitalizes on proximity to Highway 1 and acts as a gateway to the City's assets.

Policy: **Sustainable development.** Require high levels of sustainability from new buildings and the site generally, especially including stormwater treatment, drought-tolerant and native plantings, cool roofs, and indoor water conservation.

Housing Element

Goal H-1: Well-maintained neighborhoods and housing conditions support an improved quality of life.

Intent: The City of Seaside has an aging housing stock and deferred maintenance affects neighborhoods in the City. This goal seeks to improve the quality of existing housing in the community, encourage safe housing, and promote natural resource conservation and efficiency in the City's existing housing.

Policies: **Sustainability.** Promote sustainability through the use of green building techniques and materials for new construction and substantial rehabilitation of residential development.

Resource conservation. Offer incentives to promote the use of energy-efficient and water-conserving features and materials for residential rehabilitation projects.

Mobility Element

Goal M-2: Mobility options that serve the multi-modal access and travel needs generated by new development in a manner suitable to the local context.

Intent: To ensure new development includes multi-modal transportation components, and provide mechanisms for new development to pay its fair share of the cost of transportation improvements.

Policy: **Greenhouse gas emissions and vehicle miles traveled (VMT) reductions.** Support development and transportation improvements that help reduce greenhouse gas emissions and VMT in line with AMBAG targets for the Sustainable Communities Strategy. Strive to reduce VMT below regional averages on a "per resident" and "per employee" basis.

Pedestrian amenities. Require new development and redevelopment to increase connectivity through direct and safe pedestrian connections to public amenities, neighborhoods, shopping and employment destinations throughout the City.

Car sharing and bike sharing in commercial areas. Explore car-sharing and bicycle-sharing opportunities throughout the city.

Street design standards. Update and maintain street design standards consistent with the goals of the National Association of City Transportation Officials (NACTO) Urban Street Design Guide that optimize multi-modal mobility.

Parks and Open Space Element

Goal PO-7: Environmental sustainability and awareness at new and existing park and recreational facilities.

Intent: Reducing energy and water use, diverting solid waste from the landfill, and capturing stormwater onsite can improve the environmental sustainability of Seaside's parks and open spaces. This goal seeks to increase the City's sustainability efforts in parks, using these actions as an opportunity to educate the community about sustainability.

Policies: **Conservation and efficiency**. Increase energy and water conservation and efficiency at new and existing park and recreation facilities.

Solid waste diversion. Promote solid waste diversion at City parks and recreation facilities through recycling and composting.

Healthy + Sustainable Community Element

Goal HSC-7: Citywide greenhouse gas emissions that meet State reduction targets.

Intent: To meet greenhouse gas reduction targets set by the State. To achieve this, the City will quantify total emissions produced by Seaside and formalize strategies in a Climate Action Plan for reducing greenhouse gas emissions.

Policies: **Reduction targets**. Establish greenhouse gas emission reduction targets in line with those of the State that call for reducing greenhouse gas emissions as follows:

- 40 percent below 1990 levels by 2030
- carbon neutrality by 2045

Reduction measures. Implement greenhouse gas reduction measures to achieve greenhouse gas reduction targets through the development of a Climate Action Plan or similar.

Monitor emissions. Monitor and report greenhouse gas emissions so that reductions can be tracked in a transparent, consistent, and accurate manner.

Municipal emissions. Prioritize municipal policies and programs that reduce the City's carbon footprint, such as purchasing alternative fuel vehicles, pursuing solar installation, implementing green purchasing, and retrofitting existing buildings.

Green jobs. Promote greenhouse gas reduction measures that support local job training and placement in green industries focused on environmental sustainability, renewable energy, renewable-related technologies, and bioremediation.

Sustainable Communities Strategy. Collaborate with regional and State partners to implement the Sustainable Communities Strategy to reduce greenhouse gas emissions, balance jobs and housing, and develop transportation systems that support all modes of circulation.

Reduction programs. Use the emissions inventory and monitoring tools to identify, prioritize, and update programs that effectively contribute to greenhouse gas reductions.

Goal HSC-8: Buildings and landscapes that promote water conservation, efficiency, and the increased use of recycled water.

Intent: To address water supply limitations that significantly affect development opportunities in the city and that have the potential to create water shortages for existing customers. To achieve this, the City will reduce potable water used by buildings and landscapes in Seaside, focusing on water conservation, water efficiency, and recycled water use. Additional water policies are included in the Community Facilities and Infrastructure Element.

Policies: **Reduced water use.** When feasible, augment regional conservation programs with City resources to encourage reduced water use in homes and businesses.

Recycled water distribution. Continue to expand the recycled water supply and distribution facilities in the city.

Water innovation. Encourage innovative water recycling techniques such as rainwater capture, use of cisterns, and installation of greywater systems.

Conservation design requirements. Continuously update and improve water conservation and landscaping requirements for new development.

Education. Promote education on policies and practices to encourage residents and businesses to conserve water.

Goal HSC-9: Energy efficiency buildings that use energy from renewable sources.

Intent: To improve energy efficiency and encourage renewable energy that will lower greenhouse gas emissions, support green job creation, and create a more resilient community. To achieve this, the City will improve community-wide access to renewable energy in a way that meets community needs while positioning the community for a sustainable energy future.

Policies: **Net zero buildings**. Explore a requirement for all new residential buildings to use net zero energy by 2030 and all new commercial buildings by 2040, consistent with State goals.

Efficiency upgrades. Promote energy efficiency upgrades, such as weatherization and lighting retrofits for qualified households.

Renewable energy. Encourage the installation of renewable energy generation sources in the design and development of new development to reduce energy costs and support resource conservation.

Audits and upgrades. Partner with local residential and business associations to require energy disclosure, audits, and/or upgrades at time of sale of residential and commercial properties.

Funding sources. Support and implement third-party programs and financing sources, such as a PACE program and CalSolar, to improve energy and water efficiency of existing buildings and to generate renewable energy locally.

Goal HSC-11: New construction that meets a high-level of environmental performance.

Intent: To ensure that new homes and businesses in Seaside supports healthy environment design. To achieve this, the City will promote efficient use of energy and water resources, reduce waste and pollution, and protect health. Buildings can create healthy living and working conditions and meet a high-level of environmental performance.

Policies: **CalGreen.** Ensure future development meets the mandatory elements of CalGreen.

Sustainable building practices. Encourage innovative sustainable building practices when homes are renovated and new buildings are constructed.

Solar-ready buildings. Require commercial, mixed-use, and multifamily buildings to be solar ready by providing a solar zone and infrastructure such as solar panel standoffs and conduit.

Education and training. Partner with CSUMB and Rancho Cielo to encourage long-term green technology education and training.

Passive solar techniques. Encourage new development to reduce building energy use by:

- Maximizing interior daylighting.
- Using cool exterior siding, roofing, and paving materials with relatively high solar reflectivity to reduce solar heat gain.
- Planting shade trees on south- and west-facing sides of new buildings to reduce energy loads.

Goal HSC-12: A zero-waste program that increases recycling and reduces food scraps and green waste sent to the Regional Waste Management District.

Intent: To ensure the City provides leadership in waste management services to the community. To achieve this, the City will provide quality services too hard to reach populations, including multifamily and commercial buildings, and work to reduce the negative health and environmental impacts of waste, especially for communities in close proximity to these site. Additional solid waste policies are included in the Community Facilities and Infrastructure Element.

Policy: **Commercial and multifamily recycling.** Promote GreenWaste Recovery's recycling programs expanding outreach to commercial and multifamily residences, including programs that convey the lifecycle effects from green purchasing and recycling.

Food and green waste. Work with GreenWaste Recovery to expand green waste programs so they collect food waste and green waste from commercial and residential uses, and divert from landfills.

Green purchasing. Promote green purchasing options across all City departments. Consider the lifecycle effects from purchases.

Community Facilities + Infrastructure Element

Goal CFI-1: City-wide infrastructure to support existing development and future growth.

Intent: To plan new and improved city-wide infrastructure that supports future growth and sustainable infrastructure best practices. To achieve this, the City will consider strategic approaches to mitigate the cost of services and utilities, while meeting the needs of current and future residents.

Policy: **Sustainable materials.** Promote the design of infrastructure projects that use sustainable materials and fewer natural resources during construction.

Goal CFI-6: A flexible and effective system that reduces solid waste and waste resources.

Intent: To reduce solid waste sent to the landfill, divert waste to recycling or green waste programs, and encourage residents and businesses to reduce consumption of materials that are likely to end up in the landfill. To achieve this, the City will follow sustainable waste management practices to ensure that e-waste and hazardous waste are disposed of properly and will use new technology and innovation to help achieve waste reduction goals.

Policy: **Construction demolition.** Require construction demolition to meet or exceed the State's 50 percent targets for material salvage and recycling of non-hazardous construction materials.

Implementation Element

Program **HSC 3, Greenhouse gas inventory.** Prepare a revised greenhouse has inventory on regular 3-year cycles.

HSC 4, Climate Action and Adaptation Plan. Prepare a Climate Action and Adaptation Plan that establishes greenhouse gas reduction targets in alignment with State targets. Specify energy, water, transportation, and other actions necessary to meet those targets.

Identify Seaside's most significant potential climate change risks and vulnerabilities in order to create a framework for decision makers to build a more resilient and sustainable community. Include an adaptation strategy and regular plan maintenance as addressed in the Health and Sustainable Community Element. Special focus should be provided related to sea level rise and coastal flooding, drought, extreme heat, and wildfire risk.

Mitigation Measures

No mitigation is required.

Significance After Mitigation

Impacts would be less than significant without mitigation.

Threshold 2:	Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Impact GHG-2 POLICIES CONTAINED IN SEASIDE 2040 WOULD ENSURE PROJECT CONSISTENCY WITH APPLICABLE STATE AND REGIONAL PLANS AND POLICIES ADOPTED FOR THE PURPOSE OF REDUCING GHG EMISSIONS. THERE WOULD BE NO IMPACT.

The regional GHG reduction policies and regulations applicable to the project are those found in AMBAG's MTP/ SCS, *Moving Forward Monterey Bay 2045,* the SLOAPCD's GHG significance threshold, and AB 32 and SB 32, which codify the State's short-term (2020) and mid-term (2030) GHG targets, respectively. As shown in Table 4.7-1, the proposed project would be consistent with goals contained in the MTP/SCS relevant to reducing GHG emissions.

Additionally, a key goal of the 2045 MTP/SCS is to achieve GHG emission reduction targets through integrated land use and transportation strategies. The focus of these reductions is on transportation and land use strategies that influence vehicle travel. For example, land use strategies such as mixed-use development and transit-oriented development both help to reduce GHG emissions by locating occupants within proximity to multiple types of uses or transit, avoiding the need for single-passenger vehicle trips. As described in Section 4.10, *Land Use and Planning*, there are isolated differences among the land uses envisioned in the 2045 MTP/SCS and in Seaside 2040. However, in each of these differences, the envisioned land use in Seaside still encourages high-density development in urban infill areas where occupants would be in proximity to transit and other a mix of uses, such as residential and commercial. Overall, Seaside 2040 encourages mixed-use and infill development, mostly within proximity to transit, consistent with the key goal of the 2045 MTP/SCS. As described in Section 4.14, *Transportation*, implementation of Seaside 2040 would result in a reduction of VMT per capita in 2040, as compared with conditions in 2040 without Seaside 2040. This suggests that despite minor differences in planned land uses between the 2045 MTP/SCS and Seaside 2040, Seaside 2040 would not conflict with the overall goal to reduce GHG emissions per capita in the region.

Table 4.7-1 Project Consistency with the AMBAG 2045 MTP/SCS

Policy	Consistency
Access and Mobility. Provide convenient, accessible, and reliable travel options while maximizing productivity for all people and goods in the region	**Consistent** Seaside 2040 includes policies in its Mobility Element that support the development and enhancement of multi-modal transportation, including the creation of a citywide bike network and car-sharing and bike-sharing programs, provision of funding for transit improvements, and design of complete streets.
Environment. Promote environmental sustainability and protect the natural environment.	**Consistent** The Healthy & Sustainable Community (HSC) Element (as well as other elements) contains policies intended to promote environmental sustainability and protect the natural environment, such as policies under Goals HSC-8, 9, 11, and 12, which promote water conservation, energy-efficient building, sustainable building design, and waste reduction. Preservation of natural resources is included in the General Plan's Major Strategies no. 10 and no. 13 and in policies in the Conservation Element, such as Goals C-2, 3, and 4.
Healthy Communities. Protect the health of our residents; foster efficient development patterns that optimize travel, housing, and employment choices and encourage active transportation.	**Consistent** Seaside 2040 includes policies that foster mixed-use and infill development and active transportation, as summarized by some of the Plan's Guiding Principles, including: 8. A City with Distinct and Complete Neighborhoods, 11. An Active City, 12. A Healthy City, and 13. A City with a Focus on Active Transportation.
System Preservation and Safety. Preserve and ensure a sustainable and safe regional transportation system.	**Consistent** The 2040 Seaside General Plan includes policies in its Mobility Element that support the following: development and enhancement of multi-modal transportation, including the creation of a citywide bike network and car-sharing and bike-sharing programs; provision of funding for transit improvements; design of complete streets; implementation of safety improvements, safe routes to school, and traffic calming measures; and development of regional transit through coordination with neighboring jurisdictions and the Transportation Agency for Monterey County.

Source: AMBAG 2022

As discussed above under Impact GHG-1, Seaside 2040 establishes GHG reduction targets for Seaside and also requires the City to prepare a CAP or equivalent document. The City's reduction target of reducing emissions to 1990 levels by 2020 is consistent with AB 32; the reduction target of 40 percent below 1990 levels by 2030 is consistent with SB 32; and the reduction target of 60 percent below 1990 levels by 2040 is consistent with California's long-term reduction goal of 80 percent below 1990 levels by 2050 set forth in Executive Order S-3-05 and the 2022 Scoping Plan. With implementation of Seaside 2040 policies and programs, the project would not result in GHG emissions exceeding the City's emission reduction targets. Therefore, the proposed project would be consistent with regional and State plans, policies, and regulations adopted for the purpose of reducing GHG emissions. There would be no impact.

Mitigation Measures

Because impacts would be less than significant, mitigation is not required.

Significance After Mitigation

Impacts would be less than significant without mitigation.

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4.8 Hazards and Hazardous Materials

This section analyzes impacts associated with exposure to hazards and hazardous materials. Specifically, this analysis addresses impacts related to hazardous materials use and transportation, the accidental release of hazardous materials, air traffic hazards, and interference with emergency response and evacuation plans. Impacts associated with wildfire are addressed in Section 4.17, *Wildfire*.

4.8.1 Setting

a. Definition of Hazardous Materials

A material is considered hazardous if it appears on a list of hazardous materials prepared by a federal, state, or local agency, or if it has characteristics defined as hazardous by such an agency. A hazardous material is defined in Title 22 of the California Code of Regulations as follows:

> A substance or combination of substances which, because of its quantity, concentration, or physical, chemical or infectious characteristics, may either (1) cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or (2) pose a substantial present or potential hazard to human health or environment when improperly treated, stored, transported or disposed of or otherwise managed (California Code of Regulations, Title 22, Section 66261.10).

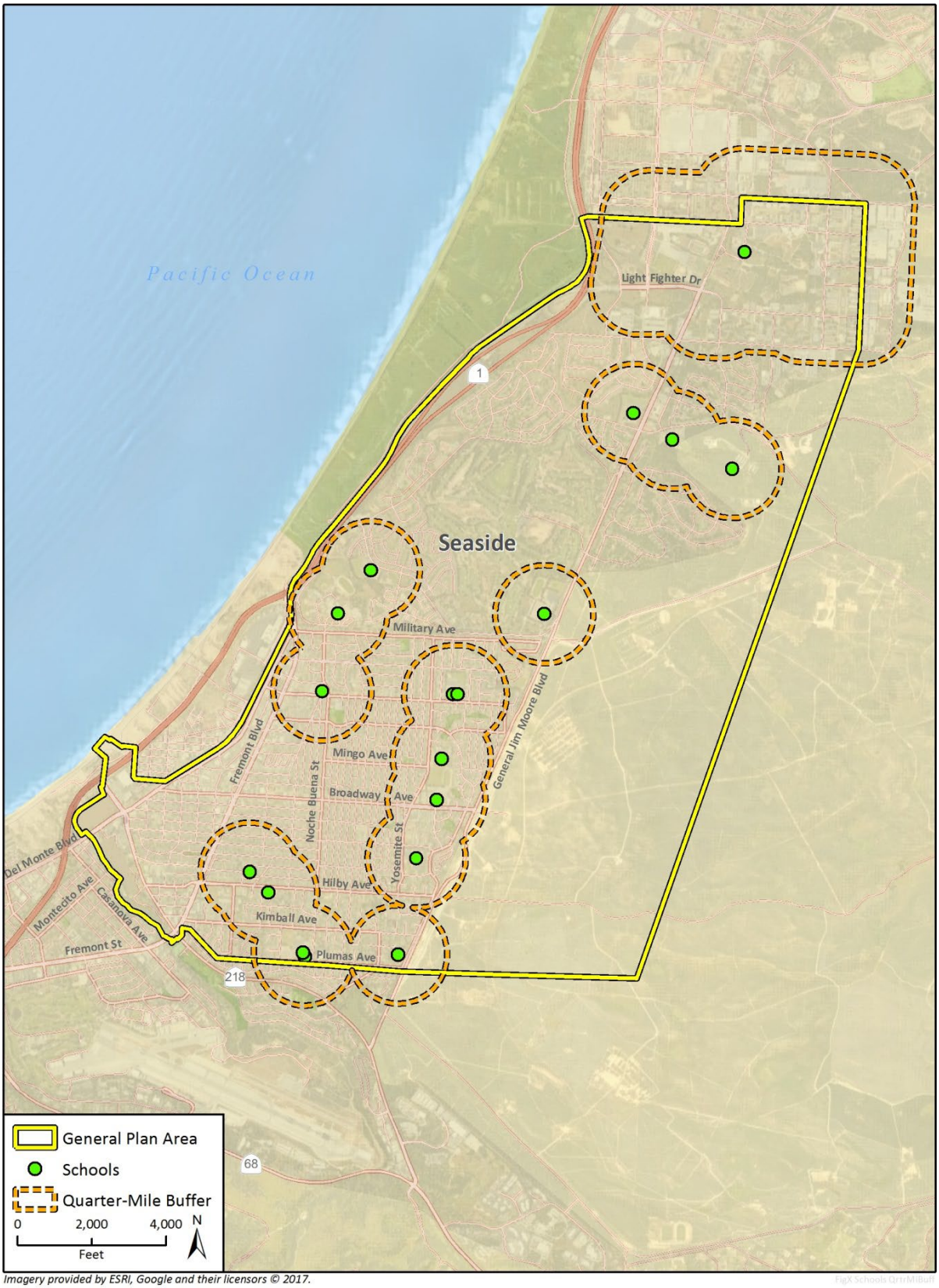
Chemical and physical properties cause a substance to be considered hazardous. Such properties include toxicity, ignitability, corrosiveness, and reactivity. California Code of Regulations, Title 22, Sections 66261.20 through 66261.24 defines the aforementioned properties. The release of hazardous materials into the environment can contaminate soils, surface water, and groundwater supplies.

b. Land Use Patterns

Past and present land use patterns are good predictors of the potential for past contamination by hazardous materials and the current use and storage of hazardous materials. Hazardous wastes can catch fire, react, explode under certain circumstances, or can be corrosive or toxic. Military, industrial, and certain commercial land uses, such as dry cleaners and auto service, are more likely to use and store large quantities of hazardous materials than residential land uses. Small quantities of hazardous materials are also routinely used and stored in other commercial and retail businesses, educational facilities, medical facilities, and households. Hazardous materials typically used in households include used motor oil, paints, solvents, lawn care and gardening products (e.g. pesticides), household cleaners, batteries, gasoline, and refrigerants are among the diverse range of substances (USEPA 2022). In Seaside, former military lands associated with the former Fort Ord are located east of General Jim Moore Boulevard and north of Military Avenue. Commercial land uses are concentrated along major transportation corridors, such as Del Monte Boulevard, Fremont Boulevard, and Broadway Avenue. Light industrial and warehousing uses occupy approximately 2.8 acres, mainly concentrated along Del Monte Boulevard.

Land use patterns are also useful for identifying the location of sensitive receptors, such as schools, day-care facilities, hospitals, and nursing homes. Figure 4.8-1 shows the distribution of schools in the General Plan Area, including California State University Monterey Bay (CSUMB), with a ¼-mile buffer around each school.

Figure 4.8-1 Existing Schools with 1/4-Mile Buffer of City of Seaside



c. Existing Hazardous Material Contamination

Several existing contaminants, including asbestos, lead (in sources such as lead-based paint in buildings or in soil), and contaminated soil and groundwater, may be present in Seaside. Due to the age of some existing buildings in the City that may be redeveloped under Seaside 2040, asbestos may be present in those structures. Similarly, lead may be present in paint that was sold prior to 1978 or in soil that was contaminated by leaded gasoline or improperly-discarded batteries. Existing soil contamination may also be present at potential redevelopment sites.

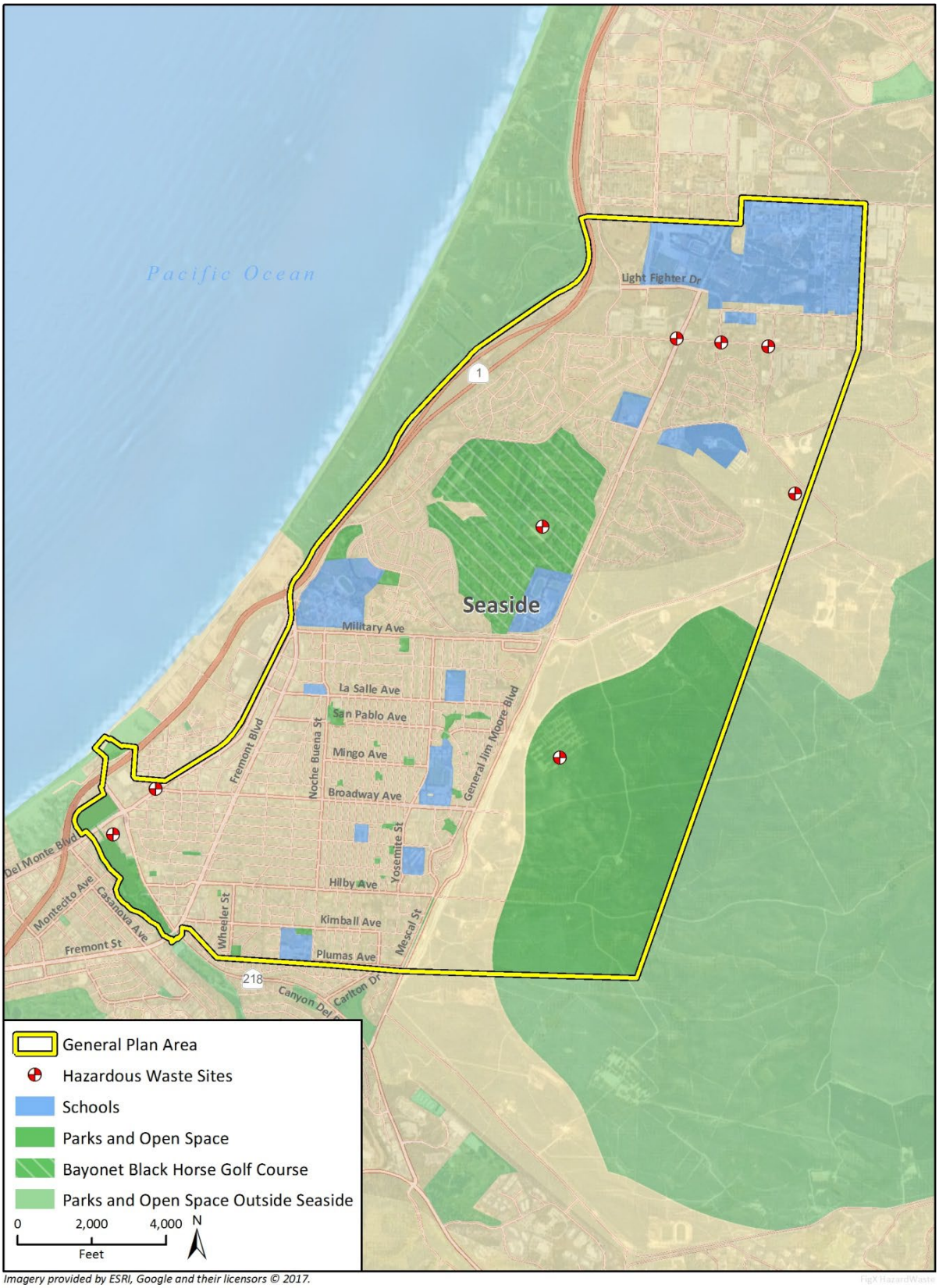
As illustrated in Figure 4.8-2, Seaside has hazardous waste sites located largely in the southwestern part of the City, as well as military cleanup sites in the northern and eastern parts of the City. Of the hazardous waste sites in Seaside, there is one Federal Superfund site, located on the former Fort Ord site, and one State response site with land use restrictions. The General Plan Area has eight open or active cleanup sites, in addition to 14 closed leaking underground storage tank (LUST) cases. Table 4.8-1 shows the status of each open or active hazardous waste site.

Table 4.8-1 Hazardous Materials Sites in the General Plan Area

Site Name/ Site ID	Address	Potential Contaminants of Concern	Site Type	Status/ Date Recorded
Embassy Suites Hotel (27750002)	1441 Canyon Del Rey Blvd	Metals, TPH-Motor Oil, Volatile Organics	State Response	Certified O&M – Land Use Restrictions Only (1/1/1997)
Site 33 Seaside Resort Contaminated Surface Soil Remediation (60002204)	1 McClure Way, Site 33	Not Specified	Voluntary Cleanup	Active (7/1/2015)
Fort Ord (27970002)	Approximate location: intersection of Parker Flats Cut Off Road and Eucalyptus Road (28,016 acres)	Explosives, Metals, Methane, Petroleum, Polynuclear Aromatic Hydrocarbons (PAHS), Semi-Volatile Organics, Uncategorized Volatile Organics	Federal Superfund	Active – Land Use Restrictions (5/1/1986)
Diaz Property (T10000002862)	1561, 1563, & 1569 Del Monte Blvd.	Total Petroleum Hydrocarbons (TPH)	Cleanup Program Site	Open – Site Assessment as of 11/3/2011
Fort Ord – Site 39 (DOD100219900)	East of General Jim Moore Blvd.	Not Specified	Military Cleanup Site	Open – Remediation as of 2/18/2010
Fort Ord – Site 11 (DOD 100199500)	Northwest corner of General Jim Moore Blvd. and Gigling Rd.	Not Specified	Military Cleanup Site	Open – Remediation as of 5/12/2010
Fort Ord – BW (DOD100196700)	Gigling Road east of Malmedy Rd.	Not Specified	Military Cleanup Site	Open – Remediation as of 5/3/2010
Fort Ord (T0605392397)	Gigling Road west of Parker Flats Cut Off Road	Not Specified	Military Cleanup Site	Open – Remediation as of 5/3/2010

Sources: California State Water Resources Control Board, GeoTracker, January 5, 2023; California Department of Toxic Substances Control, EnviroStor, January 5, 2023.

Figure 4.8-2 Active Hazardous Waste Sites



Imagery provided by ESRI, Google and their licensors © 2017.

Fort Ord, formerly a major U.S. Army Base, was added to the Superfund: National Priorities List of Hazardous Waste Sites on February 21, 1990 (City of Seaside 2017a). While most of the former Fort Ord is now part of the Fort Ord National Monument, other areas, such as in Seaside, were converted from military to civilian land uses under the direction of the Fort Ord Reuse Authority (FORA), which was legislatively terminated in June 2020. While many old military buildings and infrastructure remain abandoned, others have been demolished, reused, or replaced. Hazardous and toxic waste materials and sites at the former Fort Ord consist of a wide variety of materials including: industrial chemicals, petrochemicals, domestic and industrial wastes (landfills), universal waste, asbestos and lead paint in buildings, polychlorinated biphenyls (PCBs), above- and underground storage tanks, and ordnance and explosives, including unexploded ordnance. Universal waste refers to common hazardous wastes that are widely produced by households and many different types of businesses and includes fluorescent tubes, non-incandescent lamps, and batteries. In addition, light ballasts and transformers may contain PCBs. Ozone-depleting chemicals also may occur in water coolers and fountains. Existing building within Fort Ord also have concentrations of chromium, lead, mercury, and zinc which exceed current State thresholds for the determination of whether these structures should be considered to be hazardous wastes for the purposes of disposal. The southeast corner of Seaside, generally east of General Jim Moore Boulevard and south of Eucalyptus Road, is a munitions hazard area (City of Seaside 2017b).

The identification, remediation, and disposal of hazardous waste associated with the Superfund cleanup process of former Fort Ord takes place under the Federal Facilities Agreement (FFA) (US Army Fort Ord Cleanup 2023). The Army is responsible for conducting the Superfund cleanup process, and EPA is the lead agency for regulatory enforcement and oversight of Superfund activities. The Army is also required to submit findings to the California EPA (CalEPA). The base closure hazardous material clearance process for various sites must be investigated, characterized, and remediated before disposal and before land is transferred. The Army's documents of record for hazardous material and site remediation are the remedial action RODs (RA-ROD). These documents contain plans for engineering, level of clearance, cost analysis, community education, and site maintenance and emergency response plans. These documents can be accessed here: https://fortordcleanup.com/reference-documents/records-of-decision/.

With the closure of Fort Ord, the Army left behind buildings, ranging in age from the early 1900s to the late 1980s that have become dilapidated over time (City of Seaside 2017a). These buildings contain various hazardous materials and are frequently targeted sites for vandalism and illegal dumping. It has become expensive to reuse them due to the cost of hazardous materials removal, health and safety code issues, and engineering challenges. Since 1996, FORA's building removal program has removed over 500 World War II era wooden structures (approximately 4,000,000 square feet), achieving approximately 90 percent building material recycling rate (by weight). Within those portions of Fort Ord located in Seaside, 50 percent of the buildings have been removed, 45 percent have been reused, and 5 percent remain to be removed or reused. On the CSUMB Campus, which is partly within the City of Seaside, 36 percent have been removed, 52 percent have been reused, and 12 percent are remaining for either reuse or removal.

Multiple area jurisdictions have coordinated to reuse or remove buildings on the former Fort Ord (City of Seaside 2017). In December 2018, the Army began demolition and remediation of Surplus II buildings, and as of 2020, 20 buildings in the Surplus II area have been removed (FORA 2020).

d. Airports and Airport Hazards

Airport-related hazards can occur if departing or landing aircraft pose a safety risk to nearby development, or vice versa. Two airports are located in the near vicinity of the city of Seaside. The Monterey Regional Airport is located approximately 0.4-mile south and Marina Municipal Airport is located approximately 2.0 miles northeast of the city of Seaside. The General Plan Area is located outside of the existing and proposed safety zones associated with runway activities at both airports (Monterey County Airport Land Use Commission 2019a, 2019b).

e. Emergency Response Plans

The City is a party to the Monterey County Multi-Jurisdictional Hazard Mitigation Plan (2022), one of the goals of which is to speed recovery and redevelopment following future disaster events. The Monterey Peninsula Regional Emergency Coordination Center (MPRECC) also conducts a wide range of planning activities throughout the year in cooperation with the CSUMB campus and surrounding communities (City of Seaside 2017b). The resulting plans coordinate activities between agencies, provide safety information and establish training and exercise goals related to emergency management. In addition, the City maintains a network of evacuation routes designated in its existing General Plan Safety Element (County of Monterey 2004). These routes facilitate evacuation in the event of an emergency. However, the City's Local Hazard Mitigation Plan (LHMP) notes that ingress/egress to Seaside is limited to two main transportation corridors (Highway 1 and State Route 68), which presents evacuation concerns in response to a major hazard event (County of Monterey 2022).

4.8.2 Regulatory Setting

The management of hazardous materials and hazardous wastes is regulated at federal, state, and local levels, including through programs administered by the USEPA; agencies within the CalEPA, such as the Department of Toxic Substances Control (DTSC); Federal and State occupational safety agencies; and the Monterey County Hazardous Materials Management Services agency, which is designated as the local Certified Unified Program Agency (CUPA).

a. Federal

The Federal Toxic Substances Control Act (1976) and the Resource Conservation and Recovery Act of 1976 (RCRA)

These acts established a program administered by USEPA for the regulation of the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA was amended in 1984 by the Hazardous and Solid Waste Act (HSWA), which affirmed and extended the "cradle to grave" system of regulating hazardous wastes. Among other things, the use of certain techniques for the disposal of some hazardous wastes was specifically prohibited by HSWA.

The Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) (enacted 1980), amended by the Superfund Amendments and Reauthorization Act (SARA) (1986)

This law provides broad federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment. Among other things, CERCLA established requirements concerning closed and abandoned hazardous waste sites,

provided for liability of persons responsible for releases of hazardous waste at these sites, and established a trust fund to provide for cleanup when no responsible party could be identified. CERCLA also enabled revision of the National Contingency Plan (NCP), which provided the guidelines and procedures needed to respond to releases and threatened releases of hazardous substances, pollutants, or contaminants. The NCP also established the National Priorities List (NPL). Additionally, in compliance with CERCLA, the Department of Defense conducts environmental restoration activities. In 2001, the Department of Defense established the Military Munitions Response Programs (MMRP) to address sites that are known or suspected to contain exploded ordnance, discarded military munitions, or munitions constituents.

The U.S. Army has led groundwater and munitions clean-up efforts with some munitions removal historically conducted under FORA direction (FORA 2012). Under the 1986 Defense Environmental Restoration Program, the Department of Defense is responsible for cleanup of former munitions sites. The U.S. Army conducted lead removal at the beach firing ranges, and others have conducted lead and asbestos removal from buildings. Discovered objects that resemble munitions or explosives on or near former Fort Ord property are to be reported using the Fort Ord Munitions and Explosives of Concern (MEC) incident recording program.

Hazardous Materials Transport Act (49 USC 5101)

The U.S. Department of Transportation, in conjunction with USEPA, is responsible for enforcement and implementation of federal laws and regulations pertaining to transportation of hazardous materials. The Hazardous Materials Transportation Act directs the U.S. Department of Transportation to establish criteria and regulations regarding the safe storage and transportation of hazardous materials. Code of Federal Regulations (CFR) 49, 171–180 and Title 13 California Code of Regulations, regulates the transportation of hazardous materials, types of material defined as hazardous, and the marking of vehicles transporting hazardous materials. It requires that every employee who transports hazardous materials receive training to recognize and identify hazardous materials and become familiar with hazard materials requirements. Carriers are required to report accidental releases of hazardous materials to USDOT at the earliest practical moment. Other incidents must be reported include deaths, injuries requiring hospitalization, and property damage exceeding $50,000. The CHP and California Department of Transportation (Caltrans) are the state agencies with primary responsibility for enforcing federal and state regulations related to transportation within California. These agencies respond to hazardous materials transportation emergencies. Together, these agencies determine container types to be used and grant licenses to hazardous waste haulers for hazardous waste transportation on public roads.

The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)

FIFRA (7 USC 136 et seq.) provides Federal control of pesticide distribution, sale, and use. EPA was given authority under FIFRA not only to study the consequences of pesticide usage, but also to require users (farmers, utility companies, and others) to register when purchasing pesticides. Later amendments to the law required users to take exams for certification as applicators of pesticides. All pesticides used in the United States must be registered (licensed) by USEPA. Registration assures that pesticides will be properly labeled and that, if used in accordance with specifications, they will not cause unreasonable harm to the environment.

Lead-Based Paint Regulations

Regulations for Lead-Based Paint (LBP) are contained in the Lead-Based Paint Elimination Final Rule 24 Code of Federal Regulations (CFR) 33, governed by the U.S. Housing and Urban Development (HUD), which requires sellers and lessors to disclose known LBP and LBP hazards to perspective purchasers and lessees. Additionally, all LBP abatement activities must be in compliance with California and Federal OSHA and with the State of California Department of Health Services requirements. Only LBP-trained and -certified abatement personnel are allowed to perform abatement activities. All LBP removed from structures must be hauled and disposed of by a transportation company licensed to transport this type of material at a landfill or receiving facility licensed to accept the waste.

Additional existing regulations provide for the safe removal of lead-based paint (see 15 USC Section 2682; 40 CFR Part 745). LBP removal is required for "[r]enovations in target housing[1] or child-occupied facilities…" (40 CFR Part 745.82). This includes the requirement that parties removing LBP be properly trained and certified to ensure that the work is performed safely (see 40 CFR Part 745.80).

Regulations to manage and control exposure to lead-based paint are also described in CFR Title 29, Section 1926.62 and California Code of Regulations Title 8 Section 1532.1. These regulations cover the demolition, removal, cleanup, transportation, storage, and disposal of lead-containing material. The regulations outline the permissible exposure limit, protective measures, monitoring, and compliance to ensure the safety of construction workers exposed to lead-based materials. Cal/OSHA's Lead in Construction Standard requires project proponents to develop and implement a lead compliance plan when lead-based paint would be disturbed during construction. The plan must describe activities that could emit lead, methods for complying with the standard, safe work practices, and a plan to protect workers from exposure to lead during construction activities. Cal/OSHA requires 24-hour notification if more than 100 square feet of lead-based paint would be disturbed.

Asbestos Regulations

Asbestos is a naturally occurring fibrous material that was extensively used as a fireproofing and insulating agent in building construction materials before such uses were banned by USEPA in the 1970s. Asbestos-containing materials (ACMs) were commonly used for insulation of heating ducts as well as ceiling and floor tiles. Undisturbed ACMs contained within building materials present no significant health risk because there is no exposure pathway. However, once these tiny fibers are disturbed, they can become airborne and become a respiratory hazard. The fibers are very small and cannot be seen with the naked eye. Once they are inhaled, they can become lodged into the lungs, and may cause cancer, lung disease, mesothelioma, a rare form of cancer that is found in the thin lining of the lung, chest and the abdomen and heart, asbestosis, a serious progressive, long-term, non-cancer disease of the lungs, or other pulmonary complications.

USEPA regulations under Title 40 CFR Part 61 regulate the removal and handling of ACMs. The statute is implemented by the Monterey Bay Air Resources District (MBARD). The federal Occupational Safety and Health Administration also has a survey requirement under Title 29 CFR

[1] "The term "target housing" means any housing constructed prior to 1978, except housing for the elderly or persons with disabilities (unless any child who is less than 6 years of age resides or is expected to reside in such housing for the elderly persons with disabilities) or any 0-bedroom dwelling. In the case of jurisdictions which banned the sale or use of lead-based paint prior to 1978, the Secretary of Housing and Urban Development, at the Secretary's discretion, may designate an earlier date." (15 USC Section 2681(17).)

that is implemented by Cal/OSHA under Title 8 California Code Regulations. These regulations require facilities to take all necessary precautions to protect employees and the public from exposure to asbestos.

The MBARD Asbestos Program regulates the handling of asbestos and operates as a cradle to grave basis through the regulation of all aspects related to the handling of asbestos materials from discovery through removal, transportation, and disposal. The Asbestos Program is in place to protect the public from uncontrolled emissions of asbestos through enforcement of the federal Asbestos Standard and Air District Rule 424 (MBARD 2008). The Program covers most renovation and demolition projects in the North Central Coast Air Basin. Elements of the Program include survey and notification requirements prior to beginning a project, work practice standards, and disposal requirements. The Program operates on a cradle-to-grave basis as it regulates all aspects related to handling ACMs from discovery and removal, through transportation and disposal (MBARD 2019).

United States Environmental Protection Agency

USEPA is the agency primarily responsible for enforcement and implementation of Federal laws and regulations pertaining to hazardous materials. Applicable Federal regulations pertaining to hazardous materials are contained in the Code of Federal Regulations (CFR) Titles 29, 40, and 49. Hazardous materials, as defined in the CFR, are listed in 49 CFR 172.101. The management of hazardous materials is governed by the following laws:

- Resource Conservation and Recovery Act of 1976 (RCRA) (42 U.S. Code [USC] 6901 et seq.); Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA, also called the Superfund Act) (42 USC 9601 et seq.);
- Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) (7 USC 136 et. Seq.); and
- Superfund Amendments and Reauthorization Act (SARA) of 1986 (Public Law 99 499).

These laws and associated regulations include specific requirements for facilities that generate, use, store, treat, and/or dispose of hazardous materials. EPA provides oversight and supervision for Federal Superfund investigation/remediation projects, evaluates remediation technologies, and develops hazardous materials disposal restrictions and treatment standards.

b. State

Department of Toxic Substances Control

As a department of the CalEPA, the DTSC is the primary agency in California that regulates hazardous waste, cleans up existing contamination, and looks for ways to reduce the hazardous waste produced in California. DTSC regulates hazardous waste in California primarily under the authority of RCRA and the California Health and Safety Code.

DTSC also administers the California Hazardous Waste Control Law (HWCL) to regulate hazardous wastes. While the HWCL is generally more stringent than RCRA, until USEPA approves the California program, both state and federal laws apply in California. The HWCL lists 791 chemicals and approximately 300 common materials that may be hazardous; establishes criteria for identifying, packaging, and labeling hazardous wastes; prescribes management controls; establishes permit requirements for treatment, storage, disposal, and transportation; and identifies some wastes that cannot be disposed of in landfills.

Government Code Section 65962.5 requires the DTSC, the State Department of Health Services, the State Water Resources Control Board (SWRCB), and CalRecycle to compile and annually update lists of hazardous waste sites and land designated as hazardous waste sites throughout the state. The Secretary for Environmental Protection consolidates the information submitted by these agencies and distributes it to each city and county where sites on the lists are located. Before the lead agency accepts an application for any development project as complete, the applicant must consult these lists to determine if the site at issue is included.

If any soil is excavated from a site containing hazardous materials, it would be considered a hazardous waste if it exceeded specific criteria in Title 22 of the California Code of Regulations. Remediation of hazardous wastes found at a site may be required if excavation of these materials is performed, or if certain other soil disturbing activities would occur. Even if soil or groundwater at a contaminated site does not have the characteristics required to be defined as hazardous waste, remediation of the site may be required by regulatory agencies subject to jurisdictional authority. Cleanup requirements are determined on a case-by-case basis by the agency taking jurisdiction.

Hazardous Waste Control Act

The hazardous waste management program enforced by DTSC was created by the Hazardous Waste Control Act (California Health and Safety Code Section 25100 et seq.), which is implemented by regulations described in CCR Title 26. The State program is similar to, but more stringent than, the Federal program under RCRA. The regulations list materials that may be hazardous, and establish criteria for their identification, packaging, and disposal. Environmental health standards for management of hazardous waste are contained in California Code of Regulations (CCR) Title 22, Division 4.5. In addition, as required by California Government Code Section 65962.5, DTSC maintains a Hazardous Waste and Substances Site List for the State called the Cortese List.

California Department of Pesticide Regulation, Department of Food and Agriculture, and the Department of Public Health

The California Department of Pesticide Regulations (DPR), a division of CalEPA, in coordination with the California Department of Food and Agriculture (CDFA), a division of Measurement Standards and the California Department of Public Health (CDPH) have the primary responsibility to regulate pesticide use, vector control, food, and drinking water safety. CCR Title 3 requires the coordinated response between the County Agricultural Commissioner and SBDEH to address the use of pesticides used in vector control for animal and human health on a local level. DPR registers pesticides, and pesticide use is tracked by the County. Title 22 is used also to regulate both small and large CDPH water systems.

Cal/OSHA

The Occupational Safety and Health Act of 1970 (Title 8 CCR) is implemented by the Cal/OSHA, which is responsible for ensuring worker safety in the handling and use of chemicals in the workplace. In California, Cal/OSHA has primary responsibility to develop and enforce workplace safety regulations concerning the use of hazardous materials in the workplace, including requirements for employee safety training, availability of safety equipment, accident and illness prevention programs, hazardous substance exposure warnings, and emergency action and fire prevention plan preparation. For example, under Title 8 CCR 5194 (Hazard Communication Standard), construction workers must be informed about hazardous substances that may be encountered. Compliance with Injury Illness Prevention Program requirements (Title 8 CCR 3203)

would ensure that workers are properly trained to recognize workplace hazards and to take appropriate steps to reduce potential risks due to such hazards. This would be relevant if previously unidentified contamination or buried hazards are encountered. If additional investigation or remediation is determined to be necessary, compliance with Cal/OSHA standards for hazardous waste operations (Title 8 CCR 5192) would be required for those individuals involved in the investigation or cleanup work. A Site Health and Safety Plan must be prepared prior to commencing any work at a contaminated site or involving disturbance of building materials containing hazardous substances, to protect workers from exposure to potential hazards. Cal/OSHA also enforces hazard communication program regulations, including procedures for identifying and labeling hazardous substances. It requires Material Safety Data Sheets to be available for employee information and training programs.

California Fire Building Code

The 2022 Fire Code (24 CCR Part 9) establishes the minimum requirements consistent with nationally recognized good practices to safeguard the public health, safety, and general welfare for the hazards of fire, explosion, or dangerous conditions in new and existing buildings, structures and premises, and to provide safety and assistance to firefighters and emergency responders during emergency operations. The provisions of this code apply to the construction, alteration, movement enlargement, replacement, repair, equipment, use and occupancy, location, maintenance, removal, and demolition of every building or structure or any appurtenances connected or attached to such building structures throughout the State of California.

More specifically, California Fire Code Title 24, part 9, Chapter 7 addresses Fire-Resistances-Rated Construction, California Building Code (Part 2), Chapter 7A addresses Materials and Construction Methods for Exterior Wildfire Exposure, Fire Code Chapter 8 addresses fire related Interior Finishes, and Fire Code Chapter 9 addresses Fire Protection Systems, and Fire Code Chapter 10 addresses fire related Means of Egress, including Fire Apparatus Access Road width requirements. Fire Code Section 4906 also contains existing regulations for vegetation and fuel management to maintain clearances around structures.

Oil and Gas Well Regulations

California regulates oil and gas well pursuant to Pub. Res. Code Section 3000 et seq., including Section 3106, and 14 Cal. Code Regs. 1723.9 et seq. In California, an idle well is a well that has not been used for two years or more and has not yet been properly "plugged and abandoned" to the satisfaction of the California Geologic Energy Management Division (CalGEM). Plugging and abandonment involves permanently sealing the well with a cement plug to isolate the oil- and gas-bearing geologic formation from water. There are approximately 30,000 wells in California categorized as idle. Updated regulations to improve maintenance of idle wells became effective on April 1, 2019, based upon new statutory mandates under AB2729 [2016]. The regulations specify far more rigorous testing requirements that better protect public safety and the environment. The regulations require idle wells to be tested and, if necessary, repaired, or permanently sealed.

If well owners become insolvent or desert their idle wells, responsibility for plugging and abandoning the wells often falls to the State. Since 1977, CalGEM has plugged and abandoned about 1,400 wells at a cost of $29.5 million (the funding is from an assessment on production). To reduce the number of wells the State may become responsible for plugging and abandoning, legislative and regulatory changes have been made to create incentives for operators to manage their idle wells by entering into Idle Well Management Plans. The fees an operator must pay for each idle well have

been increased to reflect the potential costs associated with these wells. In 2020, CalGEM collected approximately $3 million in idle well fees. Additional information is available online at: https://www.conservation.ca.gov/calgem/idle_well

State Emergency Plan

The foundation of California's emergency planning and response is a statewide mutual aid system which is designed to ensure that adequate resources, facilities, and other support is provided to jurisdictions whenever their own resources prove to be inadequate to cope with a given situation.

The California Disaster and Civil Defense Master Mutual Aid Agreement (California Government Code Sections 8555–8561) requires signatories to the agreement to prepare operational plans to use within their jurisdiction, and outside their area. These plans include fire and non-fire emergencies related to natural, technological, and war contingencies. The State of California, all state agencies, all political subdivisions, and all fire districts signed this agreement in 1950.

Section 8568 of the California Government Code, the "California Emergency Services Act," states that "the State Emergency Plan shall be in effect in each political subdivision of the state, and the governing body of each political subdivision shall take such action as may be necessary to carry out the provisions thereof." The Act provides the basic authorities for conducting emergency operations following the proclamations of emergencies by the Governor or appropriate local authority, such as a City Manager. The provisions of the act are further reflected and expanded on by appropriate local emergency ordinances. The Act further describes the function and operations of government at all levels during extraordinary emergencies, including war.

All local emergency plans are extensions of the State of California Emergency Plan. The State Emergency Plan conforms to the requirements of California's Standardized Emergency Management System (SEMS), which is the system required by Government Code 8607(a) for managing emergencies involving multiple jurisdictions and agencies (California Emergency Management Agency 2009). The SEMS incorporates the functions and principles of the Incident Command System, the Master Mutual Aid Agreement, existing mutual aid systems, the operational area concept, and multi-agency or inter-agency coordination. Local governments must use SEMS to be eligible for funding of their response-related personnel costs under state disaster assistance programs. The SEMS consists of five organizational levels that are activated as necessary, including: field response, local government, operational area, regional, and state. The State of California Governor's Office of Emergency Services divides the state into several mutual aid regions. The City of Seaside is located in Mutual Aid Region II, which includes Del Norte, Humboldt, Mendocino, Sonoma, Lake, Napa, Marin, Solano, Contra Costa, San Francisco, San Mateo, Alameda, Santa Clara, Santa Cruz, San Benito, and Monterey counties (California Emergency Management Agency 2020).

Hazardous Materials Release Response Plans and Inventory Act of 1985

The Hazardous Materials Release Response Plans and Inventory Act (Health & Safety Code Section 25500 et seq.), also known as the Business Plan Act, requires businesses using hazardous materials to prepare a plan that describes their facilities, inventories, emergency response plans, and training programs. Business plans contain basic information on the location, type, quantity, and health risks of hazardous materials stored, used, or disposed.

California Environmental Protection Agency

The management of hazardous materials and waste within California is under the jurisdiction of CalEPA. CalEPA was created by the State of California to establish a cabinet level voice for the protection of human health and the environment and to assure the coordinated deployment of State resources.

The California Department of Transportation

The California Department of Transportation (Caltrans) manages more than 50,000 miles of California's highway and freeway lanes, provides inter-city rail services, permits more than 400 public-use airports and special-use hospital heliports and works with local agencies. Caltrans is also the first-responder for hazardous material spills and releases that occur on those highway and freeway lanes and inter-city rail services.

Any construction in rights of way will require a Caltrans Encroachment Permit, which includes a Traffic Control Plan in compliance with Manual on Uniform Traffic Control Devices (MUTCD) [Traffic Control Plans Part 6]. As part of these requirements, there are provisions for coordination with local emergency services, training for flagman for emergency vehicles traveling through the work zone, temporary lane separators that have sloping sides to facilitates crossover by emergency vehicles, and vehicle storage and staging areas for emergency vehicles. MUTCD requirements also provide for construction work during off-peak hours and flaggers. Caltrans MUTCD available online at: https://dot.ca.gov/programs/traffic-operations/camutcd

State Water Resources Control Board

The Central Coast Regional Water Quality Control Board (RWQCB) is authorized by the State Water Resources Control Board to enforce provisions of the Porter-Cologne Water Quality Control Act of 1969. This act gives the Central Coast RWQCB authority to require groundwater investigations when the quality of groundwater or surface waters of the State is threatened and to require remediation of the site, if necessary. The Central Coast RWQCB has established Environmental Screening Levels (ESLs) for chemicals found at sites with contaminated soil and groundwater, which are based on ESLs established by the San Francisco RWQCB.

Safe School Plan (California Education Code Sections 32282 et seq.)

This statute requires public schools to prepare a School Safety Plan, which includes routine and emergency disaster procedures and a school building disaster plan. The plan can be amended as needed and shall be evaluated at least once a year to ensure that the comprehensive School Safety Plan is properly implemented.

c. Regional

Monterey County Environmental Health Bureau

Monterey County's Environmental Health Bureau, Hazardous Materials Management Services (HMMS) is designated as the local CUPA. This agency is responsible for inspecting facilities in the County to verify proper storage, handling and disposal of hazardous materials and hazardous wastes. The HMMS administers programs for Hazardous Materials Business Plans, hazardous waste generator requirements, underground storage tanks, aboveground petroleum storage, prevention

of accidental releases (California Accidental Release Prevention program), and hazardous materials management plans.

Airport Land Use Compatibility Plans

The Section 65302.3 of the Government Code requires general plans and applicable specific plans to be consistent with amended Comprehensive Airport Land Use Plans (CALUP). The Monterey County Airport Land Use Commission has adopted such plans for two airports in the vicinity of the General Plan Area: Marina Municipal Airport and Monterey Regional Airport. CALUP designated Safety zones which restrict the development of land uses that could post particular hazards to the public or to vulnerable populations in case of an aircraft accident. The California Airport Land Use Planning Handbook provides guidance on the delineation of safety zones and the application of land use policies in those zones. There are seven safety zones:

Zone 1 Runway protection zones (RPZ) are trapezoidal-shaped areas located at ground level beyond each end of a runway. Ideally, each runway protection zone should be entirely clear of all objects. The accident risk level is considered to be very high within the RPZ zones encompassing approximately 20 percent to 21 percent of the accidents at general aviation airports.

Zone 2 Inner Approach/Departure Zone (IADZ). This zone encompasses area that is overflown at low altitudes, typically only 200 to 400 feet above runway elevation. The IADZ zone extends 6,000 feet from the end of the Runway 10R-28L and 2,500 feet from Runway 10L-28R. The accident risk level is considered high within the IADZ zones, encompassing approximately ten percent of general aviation aircraft accidents.

Zone 3 Inner Turning Zone (ITZ). This zone encompasses locations where aircraft are typically turning from the base to final approach legs of the standard traffic pattern and are descending from traffic pattern altitude. The ITZ also includes the area where departing aircraft normally complete the transition from takeoff power and flap settings to a climb mode and have begun to turn to their en-route heading. The accident risk level is moderate to high within the ITZ zones, encompassing approximately seven percent of general aviation aircraft accidents.

Zone 4 Outer Approach/Departure Zone (OADZ). The OADZ is situated along the extended runway centerline beyond the IADZ zone. Approaching aircraft are usually at less than traffic pattern altitude in the OADZ. The accident risk level is moderate within the OADZ, encompassing approximately five percent of general aviation aircraft accidents.

Zone 5 Sideline Safety Zone (SSZ). The SSZ encompasses the close-in area lateral to runways. The primary risk in SSZ is with aircraft losing directional control on takeoff. The accident risk level is low to moderate within the SSZ, encompassing approximately five percent of general aviation aircraft accidents.

Zone 6 Airport Property Zone (APZ). The APZ is defined by the current airport property from the airport layout plan. There are two subzones within the APZ: (1) Airport Building Areas include terminal areas, fixed base operator buildings, hangars, tie-down areas, automobile parking areas, and areas planned for aviation uses; (2) Aircraft Activity Areas include runways, taxiways, and associated safety areas and setbacks per FAA regulations.

Zone 7 Airport Influence Area (AIA). The AIA zone includes all other portions of regular aircraft traffic patterns based upon the 14 CFR Part 77 conical surface. The aircraft accident risk level is low within the AIA zone.

The General Plan includes areas that fall within Zone 7, the Airport Influence Area (AIA), which is considered a low accident risk zone. (See Monterey Regional Airport CALUP, Exhibit 4C; and Marina Municipal Airport, Exhibit 4C.) The northeast corner of the General Plan Area falls within the Marina Municipal AIA. Additionally, areas of the City generally between the Monterey Regional Airport to Coe Avenue fall within the AIA.

The CALUP Safety Matrix (CALUP Table 4B), sets no limits on Dwelling Units Per Acre. Prohibited uses include (1) Hazards to Flight, which include physical (e.g., tall objects), visual, and electronic forms of interference with the safety of aircraft operations, and (2) Outdoor Stadiums and similar uses with very high intensity. The AIA generally incorporates airport disclosure notices, airspace review for structures taller than 100 feet, airspace analysis of structures approximately 50 feet or taller pursuant to 14 CFR Part 77. (CALUP Table 4B.)

d. Local

Local Coastal Program (LCP)

The Coastal Land Use Plan (a component of the LCP) contains existing policies which address hazards including, geologic, floods, tsunami, seiches, sea level rise, ocean and storm surge, and fire hazards. (Policy NCR-CZ 5.1.B, 5.3.A, 5.3.B, and LUC-CZ 3.4.A.) This includes policies for siting and designing facilities to minimize risks associated with tsunamis and seiches, as well as evacuation routes and signage.

Seaside Municipal Code

Seaside's Municipal Code (SMC) Chapter 8.50, Hazardous Materials Registrations, establishes procedures to ensure that newly constructed underground storage tanks meet appropriate standards and that existing tanks be properly maintained, inspected, and tested.

4.8.3 Impact Analysis

a. Methodology and Thresholds of Significance

Methodology

This section describes the potential environmental impacts of the proposed project relevant to hazards and hazardous materials. The impact analysis is based on an assessment of baseline conditions for the General Plan Area, including locations of hazardous materials use and storage, existing contaminated sites, air traffic hazards, and emergency response and evacuation plan requirements. This analysis identifies potential impacts based on the predicted interaction between the affected environment and construction, operation, and maintenance activities related to buildout that would occur under the proposed project. Please note, hazards associated with wildland fire are addressed in Section 4.17, *Wildfire*.

Significance Thresholds

For the purposes of this EIR, implementation of the proposed project may have a significant adverse impact if it would do any of the following:

1. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials

2. 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
3. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school
4. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment
5. 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, result in a safety hazard for people residing or working in the project area
6. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan

b. Project Impacts and Mitigation Measures

Threshold 1:	Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?
Threshold 2:	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?

Impact HAZ-1 Implementation of Seaside 2040 would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials, nor through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. Impacts would be less than significant.

Buildout under Seaside 2040 would facilitate development in the General Plan Area. New development would result from conversion of uses in response to market demand, as well as increased density primarily focused in mixed-use corridors along Broadway Avenue and Fremont Boulevard, a new Campus Town adjacent to CSUMB, a new regional mixed-use center in the Main Gate area east of Highway 1, an expanded auto mall south of Lightfighter Drive, and new mixed use housing neighborhoods and mixed use in Seaside East. Construction of new development would include the use of construction machinery that would involve the transport, use, and disposal of hazardous materials such as paints, solvents, oils, grease, and caulking. Additionally, hazardous materials would be needed for fueling and servicing construction equipment in the General Plan Area. These types of hazardous materials are not acutely hazardous, and all storage, handling, use, and disposal of these materials are regulated by County, State, and federal regulations and compliance with applicable standards discussed in Section 4.8.2, *Regulatory Setting*.

New development would require the removal of existing structures. The General Plan Area contains hazardous materials such as lead-based paint, ACMs, universal waste, and PCBs. Exposure to lead can cause adverse health effects, including disturbance of the gastrointestinal system, anemia, kidney disease, and neuromuscular and neurological dysfunction (in severe cases). The California Code of Regulations, Section 1532.1, requires testing, monitoring, containment, and disposal of lead-based paints and materials, such that exposure levels do not exceed Cal/OSHA standards. Friable ACMs are regulated as a hazardous air pollutant under the Clean Air Act. As a worker safety

hazard, they are also regulated under the authority of Cal/OSHA and by MBARD. In structures slated for demolition, any ACMs would be abated in accordance with State and Federal regulations prior to the start of demolition or renovation activities and in compliance with all applicable existing rules and regulations, including MBARD. The MBARD Asbestos Program regulates the handling of asbestos and operates as a cradle to grave basis through the regulation of all aspects related to the handling of asbestos materials from discovery through removal, through transportation and disposal. These programs would ensure that asbestos removal would not result in the release of hazardous materials to the environment that could impair human health.

Fluorescent lighting ballasts manufactured prior to 1978, and electrical transformers, capacitors, and generators manufactured prior to 1977, may contain PCBs. In accordance with the Toxic Substances Control Act and other Federal and State regulations, projects would be required to properly handle and dispose of electrical equipment and lighting ballasts that contain PCBs during demolition of any buildings in the General Plan Area.

It is projected that Seaside 2040 would allow up to 12,555 new residents and 4,604 new employees in the General Plan Area by the year 2040 (Raimi + Associates 2018). New residential, industrial, and retail-commercial development also would involve the use, storage, and disposal of hazardous materials. It is projected that buildout of Seaside 2040 would increase retail commercial area by approximately 690,851 square feet, service uses by slightly over 1.0 million square feet, and industrial uses by 657,971 square feet. New commercial and industrial land uses could use and store hazardous materials in proximity to residential uses. It should be noted that the precise potential future increase in the amount of hazardous materials used in the General Plan Area as a result of implementation of Seaside 2040 cannot be predicted because specific development projects are not identified in Seaside 2040.

Exposure of persons to hazardous materials could potentially occur in the following ways: improper handling or use of hazardous materials or hazardous wastes during construction or operation of future developments, particularly by untrained personnel; transportation accidents; environmentally unsound disposal methods; or fire, explosion or other emergencies. The types and amounts of hazardous materials would vary according to the nature of the activity. In some cases, it is the type of material that is potentially hazardous; in others, it is the amount of material that could present a hazard.

Whether a person exposed to a hazardous substance would suffer adverse health effects depends upon a complex interaction of factors that determine the effects of exposure to hazardous materials: the exposure pathway (the route by which a hazardous material enters the body); the amount of material to which the person is exposed; the physical form (e.g., liquid, vapor) and characteristics (e.g., toxicity) of the material; the frequency and duration of exposure; and the individual's unique biological characteristics such as age, weight, and general health. Adverse health effects from exposure to hazardous materials may be short-term (acute) or long-term (chronic). Acute effects can include damage to organs or systems in the body and possibly death. Chronic effects, which may result from long-term exposure to a hazardous material, can also include organ or systemic damage, but chronic effects of particular concern include birth defects, genetic damage, and cancer.

Existing hazardous materials regulations were established at the State level to ensure compliance with federal regulations in order to reduce the risk to human health and the environment from the routine use of hazardous substances. Although the overall quantity of hazardous materials and waste generated in the General Plan Area would incrementally increase as a result of implementation of Seaside 2040, all new developments that handle or use hazardous materials

would be required to comply with the regulations, standards, and guidelines established by USEPA, State, Monterey County, and the City of Seaside related to storage, use, and disposal of hazardous materials.

CalEPA requires all businesses that handle more than specified amounts of hazardous materials to submit business plans through the California Environmental Reporting System (CERS). Specifically, any new business that meets the specified criteria must submit a full hazardous materials disclosure report that includes an inventory of the hazardous materials generated, used, stored, handled, or emitted; and emergency response plans and procedures to be used in the event of a significant or threatened significant release of a hazardous material. The plan needs to identify the procedures to follow for immediate notification to all appropriate agencies and personnel in the event of a release, identification of local emergency medical assistance appropriate for potential accident scenarios, contact information for all company emergency coordinators of the business, a listing and location of emergency equipment at the business, an evacuation plan, and a training program for business personnel. The Monterey County Hazardous Materials Management Services inspects businesses in Seaside to confirm that their business plan is in order and up to date (Monterey County Health Department 2023).

The U.S. Department of Transportation's Office of Hazardous Materials Safety prescribes strict regulations for the safe transportation of hazardous materials, as described in Title 49 of the Code of Federal Regulations, and implemented by Title 13 of the CCR. The transport of hazardous materials can result in accidental spills, leaks, toxic releases, fire, or explosion. It is possible that licensed vendors could bring some hazardous materials to and from new residential and retail-commercial sites in the General Plan Area as a result of development projects carried out under Seaside 2040. However, appropriate documentation for all hazardous waste transported in connection with specific project-site activities would be provided as required for compliance with existing hazardous materials regulations codified in Titles 8, 22, and 26 of the California Code of Regulations, and their enabling legislation set forth in Chapter 6.95 of the California Health and Safety Code. In addition, individual developers would be required to comply with all applicable federal, State, and local laws and regulations pertaining to the transport, use, disposal, handling, and storage of hazardous waste, including but not limited to, Title 49 of the Code of Federal Regulations. The observance of designated truck routes in Seaside 2040 also would discourage truck travel through residential areas, reducing the risk of accidental release of hazardous materials in transport.

California Building Code requirements prescribe safe accommodations for materials that present a moderate explosion hazard, high fire or physical hazard, or health hazards. Compliance with all applicable federal and State laws related to the storage of hazardous materials would maximize containment (through safe handling and storage practices described above) and provide for prompt and effective cleanup if an accidental release occurs.

For those employees that would work with hazardous materials, the amounts of hazardous materials that are handled at any one time are generally relatively small, reducing the potential consequences of an accident during handling. Further, specific project-site activities would be required to comply with federal and State laws to eliminate or reduce the consequence of hazardous materials accidents. For example, employees who would work around hazardous materials would be required to wear appropriate protective equipment, and safety equipment is routinely available in all areas where hazardous materials are used.

The County's Hazardous Materials Management Service provides emergency response to hazardous materials incidents in the General Plan Area (Monterey County Health Department 2023). Major hazardous materials accidents associated with residential, industrial, and retail-commercial uses are fairly infrequent, and additional emergency response capabilities are not anticipated to be necessary to respond to the potential incremental increase in the number of incidents that could result from implementation of Seaside 2040. Further, adherence to applicable regulations as discussed above would be required to reduce any potential consequences of a hazardous materials operational accident.

Goals and policies in Seaside 2040 Safety Element listed below would also address the use, storage, transport, and release of hazardous materials in the General Plan Area. These policies direct the City to consult with other agencies to regulate the management of hazardous materials and waste, and to assess the use of hazardous materials as part of environmental review.

Safety Element Goals and Policies

Goal S-7: Strong coordination with regulatory agencies to ensure safe and effective remediation of hazardous and toxic materials.

Intent: To clean-up and remove hazardous and toxic materials, including clearance, treatment, transport, disposal, and/or closure of such sites containing ordnance and explosives, landfills, above and below ground storage facilities, and buildings with asbestos and/or lead-based paint. To achieve this, the City would help residents avoid human-made hazards by monitoring remediation, coordinating with applicable agencies, and maximizing public safety to the fullest extent.

Policies: **Management of hazardous materials.** Continue to cooperate with federal, state, and county agencies to effectively regulate the management of hazardous materials and hazardous waste.

Hazardous Materials Management. Assess the use of hazardous materials as part of its environmental review and/or include the development of a hazardous management and disposal plan, as a condition of a project, subject to review by the County Environmental Health Department.

Maintain truck routes. Maintain designated truck routes for the transportation of hazardous materials through the city to limit potential impacts to public health and safety.

Compliance with existing applicable regulations and 2040 General Plan policies would ensure that risks from routine use, transport, handling, storage, disposal, and release of hazardous materials would be less than significant. Maintenance of truck routes throughout the city would limit potential impacts to public health and safety as a result of hazardous materials. Additionally, prior to any residential development on former Fort Ord lands, the City would ensure that all soils are analyzed and remediated as necessary such that the soils meet standards for residential development set forth by DTSC, San Francisco Bay RWQCB, and USEPA. Oversight by the appropriate federal, State, and local agencies and compliance by new development with applicable regulations related to the handling, storage, and disposal of hazardous materials would further ensure the risk of the public's potential exposure to these substances would be less than significant. Therefore, impacts from a hazard to the public or the environmental through routine transport, use or disposal of hazardous materials would be less than significant.

Mitigation Measures

No mitigation would be required.

Significance After Mitigation

Impacts would be less than significant without mitigation.

Threshold 3:	Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

Impact HAZ-2 IMPLEMENTATION OF SEASIDE 2040 COULD RESULT IN HAZARDOUS EMISSIONS OR HANDLING OF HAZARDOUS OR ACUTELY HAZARDOUS MATERIALS, SUBSTANCES, OR WASTE WITHIN ¼ MILE OF AN EXISTING OR PROPOSED SCHOOL, BUT COMPLIANCE WITH EXISTING REGULATORY REQUIREMENTS WOULD MINIMIZE RISKS TO SCHOOLS AND STUDENTS, RESULTING IN A LESS THAN SIGNIFICANT IMPACT.

Under Seaside 2040, new development of residential, industrial, and commercial uses could result in increased use and storage of hazardous materials within ¼-mile of existing or proposed schools. For instance, new development in the proposed Fremont Boulevard mixed-use corridor could involve the use and storage of hazardous materials within ¼-mile of Seaside High School, as could new service commercial and research and development uses near existing or future schools in Seaside East. Commercial uses of concern include gas stations, dry cleaners, auto-body shops, and medical laboratories. Figure 4.8-1 shows the location of existing schools in Seaside, including the CSUMB campus, with a ¼-mile radius surrounding each school. The locations of existing schools with respect to proposed land uses are shown in Figure 2-5, *Proposed Project Site and Seaside 2040 Proposed Land Use Map*, in Section 2, *Project Description*.

Since Seaside 2040 does not include any specific development projects, the quantity of hazardous materials proposed for use by future commercial developments within the City is currently unknown. However, the siting of schools facilities would be subject to California Education Code (Section 17210 et seq.), which outlines the requirements for siting near or on known or suspected hazardous materials sites, or near facilities that emit hazardous air emissions, handle hazardous or acutely hazardous materials, substances, or waste. Furthermore, schools are required to prepare a Safe Schools Plan pursuant to California Education Code Sections 32282, which is to be updated routinely.

Hazardous materials and waste generated from future development also would not pose a substantial health risk to nearby schools because all businesses that handle or have on-site storage of hazardous materials would be regulated by the HMMS and any additional elements as required in the California Health and Safety Code Article 1 Chapter 6.95 for Business Emergency Plan. As described in the Regulatory Setting above, both the federal and State governments require all businesses that handle more than a specified amount of hazardous materials to submit a business plan to a regulating agency. As such, compliance with regulatory requirements of the HMMS and existing applicable State and federal regulations would minimize the risks associated with exposure of sensitive receptors to hazardous materials. Impacts would be less than significant.

Mitigation Measures

No mitigation would be required.

Significance After Mitigation

Impacts would be less than significant without mitigation.

Threshold 4:	Would the project be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment?

Impact HAZ-3 IMPLEMENTATION OF SEASIDE 2040 COULD RESULT IN DEVELOPMENT ON SITES CONTAMINATED WITH HAZARDOUS MATERIALS, ESPECIALLY IN THE FORMER FORT ORD. COMPLIANCE WITH APPLICABLE REGULATIONS RELATING TO SITE CLEANUP AND 2040 GENERAL PLAN POLICIES WOULD MINIMIZE IMPACTS FROM DEVELOPMENT ON LISTED CONTAMINATED SITES. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

Seaside 2040 would facilitate the redevelopment of sites that are contaminated with hazardous materials. As shown in Table 4.8-1, eight listed active hazardous materials sites are located in the General Plan Area. The former Fort Ord site is a federal Superfund site located partially within city limits, to the east of General Jim Moore Boulevard and north of Military Avenue. As discussed in the Setting, hazardous and toxic waste materials and sites at the former Fort Ord consist of a wide variety of materials including: industrial chemicals, petrochemicals, domestic and industrial wastes (landfills), asbestos and lead paint in buildings, above- and underground storage tanks, and ordnance and explosives, including unexploded ordnance. The southeast corner of Seaside, generally east of General Jim Moore Boulevard and south of Eucalyptus Road, is a munitions hazard area. This area is under Seaside 2040 as Future Specific Plan and Recreation/Fort Ord National Monument.

Remediation of hazards at the former Ford Ord site is ongoing and would continue during implementation of Seaside 2040. As part of the Superfund cleanup process, the Army is required to investigate sites, characterize existing hazardous materials, and remediate them before transferring land for future development. This remediation process, supervised by USEPA, would ensure that construction in proposed growth area within the former Fort Ord site does not expose construction workers or residents to adverse levels of hazardous materials. This remediation process has been ongoing. As discussed in the regulatory setting discussion above, in 2020 the Army completed demolition of 28 abandoned buildings containing hazardous materials in the area designed as Surplus II within the City's borders.

In addition, implementation of policies under Goal S-6 in Seaside 2040 would further reduce the risk of exposure to hazardous materials. Applicable policies would require coordination between the City and regulatory agencies on remnant munitions hazards, cooperation with the Army on remediation efforts, and cooperation with the federal government to obtain Superfund monies for clean-up activities. These policies are listed as follows.

Safety Element Goals and Policies

Goal S-7: Strong coordination with regulatory agencies to ensure safe and effective remediation of hazardous and toxic materials.

Intent: To clean-up and remove hazardous and toxic materials, including clearance, treatment, transport, disposal, and/or closure of such sites containing ordnance and explosives, landfills, above and below ground storage facilities, and buildings with

asbestos and/or lead-based paint. To achieve this, the City will help residents avoid human-made hazards by monitoring remediation, coordinating with applicable agencies, and maximizing public safety to the fullest extent.

Policies: **Minimize risk**. Minimize the risk to the community associated with hazardous materials. Continually integrate updated remediation strategies in coordination with the regulating agencies.

Regional coordination. Coordinate with regulatory agencies regarding remnant safety hazards and future utilization of the Fort Ord munitions hazard area.

Monitor remediation. Monitor implementation procedures of the Remedial Action-Records of Decision and work cooperatively with the U.S. Army and all contractors to ensure the safe and effective removal and disposal of hazardous materials, compliance with all applicable regulations regarding hazardous materials, and protection of the public during remediation activities.

Superfund. Cooperate with the federal government to obtain Superfund monies and implement clean-up activities to eliminate the environmental hazards associated with past military activities at the former Fort Ord.

In addition to the former Fort Ord site, redevelopment could occur at other sites with a history of hazardous waste generation, such as gas stations. Any new development occurring on documented hazardous materials sites listed in Table 4.8-1 would be preceded by remediation and cleanup under the supervision of regulatory agencies before construction activities could begin. In addition, Seaside 2040 contains policies related to contaminated sites. As discussed above, proposed General Plan policies would require cooperation with appropriate regulatory agencies prior to development on hazardous materials sites.

It is also possible that underground storage tanks (USTs) that were in use prior to permitting and record keeping requirements may be present in the General Plan Area. If an unidentified UST were uncovered or disturbed during construction activities, it would be closed in place or removed. Potential risks, if any, posed by USTs would be minimized by managing the tank according to existing Monterey County standards as enforced and monitored by the Environmental Health Bureau. The extent to which groundwater may be affected, if at all, depends on the type of contaminant, the amount released, and depth to groundwater at the time of the release. If groundwater contamination is identified, remediation activities would be required by the Central Coast RWQCB prior to the commencement of any new construction activities. If contamination exceeds regulatory action levels, the developer would be required to undertake remediation procedures prior to grading and development under the supervision of the Monterey County Environmental Health Bureau or RWQCB (depending upon the nature of any identified contamination).

Redevelopment in the General Plan Area also could also encounter abandoned oil and gas wells. CalGEM has identified one such well within the General Plan Area (Abel 2017). This plugged and abandoned well is located along Luzern Street between Mira Monte Avenue and Santa Clara Avenue (California Department of Conservation 2017). According to the California Department of Conservation, a previously plugged well may not meet the State's current safety regulations. In general, a well has been adequately abandoned when steps have been taken to isolate all oil-bearing or gas-bearing strata encountered in the well, and to protect underground or surface water from the infiltration or addition of any detrimental substance, and to prevent damage to life, health, and property (California Public Resource Code Section 3208). As discussed in Section 4.8.2,

Regulatory Setting, updated regulations to improve maintenance of idle wells became effective on April 1, 2019, based upon new statutory mandates under AB 2729 [2016]. The regulations specify far more rigorous testing requirements that better protect public safety and the environment. The regulations require idle wells to be tested and, if necessary, repaired, or permanently sealed. If well owners become insolvent or desert their idle wells, responsibility for plugging and abandoning the wells often falls to the State. Mandatory compliance with these regulations would ensure that wells are properly closed and sealed. Impacts would be less than significant.

Mitigation Measures

No mitigation would be required.

Significance After Mitigation

Impacts would be less than significant without mitigation.

Threshold 5:	Would the project be 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, resulting in a safety hazard for people residing or working in the project area?

Impact HAZ-4 PORTIONS OF THE GENERAL PLAN AREA ARE LOCATED INSIDE AN AIRPORT INFLUENCE AREA BUT OUTSIDE NOISE CONTOURS ASSOCIATED WITH NEARBY AIRPORTS. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

Seaside 2040 would facilitate development in the vicinity of two airports. The Monterey Regional Airport is located approximately 0.25 mile south of the General Plan Area, and Marina Municipal Airport is located approximately 2.0 miles northeast of the General Plan Area. The Monterey County Airport Land Use Commission updated its CALUPs, which protect and promote the safety and welfare of residents near the public use airports in the county, as well as airport users. The General Plan includes areas that fall within Zone 7, the Airport Influence Area (AIA), which is considered to be a low accident risk zone. The CALUP for Monterey Regional Airport defines its airport influence area as encompassing the southern portion of Seaside. An airport influence area is where current or future airport-related noise, overflight, safety, or airspace protection factors may affect land uses or necessitate restrictions on those uses as determined by an airport land use commission (Monterey Airport Land Use Commission 2019a, 2019b). The CALUPs find that Seaside is only within the AIA, and no other Safety Zones, and is not within a noise contour associated with runway activities at nearby airports. The CALUP Safety Matrix (CALUP Table 4B), sets no limits on Dwelling Units Per Acre and sets a Maximum non-residential intensity of 300 persons per acre. Prohibited uses include (1) Hazards to Flight, which include physical (e.g., tall objects), visual, and electronic forms of interference with the safety of aircraft operations, and (2) Outdoor Stadiums and similar uses with very high intensity. The AIA generally incorporates airport disclosure notices, airspace review for structures taller than 100 feet, airspace analysis of structures approximately 50 feet or taller pursuant to 14 CFR Part 77. The majority of new land use designations proposed allow heights at or below 50 feet, with “Mixed Use High” and Employment designations allowing heights up to 60 feet. Furthermore, the airport is at an elevated location in comparison to the ground level of most development in the General Plan Area. Any developments which exceed 50 feet above the runways would be reviewed under 14 CFR Part 77 to ensure that they do not adversely interfere with aircraft operations.

While the project is within the AIA for the airports, this area has a low aircraft accident risk level, and new development would be required to comply with federal and local regulations which ensure public safety. Impacts would be less than significant.

Mitigation Measures

No mitigation would be required.

Significance After Mitigation

Impacts would be less than significant without mitigation.

Threshold 6:	Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Impact HAZ-5 PROPOSED POLICIES AND MAPPED EVACUATION ROUTES IN SEASIDE 2040 WOULD ENSURE EFFECTIVE EMERGENCY RESPONSE FOLLOWING A NATURAL OR HUMAN-CAUSED DISASTER. THEREFORE, THE PROPOSED PROJECT WOULD NOT RESULT IN INTERFERENCE WITH THESE TYPES OF ADOPTED PLANS. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

The Safety Element of Seaside 2040 identifies measures to protect public safety in the event of an emergency. Under Goal S-2, the City would implement emergency preparedness planning and outreach, maintain sufficient service levels, and prepare for the effects of climate change. Implementation of proposed policies would ensure coordinated emergency response, promote the City's annual emergency system training, and maintain emergency evacuation procedures in floodplain areas, among other actions. Relevant 2040 General Policies listed below would ensure adequate emergency response in Seaside.

Safety Element Goals and Policies

Goal S-1: A high standard of police services with a focus on community-based crime prevention.

Intent: To provide high-quality police services, including traditional law enforcement services and community partnership and engagement. The result will improve safety, health, peace of mind, and quality of life through excellent police services and planning.

Policies: **Assess critical facilities.** Identify and inventory critical facilities and establish guidelines for the operation of such facilities during emergencies.

Goal S-2: Effective emergency response following a natural or human-caused disaster.

Intent: To increase the safety of residents. To achieve this, the City will implement emergency preparedness planning and outreach, maintain sufficient service levels, and prepare for the potential impacts of climate change.

Policies: **Service levels.** Maintain sufficient levels of fire protection and emergency services to support existing residents and future growth.

Service delivery and efficiency. Strive to improve service delivery and efficiency of the Seaside Fire Department.

Coordinate emergency response. Implement coordinated emergency response planning.

Preparedness programs. Promote community-based, emergency preparedness programs and disaster education awareness, including the City's annual emergency system training and evacuation trainings.

Emergency evacuation. Maintain emergency procedures for the evacuation and control of population in identified floodplain areas in accordance with Section 8589.5 of the California Government Code. Inform residents and visitors about alternate routes in case of coastal flooding and tsunamis. Design evacuation maps to minimize and mitigate exposure to flood hazards to the maximum extent possible.

Emergency preparation education. Continue to educate City staff regarding appropriate actions to take during an emergency including evacuation procedures, City staff roles, and resource needs.

Partnership. Continue to work with the Monterey County Hazard Mitigation Planning Team during regular updates to the Monterey County Multi-Jurisdictional Hazard Mitigation Plan. Maintain consideration of climate change and sea level rise as part of the County's comprehensive mitigation strategy.

Climate change risks. Re-evaluate existing plans to incorporate sea level rise, and the populations and infrastructure vulnerable to climate change.

In addition, the Seaside Fire Department reviews and approves projects to ensure that emergency access meets City standards.

The proposed Safety Element also maps designated fire and tsunami evacuation routes. These routes include Canyon Del Rey Boulevard/State Route 218, Fremont Boulevard, Del Monte Boulevard, State Route 1, Monterey Road, General Jim Moore Boulevard, and eight other roadways that run in an east-west direction. In the event of a fire or tsunami that requires evacuation for public safety, the City would coordinate the evacuation in accordance with these designated routes. As noted under the regulatory setting above, the Local Coastal Program also provides for planning and evacuation routes in the Coastal Zone.

Furthermore, any work within the existing Caltrans right-of-way would have to comply with Caltrans permitting requirements. This includes a traffic control plan that adheres to the standards set forth in the California MUTCD (Caltrans 2014). As part of these requirements, there are provisions for coordination with local emergency services, training for flagmen for emergency vehicles traveling through the work zone, temporary lane separators that have sloping sides to facilitate crossover by emergency vehicles, and vehicle storage and staging areas for emergency vehicles.

Implementation of 2040 General Plan policies and actions associated with emergency planning and response, Fire Department review, and fire and tsunami evacuation routes would ensure that potential impacts from implementation of the proposed project on emergency response and evacuation would be less than significant.

Mitigation Measures

No mitigation would be required.

Significance After Mitigation

Impacts would be less than significant without mitigation.

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4.9 Hydrology and Water Quality

This section evaluates the potential environmental effects related to hydrology and water quality associated with implementation of Seaside 2040. It discusses the regional and local watershed characteristics, including water quality, drainage and infiltration patterns, and flood hazards. The analysis includes a review of surface water, groundwater, flooding, storm water, and water quality. Water supply and wastewater conveyance and treatment are discussed in Section 4.16, *Utilities and Service Systems*. Issues regarding wetlands and waters of the U.S. are discussed in Section 4.3, *Biological Resources*.

4.9.1 Setting

The City of Seaside is located along the Pacific Ocean just north of the Monterey Peninsula, adjacent to the City of Monterey and approximately 115 miles south of San Francisco. The City of Seaside lies within the Coast Range Geomorphic Province. This province is characterized by parallel northwest trending mountain ranges formed over the past 10 million years or less by active uplift related to complex tectonics of the San Andreas fault/plate boundary system (California Geological Survey 2002).

The elevation in the City of Seaside ranges from approximately mean sea level at the southwest corner of the City of Seaside to approximately 560 feet in the hills to the east in the former Fort Ord area (U.S. Geological Survey 1983). Topography in Seaside slopes generally west, toward the Pacific Ocean at the Monterey Bay. No National Hydrography Dataset named streams flow within the City (U.S. Geological Survey 2017). One unnamed ephemeral stream, known locally as Canyon del Rey Creek, flows from the southeast to the northwest along the southwestern boundary of the City; this unnamed ephemeral stream flows into Laguna Grande, also known as Laguna Del Rey, and then into Roberts Lake (U.S. Geological Survey 2017). These lakes are described in further detail below. In addition to the unnamed ephemeral stream described above, a network of storm drains and drainage ditches cross the City. Water flow in these drainage ditches is correlated with stormwater runoff, and generally limited to periods during and following precipitation events. All stormwater drainage ditches and storm drains in the City discharge to the Pacific Ocean (City of Seaside 2014).

Seaside is characterized by a typical Mediterranean coastal climate, generally dry in the summer with mild, wet winters. The climate is moderated by the marine influence of the Pacific Ocean, which can bring persistent periods of wind and fog, especially during spring and summer months. The Western Regional Climate Center maintains a weather monitoring station in the City of Monterey, just south of the City. According to data collected at this weather station (Western Regional Climate Center 2016), average summer temperatures in degrees Fahrenheit in the area are in the high 50's, with highs in the mid 60's and morning lows in the low 50's. Average winter temperatures are in the low 50's, with daytime highs in the low 60's and morning lows in the mid 40's. Most rainfall occurs between November and March, with an average annual rainfall of approximately 20 inches. The wettest months of the year are December, January, and February, with an average rainfall of 3.32, 4.46, and 3.32 inches, respectively (Western Regional Climate Center 2016).

Additional information on water resources is included in the Water Supply Assessment (WSA), which is included as Appendix F to this EIR, as well as in the Urban Water Management Plans (UWMPs), which are incorporated by reference (CalAm 2020). As described in the WSA, the City of Seaside is served by three separate water supply providers, and the respective UWMP boundaries do not align

with the boundaries of the General Plan Area. In addition, each of the three separate water suppliers use different types of assumptions to make water demand estimates for their service territories, including with respect to cumulative growth assumptions. Therefore, all applicable UWMPs are assessed in the WSA and incorporated by reference into this analysis, include as relevant to system demands, water reduction planning, system supplies, water quality information, groundwater information, water supply reliability information, water shortage contingency planning, and demand management measures.

a. Surface Water

The California Department of Water Resources (DWR) divides surface watersheds in California into 10 Hydrologic Regions. The City of Seaside lies within the Central Coast Hydrologic Region, a large coastal watershed in central California that consists of approximately 7.22 million acres (California DWR 2004). The Hydrologic Region includes all of Santa Cruz, Monterey, San Luis Obispo, and Santa Barbara counties, most of San Benito County, and parts of San Mateo, Santa Clara, and Ventura counties. Major drainages in the Central Coast Hydrologic Region include the Salinas, Cuyama, Santa Ynez, Santa Maria, San Antonio, San Lorenzo, San Benito, Pajaro, Nacimiento, Carmel, and Big Sur rivers (California DWR 2004).

The California DWR further subdivides Hydrologic Regions into Hydrologic Units, and further into Hydrologic Areas and Hydrologic Subareas. Within the Central Coast Hydrologic Region, the City is located entirely in the Salinas Hydrologic Unit (California Department of Forestry and Fire Protection 2002). The Central Coast Regional Water Quality Control Board (RWQCB) governs basin planning and water quality within both of these Hydrologic Units (RWQCB 2011). Within the Salinas Hydrologic Unit, the City is located entirely within the Monterey Peninsula Hydrologic Area.

The City of Seaside includes both undeveloped open space with natural drainage features and urban development with altered drainage systems, such as underground storm water systems and drainage ditches. According to the U.S. Geological Survey National Hydrography Dataset (2017), there are no named streams that flow within the City of Seaside. One unnamed ephemeral stream, known locally as Canyon del Rey Creek, flows from the southeast to the northwest along the southwestern boundary of the City; this unnamed ephemeral stream flows into Laguna Grande, also known as Laguna Del Rey, and then into Roberts Lake (U.S. Geological Survey 2017). Laguna Grande is located on the east side of Del Monte Boulevard and an abandoned railway and drains under the road and railway to Roberts Lake, on the west side of the road and railway. Highway 1 separates Roberts Lake from the Pacific Ocean, although a culvert connection is provided from the lake to the beach. Before construction of Highway 1, Roberts Lake and Laguna Grande were a tidal estuary complex, but development and fill for the highway cut off ocean influence (City of Seaside 2023). Both of these waterbodies now function as small lakes.

b. Groundwater

The California DWR's Bulletin 118 is the State's official compendium on groundwater, and it defines the boundaries and describes the hydrologic characteristics of California's groundwater basins. The California DWR periodically updates Bulletin 118, which includes revising the basin boundaries as applicable. An interim update of Bulletin 118 occurred in 2003 and again in 2016 (California DWR 2004; 2016).

In the 2003 update of Bulletin 118, the City of Seaside was underlain by the Seaside Area Subbasin of the Salinas Valley Groundwater Basin. The 2016 update of Bulletin 118 revised the boundary of the Salinas Area Groundwater Basin, and also divided the Seaside Area Subbasin into two separate

Subbasins: Seaside Subbasin and Monterey Subbasin. The division was based on hydrologic studies conducted by Harding ESE in 2001 (as cited in Marina Coast Water District 2016b), in which they suggest the Monterey Subbasin area is connected to the 180/400 Foot Subbasin, adjacent to the north, while the Seaside Subbasin is not connected. These two Subbasins underlie approximately 40 square miles of surface area and are bounded on the west by the shoreline of the Monterey Bay; on the northeast by a drainage divide that separates the Monterey Subbasin from the 180/400 Foot Subbasin; and on the south east by a drainage divide that separates the Seaside Subbasin from the Corral de Tierra Subbasin (California DWR 2016). The City of Seaside is underlain by both of these Subbasins.

The 2016 update of Bulletin 118 does not provide descriptions of the groundwater conditions and aquifers in the Seaside or Monterey Subbasins. However, because they are essentially the same area as the former Seaside Area Subbasin from the 2003 update of Bulletin 118, the following description of the groundwater conditions in Seaside and Monterey Subbasins is based on the description of the Seaside Area Subbasin in the 2003 update to Bulletin 118.

The Seaside and Monterey Subbasins are composed of four water-bearing geologic formations: the Santa Margarita Formation; the Paso Robles Formation; the Aromas Formation; and alluvium. The Subbasins have an estimated storage capacity of approximately one million acre-feet, based on the storage of 630,000 acre-feet in roughly the area of the Seaside Subbasin. Groundwater recharge from rainfall infiltration was estimated by the U.S. Geological Survey to range from zero to 15,200 acre-feet between 1962 and 1979 (as cited in California DWR 2004). Subsurface inflow was estimated to be about 2,000 acre-feet per year in 1976. Average withdrawal from pumping in the Subbasins was estimated at 3,600 acre-feet per year from 1962 to 1979. The U.S. Geological Survey estimated that the Subbasins yield was more than 6,400 acre-feet per year but less than 7,700 acre-feet per year (as cited in California DWR 2004).

Groundwater levels have declined across the basin since the 1960s, with a brief respite in the 1980s (Langridge et al 2016). Water level data from a well owned by California-American Water Company show a decline of approximately 40 feet between 1960 and 2002. Between 1995 and 2008, water levels in the Santa Margarita aquifer declined approximately 20 feet (Monterey Peninsula Water Management District 2008). Long-term water level hydrographs for coastal wells reveal that groundwater levels have declined in the deeper wells, but have stabilized in the shallower Paso Robles aquifer. (Langridge et al 2016)

The groundwater in Seaside and Monterey Subbasins is characterized as a sodium-chloride type in the southern end of the Subbasin to a sodium-bicarbonate type in the northern portion (California DWR 2004). The U.S. Geological Survey notes that groundwater from the Santa Margarita Formation contains elevated amounts of hydrogen-sulfide gas, and high levels of iron were found south of the City of Seaside (California DWR 2004). Seawater intrusion is an ongoing problem in the Salinas Valley Groundwater (California DWR 2004), but according to the Seaside Basin Watermaster (2014), there were no noticeable signs of seawater intrusion in the Seaside Subbasin in 2013. Groundwater quality in the basins is discussed in more detail below under the heading *Drinking Water Quality*.

c. Water Supply and Providers

The City of Seaside currently relies entirely on local water supplies to meet its demands. It does not receive imported water. The City and its water providers acquire and distribute groundwater from the underlying Seaside Groundwater Basin, as well as other Subbasins within the Salinas Valley Groundwater Basin. The Carmel River, located approximately 4.5 miles south of the City, is considered a local surface water supply source. Carmel River water is primarily acquired via

production wells alongside the river banks. Other water supply sources, including desalinated and recycled water, are being considered for future development and use (Marina Coast Water District 2016b).

The City of Seaside receives water service from three providers: 1) Marina Coast Water District; 2) Seaside Municipal Water District; and 3) California-American Water Company. The service area boundaries for the three water purveyors are shown in Figure 4.9-1. A description of each of these providers and the water supply provided by each is provided following Figure 4.9-1.

The Marina Coast Water District provides water service within the boundaries of the former Fort Ord and relies on three groundwater wells to supply water to customers in the City of Seaside. These wells are located in the lower 180-foot and 400-foot aquifers of the Salinas Valley Groundwater Basin, north of the City of Seaside. Approximately 500 acre-feet of groundwater were pumped from these three wells in 2016 (Marina Coast Water District 2021a). Additionally, the Marina Coast Water District has a seawater desalination facility with a capacity of 300 acre-feet per year; however, the plant is currently not in use (Marina Coast Water District 2016b).

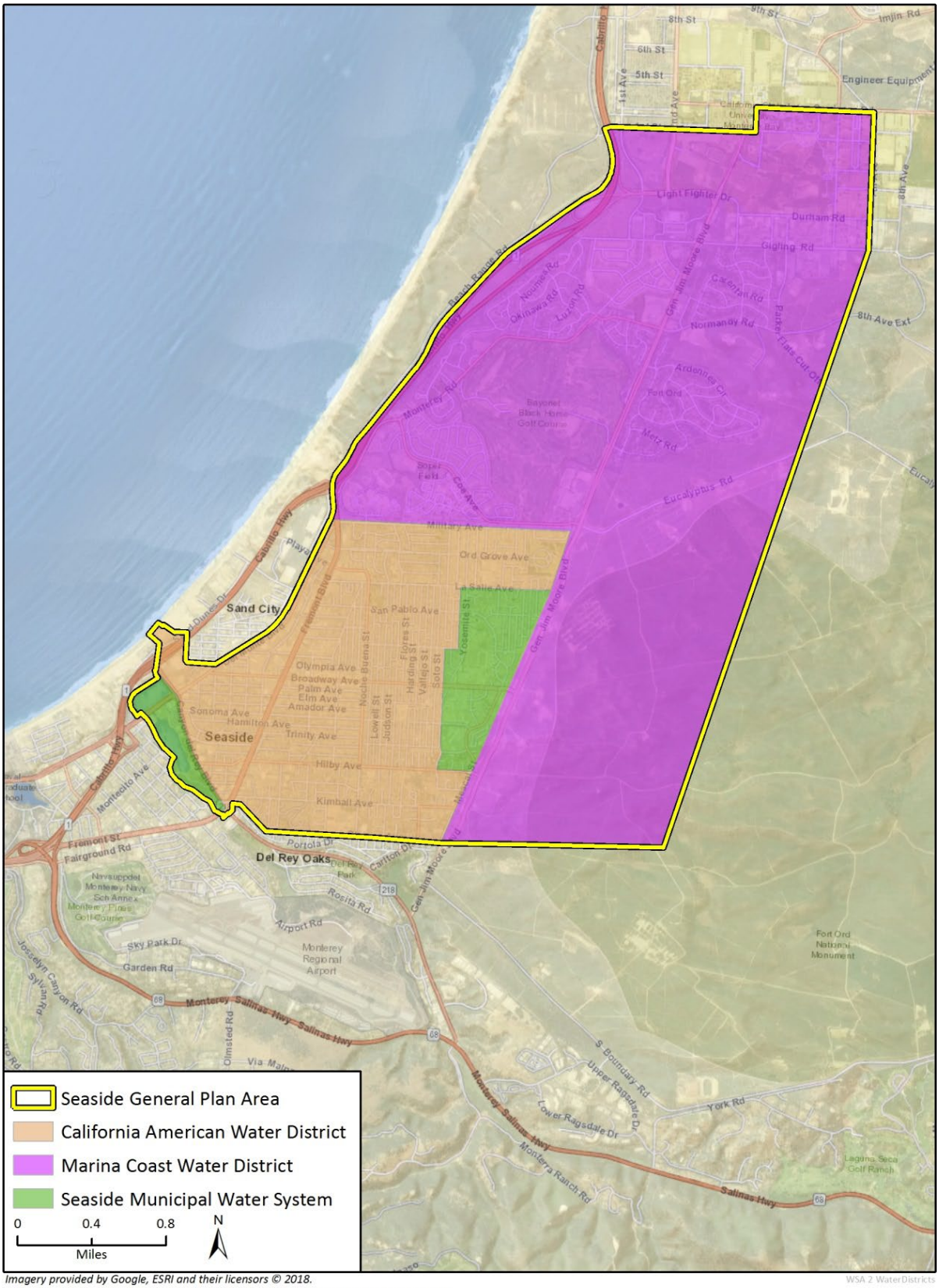
The Marina Coast Water District began providing groundwater from its wells for irrigation of Bayonet and Blackhorse Golf Courses in 2010. Prior to 2010, the City of Seaside provided irrigation supply from wells within the Seaside Area Subbasin that are operated by Seaside Municipal Water District, which was the source of supply for this demand at the time the former Fort Ord closed. In 2015, the City of Seaside transitioned back to using water from the Seaside Area Subbasin (now the Seaside and Monterey Subbasins) wells for the golf courses (Marina Coast Water District 2016b).

The Seaside Municipal Water District operates the Seaside Municipal Water System, which supplies water to the City of Seaside. The Seaside Municipal Water District also serves water to two golf courses within its jurisdiction (City of Seaside 2009). Water is supplied to the system from two groundwater wells that produce water from the Seaside Groundwater Basin. Only one of the two wells is currently in service. In addition to the groundwater well, the system also includes two 500,000 gallon water tanks (City of Seaside 2009). In Water Year 2016, the Seaside Municipal Water District pumped 195 acre-feet of water from the Seaside Groundwater Basin for municipal uses, and another 458 acre-feet of water for golf course irrigation (Seaside Groundwater Basin Watermaster 2016). The Seaside Municipal Water System is the smallest system of the three water providers within the City of Seaside. It has 790 connections and serves about 3,300 customers (City of Seaside 2022).

The Carmel River and the Carmel Valley Aquifer serve jointly as a primary water supply source for California-American Water Company. California-American Water Company produces water from these sources via surface water diversions and well pumping. Of the 326 production wells in the Carmel Valley Aquifer, 18 are owned and operated by California-American Water Company. California-American Water Company has authorized unrestricted rights to 3,376 acre-feet per year. Monterey Peninsula Water Management District and California-American Water Company share another 6,790 acre-feet per year in water rights that are subject to instream flow requirements. (Monterey Peninsula Water Management District 2017a).

In 1995, the State Water Resources Control Board (SWRCB) issued Order No. WR 95-10, which found that California-American Water Company was diverting more water from the Carmel River than it was allowed. In 2009, the SWRCB issued a Cease and Desist Order (SWRCB 2009-0060) requiring California-American Water Company (CalAm) to reduce its Carmel River diversions and secure replacement water supplies.

Figure 4.9-1 Water Districts



Imagery provided by Google, ESRI and their licensors © 2018.
Water District data from the City of Seaside, 2017 and Marina Coast Water District, 2015.

California-American Water Company production decreased from approximately 11,000 acre-feet per year (AFY) in 1995 to approximately 7,000 AFY in 2015 (Monterey Peninsula Water Management District 2017a).

d. Additional Supply

Aquifer Storage and Recovery (ASR) Project

The Aquifer Storage and Recovery Project is a groundwater recharge project implemented by Monterey Peninsula Water Management District and California-American Water Company. Monterey Peninsula Water Management District and California-American Water Company jointly own and operate two injection/extraction sites in the coastal area of the Seaside Groundwater Basin. Excess winter flows from the Carmel River are collected via the California-American Water Company distribution system and used to artificially recharge the Seaside Groundwater Basin. The average annual yield of this system varies depending on rainfall and river flows, but it is anticipated to be approximately 2,000 AFY (Monterey Peninsula Water Management District 2019).

Desalinated Water

The Sand City Desalination Facility is owned and operated by California-American Water Company. The facility includes a reverse osmosis desalination plant, a delivery pipeline connecting the facility to the Sand City distribution system, two water storage tanks, and a connection to California-American Water Company's greater regional distribution system. The facility has the capacity to produce 300 acre-feet per year (California-American Water Company 2021a).

e. Water Quality

Water quality in the City of Seaside is governed by the Central Coast RWQCB, which sets water quality standards in the Water Quality Control Plan for the Central Coastal Basin (Basin Plan) (2016). The Basin Plan identifies beneficial uses for surface water and groundwater and establishes water quality objectives to attain those beneficial uses. The identified beneficial uses and the water quality objectives to maintain or achieve those uses are together known as water quality standards. The Central Coast RWQCB designates beneficial uses for some individual waterbodies in the Central Coast Basin. All other waterbodies not designated individually are assigned the designated uses of municipal and domestic water supply and protection of recreation and aquatic life. Within the City of Seaside, as stated above under the heading *Surface Water*, surface waterbodies consist of Roberts Lake and Laguna Grande. Table 4.9-1 presents the designated beneficial uses listed in the Basin Plan for these two surface waters.

Table 4.9-1 Basin Plan Beneficial Uses

Waterbody	Beneficial Uses
Laguna Grande	Municipal and Domestic Supply; Water Contact Recreation; Non-Contact Water Recreation; Wildlife Habitat; Cold Fresh Water Habitat; Warm Fresh Water Habitat; Commercial and Sport Fishing
Roberts Lake	Municipal and Domestic Supply; Water Contact Recreation; Non-Contact Water Recreation; Wildlife Habitat; Cold Fresh Water Habitat; Warm Fresh Water Habitat; Commercial and Sport Fishing

Source: Central Coast RWQCB, Basin Plan, 2016.

The Clean Water Act 303(d) list is a register of impaired and threatened waters which the Clean Water Act requires all states to submit for Environmental Protection Agency approval. The list identifies all waters where the required pollution control measures have so far been unsuccessful in reaching or maintaining the required water quality standards. Waters that are listed are known as "impaired." Neither Roberts Lake nor Laguna Grande is listed as impaired. According to the SWRCB (2012), there are no other waterbodies in the City of Seaside listed as impaired.

Although neither Roberts Lake nor Laguna Grande is listed as impaired, both are described as being substantially polluted in the *Laguna Grande/Roberts Lake Local Coastal Program Land Use Plan Addendum* (City of Seaside and City of Monterey 2000). According to the *Laguna Grande/Roberts Lake Local Coastal Program Land Use Plan Addendum*, both waterbodies experience low levels of dissolved oxygen and sedimentation from erosion of adjacent sand dunes. Additionally, stormwater runoff that is discharged or otherwise captured in both waterbodies is suggested as potential source of pollution.

As described, the Carmel River and the Carmel Valley Aquifer serve jointly as a primary water supply source for California-American Water Company. The Carmel River is not listed as an impaired water body on the U.S. Environmental Protection Agency's Clean Water Act 303(d) listings (SWRCB 2012).

Drinking Water Quality

As described above under the heading *Water Supply*, the City of Seaside receives water service from three providers: 1) Marina Coast Water District; 2) Seaside Municipal Water District; and 3) California-American Water Company.

According to the most recent consumer confidence report produced by the Marina Coast Water District (2021b), potable water supplied by the district meets all California and Federal drinking water standards. Samples collected and tested from the districts groundwater supply wells during 2021 indicate naturally occurring levels of some contaminants, such as chloride and iron, but all contaminants were present at levels below the designated Maximum Contaminant Levels. Maximum Contaminant Levels are the highest level of a contaminant that is allowed in drinking water.

The Seaside Municipal Water District is supplied from a single groundwater well located within the Seaside Aquifer. Water samples are regularly collected from the well to monitor what contaminants are present, and if levels exceed primary and secondary drinking water standards. According to the most recent consumer confidence report produced by the Seaside Municipal Water District (2021), contaminant levels in samples collected in recent years were below state and federal Maximum Contaminant Levels.

The California-American Water Company publishes annual water quality reports at regional levels. The California-American Water Company does not publish a report specific to its water supply from extractions from the Seaside Subbasin and Salinas Valley Groundwater Basins. However, according to its 2021 water quality report for Monterey County (California-American Water Company 2021) contaminant levels in the potable water supplied by the California-American Water Company in the county are below Maximum Contaminant Levels.

f. Flood Hazards

Flood hazards can occur when the amount of rainfall exceeds the infiltration capacity of the surrounding landscape or the conveyance capacity of the storm water drainage system. The Federal Emergency Management Agency (FEMA) delineates regional flooding hazards as part of the National

Flood Insurance Program. FEMA identifies flood hazard risks through its Flood Insurance Rate Map (FIRM) program. Higher flood risk zones are called Special Flood Hazard Areas; these areas have a 1 percent chance or greater of flooding in any given year (also called the 100-year flood). Although a 100-year flood will, on average, occur once every 100 years, the probability of a 100-year flood is 1 percent for any particular year. Two 100-year floods could occur in the same year or even in the same month, but the likelihood that two 100-year flood events would occur consecutively is very small.

A shown in Figure 4.9-2, the General Plan Area is mapped on Monterey County FIRM Panels 189 (2017a), 195 (2017b), 326 (2017c), and 327 (2009). As shown on FIRM Panel 326, small coastal area west of State Route 1, and additional areas adjacent to Roberts Lake, Laguna Grande, and associated drainage area up-gradient of Laguna Grande are located within Special Flood Hazard Areas subject to a 100-year flood. Nearly the rest of the General Plan Area is mapped in a 500-year flood zone and is subject to a 0.2-percent-chance-flood-event annually.

4.9.2 Regulatory Setting

a. Federal

Clean Water Act

The federal Clean Water Act, enacted by Congress in 1972 and amended several times since, is the primary federal law regulating water quality in the United States and forms the basis for several State and local laws throughout the country. The Act established the basic structure for regulating discharges of pollutants into the waters of the United States. The Clean Water Act gave the U.S. Environmental Protection Agency the authority to implement federal pollution control programs, such as setting water quality standards for contaminants in surface water, establishing wastewater and effluent discharge limits for various industry contaminants in surface water, establishing wastewater and effluent discharge limits for various industry categories, and imposing requirements for controlling nonpoint-source pollution. At the federal level, the Clean Water Act is administered by the U.S. Environmental Protection Agency and U.S. Army Corps of Engineers. At the state and regional levels in California, the act is administered and enforced by the SWRCB and the nine RWQCBs.

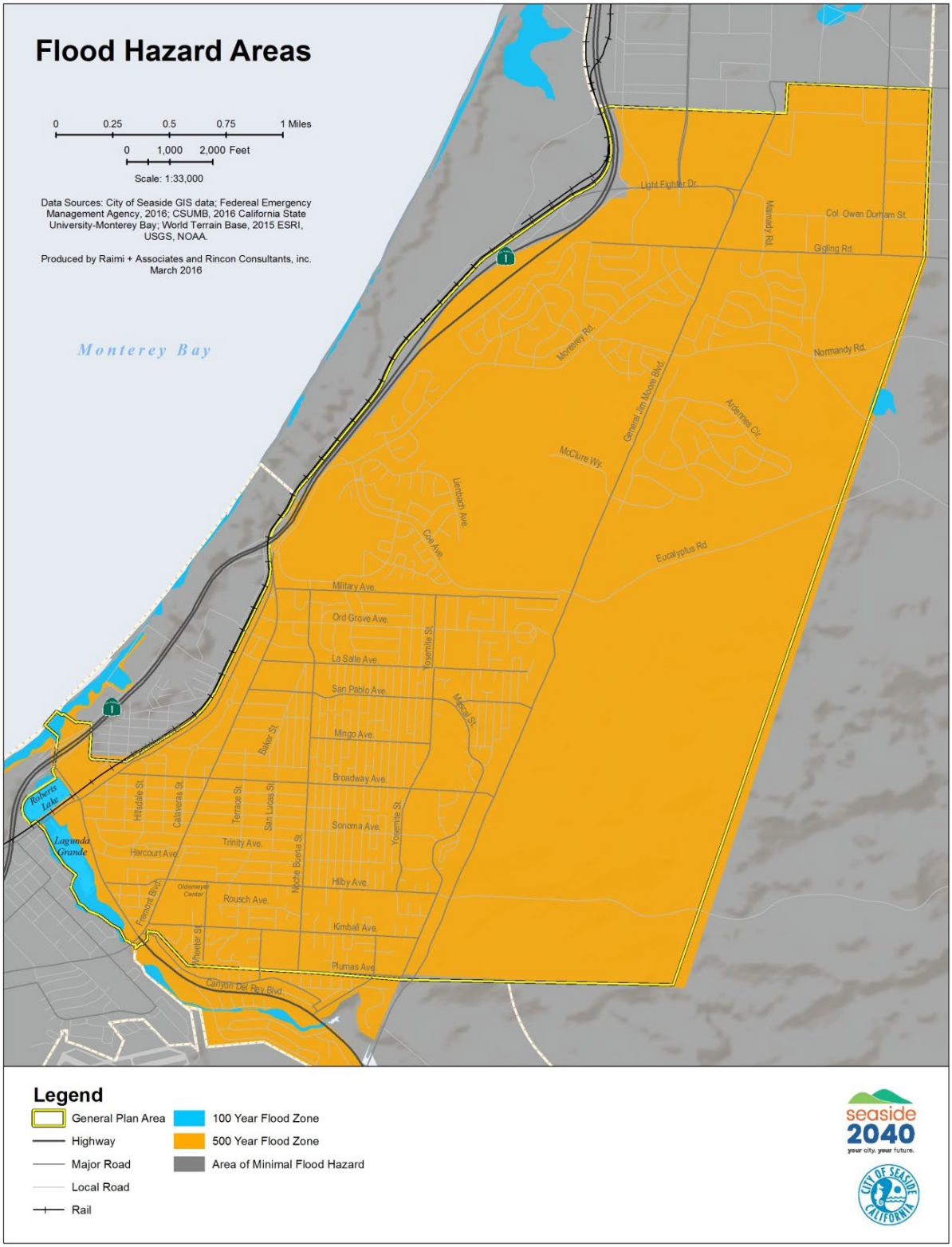
Clean Water Act Section 303(d): List of Impaired Water Bodies

As described above, Section 303(d) of the Clean Water Act requires states to identify water bodies that do not meet water quality objectives and are not supporting their beneficial uses. Each state must submit an updated list, called the 303(d) list, to the U.S. Environmental Protection Agency periodically. In addition to identifying the water bodies that are not supporting beneficial uses, the list also identifies the pollutant or stressor causing impairment, and establishes a priority for developing a control plan to address the impairment.

Clean Water Act Section 401

Under Section 401 of the Clean Water Act, the RWQCBs have regulatory authority over actions in waters of the United States and/or the State of California through the issuance of water quality certifications, which are issued in conjunction with any federal permit (e.g., permits issued by the U.S. Army Corps of Engineers under Section 404 of the Clean Water Act, described above).

Figure 4.9-2 Flood Hazard Areas



Section 401 of the Clean Water Act provides the SWRCB and the RWQCBs with the regulatory authority to waive, certify, or deny any proposed activity that could result in a discharge to surface waters of the State. To waive or certify an activity, these agencies must find that the proposed discharge would comply with State water quality standards, including those protecting beneficial uses and water quality. If these agencies deny the proposed activity, the federal permit cannot be issued. This water quality certification is generally required for projects involving the discharge of dredge or fill material to wetlands or other bodies.

Clean Water Act Section 402

Section 402 of the Clean Water Act requires that all construction sites on an acre or greater of land, as well as municipal, industrial and commercial facilities discharging wastewater or stormwater directly from a point source (e.g., pipe, ditch, or channel) into a surface water of the United States must obtain permission under the National Pollutant Discharge Elimination System (NPDES) permit. All NPDES permits are written to ensure that the surface water receiving discharges will achieve specified water quality standards.

According to federal regulations, NPDES permit coverage for stormwater discharges associated with construction activity can be obtained through individual state permits or general permits. Individual permitting involves the submittal of specific data on a single construction project to the appropriate permitting agency that will issue a site-specific NPDES permit to the project. NPDES coverage under a general permit involves the submittal of a Notice of Intent by the regulated construction project that they intend to comply with a general permit to be developed by U.S. Environmental Protection Agency or a state with delegated permitting authority.

In California, the NPDES program is administered by the SWRCB through the RWQCBs and requires municipalities to obtain permits that outline programs and activities to control wastewater and stormwater pollution. The federal Clean Water Act prohibits discharges of stormwater from construction projects unless the discharge is in compliance with an NPDES permit. The SWRCB is the permitting authority in California, and adopted an NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit) (Order 2009-0009,[1] as amended by Orders 2010-0014-DWQ[2] and 2012-006-DWQ[3]). The Order applies to construction sites that include one or more acre of soil disturbance. Construction activities include clearing, grading, grubbing, excavation, stockpiling, and reconstruction of existing facilities involving removal or replacement. The Construction General Permit requires that the landowner and/or contractor file permit registration documents prior to commencing construction and then pay a fee annually through the duration of construction. These documents include a notice of intent, risk assessment, site map, stormwater pollution prevention plan (SWPPP), and signed certification statement. The SWPPP must include measures to ensure that: all pollutants and their sources are controlled; non-stormwater discharges are identified and eliminated, controlled, or treated; site Best Management Practices (BMPs) are effective and result in the reduction or elimination of pollutants in stormwater discharges and authorized non-stormwater discharges; and BMPs installed to reduce or eliminate pollutants after construction are completed and maintained. The Construction General Permit specifies minimum BMP requirements for stormwater control based on

[1] More details on SWRCB Order 2009-0009 are available online at: https://www.waterboards.ca.gov/water_issues/programs/stormwater/docs/constpermits/wqo_2009_0009_complete.pdf

[2] More details on SWRCB Order 2010-0014-DWQ are available online at: https://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2010/wqo2010_0014dwq.pdf

[3] More details on SWRCB Order 2012-006-DWQ are available online at: https://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2012/wqo2012_0006_dwq.pdf

the risk level of the site. The Permit also specifies minimum qualifications for a qualified SWPPP developer and qualified SWPPP practitioner. The Monterey Regional Stormwater Management Program (MRSWMP) is an entity that has developed Construction Site BMPs within Seaside (MRSWMP 2014). Such Construction Site BMPs include material storage such as covering of stockpiles during the day and particularly during rain and wind events, silt fencing, straw wattles, stabilized construction entrances, routine cleaning, equipment drip pans, and dust control measures including water trucks.

Discharges from the City of Seaside's storm drain system are permitted under NPDES General Permit for Storm Water Discharges From Small Municipal Separate Storm Sewer Systems (MS4s), Order No. 2013-0001-DWQ (MS4 General Permit). The permit was issued jointly to the City and seven other local agencies, as well as several regional school districts in Monterey County as part of the Monterey Regional Stormwater Management Program. This regional program was developed in response to the SWRCB's implementation of the NPDES Phase II Stormwater Program. The purpose of this program is to implement and enforce BMPs to reduce the discharge of pollutants from municipal separate storm sewer systems, such as the City's storm drain system. The City is responsible for conducting its stormwater management program in accordance with the terms of the regional program (City of Seaside 2014).

Wastewater treatment in the City of Seaside is provided by Monterey One Water (formerly known as the Monterey Regional Water Pollution Control Agency) at its Regional Wastewater Treatment Plant located north of Marina. Discharges of treated wastewater, also called effluent, from the treatment plan are regulated by the Central Coast RWQCB under the *Waste Discharge Requirements for the Monterey Regional Water Pollution Control Agency Treatment Plant* (Order No. R3-2014-0013, NPDES Permit No. CA0048551). The minimum initial dilution established in the individual NPDES permit at the point of effluent discharge is 1:145 (parts effluent to seawater). The minimum initial dilution is used by the Central Coast RWQCB to determine compliance with the water quality effluent limitations established in the NPDES permit for in-pipe water quality (i.e., prior to discharge) that are based on water quality objectives contained in the SWRCB's Ocean Plan. The effluent limitations in the permit are based on and are consistent with the water quality objectives contained in the Ocean Plan. Further discussion of the Ocean Plan is provided in discussion of State regulations, below.

Clean Water Act Section 404

Under Section 404 of the Clean Water Act, proposed discharges of dredged or fill material into waters of the United States require U.S. Army Corps of Engineers authorization. Waters of the United States generally include tidal waters, lakes, ponds, rivers, streams (including intermittent streams), and wetlands (with the exception of isolated wetlands). The U.S. Army Corps of Engineers identifies wetlands using a multi-parameter approach, which requires positive wetland indicators in three distinct environmental categories: hydrology, soils, and vegetation. According to the *Corps of Engineers Wetlands Delineation Manual* (1987), except in certain situations, all three parameters must be satisfied for an area to be considered a jurisdictional wetland. The *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (U.S. Army Corps of Engineers 2008) is also used when conducting jurisdictional wetland determinations in areas identified within the boundaries of the arid west, such as the Coachella Valley.

When an application for a Section 404 permit is made, the Applicant must show it has:

- Taken steps to avoid impacts to wetlands or waters of the U.S. where practicable;
- Minimized unavoidable impacts on waters of the U.S. and wetlands; and
- Provided mitigation for unavoidable impacts.

National Flood Insurance Act/Flood Disaster Protection Act

The National Flood Insurance Act of 1968 made flood insurance available for the first time. The Flood Disaster Protection Act of 1973 made the purchase of flood insurance mandatory for the protection of property located in Special Flood Hazard Areas. These laws are relevant because they led to mapping of regulatory floodplains and to local management of floodplain areas according to guidelines that include prohibiting or restricting development in flood hazard zones.

Drinking Water Regulations

The federal Safe Drinking Water Act was enacted in 1974, and allows the U.S. Environmental Protection Agency to promulgate national primary drinking water standards specifying Maximum Contaminants Levels for each contaminant present in a public water system with an adverse effect on human health. Primary Maximum Contaminants Levels have been established for approximately 90 contaminants in drinking water. The U.S. Environmental Protection Agency also adopts secondary Maximum Contaminants Levels as non-enforceable guidelines for contaminants that may cause cosmetic or aesthetic effects. States have the discretion to adopt them as enforceable standards. U.S. Environmental Protection Agency has delegated to the California Department of Public Health the responsibility for administering California's drinking-water program. In 1976, two years after the federal Safe Drinking Water Act was passed, California adopted its own safe drinking water act (see below).

Federal Emergency Management Agency

The Federal Emergency Management Agency (FEMA) administers the National Flood insurance Program (NFIP) to provide subsidized flood insurance to communities that comply with FEMA regulations limiting development in floodplains. FEMA issues Flood Insurance Rate Maps (FIRMs) that identify which land areas are subject to flooding. These maps provide flood information and identify flood hazard zones in the community. The design standard for flood protection is established by FEMA. FEMA's minimum level of flood protection for new development is the 100-year flood event, also described as the magnitude flood that has a one percent chance of occurring in any given year.

Additionally, FEMA has developed requirements and procedures for evaluating earthen levee systems and mapping the areas affected by those systems. Levee systems are evaluated for their ability to provide protection from 100-year flood events and the results of this evaluation are documented in the FEMA Levee Inventory System (FLIS). Levee systems must meet minimum freeboard standards and must be maintained according to an officially adopted maintenance plan. Other FEMA levee system evaluation criteria include structural design and interior drainage.

b. State

California Lake and Streambed Alteration Agreement

Sections 1600–1616 of the California Fish and Game Code require that any entity that proposes an activity that would divert or obstruct the natural flow of any river, stream or lake; change or use any material from the bed, channel, or bank of, any river, stream, or lake; or, deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake, must notify the California Department of Fish and Wildlife. The California Department of Fish and Wildlife requires a Lake or Streambed Alteration Agreement if it determines that the alteration may adversely affect fish and wildlife resources. The Agreement includes conditions necessary to protect those resources. The Agreement applies to any stream, including ephemeral streams and desert washes.

California Ocean Plan

The *Water Quality Control Plan for Ocean Waters of California* (or Ocean Plan) (SWRCB 2015) establishes water quality objectives and beneficial uses for waters of the Pacific Ocean adjacent to the California Coast outside of estuaries, coastal lagoons, and enclosed bays. The Ocean Plan establishes effluent quality requirements and management principles for specific waste discharges. The water quality requirements and objectives of the Ocean Plan are incorporated into NPDES permits for ocean discharges, such as permit for discharge of treated wastewater from the Monterey One Water Regional Wastewater Treatment Plant to Monterey Bay.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (Division 7 of the California Water Code) is the primary statute covering the quality of waters in California. Under the act, the SWRCB has the ultimate authority over the State's water quality policy. The SWRCB administers water rights, water pollution control, and water quality functions throughout the state, while the nine RWQCBs conduct planning, permitting, and enforcement activities. The RWQCBs also regulate water quality under this act through the regulatory standards and objectives set forth in Water Quality Control Plans (also referred to as Basin Plans) prepared for each region.

The project site is located in the jurisdiction of the Central Coast RWQCB. The most current version of the Central Coast RWQCB's Basin Plan was adopted in 2016. The Basin Plan has five major components: 1) identifies the waters of the region, including the Monterey Bay; 2) designates beneficial uses of those waters; 3) establishes water quality objectives for the protection of those uses; 4) prescribes an implementation plan; and 5) establishes a monitoring and surveillance program to assess implementation efforts. Water quality objectives of the Basin Plan are incorporated into individual NPDES permits authorized by the Central Coast RWQCB.

California Safe Drinking Water Act

The U.S. Environmental Protection Agency has delegated to the California Department of Public Health the responsibility for administering California's drinking-water program. In 1976, two years after the federal Safe Drinking Water Act was passed, California adopted its own safe drinking water act (contained in the Health and Safety Code) and adopted implementing regulations (contained in Title 22 California Code of Regulations). California's program sets drinking water standards that are at least as stringent as the federal standards. Each community water system also must monitor for a

specified list of contaminants, and the monitoring results must be reported to the state. Responsibility for the state's Drinking Water Program was transferred from the Department of Public Health to the Division of Drinking Water, which is a division of the SWRCB that was created in July 2014.

California Drainage Law, Government Code 65302

Government Code Section 65302(a) requires cities and counties located within the state to review the Land Use, Conservation, and Safety elements of the general plan "for the consideration of flood hazards, flooding, and floodplains" to address flood risks. The code also requires cities and counties in the state to annually review the land use element within "those areas covered by the plan that are subject to flooding identified by floodplain mapping prepared by FEMA or the California DWR."

Sustainable Groundwater Management Act

In September 2014, California Governor Jerry Brown signed a three-bill package known as the Sustainable Groundwater Management Act (SGMA) into law. SGMA establishes a framework for local groundwater management and requires local agencies to bring overdrafted basins into balanced levels of pumping and recharge. In Medium- and High-priority groundwater basins, SGMA requires the formation of locally-controlled Groundwater Sustainability Agencies (GSAs). GSAs are responsible for developing and implementing Groundwater Sustainability Plans (GSPs) to guide groundwater management decisions and ensure long-term sustainability in their basins.

The southern approximately half of the General Plan Area coincides with the Seaside Subbasin, which is an adjudicated groundwater basin. Pursuant to SGMA, in adjudicated basins, the adjudication judgment serves as the sustainability plan. No additional GSA or GSP is required. The Seaside Basin Watermaster serves as the GSA for this subbasin, and the Seaside Basin Adjudication Judgment serves as the GSP for this subbasin.

The remaining portion of the General Plan Area overlaps the Monterey Subbasin. The Salinas Valley Basin GSA submitted a formation notice to the DWR covering most of the Salinas Valley Groundwater Basin. In some of these areas, the Salinas Valley Basin GSA will serve as the exclusive GSA. In other areas, additional GSA formation notices have been submitted by local water management entities. In the Monterey Subbasin, the MCWD GSA will prepare the GSP for the Marina Subarea and Ord Subarea, while the Salinas Valley Basin GSA prepares the GSP for the Corral de Tierra Subarea (DWR 2018).

c. Regional

Monterey One Water Ordinances

Before the establishment of Monterey One Water, each community in the Monterey Bay area had its own sewage treatment facility. In November 1972, the Monterey, Pacific Grove, and Seaside Sanitation Districts formed the regional system of Monterey One Water. In the late 1980s, a Joint Powers Authority was created consisting of eleven members: representatives from the Monterey County Board of Supervisors, City of Salinas, Boronda County Sanitation District, Castroville Community Services District, City of Del Rey Oaks, City of Monterey, City of Pacific Grove, City of Sand City, City of Seaside, Marina Coast Water District, Moss Landing County Sanitation District, and the U.S. Army as an ex-officio member. Each member municipality is responsible for maintaining and operating its own collection system. In return, Monterey One Water replaced eight older

wastewater facilities in Northern Monterey County with a Regional Treatment Plant (Monterey One Water 2017b).

Monterey One Water's Ordinance 1 (otherwise known as the Hauled Waste Ordinance) establishes regulations for the interception, treatment, and disposal of sewage and wastewater. It prohibits the discharge of earth, oil or other petroleum products, grease, industrial waste, and chemicals or waste related to masonry into the sanitary sewer system. This ordinance enables the agency to comply with the water quality requirements set by the Central Coast RWQCB and all applicable effluent limitations, national standards of performance, toxic and pretreatment effluent standards, and other discharge criteria. Ordinance 15 adopts additional discharge treatment measures for grease and oil wastes from food service establishments.

Central Coast RWQCB Post-Construction Requirements

In July 2013, the Central Coast RWQCB adopted Resolution No. R3-2013-0032, which prescribes new Post-Construction Requirements for projects that create or replace 2,500 square feet or more of impervious area and receive their first discretionary approval for design elements after March 2014. The primary objective of these post-construction requirements is to ensure that the project permittee is reducing pollutant discharges to the maximum extent practicable and preventing stormwater discharges from causing or contributing to a violation of receiving water quality standards in all applicable development projects that require approvals and/or permits. These post-construction requirements complement the MS4 General Permit for the storm drain system because post-construction runoff from project sites in the City of Seaside would generally be captured in the storm drain system. Table 4.9-2 summarizes the post-construction requirements for different categories of projects. For additional details the text of the resolution is available online.[4]

Table 4.9-2 Central Coast RWQCB Post-Construction Requirements for Stormwater

Project Category	Performance Requirements
Tier 1 Projects: Projects that create or replace 2,500 square feet or more of impervious surface	**Implement One or More Low Impact Design Measures** ▪ Limit disturbance of natural drainage features ▪ Limit clearing, grading, and soil compaction ▪ Minimize impervious surfaces ▪ Minimize runoff by dispersing runoff to landscape or using permeable pavements
Tier 2 Projects: Projects that create or replace 5,000 square feet or more net impervious surface	**Tier 1 Requirements, Plus** Treat runoff generated by the 85th percentile 24-hour storm event with an approved and appropriately sized low impact development treatment system prior to discharge from the site
Tier 3 Projects: Projects that create or replace 15,000 square feet or more of impervious surface	**Tier 2 Requirements, Plus** Prevent offsite discharge from events up to the 95th percentile rainfall event using stormwater control measures
Tier 4 Projects: Projects that create or replace 22,500 square feet or more of impervious surface	**Tier 3 Requirements, Plus** Control peak flows to not exceed pre-project flows for the 2-year through 10-year events

Source: Resolution No. R3-2013-0032, adopted by Central Coast RWQCB in July 2013

[4] Central Coast RWQCB adopted Resolution No. R3-2013-0032 available online at: https://www.waterboards.ca.gov/centralcoast/water_issues/programs/stormwater/docs/lid/lid_hydromod_charette_index.html#res_r3-2013-0032. The post construction requirements are included in Attachment 1 to the resolution, which is available at: https://www.waterboards.ca.gov/centralcoast/water_issues/programs/stormwater/docs/lid/hydromod_lid_docs/2013_0032_attach1_post_construction_requirements.pdf

Groundwater Adjudication

In the 1970s, improved groundwater monitoring and data collection in the Seaside Area Subbasin showed declines in groundwater overdrafting in many areas across the basin. In 1995, the SWRCB issued Order No. WR 95-10, which found that CalAm was diverting more water from the Carmel River than it was allowed (MPWMD 2014a). CalAm was ordered to reduce surface water intake from the Carmel River. As a result, CalAm increased coastal groundwater extraction from the Seaside Area Subbasin to supplement its water supplies.

In the early 2000s, the MPWMD considered implementing groundwater protection ordinances, and began preparing the Seaside Basin Groundwater Management Plan (GMP). Concerned that MPWMD might be taking steps to curtail its groundwater pumping, in August 2003 CalAm requested an adjudication of the Seaside Area Subbasin in *California American Water v. City of Seaside et al.,* Case No. M66343. CalAm sought a declaration of rights among parties interested in groundwater production and storage in the basin, and named a number of defendants, including local cities, developers, and landowners that historically extracted groundwater from the basin.

In October 2003, CalAm and a number of defendants executed a stipulated agreement. MCRWA and MPWMD, who had intervened in the adjudication against CalAm and the other parties, did not join in the stipulation. In 2006, the Monterey County Superior Court accepted parts of the stipulation and set forth its findings regarding the Seaside Area Subbasin, including a determination of safe yield, an operating plan, and a determination of water rights.

The court determined that the Seaside Area Subbasin was in overdraft, and that recent groundwater production exceeded the natural safe yield (NSY) of the basin (which was defined as approximately 2,581 to 2,913 AFY) and potentially contributed to seawater intrusion. The court found that total groundwater production in each of the preceding five years was between 5,100 and 6,100 AFY. A physical solution was adopted in order to set pumping limits and establish monitoring and reporting requirements within the basin. The adjudication created a Watermaster, a court-created body with representation of the parties to the adjudication, that was tasked with managing the physical solution of the basin. The Seaside Basin Watermaster Board consists of a nine-member board, representing municipal water suppliers, cities, individual pumpers, and water management agencies. A copy of the Seaside Basin Adjudication is available online.[5]

The court defined an operation safe yield (OSY) as the maximum amount of groundwater that should be allowed to be produced from the basin in a given year. An initial OSY was set at 5,600 AFY; with overdraft conditions in the basin it was mandated that groundwater pumping from the basin be reduced by 2,600 AFY by 2021, in order to achieve the aforementioned OSY. The court determined each party's water right based on their historical production from the basin. Water rights were established as a percentage of the OSY. The physical solution imposed a deliberate and gradual ramp-down of allowed groundwater pumping over time, so as to bring the basin into balance and reduce the risk of seawater intrusion. Cutbacks to the OSY were to be implemented until the OSY was equal to the NSY. The physical solution required a triennial reduction (a reduction every three years) of the OSY.

[5] The original Seaside Basin Adjudication is available as Appendix J to the 2015 CalAm UWMP, which is available online at: https://wuedata.water.ca.gov/public/uwmp_attachments/4253019034/2015%20UWMP_Monterey%20District_Final.pdf. The Adjudication was amended in 2007 and those amendments are available online at: http://www.seasidebasinwatermaster.org/Other/Amended Decision0207.pdf

d. Local

City of Seaside Local Coastal Program

The City of Seaside Local Coastal Program governs decisions that determine the short- and long-term conservation and use of coastal resources in Seaside, consistent with the California Coastal Act. The City of Seaside Local Coastal Program provides goals, policies, and implementation actions that govern land and water use within Seaside's coastal zone. The Local Coastal Program zone in Seaside is relatively small and includes the beach area west of State Route 1, Roberts Lake, Laguna Grande, and a small portion of land with existing retail uses along Del Monte Boulevard, on the north side of Roberts Lake.

As part of the Local Coastal Program, the City of Seaside adopted the Local Coastal Program Land Use Plan in June 2013 (City of Seaside 2013). The Local Coastal Program Land Use Plan contains goals and policies, that when coupled with implementing instruments, such as the City of Seaside Municipal Code, serve to carry out the Local Coastal Program. The following Land Use Plan policies are applicable to hydrology and water quality:

Policy NCR-CZ 1.5.C – Protection of the Canyon Del Rey Creek Watershed

i. The City shall continue to implement the following erosion control and sedimentation mitigation measures:
   - Continue enforcement of the Urban Storm Water Quality Management and Discharge Control ordinance, as amended, (Chapter 18.46 of the Seaside Municipal Code) for all future construction in the watershed.
   - Design of street drainage to maximize retention and minimize impervious surface area and street flooding.
   - Regulate construction activities on unstable slopes that are susceptible to erosion.
   - Prevent additional gullying of alluvial terraces by maintaining riparian vegetation.

ii. The City shall continue to implement, monitor, comply with and update (as needed) the Monterey Regional Storm Water Management Plan (SWMP) as a participating entity in order to be in compliance with Final Phase II National Pollutant Discharge Elimination System (NPDES) General Permit No. CAS000004 adopted by the State Water Resources Control Board on April 30, 2003.

Policy NCR-CZ 4.1.A – Water Quality

i. The City shall actively pursue methods of improving water quality of lakes, streams, and other waterways throughout the Local Coastal Program area by improving the quality of dry-weather and stormwater runoff flows through the adoption of adequate stormwater pollution prevention and Low Impact Development strategies.

ii. The biological productivity and quality of coastal waters, streams, wetlands, and lakes shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of wastewater discharges and entrainment, controlling runoff, encouraging wastewater reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.

Policy NCR-CZ 5.1.B – Protection from Natural Hazards

i. All new development in areas subject to natural hazards, including geologic, flood, tsunami, sea level rise, ocean storm and surge, and fire hazard, shall be sited, designed, and sized to minimize risk to life, property, and the environment from natural disaster as warranted based on assessed risk and conditions on the ground.

Policy NCR-CZ 5.3.A – Protection from Tsunami Hazards

All development located within the tsunami inundation zone shown on the most recent state or local California Emergency Management Agency maps shall be designed and sited to minimize and mitigate flood hazards to the maximum extent possible including by designing all habitable space above the maximum flood elevation as defined by a qualified coastal geologist with experience in tsunami.

Seaside Municipal Code

Title 8, Chapter 8.44 of the Seaside Municipal Code prohibits dumping rubbish, fill, and refuse in or on the water area of Laguna Grande and upon land areas adjacent or contiguous to Laguna Grande including that area lying between Canyon Del Rey Boulevard and the Monterey city limit line, unless an exception is granted by the City Engineer. Exceptions are granted only when it is demonstrated factually that filling will not be detrimental in any manner.

Title 8, Chapter 8.46 of the Seaside Municipal Code protects and enhances the water quality of watercourses and water bodies in a manner pursuant to and consistent with the Federal Clean Water Act by reducing pollutants in storm water discharges to the maximum extent practicable and by prohibiting non-storm water discharges to the City's storm drain system. This chapter provides a comprehensive and integrated plan to regulate urban storm water quality management and discharge control. Chapter 8.46 applies to all water entering the storm drain system generated on any developed and undeveloped lands lying within the boundaries of Seaside.

Article II of Chapter 8.46 prohibits discharges into the City's storm drain system or watercourses any materials, including, but not limited to, pollutants or waters containing any pollutants that cause or contribute to a violation of applicable water quality standards, other than storm water. Article III of Chapter 8.46 requires appropriate BMPs to control the volume, rate, and potential pollutant load of storm water runoff from construction sites, and new development and redevelopment projects as required by the City's NPDES permit to minimize the generation, transport and discharge of pollutants. The City incorporates such requirements in its land use entitlements and construction or building-related permits to be issued relative to such development or redevelopment. Pursuant to Article III, every entity owning or leasing property through which a watercourse passes must keep and maintain that part of the watercourse within the property reasonably free debris, excessive vegetation, and other obstacles that would pollute, contaminate, or significantly retard the flow of water. Articles IV and V of Chapter 8.46 provides the City Engineer or its designee the authority to inspect erosion and sediment control measures and facilities associated with projects requiring a City permit. The City Engineer or designee is authorized to issue a notice of violation and/or stop work order for violations of the City's grading, erosion control, and stormwater discharge requirements. Violations of the City's discharge prohibitions may be enforced by civil action brought by the City.

Title 15, Chapter 15.28 of the Seaside Municipal Code contains regulations pertaining to development in a floodplain and protection of structures from flood hazards. Regulations related to

flood hazards include flood protection measures such as anchoring and waterproofing below the base flood elevation, elevating the lowest floor of new construction above base flood elevations, restrictions on the alteration of natural floodplains, stream channels, and natural protective barriers, controls on filling, grading, dredging, and other development that may increase flood damage, and locating structures on the land-side of mean-high tide to prevent coastal flooding damage. Article V of Chapter 15.28 contains regulations specific to flood hazard areas, including regulations for proposed grading, excavation, new construction and substantial improvements must be adequately designed and protected against flood damages, and must not aggravate the existing hazard.

Title 15, Chapter 15.32 of the Seaside Municipal Code sets forth guidelines, rules, regulations and minimum standards to control excavation, grading, clearing, erosion control and maintenance, including cut and fill embankments. Pursuant to Chapter 15.32, no person or persons shall cause or allow the persistence of a condition on any site that could cause accelerated erosion. All earth cuts and fills must be planted or otherwise protected from the storm runoff erosion within 30 days of the completion of final erosion control and grading work. This chapter requires that the tops and toes of cut and/or filled slopes be set back far enough to prevent encroachment upon streams, floodplains, channels, or waterbodies and to provide and maintain an undisturbed protective strip between the grading and the riparian corridor to prevent degradation of water quality. Section 15.32.170 requires, to the greatest extent possible, that peak storm drainage runoff and sediment rates from new development to not exceed predevelopment rates. A pro rata share of the cost of off-site erosion sediment, and flood control improvements and/or for maintenance to the principal drainageway, may be required by the City Engineer to handle the increased peak runoff and/or sediment generated by the development if greater than predevelopment rates. Runoff from buildings, roads, driveways and the total site area of a development must be controlled by berms, swales, ditches, structures, vegetative filter strips and/or catch basins to prevent the escape of sediment from the site.

Title 18, Chapter 18.02 of the Seaside Municipal Code sets forth the uses, regulations, and requirements applicable to the Local Coastal Program zoning districts, consistent with the City of Seaside Local Coastal Program Land Use Plan. Pursuant to this chapter, development proposed within an area that is subject to ocean waves, tsunami, coastal flooding, landslides, and other coastal hazards must be sited and designed to minimize risks to life and property over the development's lifetime.

4.9.3 Impact Analysis

a. Methodology and Significance Thresholds

Methodology

This section describes the potential environmental impacts of implementation of Seaside 2040 relevant to hydrology and water quality. The impact analysis is based on an assessment of baseline conditions for the City of Seaside, including climate, topography, watersheds and surface waters, groundwater, and floodplains, as described above under Section 4.9.1, *Setting*. This analysis identifies potential impacts based on the predicted interaction between the affected environment and construction, operation, and maintenance activities related to the predicted development that would occur under Seaside 2040, and recommends mitigation measures, when necessary, to avoid or minimize impacts.

Significance Thresholds

The following thresholds of significance are based on Appendix G of the State CEQA Guidelines. For the purposes of this EIR, implementation of Seaside 2040 may have a significant adverse impact if it would:

1. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality
2. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin
3. 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:
    a. result in substantial erosion or siltation on- or off-site;
    b. substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;
    c. 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
    d. impede or redirect flood flows
4. In flood hazard tsunami, or seiche zones, risk release of pollutants due to project inundation
5. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan

b. Project Impacts and Mitigation Measures

Threshold 1:	Would Seaside 2040 violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

Impact HYD-1 DEVELOPMENT ENVISIONED UNDER SEASIDE 2040 COULD RESULT IN AN INCREASE IN POLLUTANTS IN STORMWATER AND WASTEWATER. COMPLIANCE WITH THE CLEAN WATER ACT AND NPDES PERMITS, SEASIDE MUNICIPAL CODE, AND IMPLEMENTATION OF 2040 GENERAL PLAN GOALS AND POLICIES WOULD PREVENT SUBSTANTIAL DISCHARGES OF POLLUTANTS AND ADVERSE CHANGES TO WATER QUALITY. WATER QUALITY STANDARDS AND WASTE DISCHARGE REQUIREMENTS WOULD NOT BE VIOLATED. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

Construction

Construction activities facilitated by Seaside 2040 could include road improvements and realignments, installation and realignment of utilities, demolition of existing structures for replacement, new development, and the potential replacement and/or improvement of drainage facilities. Water quality degradation from construction would be specific to each construction site. The topography of the site, the amount of soil disturbance, the duration that disturbed soil would be exposed, the amount of rainfall and wind that would occur during construction, and the proximity of the nearest waterbody all affect the potential for water quality degradation during construction. New development under Seaside 2040 would be limited to the General Plan Area, which would minimize that amount of new infrastructure that would be required. Additionally,

Seaside 2040 encourages new infill housing in multifamily residential areas of the City, which would also reduce the amount of new infrastructure that would be required.

Construction of future developments would involve earth-moving activities such as excavation and trenching for foundations and utilities, soil compaction and moving, cut and fill activities, and grading. If not managed properly, disturbed soils would be susceptible to high rates of erosion from wind and rain, resulting in sediment transport via stormwater runoff from the construction sites. The types of pollutants contained in runoff from construction sites would be typical of urban areas, and may include sediments and contaminants such as oils, fuels, paints, and solvents. Additionally, other pollutants, such as nutrients, trace metals, and hydrocarbons, can attach to sediment and be transported to downstream drainages and ultimately into collecting waterways, contributing to degradation of water quality.

Individual construction activities that disturb one or more acres would be subject to the NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities, Order No. 2012-0006-DWQ (Construction General Permit). Compliance with the permit requires each qualifying development project to file a Notice of Intent with the SWRCB. Permit conditions require development of a SWPPP, which must describe the site, the facility, erosion and sediment controls, runoff water quality monitoring, means of waste disposal, implementation of approved local plans, control of construction sediment and erosion control measures, maintenance responsibilities, equipment drip pans, and non-storm water management controls. Inspection of construction sites before and after storms is also required to identify storm water discharge from the construction activity and to identify and implement erosion controls, where necessary. Compliance with the Construction General Permit is reinforced through the Seaside Municipal Code (Title 8, Chapter 8.46, Article III), which requires the development and implementation of BMPs to reduce pollutants in stormwater runoff from construction sites, pursuant to the NPDES Construction General Permit. Pursuant to the Seaside Municipal Code, all persons undertaking construction activities shall employ, to the maximum extent practicable, erosion prevention and construction site management practices that ensure discharges do not cause or contribute to an exceedance of the water quality standards contained in the Central Coast RWQCB Basin Plan.

Excavation, grading, filling, clearing, and/or erosion control work all require a permit from the City, except under certain exemptions listed in Title 15, Chapter 15.32 of the Seaside Municipal Code, such as emergency work or excavations for cemetery plots. Grading and excavation plans accompanying the permit application, at a minimum, must include several measures pertaining to erosion control. These measures include: a comparison of runoff without project and with project; detailed plans and location of all temporary and permanent erosion and sediment control devices; planned direction and disposition of all storm drainage flow from all buildings, yards, lots, driveways, parking areas, and streets; vegetative erosion control and revegetation measures; and provisions for stockpiling topsoil when necessary for erosion control. Pursuant to the Seaside Municipal Code, all earthen fill must be planted or otherwise protected from the effects of stormwater runoff within thirty days of the completion of final grading. The City may restrict or temporarily halt land disturbance or construction projects between October 15 and April 15, the normal rainy season for the City of Seaside. When construction activities are allowed during the rainy season, temporary erosion control measures must be applied to all soils bared at the end of each day. All cut and fill slopes without established vegetation during the normal rainy season must be mulched. Adherence to the requirements of the Seaside Municipal Code would reduce the potential for new construction and redevelopment activities under Seaside 2040 to cause erosion

and the subsequent sedimentation of local streams by ensuring proper management of loose and disturbed soil.

The City Engineer or designee has the authority to inspect erosion and sediment control measures and facilities associated with projects requiring a City permit. The City Engineer or designee is authorized to issue a notice of violation and/or stop work order for violations of the City's grading, erosion control, and stormwater discharge requirements. Violations of the City's discharge prohibitions may be enforced by civil action brought by the City. Likewise, the Central Coast RWQCB or its designee may conduct periodic or routine monitoring of construction BMPs and erosion control measures implemented pursuant to the SWPPP required under the Construction General Permit at project sites.

Compliance with the regulations and policies discussed above would reduce the risk of water degradation within the City of Seaside from soil erosion and other pollutants related to construction activities. Because violations of water quality standards would be minimized, impacts to water quality from construction activities facilitated by Seaside 2040 would be less than significant.

Operation

As described in the regulatory framework discussion above, the City operates its storm drain system under the NPDES General Permit for Storm Water Discharges From Small Municipal Separate Storm Sewer Systems (MS4s), Order No. 2013-0001-DWQ (MS4 General Permit). The MS4 General Permit was issued jointly to the City and seven other local agencies, as well as several regional school districts as part of the Monterey Regional Stormwater Management Program. This regional program was developed in response to the SWRCB's implementation of the NPDES Phase II Stormwater Program. The purpose of this program is to implement and enforce BMPs to reduce the discharge of pollutants from municipal separate storm sewer systems, such as the City's storm drain system.

To achieve compliance with the regional program, and thus conditions of the MS4 General Permit, the City has developed ordinance and regulations to prevent illegal or illicit discharges to the municipal storm drain system. Specifically, Title 8, Chapter 8.46 of the Seaside Municipal Code establishes the discharge requirements of prohibitions to all water entering the storm drain system generated on any developed and undeveloped lands lying within the city. Examples of illegal discharges include water used to clean gas stations and other vehicle service facilities; vehicle fluids; food and kitchen cleaning water from food service facilities; water or other fluids used in industrial operations; leakage from trash dumpsters; water used to clean sidewalks, plazas, alleyways, building exteriors and other outdoor surfaces; carpet cleaning fluids; chlorinated swimming pool water; wash-out from concrete trucks; potentially contaminated runoff from areas where hazardous materials such as gasoline are stored; and sewage from boats and recreational vehicles.

Pursuant to Title 8, Chapter 8.46 of the Seaside Municipal Code, the City requires BMPs to control the volume, rate, and potential pollutant load of stormwater runoff from new development and redevelopment projects as required by the City's MS4 General Permit to minimize the generation, transport and discharge of pollutants. The City incorporates such requirements in any land use entitlement and construction or building-related permit to be issued relative to such development or redevelopment. These requirements may include a combination of structural and nonstructural BMPs, and may include requirements to ensure the proper long-term operation and maintenance of these BMPs, including inspections and right of entry by city staff or its designee to ensure compliance with the requirements.

In addition to requirements and prohibitions in the Seaside Municipal Code, the post-construction requirements for stormwater management that were adopted by the Central Coast RWQCB in 2013 would be applicable to development projects that create 2,500 square feet or more of impervious surface. As shown above in Table 4.9-2, depending on the parameters of individual projects, post-construction requirements would require low impact design measures, treating runoff before discharge from the project site, and prevention of off-site discharge up to the 95th percentile rainfall event, and controlling off-site discharge so that peak flows do not exceed pre-existing flows for the 2-year and 10-year event. The post-construction requirements also require routine maintenance of permanent BMPs intended to protect water quality and prevent discharges of pollutants to the municipal stormwater system.

Required compliance with the City of Seaside Municipal Code and the Central Coast RWQCB's post-construction requirements for stormwater management, as applicable, would prevent substantial discharges of pollutants to the municipal storm drain system or surface waters from operation of the land uses envisioned in Seaside 2040.

In addition to stormwater runoff, polluted wastewater could be discharged by development facilitated under Seaside 2040. In general, new development and redevelopment projects would be required to discharge wastewater to the existing sanitary sewer systems in the City of Seaside. The sanitary sewer system outside the limits of the former Fort Ord area is owned and operated by the Seaside County Sanitation District, a Monterey County Special District. Within the boundaries of the former Fort Ord, the sewer system is operated by the Marina Coast Water District. Wastewater discharged to either sanitary sewer system is ultimately pumped to the Regional Treatment Plant, which is operated by Monterey One Water. Wastewater undergoes primary and secondary treatment at the Regional Treatment Plant before reuse or discharge. Reuse is generally for agricultural applications. Discharge is to the Monterey Bay, approximately two miles from the coastline. The treated water meets and exceeds all State discharge requirements in accordance with the individual NPDES permit issued for discharges from the treatment plant (Monterey One Water 2017a).

Monterey One Water's Ordinance No. 2015-01 prohibits the discharge of earth, oil or other petroleum products, grease, industrial waste, and chemicals or waste related to masonry into the sanitary sewer system. Ordinance 15 adopts additional discharge treatment measures for grease and oil wastes from food service establishments. Required compliance with these ordinances would ensure that wastewater discharges to the sanitary sewer system and the Regional Treatment Plant are properly and effectively treated to meet or exceed discharge requirements of the NPDES permit.

In addition to compliance with mandatory Clean Water Act (NPDES Construction General Permit and MS4 General Permit) and City of Seaside Municipal Code requirements, implementation of Seaside 2040 goals and policies would further reduce the potential for water quality degradation and violations of water quality standards. Implementation of the following Seaside 2040 goals and policies would help to prevent discharges of contaminated storm water and reduce the potential for violations of water quality standards or waste discharge requirements:

Community Facilities and Infrastructure Element Goals and Policies

Goal CFI-5: Safe and environmentally sustainable stormwater management.

Intent: To ensure that future development and redevelopment complies with best management practices to capture and treat stormwater. To achieve this, the City will work to reduce peak stormwater flow, minimize pollutant and trash migration, and

provide flood control, reducing the need to expand the City's existing stormwater system capacity.

Policies: **Requirements for new development.** Require new development and redevelopment projects to meet federal, State, regional, and local stormwater requirements, including site design, stormwater treatment, stormwater infiltration, peak flow reduction, and trash capture.

Stormwater utility fee. Implement a Stormwater Utility Fee to fund required capital improvement projects.

Stormwater capture. Optimize stormwater capture and treatment through implementation of low-impact design techniques, stormwater treatment and infiltration in open spaces, and implementation of green streets.

Flood control. Require new development and redevelopment projects to provide adequate stormwater infrastructure for flood control.

Level of service. Maintain, improve and expand the City's existing stormwater system to provide a high level of service to Seaside's neighborhoods and commercial corridors.

Regional stormwater collaboration. Collaborate with regional agencies and neighboring jurisdictions to manage stormwater at Laguna Grande and Roberts Lake.

Public space design. Seek opportunities to integrate stormwater facilities into public spaces as an architectural design element. Include informational and educational signs to raise public awareness of water use and water pollution issues.

Land Use and Community Design Element Goals and Policies

Goal LUD-20: New development supports the preservation or enhancement of the City's natural resources.

Intent: To protect the most valuable natural areas and species in former Fort Ord lands.

Policy: **Erosion control.** For all development in former Fort Ord, require the implementation of adequate erosion control measures on lands with a prevailing slope above 30% consistent with the City's Municipal Code Erosion and Sediment Control Design Standards.

Habitat protection area. Establish a habitat protection area, including criteria for defining the area, during the creation of a specific plan for Seaside East.

On-site stormwater infiltration. Require on-site stormwater collection and infiltration according to C3 requirements.

Low-impact development. Require new construction and redevelopment projects to use low-impact development techniques to improve stormwater quality and reduce run-off quantity.

Conservation Element Goals and Policies

Goal C-2: New development supports the preservation or enhancement of the city's natural resources.

Intent: This goal fosters sustainable development practices that provide protection to sensitive habitats and species and accessible resources for the enrichment of residents.

Policies: **Stormwater area and wetlands.** Incorporate wetland features into stormwater control facilities to the extent practicable.

Water quality. Incorporate water quality and habitat enhancement in new flood management facilities.

Green streets. When feasible, explore opportunities for green streets, and using natural processes to manage stormwater runoff. When green street demonstration areas are identified, include unobtrusive educational signage.

Goal C-4: Pollutant discharge managed to minimize adverse impacts on water quality in the Monterey Bay, Robert's Lake, Laguna Grande and other bodies of water.

Intent: To reduce the negative environmental impacts of storm water runoff on the Monterey Bay, Robert's Lake, Laguna Grande, and other bodies of water improves local habitat.

Policies: **Low-impact development practices.** Require new construction and redevelopment projects to use low-impact development techniques to improve stormwater quality and reduce run-off quantity, including improving soil health, providing soil cover and water-wise planting and irrigation, installing permeable pavements, and building bio-retention areas to reduce runoff quantity.

Storm water runoff. Enforce the reduction of stormwater runoff consistent with local stormwater permits.

Storm water facilities. Incorporate stormwater facilities into the design of parks and open spaces, using natural processes to capture, treat, and infiltrate stormwater to the extent feasible.

Compliance with NPDES permits requirements, the City of Seaside Municipal Code requirements, and Seaside 2040 goals and policies would ensure that the risk of discharge of pollutants such that potential for violations of water quality standards or waste discharge requirements would be avoided. Furthermore, the same regulations and policies would further ensure that buildout of Seaside 2040 would not substantially degrade water quality. Therefore, this impact would be less than significant.

Mitigation Measures

Mitigation measures are not required.

Significance After Mitigation

Water quality impacts would be less than significant without mitigation, and Seaside 2040 would not violate water quality standards or waste discharge required.

Threshold 2:	Would the 2040 General Plan substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

Impact HYD-2 STRUCTURAL FOUNDATIONS AND INFRASTRUCTURE CONSTRUCTED BELOW GROUND SURFACE FOR DEVELOPMENT FACILITATED BY SEASIDE 2040 COULD DISPLACE GROUNDWATER STORAGE CAPACITY IN GROUNDWATER AQUIFERS. HOWEVER, THE DISPLACED VOLUME WOULD NOT BE SUBSTANTIAL RELATIVE TO THE STORAGE VOLUME OF THE AQUIFERS IN THE SEASIDE AND MONTEREY SUBBASINS. DEVELOPMENT WOULD INCREASE IMPERVIOUS SURFACE IN THE GENERAL PLAN AREA, BUT COMPLIANCE WITH THE SEASIDE MUNICIPAL CODE AND THE CENTRAL COAST RWQCB'S POST-CONSTRUCTION REQUIREMENTS FOR STORMWATER MANAGEMENT WOULD MAXIMIZE ON-SITE INFILTRATION OF RUNOFF. THUS, BUILDOUT OF THE GENERAL PLAN WOULD NOT SUBSTANTIALLY INTERFERE WITH GROUNDWATER RECHARGE. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

Construction of permanent structures associated with land uses envisioned in Seaside 2040, such as residential housing structures or commercial space buildings, could require subsurface support and foundations. Additionally, utility infrastructure serving these uses, such as sanitary sewer pipe and water mains would be located below ground surface. Although the construction of support and foundations for structures and subsurface infrastructure could contact groundwater in limited instances, the displaced volume would not be substantial relative to the storage volume of the Seaside and Monterey Subbasins. As described above, the estimated combined groundwater storage volume of these Subbasins was estimated to be one million acre-feet (California DWR 2004). Additionally, most utility infrastructure and foundations for smaller structures, such as residential development, would not extend to depths of groundwater aquifers and storage. Dewatering activities required for construction could also remove groundwater, but the volume of water removed would not be substantial relative to groundwater pumping for water supply. Water used during construction for cleaning, dust control, and other uses would be nominal. Thus, construction activities would not substantially deplete groundwater supplies nor interfere substantially with groundwater recharge.

Development facilitated by Seaside 2040 would incrementally increase the amount of impervious surface within the City of Seaside, which could reduce the potential for groundwater recharge from infiltration of precipitation. However, as stated above, precipitation accounts for only a minimal amount of groundwater recharge to the Subbasins (approximately 1.5 percent). Additionally, mandatory compliance with the Seaside Municipal Code, as well as the Central Coast RWQCB post-construction requirements for stormwater management encourages, and requires for certain projects, on-site treatment and infiltration of stormwater runoff. This would reduce the quantity of stormwater runoff that enters the storm drainage system and discharges to the Pacific Ocean, as opposed to infiltrating the ground surface. Thus, the incremental increase of impervious surface and consequential inability for infiltration of precipitation would not substantially interfere with groundwater recharge.

New development occurring from implementation of Seaside 2040 would increase the demand for water, most of which would derive from groundwater sources. For the existing conditions of the City's groundwater supply, and the expected effects of groundwater demand from development facilitated by Seaside 2040, see Section 4.16, *Utilities and Service Systems*. As described therein, the groundwater is currently subject to a groundwater adjudication which ensure that groundwater extraction does not exceed safe yields. Impacts are considered less than significant.

Mitigation Measures

Mitigation measures are not required.

Significance After Mitigation

Impacts would be less than significant without mitigation.

Threshold 3a:	Would the 2040 General Plan 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 additional of impervious surface, in a manner which would result in substantial erosion or siltation on- or off-site?

Impact HYD-3 DEVELOPMENT FACILITATED BY SEASIDE 2040 WOULD ALTER DRAINAGE PATTERNS IN THE GENERAL PLAN AREA. COMPLIANCE WITH THE SEASIDE MUNICIPAL CODE, NPDES MS4 GENERAL PERMIT, AND CONSTRUCTION GENERAL PERMIT, INCLUDING IMPLEMENTATION OF A SWPPP AND BMPS WOULD PREVENT SUBSTANTIAL EROSION AND SILTATION DURING CONSTRUCTION ACTIVITIES. SIMILARLY, REQUIRED COMPLIANCE WITH THE SEASIDE MUNICIPAL CODE AND NPDES MS4 GENERAL PERMIT WOULD PREVENT SUBSTANTIAL EROSION AND SILTATION DURING OPERATION. SEASIDE 2040 ALSO INCLUDES GOALS AND POLICIES THAT ARE INTENDED TO PROMOTE INFILTRATION OF STORMWATER RUNOFF, WHICH WOULD REDUCE THE POTENTIAL SUBSTANTIAL SILTATION ON-SITE AND OFF-SITE. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

Construction

Construction activities associated with development under Seaside 2040 would involve stockpiling, grading, excavation, dredging, paving, and other earth-disturbing activities resulting in the alteration of existing drainage patterns. As described in Impact HYD-1 above, compliance with SWRCB's NPDES Construction General Permit, NPDES MS4 General Permit, and the Seaside Municipal Code would reduce the risk of short-term erosion resulting from drainage alterations during construction. Therefore, impacts would be less than significant.

Operation

Development facilitated by Seaside 2040 would result in alterations to drainage patterns in the General Plan Area, such as changes in ground surface permeability via paving, and changes in topography via grading and excavation. Impact HYD-1 discusses applicable regulations that would limit pollutant discharges, including sediment and silt, from development and land uses envisioned under Seaside 2040. As discussed above for Impact HYD-1, the Seaside Municipal Code requires BMPs to control the volume, rate, and potential pollutant load of stormwater runoff from new development and redevelopment projects as a requirement of the MS4 General Permit. The City incorporates such requirements in any land use entitlement and construction or building-related permit to be issued relative to such development or redevelopment. Additionally, as discussed above, projects that create and/or replace more than 2,500 square feet of impervious surface are subject to the Central Coast RWQCB post-construction requirements for stormwater management. The primary objective of these post-construction requirements is to ensure that the project permittee is reducing pollutant discharges to the maximum extent practicable and preventing stormwater discharges from causing or contributing to a violation of receiving water quality standards.

Seaside 2040 also includes goals and policies that are intended to promote infiltration of stormwater runoff, which would reduce the potential substantial siltation on- or off-site. The goals and policies include the following:

Community Facilities and Infrastructure Element Goals and Policies

Goal CFI-2: A sustainable water supply that supports existing community needs and long-term growth and is prepared for the potential impacts of drought.

Intent: To create a strong framework of policies and practices that encourage sustainable water management, accommodate projected growth, and provide benefits beyond the horizon of the General Plan. To achieve this, the City will coordinate with regional water supply agencies to seek new water sources and ensure adequate supply for current and future residents. The City will also work to reduce water use and find alternative sources of potable water to ensure a sustainable water supply.

Policy: **Stormwater infiltration.** Continue to promote recharge of drinking water aquifers by stormwater infiltration and implement tracking system.

Goal CFI-3: Clean and sustainable groundwater.

Intent: To promote sustainable city practices that alleviate water shortages and ensure access to a clean and sustainable groundwater supply. To achieve this, the City will work with local partners to develop a sustainable regimen of groundwater pumping and recharge and continue to seek new and expanded opportunities to ensure long-term groundwater sustainability.

Policies: **Groundwater recharge in new development.** Continue to optimize groundwater recharge from new and redevelopment projects by infiltrating stormwater in accordance with State, regional, and local requirements.

Groundwater recharge in City projects. Seek opportunities to incorporate groundwater recharge elements into City drainage projects and work with other agencies to implement regional groundwater recharge projects.

Groundwater credits. Seek opportunities to quantify groundwater recharge from stormwater infiltration projects and credit it towards the city's potable water allocation and implement a City-wide tracking and allocation system.

Goal CFI-5: Safe and environmentally-sustainable stormwater management.

Intent: To ensure that future development and redevelopment complies with best management practices to capture and treat stormwater. To achieve this, the City will work to reduce peak stormwater flow, minimize pollutant and trash migration, and provide flood control, reducing the need to expand the City's existing stormwater system capacity.

Policies: **Requirements for new development.** Require new development and redevelopment projects to meet federal, State, regional, and local stormwater requirements, including site design, stormwater treatment, stormwater infiltration, peak flow reduction, and trash capture.

Stormwater utility fee. Implement a Stormwater Utility Fee to fund required capital improvement projects.

Stormwater capture. Optimize stormwater capture and treatment through implementation of low-impact design techniques, stormwater treatment and infiltration in open spaces, and implementation of green streets.

Flood control. Require new development and redevelopment projects to provide adequate stormwater infrastructure for flood control.

Level of service. Maintain, improve and expand the City's existing stormwater system to provide a high level of service to Seaside's neighborhoods and commercial corridors.

Regional stormwater collaboration. Collaborate with regional agencies and neighboring jurisdictions to manage stormwater at Laguna Grande and Roberts Lake.

Land Use and Community Design Element Goals and Policies

Goal LUD-20: New development supports the preservation or enhancement of the City's natural resources.

Intent: To protect the most valuable natural areas and species in former Fort Ord lands.

Policy: **Erosion control.** For all development in former Fort Ord, require the implementation of adequate erosion control measures on lands with a prevailing slope above 30% consistent with the City's Municipal Code Erosion and Sediment Control Design Standards.

On-site stormwater infiltration. Require on-site stormwater collection and infiltration according to C3 requirements.

Parks and Open Space Element Goals and Policies

Goal PO-7: Environmental sustainability and awareness at new and existing park and recreational facilities.

Intent: Reducing energy and water use, diverting solid waste from the landfill, and capturing stormwater onsite can improve the environmental sustainability of Seaside's parks and open spaces. This goal seeks to increase the City's sustainability efforts in parks, using these actions as an opportunity to educate the community about sustainability.

Policy: **Conservation and efficiency.** Increase energy and water conservation and efficiency at new and existing park and recreation facilities.

Stormwater infiltration. Design future parks to use natural processes to capture, treat, and infiltrate stormwater.

Implementation of these goals and policies included in Seaside 2040, when coupled with compliance of the CWA (i.e., NPDES), Central Coast RWQCB post-construction requirements, and the Seaside Municipal Code, would prevent substantial erosion and siltation from development envisioned in the General Plan. Impacts would be less than significant.

Mitigation Measures

Mitigation measures are not required.

Significance After Mitigation

Impacts would be less than significant without mitigation.

Threshold 3b:	Would the 2040 General Plan 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 additional of impervious surface, 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?
Threshold 3c:	Would the 2040 General Plan 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 additional of impervious surface, in a manner which 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?

Impact HYD-4 DEVELOPMENT ENVISIONED IN SEASIDE 2040 WOULD ALTER EXISTING DRAINAGE PATTERNS BY INCREMENTALLY INCREASING THE TOTAL IMPERVIOUS SURFACE AREA AND GENERATING MORE STORMWATER RUNOFF. ADHERENCE TO THE REQUIREMENTS OF THE CITY OF SEASIDE MUNICIPAL CODE AND CENTRAL COAST RWQCB POST-CONSTRUCTION REQUIREMENTS FOR STORMWATER MANAGEMENT WOULD MAXIMIZE THE ON-SITE INFILTRATION CAPACITY FOR NEW DEVELOPMENT AND REDEVELOPMENT PROJECTS. GOALS AND POLICIES OF THE 2040 GENERAL PLAN WOULD REQUIRE THAT NEW DEVELOPMENT AND REDEVELOPMENT PROJECTS TO PROVIDE ADEQUATE STORMWATER INFRASTRUCTURE FOR FLOOD CONTROL. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

Development of the land uses envisioned in Seaside 2040 would alter the existing drainage pattern within the General Plan Area by incrementally increasing the total impervious area, which would generate more stormwater runoff. However, as described above, implementation of Seaside 2040 goals and policies and adherence to the requirements of the Seaside Municipal Code and Central Coast RWQCB post-construction requirements for stormwater management would maximize the on-site infiltration capacity for new development and redevelopment projects and would minimize the off-site runoff that would leave those project sites.

Title 15, Chapter 15.28 of the Seaside Municipal Code contains requirements and provisions for reducing losses from flooding, including controlling the alteration of natural floodplains, stream channels, and natural protective barriers that help accommodate or channel flood-waters; and controlling filling, grading, dredging, and other development which may increase flood damage. Pursuant to this chapter of the Municipal Code, new development that would occur within flood-related erosion-prone areas known to the City shall be reviewed to determine whether the proposed site alterations and improvements would be reasonably safe from flood-related erosion and would not cause flood-related erosion hazards or otherwise aggravate the existing hazard. If a proposed development would be in the path of flood-related erosion or would increase the erosion hazard, the development shall be relocated or adequate protective measures shall be taken to avoid aggravating the existing erosion hazard. Potential impacts related to runoff would be less than significant.

As described above, implementation of Seaside 2040 goals and policies and required adherence to the Seaside Municipal Code and Central Coast RWQCB post-construction requirements for stormwater management would minimize off-site runoff from developments envisioned in Seaside 2040. Runoff that does not infiltrate and flows off site would be captured in the City's storm drain system, and ultimately discharge to the Pacific Ocean in the Monterey Bay. Implementation of the following Seaside 2040 goals and policies would ensure that the runoff from development envisioned in the General Plan do not exceed the capacity of the City's existing and future storm drain system and would not result in a substantial source of polluted runoff.

Land Use and Community Design Element Goals and Policies

Goal LUD-20: New development supports the preservation or enhancement of the City's natural resources.

Intent: To protect the most valuable natural areas and species in former Fort Ord lands.

Policy: **On-site stormwater infiltration.** Require on-site stormwater collection and infiltration according to C3 requirements.

Safety Element Goals and Policies

Goal S-4: Safeguarding of vulnerable community members, natural resources, buildings and facilities, and service and infrastructure from inland flooding.

Intent: To lessen the risks of inland flooding, particularly in areas adjacent to Roberts Lake and Laguna Grande, and associated drainage areas. This goal seeks to lessen the impacts of flood events on residents and community assets by enhancing local drainage.

Policies: **Drainage improvements.** Provide drainage controls and improvements that enhance local conditions and are consistent with and complement the master drainage plans, prioritizing areas adjacent to vulnerable populations and low-income households.

Flood control. Require new development and redevelopment projects to provide adequate stormwater infrastructure for flood control.

Conservation Element Goals and Policies

Goal C-4: Pollutant discharge managed to minimize adverse impacts on water quality in the Monterey Bay, Robert's Lake, Laguna Grande and other bodies of water.

Intent: To reduce the negative environmental impacts of storm water runoff on the Monterey Bay, Robert's Lake, Laguna Grande, and other bodies of water improves local habitat.

Policy: **Stormwater runoff.** Enforce the reduction of stormwater runoff consistent with local stormwater permits.

Implementation of Goal S-4 and its related policies listed above would ensure the development envisioned in Seaside 2040 provide adequate stormwater infrastructure for flood control. Implementation of Goals LUD-20 and C-4 and its related policies would reduce the amount of

stormwater runoff that is captured by the storm drain system, and instead promote and increase infiltration of runoff.

Implementation of these goals and policies, in addition to compliance with applicable laws and regulations, would minimize the potential for increased runoff exceeding the capacity of the City's storm drain system, or flooding from alteration to the drainage patterns within the General Plan Area. These same regulations and General Plan goals and policies would also prevent developments from constituting a substantial additional source of polluted runoff to surface water or the City's storm drain system. Impacts would be less than significant.

Mitigation Measures

Mitigation measures are not required.

Significance After Mitigation

Impacts would be less than significant without mitigation.

Threshold 3d:	Would the 2040 General Plan 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 additional of impervious surface, in a manner which would create or contribute runoff water which would impede or redirect flood flows?

Impact HYD-5 SEASIDE 2040 ENVISIONS THE POSSIBILITY FOR LIVE-WORK USES IN AN AREA MAPPED AS A 100-YEAR FLOODPLAIN. MANDATORY COMPLIANCE WITH THE SEASIDE MUNICIPAL CODE WOULD REQUIRE LIVE-WORK STRUCTURES TO BE DESIGNED AND CONSTRUCTED TO MINIMIZE THE RISK AND DAMAGE OF FLOODING. THIS DEVELOPMENT WOULD GENERALLY BE INFILL DEVELOPMENT, AND NOT A SUBSTANTIAL INCREASE IN THE NUMBER OF NEW STRUCTURES OR BARRICADES TO THE FLOW OF FLOOD WATERS. ADDITIONALLY, THE SEASIDE MUNICIPAL CODE REQUIRES EITHER PREVENTING OR REGULATING BARRICADES TO FLOOD WATER MOVEMENT. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

As shown in Figure 4.9-2 above, a small coastal area west of State Route 1 and additional areas adjacent to Roberts Lake, Laguna Grande, and the associated Canyon Del Rey drainage up-gradient of Laguna Grande are located within Special Flood Hazard Areas subject to a 100-year flood (FEMA 2009, 2017a, 2017b, 2017c). Flood hazard mapping in Seaside 2040 is consistent with the FEMA mapping.

With the exception of a small coastal area west of State Route 1, Special Flood Hazard Areas subject to a 100-year flood would be designated as Park/Recreation/Open Space under Seaside 2040, consistent with the existing land use designation in these areas. Thus, no structures, including housing, would be located within the 100-year floodplain in the areas around Roberts Lake, Laguna Grande, and the Canyon Del Rey drainage as a result of Seaside 2040.

A portion of the coastal area west of State Route 1 that is mapped as a Special Flood Hazard Area subject to a 100-year flood would be designated as Employment under the Seaside 2040. According to Seaside 2040, the Employment designations would allow for office, research development, light industrial, small manufacturing, hotel and lodging, live-work, neighborhood retail, and regional retail uses, as well auto sales and service and entertainment land uses as secondary uses. Thus, because live-work land uses are a primary use of the Employment designation, housing may be located within the Special Flood Hazard Area subject to a 100-year flood.

Title 15, Chapter 15.28 of the Seaside Municipal Code contains requirements and provisions for reducing losses from flooding. These requirements and provisions include:

- Restricting or prohibiting uses which are dangerous to health, safety and property due to water or erosion hazards, or which result in damaging increases in erosion or flood heights or velocities;
- Requiring that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction;
- Preventing or regulating the construction of flood barriers which will unnaturally divert flood waters or which may increase flood hazards in other areas.

Section 15.28.120 of the Seaside Municipal Code requires that a development permit be obtained before construction or development begins within a Special Flood Hazard Area. The application for a development permit is reviewed by the City Floodplain Administrator to ensure that the development site "is reasonably safe from flooding" and that the development would not adversely affect the carrying capacity of areas where base flood elevations have been determined. Section 15.28.150 of the Seaside Municipal Code requires that all new construction and substantial improvements within Special Flood Hazard Areas be anchored to prevent flotation, collapse or lateral movement of the structure resulting from the forces of floods, including the effects of buoyancy. All new construction and substantial improvements must be constructed using methods and practices that minimize flood damage. New construction and substantial improvement of residential structures must have the lowest floor, including basement, elevated to or above the base flood elevation. Non-residential structures must also be elevated in the same way, or be either flood-proof below the base flood elevation or designed to withstand flood forces.

Required compliance with the Seaside Municipal Code, as described above, would prevent within a 100-year flood hazard area structures which would impede or redirect flood flows, such that a flood hazard would be increased elsewhere. Structures that would be located within Special Flood Hazard Area would be required to be elevated above base flood elevation or flood-proof, depending on whether the structures are for residential uses or non-residential uses. Seaside 2040 includes only minimal land uses designations allowing development of structures within a Special Flood Hazard Area. Therefore, implementation of Seaside 2040 would not substantially impede or redirect flood flows. Impacts would be less than significant.

Mitigation Measures

Mitigation measures are not required.

Significance After Mitigation

Impacts would be less than significant without mitigation.

Threshold 4:	In flood hazard, tsunami, or seiche zones, would the 2040 General Plan risk release of pollutants due to project inundation?

Impact HYD-6 MANDATORY COMPLIANCE WITH THE SEASIDE MUNICIPAL CODE WOULD REQUIRE DEVELOPMENT PROPOSED WITHIN AN AREA THAT IS SUBJECT TO FLOOD HAZARD, TSUNAMI, AND SEICHE TO BE SITED, DESIGNED AND CONSTRUCTED TO MINIMIZE RISKS TO LIFE AND PROPERTY OVER THE DEVELOPMENT'S LIFETIME. ADDITIONALLY, SEASIDE 2040 ENVISIONS PARK AND OPEN SPACE LAND USES IN MOST AREAS SUBJECT TO TSUNAMI OR SEICHE, WITH LIMITED INFILL DEVELOPMENT. SEASIDE 2040 INCLUDES GOALS AND POLICIES TO REDUCE HAZARDS ASSOCIATED WITH GEOLOGIC AND SEISMIC EVENTS, WHICH WOULD REDUCE THE RISK OF RELEASE OF POLLUTANTS DUE TO PROJECT INUNDATION. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

As shown in Figure 4.9-2 and discussed above, a small coastal area west of State Route 1 and additional areas adjacent to Roberts Lake, Laguna Grande, and the associated Canyon Del Rey drainage up-gradient of Laguna Grande are located within Special Flood Hazard Areas subject to a 100-year flood (FEMA 2009, 2017a, 2017b, 2017c). Flood hazard mapping in Seaside 2040 is consistent with the FEMA mapping. In addition, climate change is anticipated to amplify existing hazards, including coastal flooding and gradual sea level rise. According to Seaside 2040, scenario models indicate that the Monterey Bay may see between 16 and 63 inches of sea level rise by the end of this century. Sea level rise in the region is expected to match global projections, which will also potentially exacerbate coastal flooding impacts from storm surges and big-wave storms, and lead to greater loss of land. Estimates of sea level rise projected in the Monterey Bay are shown in Table 17 of Seaside 2040. As a result, the City may experience additional flooding around Robert's Lake.

Much of the City of Seaside lies approximately 2,000 feet inland from the coastline of the Pacific Ocean, which provides for sufficient distance and protection from tsunamis. According to the Tsunami Inundation Map for Emergency Planning, Seaside Quadrangle (California Geological Survey 2009), areas within the General Plan Area subject to inundation by tsunami are limited to a small coastal area west of State Route 1 and additional areas adjacent to Roberts Lake and Laguna Grande, as well as the lakes themselves.

A seiche is a standing wave oscillating in a body of water that is semi-enclosed or fully enclosed, such as bays and lakes. Seiches are typically caused when strong winds and rapid changes in atmospheric pressure, but earthquakes and tsunamis may also cause seiches along ocean shelves and ocean harbors (National Oceanic and Atmospheric Administration 2017). The severity or magnitude of seiche is limited by the volume of water in the waterbody. Deeper and larger waterbodies contain more water, which in return, can produce taller and more voluminous waves. Roberts Lake and Laguna Grande are both relatively small and shallow waterbodies, and would not generate seiches large enough to result in substantial damage. Seiches in Monterey Bay would not be any larger than a potential tsunami, which is discussed above.

The majority of the areas adjacent to Roberts Lake and Laguna Grande would be designated as Parks and Open Space under Seaside 2040, consistent with the existing Local Coastal Program land use designation in these areas. Areas designated as Parks and Open Space would not be developed with residential housing or other structures that would increase risk of pollutant release in the case of project inundation. Thus, within these areas that would be designated as Parks and Open Space, the 2040 General Plan would not risk release of pollutants due to project inundation.

Seaside is considered to have a low susceptibility to landslides and mudslides, as it has minimal hillside areas (i.e., slopes greater than 25 percent) and lacks steep bluffs. The western areas of Seaside, generally west of General Jim Moore Boulevard, are largely developed. Most slopes in these areas are stabilized by development, such as asphalt paving, building structures, retaining walls, and landscaping. Slope failure resulting in a mudflow on these slopes would be unlikely. However, the eastern areas of Seaside, generally east of General Jim Moore Boulevard, coinciding with the former Ford Ord Base, is less developed and also has steeper slopes. Mudflow could occur following a rainstorm within and near the hills and foothills in these eastern areas of Seaside. Development projects envisioned in the former Fort Ord Base area could be inundated by mudflow following substantial rainstorms.

Monterey County Water Resources Agency (MCWRA) aims to protect the community from flooding hazards by providing and maintaining adequate flood control facilities. The City also requires developers to provide flood control systems in new development areas that mitigate potential on-site flooding hazards and avoid increasing flood hazards elsewhere. Article V of Title 15, Chapter 15.28 of the Seaside Municipal Code would require proposed grading, excavation, new construction and substantial improvements associated with these developments to be adequately designed and protected against mudslide damage.

In addition to compliance with mandatory California Building Code requirements, implementation of the following Seaside 2040 goal and associated policies would help to ensure proper siting and construction of new development in areas subject to inundation.

Safety Element Goals and Policies

Goal S-3: Protection from the effects of earthquakes, landslides, tsunamis, and other natural disasters.

Intent: To lessen the impacts of earthquakes, geologic threats, tsunami and other natural disasters on City residents and structures. To achieve this, the City will regularly update and assess risks and hazards, examine mitigation strategies, and raise public awareness around disasters.

Policies: **Identify earthquake risks and mitigation.** Coordinate with the National Earthquake Hazard Reduction Program of the Federal Emergency Management Agency (FEMA) to identify earthquake risks and available mitigation techniques.

Update seismic and geologic hazard maps. Proactively seek compliance with the Alquist-Priolo Earthquake Fault Zoning Act by coordinating with the California Geological Survey and the United States Geological Survey (USGS) to establish and maintain maps within the City boundaries, former Fort Ord lands, and the Sphere of Influence.

Updated building codes and development reviews. Reduce the risk of impacts from seismic and geologic hazards through land use planning, updated building codes, and the development review process. Ensure new development meets building code requirements.

In addition, implementation of Goal S-4 of Seaside 2040 and its related policies, listed under Thresholds 3b and 3c, would ensure the development envisioned in Seaside 2040 provide adequate stormwater infrastructure for flood control and would minimize risk of pollutant release due to project inundation.

Implementation of these goals and policies, in addition to compliance with applicable laws and regulations, would ensure that new development on slopes is properly designed in accordance with California Building Code requirements and is constructed to minimize risk of pollutant release due to project inundation. Impacts would be less than significant.

Mitigation Measures

Mitigation measures are not required.

Significance After Mitigation

Impacts would be less than significant without mitigation.

Threshold 5:	Would the 2040 General Plan conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Impact HYD-7 DEVELOPMENT ENVISIONED UNDER SEASIDE 2040 WOULD AFFECT WATER QUALITY AND GROUNDWATER SUPPLY. HOWEVER, COMPLIANCE WITH THE SEASIDE MUNICIPAL CODE AND SEASIDE 2040 GOALS AND POLICIES WOULD ENSURE THAT DEVELOPMENT WOULD NOT CONFLICT WITH OR OBSTRUCT IMPLEMENTATION OF A WATER QUALITY CONTROL PLAN. ADHERENCE TO MITIGATION MEASURE UTIL-1 WOULD HELP TO ENSURE THAT DEVELOPMENT ENVISIONED UNDER SEASIDE 2040 WOULD NOT CONFLICT WITH SUSTAINABLE GROUNDWATER MANAGEMENT PLANNING EFFORTS. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

Development envisioned under Seaside 2040 would affect water quality and groundwater supply through construction and operational activities. This analysis refers to the Basin Plan as the applicable water quality control plan in the General Plan Area. At the time of publication, there are no adopted groundwater sustainability plans for the Monterey or Seaside Subbasins. However, compliance with the required permits and existing regulations, as well as implementation of Mitigation Measure UTIL-1, would ensure that implementation of Seaside 2040 would not conflict with sustainable groundwater management planning efforts.

The Basin Plan identifies beneficial uses for surface water and groundwater and establishes water quality objectives to attain those beneficial uses. The identified beneficial uses and the water quality objectives to maintain or achieve those uses are together known as water quality standards. As discussed in detail under Impact HYD-1, compliance with relevant water quality regulations, BMPs, and policies would reduce the risk of water degradation from soil erosion and other pollutants related to construction and operational activities. Construction and operation of the development envisioned under Seaside 2040 would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade water quality. Consequently, implementation of Seaside 2040 would not conflict with or obstruct implementation of the Basin Plan and impacts would be less than significant.

The General Plan Area overlies the Monterey and Seaside Subbasins. MCWD - Ord Service Area Groundwater Sustainability Agency and the Salinas Valley Basin Groundwater Sustainability Agency have both filed notices to be designated as the groundwater sustainability agency with authority

over the Monterey Subbasin. Neither agency has developed nor adopted a groundwater sustainability plan to date. The Seaside Adjudication Judgment (discussed in detail in Section 4.16, *Utilities and Service Systems*) serves as the sustainability document for the Seaside Subbasin.

As discussed in detail under Impact HYD-2, mandatory compliance with the Seaside Municipal Code and Central Coast RWQCB post-construction requirements for stormwater management would minimize interference with groundwater recharge. Development envisioned by Seaside 2040 would increase the demand for water, most of which would derive from groundwater sources. For the existing conditions of the City's groundwater supply, and the effects of groundwater demand from development, see Section 4.16, *Utilities and Service Systems*. Mitigation Measure UTIL-1 would require the applicant to provide a Water Verification Report from the applicable water purveyor. Therefore, implementation projects under Seaside 2040 would be restricted to projects for which sufficient water supplies have been secured and approved. In addition, implementation of Seaside 2040 Goal CFI-3 and associated policies, detailed under Impact HYD-3, would ensure that development activities would maintain a sustainable regiment of groundwater pumping and recharge. Consequently, implementation of Seaside 2040 would not interfere with sustainable groundwater management planning efforts. Impacts related to sustainable groundwater management would be less than significant.

Mitigation Measures

Mitigation measures are not required.

Significance After Mitigation

Impacts would be less than significant without mitigation.

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4.10 Land Use and Planning

This section summarizes Seaside's land use characteristics, including the overall land use pattern as well as a more detailed analysis by major land use type, and analyzes existing plans and focus areas with development potential in order to determine the potential environmental effects of Seaside 2040 related to Land Use and Planning. This section also analyzes the Plan's consistency with applicable local and regional land use plans and policies.

4.10.1 Setting

a. Current Land Use Pattern

Figure 2-4 in Section 2, *Project Description*, shows the Land Use Map from the City's current 2004 General Plan. The general distribution of land uses within the City is shown in Table 4.10-1.

The most common existing land use category within the city limits is undeveloped. Undeveloped uses make up 39 percent (2,037 acres) of the city limits. Just under one-quarter (22 percent) of the undeveloped land includes former Fort Ord land that is earmarked for conservation. Former Fort Ord lands that are planned for growth (15.9 percent) equates to 830 developable acres of land. Finally, there are 49 acres (0.9 percent) of vacant/non-buildable land.

Approximately one-third, or 33 percent (1,722 acres) of the land area within the city limits is occupied by residential uses, predominantly single-family (758 acres) and military housing (734 acres). The remainder of residential uses includes multi-family and mobile homes.

Public lands account for about one-quarter, or 23.8 percent (1,239 acres) of the total land area within the City limits, and consist of institutional or public facilities, and parks and recreational facilities.

Commercial uses make up 4.1 percent (214 acres) of land within the city and consist predominantly of retail and commercial uses (186 acres) with some office, lodging, and light industrial.

Table 4.10-1 Distribution of Existing Land Uses

Land Use	Acres	Percentage
Residential	**1,722**	**33.1**
Mobile Home	68	1.3
Single-Family	758	14.6
Military Housing	734	14.1
Duplex/Triplex/Condo/Fourplex	88	1.7
Residential – 5 or more Units	72	1.4
Commercial/Industrial	**214**	**4.1**
Retail/Commercial	186	3.6
Office	7	0.1
Lodging	17	0.3
Light Industrial	2	0.1

Land Use	Acres	Percentage
Public	**1,239**	**23.8**
Institutional or Public Facilities	781	15.0
Parks & Recreation Facilities	458	8.8
Undeveloped	**2,037**	**39**
Vacant/Nonbuildable	49	0.9
Fort Ord Conservation	1,157	22.2
Fort Ord Future Development	830	15.9
Total	**5,213**	**100.0**

Note: Table excludes rights-of-way
Source: City of Seaside GIS Data

b. Existing Plans and Studies

Regional

Airport Land Use Compatibility Plans

The State Aeronautics Act, which requires the formation of Airport Land Use Compatibility Commissions (ALUCs), requires counties and cities to prepare Comprehensive Airport Land Use Plans (CALUPs). Cities and counties bear responsibility for the orderly and compatible development of areas surrounding the airports within their respective jurisdictions. To achieve this goal, each jurisdiction is charged with making sure all applicable planning documents and building codes are consistent with the ALUC's CALUP, or otherwise responsible for going through the overrule process as outlined in Government Code Section 65302.3 and PUC Section 21676 (Monterey County Airport Land Use Commission 2019a, 2019b). The Monterey County Airport Land Use Commission has adopted such plans for two airports in the vicinity of the General Plan Area: Marina Municipal Airport and the Monterey Regional Airport. The Marina Municipal Airport CALUP and the Monterey Regional Airport CALUP were updated in 2019. CALUP designated Safety zones restrict the development of land uses that could post particular hazards to the public or to vulnerable populations in case of an aircraft accident. The California Airport Land Use Planning Handbook provides guidance on the delineation of safety zones and the application of land use policies in those zones. There are seven safety zones as described in greater detailed in Draft EIR Section 4.8.2.

The General Plan includes areas that fall within Zone 7, the Airport Influence Area (AIA), which is considered to be a low accident risk zone. (See Monterey Regional Airport CALUP, Exhibit 4C; and Marina Municipal Airport, Exhibit 4C.) A small area of the General Plan Area in the northeast corner falls within the Marina Municipal AIA. Additionally, areas of the city generally between the Monterey Regional Airport to Coe Avenue fall within the AIA. The CALUP Safety Matrix (CALUP Table 4B), sets no limits on Dwelling Units Per Acre. Prohibited uses include (1) Hazards to Flight, which include physical (e.g., tall objects), visual, and electronic forms of interference with the safety of aircraft operations, and (2) Outdoor Stadiums and similar uses with very high intensity. The AIA generally incorporates airport disclosure notices, airspace review for structures taller than 100 feet, airspace analysis of structures approximately 50 feet or taller pursuant to 14 CFR Part 77. (CALUP Table 4B.)

2016 Airport Layout Plan and 2015 Monterey Regional Airport Master Plan

The Monterey Regional Airport is located approximately 0.36-mile south of the Seaside city limits. The 2016 Airport Layout Plan (ALP) was approved by the Federal Aviation Administration (FAA) on December 7, 2016 (Monterey Peninsula Airport District [MPAD] 2018). Related to land use planning and development, the primary functions of the ALP is to create a blueprint for airport development by depicting proposed facility improvements; and to provide a guideline by which the airport sponsor can ensure that development maintains airport design standards and safety requirements, and is consistent with airport and community land use plans (MPAD 2018). The ALP is an important component to the Airport Master Plan (AMP) and reflects the actual and/or planned modifications to the Airport while reserving sufficient areas for future aviation needs. FAA approval of the ALP indicates that the existing facilities and proposed development depicted on the ALP conforms to FAA airport design standards and that FAA finds the proposed development to be safe and efficient.

The Monterey Peninsula Airport District Board or Directors approved the 2016 Monterey Regional AMP and certified the 2018 Final Environmental Impact Report on November 26, 2018. The AMP and associated land use compatibility plan for the Monterey Regional Airport provides a framework to implement improvements that would enable the Airport to accommodate future demand for air travel in the region, enhance airport safety, incorporate airport sustainability goals, and increase airport self-sufficiency. The Airport Master Plan does not include land use policies that guide growth in the manner that a specific plan or general plan provides, nor does the Airport Master Plan work in conjunction with any type of implementing regulations, such as a zoning ordinance. The AMP is a facility planning study with a 20-year planning horizon that sets forth a conceptual framework for possible future airport development. The goals of the AMP is to provide the framework necessary to guide possible future airport development that will cost-effectively satisfy aviation demand, while considering potential environmental and socioeconomic issues (MPAD 2018).

The primary objectives of the AMP are as follows:

- Maintain and ensure the safety and security of the Airport
- Plan for phased, incremental development that meets foreseeable aviation demand and maintains flexibility for change
- Determine the required level of environmental documentation to move forward with the recommendations of the completed Airport Master Plan
- Develop policies and objectives for a sustainability program for the Airport
- Research and evaluate factors likely to affect the air transportation demand in the region
- Project the facility needs through the year 2033
- Recommend improvements that will enhance the Airport's safety capabilities to the maximum extent feasible
- Produce current and accurate Airport base maps and Airport Layout Plan drawings
- Establish a schedule of development priorities and a program for the improvements proposed in the Airport Master Plan
- Prioritize the Airport capital improvement program and develop a detailed financial plan
- Prepare a study of the economic impacts accruing to the region as a result of the Airport
- Develop Airport land use compatibility planning policies that will protect the Airport from future encroachment by incompatible land uses
- Develop robust and productive public involvement throughout the planning process

California State University Monterey Bay Comprehensive Master Plan

In 2022, California State University Monterey Bay (CSUMB) adopted an updated campus master plan. The 2022 Master Plan expresses a vision for a twenty-first century learning environment that connects the university's mission and academic plan with the design, development, and sensitive stewardship of the campus. It creates a sustainable framework for building and site improvements, a framework that preserves and enhances the unique qualities of the Monterey Bay setting, while addressing program accommodation, land use, open space, mobility, and infrastructure systems. The plan will be designed to accommodate 12,700 students (a doubling of the campus's current 6,000 students) with a long-term framework for growth up to 25,000 students. The vision is to create a compact campus with increased density at its core and to house 60 percent of the students on the campus.

Local

Local Coastal Program

In accordance with the CCA, Seaside adopted its Local Coastal Program (LCP) Land Use Plan in 2013. The Seaside LCP identifies the coastal zone as approximately 90 acres of land that extend from the Pacific Ocean to the terminus of the Canyon Del Rey Creek on the southeastern portion of Laguna Grande. Existing development and infrastructure within the coastal zone includes a beach visitor parking lot, the Monterey Bay Trail system, access to Sand Dunes Drive, and State Route 1. The area also includes approximately 500 feet of beach frontage along the Monterey Bay.

2004 City of Seaside General Plan

The current City of Seaside General Plan was adopted by City Council Resolution 04-59 on August 5, 2004.

Key goals and objectives from the existing General Plan related to land use are summarized below.

Land Use Element Goals and Policies

Goal LU-1 Promote a mixture of land uses and a balance of jobs and housing to support a community in which people can live, work, shop, and play.

Goal LU-2 Revitalize existing commercial areas.

Goal LU-3 Revitalize existing residential areas.

Goal LU-4 Ensure that new development complements existing land uses and enhances the character of the community and its neighborhoods.

Goal LU-5 Collaborate with local and regional water suppliers to continue and to provide quality water supply and treatment capacity to meet community needs.

Goal LU-6 Ensure that sewer service and facilities are provided and maintained to adequately meet the community's current and future need for sewer collection and treatment.

Goal LU-7 Collaborate effectively with local providers of solid waste collection and disposal to provide a sufficient level of solid waste disposal.

Goal LU-8 Provide a level of flood control and protection that meets the needs of the community.

Goal LU-9 Provide a sufficient level of fire protection, public education, and emergency response service (with a response time of five minutes) for all portions of the community.

Goal LU-10 Provide an effective and responsive level of police protection (including facilities, personnel, and equipment) through the Seaside Police Department.

Goal LU-11 Cooperate with local school districts and other educational organizations to ensure that a level of public education is provided that meets the community's educational needs.

Goal LU-12 Provide a level of library facilities and services that meet the needs of the community.

West Broadway Urban Village Specific Plan

The City of Seaside adopted the West Broadway Urban Village Specific Plan in January 2010. The Specific Plan Area encompasses approximately 40 acres in the southwest portion of the city, immediately south of the Seaside Auto Mall, and includes West Broadway Avenue between Del Monte Boulevard, Palm Avenue and Canyon Del Rey Boulevard. The Plan is approximately bounded by Olympia Avenue, Elm Avenue, Imperial Street, Canyon Del Rey Boulevard and Harcourt Avenue. The Specific Plan Area includes commercial, light industrial, and residential uses, as well as a former rail right-of-way (ROW) that is to become the future location of a multi-modal transit hub.

The purpose of the Specific Plan is to create a pedestrian-friendly Urban Village that offers a mix of market-rate and affordable for-sale and rental residences with ground-floor retail and commercial uses. The West Broadway Urban Village will become the new downtown, strengthening the Seaside community by developing a strong urban core. Objectives for the Specific Plan include creating strong linkages between activity centers within the City of Seaside and throughout the Monterey Peninsula; defining a unified, well-designed urban core that is a destination for residents, visitors, businesses and shoppers; and providing diverse housing opportunities for all income levels. The Specific Plan envisions an Urban Village that incorporates principles of long-term environmental sustainability and resource conservation, reduces potential environmental impacts of development and supports preservation of the natural environment. The overarching goal of the Specific Plan is to ensure that development within the West Broadway Urban Village adheres to environmentally-sustainable design and land use principles with the goal of enhancing and protecting the immediate and long-term well-being of the City, its citizens, and the area's natural resources (City of Seaside 2010a).

Projects at Main Gate Specific Plan

The City of Seaside adopted the Projects at Main Gate Specific Plan in August 2010. The Specific Plan Area includes four parcels comprising 56 acres of former Fort Ord lands in the City, and is generally bounded by State Route 1 and State park land to the west, open space and former Fort Ord lands to the north, CSUMB to the east, and existing city land and Lightfighter Drive to the south. The 2004 Seaside General Plan identified the project site as the North Gateway Specific Plan area, and designated the site for regional commercial uses.

The purpose of the Projects at Main Gate Specific Plan is to facilitate development of an open-air retail and entertainment-based shopping center and a hotel/conference center. Goals of the specific plan include successful reuse of former Fort Ord lands consistent with the 2004 Seaside General Plan, and to create a commercial project that would be a unique, high-quality, well-planned destination location that also complements and integrates with surrounding land uses. The plan

would further the City's development and redevelopment goals, and provide a destination hotel, spa, and conference facility to expand tourism and hospitality services in Seaside (City of Seaside 2010b).

Campus Town Specific Plan

The City of Seaside adopted the Campus Town Specific Plan in March 2020. The Campus Town Specific Plan would facilitate the construction and operation of up to 1,485 housing units, 250 hotel rooms, 75 hostel beds, approximately 150,000 square feet of commercial and entertainment uses, and approximately 50,000 square feet of office and light industrial uses in 122 acres south of CSUMB campus. The project would replace abandoned buildings on former Fort Ord lands. Goals of the Campus Town Specific Plan include development of a variety of building types and uses, including retail, visitor lodging, and housing; provide shopping, employment, and housing opportunities for households of various sizes and income levels; centrally focus commercial development; create a vibrant multi-model transportation network; and expand the City's retail and employment opportunities (City of Seaside 2020).

Proposed Seaside 2040

The proposed Seaside 2040would update and supersede the 2004 General Plan. It contains a description of 14 different land use designations proposed for the City of Seaside. The descriptions include allowed maximum density or intensity of development; and specific guidance on the intended physical character of future development, including building placement on a lot, lot coverage, building frontage, streetscape character, and parking location and access. Table 2-3 of Section 2, *Project Description*, describes the 15 land use designations.

A principal philosophy of the General Plan is to better knit the historic City, the original area before base annexation, and the former Fort Ord base lands, which stretch northward and eastward from the historic city and are largely undeveloped apart from remnants of the base.

Proposed Seaside 2040 Land Use and Community Design Goals

Goal LUD-1 An urban form and structure that enhances the quality of life of residents, meets the community's vision for the future, and weaves new growth areas together with long-established Seaside neighborhoods.

Goal LUD-2 Increased employment opportunities in Seaside to meet the needs of existing and future residents.

Goal LUD-3 New retail and commercial activity in the City to meet the needs of residents and create regional destinations.

Goal LUD-4 Revitalized and improved existing commercial areas.

Goal LUD-5 Visitor-serving amenities that support and strengthen the City's relationship to the Fort Ord National Monument and the Dunes State Park.

Goal LUD-6 Visible and strong arts and cultural identity in Seaside.

Goal LUD-7 A community that actively participates and engages in decision-making processes.

Goal LUD-8 A safe urban environmental oriented and scaled to pedestrians and bicyclists.

Goal LUD-9 A City with beautiful and vibrant architecture and building design that reflects the culture and character of Seaside.

Goal LUD-10 A network of pedestrian-oriented, human-scale and well- landscaped streetscapes throughout Seaside.

Goal LUD-11 Maintain and enhance existing residential neighborhoods.

Goal LUD-12 Preserve and improve the quality, diversity, and affordability of existing single-family neighborhoods.

Goal LUD-13 High-quality multifamily neighborhoods with a mixture of well-designed building types for a diversity of households.

Goal LUD-14 Create a pedestrian-oriented Downtown along Broadway Avenue and Del Monte Boulevard that is a local and regional-serving mixed use district.

Goal LUD-15 Transform Fremont Boulevard into a distinct, visually-consistent, mixed-use commercial boulevard with neighborhood and regionally-serving centers.

Goal LUD-16 Maintain the auto center as a critical economic engine for Seaside while allowing for the gradual transformation of the area.

Goal LUD-17 Abundant and high-quality natural open space on former Fort Ord lands.

Goal LUD-18 Design new Seaside neighborhoods on former Fort Ord lands sustainably by linking land use, transportation, and infrastructure development to increase non-automobile travel, protect sensitive habitat, and reduce infrastructure costs.

Goal LUD-19 Seamlessly connect new growth areas of former Fort Ord lands with the rest of the City.

Goal LUD-20 New development supports the preservation or enhancement of the City's natural resources.

Goal LUD-21 Resilient neighborhoods on former Fort Ord lands.

Goal LUD-22 Balanced, diverse, and sustainable growth.

Goal LUD-23 Transform Seaside's northern area into a mixed-use, economically-vibrant Campus Town that serves the student population and leverages its geographic adjacency to CSUMB.

Goal LUD-24 Transform the "Main Gate" area into a mixed-use center with retail, residential, and entertainment.

4.10.2 Regulatory Setting

State

General Plan Law (California Government Code Section 65300 et seq.)

California Government Code Section 65300 et seq. regulates the substantive requirements of general plans. State law requires each city and county to adopt a general plan "for the physical development of the county or city, and any land outside its boundaries which bears relation to its planning." The California Supreme Court has called the general plan the "constitution for future development." The general plan expresses the community's development goals and embodies public policy relative to the distribution of future land uses, both public and private. As also discussed by the Supreme Court in *Lesher Communications, Inc. v. City of Walnut Creek* (1990) 52

Cal.3d 531, a general plan is "simply a statement of policy to govern future regulations." "General plans ordinarily do not state specific mandates or prohibitions. Rather, they state policies, and set forth goals." (*Napa Citizens v. Citizens for Honest Government v. Napa County Board of Supervisors* (2001) 91 Cal.App.4th 342,378.) "California courts permit vague standards because they are sensitive to the need of government in large urban areas to delegate broad discretionary power to administrative bodies if the community's zoning business is to be done without paralyzing the legislative process." *Sacramentan's for Fair Planning v. City of Sacramento* (2019, 3rd App. Dist. Case No. C086182) Cal.App.5th. As also discussed in the Governor's Office of Planning and Research (OPR) General Plan Guidelines, "given the long-term nature of a general plan, its diagrams and text should be general enough to allow a degree of flexibility in decision-making as times change" (Office of Planning and Research 2017: 380). Government Code Section 65301 allows the general plan to "be adopted in any format deemed appropriate or convenient by the legislative body, including the combining of elements."

California Coastal Act

The City of Seaside is mandated by the California Coastal Act of 1976 (Pub. Res. Code §§ 30000 et seq.) to prepare a Local Coastal Program for the areas of the city that are located within the Coastal Zone boundary. A Local Coastal Program, or LCP, consists of City land use plans and land use controls that implement the provisions of the California Coastal Act. The California Coastal Act is intended to "protect, maintain, and where feasible, enhance and restore the overall quality of the coastal zone environment and its natural and artificial resources." All development in the coastal zone requires a coastal development permit, which is issued by the City or the California Coastal Commission, in compliance with the LCP, for all proposed development that occurs within the city's Coastal Zone boundaries (City of Seaside 2013).

The City of Seaside prepared and adopted its LCP on June 20, 2013. The City's LCP was originally certified by the CCC in 1983. The LCP consists of a land use plan, policies, and implementing ordinances, including the Zoning Ordinance, applicable to the coastal zone portions of the city. The proposed General Plan update does not amend the Local Coastal Program.

Cortese Knox Hertzberg Local Government Reorganization Act of 2000 (CKH Act)

The Cortese Knox Hertzberg Local Government Reorganization Act (CKH Act) established procedures for local agency changes of organization, including city incorporation, annexation to a city or special district, and consolidation of cities or special districts (Government Code Section 56000 et seq.). LAFCos have numerous powers under the CKH Act, but the most important are the power to act on local agency boundary changes and to adopt spheres of influence for local agencies. The law also states that in order to update a Sphere of Influence, Local Agency Formation Commissions (LAFCO) are required to first conduct a review of the municipal services provided by the local agency. The CKH Act also requires LAFCOs to update spheres of influence for every city and special district every five years. The original deadline was January 2006, five years following the CHK Act becoming State law. That deadline was extended two years to January 2008. Every SOI update must be accompanied by an update of the municipal services review (MSR). Monterey County LAFCO completed a municipal service review for Seaside in 2011. Monterey County LAFCo's policy is to review Sphere of Influence determinations not less than every five years. If a local agency desires amendment or revision of an adopted Sphere of Influence, the local agency by resolution may file such a request with the Executive Officer (LAFCO 2013). The next municipal service review for Seaside will occur whenever an amendment is considered.

Regional

AMBAG 2045 Metropolitan Transportation Plan/Sustainable Communities Strategy

The 2045 Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS), approved by the AMBAG Board of Directors in June 2022, is a comprehensive planning effort that coordinates land use patterns and transportation investments with the objective of developing an integrated, multimodal transportation system. The MTP/SCS is built on a set of integrated policies, strategies, and investments to maintain and improve the transportation system to meet the diverse needs of the regional through 2045. The Plan describes where and how the region can accommodate the projected 42,000 more households and 65,500 new jobs between 2020 and 2045 and details the regional transportation investment strategy over the next 25 years.

The Plan contains six goals to address major challenges in the region and has established fifteen performance measures to measure how well the 2045 MTP/SCS performs.

To better analyze land use patterns and consider scenario alternatives, AMBAG created a set of place types which established a set of land use designations common to general plans for the three counties and 18 cities in the region. The assignment of place types was based primarily on existing land use designations, transit service maps and aerial imagery, but also relied upon information from local jurisdictions. The Place Type maps and designations of residential building intensities are included in Appendix I[1] of the 2045 MTP/SCS (AMBAG 2022). The 2045 MTP/SCS place types and designations applicable to Seaside include:

- **Single-Family Residential:** Single-family homes in self-contained residential neighborhoods.
- **Multi-Family Residential:** Duplexes, apartment complexes, subdivided houses, and mobile home parks in a generally low-density setting.
- **Neighborhood Commercial:** Stand-alone retail buildings, strip malls, local-serving big-box stores, and smaller-scale offices or office parks.
- **Regional Commercial:** Large-scale retail or entertainment uses with a regional draw, including shopping malls, big-box stores, and tourist destinations.
- **Employment Center:** Office and research-oriented industrial land uses with medium to high employment densities.
- **Neighborhood Mixed Use:** Multi-family, mixed-use developments with ground-floor, neighborhood serving retail, medical, office or mixed uses. Usually found in newly built traditional neighborhood developments or as infill along existing commercial corridors.
- **Town Commercial:** Pedestrian-oriented commercial uses in town core commercial areas or along commercial corridors. Usually in areas with traditional street patterns.
- **Industrial/Manufacturing:** Various industrial and manufacturing uses, including factories, storage facilities, industrial and commercial suppliers, and some research and development uses.
- **Institutional/Civic:** Various institutional, civic, public, educational, hospital, cemeteries, and utilities uses located in various settings.
- **Open Space/Recreational:** Open space and recreational uses, including local and regional parks, nature preserves, and beaches.

[1] The AMBAG Place Types Matrix for the region and Place Type maps and designations for the City of Seaside are found in the 2045 AMBAG MTP/SCS - Appendix I: https://www.ambag.org/sites/default/files/2022-07/Appendix%20I_%20SCSMaps_Updated.pdf

Local

Zoning

Zoning is the instrument that implements the land use designations of the General Plan. In addition to establishing permitted uses, zoning may also establish development standards relating to issues such as intensity, setbacks, height, and parking.

Zoning Districts

The City of Seaside Zoning Ordinance is the primary tool used by the City to carry out the goals, objectives, and policies of the Seaside General Plan by classifying and regulating the uses of land and structures within the city, consistent with the General Plan. The City's Subdivision Ordinance, Title 17 of the Seaside Municipal Code, provides standards for the processing of subdivision requests, including new tract maps, parcel maps, and lot line adjustments. The Zoning Code describes various types of zoning districts and land use classifications, land use regulations, development standards, and environmental performance standards. The Zoning Ordinance applies to all land uses and development within the city of Seaside. The purpose of the Zoning Ordinance is to protect and to promote the public health, safety, comfort, convenience, prosperity, and general welfare of residents, and businesses in the city. More specifically, the purposes of this Zoning Ordinance are to:

A. Provide standards and guidelines for the continuing orderly growth and development of the City that will assist in protecting the character and community identity of Seaside;
B. Conserve and protect the City's natural beauty and setting, including waterways, hills and trees, scenic vistas, historic and environmental resources;
C. Create a comprehensive and stable pattern of land uses upon which to plan transportation, water supply, sewerage, energy, and other public facilities and utilities;
D. Minimize automobile congestion by promoting pedestrian-oriented development, safe and effective traffic circulation, and adequate off-street parking facilities; and
E. Ensure compatibility between different types of development and land use.

The city is divided into 18 zoning districts or zones that implement the Seaside General Plan, as shown on Table 4.10-2. Section 65860(c) of the Government Code requires that when a General Plan is amended in a way that makes the Zoning Ordinance inconsistent with the General Plan, "the zoning ordinance shall be amended within a reasonable time so that it is consistent with the general plan as amended." The City of Seaside will prepare a Zoning Code Amendment following the adoption of Seaside 2040 to ensure consistency with the most updated General Plan.

Table 4.10-2 Zoning Districts (Zones) that Apply to Property within the City of Seaside

Zone Symbol	Name of Zone	2004 General Plan Designation Implemented by Zone
Residential Zones		
RS-8	Single-Family Residential	RLS – Low Density Single-Family Residential
RS-12	Single-Family Residential	RMS – Medium Density Single-Family Residential
RM	Medium Density Residential	RM – Medium Density Residential
RM	Medium Density Residential (West Broadway Urban Village [WBUV]	RM – Medium Density Residential
RH	High Density Residential	RH – High Density Residential
RH/MX	High Density Residential/Mixed Use (WBUV)	RH – High Density Residential
Commercial Zones		
CMX	Commercial Mixed Use	MX – Mixed Use
MX	Mixed Use (WBUV)	MX – Mixed Use
CC	Community Commercial	CC – Community Commercial
CRG	Regional Commercial	RGC – Regional Commercial
CA	Automotive Commercial	RGC – Regional Commercial
CH	Heavy Commercial	HC – Heavy Commercial
V-FO	Visitor-Serving Commercial	RC – Recreational Commercial
Special Purpose Zones		
OSR	Open Space-Recreation	POS – Parks and Open Space RC – Recreational Commercial
OSC	Open Space-Conservation	HM – Habitat Management
PI	Public/Institutional	PI – Public/Institutional
M	Military	M – Military
Overlay Zones		
ORD	Ordnance Remediation District Overlay	All
H1	Highway 1 Design Overlay	All

Note: For a graphic depiction, refer to City Proper 2007 Zoning District Map: http://www.ci.seaside.ca.us/DocumentCenter/View/521
Source: City of Seaside, Seaside Municipal Code Section 17.060.020, Zoning Map and Zones

4.10.3 Impact Analysis

Methodology and Significance Thresholds

The land use and planning analysis describes existing regional and local plans, policies and is intended to fulfill the requirements of CEQA Guidelines Section 15125(d). The emphasis of the analysis is on plan inconsistency and potential conflicts between the proposed project and existing applicable land use plans. The proposed project is considered consistent with the provisions of the identified regional and local plans if it meets the general intent of the applicable plans. A given project need not be in perfect conformity with each and every policy nor does state law require precise conformity of a proposed project with every policy or land use designation. It follows that it is nearly, if not absolutely impossible for a project to be in perfect conformity with each and every policy set forth in the applicable plan. Furthermore, any inconsistency would also have to result in a

physical change in the environment, not analyzed in the other resource chapters of this EIR, to result in a significant environmental impact. The analyses below provide a brief overview of the most relevant policies and development standards from the various planning documents. However, the City's consistency conclusions are based upon the planning documents as a whole.

For purposes of this EIR, implementation of the proposed 2040 General Plan may have a significant adverse impact if it would do any of the following:

1. Physically divide an established community
2. 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 and would result in a significant adverse physical change to the environment not already addressed in the other resource chapters of this EIR.

Project Impacts and Mitigation Measures

Threshold 1: Would the project physically divide an established community?

Impact LU-1 IMPLEMENTATION OF THE PROPOSED 2040 GENERAL PLAN WOULD PROVIDE FOR ORDERLY DEVELOPMENT IN THE CITY OF SEASIDE AND WOULD NOT PHYSICALLY DIVIDE AN ESTABLISHED COMMUNITY. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

Based on the buildout capacity of the General Plan Area under Seaside 2040, an estimated 12,555 new residents and 4,050 new dwelling units would be added to Seaside. In addition, up to 1,670 hotel rooms could be developed in the city by 2040. The residential growth is anticipated to result in up to 1,651 single-family dwelling units and 2,398 multi-family dwelling units. This is roughly equivalent to a compound annual growth rate of 1.13 percent through the year 2040. The increased land uses are anticipated to generate 4,604 new jobs in the city by the year 2040 in the retail, service industry, industrial, and public sectors. This is roughly equivalent to 2.6 million square feet of non-residential uses.

As shown on Figure 2-5, *Proposed Project Site and Seaside 2040 Proposed Land Use Map* in Section 2, *Project Description*, the projected growth would occur primarily as either infill (i.e., redevelopment on underutilized land) or on vacant land available for development within former Fort Ord land. As shown in Table 4.10-1 above, the city contains approximately 2,036 acres of undeveloped land, of which approximately 49 acres is non-buildable (i.e., vacant parcels that are too small or narrow to develop) and 1,987 acres is located on former Fort Ord lands. Of the 1,987 acres of undeveloped former Fort Ord lands that are not precluded from development, approximately 1,157 acres of former Fort Ord land is earmarked for conservation, while the remaining 830 acres allow development growth. Of the 4,050 new dwelling units projected under full buildout of the General Plan, as described above, an estimated 2,974 dwelling units and 2,559 jobs are projected to occur within the former Fort Ord lands, including Campus Town, Main Gate, and Seaside East.

The projected growth would not physically divide the city of Seaside. Guiding Principle 2, *One City*, of Seaside 2040 aims for the City to weave together existing Seaside neighborhoods with military housing areas and new neighborhoods and employment districts on former Fort Ord lands to create a single, identifiable city on the Monterey Peninsula. This guiding principle also states that new neighborhoods would grow incrementally over time, would connect to the existing circulation network, and would relate physically and architecturally to adjacent neighborhoods.

Seaside 2040 includes goals and policies that would ensure connectivity between the planned growth areas and established neighborhoods and business districts in Seaside, as follows.

Land Use and Community Design Element Policies

Goal LUD-1: An urban form and structure that enhances the quality of life of residents, meets the community's vision for the future, and weaves new growth areas together with long-established Seaside neighborhoods.

Intent: To provide an appropriate mix of housing, employment, retail/services, recreation, arts, education and entertainment for the City's residents and businesses. To grow responsibly and sustainably in a manner which benefits the community now and into the future.

Policies: **Balanced land uses.** Maintain a land use pattern to support a broad range of housing choices, retail businesses, employment opportunities, educational and cultural institutions, entertainment spaces, and other supportive uses on former Fort Ord lands and within long-established Seaside neighborhoods.

Overall city structure. Establish a clearly defined city structure as described below by:

- Establishing West Broadway as the city's pedestrian-oriented Downtown that is a local and regional-serving mixed-use district.
- Maintaining existing regional neighborhoods and creating new residential neighborhoods on former Fort Ord lands with a character that reflects Seaside's identity. New residential neighborhoods should be arranged around neighborhood centers and community gathering spaces, such as schools and parks.
- Ensuring public improvements are consistently made to existing and new neighborhoods to establish sufficient maintenance, capacity, and reliability.
- Creating mixed-use corridors along East Broadway Avenue, Fremont Boulevard, Lightfighter Drive, and Del Monte Boulevard that contain a mix of retail, service, office, and residential uses. Corridors have defined nodes that provide a mix of local and regional serving uses.
- Retaining the auto center as a critical economic engine for the City, recognizing that are going under a market driven evolution.
- Development of the Campus Town Specific Plan area adjacent to CSUMB that provides for higher-density housing, R&D and employment areas, retail and entertainment uses, and active parks and recreational spaces to support CSUMB students and faculty, as well as permanent Seaside residents.
- Development of the Main Gate Specific Plan area into a mixed-use center with retail residential, institutional, public, and entertainment uses.
- Protecting and maintaining parks and open space on former Fort Ord lands, including supporting FORTAG implementation, developing open space corridors, and creating new neighborhood and community parks that support Seaside residents and access to regional destinations.

- Develop a new City Hall and other city facilities including a broad mix of cultural, arts, and institutional uses, including the construction of a new library.

Connecting new and old. Connect new growth area on former Fort Ord lands with existing Seaside neighborhoods through transportation investments, open space connectivity, wayfinding, and urban design strategies.

Recycled water. Locate initial new development where there are opportunities for recycled water supply to be utilized.

Goal LUD-19: Seamlessly connect new growth areas on former Fort Ord lands with the rest of the City.

Intent: To create a unified city where eastward growth does not diminish or ignore the existing city fabric, but rather reinforces and expands upon it.

Policies: **Visual connections.** Provide visual connections, including wayfinding, between existing development and new development, and between open space on former Fort Ord lands. Ensure consistency with the former FORA Regional Urban design guidelines emphasizing:

- **Connections.** Ensure signage provides guidance for seamless connections to centers of activity, public open spaces, and educational institutions, locations of interest, transit facilities, and trails.
- **Coordinated.** Coordinate wayfinding sign design to incorporate regional wayfinding standards and allow for unique jurisdiction and community identity.
- **Consistent.** Ensure wayfinding signage is consistent with Monterey County Bicycle and Pedestrian Wayfinding Signage Design standards. When applicable, use internationally standardized imagery.
- **Legible.** Ensure wayfinding signage is clear and readable to the intended audience (i.e., pedestrians, cyclists, equestrians and motorists).

Physical connections. Require future development projects to better integrate with existing development by physically connecting new development on former Fort Ord lands with frequent streets, transit, bicycle, and pedestrian connections to ensure easy access from historic Seaside.

Prioritization. Prioritize City programs and capital projects that actively work to integrate historic Seaside with new development on former Fort Ord lands.

Contiguous expansion. Locate initial new development on former Fort Ord lands adjacent to Seaside's built environment and CSUMB to create a contiguous expansion of the city.

Goal LUD-22: Balanced, diverse, and sustainable growth.

Intent: To guide development towards a diverse community that balances habitat and wilderness with new low-impact residential development clustered around neighborhood centers, supporting public use, and employment districts.

Policies: **Gateways**. Provide ample gateways to the National Monument, through formal and informal entryways to trailheads. Provide distinctive signage and gateway elements at entryways.

New infrastructure. Plan for significant improvements to existing infrastructure in the area, including the development of an active transportation and transit plan.

FORTAG trail. Support implementation of the FORTAG regional trail. Coordinate with FORTAG about trail design and connectivity, including opportunities for:

- art installation
- nature and historic interpretation
- outdoor classrooms
- birding
- native plant appreciation
- commercial uses including cages, bike shops, and visitor centers
- senior mobility
- safe "Just Run" routes, "ParkRun," and other commercial and charity fun runs.

Habitat preservation. Working with CSUMB and City of Marina to minimize the impacts of land uses at the western entrance of the CSUMB campus, support the preservation of open space and sensitive habitat including:

- Oak woodlands and linkages.
- An open space buffer between future development and the National Monument.
- Open space corridors that support natural vegetation communities, scenic vistas, and sensitive habitats.

Balanced land use mix. Create a complete community in Seaside East with a mix of parks, recreation, employment, retail and services, and housing. Specifically, the eventual build-out of the area will include all of the following, in the approximate quantities specified in Table 3:

- A range of park types and community recreation facilities, including a regional recreation area with multipurpose athletic fields, courts, and other park uses.
- Visitor-serving amenities (retail and services) at primary National Monument access points.
- New office, research and development (R&D), and/or flex space to increase employment in the area as required as a condition of the City's acquisition of the land.
- Traditional, walkable residential neighborhoods with a diversity of low and moderate-density housing types built around "neighborhood centers" with a mix of retail, services, parks, and other amenities for residents.
- New schools, public facilities, and a Civic Campus to support the expected population and worker growth in the area.

Connections across General Jim Moore Boulevard. Improve connections to the rest of the City, especially across General Jim Moore Boulevard.

Walkable grid. Plan new streets to form an interconnected grid of street and greenway circulation within the subarea. Design street and block patterns to provide safe, convenient, and comfortable circulation for pedestrians and bicyclists.

Mobility Element Policies

Goal M-1: A citywide network of "complete streets" that meets the needs of all users, including bicyclists, children, persons with disabilities, motorists, movers of commercial goods, pedestrians, public transportation, and seniors.

Intent: To make travel safe for users, including bicyclists, pedestrians, motorists, and transit vehicles, and access for riders and people of all ages and abilities. Complete streets principles are incorporated into the General Plan, consistent with the California Complete Streets Act (AB 1358).

Policies: **Planning for all modes and transportation/land use integration.** Design streets holistically, using a complete streets approach, which considers pedestrians, bicyclists, motorists, transit users, and other modes together to adequately serve future land uses.

CSUMB and former Fort Ord lands. Increase multi-modal access to CSUMB and former Fort Ord lands.

Block length. Limit block sizes to 600 feet to enhance multi-modal circulation and connectivity wherever feasible.

Goal M-2: Mobility options that serve the multi-modal access and travel needs generated by new development in a manner suitable to the local context.

Intent: To ensure new development includes multi-modal transportation components, and provide mechanisms for new development to pay its fair share of the cost of transportation improvements.

Policies: **Coordination with new development**. Improve the Seaside circulation system in concert with public and private land development and redevelopment projects.

Multi-modal connectivity. Promote pedestrian and bicycle improvements that improve connectivity between existing and new development.

Goal M-3: Pedestrian facilities that connect land uses, address safety concerns, and support land uses and urban design goals.

Intent: To prioritize the provision of pedestrian improvements and ensure that adequate pedestrian access is provided to land uses and destinations.

Policies: **Pedestrian access to land uses.** Provide pedestrian access to all land uses in Seaside.

Crossings at barrier locations. Enhance pedestrian and bicycle crossings and pathways at key locations across physical barriers such as highways and road barriers.

Under Goal LUD-1, the balanced land uses policy would ensure an appropriate balance of land uses are maintained in Seaside, while establishing an urban form and structure that promotes responsible and sustainable development, leading to orderly development in the city. This policy,

and other policies listed above under Goals LUD-19, M-1, M-2, and M-3 promote seamless connectivity between new growth areas and established Seaside neighborhoods through physical connections, such as frequent streets, transit, bicycle, and pedestrian connections, open space connectivity, and urban design strategies; and visual connections, such as including wayfinding between existing and new development, and between open space on former Fort Ord lands. Polices under Goal LUD-22, policies would guide new development around neighborhood centers, supporting public uses and employment districts while encouraging the preservation of open space and sensitive habitat.

Seaside 2040 includes many strategies, goals, and policies that would provide for orderly development and would not physically divide an established community, including the following: 1) maintain a balanced land use pattern to support a broad range of land uses; 2) seamlessly connect new growth areas on former Fort Ord lands with existing Seaside neighborhoods; 3) locate initial new development on former Fort Ord lands adjacent to Seaside's built environment and CSUMB to create a contiguous expansion of the city; 4) prioritize City programs and capital projects that actively work to integrate historic Seaside with new development on former Fort Ord lands; and 5) design streets using a complete streets approach to adequately serve future land uses. Therefore, this impact would be less than significant.

Mitigation Measure

No mitigation is required.

Significance After Mitigation

Impacts would be less than significant without mitigation.

Threshold 2:	Would the project conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect? and would result in a significant adverse physical change to the environment not already addressed in the other resource chapters of this EIR?

Impact LU-2 IMPLEMENTATION OF THE PROPOSED PROJECT WOULD BE CONSISTENT WITH APPLICABLE REGIONAL LAND USE PLANS, POLICIES, OR REGULATIONS . IMPACTS WOULD BE LESS THAN SIGNIFICANT.

Several regionally- and locally-adopted land use plans, policies, and regulations are relevant to development under Seaside 2040. These include the City's Local Coastal Program, the AMBAG *Monterey Bay 2045 MTP/SCS*, the Marina Municipal Airport Master Plan, and the Monterey Regional Airport Master Plan. Seaside 2040's consistency with each of these existing land use plans and their policies intending to avoid or mitigate an environmental effect is demonstrated below.

City of Seaside Local Coastal Program

The Land Use Plan of the City's Local Coastal Program was adopted as part of the Local Coastal Program in 2013. Land use policies with the intention of avoiding or mitigating an environmental effect and Seaside 2040's consistency with the applicable policies are shown in Table 4.10-3.

Table 4.10-3 Seaside 2040 Consistency with City of Seaside Local Coastal Program Land Use Plan

Local Coastal Program Land Use Plan Policy	Seaside 2040 Consistency
Policy NCR-CZ 1.1.A. Promote Sustainable Development. New development shall promote environmental sustainability which is essential to reducing impacts to natural resources, habitat loss, and air and water resources.	**Consistent.** Goal C-2 through Goal C-4 of the Seaside 2040 Conservation Element outline policies related to environmental sustainability and the protection of natural resources, including habitat management areas, hillsides, the coastal zone, and water bodies within Seaside. Goal C-2 would foster sustainable development practices that would provide protection for sensitive habitats and species, and Goal C-3 aims to preserve and protect natural resources in the city's coastal zone. Goal C-4 intends to reduce stormwater runoff and pollutant discharge in the Monterey Bay, Robert's Lake, Laguna Grande, and other water bodies to improve local habitat. Therefore, Seaside 2040 would be consistent with this policy.
Policy NCR-CZ 1.1.C. Minimize Adverse Effects to Natural Coastal Resources. New development shall be located in areas where it will not have a significant adverse effect either individually or cumulatively on natural coastal resources and public access and recreation.	**Consistent.** Goal C-3 of the Seaside 2040 Conservation Element intends to preserve and protect natural resources in the coastal zone. This goal contains policies to promote local and regional cooperation and partnerships to protect and manage natural resources in the coastal zone, protect critical habitats identified in the Local Coastal program, and work with local and regional agencies to ensure beaches can function as quality habitat for permanent and migratory species. Additionally, Goal PO-5 of the Seaside 2040 Parks and Open Space Element intends to maintain and enhance public access to the coast while requiring new development and redevelopment to minimize impacts to existing public access to the coast. Therefore, Seaside 2040 would be consistent with this policy.
Policy NCR-CZ 1.2.B. Protection of Environmentally Sensitive Habitat Areas (ESHA). ii. Development in areas adjacent to ESHAs shall be sited and designed to prevent impacts which would significantly degrade those areas and shall be compatible with the continuance of those habitat areas.	**Consistent.** Goal C-2 through Goal C-4 of the Seaside 2040 Conservation Element outline policies related to environmental sustainability and the protection of natural resources, including habitat management areas, hillsides, the coastal zone, and water bodies within Seaside. Seaside 2040 would encourage establishment of habitat protection areas and would require new development near habitat management areas to implement low impact development practices. Therefore, Seaside 2040 would be consistent with this policy.
Policy NCR-CZ 1.3.B. Protection of Wetlands. ii. Development that may have an adverse effect on a wetland shall not be allowed.	**Consistent.** Goal C-1 of the Seaside 2040 Conservation Element contains policies to protect inland water resources including creeks, lakes, and wetlands. Additionally, policies under Goal C-2 would encourage clustered development to minimize impacts to wetlands, among other natural resources. Goal C-4 also includes policies to incorporate wetland design that enhances the use of existing wetlands and improves ecosystem services. Therefore, Seaside 2040 would be consistent with this policy.

Local Coastal Program Land Use Plan Policy	Seaside 2040 Consistency
Policy NCR-CZ 2.1.B. Protection of Visual Resources. iii. Development determined to have a significant adverse effect on a visual resource or substantially limit visibility of visual resource shall not be allowed. v. New development shall be sited and designed to protect visual resources, minimize the alteration of natural land forms, preserve view corridors, be visually compatible with the character of surrounding areas, and, where feasible, restore and enhance visual quality in visually degraded areas.	**Consistent.** Goal C-6 of the Seaside 2040 Conservation Element includes policies to protect public views of significant natural resources, including the Monterey Bay, the Pacific Ocean, the surrounding mountains, and other prominent viewsheds. Major redevelopment projects would be reviewed to ensure they will not significantly obstruct views of these resources. Therefore, Seaside 2040 would be consistent with this policy.
Policy NCR-CZ 5.1.B. Protection from Natural Hazards. i. All new development in areas subject to natural hazards, including geologic, flood, tsunami, sea level rise, ocean storm and surge, and fire hazard, shall be sited, designed, and sized to minimize risk to life, property, and the environment from natural disaster as warranted based on assessed risk and conditions on the ground.	**Consistent.** The Safety Element of Seaside 2040 would include goals and polices related to geologic, hydrologic, and fire hazards. Goal S-3 outlines policies to ensure protection from the effects of earthquakes, tsunamis, and other natural disasters, and Goal S-6 intends to minimize the risk of fire hazards in the city and wildfire hazards within former Fort Ord lands. Therefore, Seaside 2040 would be consistent with this policy.

Source: City of Seaside 2013

As shown in Table 4.10-3, Seaside 2040 would be consistent with policies of the City's Local Coastal Program with the intention of avoiding or mitigating an environmental effect.

Association of Monterey Bay Area Governments 2045 MTP/SCS

AMBAG's 2045 MTP/SCS is a long-range land use and transportation plan for the Monterey Bay region. The 2045 MTP/SCS identifies placetypes (land uses) for a 2045 buildout scenario of Seaside, which is generally consistent with Seaside 2040. Minor differences between the plans do occur, some of which include:

- Seaside 2040 designates the Fort Ord Area as military use, while the 2045 MTP/SCS designates the area as single-family residential and institutional use
- Seaside 2040 designates the Campus Town area for a future specific plan and military uses, while the 2045 MTP/SCS designates the area as neighborhood mixed use
- Seaside 2040 designates the northwesternmost area of Seaside as low and high density mixed use, while the 2045 MTP/SCS designates the area as regional commercial
- Seaside 2040 designates the area south of Gigling Street on the eastern edge of the City for employment uses, while the 2045 MTP/SCS designates the area for multi-family residential
- The West Broadway Specific Plan area is shown in Seaside 2040, and the same area is designated in the 2045 MTP/SCS as multi-family residential and neighborhood mixed-use
- Highland Elementary School is shown as Institutional in Seaside 2040 and designated for multi-family residential in the 2045 MTP/SCS

Not all of these differences represent inconsistencies within the goals and intent of the 2045 MTP/SCS, however. For example, the City of Seaside adopted the Campus Town Specific Plan in March 2020, and the plan involves mixed-use development, which is consistent with the 2045

MTP/SCS designation for the area. Additionally, Seaside 2040 encourages infill, mixed-use development that facilitates active transportation modes and transit use, consistent with the goals of the 2045 MTP/SCS.

The 2045 MTP/SCS also contains six goals intended to benefit the region. The three categories of goals in the 2045 MTP/SCS that are relevant to the environmental analysis are:

- Access and Mobility – Provide convenient, accessible, and reliable travel options while maximizing productivity for all people and goods in the region
- Environment – Promote environmental sustainability and protect the natural environment
- System Preservation and Safety – Preserve and ensure a sustainable and safe regional transportation system

Goals and policies within Seaside 2040 are consistent with these objectives, and as described above, the land use patterns contained in Seaside 2040 are generally consistent with those in the 2045 MTP/SCS. The proposed project is considered consistent with the provisions of the identified regional and local plans if it meets the general intent of the applicable plans. A given project need not be in perfect conformity with each and every policy nor does state law require precise conformity of a proposed project with every policy or land use designation. It follows that it is nearly, if not absolutely impossible for a project to be in perfect conformity with each and every policy set forth in the applicable plan. As described above, Seaside 2040 and the 2045 MTP/SCS both encourage transit use and active transportation modes by envisioning infill and mixed-use development. Therefore, impacts related to land use designation inconsistencies would not be significant. Furthermore, there are no anticipated secondary physical environmental impacts associated with the consistency between the Seaside 2040 and the 2045 MTP/SCS. As summarized above, Seaside 2040 is consistent with land use plans, policies, and regulations that have been adopted for the purpose of avoiding or mitigating an environmental effect. Impacts would be less than significant.

Marina Municipal and Monterey Regional Airport Master Plans

Two airports are located in the near vicinity of the City of Seaside. The Monterey Regional Airport is located approximately 0.4-mile south and Marina Municipal Airport is located approximately 2.0 miles northeast of the General Plan Area. The Monterey County Airport Land Use Commission (ALUC) has CALUPs for both airports.

The southern one-third of the General Plan Area, roughly south of Military Avenue, is located within the Monterey Regional Airport Influence Area, which is considered to be a low accident risk zone (County of Monterey 2019). The northern tip of the General Plan Area, southwest of Inter-Garrison Road and 7th Avenue on the CSUMB campus is located within Airport Influence Area associated with the Marina Municipal Airport. The Airport Influence Area establishes the Airport Land Use Commission's jurisdictional authority, where airport operations may affect land use compatibility or necessitate restrictions on those uses. Although the General Plan Area is within the Airport Influence Area associated with the Monterey Regional Airport, the General Plan Area does not conflict with the Airport Layout Plan adopted by the FAA in 2016.

The CALUP Safety Matrix (CALUP Table 4B), sets no limits on Dwelling Units Per Acre and sets a Maximum non-residential intensity of 300 persons per acre. Prohibited uses include (1) Hazards to Flight, which include physical (e.g., tall objects), visual, and electronic forms of interference with the safety of aircraft operations, and (2) Outdoor Stadiums and similar uses with very high intensity. The

AIA generally incorporates airport disclosure notices, airspace review for structures taller than 100 feet, airspace analysis of structures approximately 50 feet or taller pursuant to 14 CFR Part 77. The majority of new land use designations proposed allow heights at or below 50 feet, with "Mixed Use High" and Employment designations allowing heights up to 60 feet. Furthermore, the airport is at an elevated location in comparison to the ground level of most development in the General Plan Area. Any developments which exceed 50 feet above the runways would be reviewed under 14 CFR Part 77 to ensure that they do not adversely interfere with aircraft operations.

While the General Plan Area is within the AIA for the airports, this area has a low aircraft accident risk level, and new development would be required to comply with federal and local regulations which ensure public safety.

Implementation of Seaside 2040 would not conflict with the 2019 Monterey Regional Airport Land Use Compatibility Plan or the Marina Municipal Airport Comprehensive Land Use Plan. Impacts would be less than significant without mitigation.

Mitigation Measure

No mitigation is required.

Significance After Mitigation

This impact would be less than significant without mitigation.

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4.11 Noise

This section analyzes noise impacts associated with the buildout of Seaside 2040. Impacts related to noise from construction, building operations, traffic, and operations are addressed.

4.11.1 Setting

a. Overview of Noise and Vibration Measurement

Noise

Noise is defined as unwanted sound that disturbs human activity. Noise level (or volume) is generally measured in decibels (dB) using the A-weighted sound pressure level (dBA). The A-weighting scale is an adjustment to the actual sound power levels to be consistent with human hearing response, which is most sensitive to frequencies around 4,000 Hertz (similar to the highest note on a piano) and less sensitive to frequencies below 100 Hertz (similar to a transformer hum).

Sound pressure level is measured on a logarithmic scale with the 0 dB level based on the lowest detectable sound pressure level that people can perceive (an audible sound that is not zero sound pressure level). Based on the logarithmic scale, a doubling of sound energy is equivalent to an increase of 3 dB, and a sound that is 10 dB less than the ambient sound level has no effect on ambient noise. Because the dB scale is based on logarithms, two noise sources do not combine in a simple additive fashion, but rather logarithmically. For example, if two identical noise sources produce noise levels of 50 dBA, the combined sound level would be 53 dBA, not 100 dBA. However, where ambient noise levels are high in comparison to a new noise source, there will be a small change in noise levels. For example, when 70 dBA ambient noise levels are combined with a 60 dBA noise sources, the resulting noise level equals 70.4 dBA.

Because of the nature of the human ear, a sound must be about 10 dB greater than the reference sound to be judged as twice as loud. In general, a 3 dBA change in community noise levels is just considered noticeable, while 1-2 dBA changes generally are not perceived. Quiet suburban areas typically have noise levels in the range of 40-50 dBA, while those along arterial streets are in the 50-60+ dBA range. Normal conversational levels are in the 60-65 dBA range, and ambient noise levels greater than 65 dBA can interrupt conversations.

Noise levels typically attenuate (drop off) at a rate of 6 dB per doubling of distance from point sources such as industrial machinery. Noise from lightly traveled roads typically attenuates at a rate of about 4.5 dB per doubling of distance. Noise from heavily traveled roads typically attenuates at about 3 dB per doubling of distance. A barrier will typically provide at least a 5 dB noise reduction when it just breaks the line of sight between a noise source and a receiver, and additional noise reduction is achieved with increased height of the barrier and/or with the use of sound absorbing material (i.e., sound blankets on the noise source side of the barrier).

In addition to the instantaneous measurement of sound levels, the duration of sound is important since sounds that occur over a long period of time are more likely to be an annoyance or cause direct physical damage or environmental stress. One of the most frequently used noise metrics that considers both duration and sound power level is the equivalent noise level (Leq). The Leq is defined as the single steady A-weighted level that is equivalent to the same amount of energy as that

contained in the actual fluctuating levels over a period of time (essentially, the average noise level). Typically, Leq is summed over a one-hour period.

The time period in which noise occurs is also important since nighttime noise tends to disturb people more than daytime noise. Two commonly used noise metrics – the Day-Night average level (Ldn) and the Community Noise Equivalent Level (CNEL) - recognize this fact by weighting hourly Leqs over a 24-hour period. The Ldn is a 24-hour average noise level that adds 10 dB to actual nighttime (10:00 P.M. to 7:00 A.M.) noise levels to account for the greater sensitivity to noise during that time period. The CNEL is identical to the Ldn, except it also adds a 5 dB penalty for noise occurring during the evening (7:00 P.M. to 10:00 P.M.). Noise levels described by Ldn and CNEL typically do not differ by more than 1 dBA. In practice, CNEL and Ldn are often used interchangeably.

Effects of Noise on People

The effects of noise on people can be placed into three categories:

- Subjective effects of annoyance, nuisance, and dissatisfaction;
- Interference with activities such as speech, sleep, and learning; and
- Physiological effects such as hearing loss or sudden startling.

These potential effects can be caused by both short- and long-term exposure to very loud noises and long-term exposure to lower levels of sound. However, there is no perfect way to measure the subjective effects of noise or the corresponding reactions of annoyance and dissatisfaction. A wide variation exists in the individual thresholds of annoyance, and different tolerances to noise tend to develop based on an individual's past experiences with noise. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise would be judged by those hearing it.

Nighttime noise can potentially affect sleep. Noise can make it difficult to fall asleep and create momentary disturbances of natural sleep patterns by causing shifts from deep to lighter stages (Los Angeles World Airports 2012). In addition, noise can awaken people from sleep, although nighttime awakenings also occur independent of noise. People commonly attain full waking consciousness two or three times per night for reasons having nothing to do with noise exposure.

The Occupational Safety and Health Administration has an established noise exposure limit of 90 dBA for 8 hours per day (or higher for shorter duration exposures) to protect an individual from hearing loss (29 Code of Federal Regulations [CFR] 1910.95). Noise levels in neighborhoods, even near a major airport or a major freeway, are not sufficiently loud to cause hearing loss (Los Angeles World Airport2012).Table 4.11-1 briefly defines measurement descriptors and other sound terminology used in this section.

Table 4.11-1 Sound Terminology

Term	Definition
Sound	A vibratory disturbance created by a vibrating object which, when transmitted by pressure waves through a medium such as air, can be detected by a receiving mechanism such as the human ear or a microphone.
Noise	Sound that is loud, unpleasant, unexpected, or otherwise undesirable.
Ambient Noise	The composite of noise from all sources near and far in a given environment.
Decibel (dB)	A unitless measure of sound on a logarithmic scale, which represents the squared ratio of sound-pressure amplitude to a reference sound pressure. The reference pressure is 20 micropascals, representing the threshold of human hearing (0 dB).
A-Weighted Decibel (dBA)	An overall frequency-weighted sound level that approximates the frequency response of the human ear.
Equivalent Noise Level (L_{eq})	The average sound energy occurring over a specified time period. In effect, L_{eq} is the steady-state sound level that in a stated period would contain the same acoustical energy as the time-varying sound that actually occurs during the same period.
Ambient Noise	The composite of noise from all sources near and far in a given environment.
Maximum and Minimum Noise Levels (L_{max} and L_{min})	The maximum or minimum instantaneous sound level measured during a measurement period.
Day-Night Level (DNL or L_{dn})	The energy average of the A-weighted sound levels occurring during a 24-hour period, with 10 dB added to the A-weighted sound levels occurring between 10:00 p.m. and 7:00 a.m. (nighttime).
Community Noise Equivalent Level (CNEL)	The energy average of the A-weighted sound levels occurring during a 24-hour period, with 5 dB added to the A-weighted sound levels occurring between 7:00 p.m. and 10:00 p.m. and 10 dB added to the A-weighted sound levels occurring between 10:00 p.m. and 7:00 a.m.

Source: Data compiled by Rincon in 2022.

Vibration

Vibration is sound radiated through the ground. The rumbling sound caused by the vibration of room surfaces is called groundborne noise. Groundborne vibration is almost exclusively a concern inside buildings and is rarely perceived as a problem outdoors. Typically, ground-borne vibration generated by human activities attenuates rapidly with distance from the source of the vibration. Groundborne vibration related to human annoyance is generally related to root mean square (RMS) velocity levels expressed in vibration decibels (VdB). However, construction-related groundborne vibration in relation to its potential for building damage can also be measured in inches per second (in/sec) peak particle velocity (PPV) (Federal Transit Administration [FTA] 2006). The vibration level experienced from construction equipment depends on the amount of vibration generated by the source equipment, the distance to sensitive receptors, and the rate of attenuation as vibration propagates through the ground. The background vibration velocity level in residential and educational areas is usually around 50 VdB (FTA 2006). The threshold of perception for humans is approximately 65 VdB. A vibration velocity level of 75 VdB is the approximate dividing line between barely perceptible and distinctly perceptible levels for many people. Most perceptible indoor vibration is caused by sources within buildings, such as operation of mechanical equipment, movement of people, or the slamming of doors. Typical outdoor sources of perceptible groundborne vibration are construction equipment in close proximity, steel-wheeled trains, and traffic on rough roads. If a roadway is smooth, the groundborne vibration from traffic is rarely perceptible. The range of interest is from approximately 50 VdB, which is the typical background

vibration velocity level, to 100 VdB, which is the general threshold where minor damage can occur in fragile buildings.

b. Sensitive Receptors

Noise exposure goals for various types of land uses reflect the varying noise sensitivities associated with those uses. Noise-sensitive land uses typically include residences, schools, hospitals, religious meetings, and recreation areas. Transportation is the primary ambient noise source in the City, and road corridors that transverse noise-sensitive residential areas include State Route 1, State Route 218, Fremont Boulevard, Del Monte Boulevard, General Jim Moore Boulevard, and Broadway Avenue (Seaside 2004).

c. Existing Noise Conditions and Sources

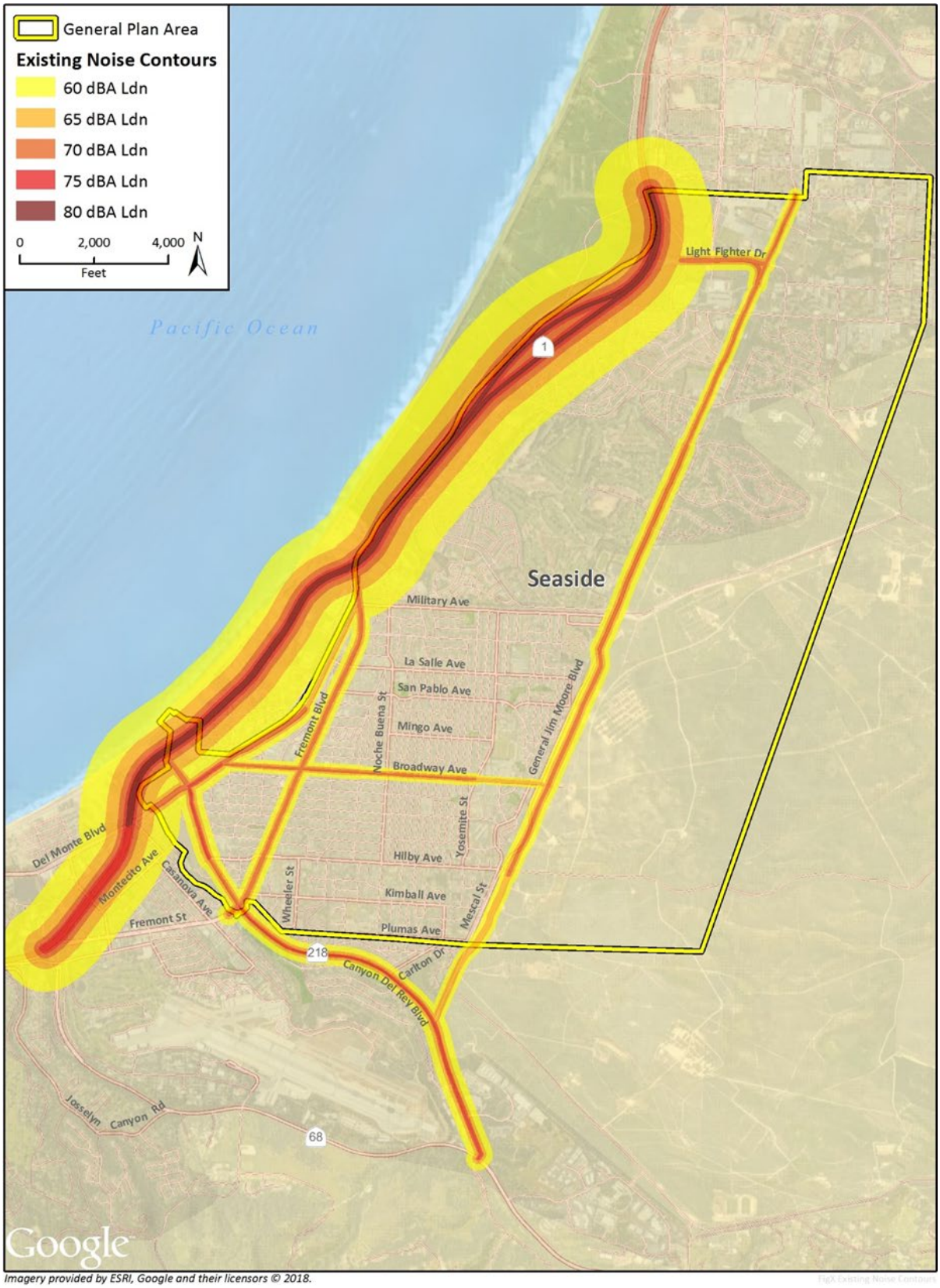
Transportation activity and stationary sources contribute to the ambient noise environment in Seaside. Modes of transportation that generate noise include automobile use, trucking, and airport operations. The highest ambient noise levels in Seaside occur along high-volume roadways including freeways, highways, and arterials, including State Route 1, State Route 218 (Canyon Del Rey Boulevard), General Jim Moore Boulevard, Broadway Avenue, Del Monte Boulevard, Lightfighter Drive, Fremont Boulevard, Gigling Road, Hilby Avenue, and Imjin Road (Seaside 2017a). Roadways with the highest traffic volumes and the highest speeds produce the highest noise levels because such roadways are characterized by a high number of individual events, which often create a sustained noise level, and because of their proximity to noise-sensitive uses.

Two airports are located in the near vicinity of the City of Seaside. The Monterey Regional Airport is located approximately 0.36-mile south and Marina Municipal Airport is located approximately 2.0 miles northeast of the City of Seaside. Flights in and out of Monterey Regional Airport approach and takeoff from the east and west of the airport, over rural areas and Monterey Bay respectively, limiting exposure to aircraft noise in Seaside (Seaside 2017a). Noise contours were developed as part of the Airport Master Plan for the Monterey Regional Airport in 2013 for existing year (2013) conditions and future year (2033) conditions (Monterey County Airport Land Use Commission 2019).[1] Based on these noise contours, no part of the City of Seaside lies within the existing or projected future 65 dBA CNEL noise contour for the airport. The Marina Municipal Airport is located sufficiently far from city limits that no part of Seaside is within the 55 dBA CNEL noise contour. Railroad activity does not currently contribute to ambient noise in the City because the railway located on the western edge of Seaside is abandoned (Seaside 2017a). Typical sources of stationary sources in the City include commercial establishments, machinery, air conditioning systems, compressors, and landscape maintenance equipment.

Figure 4.11-1 depicts average ambient noise levels from freeways, highways and arterial roadways mapped as noise contours. Roadway noise levels were calculated based on existing traffic volumes, average traffic speeds, and the percentage of truck traffic on roadways. As shown in this figure, estimated ambient noise levels in Seaside are highest adjacent to State Route 1, exceeding 80 dBA CNEL; and along Canyon Del Rey Boulevard and Del Monte Avenue between Canyon Del Rey Boulevard and Broadway Avenue, exceeding 75 dBA CNEL. Noise levels are also estimated to exceed 70 dBA CNEL on other arterial roadways in Seaside, including Fremont Boulevard, Broadway Avenue, General Jim Moore Boulevard, and Lightfighter Drive.

[1] Monterey County. 2019. Airport Land Use Compatibility Plan Update. Available at https://www.co.monterey.ca.us/home/showdocument?id=18696

Figure 4.11-1 Existing Noise Contours



These noise levels are conservative because they do not account for local factors that reduce exposure to ambient noise: intervening structures and topography between noise sources and receptors.

4.11.2 Regulatory Setting

Federal

Federal noise standards established by the U.S. Department of Housing and Urban Development (HUD) are applicable to residential projects that receive HUD assistance. These standards are presented in 24 Code of Federal Regulations (CFR) Part 51. New construction proposed in high noise areas (exceeding 65 dBA Ldn) must incorporate noise attenuation features to maintain acceptable interior noise levels. A goal of 45 dBA Ldn is set forth for interior noise levels and attenuation requirements are geared toward achieving that goal. It is assumed that with standard construction, any building will provide sufficient attenuation to achieve an interior level of 45 dBA Ldn or less if the exterior level is 65 dBA Ldn or less. Approvals in a "normally unacceptable noise zone" (exceeding 65 dBA, but not exceeding 75 dBA) require a minimum of 5 dBA of additional noise attenuation for buildings having noise sensitive uses (e.g., residences) if the day-night average is greater than 65 dBA, but does not exceed 70 dBA, or a minimum of 10 dBA of additional noise attenuation if the day-night average is greater than 70 dBA, but does not exceed 75 dBA.

There are additional federal regulations that influence the audible landscape, especially for projects where federal funding is involved. For example, the Federal Highway Administration (FHWA) requires abatement of highway traffic noise for highway projects through rules in the Code of Federal Regulations (23 CFR Part 772), the FTA, and Federal Railroad Administration (FRA). Each agency recommends thorough noise and vibration assessments through comprehensive guidelines for any highway, mass transit, or high-speed railroad projects that would pass by residential areas.

In addition, the Federal Aviation Administration (FAA) has prepared guidelines for acceptable noise exposure in its Federal Aviation Regulations Part 150 Noise Compatibility Planning program for airports. The program is aimed at balancing an airport's operational needs and its impact on the surrounding community. Its purpose is to reduce noise impacts on existing incompatible land use and to prevent the introduction of new incompatible land uses in the areas impacted by aircraft noise. It establishes standard noise methodologies and noise metrics, identifies land uses normally compatible with various levels of airport noise, and provides for voluntary development and submission of noise exposure maps and noise compatibility programs by airport operators. See discussion below regarding the Monterey Regional Airport Land Use Compatibility Plan.

State

California Building Code

California Code of Regulations Title 24, Building Standards Administrative Code, Part 2, Chapter 12, and the California Building Code codify the State noise insulation standards. These noise standards apply to new construction in California to control interior noise levels as they are affected by exterior noise sources and interior noise sources from separate areas. The regulations specify that interior noise levels shall not exceed 45 dB CNEL/L_{dn} in any habitable room, as well as specifying sound transmission class requirements for walls, floors, and ceilings around sleeping units.

California Green Building Code

California Green Building Standards Code 2019 (CALGreen) Section 5.507.4, Acoustical Control, regulates construction of non-residential uses within the 65 dBA CNEL/L_{dn} contour of an airport, freeway, expressway, railroad, industrial noise source, or other fixed source. According to Section 5.507.4.1-2 "buildings exposed to a noise level of 65 dB L_{eq}(1-hr) during any hour of operation shall employ sound-resistant assemblies as determined by a prescriptive method or performance method".

Projects may demonstrate compliance through the prescriptive method if wall and roof-ceiling assemblies exposed to the noise source meet a composite sound transmission class (STC) rating of at least 50 or a composite outdoor/indoor transmission class (OITC) rating of no less than 40, with exterior windows of a minimum STC of 40 or OITC of 30. Projects may demonstrate compliance through the performance method if wall and roof-ceiling assemblies exposed to the noise source are constructed to provide an interior noise environment that does not exceed 50 dB L_{eq}(1-hr) in occupied areas during hours of operations.

While there are no State standards for vibration, Caltrans establishes vibration risk for structures. For continuous, frequent, and intermittent vibration, Caltrans considers the architectural damage risk level to be somewhere between 0.08 and 0.5 inches per second (in/sec) peak particle velocity (PPV) depending on the type of building that is affected.

Regional

Monterey Regional Airport – Airport Land Use Compatibility Plan Update

Section 65302.3 of the Government Code requires general plans and applicable specific plans to be consistent with the amended Comprehensive Airport Land Use Plans (CALUP). The latter are intended to protect the public from the adverse effects of airport noise, to ensure that people and facilities are not concentrated in areas susceptible to high risk of aircraft accidents, and to ensure that no structures or activities encroach upon or adversely affect the use of navigable airspace (Monterey County Airport Land Use Commission 2019).

The Monterey County Airport Land Use Commission has CALUPs for two airports in the vicinity of the General Plan Area –Monterey Regional Airport and Marina Municipal Airport – and adopted an update to both CALUPs in 2019 (Monterey County Airport Land Use Commission 2019). The southern portion of Seaside, roughly south of Military Avenue, is within the Airport Influence Area associated with Monterey Regional Airport. This area establishes the Airport Land Use Commission's jurisdictional authority, where airport operations may affect land use compatibility or necessitate restrictions on those uses. However, the General Plan Area is located outside of the existing and forecasted future noise contours identified in the Monterey Regional Airport CALUP. Similarly, the General Plan Area is located outside of the existing and forecasted future noise contours associated with Marina Municipal Airport (Monterey County Airport Land Use Commission 1996, Monterey County 2019). Therefore, Seaside is not exposed to aircraft noise exceeding 65 dBA CNEL.

Local

2004 City of Seaside General Plan

The current City of Seaside General Plan was adopted by City Council Resolution 04-59 on August 5, 2004. The General Plan's Noise Element establishes policies to protect noise-sensitive land uses

from exposure to excessive ambient noise. This chapter sets normally acceptable, conditionally acceptable, and normally unacceptable ambient noise levels for proposed developments according to their land use, as shown in Table 4.11-2. When a project would be exposed to conditionally acceptable ambient noise, minor mitigation measures may be required to meet the City's noise standards. If a project would be subject to normally unacceptable ambient noise, substantially, noise mitigation would be necessary, such as construction of noise barriers and substantially building sound insulation.

Table 4.11-2 City of Seaside Noise/Land Use Compatibility Matrix

	Community Noise Equivalent Level (CNEL, dBA)					
Land Use Category	**55**	**60**	**65**	**70**	**75**	**80**
Residential – Single Family, Multifamily, Duplex	A	B	B	C	–	–
Residential – Mobile Homes	A	B	C	C	–	–
Transient Lodging – Motels, Hotels	A	B	B	C	C	–
Schools, Libraries, Churches, Hospitals, Nursing Homes	A	B	C	C	–	–
Auditoriums, Concert Halls, Amphitheaters, Meeting Halls	B	C	C	–	–	–
Sports Arenas, Outdoor Spectator Sports, Amusement Parks	A	A	B	B	–	–
Playgrounds, Neighborhood Parks	A	A	B	C	–	–
Golf Courses, Riding Stables, Cemeteries	A	A	A	B	C	C
Office and Professional Buildings	A	A	B	B	C	–
Commercial Retail, Banks, Restaurants, Theaters	A	A	A	B	B	C
Industrial, Manufacturing, Utilities, Wholesale, Service Stations	A	A	A	B	B	B
Agriculture	A	A	A	A	A	A

Land Use Acceptability Interpretation/Conditions:

A = Normally Acceptable: Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.

B = Conditionally Acceptable: New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems, will normally suffice.

C = Normally Unacceptable: New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

– = Clearly Unacceptable: New construction or development should generally not be undertaken.

Source: City of Seaside General Plan, Noise Element, 2004

In addition to the ambient noise standards shown in Table 4.11-2, the Noise Element reiterates the State's Title 24 standard of 45 dBA CNEL for interior noise in living spaces (Seaside 2004). The City applies this interior noise standard to all new hotel, motel, apartment, multi-family, and single-family residential developments.

The Noise Element also provides policy direction on noise impacts. Policy N-1.1 is to "ensure that new development and reuse/revitalization projects can be made compatible with the noise environment and existing development." Under this policy, the City requires review of any proposed development within a 60 dBA or higher noise contour for potential noise impacts and compliance with the standards in Table 4.11-2, as part of the CEQA process. In addition, General Plan Policy N-

2.1 requires the reduction of noise impacts associated with motorized vehicles, aircraft, and trains. This City implements this policy by incorporating sound walls and berms into roadway projects, maintaining designated truck routes, and updating goals and policies for consistency with updated airport master plans, among other measures. Moreover, General Plan Policy N-3.1 requires the reduction of noise impacts from land uses, activities, and businesses on noise-sensitive land uses. This would be implemented by enforcement of non-transportation noise standards contained in the Noise Element and the City's Municipal Code, hours of operation limits for commercial activities, and construction noise limits. All construction activity would be required to comply with the limits established in the City's noise regulations (Title 24 California Code of Regulations, Zoning Ordinance, and Chapter 21A of the Municipal Code).

Seaside Municipal Code

Section 17.30.060 of the Seaside Municipal Code sets maximum allowable exterior and interior noise levels at receiving land uses subject to noise generated by activities on nearby properties, as measured in terms of Community Noise Equivalent Level (which contains a 24-hour average with a nighttime noise penalty) (Seaside 2017b). These allowable noise levels vary by land use, as shown in Table 4.11-3.

Table 4.11-3 Maximum Interior and Exterior Noise Standards by Receiving Land Use

Land Use	Exterior Maximum Allowable Noise Level (dBA)	Interior Maximum Allowable Noise Level (dBA)
Residential	65	45
Mixed-Use Residential	70	45
Commercial	70	–
Office	70	50
Industrial	75	55
Public Facilities	70	50
Schools	50	50

Source: City of Seaside Municipal Code, Section 17.30.060, 2017b

If the measured ambient noise level at a site exceeds the applicable standard listed in Table 4.11-3, then it is deemed the functional standard at that site. Notwithstanding these quantitative standards, Section 17.30.060 also sets a qualitative standard for nuisance noise. This standard prohibits noise "of a duration, pitch, repetition, tone, type, or volume that would be found to be a nuisance by a reasonable person beyond the boundaries of the property where the noise is generated."

For proposed projects, Section 17.30.060 also requires that the applicant prepare an acoustical if a noise-sensitive land use is proposed, if the project may generate noise in excess of the standards in Table 4.11-3, or if the use may generate noise in outdoor areas in excess of 60 dBA.

In addition, Section 9.12.030 of the Seaside Municipal Code regulates noise from construction activity. This section prohibits "excessive, unnecessary, or unusually loud" construction activity between 7 p.m. and 7 a.m. on weekdays, and between 7 p.m. and 9 a.m. on weekends and holidays.

4.11.3 Impact Analysis

a. Methodology and Significance Thresholds

In accordance with Appendix G of the *CEQA Guidelines,* a significant noise impact would occur if new development facilitated by Seaside 2040 would result in:

1. 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, noise ordinance, or applicable standards of other agencies
2. Generation of excessive groundborne vibration or groundborne noise levels
3. 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 public airport or public use airport, expose people residing or working in the project area to excessive noise levels

Construction Noise

As noted above, construction noise is not regulated in the same manner as operational noise. This section estimates construction noise from development facilitated by the proposed 2040 General Plan based on reference noise levels reported by the FTA's *Noise and Vibration Impact Assessment* (2006) for various pieces of construction equipment. It is conservatively assumed that construction equipment typically operates as close as 50 feet from the nearest noise-sensitive receptors. Construction noise level estimates do not account for the presence of intervening structures or topography, which could reduce noise levels at receptor locations. New development facilitated by Seaside 2040 would have a significant impact if temporary construction noise during permitted daytime hours could expose noise-sensitive receptors to adverse noise levels that substantially exceed existing ambient noise levels.

Groundborne Vibration

This analysis applies the following vibration thresholds established by the FTA for disturbance of people: 65 VdB for buildings where low ambient vibration is essential for interior operations (such as hospitals and recording studios), 72 VdB for residences and buildings where people normally sleep, including hotels, and 75 VdB for institutional land uses with primary daytime use (such as churches and schools). These thresholds apply to "frequent events," which the FTA defines as vibration events occurring more than 70 times per day. The thresholds for frequent events are considered appropriate because of the scale and duration of proposed construction activity. In addition, this analysis applies the following FTA thresholds in Table 4.11-4 for potential structural damage to buildings from construction vibration.

Table 4.11-4 Vibration-related Building Damage Thresholds

Building Category	PPV (in/sec)	Approximately L_v
I. Reinforced-concrete, steel or timber (no plaster)	0.50	102
II. Engineered concrete and masonry (no plaster)	0.30	98
III. Non-engineered timber and masonry buildings	0.20	94
IV. Buildings extremely susceptible to vibration damage	0.12	90

PPV = peak particle velocity
in/sec = inches per second
L_v = root mean square velocity in decibels (VdB) re 1 micro-inch/second
Source: FTA 2006

On-site Operational Noise

On-site activities at new development facilitated by Seaside 2040 would have a significant impact if it would expose neighboring noise-sensitive land uses to noise levels exceeding the City's existing standards shown in Table 4.11-3, which are reiterated in Seaside 2040.

Increase in Traffic Noise

This analysis involves noise contour modeling to estimate noise levels associated with existing and future (year 2040) traffic on area roadways. Projected traffic volumes in the year 2040, provided by Hexagon and shown in Table 4.11-5, are used to predict future noise contours (see Appendix C).

Table 4.11-5 Seaside 2040 Traffic Volumes

		Segment Volumes	
Street	**Segment**	**2040 Baseline**	**2040 Plus Project**
Broadway	East of Del Monte	16,094	17,804
	West of Fremont	16,507	18,248
	East of Fremont	18,019	20,023
	West of Noche Buena	15,543	17,696
	East of Noche Buena	15,740	17,592
	West of Gen Jim Moore Blvd	11,816	14,219
Canyon Del Rey	East of SR-1	15,392	15,131
	West of Del Monte	17,907	17,838
	East of Del Monte	19,456	20,066
	West of Fremont	11,326	10,963
	East of Fremont	15,948	15,656
	West of Gen Jim Moore Blvd	12,463	12,352
	East of Gen Jim Moore Blvd	19,817	20,607
Del Monte Blvd	South of Canyon Del Rey	42,151	43,212
	North of Canyon Del Rey	38,801	40,002
	South of Broadway	29,500	30,200
	North of Broadway	22,909	22,434
	South of Fremont	12,135	12,026
Fremont Blvd	South of Canyon Del Rey	24,503	24,779
	North of Canyon Del Rey	19,497	19,630
	South of Broadway	16,284	16,641
	North of Broadway	17,972	17,865
	South of Del Monte	15,968	16,138
Gen Jim Moore Blvd	North of Canyon Del Rey to Hilby	15,610	17,034
	North of Hilby to Broadway	19,128	21,407
	North of Broadway to San Pablo	27,430	32,494
	South of Coe/Eucalyptus	28,326	34,753
	North of Coe/Eucalyptus	28,851	35,490
	South of Lightfighter	16,918	21,570
	North of Lightfighter	16,286	18,640

Street	Segment	Segment Volumes	
		2040 Baseline	2040 Plus Project
Lightfighter Dr	West of Gen Jim Moore Blvd	21,704	24,088
	West of Second Avenue	21,715	23,259

Source: Hexagon Transportation Consultants, Inc. 2022

Existing and cumulative future noise contours are compared to assess the increase in noise-sensitive receptors' exposure to traffic noise during buildout of the proposed General Plan. Proposed policies are then evaluated for the ability to protect noise-sensitive receptors from excessive increases in ambient noise.

Exposure of New Noise-sensitive Land Uses to Noise

Projected noise contours for the year 2040 were evaluated to estimate future exposure to ambient traffic noise. Estimated noise levels were compared to the City's noise compatibility standards shown in Table 4.11-1 and Table 4.11-2, which are reiterated in Seaside 2040. This section also analyzes the exposure of new noise-sensitive land uses to aircraft noise associated with flights to and from Monterey Regional Airport and Marina Municipal Airport.

b. Project Impacts and Mitigation Measures

Threshold 1: 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?

Impact N-1 CONSTRUCTION OF INDIVIDUAL PROJECTS FACILITATED BY SEASIDE 2040 WOULD TEMPORARILY PRODUCE HIGH NOISE LEVELS, POTENTIALLY AFFECTING NEARBY NOISE-SENSITIVE LAND USES. OPERATION OF DEVELOPMENT FACILITATED BY SEASIDE 2040 WOULD ALSO INCREASE ON-SITE NOISE LEVELS AND TRANSPORTATION NOISE. IMPACTS WOULD BE LESS THAN SIGNIFICANT WITH MITIGATION.

Construction

Noise from individual construction projects carried out under Seaside 2040 would temporarily increase ambient noise levels on and adjacent to individual construction sites, including noise from construction traffic. Since there are no specific plans or time scales for individual development projects that would be carried out under the proposed project, it is not possible to determine exact noise levels, locations, or time periods for construction of such projects. However, sites adjacent to areas where a higher density of future development/redevelopment is anticipated to occur would be exposed to the highest levels of construction noise for the longest duration. New development would result from conversion of uses in response to market demand, as well as increased density in mixed-use corridors along Broadway Avenue and Fremont Boulevard, a new Campus Town adjacent to CSUMB, a new regional mixed-use center in the Main Gate area east of State Route 1, an expanded auto mall south of Lightfighter Drive, and new mixed use housing neighborhoods and mixed use in Seaside East. Buildout of the General Plan would result in construction activity over the life of Seaside 2040 (the next 20 plus years).

Construction activities that would generate noise include construction traffic and hauling, demolition, and reconstruction. Table 4.11-6 illustrates typical noise levels associated with various common types of construction equipment at a distance of 50 feet, which is representative of the exposure of adjacent noise-sensitive receptors to construction noise. Noise from stationary sources of equipment typically drops off at a rate of about 6 dBA per doubling of distance; therefore, noise levels would be about 6 dBA lower than shown in the table at 100 feet from source construction site and 12 dBA lower at a distance of 200 feet from source construction site.

Table 4.11-6 Typical Noise Levels for Construction Equipment

	Estimated Noise Levels at Nearest Sensitive Receptors (dBA Leq)		
Equipment	**50 feet**	**100 feet**	**200 feet**
Air Compressor	81	75	69
Backhoe	80	74	68
Concrete Mixer	85	79	73
Dozer	85	79	73
Grader	85	79	73
Jackhammer	88	82	76
Paver	89	83	77
Saw	76	70	64
Scraper	89	83	77
Truck	88	82	76

Source: FTA 2006.

As shown in Table 4.11-6, noise levels from typical individual pieces of construction equipment could approach 90 dBA Leq at adjacent land uses located approximately 50 feet away from an active construction site. Construction noise would exceed ambient noise levels and may temporarily disturb people at neighboring properties.

Section 9.12.030 of the Seaside Municipal Code would restrict the timing of construction activities authorized by a City permit to the hours of 7 a.m. to 7 p.m. Monday through Friday and 9 a.m. to 7 p.m. on weekends and holidays (City of Seaside 2017b). Implementation of and adherence to the following policies in Seaside 2040 would ensure continued application of the City's existing timing restrictions on construction activity, or modification of those standard restrictions as necessary to protect noise-sensitive receptors.

Goal N-1: Appropriate noise environments that are compatible with existing and proposed land uses based on guidelines provided in the Noise Element.

Intent: To regulate the noise environment and to protect the health and welfare of Seaside residents and visitors. Some land uses are more sensitive to noise than others. Elevated noise levels affecting sensitive land uses can be disruptive and adverse to quality of life for residents and visitors. To achieve this, the City will ensure that the noise environment is appropriate for proposed land uses and that noise sensitive land uses are not exposed to high noise levels.

Policies: **Noise sensitive land uses.** Protect noise-sensitive land uses or sensitive receptors, including residences, schools, hospitals, libraries, established religious gatherings, convalescent homes, community open spaces and recreation areas, and sensitive wildlife habitat on former Fort Ord lands, from high noise levels emitted by both existing and future noise sources.

Enforcement of stationary noise standards. Review and enforce the noise limits and construction and operation regulations contained in this Noise Element and the City's Municipal Code.

Implementation of Seaside 2040 policies would minimize construction noise; however, construction noise impacts would continue to be potentially significant, and Mitigation Measure N-1 is required.

Operation

On-Site Operational Noise

Operation of development facilitated by Seaside 2040 would introduce on-site activities that generate operational noise and would redesignate existing land uses to promote infill development and new development on former Fort Ord lands, leading to a growth in vehicle trips on roadways.

Typical noise sources at new residential and mixed-use development would include rooftop ventilation and heating systems, and delivery and hauling systems. New industrial development could introduce noise associated with loading activity and industrial equipment. Additionally, Seaside 2040 would facilitate the development of new residential and other noise-sensitive land uses that could be exposed to ambient noise exceeding normally acceptable ranges. Table 4.11-2 shows the City's normally acceptable exposure levels for new development, which are reiterated in Seaside 2040.

New noise-sensitive uses would include residential development, especially in the following areas of Seaside:

- Mixed-use corridors along Broadway Avenue and Fremont Boulevard
- Housing in the Campus Town Specific Plan area along Lightfighter Drive
- A new regional mixed-use center in the Main Gate area immediately east of State Route 1
- New mixed-use housing neighborhoods and mixed use in Seaside East, to the east of General Jim Moore Boulevard

Noise generated by on-site activities at new development would be subject to the City's maximum allowable exterior and interior noise levels at receiving land uses, as shown in Table 4.11-3, pursuant to Section 17.30.060 of the Seaside Municipal Code. As shown in Figure 4.11-1, predicted noise contours for the year 2040 near these development areas would reach at least 75 dBA Ldn within approximately 150 feet of the centerline of State Route 1, and at least 70 dBA L_{dn} along Broadway Avenue, Fremont Boulevard, Lightfighter Drive, and General Jim Moore Boulevard. However, these noise contours would be limited to properties directly adjacent to the arterial roadways; traffic noise would decrease at greater distances from motor vehicle activity.

New single-family and multi-family residential development would be conditionally acceptable where ambient noise reaches 60-70 dBA CNEL, as would new office and professional development exposed to 65-75 dBA CNEL, and new commercial retail, bank, restaurant, and theater development exposed to 70-80 dBA CNEL. In conditionally acceptable areas, the City would require a detailed

analysis of noise reduction requirements and inclusion of needed noise insulation features in the design. New residences in normally unacceptable areas of at least 70 dBA CNEL, such as adjacent to high-volume arterial roadways, also would be subject to these existing standards. All residential development facilitated by Seaside 2040 also would be subject to the City's standard of 45 dBA CNEL for interior noise in living spaces and would be required to comply with the California Building Code which requires noise insulation to achieve this standard.

Seaside 2040 would include policies intended to minimize the exposure of new development to ambient noise:

Goal N-1: Appropriate noise environments that are compatible with existing and proposed land uses based on guidelines provided in the Noise Element.

Intent: To regulate the noise environment and to protect the health and welfare of Seaside residents and visitors. Some land uses are more sensitive to noise than others. Elevated noise levels affecting sensitive land uses can be disruptive and adverse to quality of life for residents and visitors. To achieve this, the City will ensure that the noise environment is appropriate for proposed land uses and that noise sensitive land uses are not exposed to high noise levels.

Policies: **Noise sensitive land uses.** Protect noise-sensitive land uses or sensitive receptors, including residences, schools, hospitals, libraries, established religious gatherings, convalescent homes, community open spaces and recreation areas, and sensitive wildlife habitat on former Fort Ord lands, from high noise levels emitted by both existing and future noise sources.

Enforcement of stationary noise standards. Review and enforce the noise limits and construction and operation regulations contained in this Noise Element and the City's Municipal Code.

Non-transportation related noise. Encourage reduction of stationary noise impacts from commercial and industrial land uses, activities, events, and businesses on noise-sensitive land uses.

Limit on hours of operation. Limit delivery or service hours for stores and businesses with loading areas, docks, or trash bins that front, side, border, or gain access on driveways next to residential and other noise sensitive areas, such as residences, schools, hospitals, religious meeting spaces, and recreation areas.

Goal N-2: Minimal transportation-related noise impacts.

Intent: To minimize transportation-related noise, which is the primary source of noise in Seaside. Transportation noise increases with increased development and can be of concern due to the high number of individual events. This goal seeks to reduce the impact transportation noise has in Seaside, particularly on noise sensitive land uses.

Policy: **Noise enforcement.** Promptly investigate noise complaints and abate any noise impacts associated with commercial and other activities.

Implementation of the above policies and goals in Seaside 2040 would comply with citywide goals for noise, enforcement of the City's stationary noise standards, and limits on hours of commercial operation next to noise-sensitive land uses. These policies would minimize disturbance to nearby

noise-sensitive land uses. Therefore, on-site operational noise at new development facilitated by Seaside 2040 would have a less than significant impact.

Transportation Noise

Seaside 2040 would facilitate infill development and new development on former Fort Ord lands, leading to a growth in vehicle trips on roadways. By generating new vehicle trips, new development would incrementally increase the exposure of land uses along roadways in Seaside to traffic noise. It is anticipated that full buildout of Seaside 2040, over a period of 20 plus years, would add up to 1,665 new single-family residences, 2,385 new multi-family housing units, and approximately 2.7 million square feet of employment space. The increase in roadway activity would result in greater ambient noise. Figure 4.11-1 shows the estimated noise contours from traffic activity in the year 2040, under full buildout of Seaside 2040. Future rail noise potentially generated by TAMC's proposed Monterey Branch Rail Light Rail is qualitatively acknowledged but was not quantitatively modeled because the addition of rail activity and its frequency is uncertain and speculative. Similar to the City's existing noise contours, the highest estimated ambient noise levels would remain greater than 80 dBA Ldn along State Route 1 from Del Monte Boulevard to north of Lightfighter Drive; greater than 75 dBA Ldn at Del Monte Boulevard from Broadway Avenue to the southern city limits, and at Canyon Del Rey Boulevard; and greater than 70 dBA Ldn at other portions of Del Monte Boulevard, Fremont Boulevard, Broadway Avenue, General Jim Moore Boulevard, and Lightfighter Drive. These noise levels are a conservative estimate of future noise levels because they do not account for site-specific conditions that may reduce exposure to ambient noise, such as intervening structures and topography between noise sources and receptors. Increases in ambient noise would have the greatest effect on noise-sensitive uses, such as residences and schools.

Seaside 2040 would include the following policies and implementation programs intended to reduce exposure to traffic and rail noise.

Goal N-2: Minimal transportation-related noise impacts.

Intent: To minimize transportation-related noise, which is the primary source of noise in Seaside. Transportation noise increases with increased development and can be of concern due to the high number of individual events. This goal seeks to reduce the impact transportation noise has in Seaside, particularly on noise sensitive land uses.

Policies: **Transportation-related noise.** Work with Caltrans and other agencies to enforce and reduce noise impacts associated with motor vehicles.

Traffic and truck noise. Regulate traffic flow to enforce speed limits to reduce traffic noise. Periodically evaluate and enforce established truck and bus routes to avoid noise impacts on sensitive receptors.

Noise reduction strategies. Research and implement innovative noise reduction measures, such as asphalt rubber and living "green" noise barriers, to reduce noise on high volume streets in Seaside.

Noise barriers along future rail. Should passenger rail service be initiated, the City shall work with TAMC to address noise and vibration considerations adjacent to the rail corridor.

Implementation Element Programs

Programs: **N 4, Reduce motor vehicle noise.** The City should coordinate with Caltrans to evaluate the exposure of existing and future residences in Seaside to noise generated by motor vehicle activity on State Route 1 and Canyon Del Rey Boulevard/State Route 218. As appropriate and feasible to protect residents from excessive traffic noise, the City should encourage the construction of aesthetically pleasing sound barriers on Caltrans facilities.

N 5, Reduce rail noise. If TAMC initiates passenger rail service in Seaside, the City should coordinate with TAMC to encourage the designation of "quiet zones" along the rail corridor adjacent to land uses that are sensitive and/or the installation of aesthetically pleasing sound barriers to reduce the exposure of nearby residences to rail noise. In addition, the City should coordinate with TAMC to encourage the design and use of trains that reduce groundborne vibration.

Implementation of the policy for transportation-related noise would encourage the attenuation of highway noise (e.g., through installation of sound barriers). On City streets, implementation of the proposed policy for traffic and truck noise would restrict the geographic extent of the loudest truck noise by evaluating and enforcing designated truck routes, and by regulating traffic flow. Therefore, with implementation of Seaside 2040 policies and implementation programs, impacts related to transportation noise would be less than significant.

Mitigation Measures

The following mitigation measure is proposed to reduce potential impacts from increased construction noise to the extent feasible.

N-1 Construction Noise Policies and Implementation Programs

The following Policy shall be added to the Noise Element under Goal N-1:

Construction noise and vibration. Protect noise sensitive land uses or sensitive receptors from excessive noise and vibration resulting from construction, including mobile and stationary equipment.

The following Implementation Program shall be added to the Implementation Chapter:

Construction Noise Control Measures. The following noise control measures should be included as standard conditions of approval for projects involving construction:

- Properly muffle and maintain all construction equipment powered by internal combustion engines.
- Prohibit unnecessary idling of combustion engines.
- Locate all stationary noise-generating construction equipment such as air compressors as far as practical from existing nearby residences and other noise-sensitive land uses. Such equipment should also be acoustically shielded.
- Select quiet construction equipment, particularly air compressors, whenever possible. Fit motorized equipment with proper mufflers in good working order.
- Residences adjacent to project sites shall be notified in advance by writing of the proposed construction schedule before construction activities commence.

- The project applicant should designate a "noise disturbance coordinator" responsible for responding to any local complaints about construction noise. The disturbance coordinator shall determine the cause of any noise complaint (e.g., starting too early, bad muffler, etc.) and should require that reasonable measures be implemented to correct the problem. A telephone number for the disturbance coordinator should be posted at the construction site.

Significance After Mitigation

Construction noise impacts would be reduced through the requirements of policies and implementation programs provided in Mitigation Measure N-1. These policies and programs would reduce construction noise impacts to a less than significant level, through more stringent construction equipment requirements and the provision of noise disturbance coordinators at construction sites. With implementation of this mitigation measure, construction noise impacts would be less than significant.

Operational noise impacts would be less than significant without mitigation.

Threshold 2:	Would the project result in generation of excessive groundborne vibration or groundborne noise levels?

Impact N-2 CONSTRUCTION OF INDIVIDUAL PROJECTS FACILITATED BY SEASIDE 2040 COULD TEMPORARILY GENERATE GROUNDBORNE VIBRATION, POTENTIALLY AFFECTING ADJACENT SENSITIVE LAND USES. IMPACTS WOULD BE LESS THAN SIGNIFICANT WITH MITIGATION.

Construction

The construction of individual projects facilitated by Seaside 2040 could intermittently generate strong vibration on and adjacent to construction sites. Typical construction equipment that produce vibration include vibratory rollers for paving, caisson drills, bulldozers, loaded trucks, and jackhammers. Table 4.11-7 shows estimated vibration levels from the use of typical construction equipment, based on reference levels provided by the FTA at a distance of 25 feet from the source.

Table 4.11-7 Vibration Levels for Typical Construction Equipment

	Estimated VdB at Nearest Sensitive Receptors			
Equipment	**25 Feet**	**50 Feet**	**100 Feet**	**200 Feet**
Caisson Drilling	87	80	74	67
Jackhammer	79	72	66	59
Large Bulldozer	87	80	74	67
Loaded Trucks	86	79	73	66
Small Bulldozer	58	51	45	38
Vibratory Roller	94	87	81	74

Source: FTA 2006

Based on Table 4.11-7, noise-sensitive receptors could experience the strongest vibration during the use of vibratory rollers, caisson drills, and large bulldozers at neighboring construction sites. Vibration levels from vibratory rollers could approach 94 VdB at a distance of 25 feet from the source and 87 VdB at 50 feet.

Compliance with Section 9.12.030 of the Seaside Municipal Code would restrict the timing of construction activities authorized by a City permit to the hours of 7 a.m. to 7 p.m. Monday through Friday and 9 a.m. to 7 p.m. on weekends and holidays (City of Seaside 2017b). This requirement for new development would protect residents from exposure to vibration during normal sleeping hours. Therefore, vibration would not exceed the FTA's thresholds of 72 VdB for residences and buildings where people normally sleep. However, vibration levels during daytime construction activity could potentially exceed the FTA threshold of 75 VdB for institutional land uses like schools, churches, or offices with primary daytime use. The use of vibratory rollers also could generate vibration levels that equal or exceed the FTA's thresholds of 90 VdB for buildings extremely susceptible to vibration damage and 94 VdB for non-engineered timber and masonry buildings. This impact is potentially significant, and mitigation is required.

Operation

Residential, commercial, industrial, and retail land uses facilitated by Seaside 2040 would not involve substantial vibration sources associated with operation. Therefore, 2040 General Plan operational groundborne vibration and noise impacts would be less than significant.

Mitigation Measures

In addition to Mitigation Measure N-1, the following mitigation measure is proposed to reduce potential impacts from increased construction noise to the extent feasible.

N-2 Construction Vibration Implementation Programs

The following Implementation Programs shall be added to the Implementation Chapter:

Construction Vibration Control Measures. The following measures to minimize exposure to construction vibration should be included as standard conditions of approval for applicable projects involving construction:

- Avoid the use of vibration-intensive construction equipment that generate 94 VdB or 0.20 PPV at 25 feet or greater (such as vibratory rollers) within 50 feet of buildings that are extremely susceptible to damage from vibration or non-engineered timber and masonry buildings, as defined by the FTA (2006 Transit Noise and Vibration Impact Assessment).
- Schedule construction activities with the highest potential to produce vibration to hours with the least potential to affect nearby institutional, educational, and office uses that the Federal Transit Administration identifies as sensitive to daytime vibration.

Construction Vibration Notification. Developers should notify neighbors of scheduled construction activities that would generate vibration.

Significance After Mitigation

Construction vibration impacts would be reduced by Mitigation Measures N-1 and N-2. Implementation of the "construction noise and vibration" policy, pursuant to Mitigation Measure N-1, would reduce vibration exposure to sensitive land uses and receptors, and implementation of Implementation Programs "Construction Vibration Control Measures" and "Construction Vibration Notification," pursuant to Mitigation Measure N-2, would both minimize the amount of construction vibration experienced at historic and sensitive land uses, and notify affected residents of possible

vibration noise. Mitigation Measures N-1 and N-2 would reduce impacts to a less than significant level.

Operational vibration impacts would be less than significant without mitigation.

Threshold 3:	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?

Impact N-3 SEASIDE 2040 WOULD FACILITATE NEW DEVELOPMENT THAT WOULD BE EXPOSED TO AIRCRAFT NOISE ASSOCIATED WITH MONTEREY REGIONAL AIRPORT AND MARINA MUNICIPAL AIRPORT. HOWEVER, NOISE-SENSITIVE LAND USES IN SEASIDE WOULD BE LOCATED OUTSIDE OF NOISE CONTOURS ASSOCIATED WITH NEARBY AIRPORTS. IMPLEMENTATION OF POLICIES IN SEASIDE 2040 WOULD PROVIDE FOR CONSISTENCY WITH FUTURE CHANGES TO AIRPORT LAND USE PLANNING DOCUMENTS. THEREFORE, THE IMPACT RELATED TO AIRCRAFT NOISE WOULD BE LESS THAN SIGNIFICANT.

As discussed in Section 4.11.1, *Setting*, two airports are located in the near vicinity of the City of Seaside. The Monterey Regional Airport is located approximately 0.36-mile south and Marina Municipal Airport is located approximately 2.0 miles northeast of the City of Seaside. However, the City lies outside the existing and projected future noise contours associated with both airports (Monterey County Airport Land Use Commission 1996, 2019; County of Monterey 2019). While new development facilitated by Seaside 2040 would be exposed to aircraft noise, the City's location outside noise contours associated with nearby airports indicates that noise exposure to sensitive land uses would be within acceptable levels. Seaside 2040 also includes the following two policies related to noise from aircraft operations.

Goal N-2: Minimal transportation-related noise impacts.

Intent: To minimize transportation-related noise, which is the primary source of noise in Seaside. Transportation noise increases with increased development and can be of concern due to the high number of individual events. This goal seeks to reduce the impact transportation noise has in Seaside, particularly on noise sensitive land uses.

Policies: **Coordination with Airport Land Use Commission.** Work with the Monterey County Airport Land Use Commission, the Marina Municipal Airport, and Monterey Regional Airport to monitor aircraft noise and make future updates to noise contours in Seaside.

Airport Master Plan. Provide input on any update to the Monterey Peninsula Airport Master Plan, County Airport Land Use Plan, or California Airport Land Use Planning Handbook. Review and revise as necessary the goals, policies, and noise standards within the General Plan Noise Element to correspond with updates to the Airport Master Plan.

Implementation of these policies would provide for City input on future updates to noise contours associated with nearby airports and revisions to the City's Noise Element as necessary for consistency with updates to airport land use planning documents. Therefore, Seaside 2040 would ensure consistency with future changes to airport noise contours and land use policies. Impacts related to aircraft noise would be less than significant.

Mitigation Measures

No mitigation is needed.

Significance After Mitigation

This impact would be less than significant without mitigation.

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4.12 Population and Housing

This section evaluates the potential population growth and potential displacement of housing impacts associated with implementation of Seaside 2040.

4.12.1 Setting

Population, housing, and employment data are available on a city, county, regional, and state level. This EIR uses data collected and provided at the city and county level in an effort to focus the analysis specifically on the City of Seaside.

a. Population

As shown in Table 4.12-1, the City of Seaside's estimated 2022 population is 32,068 people (California Department of Finance [DOF] 2022). Table 4.12-1 also shows population growth in the City since census year 2000. Since its incorporation in 1954, the City of Seaside has expanded at a slower rate than Monterey County and has remained generally stable. The City's population decreased by 3.2 percent between 2000 and 2022 compared to a 7.9 percent population increase in the County over the same period of time. Based on DOF data, the City's population generally increased from 2000 to 2017 with declines in population from 2002 to 2004, from 2005 to 2007, and from 2015 to 2016. From 2000 through 2007, the population decreased by 3.5 percent, whereas between 2007 and 2017, the City experienced a 6.9 percent population growth rate. Between 2017 and 2022, the City's population decreased by approximately 5 percent. The City's 2022 population of 34,165 people represents 7.4 percent of Monterey County's total population of 433,716 people. Seaside is the second most populated City of the twelve cities in Monterey County.

Table 4.12-1 Population Growth in Seaside

Year	Population	Growth Percentage
2000	33,097	–
2001	33,357	0.8%
2002	33,756	1.2%
2003	33,337	-1.2%
2004	32,927	-1.2%
2005	33,037	0.3%
2006	32,344	-2.1%
2007	31,954	-1.2%
2008	32,657	2.2%
2009	32,660	<0.1%
2010	33,025	1.1%
2011	32,910	-0.3%
2012	33,407	1.5%
2013	33,644	0.7%

Year	Population	Growth Percentage
2014	33,747	0.3%
2015	34,172	1.3%
2016	34,088	-0.2%
2017	34,295	0.6%
2018	34,382	0.3%
2019	33,074	-3.8%
2020	32,708	-1.1%
2021	31,113	-4.8%
2022	32,068	3.1%

Sources: DOF 2012a, 2020, 2022

b. Housing

A household consists of all the people who occupy a housing unit (U.S. Census Bureau 2018). A household differs from a dwelling unit because the number of dwelling units includes both occupied and vacant dwelling units. Not all of the population lives in households. A portion lives in group quarters, such as board and care facilities, while others are homeless, in at least a temporary capacity.

Housing Units

Table 4.12-2 shows the growth in number of housing units in Seaside for the years 2000, 2010, and 2022. Between 2000 and 2010, approximately 133 housing units were removed from the City's housing inventory, an average yearly decrease in the housing stock of approximately 13 housing units. Between 2010 and 2022, 43 housing units were added to the City's housing inventory, an average yearly increase of approximately six units.

Table 4.12-2 Household Units in Seaside

	Single Family Homes		Multifamily Homes					
Year	Detached	Attached	Two to Four	Five Plus	Mobile Homes	Vacancy Rate	Total Household Units	Growth Percentage
2000	8,386[1]		2,187[2]		432	10.7%	11,005	-
2010	6,779	1,265	877	1,368	583	7.2%	10,872	-1.2% (from 2000)
2022	6,732	1,261	895	1,353	577	5.8%	10,818	-0.5% (from 2010)

[1]Single Detached and Attached are provided as a combined "Single" number by the DOF for the years 2000 through 2009.

[2]Two to Four and Five Plus categories are provided as a combined "Multiple" number by the DOF for the years 2000 through 2009.

Sources: DOF2012b, 2021, 2022

Household Size

Small households (one to two persons per household [pph]) traditionally reside in units with zero to two bedrooms; family households (three to four pph) normally reside in units with three to four bedrooms. Large households (five or more pph) typically reside in units with four or more bedrooms. However, the number of units in relation to the household size may also reflect preference and economics. Many small households obtain larger units, and some larger households live in small units for economic reasons.

Table 4.12-3 compares the size of households in the City of Seaside and Monterey County in 2000, 2010, and 2022. As shown therein, the average household size in Seaside decreased slightly from 3.21 pph in 2000 to 2.98 pph in 2022. The average household size in the County increased from 3.14 pph in 2000 to 3.15 pph in 2010 and 3.17 in 2020, and then decreased slightly to 3.12 pph in 2022. Between 2000 and 2010, the City has maintained a higher average household size than the County; however, in 2020 and continuing into 2022, the county-wide average household size surpassed that of the City.

Table 4.12-3 Household Size in Seaside and Monterey County

	City of Seaside		Monterey County	
Year	Household Size (pph)	Growth Percentage	Household Size (pph)	Growth Percentage
2000	3.21	–	3.14	–
2010	3.16	-1.6% (from 2000)	3.15	0.3% (from 2000)
2020	3.04	-4.0% (from 2010)	3.17	0.6% (from 2010)
2022	2.98	-1.9% (from 2020)	3.12	-1.6% (from 2020)

Sources: DOF 2012b, 2021, 2022

c. Employment-Housing Ratio

The employment-household ratio in a jurisdiction is an overall indicator of job availability within the area. A balance of jobs and housing is considered beneficial as it has the potential to provide residents an opportunity to work locally and avoid employment commutes to other places in the region. As shown in Table 4.12-4, the existing (2022) employment in Seaside is estimated to be 10,476. Based on this employment estimate and the City's estimated households, the City's jobs-housing ratio was approximately 1 job per household in 2022. As the County had approximately 243,015 jobs in 2022 (Association of Monterey Bay Area Governments 2022), Seaside's jobs-housing ratio was less than the County's jobs-housing ratio of 1.6 jobs per household in 2022, thereby resulting in Seaside residents having to travel outside the City for jobs.

d. Projections

Table 4.12-4 presents 2010, 2020, and 2040 estimates and projections regarding population, housing, and employment for the City of Seaside. Table 4.12-4 also displays two different 2040 projections for the City of Seaside. The first, named "2040 General Plan Growth Projections," was provided by Raimi + Associates for the anticipated 2040 conditions under the proposed General Plan, which estimates the 2040 population growth with the assumption of 3.1 people per housing unit consistent with Association of Monterey Bay Area Governments (AMBAG) projections. The second, named "AMBAG 2040," is based on data provided from AMBAG's *2022 Regional Growth Forecast* (RGF) (AMBAG 2022), which is a growth forecast for the Counties of Monterey, Santa Cruz,

and San Benito and is further utilized under Section 4.12.3, *Impact Analysis*. The projections for anticipated 2040 conditions estimate that the City's population will grow by 12,555 residents, and there will be an estimated addition of 4,050 housing units and 4,604 jobs compared to 2010 levels.

Table 4.12-4 Seaside Population, Housing, and Employment

	2010[1]	2020[2]	2040 General Plan Growth Projections[1]	AMBAG 2040[1]	2010-2040 Change[1]
Population	33,742	32,708	46,297	36,582	12,555
Housing (# of units)	10,093	10,801	14,143	12,604	4,050
Employment	7,790	10,476	12,394	11,290	4,604
Jobs/Household Ratio	0.8	0.9	0.9	0.8	0.1

[1] Raimi + Associates 2018

[2] DOF 2021, AMBAG 2022b

4.12.2 Regulatory Setting

a. State

State Housing Element Statutes

State housing element statues (Government Code Sections 65580-65589.9) mandate that local governments adequately plan to meet the existing and projected housing needs of all economic segments of the community. The law recognizes that in order for the private market to adequately address housing needs and demand, local governments must adopt land use plans and regulatory systems that provide opportunities for, and do not unduly constrain, housing development. As a result, State housing policy rests largely upon the effective implementation of local general plans and in particular, housing elements. Additionally, Government Code §65588 dictates that housing elements must be updated at least once every eight years.

b. Regional

AMBAG Regional Housing Needs Assessment

California's Housing Element law requires that each county and city develop local housing programs to meet their "fair share" of future state-wide housing growth needs for all income groups, as determined by the California Department of Finance (DOF). The regional councils of government, including AMBAG, are then tasked with distributing the State-projected housing growth need for their region among their city and county jurisdictions by income category. This fair share allocation is referred to as the Regional Housing Needs Assessment (RHNA) process. The RHNA represents the minimum number of housing units each community is required to plan for through a combination of: 1) zoning "adequate sites" at suitable densities to provide affordability; and 2) housing programs to support production of below-market rate units. Seaside's allocation from the 2023-2031 RHNA, distributed among the four income categories is shown in Table 4.12-5.

Table 4.12-5 Regional Housing Needs Assessment 2023 – 2031

	City of Seaside		Monterey County	
Income Group	**RHNA Allocation**	**Percent of Total**	**RHNA Allocation**	**Percent of Total**
Very Low	86	14%	4,412	22%
Low	55	9%	2,883	14%
Moderate	156	25%	4,028	20%
Above Moderate	319	52%	8,972	44%
Total	**616**		**20,295**	

Note: Totals may not add up due to rounding.

Source: Association of Monterey Bay Area Governments (AMBAG) 2022 a

As noted under Government Code 65589.5(a), the legislature has concluded that "the lack of housing, including emergency shelters, is a critical problem that threatens the economic, environmental, and social quality of life in California." As further acknowledged by the legislature, the lack of housing can result in…. reduced mobility, urban sprawl, excessive commuting, and air quality deterioration. The General Plan contains state mandated policies and analysis to ensure that the City "facilitate[s] the improvement and development of housing to make adequate provision for the housing needs of all economic segments of the community" (Gov. Code § 65580(d)). More specifically, the Legislature's stated intent is "to assure that counties and cities recognize their responsibilities in contributing to the attainment of the state housing goal…to assure that counties and cities will prepare and implement housing elements which…will move toward attainment of the state housing goal" (Gov. Code § 65581).

Association of Monterey Bay Area Governments

As discussed in Section 4.10, *Land Use and Planning,* the City of Seaside is located within the AMBAG planning area. AMBAG functions as the Metropolitan Planning Organization (MPO) for Monterey County, Santa Cruz County, and San Benito County and the towns and cities therein, and is responsible for implementing the Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS; *Moving Forward*). *Moving Forward* is a long-range integration transportation and land-use plan for the Monterey Bay area through 2045. AMBAG projections for the Plan Area consider regional, State, and national economic trends and planning policies.

Transportation Authority for Monterey County

The Transportation Authority for Monterey County (TAMC) serves as the coordinating and advocacy agency for transportation funding for Monterey County. TAMC acts as the countywide planning and programming agency for transportation related issues. TAMC has a lead role in transportation needs assessment and improvements and is active in securing funds, providing project oversight, and initiating long term planning. To comply with State and federal requirements for local transportation agencies to establish transportation plans that can feed into the larger Metropolitan Transportation Plan (MTP), TAMC prepared Monterey County's Regional Transportation Plan (RTP) in 2022. The Monterey County RTP is based on regional growth assumptions included in the 2022 AMBAG Regional Growth Forecast. That forecast includes population, employment and housing unit projections over a 20-year planning horizon to the year 2045 (TAMC 2022).

Seaside Housing Element

The Housing Element is one of the seven State-mandated elements of the General Plan. It is the primary planning guide for local jurisdictions to identify and prioritize the housing need of the city and determine ways to best meet these needs, while balancing community objectives and resources. The City adopted the 2015-2023 Housing Element in October 2019 as part of the State's fifth Housing Element planning cycle. The updated 2015-2023 Housing Element includes a detailed technical analysis of housing needs, resources, and constraints; and a review of the current Housing Element goals, policies, and programs, which were used to develop new policies and implementation programs. The City's 2023-2031 Housing Element Update is underway as a separate process from Seaside 2040, and is anticipated to be adopted by the end of 2023.

The City's Housing Element identifies and analyzes existing and projected housing needs in order to preserve, improve, and develop housing for all economic segments of the community. The Housing Element consists of two parts: the General Plan Housing Element and the Housing Technical Analysis. The Housing Element identifies the nature and extent of the City's housing needs and provides the objectives, policies, and implementation programs intended to meet identified needs. The Housing Technical Analysis, included as a technical appendix to the General Plan, details the housing needs, resources, and constraints for the City and provides a review of the current goals, policies, and programs to address targeted inefficiencies and inadequacies. The following goals, and the associated policies, are intended to preserve affordable units and prevent displacement in Seaside as follows:

Goal H-1: Well-maintained neighborhoods and housing conditions support an improved quality of life.

Intent: The City of Seaside has an aging housing stock and deferred maintenance affects neighborhoods in the City. This goal seeks to improve the quality of existing housing in the community, encourage safe housing, and promote natural resource conservation and efficiency in the City's existing housing.

Policies: **Improvement of existing housing.** Promote the repair, improvement, and rehabilitation of the City's housing stock and properties in order to enhance quality of life in the City and promote community identity and pride.

Adequate and decent housing. Explore options for City policies and programs to reduce overcrowding and promote safe, affordable housing.

Goal H-2: Neighborhoods with a range of housing opportunities to meet the existing and projected needs of all socioeconomic segments of the community.

Intent: A diverse housing inventory is needed to meet the changing socio and economic needs of the community. Demographics shifts in the last two decades and expected changes in the future require a range of housing options that can give residents choice of housing options and the ability to age-in-place as their housing needs evolve over time. Anticipated economic growth also demands new housing to be constructed in order to improve the jobs-housing balance. Furthermore, the City has an obligation under State law to accommodate a share of the region's projected housing needs.

Policies: **Variety of housing.** Provide a variety of housing types, sizes, and prices throughout the City to increase housing choice and ensure that households of all types and income levels have the opportunity to find suitable ownership or rental housing.

Affordability by design. Encourage the creation of smaller and more affordable residential units that are affordable by design – units that are physically smaller and more efficiently designed.

Aging in place. Support the concept of "aging in place" by offering a range of housing types and sizes that allows people to remain in the community as their housing needs change.

Innovative housing options. Encourage the development of innovative housing options, including micro units and co-housing arrangements, to provide affordable housing options for seniors and single households.

De-concentration of affordable units. Promote a geographic dispersal of units affordable to extremely low, very low, low, and moderate-income households throughout the City.

Accessory dwelling units. Allow the development of accessory dwelling units in existing single family neighborhoods as an affordable alternative.

Goal H-3: Ample new affordable housing available to extremely low, very low, low, and moderate-income households in Seaside.

Intent: While Seaside has more affordable housing inventory compared to other communities in the Monterey Peninsula, rising costs in recent years have compelled many, especially those with lower incomes, to live in inadequate housing. Expanding affordable housing opportunities will benefit many, including young professionals looking to remain or relocate to Seaside, first-time buyers, or seniors looking to downsize, among others.

Policies: **Multifamily housing construction.** Encourage the construction of high-quality, well-designed multifamily housing and residential mixed-use projects along Broadway Avenue, Fremont Boulevard, the City's existing multifamily neighborhoods, Campus Town, and Seaside East Specific Plan Areas.

Density bonus. Implement the State density bonus program to provide incentives for additional affordable housing.

Acquisition and rehabilitation. Partner with non-profit housing developers to acquire and maintain property as affordable housing, actively pursuing local, State, and federal funding programs or mechanisms for affordable housing.

Allocation of water and sewer services. In compliance with State law, prioritize the allocation of water and sewer services for affordable housing.

Goal H-4: A streamlined development process to encourage housing production and reduce the costs of development.

Intent: A lengthy development process can add to the costs of housing development, costs which are ultimately passed through to the consumers. To facilitate housing production, the City will streamline a process to encourage housing production and offer a land use strategy that allocates adequate land resources and establishes appropriate development standards to accommodate future housing.

Policies: **Adequate sites for Regional Housing Needs Assessment (RHNA).** Identify adequate sites within appropriate zoning and development standards to facilitate and encourage housing production commensurate with the projected housing needs of the City, including the City's share of regional housing needs.

Parcel consolidation. Offer incentives and/or regulatory reliefs to encourage lot consolidation of small parcels for development and lot mergers of contiguous substandard lots with common ownership.

Development standards and procedures. Regularly review the City's development standards and procedures to identify potential constraints to the production, maintenance, and development of housing, and to develop appropriate measures to mitigate constraints.

Goal H-5: A City that preserves and enhances housing affordability in the community, with an emphasis on promoting affordable housing for extremely low, low, and moderate income households.

Intent: Rising construction materials and labor costs, and energy costs, along with diminishing public funds for affordable housing, have made it increasingly difficult to create new affordable housing. Therefore, it is critical for the city to explore diverse avenues to expand affordable housing opportunities and to preserve and enhance affordability of the existing housing stock.

Policies: **Incentives.** Facilitate the development and provision of affordable housing through regulatory incentives, density bonuses, and other financial assistance (as funding permits).

Long-term affordability. Ensure that units produced for extremely low, very low, low, and moderate-income households are maintained as long-term affordable units by adopting deed restrictions and other reasonable mechanisms to maintain the affordability for subsequent owners/renters of below market-rate housing.

Monitor affordable housing. Monitor affordable housing programs to ensure continued availability of below market-rate housing in Seaside.

Short-term rentals. Monitor short-term rentals that take units off the market for significant periods of time to better understand the impacts on the City's residential neighborhoods.

Goal H-6: A City that protects Seaside households from the risks of displacement.

Intent: Rising housing costs, particularly rental rates, have resulted in the displacement of existing residents. While the City has limited influence over the market, the City will work to preserve and expand its rental housing inventory.

Policies: **No net loss.** Require no net loss in the number of residential units during reconstruction or renovation in multifamily and mixed-use neighborhoods.

First right of refusal. During housing redevelopment, provide displaced households with the first right to return to replacement units.

Condominium conversion. Monitor the condominium conversion trends and devise appropriate actions to ensure a stable rental housing inventory.

Goal H-8: The City of Seaside is a leader seeking regional solutions to housing issues in the Monterey Bay area.

Intent: Many housing issues, such as affordable housing, jobs-housing balance, and homelessness, are regional issues that require regional solutions. This goal sets a framework for supporting Seaside's continued work and leadership around regional housing issues.

Policies: **Collaborative partnerships.** Participate in collaborative partnerships of neighboring jurisdictions, non-profit organizations, affordable and for-profit housing developers, and major employers in the production of a variety of affordable housing opportunities in Seaside.

Regional planning. Participate in regional planning efforts to address regional housing issues, such as the Sustainable Communities Strategy, a jobs-housing balance, and homelessness prevention.

Fair Housing. Participate in regional efforts to address fair housing issues and disparities in access to opportunities through the Regional Assessment of Fair Housing (AFH) process.

4.12.3 Impact Analysis

a. Methodology and Thresholds of Significance

Population and housing trends in the City were evaluated by reviewing the most current data available from the U.S. Census Bureau, DOF, the current 2004 Seaside General Plan, AMBAG 2022 RGF, and RHNA Plan. Impacts related to population are generally social or economic in nature. Under CEQA, a social or economic change generally is not considered a significant effect on the environment unless the changes are directly linked to a physical change.

The following thresholds are based on Appendix G to the *CEQA Guidelines*. For purposes of this EIR, impacts related to population and housing are considered significant if implementation of Seaside 2040 would:

1. 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)
2. Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere

For purposes of this analysis, "substantial" population growth is defined as growth exceeding AMBAG or MBARD population forecasts for the City of Seaside. "Substantial" displacement would occur if allowed land uses would displace more residences than would be accommodated through

growth accommodation by the project. If it is determined the proposed project would induce substantial unplanned population growth to the area, there would also need to be an additional physical impact on the environment from the construction of new facilities that have not already been addressed as part of the buildout of the General Plan, for impacts to be considered significant.

b. Project Impacts and Mitigation Measures

Threshold 1:	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)?

Impact PH-1 FULL IMPLEMENTATION OF SEASIDE 2040 WOULD ACCOMMODATE AN ESTIMATED 12,555 NEW RESIDENTS, 4,050 NEW HOUSING UNITS, AND 4,604 NEW JOBS IN THE CITY, WHEN COMPARED TO 2010. THIS WOULD EXCEED THE 2022 AMBAG RGF; HOWEVER, SEASIDE 2040 IS INTENDED TO ACCOMMODATE REGIONAL HOUSING NEEDS AND INCLUDES POLICIES TO MANAGE NEW DEVELOPMENT AND LIMIT GROWTH IN SUCH A WAY TO MINIMIZE ENVIRONMENTAL IMPACTS. THEREFORE, IMPACTS WOULD BE LESS THAN SIGNIFICANT.

Seaside 2040 would designate land uses and define the type of development that can occur throughout the City through the planning horizon year of 2040. As depicted in Table 4.12-4, full implementation of the proposed 2040 General Plan would accommodate an estimated 12,555 new residents, 4,050 new housing units, and 4,604 new jobs in the City in comparison to 2010 levels. Table 4.12-4 also indicates the population and housing anticipated with 2040 General Plan buildout compared to AMBAG forecasts. As shown therein, with the estimated growth under Seaside 2040, the City of Seaside would have 46,297 residents, 14,143 housing units, and 12,394 jobs in 2040. This would exceed AMBAG growth projections; however, this growth under Seaside 2040 would result in a jobs-housing ratio of 0.9 jobs per household in 2040, whereas the 2040 jobs-housing ratio under AMBAG projections would be lower at 0.8. By bringing the City's jobs-housing ratio closer to 1.0, Seaside 2040 would further enable Seaside residents to find employment opportunities where they live.

The 2022 AMBAG RGF growth projections are based on local data, and state and national trends. . Growth anticipated under Seaside 2040 is intended in part to meet regional housing needs over the long term. Even though Seaside 2040 does not propose new project-level development, the development capacity allowed by Seaside 2040 would exceed AMBAG forecasts. However, the maximum buildout estimate under the proposed 2040 General Plan assumes that all Specific Plan Areas and existing projects would be built out by 2040, except Seaside East which was assumed to build out to 35 percent by 2040 (see further explanation in Section 2.4, *Components of the Proposed General Plan Update*). Such complete or nearly so buildout of these areas may be difficult to achieve due to the requirements and process necessary to carry out development.

Additionally, growth under Seaside 2040 would improve the jobs-housing ratio in the City in 2040 when compared to 2010 levels. Therefore, such growth would not result in any adverse effects associated with population growth in the City.

The following goals and policies of the Land Use and Community Design and Housing Chapters of Seaside 2040 are aimed at ameliorating the jobs-housing balance:

Goal LUD-2: Increased employment opportunities in Seaside to meet the needs of existing and future residents.

Intent: To ameliorate the jobs-housing balance by expanding current and attracting new businesses in the community, especially those offering high-quality jobs in new, cutting-edge industries.

Policy: **Jobs-Housing ratio.** Strive for a jobs-to-housing ratio that has at least a 1 to 1 ratio of jobs per employed residents.

Policy "Jobs-housing ratio" under Goal LUD-2 would promote a balanced jobs-to-housing ratio that has at least a 1 to 1 ratio of jobs per employed residents. Seaside 2040 would not induce substantial unplanned population growth, and this impact would be less than significant.

Mitigation Measure

No mitigation is required.

Significance After Mitigation

Impacts would be less than significant without mitigation.

Threshold 2:	Would the project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

Impact PH-2 IMPLEMENTATION OF SEASIDE 2040 WOULD NOT DISPLACE SUBSTANTIAL NUMBERS OF EXISTING HOUSING OR PEOPLE, NECESSITATING THE CONSTRUCTION OF REPLACEMENT HOUSING ELSEWHERE. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

Seaside 2040 would enable development in Seaside through the year 2040 that could add 4,050 residential units to the City from 2010 levels, primarily to City-designated priority infill areas. One of the fundamental goals of Seaside 2040 is to direct future development in such a way as to minimize some of the adverse impacts of growth by emphasizing compatible and interconnected design in already developed areas. Such a pattern would minimize displacement of existing housing and people that could otherwise result in development pressure on the periphery of the City. Moreover, a number of the guiding principles express the City's goals to nurture distinct and complete neighborhoods that provide Seaside residents with affordable options for housing.

A strategy of Seaside 2040 is to preserve and enhance established Seaside neighborhoods by focusing development in the following subareas:

- Residential Neighborhoods;
- Downtown/Broadway Avenue;
- Fremont Boulevard; and
- Auto Center

Focusing development in these areas would maximize the use of underutilized parcels within the City and minimize encroachment into open space areas. Additionally, Seaside 2040 directs new growth within the above subareas to utilize existing transportation, water, and sewer infrastructure. The following goals and policies of the Land Use and Community Design and Housing Chapters of

Seaside 2040 are aimed at reducing the impacts associated with displacement of people and/or housing in the City:

Goal LUD-1: An urban form and structure that enhances the quality of life of residents, meets the community's vision for the future, and weaves new growth areas together with long-established neighborhoods.

Intent: To provide an appropriate mix of housing, employment, retail/services, recreation, arts, education and entertainment for the City's residents and businesses. To grow responsibly and sustainably in a manner which benefits the community now and into the future.

Policies: **Balanced land uses.** Maintain a land use pattern to support a broad range of housing choices, retail businesses, employment opportunities, educational and cultural institutions, entertainment spaces, and other supportive uses on former Fort Ord lands and within long-established Seaside neighborhoods.

Overall city structure. Establish a clearly defined city structure as described below:

- Establishing West Broadway as the city's pedestrian-oriented downtown that is a local and regional-serving mixed-use district.
- Maintaining existing residential neighborhoods and creating new residential neighborhoods on former Fort Ord lands with a character that reflects Seaside's identity. New residential neighborhoods should be arranged around neighborhood centers and community gathering spaces, such as schools and parks.
- Ensuring public improvements are consistently made to existing and new neighborhoods to establish sufficient maintenance, capacity, and reliability.
- Creating mixed-use corridors along East Broadway Avenue, Fremont Boulevard, Lightfighter Drive, and Del Monte Boulevard that contain a mix of retail, service, office, and residential uses. Corridors have defined nodes that provide a mix of local and regional serving uses.
- Retaining the auto center area as a critical economic engine for the City, recognizing that are undergoing a market driven evolution.
- Development of the Campus Town Specific Plan area adjacent to CSUMB that provides for higher-density housing, R&D and employment areas, retail and entertainment uses, and active parks and recreational spaces to support CSUMB students and faculty, as well as permanent Seaside residents.
- Development of the Main Gate Specific Plan area into a mixed-use center with retail, residential, institutional, public, and entertainment uses.
- Protecting and maintaining parks and open space on former Fort Ord lands, including supporting FORTAG implementation, developing open space corridors, and creating new neighborhood and community parks that support Seaside residents and access to regional destinations.
- Develop a new City Hall and other city facilities including a broad mix of cultural, arts, and institutional uses, including the construction of a new library.

Connecting new and old. Connect new growth areas on former Fort Ord lands with existing Seaside neighborhoods through transportation investments, open space connectivity, wayfinding, and urban design strategies.

Recycled water. Locate initial new development where there are opportunities for recycled water supply to be utilized.

Goal LUD-11: Maintain and enhance existing residential neighborhoods.

Intent: To encourage stable, livable low and moderate density neighborhoods, and to maintain and enhance their character.

Policies: **Maintenance.** Support the on-going maintenance and improvement of existing residential properties; in particular, encourage property owners to maintain and improve their front yards and facades.

Orientation. Orient all new residential construction towards streets, public spaces, or shared private spaces, placing parking to back or side of the lot.

No net loss. Require no net loss in the number of residential units during reconstruction or renovation.

Goal LUD-12: Preserve and improve the quality, diversity, and affordability of existing single-family neighborhoods.

Intent: To maintain a high quality of life for residents in predominantly single-family neighborhoods, while allowing for compatible additions and new construction.

Policies: **Neighborhood character.** Preserve the quality of existing single-family residential areas and housing stock of the Neighborhood Low and Neighborhood Medium areas, while allowing on-going maintenance and improvements to dwelling.

Compatible scale. Maintain high-quality existing residential neighborhoods by ensuring new development projects are compatible in scale and provide adequate transitions to adjacent residential properties.

Lot subdivision. Allow for the subdivision of large lots for new single-family housing and duplexes. The subdivision shall not result in lots smaller than 1,200 square feet, unless smaller lots are approved by the City Council.

Accessory Dwelling Units. Permit accessory dwelling units and second primary units (e.g., duplexes) on single-family lots in accordance with State law.

Additions. Allow additions, such as a new bedroom or bathroom that are complementary to the existing neighborhood. Renovations and expansions should use complementary building materials and forms, while allowing flexibility for unique design conditions.

Goal LUD-13: High-quality multifamily neighborhoods with a mixture of well-designed building types for a diversity of households.

Intent: To promote a variety of building types in the Neighborhood General and High designations, in order to serve the housing needs of a broad cohort of the City and region's population.

Policies: **Housing diversity.** Permit a range of housing options in Seaside's multifamily neighborhoods to accommodate different economic levels, household sizes, and age groups.

Affordable by design. Encourage the creation of smaller and more affordable residential units that are affordable by design – units that are physically smaller, more efficiently designed, and are not bundled with parking stalls.

Infill housing. Encourage new infill housing in residential areas of the City and on public/institutional sites to expand the amount and diversity of housing.

Design of new multifamily buildings. Design new multifamily housing in a way that creates attractive, quality-living environments for a variety of household types and contributes to the overall visual quality of the City.

Integration of new and old. Promote new multifamily developments that are integrated with older development nearby, using transitions in scale, building proportions, and articulation and texture to reduce their apparent size.

Renovation. Encourage and incentivize the renovation of older multi-family buildings to more contemporary standards.

Common open spaces. Require apartment and townhouse property management companies to improve the safety, lighting, and landscaping of common private and semi-private open spaces.

Minimum open space. Require a minimum amount of open space in higher density residential and mixed-use projects. Carefully and deliberately integrate these spaces into project design and require maintenance by the property management organization.

Neighborhood retail. Allow limited neighborhood oriented retail or offices in suitable locations within existing multifamily neighborhoods.

Senior housing. Encourage the development of senior housing in locations that are accessible to public transit, commercial services, and health and community facilities.

With incorporation of these goals and policies, Seaside 2040 would result in a net increase in housing availability in the City, including affordable housing, and would provide housing to accommodate future growth.

Nonetheless, displacement of existing residential units could still occur during redevelopment under Seaside 2040. Although no residential development that would be displaced by implementation of the proposed Plan has been identified, if any such temporary displacement did occur, the 4,050 new residential units, including a proportion of these as affordable housing in compliance with the City's Housing policies, would replace any existing displaced residences. Land Use and Urban Design Goal LUD-11 and Goal LUD-12 promote the preservation of the City's existing supply of affordable housing units, and if preservation is not possible and temporary displacement were to occur, compliance with Policy *No net loss* under Goal LUD-11 in combination with Policy *Neighborhood character* under Goal LUD-12 would ensure that housing placement is provided for potentially displaced residents. Additionally, Goal LUD-13 would promote development of high quality multifamily housing would help to accommodate potentially displaced residents and the anticipated new population in Seaside facilitated by Seaside 2040.

Given that Seaside 2040 includes goals and policies to increase overall housing in the City and that there are no current plans for displacement of housing, it is not known when or where construction of replacement housing would occur so it cannot be determined what project-specific environmental impacts would result from the construction and operation of replacement housing. As potential residential development or redevelopment projects are identified, additional project specific, environmental analysis, as necessary, would be completed at that time. As a result, impacts related to displacement of existing residences would be less than significant.

Mitigation Measure

No mitigation is required.

Significance After Mitigation

Impacts would be less than significant without mitigation.

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4.13 Public Services and Recreation

This section assesses potential impacts associated with public services, including fire and police protection, public schools, libraries, and parks and recreation from Seaside 2040. Impacts associated with water and wastewater infrastructure and solid waste collection and disposal are discussed in Section 4.16, *Utilities and Service Systems*. Impacts associated with wildfire are discussed in Section 4.17, *Wildfire.*

4.13.1 Setting

a. Fire Protection

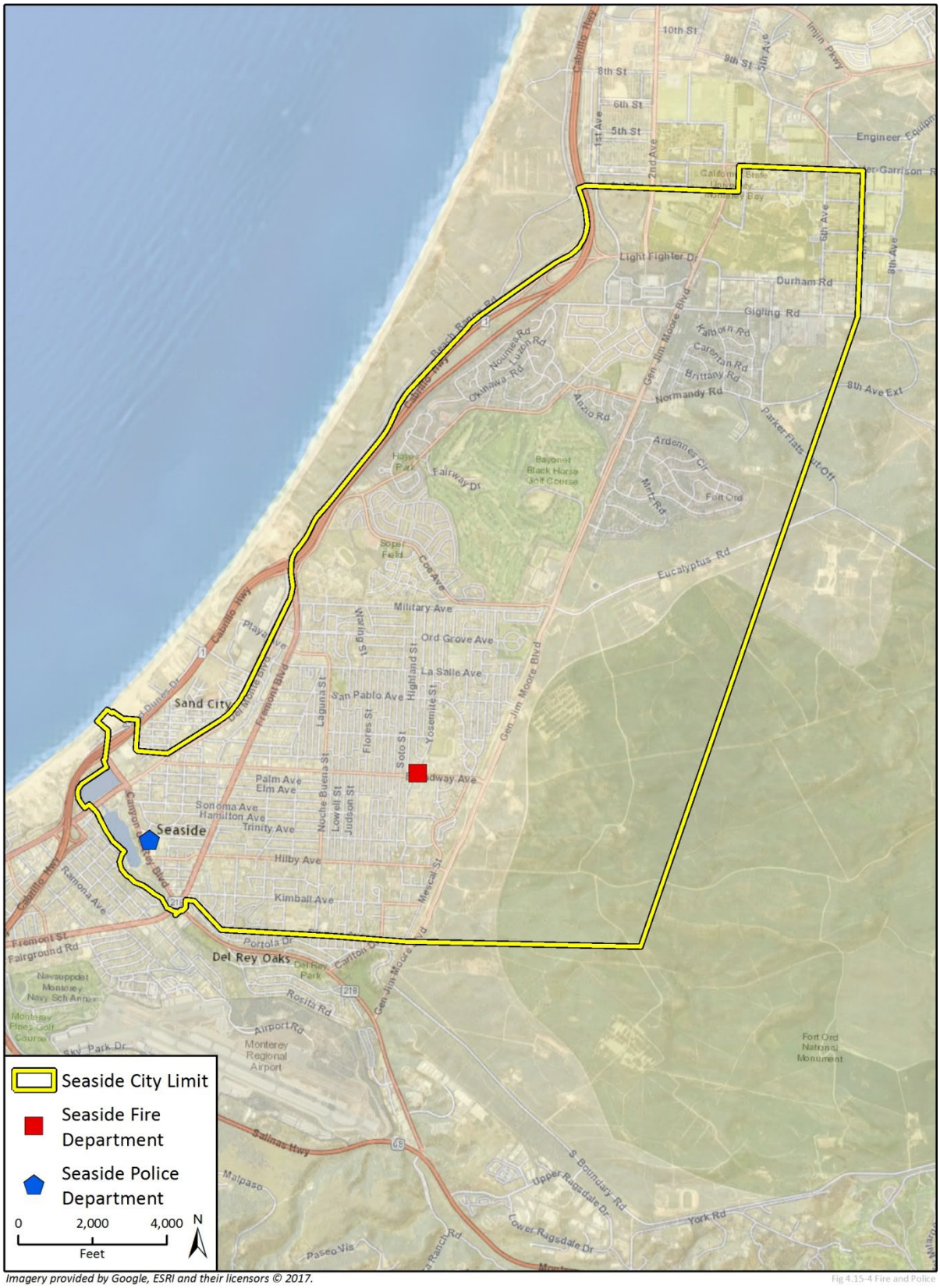
Fire protection, first response emergency medical services, and natural disaster preparedness services in the City are provided by the Seaside Fire Department (SFD). The SFD serves as an "all hazards" response force to fires, floods, rescue situations, building collapse, water rescue, rope or high angle rescue, hazardous materials mitigation, trench rescue, and confined space rescue. In addition to conducting fire- and life-safety inspections, training, and public education, the SFD organizes CPR, Smoke Alarm, Hazardous Materials, and Reserve Firefighter programs, and is involved in the Monterey Peninsula Regional Emergency Coordination Center wide-range planning activities throughout the year (City of Seaside 2017).

Personnel, Facilities and Equipment

The City is served by one fire station with a total of nine firefighters, six engineers, six captains, three division chiefs, one administrative assistant, one fire chief, one deputy chief, as well as five reserve firefighters. As shown on Figure 4.13-1, the SFD is located at 1635 Broadway Avenue. The SFD station is approximately 9,600 square feet in size. SFD operates two ladder trucks, three fire engines (two Type 1 engines and one Type 3 engine), one rescue vehicle, three command vehicles, and one hazardous materials vehicle. SFD provides contract fire services to the City of Del Rey Oaks, and participates in mutual and automatic aid agreements with the City of Monterey, Presidio of Monterey, as well as adjoining cities and the counties of Monterey, Santa Cruz, and San Benito (Gutierrez 2022).

Table 4.13-1 shows the number and types of incidents to which the Department responded within Seaside in 2018, as reported in the Department's most recent annual report (SFD 2018). As shown therein, the Department responded to 2,997 incidents, of which nearly 69 percent were for Emergency Medical Services (EMS).

Figure 4.13-1 Seaside Fire and Police Department Locations



Imagery provided by Google, ESRI and their licensors © 2017.

Fig 4.15-4 Fire and Police

Table 4.13-1 Seaside Fire Department Statistics, 2018

Type of Incident	Number of Incidents	Percent of Total
Fire	60	2.0%
EMS	2,056	68.9%
Hazmat	159	5.3%
Service Calls	420	14.1%
Good Intent	144	4.8%
False Alarms	144	4.8%
Total All Incidents	**2,983**	

Source: SFD 2018

Response Times

Maintaining low fire and emergency medical response times and high level of service is a high priority of SFD. SFD has set an EMS and fire response time of five minutes or less for all incidents (SFD 2018). To achieve this, the 2004 General Plan calls for a standard of 1.0 firefighters per 1,000 residents. In 2018, the City had 25 full-time equivalent employees at SFD (City of Seaside 2017), while the City's total population was 33,767 (California Department of Finance 2021). As such, the ratio in 2018 was just below the standard at 0.74 firefighters per 1,000 residents.

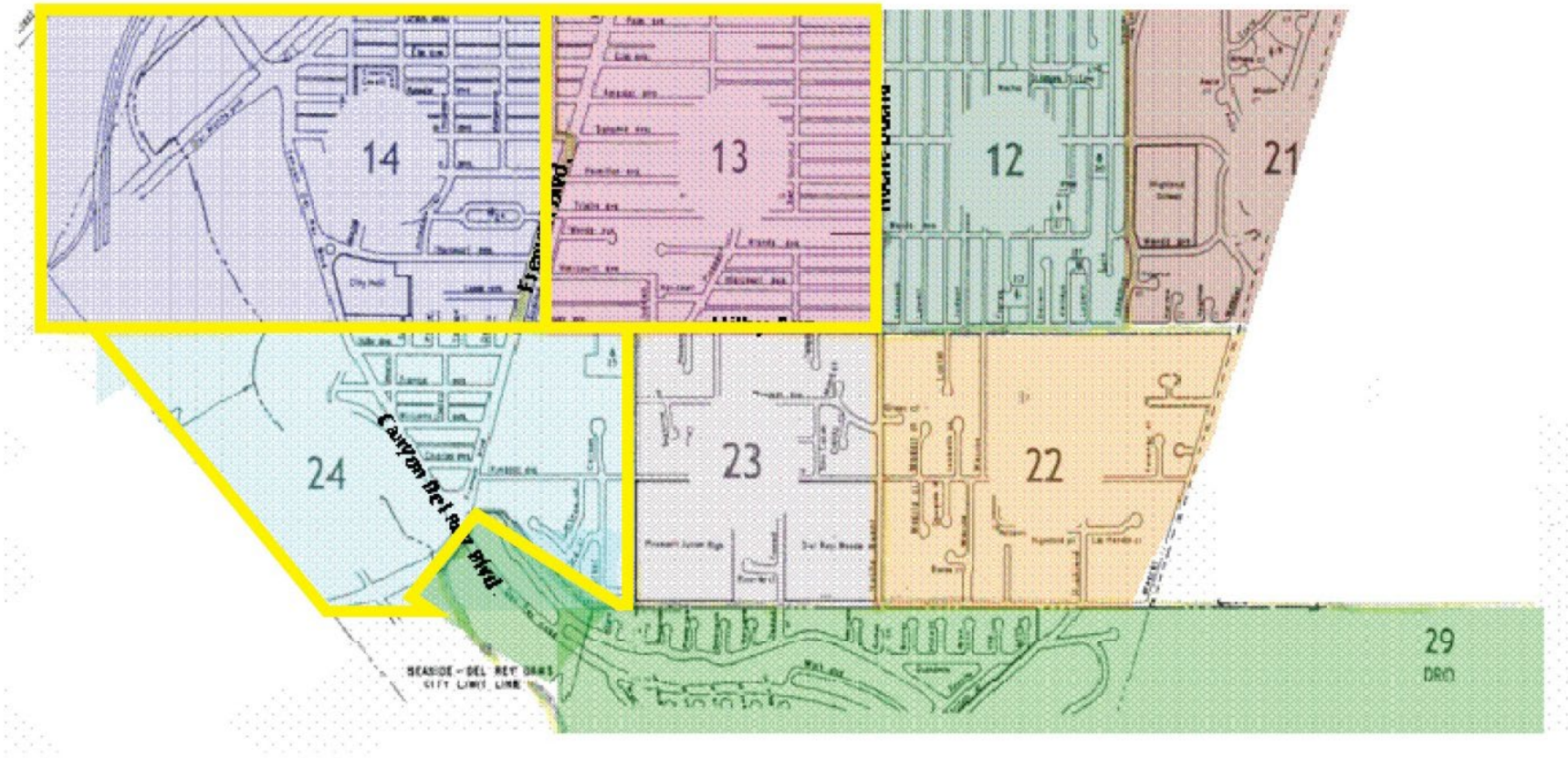
Excluding mutual aid calls, the average response time in 2018 was 4.8 minutes. Currently, districts with the highest average arrival times are "Seaside Highlands / Coe / Ft. Ord" (6.45 minutes), "SW General Jim Moore and Gigling" (7.20 minutes) and "NE General Jim Moore and Gigling" (9.0 minutes). (SFD 2018).

As shown in Figure 4.13-2, the top three districts with the highest call volumes are:

- **13:** SW Noche Buena Broadway
- **14:** SW Broadway Calaveras
- **24**: SW Hilby Wheeler

The Insurance Services Office (ISO) analyzes fire protection data from communities and assigns a Public Protection Classification (PPC). A PPC is a number from 1 to 10, with Class 1 generally indicating superior fire protection for property, and Class 10 indicating that ISO's minimum criteria are not met. Companies that insure property use ISO PPCs to calculate premiums, with higher fire risk assumed for communities with higher PPCs (ISO 2019). In 2014, ISO completed an analysis of the structural fire suppression delivery systems on the Monterey Peninsula. The City of Seaside's PPC was upgraded from a Class 4/9 to a Class 2/2, indicating a substantial improvement in fire protection capacity (City of Seaside 2014).

Figure 4.13-2 Top Three Fire Districts by Call Volume



Source: Seaside Fire Department. 2016. 2016 Annual Report.

b. Police Protection

The Seaside Police Department (SPD) is a full-service law enforcement agency that is committed to providing quality police services in partnership with the community to enhance and maintain a safe environment. The SPD occupies 9,000 square feet within the lower level of Seaside City Hall at 440 Harcourt Avenue. The SPD also occupies a modular trailer of approximately 1,400 square feet. As of January 2018, the SPD operates with 51 members, with 40 sworn and 11 non-sworn personnel, and responds to more than 46,000 calls for service per year (Borges 2022).

With the SPD employing 40 sworn officers and the population of the City of Seaside currently at approximately 33,767 (California Department of Finance 2021), the SPD has 1.2 sworn officers per 1,000 residents.

Police Administration and Support Services

Police Administration provides for the management, coordination, and administration of all law enforcement activities for the City. The Police Chief and the administrative aide perform the primary administrative functions, with the Chief having overall management responsibility for the Department. The Chief's responsibilities focus on providing optimum services to the City through efficient and effective use of available personnel, facilities, and equipment. The administrative aide provides general office management and clerical support for the Department.

Police Patrol and Traffic Enforcement

The patrol program includes a variety of law enforcement activities performed by sworn police officers. Officers perform directed patrolling based on patterns of criminal activity occurring, or anticipated to occur, within specified areas and respond to calls for service and initiate activity, as required. Other law enforcement activities performed by deputies include investigating complaints and criminal violations, arresting and interrogating suspects, and prepared reports.

The SPD also staffs a Seaside Animal Control Officer, which allows for initial response to calls for services related to dangerous animal situations or noise disturbances caused by animals (City of Seaside 2017).

Community Services

In addition to traditional law enforcement services, the Department participates in regional services that include a tactical special response unit, and a violence and illegal narcotics team. Community partnerships include a Police Activities League, a Cadet Program, Neighborhood Watch, a School Resource Officer program, a Youth Resource Center, a Youth Diversion program, and community outreach that incorporate events and participation in the Blue Ribbon Task Force, the Prescription Drug Take Back event, National Night Out, Meals on Wheels during the holidays, and Heroes for Kids (City of Seaside 2023).

California Highway Patrol

The California Highway Patrol (CHP) provides traffic safety and enforcement services on unincorporated roadways and State highways. The City of Seaside is located in the CHP Coastal Division that operates eleven offices along the Division's 325-mile long jurisdiction along California's coastline. The Coastal Division area office that serves Seaside is CHP Area Office 730, Monterey, located at 960 East Blanco Road in Salinas, California (CHP 2018).

c. Schools

Monterey Peninsula Unified School District

The City is located within the Monterey Peninsula Unified School District (MPUSD). There are 17 schools in the City, as depicted in Figure 4.13-3**.** Table 4.13-2 lists the MPUSD public schools. In addition to public schools, there are six private and charter schools in Seaside. The City is also home to three colleges and other continuation schools for community members seeking higher education. These include California State University Monterey Bay (CSUMB) and the Monterey College of Law.

Table 4.13-2 MPUSD Schools in Seaside

School Name	Public/ Private	Grades	2021 – 2022 Enrollment[1]	Capacity[2]
Del Rey Woods Elementary	Public	K – 6	434	800
George C. Marshall Elementary	Public	K – 6	459	725
Highland Elementary	Public	K – 6	276	700
Ord Terrace Elementary	Public	K – 6	497	900
Martin Luther King Elementary	Public	K – 6	454	1,125
Seaside Middle	Public	7 – 8	475	1,850
Central Coast High	Public	9 – 12	122	575
Seaside High	Public	9 – 12	475	1,850

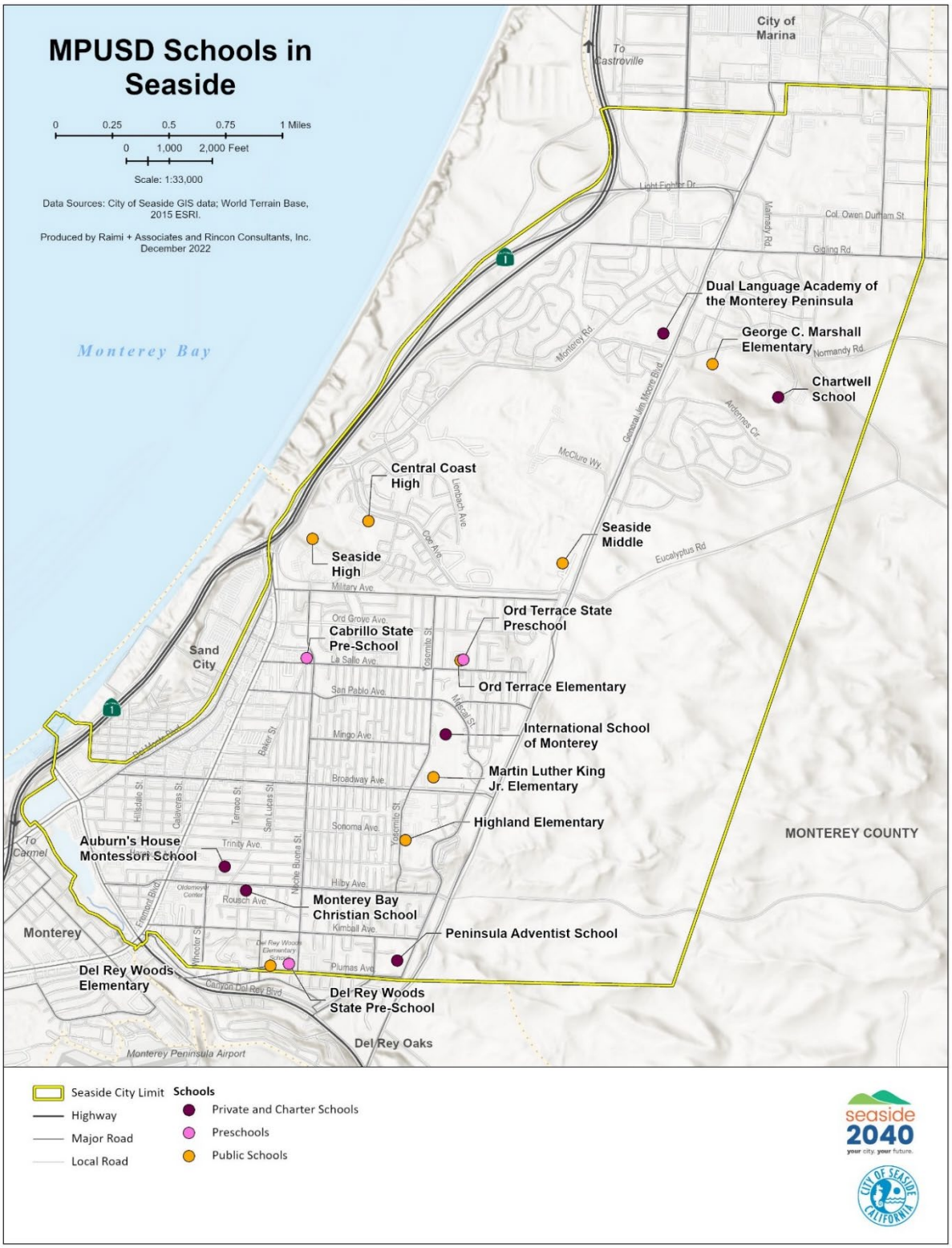
[1] California Department of Education 2022

[2] McFadden2018

d. Public Libraries

The Seaside Library, located at 550 Harcourt Avenue, is part of the Monterey County Free Libraries network of information centers serving the diverse communities of Monterey County by offering opportunities for all to succeed in school, work and their personal lives. The Seaside Branch Library is the largest of the 17 branches of the Monterey County Free Libraries network and also serves as a regional center and important collection base for the use of more than 127,000 registered patrons of the system (City of Seaside 2018).

Figure 4.13-3 Schools Serving Seaside



e. Parks and Recreation

As shown in Table 4.13-3, the City of Seaside owns and maintains 28 park and recreational sites totaling approximately 55 acres. In addition, there are other large open space areas with the City limits, including the Bayonet and Black Horse golf course, the Fort Ord National Monument lands, and the Eolian Dunes Preserve/Seaside Beach. These additional open space areas total 1,284.3 acres (City of Seaside 2017, 2023).

With the inclusion of the Bayonet and Black Horse golf courses (359.6 acres), the Fort Ord National Monument lands (918.7 acres), and the Eolian Dunes Preserve/Seaside Beach (6 acres), the City currently provides 12 acres of park, recreational, and open space per 1,000 residents. This ratio exceeds the California Quimby Act target of 3.0 acres per 1,000 residents (California Government Code 66477).

Table 4.13-3 Parks and Recreational Areas by Type

#	Park Name	Acres	Park Type
City-Owned and Maintained Parks and Recreation Facilities			
1	Beta Park	1.1	Mini
2	Capra Park	0.8	Mini
3	Durant Park	0.5	Mini
4	Ellis Park	0.4	Mini
5	Farallones Park	0.8	Mini
6	Fernando-Montgomery Park	0.1	Mini
7	Highland-Otis Park	1.2	Mini
8	Manzanita-Stuart Park	0.8	Mini
9	Martin Park	0.6	Mini
10	Portola Leslie Park	1.1	Mini
11	Sabado Park	0.4	Mini
12	Trinity Park	0.8	Mini
13	Havana Soliz Park	2.6	Neighborhood
14	Lincoln Cunningham Park	2.9	Neighborhood
15	Mescal-Neil Park	2.2	Neighborhood
16	Metz Park	2.1	Neighborhood
17	Pacchetti Park	1.7	Neighborhood (dog friendly)
18	Cutino Park	5.6	Community
19	Soper Field and Community Center	4.2	Community
20	Laguna Grande Park	10.7	Regional
21	Roberts Lake Area	5.7	Regional
22	Encanto Park	0.2	Undeveloped
23	Wheeler Tennis Courts	1.6	Special Use

#	Park Name	Acres	Park Type
24	Oldemeyer Center	2.4	Special Use
25	Pattullo Swim Center	2.0	Special Use
26	Stephen E. Ross Memorial Park	1.3	Special Use (modular office buildings now occupy a portion of the park)
27	Youth Education Center	1.1	Special Use
Subtotal		**55.0**	
Other Open Space Areas (within city limits)			
28	Eolian Dunes Preserve/Seaside Beach	6	Regional
29	Bayonet and Black Horse Golf Courses	359.6	Golf Course
30	Fort Ord National Monument	918.7	Regional
Subtotal		**1,284.3**	
Total		**1,339.3**	

Sources: City of Seaside 2023.

Seaside's parks are spread out across the City, with some areas being better served than others. Many residents in the Terrace West, Terrace East, and Olympia neighborhoods are more than a half-mile walk from a park. These neighborhoods have some of the highest population densities, greatest number of children, and largest non-White populations. Improving access to parks and open spaces by adding new green spaces, repurposing unused spaces for public use, and improving pedestrian and bicycle connections to existing parks and open spaces can make it easier for Seaside residents to use public spaces, especially in underserved neighborhoods (City of Seaside 2017).

Community groups have become more active in recent years, with a volunteer group renovating and maintaining Pachetti Dog Park and the SeaStars volunteers that take one hour a month to beautify city parks with tools supplied by the Seaside Public Works department.

Along with the park and recreational sites, the City owns a variety of recreational facilities, including the Oldemeyer Center, Pattullo Swim Center, Wheeler Tennis Courts, the Bayonet and Black Horse Golf Courses. These centers are designed primarily for large group gatherings and provide activities for all age groups (City of Seaside 2017).

The City also owns sport facilities, such as fields and courts, which are incorporated into existing park and recreational sites. These sport facilities include three youth baseball/softball fields, but no soccer fields. The City also currently partners with the Monterey Peninsula Unified School District to use their athletic facilities.

4.13.2 Regulatory Setting

a. Fire Protection

Federal

Disaster Mitigation Act (2000-Present)

Section 104 of the Disaster Mitigation Act of 2000 (Public Law 106-390) requires a state mitigation plan as a condition of disaster assistance. There are two different levels of state disaster plans: "Standard" and "Enhanced." States that develop an approved Enhanced State Plan can increase the amount of funding available through the Hazard Mitigation Grant Program. The Act has also established new requirements for local mitigation plans.

National Fire Plan 2000

The National Fire Plan was developed under Executive Order 11246 in August 2000, following a landmark wildland fire season. Its intent is to actively respond to severe wildland fires and their impacts to communities while ensuring sufficient firefighting capacity for the future. The plan addresses firefighting, rehabilitation, hazardous fuels reduction, community assistance, and accountability.

State

California Fire Plan

The Strategic California Fire Plan is the State's roadmap for reducing the risk of wildfire. The plan was updated in 2012, and directs each CAL FIRE unit to prepare a locally specific Fire Management Plan. In compliance with the California Fire Plan, individual CAL FIRE units are required to develop Fire Management Plans for their areas of responsibility. These documents assess the fire situation within each of CAL FIRE's 21 units and six contract counties. The plans include stakeholder contributions and priorities, and identify strategic areas for pre-fire planning and fuel treatment as defined by the people who live and work with the local fire problem. The plans are required to be updated annually.

California State Multi-Hazard Mitigation Plan, Draft (Updated 2018)

The purpose of the State Multi-Hazard Mitigation Plan (SHMP) is to significantly reduce deaths, injuries, and other losses attributed to natural and human-caused hazards in California. The SHMP provides guidance for hazard mitigation activities emphasizing partnerships among local, state, and federal agencies as well as the private sector. The California Office of Emergency Services (OES) prepares the State of California Multi-Hazard Mitigation Plan (SHMP). The SHMP identifies risks, and includes a vulnerability analysis and a hazard mitigation strategy. The SHMP is federally required under the Disaster Mitigation Act of 2000 in order for the State to receive federal funding. The Disaster Mitigation Act of 2000 requires a State mitigation plan as a condition of disaster assistance.

Wildland-Urban Interface Building Standards

On September 20, 2007, the building Standards Commission approved the Office of the State Fire Marshal's emergency regulations amending the California Code of Regulations, Title 24, Part 2,

known as the 2007 California Building Code (CBC). These codes include provisions for ignition-resistant construction standards in the wildland-urban interface.

California Fire and Building Code (2016)

The 2016 Fire and Building Code establishes the minimum requirements consistent with nationally-recognized good practices to safeguard the public health, safety, and general welfare from the hazards of fire, explosion, or dangerous conditions in new and existing buildings, structure and premises, and to provide safety and assistance to firefighters and emergency responders during emergency operations. The provisions of this Code apply to the construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, maintenance, removal and demolition of every building or structure or any appurtenances connected or attached to such building structures throughout the State of California.

More specifically, the Fire Code is included in Title 24 of the California Code of Regulations. California Fire Code Title 24, part 9, Chapter 7 addresses Fire-Resistances- Rated Construction, California Building Code (Part 2), Chapter 7A addresses Materials and Construction Methods for Exterior Wildfire Exposure, Fire Code Chapter 8 addresses fire related Interior Finishes, and Fire Code Chapter 9 addresses Fire Protection Systems, and Fire Code Chapter 10 addresses fire related Means of Egress, including Fire Apparatus Access Road width requirements. Fire Code Section 4906 also contains existing regulations for vegetation and fuel management to maintain clearances around structures.

Regional

Monterey County Multi-Jurisdictional Hazard Mitigation Plan

The Monterey County Multi-Jurisdictional Mitigation Plan identifies measures that the County will take to lower the hazard risk to property and life. Wildfire hazard mitigation features prominently in the plan due to the relatively rural nature of the County and its high fire risk, as identified by CAL FIRE.

Monterey County Community Wildfire Protection Plan

The Monterey County Community Wildfire Protection Plan makes the connection between strategic fuel breaks, defensible space, defensible polygons, and incident management, providing communities and agencies with guidance on wildfire prevention and protection.

b. Police Protection

California Commission on Peace Officer Standards and Training

The California Commission on Peace Officer Standards and Training advocates for, exchanges information with, sets selection and training standards for, and works with law enforcement and other public and private entities. Peace Officer Standards and Training was established by the Legislature in 1959 to identify common needs that are shared by representatives of law enforcement.

c. Schools

California Code of Regulations

The California Code of Regulations, Title 5 Education Code, governs all aspects of education within the State.

California State Assembly Bill 2926 (AB 2926) – School Facilities Act of 1986 – was enacted by the State of California in 1986 and added to the California Government Code (Section 65995). It authorizes school districts to collect development fees, based on demonstrated need, and generate revenue for school districts for capital acquisitions and improvements. It also established that the maximum fees which may be collected under this and any other school fee authorization are $1.50 per square foot ($1.50/ft^2) for residential development and $0.25/ft^2 for commercial and industrial development.

AB 2926 was expanded and revised in 1987 through the passage of AB 1600, which added Section 66000 *et seq.* of the Government code. Under this statute, payment of statutory fees by developers serves as total mitigation under CEQA to satisfy the impact of development on school facilities. However, subsequent legislative actions have alternatively expanded and contracted the limits placed on school fees by AB 2926.

California Senate Bill 50 (SB 50)

As part of the further refinement of the legislation enacted under AB 2926, the passage of SB 50 in 1998 defined the Needs Analysis process in government Code Sections 65995.5-65998. Under the provisions of SB 50, school districts may collect fees to offset the costs associated with increasing school capacity as a result of development. The fees (Level One fees) are addressed based upon the proposed square footage of residential, commercial/industrial, and/or parking structure uses. Level Two fees require the developer to provide one-half of the costs of accommodating students in new schools, while the state would provide the other half. Level Three fees require the developer to pay the full cost of accommodating the students in new schools and would be implemented at the time the funds available from Proposition 1A (approved in 1998) are expended. School districts must demonstrate to the State their long-term facilities' needs and costs based on long-term population growth in order to quality for this source of funding. However, voter approval of Proposition 55 in 2004 precludes the imposition of the Level Three fees for the foreseeable future. Therefore, once qualified, districts may impose only Level Two fees, as calculated according to SB 50 (Greene 1998).

According to Section 65995(h), the payment of statutory fees is "deemed to be full and complete mitigation of the impacts of any legislative or adjudicative act, or both, involving, but not limited to, the planning, use, or development of real property, or any change in governmental organization or reorganization...on the provision of adequate school facilities."

d. Parks and Recreation

Quimby Act

The Quimby Act (Section 66477 of the California Government Code) was established by the California legislature in 1965 to provide parks for growing communities in California. The Act authorizes cities to adopt ordinances addressing park land and/or fees for residential subdivisions for the purpose of providing and preserving open space and recreational facilities and improvements. The Act requires the provision of three acres of park area per 1,000 persons residing

within a subdivision, unless the amount of existing neighborhood and community park area exceeds that limit, in which case the City may adopt a higher standard not to exceed five acres per 1,000 residents. The Act also specifies acceptable uses and expenditures of such funds.

State Public Park Preservation Act

This primary instrument for protecting and preserving parkland is the State Public Park Preservation Act. Under the Public Resource code, cities and counties may not acquire any real property that is in use as a public park for any non-park use unless compensation or land, or both, are provided to replace the parkland acquired. This provides no net loss of parkland and facilities.

State Street and Highway Code

The State Street and Highway Code assists in providing equestrian and hiking trails within the right-of-way of county roads, streets, and highways.

Seaside Parks, Recreation, and Community Services Plan

The Seaside City Council adopted the Parks, Recreation, and Community Services Plan in October 2005 to provide policies for developing and maintaining the City's park system and a strategy for financing planned improvements. The plan identifies and evaluates the existing system; assesses the need for additional park land, open space, and specialized facilities; establishes criteria and standards for site selection, design, and management of the various areas; and recommends an approach to funding acquisition, development, and maintenance of facilities (City of Seaside 2005).

4.13.3 Impact Analysis

a. Methodology and Significance Thresholds

Impacts related to public services from the proposed project would be significant if it would:

1. Result in substantial adverse physical impacts associated with the need for or provision of new or physically altered government facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other objectives for:
    a. Fire Protection,
    b. Police Protection,
    c. Schools,
    d. Parks,
    e. Other Public Facilities
2. 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
3. Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment

Additionally, for impacts to be considered significant, development of these public services would also have to result in a significant physical environmental impact not already analyzed and disclosed in the other resource chapters of this EIR.

b. Project Impacts and Mitigation Measures

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

Impact PS-1 DEVELOPMENT FACILITATED BY SEASIDE 2040 WOULD INCREASE THE CITY'S POPULATION. THIS WOULD INCREASE DEMAND FOR FIRE, POLICE, OR OTHER SERVICE FACILITIES. HOWEVER, GOALS AND POLICIES OF SEASIDE 2040 WOULD HELP MANAGE GROWTH AND WOULD REDUCE IMPACTS RELATED TO THE CONSTRUCTION OF FIRE AND POLICE FACILITIES TO A LESS THAN SIGNIFICANT LEVEL.

A key guiding principle of Seaside 2040 is to promote safe neighborhoods free from violence and crime that have a trusting, collaborative relationship between law enforcement and residents (City of Seaside 2023). As described in Section 2.4.6, *City Growth/General Plan Buildout,* of Section 2, *Project Description*, buildout of the proposed 2040 General Plan could accommodate an estimated 12,555 new residents. As mentioned under Section 4.13.1, *Setting*, the 2004 General Plan establishes a standard of 1.0 firefighters per 1,000 residents. As the SFD currently has a ratio of 0.74 firefighters per 1,000 residents, the City currently falls below its established standard for fire services. With the addition of 12,555 residents through the year 2040, reaching a total of 46,297 residents, meeting the established fire service ratio of 1.0 firefighters per 1,000 residents would require the City to employ a total of 46 firefighters. As the City currently employs 25 firefighters, the City would need to incrementally increase their fire services by 21 firefighters through the year 2040, which could require the construction of a new facility to house subsequent personnel, equipment, and vehicles. Furthermore, incremental growth under Seaside 2040 would increase demand under the Marina, Monterey, and POM Mutual Aid and Automatic Aid Agreements to suppress fires and respond to medical emergencies, rescues, and other threats to life, property, and the environment.

New development under buildout of Seaside 2040 would be required to comply with all applicable federal, state, and local regulations governing the provision of fire protection services, including adequate fire access, fire flows, and number of hydrants. This includes the 2022 California Fire Code or its most recent iteration, which contains project-specific requirements such as construction standards in new structures and remodels, road widths and configurations designed to accommodate the passage of fire trucks and engines, and requirements for minimum fire flow rates for water mains. As redevelopment occurs and older structures are replaced with new structures, such structures would improve fire safety in comparison to existing conditions, due to improved fire safety from updated Fire and Building Codes (2022). However, the placement and potential impacts of a new fire facility are unknown at this time and separate environmental review may be required.

As the SPD currently employs 40 sworn officers, the City has a ratio of approximately 1.2 sworn officers per 1,000 residents. Implementation of Seaside 2040 would result in the addition of 12,555 residents through the year 2040, reaching a total of 46,297 residents. In order to maintain the current ratio of 1.2 sworn officers per 1,000 residents under Seaside 2040, the City would need to incrementally increase their police services by 16 sworn officers through the year 2040. This would require an expansion of the existing SPD facility or the construction of a new facility to house subsequent personnel, equipment, and vehicles (Borges 2022).

New development under buildout of Seaside 2040 would be required to comply with all applicable federal, state, and local regulations. Furthermore, new development would be required to incorporate Seaside 2040 Crime Prevention Development Standards policies under Goal S-1. However, the placement and potential impacts of a new police facility are unknown at this time and separate environmental review may be required.

Furthermore, this EIR analyzes buildout of the proposed General Plan, which includes development of the "Public/Institutional (PI)" land use designation, as well as "Neighborhood General," "Neighborhood High" designations, which allow public uses, including police, fire, schools, libraries, and recreation, as discussed in Section 2.4.6. The City is currently planning to construct and operate an additional fire station in the northern portion of the City, and the City may plan to develop additional police and fire stations during the planning period of Seaside 2040. Future individual developments would be analyzed under CEQA separately, while impacts of anticipated Seaside 2040 buildout have been analyzed in the individual resource sections of the EIR.

The *Safety Element* of Seaside 2040 includes the following goals for public facilities in providing required and needed police and fire protection for City of Seaside residents.

Safety Element Goals and Policies

Goal S-1: A high standard of police services with a focus on community-based crime prevention.

Intent: To provide high-quality police services, including traditional law enforcement services and community partnership and engagement. The result will improve safety, health, peace of mind, and quality of life through excellent police services and planning.

Policies: **Coordination**. Coordinate with local, state, and federal law enforcement agencies to reduce the risk to criminal activity. Coordinate with local partners, including schools, neighborhood groups, and community-based organizations, to encourage community-based crime prevention.

Crime prevention programs. Promote after school programs, volunteer programs, and Business and Neighborhood Watch programs, and other innovative programs to help maintain a safe environment.

Community relationship building. Continue to foster positive, peaceful, mutually-supportive relationships between Seaside residents and the police. Encourage increased community involvement and activities such as block parties as a way to reduce criminal activity.

Youth crime prevention programs. Encourage the development and operation of community and recreational facilities as a pre-emptive strategy to reduce youth-related crime. Expand opportunities for positive law enforcement and youth interaction.

Assess critical facilities. Identify and inventory critical facilities and establish guidelines for the operation of such facilities during emergencies.

Goal S-2: Effective emergency response following a natural or human-caused disaster.

Intent: To increase the safety of residents. To achieve this, the City will implement emergency preparedness planning and outreach, maintain sufficient service levels, and prepare for the potential impacts of climate change.

Policies: **Service levels.** Maintain sufficient levels of law enforcement services and facilities to support existing residents and future growth.

Service delivery and efficiency. Strive to improve service delivery and efficiency of the Seaside Police Department.

Coordinate emergency response. Implement coordinated emergency response planning.

Preparedness programs. Promote community-based, emergency preparedness programs and disaster education awareness, including the City's annual emergency system training and evacuation trainings.

Emergency evacuation. Maintain emergency procedures for the evacuation and control of population in identified floodplain areas in accordance with Section 8589.5 of the California Government Code. Inform residents and visitors about alternate routes in case of coastal flooding and tsunamis. Design evacuation maps to minimize and mitigate exposure to flood hazards to the maximum extent possible.

Emergency preparation education. Continue to educate City staff, residents, and businesses regarding appropriate actions to take during an emergency including evacuation procedures, City staff roles, and resource needs.

Partnership. Continue to work with the Monterey County Hazard Mitigation Planning Team during regular updates to the Monterey County Multi-Jurisdictional Hazard Mitigation Plan. Maintain consideration of climate change and sea level rise impacts as part of the County's comprehensive mitigation strategy.

Climate change risks. Re-evaluate existing plans to incorporate climate change hazards, sea level rise, and the populations and infrastructure vulnerable to climate change.

Goal S-6: Minimization of risk of fire hazards in the city and wildfire hazards on former Fort Ord Lands through fire prevention design and fuel reduction strategies.

Intent: To encourage planning and design strategies that mitigate wildfire risk. To achieve this, the City will assess and evaluate fire hazards, encourage fire mitigation, and ensure a level of service that meets or exceeds resident needs.

Fire protection for the Seaside East Specific Plan. Provide fire suppression water system guidelines and implementation plans to maintain adequate fire protection water volumes and emergency water storage and identify system distribution upgrades to adequately accommodate new development envisioned as part of the development of the Seaside East Specific Plan.

Water pressure. Coordinate with water districts to ensure that water pressure for existing developed areas is adequate for firefighting purposes during the season and time of day when domestic water demand on a water system is at its peak.

Fire education. Continue to provide fire hazard education and fire prevention programs to Seaside residents and businesses with targeted outreach to vulnerable populations.

Facility siting. Ensure that the location of new and existing fire protection facilities provides a consistent level of service to existing neighborhoods/centers and new neighborhoods/centers on former Fort Ord lands. Locate, when feasible, new essential public facilities, including, but not limited to, hospitals and health care facilities, emergency shelters, emergency command centers, and emergency communications facilities, outside of very high fire hazard severity zones, or identify construction methods or other methods to minimize damage if these facilities are in a very high fire hazard severity zone.

Fire hardening structures and homes. To increase resistance of structures to heat, flames, and embers, review current building code standards and other applicable statutes, regulations, requirements, and guidelines regarding construction, and specifically the use and maintenance of non-flammable materials (both residential and commercial). Promote the use of building materials and installation techniques beyond current building code requirements, to minimize wildfire impacts.

Update building code. Reduce the risk of impacts from wildfire through updating development standards that meet or exceed the California Code of Regulations Title 14 State Responsibility Area Fire Safe Regulations and Fire Hazard Reduction Around Buildings and Structures Regulations and ensure new development meets the fire safe requirements. Require ongoing maintenance and upkeep to be codified as part of building covenants or homeowner covenants, conditions, and restrictions to ensure defensible space measures are retained over time.

Development in the Very High Fire Hazard Severity Zone. Require new development in the Very High Fire Hazard Severity Zone to develop an evacuation plan and ensure that the plan includes adequate fire access (ingress, egress) to new development, including safe access for emergency response vehicles, visible street signs, and water supplies for structural fire suppression.

Fire redevelopment. Evaluate soils and waterways for risks from flooding, water quality, and erosion to ensure that they are suitable to support redevelopment following a large fire.

Wildfire evacuation. In planned developments that may occupy the WUI, VHFHSZ, or areas proximal to fire hazard severity zones, increase resilience during a potential wildfire evacuation through:

- Enforcing visible address numbers painted on sidewalks enforced through the city;
- Developing and/or adapting a multiple language accessible materials for how to prepare your family and home for an evacuation and go kit;
- Identifying and preparing at risk and vulnerable populations that may need assistance to evacuate;
- Maintaining critical evacuation routes, community fire breaks;
- Requiring adequate ingress and egress to new developments; and

- Restrict parking periodically (e.g., on red flag days) along critical evacuation routes.

The purpose of Goal S-1 is to provide high-quality police services in order to improve safety, health, peace of mind, and quality of life for Seaside residents. Several policies serve to meet Goal S-1, such as *Service levels* and *Service delivery and efficiency* which strive to maintain sufficient levels of law enforcement services and facilities and to support existing residents and future growth. For example, future development anticipated by the Future Specific Plan land use designations in 2040 General Plan would result in the need for additional fire and police protection. Implementation of the policies under Goal S-1, specifically *Service levels*, *Service delivery and efficiency*, and *Coordination*, would help the City achieve sufficient service levels for existing residents and future growth throughout the City. The remaining policies under Goal S-1 would aid the City in integrating community-based strategies to improve and augment City-provided police services.

Moreover, Goals S-2 and S-5 are intended to improve the current fire protection services in the City of Seaside, specifically with the implementation of polices such as *Service levels*, *Service delivery and efficiency, Coordinate emergency response*, *Emergency evacuation*, *Facility siting*, and *Fire protection of public facilities*. Additionally, other policies under Goals S-2 and S-5, such as *Preparedness programs*, *Emergency preparation education*, and *Fire education*, would help the City incorporate community-based strategies into improving emergency response effectiveness for existing residents and future growth. Lastly, the remaining policies under Goals S-2 and S-5, such as *Partnership*, *Climate change risks*, *Inventory risk levels*, *Fire prevention by design*, *Fire Protection Former Fort Ord*, *Landscaping and buffer zones*, *Water pressure*, *Update building code*, *Development in the Very High Fire Hazard Severity Zone*, and *Fire redevelopment*, would aid the City to proactively reduce wildfire hazards for existing residents and future growth by incorporating fire-prevention strategies into development design.

Goal LUD-1 would promote an urban form and structure that enhances the quality of life of residents, meets the communities vision for the future, and weaves new growth areas together with long-established Seaside neighborhoods.

As mentioned above, both the SPD and SFD would require an increase in staffing through the year 2040 to meet service staffing ratios under buildout of the General Plan. This could require the construction of new public service facilities. While implementation of the policies under Goal S-1, specifically *Service levels*, *Service delivery and efficiency*, and *Coordination* and Goal S-2, specifically *Service levels, Service delivery and efficiency, Coordinate emergency response*, would help the City achieve sufficient service levels for existing residents and future growth throughout the City, one or more new facilities to maintain the desired level of fire and police staffing may need to be constructed. The specific impacts associated with the construction of such new police and fire facilities are not known at this time, and any analysis of such impacts would be speculative. In addition, any such new facilities would require separate environmental analysis and any necessary project specific mitigation prior to being considered for approval. Furthermore, as noted above, this EIR analyzes buildout of the General Plan, including land use designations which provide for new police and fire facilities. As a result, this impact would be less than significant.

Mitigation Measure

No mitigation is required.

Significance After Mitigation

Impacts would be less than significant without mitigation.

Threshold 1:	Would Seaside 2040 result in substantial adverse physical impacts associated with the provision of new or physically altered school, library or other public facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other objectives?

Impact PS-2 DEVELOPMENT FACILITATED BY SEASIDE 2040 WOULD INCREASE THE CITY'S POPULATION. THIS WOULD INCREASE DEMAND FOR SCHOOL AND LIBRARY SERVICES AND POTENTIALLY CREATE THE NEED FOR NEW SCHOOL OR LIBRARY FACILITIES. HOWEVER, COMPLIANCE WITH POLICIES IN SEASIDE 2040 WOULD REDUCE IMPACTS RELATED TO THE CONSTRUCTION OF SCHOOL, LIBRARY, OR PUBLIC OTHER FACILITIES TO A LESS THAN SIGNIFICANT LEVEL.

With regard to City residents attending K-12 schools or vocational training programs within the City, a key guiding principle of Seaside 2040 is to foster a diverse economy that allow prosperity to be shared by all residents, maintain and improve access to educational and training opportunities, and cultivate a highly-trained and skilled workforce that can help attract new business to the City. Goals and policies in Chapter 3, *Land Use and Urban Design*, Chapter 7, *Parks, Open Space, and Conservation*, and Chapter 9, *Community Facilities and Infrastructure*, of Seaside 2040 support the continued partnership between Seaside and the MPUSD with the development of new schools for existing and future growth areas, and the maintenance and upkeep of the Seaside Library. Furthermore, Chapter 3, *Land Use and Urban Design*, of Seaside 2040 describes the establishment of the West Broadway Urban Village Specific Plan area, which includes the construction of a new library. Listed below are goals found in Seaside 2040 that relate to improving the City's management of school and library facilities in meeting the needs of existing residents and future growth.

Goal CFI-8: High-quality community facilities and services that meet the needs and preferences of all residents in the City.

Intent: To provide well-maintained community facilities that meet the needs of current and future residents. To achieve this, the City will work with regional partners, youth, community-based organizations, and others to ensure high-quality services are available.

Policies: **Community facility siting.** Provide community facilities and services throughout the City in close proximity to or on accessible transit corridors and priority bikeways. Ensure nearby sidewalks are well-maintained for accessibility.

Community services. Collaborate with a range of community partners (e.g., libraries, community centers, non-profits) to develop high-quality health, environmental, education, and recreation programs and services. Ensure provision of bilingual services and better serve needs of the diverse community.

Maintenance. Ensure well-maintained community facilities that promote civic pride and encourage their use.

Public space. Support the use of public facilities by local artists, students, and cultural groups, including shared space and financial and program support for local organizations.

Youth engagement. Encourage youth to guide planning and programming efforts at community facilities, including libraries, schools, art galleries, parks, and other public spaces.

Coordinated service delivery. Coordinate with City and County offices (e.g., libraries, parks, fire stations, police stations) to deliver public access to library services and community programming at the neighborhood scale.

After-school programming. Partner with local schools, libraries, and community centers to offer safe and accessible after-school programming opportunities that promote community health, wellness, and learning.

Childcare. Coordinate with local agencies to encourage a range of child-care facilities, including in-home childcare, family care, public and private childcare centers, and community centers, where feasible.

Goal CFI-9: Access to high-quality education and community services for all residents.

Intent: To continue to expand access to educational opportunities in order to increase economic opportunity for all residents and to strengthen the regional economy. To achieve this, the City will also work with the Monterey Peninsula Unified School District to ensure an adequate number of schools are sites appropriately.

Policies: **Adequate schools.** Work with the Monterey Peninsula Unified School District to anticipate potential adjustments in new student enrollment and potential impacts on existing schools. As appropriate, work with the Monterey Peninsula Unified School District to site schools within new residential neighborhoods, such as Seaside East or Campus Town in close proximity to parks, bike paths, and other open space amenities.

Redevelopment of former school sites. Should Monterey Peninsula Unified School District close schools within the city, work with the District to evaluate the potential for redevelopment of the school site with workforce housing. Additionally, work with the District in evaluating the potential of adding workforce housing to existing schools.

Amenity clustering. Encourage public and public-private partnerships to cluster development of schools, parks, child care facilities, and community activity centers with a coordinated share of costs and operational responsibilities.

Community partnerships. Promote collaborative and inclusive partnerships with local cultural organizations, music groups, and community members to continue building a strong arts and cultural identity in Seaside.

The above goals in Seaside 2040 aim to improve the City's management of growth and ensure that City facilities and services adequately meet the needs of existing residents and future growth. For example, *School siting,* contained in Goal CFI-9, states that the City will work with the MPUSD to site schools within new residential neighborhoods on former Fort Ord lands in close proximity to open space amenities. As the City currently envisions the construction of a new school as part of the buildout of the Seaside East Specific Plan Area, this new school would be designed and planned to accommodate the added and anticipated growth within the City of Seaside. The specific impacts associated with the construction of a new school are not known at this time and any analysis of such

impacts would be speculative. Because a new school would be part of this Seaside East Specific Plan Area, separate environmental review would be required.

Through the implementation of other policies contained in Goals CFI-8 and CFI-9, such as *Maintenance*, the City will aim to provide high-quality and well-maintained community facilities. Policies such as *Adequate schools*, *Community partnerships*, *Childcare*, *After-school programming*, *Coordinated service delivery*, *Public space*, *Community facility siting*, and *Community services* would additionally enable the City to appropriately adjust its public facilities and accommodate existing residents and future growth. Development under Seaside 2040 would likely increase enrollment at schools in Seaside over current levels; however, all of the schools shown in Figure 4.13-3 are currently below enrollment capacity. In addition, as enrollment increases and new or existing schools are considered for construction or expansion, separate environmental review may be required.

For library services demand, the Seaside Library, located at 550 Harcourt Avenue, is the only public library currently serving the community of Seaside. It is part of the Monterey County Free Libraries network of information centers serving the diverse communities of Monterey County and is the largest of the 17 branches of the network. The Seaside Library would sufficiently serve the addition of 12,555 people through 2040 when compared to 2010. Moreover, in order to meet future demands for library and other public services, the City currently envisions the construction of a new library. As described in the Seaside's "overall city structure policy" under Goal LUD-1, the City intends to develop a new City Hall and new cultural, arts, and institutional uses, including a new library. Because the new library would be located in downtown Seaside, as infill development, the extension of utilities and public services would not be needed.

Furthermore, this EIR analyzes buildout of the proposed General Plan, which includes development of the "Public/Institutional (PI)" land use designation, as well as "Neighborhood General," "Neighborhood High" designations, which allow public uses, including police, fire, schools, libraries, and recreation, as discussed in Section 2.4.6. Consequently, while specifics above new fire and police facilities are not know at this time, such impacts have been analyzed in the individual resource sections of the EIR as part of overall buildout of the General Plan. Adherence to the aforementioned goals and policies will reduce impacts from the construction of new library facilities to a less than significant level.

Mitigation Measure

No mitigation is required.

Significance After Mitigation

Impacts would be less than significant without mitigation.

Threshold 2:	Would Seaside 2040 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?
Threshold 3:	Would Seaside 2040 include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

Impact PS-3 DEVELOPMENT FACILITATED BY THE PROPOSED 2040 GENERAL PLAN WOULD INCREASE THE CITY'S POPULATION WITH COMMENSURATE INCREASES IN DEMAND FOR PARKS AND RECREATION FACILITIES. THE CURRENT INVENTORY OF PARKS WOULD NOT MEET THE CITY'S TARGET OF 12 ACRES OF ACTIVE PARKLAND PER 1,000 RESIDENTS. HOWEVER, THE DEVELOPMENT OF NEW PARK SITES IDENTIFIED UNDER SEASIDE 2040 WOULD PROVIDE SUFFICIENT PARK ACREAGE TO MEET THE CITY'S TARGET. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

As discussed in Section 4.13.1, *Setting*, the City of Seaside owns and maintains 28 parks and recreational sites totaling approximately 55 acres. With the inclusion of the Bayonet and Black Horse golf courses (359.6 acres), the Fort Ord National Monument lands (918.7 acres), and the Eolian Dunes Preserve/Seaside Beach (6 acres), the City currently provides a total of 1,333 acres of parks, open space, and recreational land uses. This is equal to approximately 12 acres of park, recreational, and open space per 1,000 residents, which exceeds the California Quimby Act target of 3.0 acres per 1,000 residents (California Government Code 66477). The buildout of Seaside East Specific Plan area alone is anticipated to add approximately 120 acres in parks, open space, and recreational commercial uses and 150 acres of recreational-open space, according to the estimates in Chapter 3, *Land Use and Community Design*, of Seaside 2040.

Population and employment growth accommodated by Seaside 2040 would increase demand for new park and recreational facilities. Chapter 3, *Land Use and Community Design*, of Seaside 2040 describes the establishment of the West Broadway Urban Village Specific Plan area, the Campus Town Specific Plan area, the Main Gate Specific Plan area, and the Seaside East Specific Plan area, which include the establishment of new parks and open space areas. Former Fort Ord lands, including Seaside East, Campus Town, and Main Gate, will provide new neighborhood, community, and recreational commercial areas. These areas will add innovative green spaces, re-program unused spaces for public use, and improve pedestrian and bicycle connections to existing parks and open spaces within existing Seaside neighborhoods. This would also include improvements to park access for residents in the Terrace West, Terrace East, and Olympia neighborhoods, who are living greater than one-half mile walking distance from a park.

In addition, Goal PO-1 contains *Park ratio and standard*, which expresses the City's intent to meet and maintain a city-wide park standard ratio of five acres per thousand residents. In 2022, the City had a population of 32,068; this would constitute a city-wide park standard of approximately 160 acres of park and open space. According to the final Existing Conditions Report (2017), Seaside currently has 458.5 acres of land designated as parks and recreation facilities, including former Fort Ord lands not considered part of the National Monument. With the introduction of a population increase of 12,555 people, meeting the City's park development standard of five acres per 1,000 residents would require a total of approximately 223 acres. Therefore, the City already exceeds its parkland standard. The General Plan indicates an addition of up to 270 acres of parks, open space, and recreational land uses to Seaside through the year 2040. This exceeds the City's target of 223 acres, with Seaside 2040 anticipating a total of approximately 730 acres. While parks demand would

be satisfactorily met, the development of new parks and open space areas would result in physical changes that could have significant environmental impacts.

Listed below are goals found in Seaside 2040 that relate specifically to improving the City's management of park and recreational facilities in meeting the needs of existing residents and future growth.

Goal PO-1: Abundant new park and recreational facilities to serve Seaside.

Intent: Close proximity to parks, open space, and recreational facilities encourages use, but can also facilitate opportunities to engage in physical exercise. Creating new parks in areas with limited access to park space is particularly important. Incorporating the principles of active design can help improve health and promote civic engagement. This goal seeks to increase the amount and availability of park and recreational facilities for all Seaside residents and future residents. Figure 35 illustrates a complete vision for the proposed additions to Seaside's open space network.

Policies: **Park ratio and standard.** Strive to meet a citywide park standard of five acres per thousand residents, (excluding the Fort Ord National Monument and Bayonet) reflecting the standard requirement in the Quimby Act.

Parks in existing neighborhoods. If sufficient water supply is available to make the project feasible, increase the number and acreage of mini and neighborhood parks in areas with low park levels of service, including the Terrace, Olympia, Noche Buena, and Rousch neighborhoods. Ensure that all neighborhoods are served by a park within a reasonable walking or bicycling distance. Maintain existing parks, as funds allow, and supplement with volunteer opportunities or partnerships when possible.

Parks on former Fort Ord lands. Provide a range of park types and community recreation facilities on former Fort Ord, including a regional recreation area in Seaside East.

FORTAG. Support implementation of the FORTAG regional trail. Coordinate with FORTAG on trail design and connectivity and promote trail art.

Innovation in park design. Encourage innovation in new park design allowing community gardens, urban agriculture and orchards, paseos, plazas, tot lots, roof-top gardens and other urban parks and green spaces.

New fields, courts, and gyms. Provide multi-purpose fields and courts and new indoor gyms for Seaside residents and visitors.

New park maintenance. In addition to the adopted Community Facilities District explore options for Quimby Act fees, other developer impact fees, disposition and development agreements or other mechanisms to provide funding for improvements.

Recreation programs. Promote opportunities for physical activities for all ages and abilities by improving and expanding community recreation programs.

Goal PO-2: Natural Open Space on Former Fort Ord Lands

Intent: As former Fort Ord lands redevelop, this goal aims to create a high-quality and well-connected series of natural open spaces that support expanded recreational opportunities. Open space corridors include trails connecting to the Fort Ord National Monument, parks, and other destinations. It also includes passive corridors to preserve habitat.

Policies: **Active open space corridors and trails.** In partnership with regional and local agencies, develop active open space corridors that support natural vegetation communities, scenic vistas, and sensitive habitats within former Fort Ord lands. Open space corridors should connect to formal and informal trailheads in the National Monument where possible.

FORTAG trail. Coordinate trail design and connectivity of parks and other open spaces with the FORTAG regional trail.

Open space buffer. Provide an open space buffer/fuel break consistent with the BRP, HMP, and potential HCP between future development in Seaside East and the National Monument.

Goal PO-3: Well-maintained and safe parks, recreational facilities, and open spaces.

Intent: Safe and well-maintained parks encourage greater community use. Improving infrastructure around parks, implementing safer park design, and ensuring adequate staff and resources support active and passive recreational opportunities for existing and future residents.

Policies: **Park upgrades.** Continue making improvements to existing parks and recreational facilities, including ADA and Title 24 compliance, upgrading and adding new recreational equipment, and enhancing park sustainability.

Resources and staff. Provide the appropriate resources and staffing to improve and maintain existing park and recreational facilities in Seaside.

Goal PO-4: Accessible connections to parks, recreational facilities, and open space.

Intent: Safe and accessible bicycle and pedestrian connections to the park, open space, and recreational facilities encourage greater park use. These access improvements include providing bicycle and pedestrian priority routes to parks, as well as ADA and Title 24 improvements. Transportation improvements and wayfinding can also increase access to regional open spaces, such as the Fort Ord National Monument and Seaside beach.

Policies: **Access to parks**. Increase connectivity between parks and open space through bicycle facilities and priority pedestrian routes.

ADA improvements. Support ADA and Title 24 improvements to improve access to existing parks.

Park visibility. Increase park visibility through signage, wayfinding, and well-marked entry points.

National Monument connectivity. Promote the development of trails within Seaside East to the National Monument.

Coastal and beach access. Improve coastal and beach access from existing Seaside neighborhoods.

On-site open space. Encourage on-site open space (e.g., courtyards, to be connected to streets and other public spaces through physical access and sightlines).

Goal PO-6: Partnerships and agreements that improve park access.

Intent: The Monterey Peninsula Unified School District, CSUMB, federal government, and Monterey Peninsula Regional Parks District all maintain parks, open spaces, and recreational facilities within or directly adjacent to Seaside. Area nonprofits also help with park design, construction, maintenance and funding. This goal seeks to maintain and expand joint use agreements with these agencies and organizations to facilitate greater park access for Seaside residents and visitors.

Policies: **Joint use agreements.** Maintain joint use agreements with the Monterey Peninsula Unified School District, CSUMB, federal government, and Monterey Peninsula Regional Parks District to allow greater park access.

Partnerships. Strengthen public-private partnerships with groups, such as the Friends of Seaside Parks Association, to build and maintain public parks and recreational facilities. Continue working with Sustainable Seaside and other partners, when programming ecology education.

Regional coordination. Participate in coordinated regional planning for parks and open space development and access.

Green space near schools. Work with Seaside schools to ensure that students have adequate access to green space.

Goal LUD-11: Maintain and enhance existing residential neighborhoods.

Intent: To encourage stable, livable low and moderate density neighborhoods, and to maintain and enhance their character.

Policy: **Open space maintenance.** Strengthen public-private partnerships with local neighborhood organizations to build and maintain neighborhood parks and recreational facilities.

Goal LUD-13: High-quality multifamily neighborhoods with a mixture of well-designed building types for a diversity of households.

Intent: To promote a variety of building types in the Neighborhood General and High designations, in order to serve the housing needs of a broad cohort of the City and region's population.

Policy: **Minimum open space.** Require a minimum amount of open space in higher density residential and mixed-use projects. Carefully and deliberately integrate these spaces into project design and require maintenance by the property management organization.

Goal LUD-17: Abundant and high-quality natural open space on former Fort Ord Lands.

Intent: To leverage the undeveloped Fort Ord lands to provide new active and passive open space for the Seaside community. To create connected open space and habitat corridors that maximize ecological quality.

Policies: **Open space corridors.** Balance the need to create more housing, employment, retail, and entertainment uses on former Fort Ord lands with open space corridors that support natural vegetation communities, scenic vistas, and sensitive habitats within new growth areas. Open space corridors should connect to formal and informal trailheads in the National Monument, where possible.

Open space buffer. Provide an open space buffer/fuel break between new development and habitat areas.

Regional efforts. Participate in regional programs and in partnerships with land trusts and conservancies to seek funding to preserve, maintain, and acquire open space as opportunities allow.

Trail network implementation. Work with project applicants to dedicate land or pay in lieu fees for trails that connect to parks and open space, FORTAG, or other regional bicycle and pedestrian connections.

Goal CFI-8: High-quality community facilities and services that meet the needs and preferences of all residents in the City.

Intent: To provide well-maintained community facilities that meet the needs of current and future residents. To achieve this, the City will work with regional partners, youth, community-based organizations, and others to ensure high-quality services are available.

Policy: **Community facility siting.** Provide community facilities and services throughout the City in close proximity to or on accessible transit corridors and priority bikeways. Ensure nearby sidewalks are well-maintained for accessibility.

Goal CFI-10: An integrated and well-planned expansion of CSUMB.

Intent: To work with CSUMB to ensure the planned expansion provides numerous benefits to Seaside and its residents. The expansion of CSUMB can play an important role as a community anchor, providing services in convenient locations, improving opportunities for physical activity, and leveraging opportunities for capital investments.

Policies: **CSUMB expansion.** Continue to work with CSUMB to plan for the expansion of the campus in a way that supports the vision for a Campus Town, as described in the Land Use and Community Design Element.

Joint-use. Establish and maintain a joint-use agreement allowing Seaside residents and employees to use park and outdoor recreational facilities.

The above goals in Seaside 2040 aim to improve the City's management of growth and ensure that City facilities and services adequately meet the needs of existing residents and future growth. Goals PO-1, PO-2, PO-3, PO-4, LUD-9, LUD-13, and LUD-17 each contain policies intended to establish and maintain open space areas and corridors in existing neighborhoods and anticipated growth areas,

such as Campus Town, Main Gate, and Seaside East. Furthermore, several policies contained in Goals PO-3, PO-4, and CFI-8 intend to improve and upgrade existing parks and recreational facilities, as well as the creation of high-quality parks and recreational facilities, which have high accessibility and can serve Seaside residents and visitors.

With Seaside's parks generally spread out across the City and the expected introduction of new parks, active open space, and recreational land uses, implementation of Seaside 2040 is not anticipated to place demands on existing or future parks or recreational facilities such that substantial physical deterioration would occur from increased demand. These parks do not have a quantifiable capacity and depend upon the activities that can vary on a day-to-day basis (e.g., the Oldemeyer Center may have private-youth baseball or softball games one day and a citywide event organized by Seaside Recreational Services another). If certain facilities are being used (i.e., turf area), individuals may elect to participate in ongoing activities or choose alternate activities in the area. While existing and future parks would need periodic maintenance, the increased demand for parks and other recreational facilities is not anticipated to outpace normal maintenance responsibilities. In addition, as individual development projects are considered for construction through the preparation, review, and implementation of specific plans for areas of new growth, separate environmental review would be required.

As a result, this impact would be less than significant.

Mitigation Measure

No mitigation is required.

Significance After Mitigation

Impacts would be less than significant without mitigation.

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4.14 Transportation

This section evaluates the potential impacts to the local and regional circulation system that would result from implementation of Seaside 2040. This includes an analysis of the potential for the Proposed 2040 General Plan to conflict with applicable circulation system plans, increase local and regional per capita vehicle miles traveled, increase hazards due to a design feature, or interfere with emergency access.

4.14.1 Setting

a. Street Classifications

The current Seaside General Plan Circulation Element identifies a functional classification system for each street type. Similar to many other cities, the existing street classifications are primarily focused on the function of each street for purposes of accommodating motor vehicle travel. The current General Plan defines the existing street classifications are as follows:

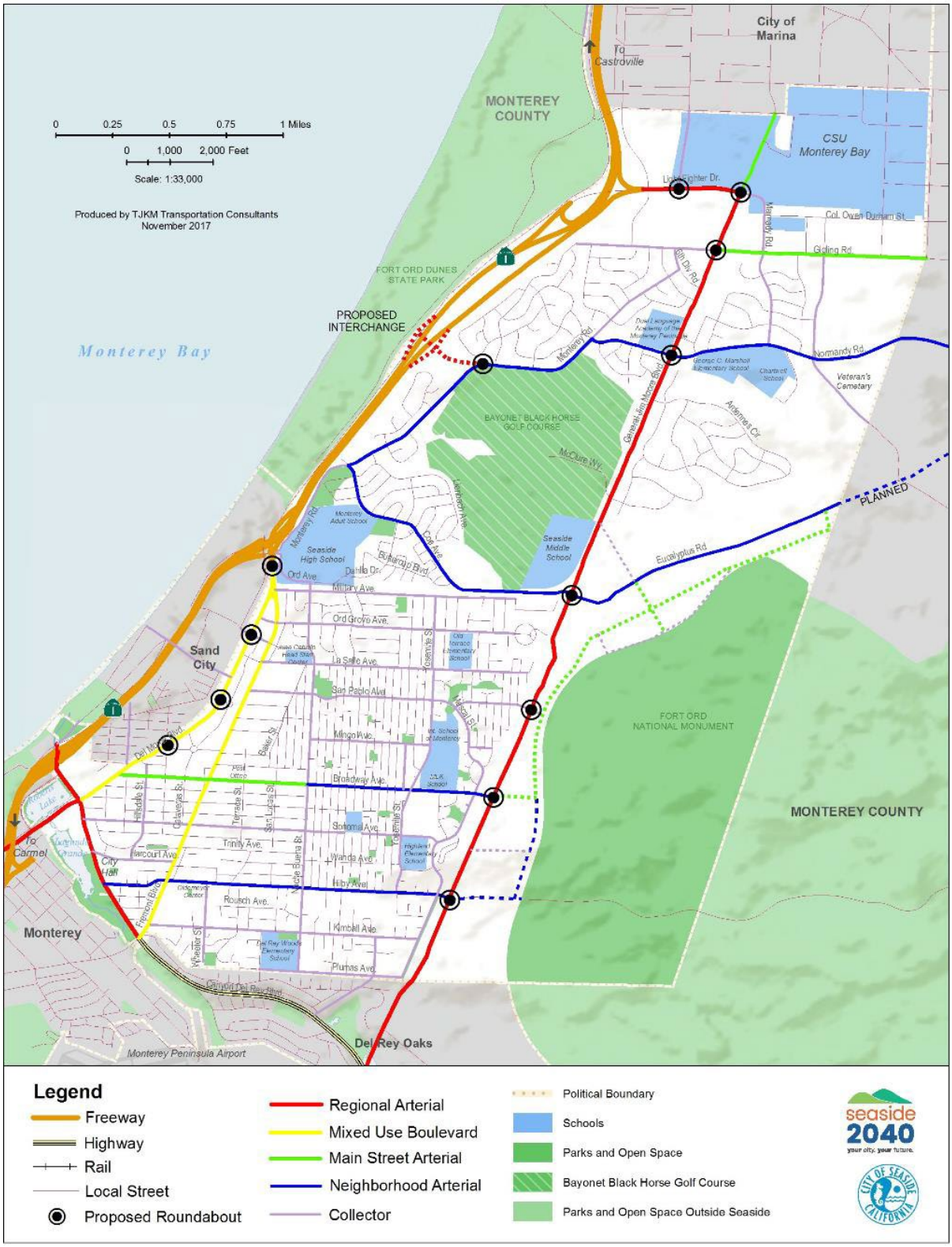
- Arterial streets provide the principal network for cross-town traffic and connect the City to the external freeway and highway systems. They generally have moderate traffic speeds and carry significant amounts of traffic. Primary traffic generators are and/or should be located on arterials.
- Collector streets provide traffic circulation between arterials and local streets. They connect neighborhoods with neighborhood activity centers and, as currently defined are intended to provide limited direct access to abutting properties. Collectors generally have two travel lanes.
- Local streets provide direct access to abutting properties and, as currently defined, have a function of serving local traffic movements within residential and commercial areas. All streets not designated as major streets (arterial, collector, highway, or freeway) are local streets, which have either two travel lanes for bidirectional travel or one travel lane for one-way.
- Freeways are divided highways with full control of access and two or more lanes for the exclusive use of motor vehicle traffic in each direction. The only freeway adjacent to Seaside is State Route 1 (SR 1).
- Highways as defined by the current General Plan are facilities with two or more lanes and points of access that are not fully controlled. Canyon del Rey Boulevard (State Route 218) is the only designated highway within the City, designated as such due to its regional function.

b. Street Network

There is a natural hierarchy of streets that provide various levels of access and mobility, with freeways and state highways generally accommodating the highest volumes and speeds, arterial streets connecting to freeways and operating at moderate speeds and/or volumes, and collector and local streets that link, neighborhoods, parks and schools to the arterial streets and to each other, with many of these serving adjacent development and neighborhoods.

The Seaside street network consists of approximately 130 miles of roadways that serve motor vehicle, bicycle, pedestrian and transit circulation. Figure 4.14-1 provides a map of the existing roadway network serving Seaside.

Figure 4.14-1 Existing Roadway Network & Street Classification Map



Freeways

State Route 1 is the primary regional motor vehicle facility, which follows the Pacific coastline from Los Angeles, ending near the Oregon border. Where it abuts the western boundary of Seaside, State Route 1 is a four-lane divided freeway connecting Seaside with adjacent cities including Marina and Monterey. State Route 1 also connects with other regional facilities that provide motor vehicle access to US 101, Salinas, and the San Francisco Bay Area. As of 2018, State Route 1 carried over 78,000 daily vehicles adjacent to Seaside.

State Highways

Canyon Del Rey Boulevard (SR 218) is the only designated state highway within the City, designated as such in the 2004 General Plan due to its status as a facility under State jurisdiction of and its regional function connecting State Route 1 with another regional facility, State Route 68, to the south of Seaside that connects the Monterey Peninsula with Salinas. Within Seaside, Canyon Del Rey Boulevard runs east-west and operates in a similar manner as Seaside's arterial streets, intersecting other streets with at-grade intersections. 2018 Traffic volumes ranged from nearly 30,000 daily motor vehicles west of Del Monte Avenue near State Route 1 to less than 20,000 daily motor vehicles on eastern segments near Fremont Boulevard.

Arterial Streets

Broadway Avenue runs east-west, extending from Del Monte Boulevard in downtown Seaside east to General Jim Moore Boulevard. Broadway Avenue carried an estimated 12,000 daily motor vehicles on most segments as of 2018, well below its capacity of approximately 20,000 daily vehicles (on the two-land segment west of Fremont Boulevards) to 30,000 daily motor vehicles (on the four-lane segment east of Fremont Boulevard).

Del Monte Boulevard runs north-south just south of State Route 218 in Seaside to Fremont Boulevard east of Sand City and SR 1. As of 2018, Del Monte Boulevard served a daily traffic volume that ranges from 22,000 south of Broadway to just 12,000 daily motor vehicles north of Broadway Avenue, well below the capacity of approximately 30,000 daily motor vehicles.

Fremont Boulevard runs north-south from Monterey and provides direct access to many of Seaside's commercial sites before connecting with SR 1. As of 2018, Fremont Boulevard carried approximately 17,000 daily motor vehicles on segments south of its intersection with Del Monte Avenue – well below its capacity of approximately 30,000 daily motor vehicles.

General Jim Moore Boulevard runs north-south along the eastern edge of Seaside's urban edge, west of former Fort Ord land. As of 2018, General Jim Moore Boulevard carried just over 10,000 daily motor vehicles, roughly one-fourth of capacity.

Gigling Road runs east-west from General Jim Boulevard to the eastern city limits within former Fort Ord lands, south of the California State University Monterey Bay (CSUMB) campus. As of 2018, Gigling Road carried less than 10,000 daily vehicles, a relatively low volume for an arterial street.

Lightfighter Drive runs east-west from State Route 1 to General Jim Boulevard, near the CSUMB campus. As of 2018, Lightfighter Drive carried 15,000 daily vehicles.

Hilby Avenue runs east-west through residential neighborhoods within the historic core area of Seaside, connecting Del Monte Avenue, Fremont Boulevard and General Jim Boulevard.

Coe Avenue runs east-west from General Jim Boulevard to Coe Avenue, where it intersects Monterey Road just north of Seaside High School.

Eucalyptus Avenue runs east of General Jim Moore Boulevard, from its intersection with Coe Avenue, within the former Fort Ord lands.

Table 4.14-1 lists the general characteristics of each of the arterials in Seaside, including Canyon Del Rey Boulevard, a state highway that functions similar to an arterial:

- Each arterial street segment in Seaside provides two to four motor vehicle travel lanes, and sidewalks are provided on both sides of most arterials, with the exception of some portions of Canyon Del Rey Boulevard, Fremont Boulevard, Gigling Road and Coe Avenue where sidewalks are limited to one side.
- Bicycle lanes are lacking on most of the City's arterial street network, with the exception of General Jim Moore Boulevard and Coe Avenue. Bicycle lanes are not provided on any of the arterial streets within the historic core of Seaside.

Table 4.14-1 Existing Arterial Street Characteristics

Street Name	Orientation	Motor Vehicle Lanes	Sidewalk Presence[1]	Bicycle Facilities[2]
Canyon Del Rey Boulevard (west of Fremont Boulevard)	East-West	4	Varies (1-2 sides)	None
General Jim Moore Boulevard	North-South	4	Both sides	Class I & Class II
Broadway Avenue	East-West	2 to 4	Both sides	None
Del Monte Boulevard	North-South	4	Both sides	None
Lightfighter Drive	East-West	4	Both sides	None
Eucalyptus Road	North-South	2	Both sides	Class II
Fremont Boulevard	North-South	4	Varies (1-2 sides)	None
Gigling Road	East-West	2	Varies (1-2 sides)	None
Hilby Avenue	East-West	2	Both sides	None
Coe Avenue	East-West	2	One side	Class II

[1] Sidewalk Presence represents types of sidewalk coverage on roadway.

[2] Bicycle Facilities represents types of bikeway (Class I to IV) within right-of-way.

[3] Canyon Del Rey Boulevard (State Route 218) is designated as a State Highway but functions as an arterial street within Seaside.

Source: Appendix I

Collector Streets

Table 4.14-2 lists the general characteristic of each of the collector streets in Seaside. One motor vehicle lane per direction is provided on each of the collector streets. Sidewalks are provided on both sides of most collector streets, with the exception of sidewalk gaps on one or both side of portions of several collector streets. Bicycle lanes are limited to portions of just two collector streets – Monterey Road and San Pablo Avenue.

Table 4.14-2 Existing Collector Street Characteristics

Street Name	Orientation	Sidewalk Presence[1]	Bicycle Facilities[2]
2nd Avenue	North-South	Both sides	Class I
Baker Street	North-South	Varies (1-2 sides)	None
Contra Costa Street	North-South	Varies (1-2 sides)	None
Gigling Road	East-West	Varies (1-2 sides)	None
Harcourt Avenue	East-West	Both sides	None
Hillsdale Street	North-South	Varies (0-2 sides)	None
Kimball Avenue	East-West	Both sides	None
La Salle Avenue	East-West	Both sides	None
Mescal Street	North-South	Varies (0-2 sides)	None
Military Avenue	East-West	Both sides	None
Monterey Road	North-South	Varies (1-2 sides)	Class II (partial)
Mingo Avenue	East-West	Both sides	None
Normandy Road	East-West	North side	None
Noche Buena Street	North-South	Both sides	None
Ord Grove Avenue	East-West	Both sides	None
Playa Avenue	East-West	Both sides	None
Plumas Avenue	East-West	Varies (0-1 side)	None
San Pablo Avenue	East-West	Both sides	Class II (partial)
Sonoma Avenue	East-West	Both sides	None
Tioga Avenue	East-West	Both sides	None
Wheeler Street	North-South	Varies (1-2 sides)	None
Yosemite Street	North-South	Both sides	None

[1] Sidewalk Presence represents types of sidewalk coverage on roadway.

[2] Bicycle Facilities represents types of bikeway (Class I to IV) within right-of-way.

Source: Appendix I

c. Bicycle and Pedestrian Facilities

Bicycle Facilities

Seaside's existing bicycle network totals just under 10 miles, including approximately 3.3 miles of Class I multi-use paths and approximately 6.4 miles of Class II bicycle lanes on City streets. Bicycle facilities are currently provided along some portions of major streets and include portions of the Monterey Peninsula Recreational Trail. The existing bicycle network is as follows:

- Class I multi-use paths along the western side of SR 1 (Monterey Peninsula Recreational Trail); General Jim Moore Boulevard north of Eucalyptus, the southwestern portion of the City extending south into the City of Monterey (Monterey Bay Costal Trail); and between Divarty Street and Gigling Road adjacent to the California State University Monterey Bay Campus
- Class II bicycle lanes along portions of Coe Avenue, Eucalyptus Road, General Jim Moore Boulevard, and Monterey Road
- Existing bicycle facilities provide regional north-south connectivity between the Cities of Marina and Monterey, with minimal east-west connectivity.

Current plans to expand the Seaside bikeway network are described in the Seaside Bicycle Master Plan (BMP) that was originally developed in 1997 and updated in 2007. Future bike lane installation projects described in the BMP are limited to Broadway Avenue, and Del Monte Boulevard south of Broadway Avenue. Most of the future bikeway projects under the current plan are limited to Class III signed routes on neighborhood collector streets. Class III bicycle routes are facilities where bicyclists share travel lanes with motor vehicle traffic, often limited to the installation of "Bicycle Route" directional signage on low-volume streets.

Existing bikeway facilities, as well as planned facilities described in the BMP (thus representing future bikeway conditions without the Proposed 2040 General Plan) are shown on Figure 4.14-2.

Pedestrian Facilities

The existing pedestrian network provides a nearly continuous system of sidewalks in much of Seaside's historic core area. Key challenges to pedestrian circulation are along the City's key commercial corridor, Fremont Boulevard, where longer crossing distances are required. There are numerous blocks lacking sidewalks near west Broadway Avenue including the Auto Mall, Calaveras Street, and Hillsdale Street. These areas without adequate walking conditions are in proximity to commercial and residential areas and downtown where pedestrian connections are desired. In addition, gaps in the existing pedestrian network are located in the northern half of the City, within former Fort Ord lands, north of Coe and Eucalyptus Avenues, where the street and sidewalk network has not yet been fully developed.

The City of Seaside does not have a Pedestrian Master Plan. Planned pedestrian improvements identified in the 2004 General Plan Circulation Element are limited to West Broadway. The West Broadway Urban Village Specific Plan identifies a planned 4- to 2-lane reduction on West Broadway Avenue between Del Monte Boulevard and Fremont Boulevard that includes widening sidewalks along the roadway. The project aims at developing a pedestrian- and bicycle-friendly atmosphere and revitalizing the study area.

Pedestrian safety was assessed through a review of collision data obtained from the California Highway Patrol (CHP). In 2022, 12 pedestrian-related collisions were reported in the city. Of these collisions, five occurred on Fremont Boulevard, two occurred on Lightfighter Drive, two occurred on La Salle Avenue, and one occurred on Flores Street, Noche Buena Street, and Vallejo Street (California Highway Patrol 2023).

d. Public Transit

The Monterey County public transit system is designed to serve regional and local travel needs. Monterey-Salinas Transit (MST) provides transit services in the City. As of January 2023, 15 MST routes have stops in Seaside. Figure 4.14-3 provides a map of transit service.

The most frequent service is provided by the MST Jazz Routes A, B, and C that operate between the Sand City Transit Station and Monterey. The three Jazz routes operate with 10-minute combined headways on Fremont Boulevard in Monterey before splitting into three lines with 30-minute headways within Seaside, serving three different routes within Seaside's historic core area. The MST Jazz routes provide an enhanced level of bus service that includes faster service through bus stop improvements and measures to reduce bus delay at some locations in Monterey. Such service is often referred to as "rapid bus service." Future transit strategies in Seaside could include expansion of the Jazz service to areas such as Fort Ord. Each of the key Seaside routes include a stop at the Sand City Transit Station, located just a few blocks from Del Monte Avenue.

Figure 4.14-2 Bikeway Network Map: Existing and Planned Facilities (prior to the Proposed 2040 General Plan)

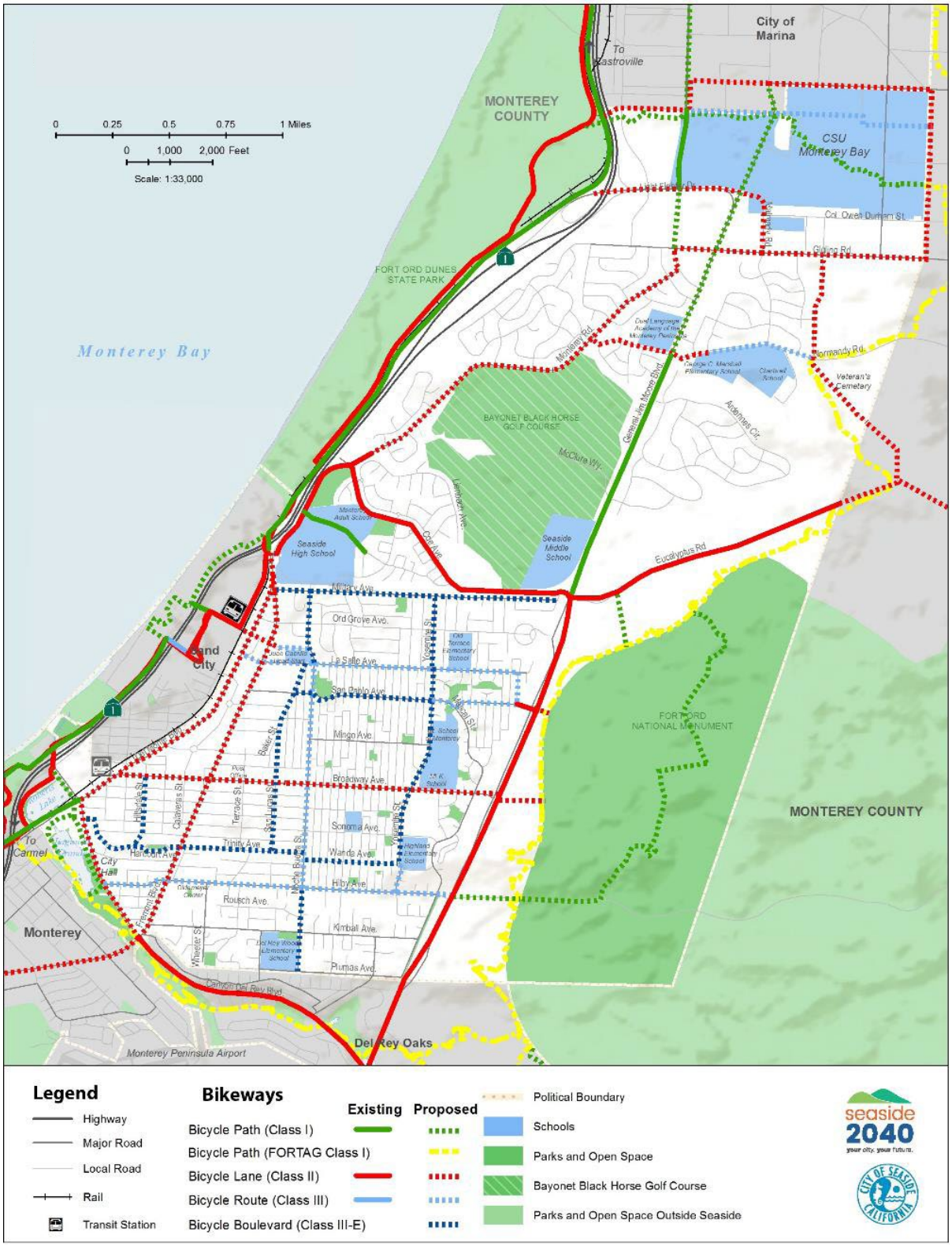
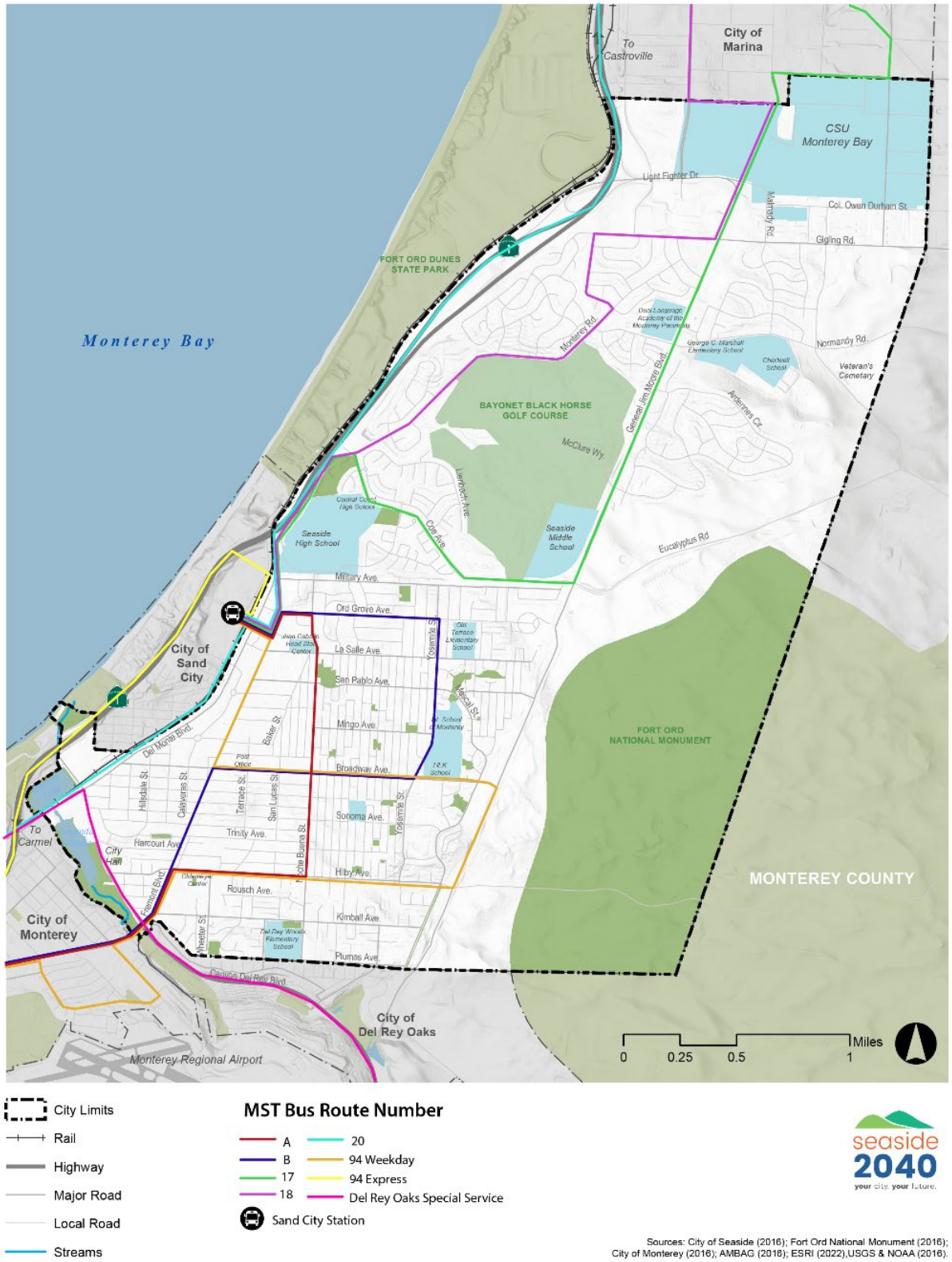


Figure 4.14-3 Existing Public Transit Service Map



ADA Paratransit (RIDES) is another service offered by MST that provides transportation services for people with disabilities. Though each of MST buses are fully accessible and equipped with wheel-chair lifts, RIDES offers eligible passengers curb to curb transportation service by reservation during the same hours of fixed-route services. In addition, the MST RIDES program offers taxi vouchers to assist seniors and persons with disabilities in accessing important locations within their community.

e. Travel Characteristics

Travel Modes & Distance Traveled

U.S. Census Bureau data for mode travel to and from places of employment provide general travel characteristics and patterns of the City. As shown in Table 4.14-3, Seaside residents have a higher rate of public transit ridership and carpooling, and a lower rate of driving alone to work, compared to the countywide average. The walk to work mode share is also slightly higher in Seaside compared to the countywide average. In addition, Seaside residents typically own slightly fewer motor vehicles than the countywide average. While approximately 5 percent of households in Monterey County own no cars, in Seaside, 7 percent of households are zero-vehicle households.

In comparison to state and countywide trends, the mean travel time of Seaside residents to work is approximately 19 minutes, with Monterey County and State averaging 22 and 28 minutes, respectively.

Table 4.14-3 Travel Mode Comparison for Work Trips

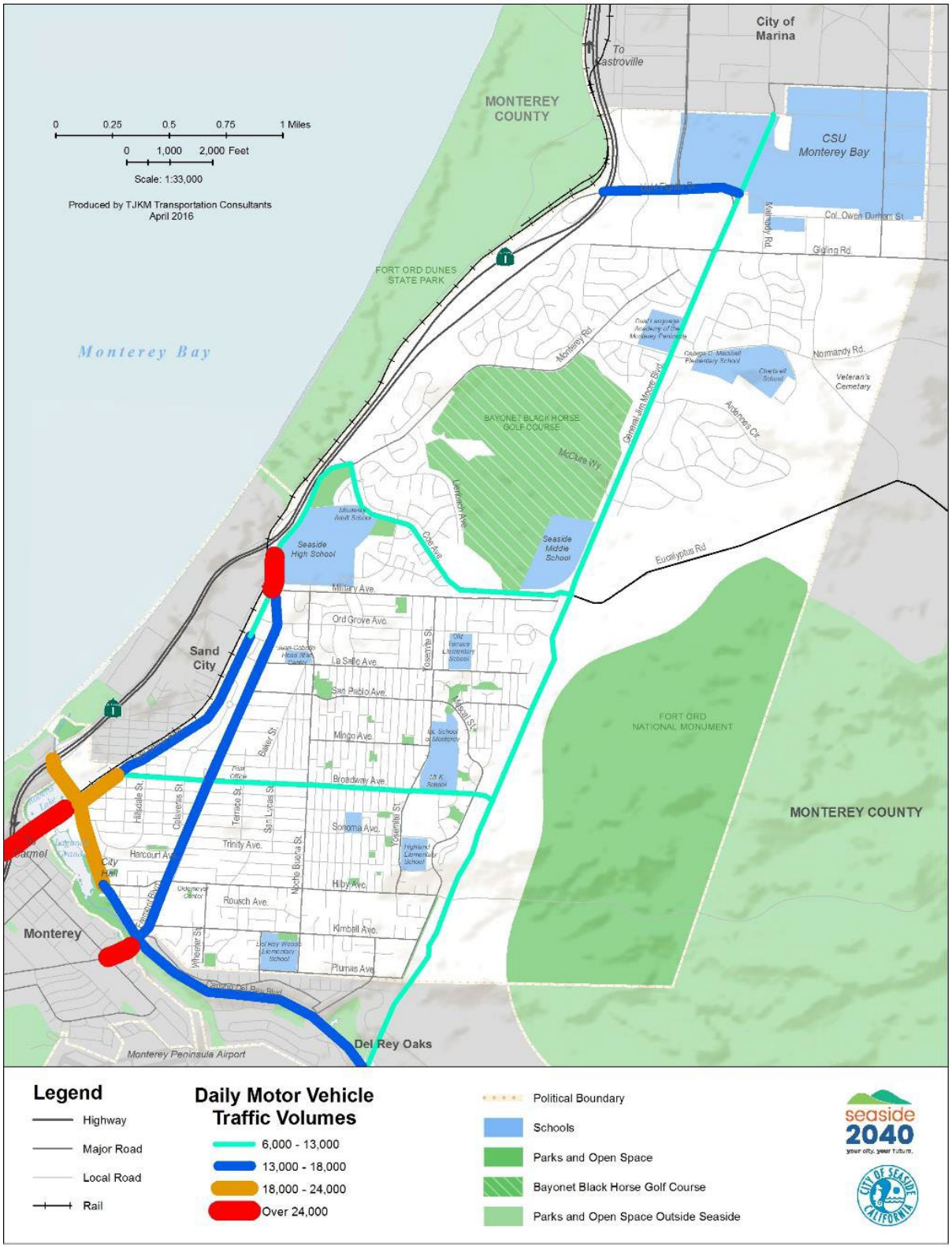
Jurisdiction	Drive Alone	Carpool	Transit	Walk	Bicycle	Work at Home	Other
Seaside	74%	11.5%	3.6%	2%	1.5%	6.3%	1.1%
Monterey County	70.3%	6.8%	0.5%	2.8%	0.4%	11.3%	7.9%

Source: United States Census Bureau 2022a, 2022b

Existing Traffic Volumes & Capacity

The primary regional motor vehicle facility in Seaside is State Route 1. Traffic delays on State Route 1 are primarily limited to peak-hour reductions in travel speeds where State Route 1 passes Seaside. As of 2018, State Route 1 carried over 78,000 daily vehicles. Daily traffic counts were derived from peak-hour counts. Figure 4.14-4 illustrates the approximate daily traffic volumes on key streets in 2018. As shown, traffic volumes are highest at regional access locations near SR 1 (State Route 1) and some segments of Canyon Del Rey Boulevard (State Route 218).

Figure 4.14-4 Existing Daily Traffic Volumes



4.14.2 Regulatory Setting

This section summarizes applicable municipal plans and regulations that may apply to the General Plan Area. This information provides a context for the impact discussion below.

a. Federal

The US Department of Transportation (USDOT) provides a number of grant programs, primarily for the construction and upgrading of major highways and transit facilities. Many of these grants are administered by the state and regional governments. Use of federal grant funding also invokes the National Environmental Protection Act (NEPA) in some cases. The Federal Highway Administration (FHWA) sets design standards (such as interchange spacing) for interstate highways such as the I-10 and I-710 freeways. The Federal Railroad Administration (FRA) within the USDOT establishes safety rules regarding the operation of railroads (e.g., maximum train speeds, maximum allowed highway crossing blockage time).

b. State

The California Department of Transportation (Caltrans) has jurisdiction over state highways. Caltrans constructs and maintains all state highways, and sets design standards that are often copied by local governments.

Caltrans Authority over the State Highway System

Caltrans is responsible for planning, design, construction and maintenance of all interstate freeways and state routes. Caltrans provides a Guide for Preparation of Traffic Impact Studies (Caltrans 2002), which provides information for Caltrans' review of projects and State highway facilities, including freeway and arterial segments, on- and off-ramps, and signalized intersections. Caltrans builds, maintains, and operates the State Highway system in California, with a goal to allow for the safe and efficient use of the State transportation system for all users. Caltrans has set operational goals of its facilities pertaining to intersection, arterial segment, and freeway segment level of service.

Within the study area, three facilities are State Routes under the jurisdiction of Caltrans. These facilities are State Route (SR)-1, and Canyon Del Rey Boulevard (SR-218). According to the Caltrans Guide for the Preparation of Traffic Impact Studies (TIS), "Caltrans endeavors to maintain a target LOS at the transition between LOS C and LOS D."

However, on November 9, 2016, Caltrans issued the Local Development Intergovernmental Review Project Interim Guidance Implementing Caltrans Strategic Management Plan 2014-2020 Consistent with Senate Bill (SB) 743 - Interim Guidance (SB743 is described subsequently). This document provides guidance to Caltrans staff regarding commenting on local EIRs in a manner consistent with SB 743. Among other things, it suggests that Caltrans should provide recommendations that strive to reduce vehicle miles traveled (VMT) generation and improve pedestrian, bike, and transit service rather than providing recommendations that primarily accommodate motor vehicle travel. In addition, comments related to the State Highway System should focus on VMT and not vehicle delay or a project's effects on road capacity.

Caltrans Encroachment Permits

Any work within the existing right of way would have to comply with Caltrans permitting requirements. This includes a traffic control plan that adheres to the standards set forth in the

California Manual of Uniform Traffic Control Devices (MUTCD) (Caltrans 2014).[1] As part of these requirements, there are provisions for coordination with local emergency services, training for flagmen for emergency vehicles traveling through the work zone, temporary lane separators that have sloping sides to facilitate crossover by emergency vehicles, and vehicle storage and staging areas for emergency vehicles. MUTCD requirements also provide for construction work during off-peak hours and flaggers. Given the programmatic nature of the general plan, the lack of detailed construction information, vehicular construction impacts are considered less than significant.

Statewide Transportation Improvement Plan

The Statewide Transportation Improvement Plan (STIP) is a capital improvement program that plans transportation projects related to state facilities in California for the next five years. The program is updated every two years with new construction projects as more funding is provided. The California Transportation Commission approves the fund estimate and then Caltrans and regional planning agencies submit plans for transportation improvement projects. If the projects are programmed in the STIP, then relevant agencies can begin the implementation process.

Senate Bill 743

On September 27, 2013, Governor Jerry Brown signed Senate Bill (SB) 743 into law. SB 743 changed the way transportation impact analysis is conducted as part of CEQA compliance. These changes eliminated automobile delay, level of service (LOS), and other similar measures of vehicular capacity or traffic congestion as a basis for determining significant impacts under CEQA.

Prior rules treated automobile delay and congestion as an environmental impact. SB 743 requires the *CEQA Guidelines* to prescribe an analysis that better accounts for transit and reductions of greenhouse gas emissions. In December 2018, Office of Planning and Research (OPR) released the final update to *CEQA Guidelines* consistent with SB 743, which recommends using vehicle miles traveled (VMT) as the most appropriate metric of transportation impact to align local environmental review under CEQA with California's long-term greenhouse gas emissions reduction goals. The *Guidelines* require all jurisdictions in California to use VMT-based thresholds of significance no later than July 1, 2020.

At the same time as the release of the updated *CEQA Guidelines,* OPR also released a non-binding *Technical Advisory on Evaluating Transportation Impacts in CEQA*, which outlines potential VMT analysis methodologies and thresholds of significance for use by agencies in California based on substantial evidence developed by OPR related to achievement of the State's greenhouse gas emissions reductions targets.

Senate Bill 32 and Senate Bill 375

On September 8, 2016, the governor signed SB 32 into law, extending the California Global Warming Solutions Act of 2006 by requiring the state to further reduce greenhouse gas emissions to 40 percent below 1990 levels by 2030 (the other provisions of AB 32 remain unchanged). AB 1279, "The California Climate Crisis Act," was passed on September 16, 2022 and declares the State would achieve net zero GHG emissions as soon as possible, but no later than 2045, and to achieve and maintain net negative GHG emissions thereafter. In addition, the bill states that the State would reduce GHG emissions by 85 percent below 1990 levels no later than 2045. The 2022 Scoping Plan

[1] Caltrans Manual on Uniform Traffic Control Devices available online at https://dot.ca.gov/programs/safety-programs/camutcd/camutcd-files.

lays out a path to achieve AB 1279 targets. The actions and outcomes in the 2022 Scoping Plan would achieve significant reductions in fossil fuel combustion by deploying clean technologies and fuels, further reductions in short-lived climate pollutants, support for sustainable development, increased action on natural and working lands to reduce emissions and sequester carbon, and the capture and storage of carbon.

The Sustainable Communities and Climate Protection Act of 2008 (SB 375), signed in August 2008, enhances the state's ability to reach greenhouse gas emissions goals by directing the California Air Resources Board to develop regional GHG emission reduction targets to be achieved from passenger vehicles by 2020 and 2035. SB 375 aligns regional transportation planning efforts, regional GHG reduction targets, and affordable housing allocations.

California's Complete Streets Act

The California Complete Streets Act (AB 1358) adopted in 2008 requires that cities and other public agencies incorporate "complete street" policies when updating their General Plan Circulation Element, to ensure that Complete Streets principles are incorporated. Complete Streets Law was signed into law as Assembly Bill 1358. It requires that cities plan for the needs of all users, including bicyclists and pedestrians, when updating local general plans.

c. Regional

Transportation Agency for Monterey Regional Transportation Plan

Updated every four years, the Regional Transportation Plan (RTP) prepared by the Transportation Agency for Monterey was most recently updated in 2022 and includes a set of goals tied to sets of objectives and performance measures:

- **Access & Mobility:** Deliver a reliable and efficient transportation system that promotes viable transportation alternatives.
- **Safety & Health:** Create a safe transportation system that fosters county-wide health and well-being through promoting active lifestyles.
- **Environmental Stewardship:** Protect and enhance the County's built and natural environment.
- **Equity:** Promote social and geographic equity through transportation planning, engineering, and design.
- **Economic Vitality:** Foster an economically viable, sustainable transportation system that supports the regional economy.

Association of Monterey Bay Area Governments 2045 Metropolitan Transportation Plan/Sustainable Communities Strategy

Federal and State law requires that AMBAG prepare a long-range transportation plan every four years. The most recent long-range transportation plan, the 2045 MTP/SCS, was adopted by the AMBAG Board of Directors in June 2022. The 2045 MTP/SCS is a comprehensive planning effort that coordinates land use patterns and transportation investments with the objective of developing an integrated, multimodal transportation system. The MTP/SCS is built on a set of integrated policies, strategies, and investments to maintain and improve the transportation system to meet the diverse needs of the region through 2045. The MTP/SCS describes where and how the region can accommodate projected new households and jobs between 2022 and 2045,and details the regional transportation investment strategy through 2045.

AMBAG began developing the 2045 MTP/SCS when its Board of Directors adopted the following goals and policy objectives:

- **Access and Mobility:** Provide convenient, accessible, and reliable travel options while maximizing productivity for all people and goods in the region.
- **Economic Vitality**: Raise the region's standard of living by enhancing the performance of the transportation system.
- **Environment**: Promote environmental sustainability and protect the natural environment.
- **Healthy Communities:** Protect the health of our residents; foster efficient development patterns that optimize travel, housing, and employment choices and encourage active transportation.
- **Social Equity**: Provide an equitable level of transportation services to all segments of the population.
- **System Preservation and Safety:** Preserve and ensure a sustainable and safe regional transportation system.

This framework of goals and policy objectives was used to guide the development of the 2045 MTP/SCS.

TAMC Active Transportation Plan for Monterey County

The 2018 TAMC *Active Transportation Plan* is an update of the 2011 Bicycle and Pedestrian Master Plan, which identifies all existing and proposed bicycle and pedestrian facilities in Monterey County. This Plan identifies remaining gaps in the bicycle and pedestrian network and opportunity areas for innovative bicycle facility design. Its vision is: "Active transportation will be an integral, convenient and safe part of daily life in Monterey County for residents and visitors of all ages and abilities." The goals of the Plan are as follows:

- **Active Transportation Trips:** Increase the proportion of trips accomplished by biking and walking throughout Monterey County.
- **Safety:** Improve bicycle and pedestrian safety.
- **Connectivity:** Remove gaps and enhance bicycle and pedestrian network connectivity.
- **Equity:** Provide improved bicycle and pedestrian access to diverse areas and populations in Monterey County via public engagement, program delivery and capital investment.
- **Education:** Increase awareness of the environmental and public health benefits of bicycling and walking for transportation and recreation.
- **Quality Facilities:** Improve the quality of the bike and pedestrian network through innovative design and maintenance of existing facilities.

d. Local

2004 Seaside General Plan

The current adopted City of Seaside (City) General Plan contains goals and policies for transportation within the Circulation Element. Under the City's current adopted Circulation Element, the City considers LOS C or better to be the operational goal for signalized intersections. The General Plan also provides parking goals and policies. Goal C-4 is to "ensure adequate parking is provided throughout Seaside." The General Plan also includes a discussion of the benefits and

opportunities associated with new mixed-use development, including that businesses and residential projects have the opportunity to share parking and increase the number of trips made by active modes, such as walking or biking.

Bicycle Master Plan

The Seaside Bicycle Transportation Plan (BTP), adopted in 2007, identifies the City's existing and planned bicycle network and related infrastructure project recommendations to achieve the following goals:

- Make bicycling in Seaside safe, convenient and pleasurable for everyday transportation to work, school, errands and to connect with other transportation modes; as well as for pleasure, recreation and health
- Promote cycling as a safe, healthful, inexpensive, and environmentally benign alternative to auto travel for short trips
- Integrate bikeways bike facilities and programs into all planning activities
- Establish bikeways that link California State University Monterey Bay (CSUMB) and Fort Ord developments to services, businesses and residential areas in Seaside proper
- Encourage development of bicycle safety education and enforcement programs to improve bicycle skills, observance of traffic laws and to promote safety for all cyclists
- Develop and upgrade bikeways and related facilities to provide improved biking opportunities
- Provide secure and visible bicycle facilities that meet the needs of all bicyclists within the City of Seaside
- Increase provisions for support facilities (showers and lockers) by private employers
- Provide convenient bicycle access and parking throughout the City's transportation system
- Link City and regional bikeways to the proposed Intermodal Transportation Center to be located in the vicinity of Del Monte Boulevard and Broadway Avenue
- Uniformly apply Caltrans and City design standards and policies that promote safe, convenient and pleasurable bicycle facilities that encourage bicycle transportation
- Pursue all available bicycle funding opportunities
- Address safety issues of integrating bikeways into the motorized transportation network
- Build a network that accommodates bicyclists of all ages and riding levels
- Increase the number of bicycle commuters

The majority of the planned bikeways under the 2007 BTP would be Class III bikeways, in which bicycles and motor vehicles would share travel lanes with motor vehicles.

4.14.3 Impact Analysis

a. Methodology and Significance Thresholds

Significance Criteria

Impacts would be significant if the project would:

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

2. Conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)
3. Substantially increase traffic hazards due to a geometric design feature (e.g. sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment)
4. Result in inadequate emergency access

VMT Impact Methodology

Since SB 743 eliminated the use of LOS for CEQA impact analysis purposes, that method is not utilized in this analysis. The analysis in this document examines potential roadway transportation impacts under current CEQA criteria. The primary quantitative measure of roadway impacts is VMT.

A VMT Analysis for Seaside 2040 was prepared by Hexagon Transportation Consultants, Inc. in October 2022, which is included as Appendix C. This analysis estimated VMT that would be generated by additional residential uses and employment facilitated by Seaside 2040 using the AMBAG Regional Travel Demand Model. This model uses trip generation and distribution data and socioeconomic data from transportation analysis zones within the AMBAG region.

Because the City of Seaside has not adopted city-specific VMT policies and thresholds, this analysis establishes thresholds based on OPR's 2018 *Technical Advisory on Evaluating Transportation Impacts in CEQA,* which defines the VMT threshold as 15 percent below the existing regional average for different land use categories. For Seaside 2040 residential development, the VMT threshold is 15 percent below the existing Monterey County average daily residential VMT per capita. AMBAG's Regional Travel Demand Model provides data from 2015 as the model base year, which estimates the county average daily residential VMT per capita was 11.4 and county average daily employment VMT per job is 7.9. Therefore, the residential VMT threshold of significance would be 9.7 (15 percent below 11.4) and the employment-based VMT threshold of significance would be 6.7 (15 percent below 7.9).

b. Project Impacts and Mitigation Measures

Threshold 1:	Would the project conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?

Impact T-1 SEASIDE 2040 PROPOSES A GREATER EMPHASIS ON BICYCLING, WALKING AND TRANSIT, CONSISTENT WITH THE MONTEREY COUNTY REGIONAL TRANSPORTATION PLAN GOALS AND POLICIES. SEASIDE 2040 WOULD ALSO BE CONSISTENT WITH THE REGIONAL TRANSPORTATION PLAN BIKEWAY NETWORK AND ROADWAY NETWORK GOALS. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

Growth and development in Seaside associated with the buildout of the Proposed 2040 General Plan, would increase traffic on local and regional roadways when compared to existing conditions. Additionally, development outside the City's boundaries would contribute to increased traffic on area roadways. Seaside 2040 places a greater emphasis on transit, bicycling and pedestrian transportation, compared to the 2004 General Plan, and impacts to mass transit and non-motorized travel are anticipated to be less than significant as explained below. Additionally, as described below, Seaside 2040 would not conflict with plans and policies related to the roadway network.

Impacts to Mass Transit and Non-motorized Travel

Seaside 2040 buildout would generate new transit riders, bicyclists, and pedestrians. Seaside 2040 includes goals, policies, and programs that provide for an integrated network of bicycle and pedestrian facilities as well as for the needs of transit users, including:

- Seaside 2040 includes a Complete Street Policy, and changes to street classifications to better accommodate bicycle and pedestrian travel.
- Seaside 2040 is consistent with countywide bicycle plan and MTP/SCS bikeway network goals and incorporates the planned regional FORTAG trail and regional bikeway via Broadway Avenue and Del Monte Avenue. Seaside 2040 substantially expands Seaside's planned bikeway network, to provide a comprehensive network of bike lanes (including buffered bike lanes on some segments) on major streets, and bike boulevards on local and collector streets. Figure 4.14-5 shows the proposed bikeway network as envisioned by Seaside 2040.
- Seaside 2040 identifies pedestrian improvement priority areas, recommends the provision of wider sidewalks and buffer treatments to benefit pedestrians, and provides sample cross-section drawings relevant to specific corridor segments. Figure 4.14-6 shows the pedestrian improvement priority zones.
- Seaside 2040 supports regional efforts to provide enhanced bus service by designating "transit-priority" segments on specific streets, including a second BRT corridor through the eastern half of the city to serve Seaside East and CSUMB. The MTP/SCS identifies "queue-jump improvements" as a desirable type of transit improvement throughout the county, and Seaside 2040 includes a policy supporting installation of "queue-jump" lanes, and similar measures to reduce delays to buses.

Seaside 2040 includes goals and policies aimed at facilitating travel by public transit, walking and bicycling including the following:

Goal M-1: A citywide network of "complete streets" that meets the needs of all users, including bicyclists, children, persons with disabilities, motorists, movers of commercial goods, pedestrians, public transportation, and seniors.

Intent: To make travel safe for users, including bicyclists, pedestrians, motorists, and transit vehicles, and access for riders and people of all ages and abilities. Complete Streets principles are incorporated into the General Plan, consistent with the California Complete Streets Act (AB 1358).

Policies: **Planning for all modes and transportation/land use integration.** Design streets holistically, using a complete streets approach which considers pedestrians, bicyclists, motorists, transit users, and other modes together to adequately serve future land uses.

Universal access. Incorporate universal design techniques to accommodate pedestrians of all ages and abilities. Ensure compliance with the ADA.

Commercial corridors and neighborhood connections. Focus on improving automobile-oriented streets, such as Fremont Boulevard, Del Monte Boulevard, and East Broadway Avenue to support safe and comfortable access to retail and services by pedestrians, transit users, and bicyclists from adjacent neighborhoods and nearby destinations.

Reallocate space for Complete Streets. Reallocate roadway space to allow complete streets improvements on streets with excess traffic capacity, including implementation of the following "road diets:"

- Broadway Avenue. Reduce to one motor vehicle lane per direction to provide space for bicycle lanes and wider sidewalks.
- Fremont Boulevard. Reduce to one southbound motor vehicle lane, to provide space for bicycle lanes and wider sidewalks while retaining on-street parking where desired.
- Del Monte Boulevard. Reduce to one northbound lane, to provide space for bicycle lanes and wider sidewalks while retaining on-street parking where desired.

CSUMB and former Fort Ord lands. Increase multi-modal access to CSUMB and former Fort Ord lands.

Block length. Limit block sizes to 600 feet to enhance multi-modal circulation and connectivity wherever feasible.

Alleys. Maintain existing alleys as important resources for auto and pedestrian mobility.

Shared streets. Encourage the concept of shared streets on low volume streets with limited right-of-ways, particularly on Seaside's one-way streets.

Maintenance. Maintain all streets, on-street paths, and sidewalks in a state of good repair. Coordinate improvements to and maintenance with other major transportation and infrastructure improvement programs.

Public use of rights-of-way. Allow for the flexible use of public rights-of-way to accommodate all users and support neighborhood placemaking activities, community events, and temporary public spaces.

Street trees. Maintain street trees to enhance the pedestrian environment and support Seaside's open space system and urban forest.

Wayfinding. Provide wayfinding signage that helps travelers navigate to transit facilities, local and regional bicycle routes, public and cultural amenities, and visitor and recreation destinations.

Transportation performance measures. Evaluate transportation performance holistically, taking into consideration multi-modal system performance measures as a consideration of new mobility priorities. Transportation performance measures should emphasize the efficient movement of people.

Signal synchronization. Promote signal synchronization in a manner that reduces travel time without negatively affecting pedestrians and bicyclists. Coordinate synchronization efforts with neighboring cities.

Balance transportation spending across modes. Provide sufficient spending on transportation improvements for each of the key travel modes to support the long-term viability and safety of each mode, as well as required maintenance.

Roundabouts. Consider installation of roundabouts as shown on Figure 21.

Goal M-2: Mobility options that serve the multi-modal access and travel needs generated by new development in a manner suitable to the local context.

Intent: To ensure new development includes multi-modal transportation components, and provide mechanisms for new development to pay its fair share of the cost of transportation improvements.

Policies: **Coordination with new development.** Improve the Seaside circulation system in concert with public and private land development and redevelopment projects.

Parking standards. Maintain efficient and updated parking standards to ensure development provides adequate parking, while reducing reliance on automobiles.

Greenhouse gas emissions and vehicle miles traveled (VMT) reductions. Support development and transportation improvements that help reduce greenhouse gas emissions and VMT in line with AMBAG targets for the Sustainable Communities Strategy. Strive to reduce VMT below regional averages on a "per resident" and "per employee" basis.

Street design standards. Update and maintain street design standards consistent with the goals of the National Association of City Transportation Officials (NACTO) Urban Street Design Guide that optimize multi-modal mobility.

Traffic calming. Consider the implementation of traffic calming measures to reduce speeding and make streets user-friendly for all modes of transportation, including pedestrians and bicyclists.

Multi-modal connectivity. Promote pedestrian and bicycle improvements that improve connectivity between existing and new development.

Pedestrian amenities. Require new development and redevelopment to increase connectivity through direct and safe pedestrian connections to public amenities, neighborhoods, shopping and employment destinations throughout the city.

Landscape treatments. Encourage landscape strips between streets and sidewalks on all new and/or improved streets, when feasible.

Car sharing and bike sharing in commercial areas. Explore car-sharing and bicycle-sharing opportunities throughout the city.

Figure 4.14-5 Proposed 2040 General Plan – Bikeway Network Map

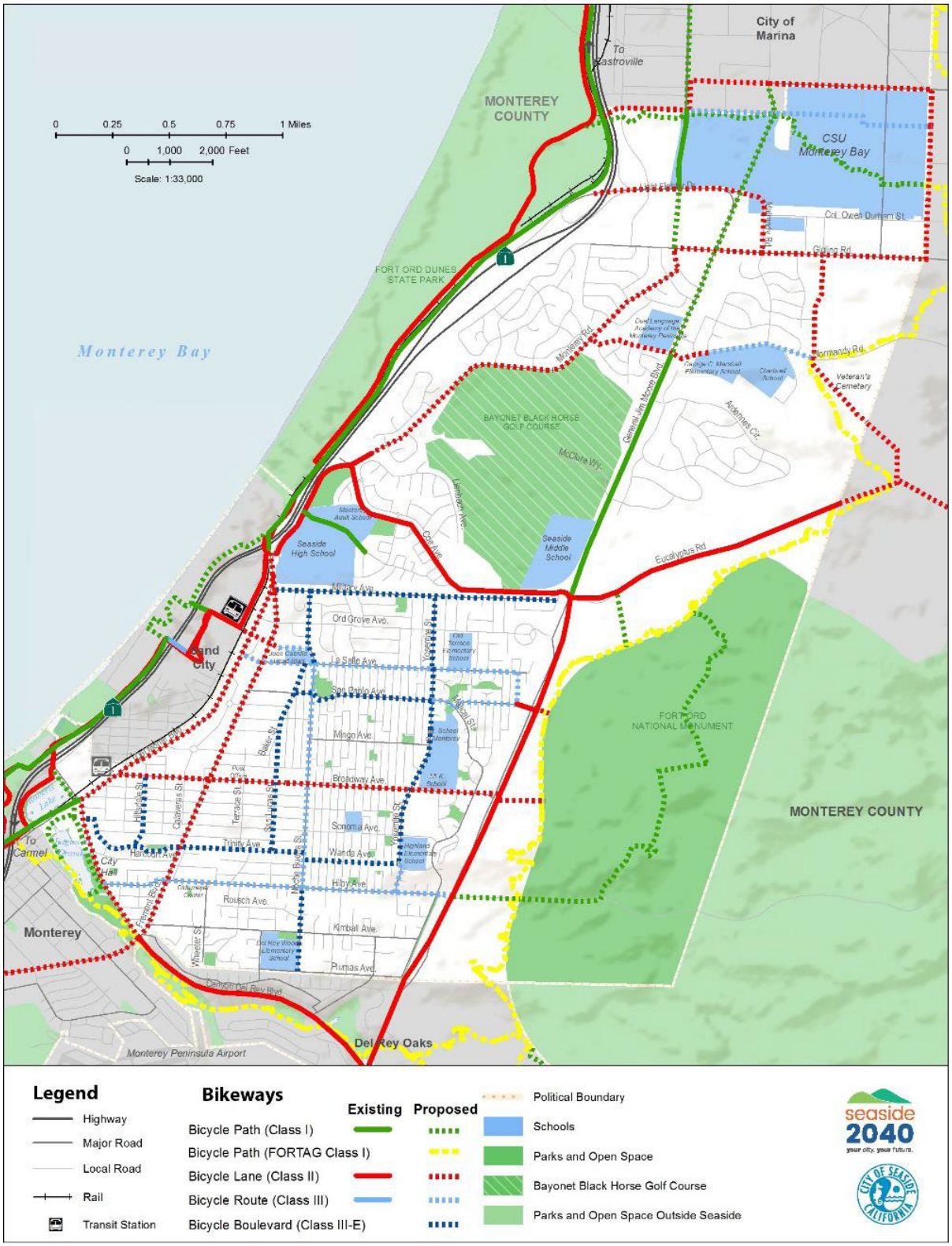


Figure 4.14-6 Proposed 2040 General Plan – Pedestrian Improvement Focus Areas

Goal M-3: Pedestrian facilities that connect land uses, address safety concerns, and support land use and urban design goals.

Intent: To prioritize the provision of pedestrian improvements and ensure that adequate pedestrian access is provided to land uses and destinations.

Policies: **Pedestrian paths and sidewalks.** Provide adequate sidewalk widths and clear paths of travel based on the street classifications, neighboring land uses, and anticipated pedestrian demand.

Pedestrian amenities. Widen sidewalks in areas of high pedestrian activity to provide space for streetscape improvement and amenities as appropriate and feasible.

Pedestrian access to land uses. Provide pedestrian access to all land uses in Seaside.

Pedestrian Improvement Focus Areas. Allocate resources and/or pursue funding to plan and construct pedestrian improvements in the pedestrian improvement focus areas shown on Figure 4.14-6.

Crossings at barrier locations. Enhance pedestrian and bicycle crossings and pathways at key locations across physical barriers such as highways and road barriers.

Pedestrian facility maintenance. Allocate funds for adequate regular maintenance of pedestrian facilities. Ensure existing facilities are maintained to continue compliance with accessibility standards. Maintain clearly marked crosswalks.

Goal M-4: Accessible regional connections to parks, recreational facilities, and open space.

Intent: To ensure that mobility network planning is coordinated with related planning efforts pertaining to parks, recreational facilities, and coastal access.

Policies: **FORTAG trail.** Support implementation of the FORTAG regional walking and bicycling trail. Coordinate with FORTAG on trail design and connectivity.

Trail art. Enhance walking and biking trails with public art, including infrastructure facilities, installations, and programming.

Connections to Fort Ord National Monument. Promote the development of safer routes and trails connecting Seaside to the National Monument, and support provision of visitor serving amenities that complement bicycling.

Coastal access. Promote the development of safer routes and trails connecting Seaside to the coast.

Goal M-5: A citywide bicycle network that connects residential, commercial, educational and recreational uses, and earns Seaside the reputation of a bicycle-friendly city.

Intent: To prioritize completion of the citywide bikeway network and ensure that adequate bicycle circulation and access is provided throughout Seaside and to/from regional designations.

Policies: **Bikeway network completion.** Strive to complete the citywide bicycle network to create a full network of bicycle facilities throughout Seaside.

Funding for bikeway Improvements. Increase the share of bicycle facility improvements included in the City's Capital Improvement Program.

Bicycle Master Plan. Update the City of Seaside Bicycle Transportation Plan on a regular basis, typically every five years.

Bikeway design guidelines. Refer to the NACTO Urban Bikeway Design Guide when designing bikeways in Seaside.

Bicycle program staff. Dedicate City staff to the management of bicycle related projects and programs.

Bicycle encouragement and events. Encourage bicycling by sponsoring and/or supporting community outreach events that promote bicycling such as Bike Month and Bike to Work/School Events, and the Safe Routes to School Program.

Bicycle facilities and commercial areas. Install bicycle amenities, including bicycle lanes, parking and storage, and wayfinding and signage throughout Seaside's commercial areas as appropriate.

Bicycling and law enforcement. Ensure bicycle-friendly laws and ordinances are in place and enforced by law enforcement.

Bicycle parking requirements for new development. Ensure future development meets Seaside Municipal Code requirements for bicycle parking spaces.

Bicycle parking requirements for existing development. Develop a retrofit program to make it easier to add bicycle parking to existing buildings. This could include example layouts and simplifying the permitting process.

Bicycle commute programs. Encourage employers to provide shower and locker facilities for bicycle commuters.

Goal M-6: Transit service that is frequent and convenient, and maximizes ridership potential for residents, employees and visitors.

Intent: To enhance local support for transit improvements and efforts to increase service frequency and ridership, anticipate future transit opportunities, and consider measures to enhance transit-operating speeds on priority transit corridors.

Policies: **Funding for transit Improvements**. Support the collection of transportation impact fees to augment transit operational costs and funding for physical improvements to enhance transit.

Transit Priority Corridors. Provide measures to reduce delay to transit vehicles on priority transit corridors, such as queue-jump lanes and/or bus signal prioritization, where feasible, on transit-priority street segments, shown on Figure 4.14-7.

Coordination with transit agencies. Coordinate with local and regional transit agencies to improve and increase transit service, infrastructure, and access to the city.

Transit amenities. Support right-of-way design and amenities consistent with local transit goals to make it easier to get to transit services and improve transit as a viable alternative to driving.

Transit stop maintenance is provided. Ensure that transit stops are maintained in a safe, clean, and attractive condition to encourage transit ridership.

Monterey Branch Railroad right-of-way. Promote the preservation of opportunity to transform the abandoned Monterey Branch railroad right-of-way for future transit, pedestrians and bicyclists, or other modes.

Emerging transit technologies. Continue to explore emerging transit technologies and their citywide applicability.

Transit program staff: Identify City staff to manage transit related projects and programs.

New bus infrastructure. Plan for significant improvements to existing infrastructure on former Fort Ord land, including the development of bus stop location plan.

Goal LUD-13: High-quality multifamily neighborhoods with a mixture of well-designed building types for a diversity of households.

Intent: To promote a variety of building types in the Neighborhood General and High designations, in order to serve the housing needs of a broad cohort of the City and region's population.

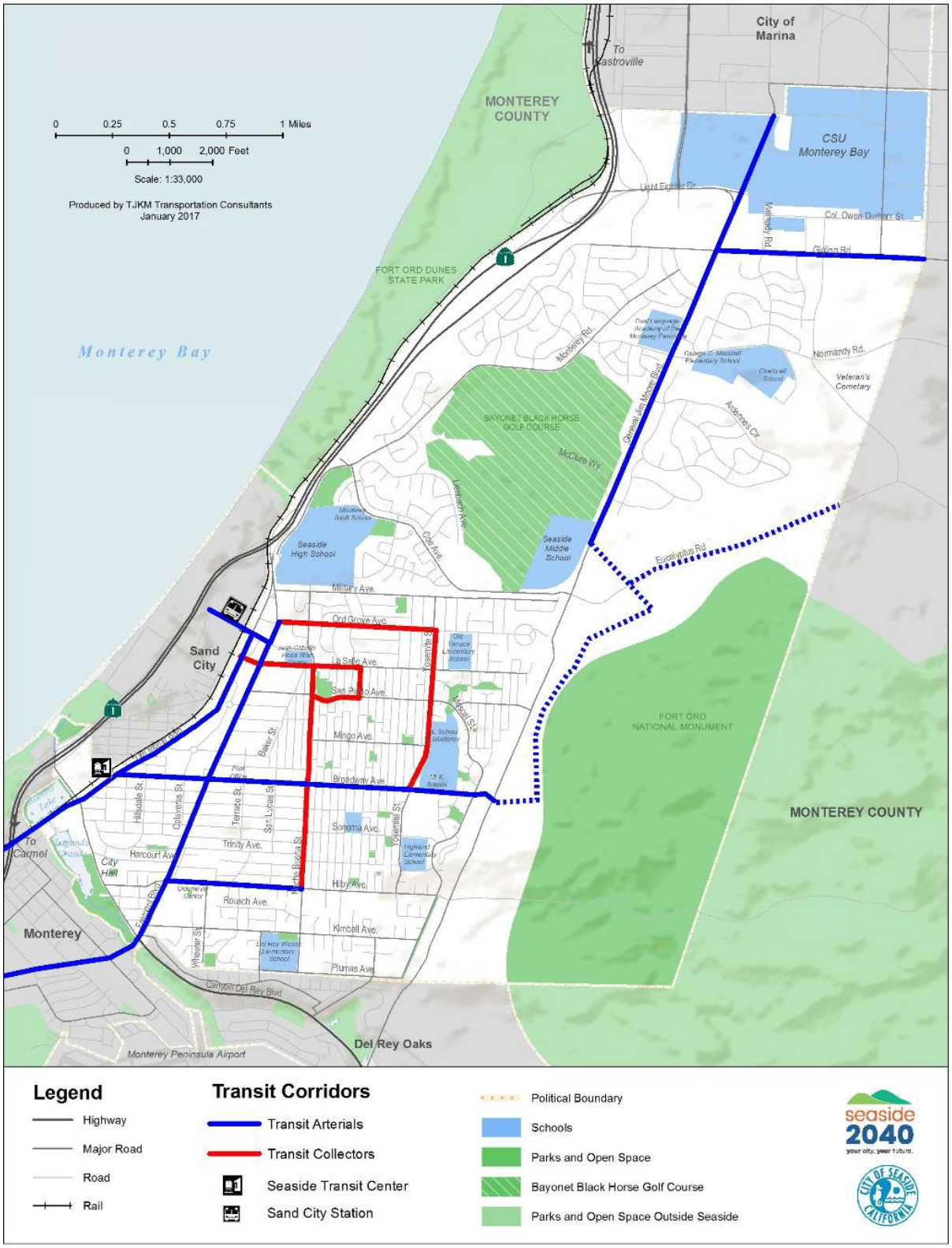
Policies: **Senior housing.** Encourage the development of senior housing in locations that are accessible to public transit, commercial services, and health and community facilities.

Goal LUD-22: Balanced, diverse, and sustainable growth.

Intent: To guide development towards a diverse community that balances habitat and wilderness with new low-impact residential development clustered around neighborhood centers, supporting public use, and employment districts.

Policies: **New infrastructure.** Plan for significant improvements to existing infrastructure in the area, including the development of an active transportation and transit plan.

Figure 4.14-7 Proposed 2040 General Plan – Transit Priority Corridors



The AMBAG 2045 MTP/SCS is the applicable countywide plan in Monterey County. The Seaside 2040 is consistent with the MTP/SCS goals and policies and proposes a greater emphasis on bicycling, walking and transit facilities that are consistent with the SCS goals.

The MTP/SCS recommends the provision of Complete Streets improvements, including pedestrian-oriented programs that are primarily implemented by local jurisdictions including the City of Seaside. Seaside 2040 includes a Complete Street Policy, and changes to street classifications to better accommodate bicycle and pedestrian travel. Seaside 2040 identifies "pedestrian priority corridors". Seaside 2040 also recommends the provision of wider sidewalks and buffer treatments to benefit pedestrians and provides sample cross-section drawings relevant to specific corridor segments.

The MTP/SCS proposes a bus rapid transit (BRT) corridor with enhanced bus service that would pass through the west side of Seaside via Fremont to/from Monterey, and then via SR 1 to/from the north of Seaside. Seaside 2040 expands on the MTP/SCS by designating "transit-priority" segments on specific streets – as illustrated on Figure 4.14-7 – including a second BRT corridor through the eastern half of the city to serve Seaside East and CSUMB. The MTP/SCS identifies "queue-jump improvements" as a desirable type of transit improvement throughout the county, and Seaside 2040 includes a policy supporting installation of "queue-jump" lanes, and similar measures to reduce delays to buses.

Seaside 2040 is also consistent with the MTP/SCS bikeway network goals and incorporates the planned regional FORTAG trail and regional bikeway via Broadway Avenue and Del Monte Avenue. Seaside 2040 would substantially expand Seaside's planned bikeway network, to provide a comprehensive network of bike lanes (including buffered bike lanes on some segments) on major streets, and bike boulevards on local and collector streets.

Roadway Network Impacts

Within the Plan Area, SR 1 and SR 218 (Canyon Del Rey Boulevard) are included in the Regional Highway Network described in the MTP/SCS. The MTP/SCS does not propose any near-term changes to traffic lanes on state highway segments bordering or passing through Seaside that might occur by 2040. Seaside 2040 recommends future provision of an additional on/off ramp to/from SR 1 to connect with Coe Avenue and Monterey Road, north of Seaside High School, without requiring such trips to pass through the Fremont Boulevard/Monterey Road intersection.

The MTP/SCS includes a "goods movement" map, and Seaside 2040 is consistent. The truck route map contained in Seaside 2040 includes the designated MTP/SCS truck routes, and designates General Jim Blvd as a truck route through Seaside. In addition, Seaside 2040 includes the following goals and policies to ensure that improvements in Seaside continue to be coordinated with regional planning efforts.

Goal M-11: Integrate Seaside's circulation system with the larger regional transportation system to ensure the economic well-being of the community.

Intent: To ensure that planning and implementation of mobility improvements in Seaside continues to be coordinated with regional planning efforts and neighboring jurisdictions.

Policies: **Participation in regional planning efforts.** Continue to participate in regional projects and infrastructure planning to ensure consistency with local planning and pursue funding for City transportation projects.

Coordination with neighboring jurisdictions and planned regional improvements. Continue to coordinate pedestrian and bicycle improvements with the plans of neighboring jurisdictions and the region.

TAMC and countywide planning efforts. Continue to support the overall vision, goals, objectives and policies as a partner in TAMC. The City recognizes the regional significance of connecting bicycle and pedestrian facilities, sharing consistent guidelines, needs, and preferences within the City and the greater Monterey County.

Regional transit. Continue to support and encourage development of TAMC's planned regional transit projects and coordinate service and facilities for new development and redeveloped parts of the City.

As described above, Seaside 2040 would not conflict with the MTP/SCS or other applicable plans pertaining to transportation. Impacts would be less than significant.

Mitigation Measures

No mitigation is required.

Significance After Mitigation

Impacts would be less than significant without mitigation.

Threshold 2:	Would the project conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)?

Impact T-2 SEASIDE 2040 WOULD GENERATE ADDITIONAL VMT ASSOCIATED WITH POPULATION AND JOB GROWTH. INCREASED RESIDENTIAL AND EMPLOYMENT-BASED VMT WOULD BE BELOW THRESHOLDS CONSISTENT WITH STATEWIDE GOALS AIMED AT REDUCING VMT AND IMPACTS WOULD BE LESS THAN SIGNIFICANT. THE PROJECT WOULD NOT BE INCONSISTENT WITH CEQA GUIDELINES SECTION 15064.3, SUBDIVISION (B), AND IMPACTS WOULD BE LESS THAN SIGNIFICANT.

Seaside 2040 would facilitate the reduction of VMT as it places a greater emphasis on transit, bicycling, and pedestrian transportation, compared to the 2004 General Plan. Utilization of transit, bicycling, and pedestrian transportation modes instead of vehicle modes would help reduce VMT because fewer vehicles would be used for traveling, and therefore less VMT would be generated. Seaside 2040 also focuses on mixed-use and infill development, which multiple land uses (e.g., residential, commercial, office) within proximity, facilitating pedestrian travel as opposed to vehicle travel. The emphasis of Seaside 2040 on transit, active transportation, and mixed-use and infill development would help to reduce VMT per capita.

As described above under *VMT Impact Methodology,* the project would be consistent with statewide goals aimed at reducing VMT if residential development and employment generation facilitated by Seaside 2040 results in less than 9.7 average daily VMT per resident and less than 6.7 average daily VMT per job. Table 4.14-4 summarizes estimated residential and employment-based VMT that would be generated by Seaside 2040. Estimated VMT generated by the project was projected with AMBAG's Regional Travel Demand Model.

Table 4.14-4 Seaside 2040 Residential and Employment-Based VMT

VMT	Residential VMT per Capita (2040)	Employment VMT per Job (2040)
VMT Generated by Seaside 2040	8.5	5.3
Impact Threshold	9.7	6.7
Significant Impact?	**No**	**No**

Source: Appendix C

As shown above in Table 4.14-4, Seaside 2040 would result in an estimated average daily residential VMT per capita of 8.5 in 2040, which is below the residential VMT threshold of 9.7 VMT per capita Therefore, impacts to VMT from residential uses facilitated by Seaside 2040 would be less than significant. As shown above in Table 4.14-4, Seaside 2040 would result in an estimated average daily employment-based VMT per job of 5.3 in 2040, which is below the employment-based VMT threshold of 6.7 VMT per capita. Therefore, impacts to VMT from employment-based uses facilitated by Seaside 2040 would be less than significant.

Mitigation Measures

Mitigation is not required.

Significance After Mitigation

Impacts would be less than significant without mitigation.

Threshold 3: Would the project substantially increase traffic hazards due to a geometric design feature (e.g. sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment)?

Impact T-3 SEASIDE 2040 IS A PROGRAM-LEVEL PLANNING EFFORT THAT DOES NOT DIRECTLY ADDRESS PROJECT-LEVEL DESIGN FEATURES. ROADWAY IMPROVEMENTS AND SITE ACCESS MEASURES WOULD BE DESIGNED AND REVIEWED IN ACCORDANCE WITH THE SEASIDE PUBLIC WORKS DEPARTMENT STANDARDS. IMPACTS WOULD BE LESS SIGNIFICANT.

Seaside 2040 is a program-level planning effort that not directly address project-level design features or building specifications. Seaside 2040 would allow an increase in commercial, residential, and mixed land use development. As these land uses develop, construction of new or realigned roadways would be provided when necessary based on the site location and project characteristics. Improvements would be designed and reviewed in accordance with Caltrans standards and the Seaside Public Works Department standards, such as the City's driveway and access standards in Section 17.34.120 of the Seaside Municipal Code. Portions of the future development under the Proposed 2040 General Plan would be concentrated on sites that are already developed and are not anticipated result in incompatible land uses. Seaside 2040 includes the following goal and policies intended to improve safety and ensure adequate emergency access, and provide safe intersection designs:

Goal M-7: A safe transportation system that eliminates traffic-related fatalities and reduces non-fatal injury collisions.

Intent: To encourage programs and improvements aimed at the elimination of traffic fatalities (often referred to as "vision zero" programs).

Policies: **Safety Improvements**. Provide safety improvements, and prioritize pedestrian circulation over other travel modes, along high-injury and fatality streets and intersections.

Safe Routes to Schools. Promote Safe Routes to Schools programs for all schools serving the city.

Safety and traffic calming. Use traffic calming methods within residential and mixed-use areas where necessary to create a pedestrian-friendly circulation system.

Safety for all modes. Ensure that planned non-transportation capital improvement projects, on or near a roadway, consider safety for all modes of travel during construction and upon completion.

Community engagement. Engage the community in promoting safe walking and bicycling through education and outreach.

Context sensitive design and speeds. Maintain context-sensitive, safe speeds on Seaside streets.

Safety monitoring. Monitor high-priority corridors and intersections to better understand the potential benefits of improvements.

Emergency access. Ensure that adequate emergency vehicle access is provided.

Video enforcement. Explore the use of video surveillance for traffic enforcement.

Discourage truck traffic in residential areas. Reduce impacts on residential neighborhoods from truck traffic and related noise.

Future developments and roadway improvements would be designed in accordance to City standards and would be subject to existing regulations, including 2040 General Plan policies and Zoning regulations. Adoption of Seaside 2040 would result in less than significant impacts with respect to hazards due to design features or incompatible uses.

Mitigation Measures

Mitigation is not required.

Significance After Mitigation

Impacts would be less than significant without mitigation.

Threshold 4:	Would the project result in inadequate emergency access?

Impact T-4 SEASIDE 2040 IS A PROGRAM-LEVEL PLANNING EFFORT THAT DOES NOT DIRECTLY ADDRESS PROJECT-LEVEL DESIGN FEATURES. ROADWAY IMPROVEMENTS AND SITE ACCESS MEASURES WOULD BE DESIGNED AND REVIEWED IN ACCORDANCE WITH THE SEASIDE PUBLIC WORKS DEPARTMENT STANDARDS. IMPACTS WOULD BE LESS SIGNIFICANT.

Because Seaside 2040 is a program-level planning effort, it does not directly address project-level design features or building specifications. Both the 2004 General Plan and the Proposed 2040 General Plan include policies that would ensure efficient circulation and adequate access are

provided in the city, and that adequate emergency access be provided. Future development under Seaside 2040, as part of the City's project approval process, and would be required to comply with existing regulations, including General Plan policies and Zoning regulations that have been prepared to minimize impacts related to emergency access. The City, throughout the period of Seaside 2040, would implement the General Plan programs that require the City's coordination with local emergency response providers. As explained above under Caltrans' encroachment permit process, Caltrans' MUTCD provisions provide for coordination with local emergency services, training for flagmen for emergency vehicles traveling through the work zone, temporary lane separators that have sloping sides to facilitate crossover by emergency vehicles, and vehicle storage and staging areas for emergency vehicles. Fire Code Chapter 10 also provides regulations to provide for safe Means of Egress, including Fire Apparatus Access Road width requirements. The Coastal Land Use Plan (a component of the LCP) also contains existing policies which address hazards including, including evacuation routes and signage. (Coastal Land Use Plan Policies NCR-CZ 5.1.B, 5.3.A, 5.3.B, and LUC-CZ 3.4.A.)

Adherence to the State and City requirements combined with compliance the City's General Plan and Zoning regulations will ensure that the adoption of the Proposed 2040 General Plan would result in less-than-significant impacts with respect to inadequate emergency access.

Mitigation Measures

Mitigation is not required.

Significance After Mitigation

Impacts would be less than significant without mitigation.

4.15 Tribal Cultural Resources

This section evaluates potential effects on tribal cultural resources related to implementation of the proposed General Plan.

4.15.1 Setting

The project lies within an area traditionally occupied by the Ohlone and near the area traditionally occupied by the Esselen. A full discussion of the prehistoric and ethnographic setting of the region is presented in Section 4.4, *Cultural Resources*.

a. Existing Conditions

As part of the process of identifying tribal cultural resources issues within or near the project site, the NAHC conducted a search of the Sacred Lands File (SLF). The SLF search stated that the SLF search was completed with negative results.

As discussed in Section 4.4.1, areas with the General Plan borders have been identified as archaeologically sensitive: the drainage area along the southern border of Seaside (leading to and including Laguna del Rey), the area of active sand dunes along the coast, and lands east of General Jim Moore Boulevard, within the former Fort Ord. These areas have been identified as containing land forms and/or natural resources that increase the general likelihood of aboriginal occupation. However, many existing developed sites within the City's boundaries have been subject to grading, excavation, and artificial fill, which reduce site-specific archaeological sensitivity, depending upon the specific parcel.

AB 52 and SB 18 Consultation

In accordance with AB 52 and SB 18, the City of Seaside notified California Native American tribes listed in Table 4.15-1 of the proposed General Plan and invited them to participate in consultation. The City prepared and mailed letters in accordance with AB 52 and SB 18 on September 12, 2017. The City followed up via telephone on September 22, 2017, to confirm receipt of the letters. The letters and consultation documentation are provided in Appendix G.

Table 4.15-1 Native American Tribes Requesting Consultation

Tribal Contact	AB 52	SB 18	Responded within applicable time period?
Valentin Lopez, Amah Mutsun Tribal Band	X	X	Yes
Irenne Zwierlein, Amah Mutsun Tribal Band	X	X	Yes
Tony Cerda, Costanoan Rumsen Carmel Tribe	X	X	Yes
Tom Little Bear Nason, Esselen Tribe of Monterey County	X	X	Yes
Anne Marie Sayers, Indian Canyon Mutsun Tribal Band of Costanoan	X	X	No
Louise Miranda-Ramirez, Ohlone/Costanoan-Esselen Nation	X	X	Yes

The City spoke with Irenne Zwierlein, Chairperson of the Amah Mutsun Tribal Band of Mission San Juan Bautista, over the phone on September 22, 2017. Chairperson Zwierlein did not request formal consultation but stated that Seaside is a relatively new community, thus it has seen little ground disturbance compared with other areas. She further stated that archaeological studies should be

conducted for projects in the City and that the Band would answer questions as studies are conducted. No specific tribal cultural resources were identified as being significantly impacted in this correspondence. Consistent with this request, the City's General Plan incorporates Goal C-8 which includes preservation, conservation, enhancement, and education related to cultural and historical assets, including archaeological and tribal cultural resources. The General Plan also incorporates implementation measures C 6 [Sensitivity Map] and C 8 [Sensitivity Database].

The City met in person with Louise Miranda-Ramirez of the Ohlone/Costanoan-Esselen Nation (OCEN) on November 7, 2017 to discuss the proposed General Plan and future projects within the City. Chairperson Ramirez stated that OCEN's general preference is for no ground disturbance to occur in their traditional tribal territory and that avoidance is the preferred mitigation measure whenever cultural or tribal cultural resources are encountered. For all projects occurring in the vicinity of known cultural sites, OCEN requests notification of project initiation and to be involved in mitigation decisions. No specific tribal cultural resources were identified as being significantly impacted in this correspondence. If resources of Native American origin are identified during the course of cultural resource studies, OCEN requests notification upon discovery and inclusion in any mitigation or recovery programs. Whenever sites are present or there is known sensitivity, OCEN requests the inclusion of an OCEN-approved tribal monitor to observe ground-disturbing activities. It is their preference that all recovered artifacts be returned to the tribe or reburied on site. If burials are discovered and OCEN is identified as the Most Likely Descendant (MLD), it is their preference that burials and all associated artifacts be moved and reburied in a location where no further development or disturbance will occur. Chairperson Ramirez further requested copies of all cultural resources studies conducted within the City for their records. Consistent with these requests, specific projects will be required to comply with AB 52 consultation. The requests made by OCEN and detailed above may be included on projects on a case-by-case basis based on the results of project-specific AB 52 consultation. Additionally, the City's General Plan incorporates Goal C-8which includes preservation, conservation, enhancement, and education related to cultural and historical assets, including archaeological and tribal cultural resources. The General Plan also incorporates implementation measures C 6 [Sensitivity Map] and C 8 [Sensitivity Database].

The City also met in person with Tom Little Bear Nason, Tribal Chair, and other representatives of the Esselen Tribe of Monterey County on January 5 and again on February 2, 2018. They would like to meet with the City on an annual basis and to be advised of development plans that will impact areas in their history. No specific tribal cultural resources were identified as being significantly impacted in this correspondence. The Esselen tribe also requested the preparation of a Memorandum of Understanding (MOU) to (1) address steps necessary to ensure confidentiality when sharing culturally sensitive documents and other information and to (2) create an advisory committee between the City and the Tribe for consultations that meets as-needed to discuss and address development projects, landscaping, signage, and the development of interpretation areas. Specific projects will be required to comply with AB52 consultation. Any materials disclosed during such confidential consultation shall be kept confidential, consistent with *CEQA Guidelines* § 15120(d) and Pub. Res. Code § 21082.3(c).

The City spoke with Valentin Lopez of the Amah Mutsun Tribal Band of Mission San Juan Bautista on September 12, 2017, who stated that the City is outside of their area and they did not have any comments. The City spoke with Tony Cerda of the Coastanoan Rumsen Carmel Tribe, who requested that the SB 18 letter be sent to his email address and that he would respond at a later date if he had comments or concerns. To date, he has not responded to request consultation. The remaining groups contacted did not respond or did not have concerns regarding Seaside 2040.

During these consultations no specific tribal cultural resources within the General Plan Area were identified and no specific significant tribal cultural resource impacts were identified.

4.15.2 Regulatory Setting

Assembly Bill 52

California Assembly Bill 52 of 2014 (AB 52) expanded CEQA by defining a new resource category, "tribal cultural resources." Assembly Bill 52 establishes that "A project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment" (PRC Section 21084.2). It further states that the lead agency shall establish measures to avoid impacts that would alter the significant characteristics of a tribal cultural resource, when feasible (PRC Section 21084.3). PRC Section 21074 (a)(1)(A) and (B) defines tribal cultural resources as "sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe" and meets either of the following criteria:

a) Listed or eligible for listing in the CRHR, 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 Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

AB 52 also establishes a consultation process for California tribes regarding those resources. AB 52 requires that, for those tribes that have requested consultation on a project, lead agencies "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.

Senate Bill 18

California Government Code Section 65352.3 (adopted pursuant to the requirements of SB 18) requires local governments to contact, refer plans to, and consult with tribal organizations prior to making a decision to adopt or amend a general or specific plan. The tribal organizations eligible to consult have traditional lands in a local government's jurisdiction, and are identified, upon request, by the Native American Heritage Commission (NAHC). As noted in the California Office of Planning and Research's Tribal Consultation Guidelines (2005), "The intent of SB 18 is to provide California Native American tribes an opportunity to participate in local land use decisions at an early planning stage, for the purpose of protecting, or mitigating impacts to, cultural places."

4.15.3 Impact Analysis

a. Methodology and Thresholds of Significance

According to Appendix G of the *CEQA Guidelines*, an impact to tribal cultural resources from the proposed General Plan would be significant if the project would:

1) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, 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 CRHR, 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 Resource Code section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

b. Project Impacts and Mitigation Measures

Threshold 1:	Would the project cause a substantial adverse change in the significance of a tribal cultural resource?

Impact TC-1 DEVELOPMENT FACILITATED BY SEASIDE 2040 MAY INVOLVE SURFACE EXCAVATION, WHICH HAS THE POTENTIAL TO IMPACT PREVIOUSLY UNIDENTIFIED TRIBAL CULTURAL RESOURCES. IMPACTS TO TRIBAL CULTURAL RESOURCES WOULD BE SIGNIFICANT AND UNAVOIDABLE DESPITE THE IMPLEMENTATION OF MITIGATION MEASURE TC-1.

No known tribal cultural resources were identified as being significantly impacted during the AB 52 consultation. Effects to unknown tribal cultural resources are highly dependent on both the individual project site conditions and the characteristics of the proposed activity. Areas with General Plan boundaries are archaeologically sensitive and sensitive for tribal cultural resources, include the drainage area along the southern border of Seaside (leading to and including Laguna del Rey), the area of active sand dunes along the coast, and lands east of General Jim Moore Boulevard, within the former Fort Ord. These areas have been identified as containing land forms and/or natural resources that increase the general likelihood of aboriginal occupation. However, many existing developed sites within the City's boundaries have been subject to grading, excavation, and artificial fill, which reduce site-specific archaeological sensitivity, depending upon the specific parcel.

As specific projects are proposed, consultation with tribes under AB 52 would occur to determine if any site-specific tribal cultural resources may be impacted by project specific elements and any project specific mitigation measures proposed. Additionally, Mitigation Measure TC-1 below would be required to reduce potential impacts to tribal cultural resources from development facilitated by the General Plan.

Mitigation Measure

The following mitigation measure is proposed to reduce potential impacts to tribal cultural resources to the extent feasible.

TC-1 Tribal Cultural Resources Avoidance and Minimization

The City shall add the implementation program to the General Plan prior to adoption. The following Implementation Program shall be added to the Implementation Chapter:

> **Tribal Cultural Resources.** The City shall comply with AB 52, which may require formal tribal consultation on a project-by-project basis. If the City determines that a project may cause a substantial adverse change to a tribal cultural resource, they shall implement mitigation measures identified in the consultation process required under PRC Section 21080.3.2, or shall implement the following measures where feasible to avoid or minimize the project-specific significant adverse impacts:

- Avoidance and preservation of the resources in place, including, but not limited to: planning and construction to avoid the resources and protect the cultural and natural context, or planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.
- Treating the resource with culturally appropriate dignity taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:
  1. Protecting the cultural character and integrity of the resource
  2. Protecting the traditional use of the resource
  3. Protecting the confidentiality of the resource
- Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.
- Native American monitoring by the appropriate tribe for all projects in areas identified as sensitive for potential tribal cultural resources and/or in the vicinity (within 100 feet) of known tribal cultural resources.
- If potential tribal cultural resources are encountered during ground-disturbing activities; work in the immediate area must halt and the appropriate tribal representative(s), the implementing agency, and an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for archaeology (National Park Service [NPS] 1983) must be contacted immediately to evaluate the find and determine the proper course of action.

Significance After Mitigation

Mitigation Measure TC-1 would address potential impacts to tribal cultural resources on a project-by-project basis within Seaside, which would reduce potential impacts to tribal cultural resources to the extent feasible. However, , it cannot be guaranteed that this measure would reduce impacts to tribal cultural resources to less than significant in all cases. Ground disturbance associated with projects facilitated by Seaside 2040 may still materially alter tribal cultural resources by modifying their context and spatial relationships, which could affect the significance of these resources. Therefore, this impact would be significant and unavoidable.

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4.16 Utilities and Service Systems

This section evaluates potential effects on utilities related to adoption and implementation of Seaside 2040 by identifying anticipated demands and existing and planned service availability. For purposes of this EIR, utilities consist of: 1) water supply; 2) wastewater; 3) storm drain facilities; 4) electric power; 5) natural gas; 6) telecommunications; and 7) solid waste.

4.16.1 Setting

a. Water Supply

Water Providers

The residences and businesses within the General Plan Area are served by three water supply providers: 1) Seaside Municipal Water System (SMWS); 2) Marina Coast Water District (MCWD); and 3) California-American Water Company (CalAm). The service area boundaries for the three water purveyors are shown on Figure 4.9-1, in Section 4.9, *Hydrology and Water Quality*. A description of each of these providers and the water supply provided by each is provided below and shown on Figure 4.16-1.

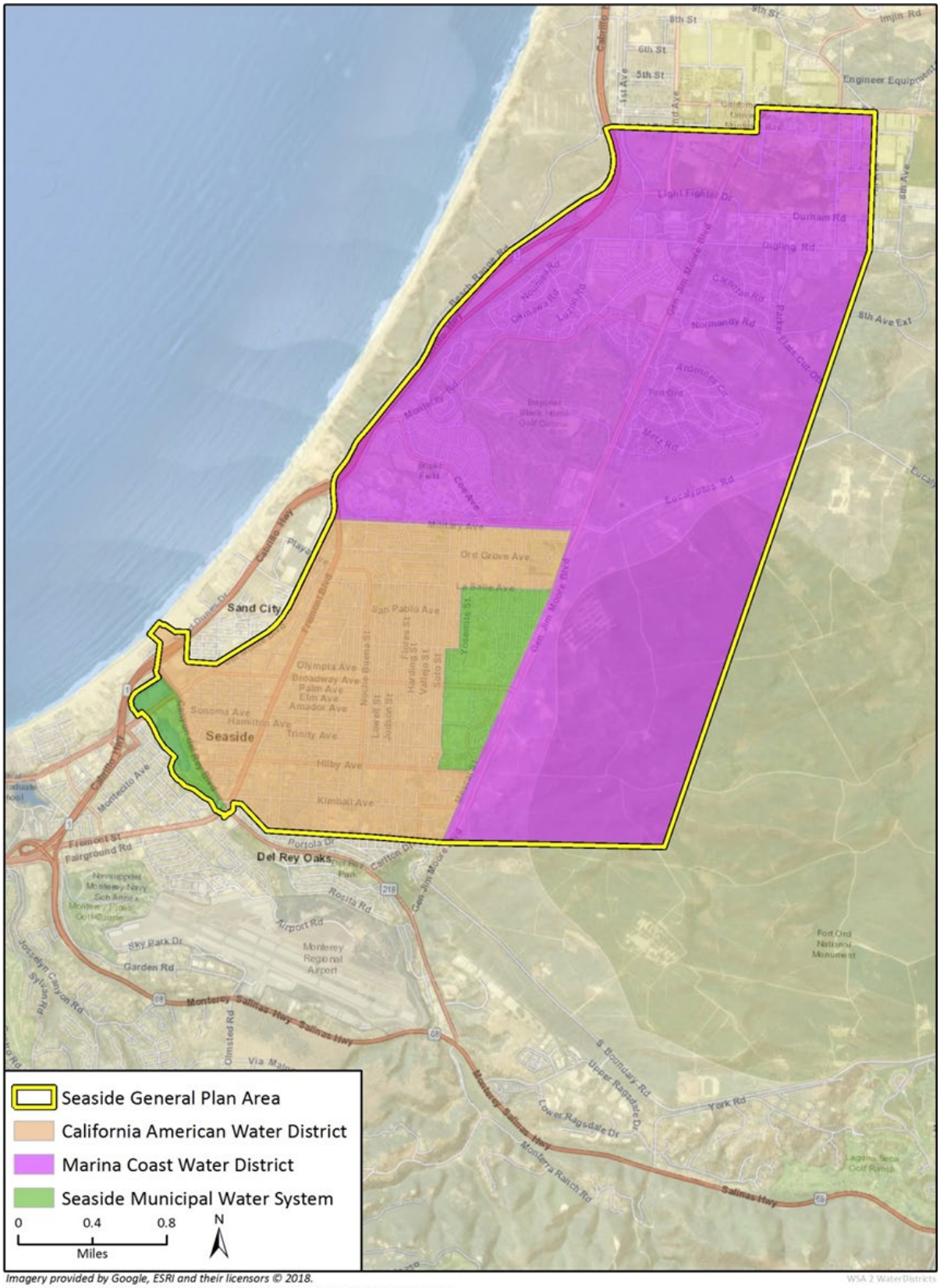
The water supply analysis in this section is based on information contained in the Water Supply Assessment (WSA) prepared for this project, which is included in this EIR as Appendix F. Additional information on water resources is included in the Urban Water Management Plans (UWMPs), which are incorporated by reference.[1] The availability of data from UWMPs is complex for the proposed project because the City of Seaside is served by multiple water supply providers, and the respective UWMP boundaries do not align with the boundaries of the General Plan Area. In addition, each of the three separate water suppliers have used different types of assumptions to make water demand estimates for their service territories. Therefore, an "apples to apples" comparison of water use and forecasted water demand in each service territory is not possible based on available published data. Therefore, in order to characterize water supply availability using the most reliable available information, the WSA relies upon data provided in the CalAm UWMP and the MCWD UWMP. The UWMPs provide detailed system description, system demands (including cumulative growth assumptions), water reduction planning, system supplies, water quality information, groundwater information, water supply reliability information, water shortage contingency planning, demand management measures, as well as information on climate change.

Seaside Municipal Water System

The City of Seaside owns and operates its own water utility, the Seaside Municipal Water System (SMWS). The SMWS is the smallest of the three water providers within the General Plan Area. It has 790 connections. Of the 790 service connections, 758 connections are to single-family residences. The City of Seaside also provides water to two golf courses within its jurisdiction: Blackhorse and Bayonet (City of Seaside 2009).

[1] CalAm UWMP is available online at: https://wuedata.water.ca.gov/public/uwmp_attachments/3596173942/Final_Monterey_UWMP_compiled.pdf; and the MCWD UWMP is available online at: https://wuedata.water.ca.gov/public/uwmp_attachments/2139524161/MCWD%202020%20UWMP%20Appendices_20210625.pdf

Figure 4.16-1 Water Districts



Imagery provided by Google, ESRI and their licensors © 2018.
Water District data from the City of Seaside, 2017 and Marina Coast Water District, 2015.

The SMWS owns and operates two groundwater wells that produce water from the Seaside Area Subbasin of the Salinas Valley Groundwater Basin. Only one of the two wells is currently in service. In addition to the groundwater well, the system also includes two 500,000 gallon water tanks (City of Seaside 2009). According to the City's annual water quality report released in 2016, the concentrations of water quality constituents in potable water delivered by the SMWS were within U.S. EPA thresholds for drinking water quality standards (City of Seaside 2016).

In Water Year 2019, the SMWS pumped 147 acre-feet of water from the Seaside Area Subbasin for municipal uses, and another 540 acre-feet of water for golf course irrigation, for a total of 687 acre-feet (Seaside Basin Watermaster 2019). Groundwater production is limited by the Seaside Area Subbasin Adjudication. The golf courses currently use approximately 450 to 500 AFY from the basin pursuant to the City's Alternative Production Allocation. Municipal uses, which include residential demand and other miscellaneous customer account types, are supplied with water pumped from the basin pursuant to the City's Standard Production Allocation under the Adjudication Judgment. The amount of water allocated to SMWS is ramped down by slightly more than ten percent every three years. In 2018, the SMWS (municipal) was allocated approximately 147 AFY by the Watermaster.

Marina Coast Water District

The Marina Coast Water District (MCWD) was formed in 1960 to serve the City of Marina, located directly north of the City of Seaside. The service area has since expanded to include the former Fort Ord area, which is also known as the Ord Community service area (MCWD 2021). Much of the Ord Community occurs within the General Plan Area. MCWD provides potable water delivery and wastewater conveyance services to the Ord Community (2021).

MCWD provides water service to the Ord Community from three groundwater wells located in the lower 180-foot and 400-foot aquifers of the Salinas Valley Groundwater Basin, north of the General Plan Area. Additionally, MCWD has other groundwater wells in the Salinas Valley Groundwater Basin that supply water to its customers in Marina and other locations beyond the General Plan Area. MCWD also owns the Marina Coast Water District Desalination Plant, a seawater desalination facility with a capacity of approximately 300 acre-feet per year; however, the plant is currently not in use due to high energy costs and adequate available water supply to serve MCWD's customers (MCWD 2021; MCWD 2017).

After the closure of Fort Ord in 1994, the US Army transferred the majority of its 6,600 acre-feet per year Salinas Valley Groundwater Basin water rights to the Fort Ord Reuse Authority (FORA) which was responsible for the oversight the closure and reuse of the former Fort Ord military base. FORA was legislatively terminated in June 2020. Of this 6,600 acre-feet per year, the City of Seaside has been allocated 1,012.5 acre-feet per year (FORA 2017). Water and wastewater facilities and rights were deeded from FORA to MCWD in 2001 (MCWD 2021).

Table 4.16-1 shows current and projected water supplies for MCWD's entire service area from 2020 to 2040. As shown in this table, recycled water and desalinated water are expected to become contributing sources of supply by 2020 and 2025, respectively (MCWD 2016). In 2007, the FORA Board assigned a Recycled Water Allocation of 453 acre-feet per year to the City of Seaside (FORA 2017). A number of Fort Ord development projects, including Seaside Resort Golf Courses, Seaside Highlands, and East Garrison, are already equipped with recycled water pipeline infrastructure to deliver recycled water for landscaping when it becomes available. This Recycled Water Allocation is accounted for in Table 4.16-1.

Table 4.16-1 MCWD Water Supplies – Current and Projected

Water Supply Source	2020	2025	2030	2035	2040
Salinas Valley Groundwater Basin	3,367	5,401	6,550	7,345	7,831
Recycled Water	0	600	953	1,140	1,270
Desalinated Water	0	0	299	394	483
Total	**3,367**	**6,001**	**7,802**	**8,879**	**9,584**

Units in acre-feet per year
Source: MCWD 2021

The 2020 MCWD UWMP projected a significant increase in water demand within the Ord Community due to the planned redevelopment of the former Fort Ord, as documented in the General Plans of various land use jurisdictions and the approved specific plans in the Ord Community. The UWMP also accounted for other development across the MCWD service area. With redevelopment of the Fort Ord lands, the 2020 UWMP accounted for anticipated population growth of 36,537 people in the Ord Community between 2020 and 2040.

The 2020 UWMP found that the projected Ord Community water demand of 6,610 AFY in 2040 would be adequately served by the anticipated supply of 6,600 AFY. Additionally, because the current water supply in the Ord Community has been allocated among the land use jurisdictions, some jurisdictions maintain a projected surplus, while others have shortages. To address this projected shortfall, MCWD is pursuing water supply projects, which are further discussed in the WSA.

California-American Water Company

California-American Water Company (CalAm) is an investor-owned regulated utility that provides service to approximately 95 percent of residents and businesses on the Monterey Peninsula (Monterey Peninsula Water Management District [MPWMD] 2014). The General Plan Area is located within CalAm's Monterey Main service area in the Central Division. CalAm is a wholly-owned subsidiary of the American Water Works Company (American Water), headquartered in Voorhees, New Jersey (CalAm 2021).

CalAm owns and operates a series of production wells along the Carmel River and in the Seaside Area Subbasin. Groundwater produced from the Seaside Area Subbasin is delivered to customers both within and outside the Subbasin area through a network of delivery pipelines, all within Monterey County. CalAm also operates separate water treatment facilities to treat the raw groundwater before it is delivered (MPWMD 2014; Langridge et al 2016).

CalAm has authorized unrestricted rights to 3,376 acre-feet per year. Unrestricted water rights represent a minimum allotment that does not fluctuate based on instream flow conditions in the Carmel River. MPWMD and CalAm share another 6,790 acre-feet per year in water rights that are subject to instream flow requirements (MPWMD 2017a). In 1995, the State Water Resources Control Board (SWRCB) issued Order No. WR 95-10, which found that CalAm was diverting more water from the Carmel River than it was allowed. In 2009, SWRCB issued a Cease and Desist Order (SWRCB 2009-0060) requiring CalAm to reduce its Carmel River diversions and secure replacement water supplies. CalAm production decreased from approximately 11,000 acre-feet in 1995 to approximately 7,000 acre-feet in 2015 (MPWMD 2017a).

Table 4.16-2 shows current and projected water supplies for CalAm's entire Monterey District service area from 2025 to 2045.

Table 4.16-2 California-American Projected Water Supplies

Water Supply Sources	2025	2030	2035	2040	2045
Groundwater					
Carmel River Aquifer	3,376	3,376	3,376	3,376	3,376
Seaside Basin	1,474	774	774	774	774
Recycled Water					
Pure Water Monterey	3,500	3,500	3,500	3,500	3,500
Pure Water Monterey Expansion	528	2,250	2,250	2,250	2,250
Desalination					
Sand City Desalination	94	94	94	94	94
Monterey Peninsula Water Supply Project Ocean Desalination Project	0	6,252	6,252	6,252	6,252
Other					
Aquifer Storage and Recovery	920	920	920	920	920
Total	**9,892**	**17,166**	**17,166**	**17,166**	**17,166**

Source: CalAm 2021

The 2021 CalAm UWMP estimated the 2020 population served by the CalAm Monterey County District to be 91,717. The population projections for CalAm's service areas are based on DWR's Population Tool and Transportation Analysis Zones (TAZ) growth rates from the Association of Monterey Bay Area Governments (AMBAG)'s 2018 population projections. The total service area population is expected to increase by approximately 9,300 people between 2020 and 2045. The 2021 CalAm UWMP notes that most of the areas served have been built out (CalAm 2021).

The development proposed by Seaside 2040 exceeds AMBAG's population growth projections for the region. Therefore, the water demands associated with Seaside 2040 exceed the demand forecasted in the 2021 CalAm UWMP, and the proposed project is not entirely accounted for in the UWMP. Some of the development proposed in Seaside 2040 is accounted for in the growth projections used by CalAm to develop long-term water demand forecasts. Because the 2021 CalAm UWMP is the most reliable published source of water data for the CalAm service area, the WSA relies upon it to characterize water supplies in the region.

Water Source and Supply

The General Plan Area currently relies entirely on local water supplies to meet its demands. Water providers in the General Plan Area acquire and distribute groundwater from the underlying Salinas Valley Groundwater Basin. The Carmel River, located approximately 4.5 miles south of the General Plan Area, is considered a local surface water supply source. Carmel River water is primarily acquired via production wells alongside the river banks, which is still considered a surface water supply by current regulatory definitions. Other existing water supply sources include desalinated water from CalAm's Sand City Desalination Facility and the Aquifer Storage and Recovery (ASR) Project implemented by MPWMD and CalAm, which injects excess winter flows from the Carmel

River into the coastal area of the Seaside Area Subbasin and then extracts the stored groundwater during times of decreased supply or increased demand (MPWMD 2017b; CalAm 2021). These additional sources are described in further detail below.

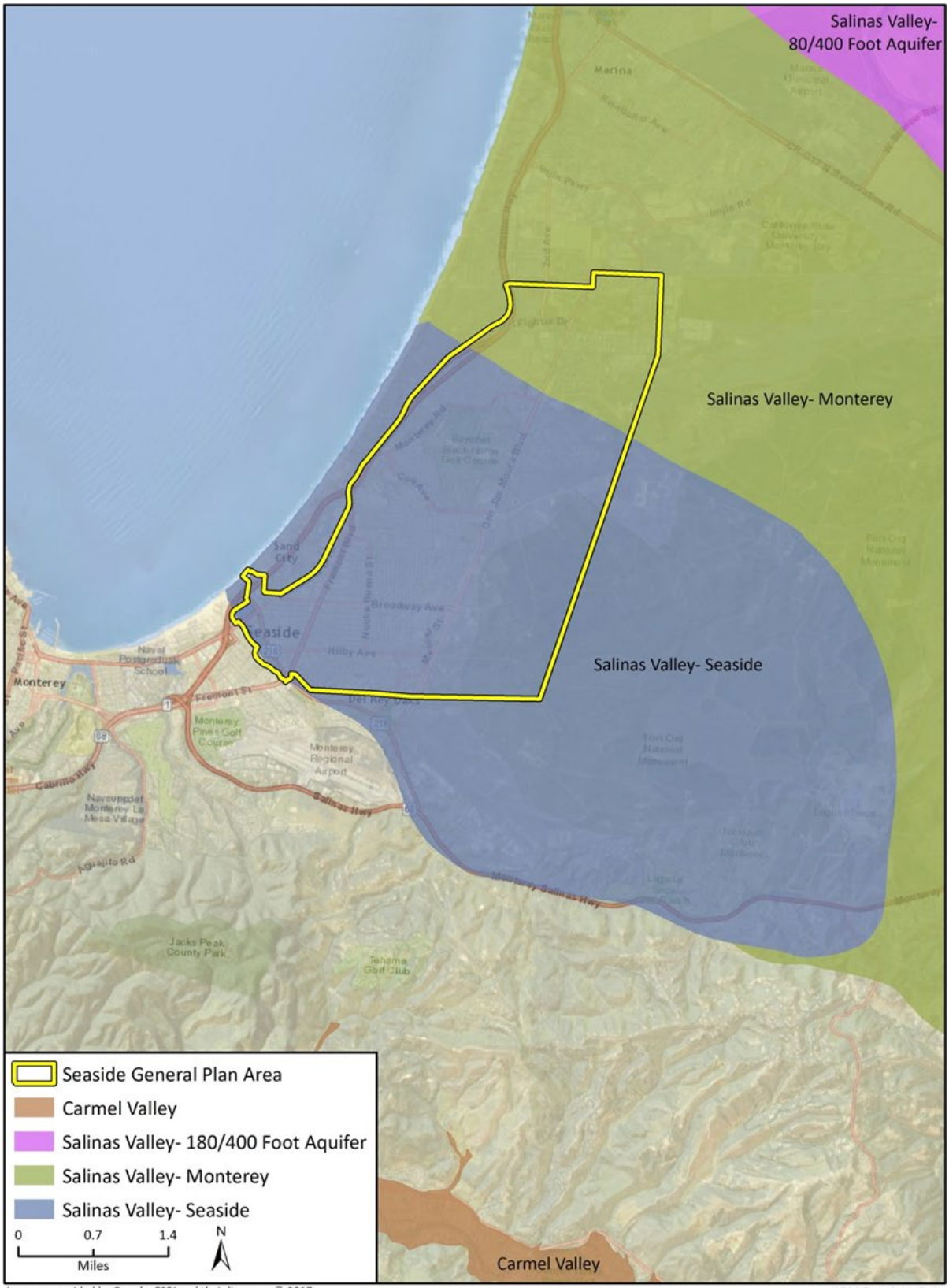
Salinas Valley Groundwater Basin

As described in detail in Section 4.9, *Hydrology and Water Quality*, the Salinas Valley Groundwater Basin is located in the Central Coast region of California, stretching from Monterey Bay on the coast to the City of Santa Margarita in the south, approximately 14 miles east of the Pacific Ocean. The Salinas Valley Groundwater Basin consists of nine Subbasins. As shown in Figure 4.16-2 below, the General Plan Area overlies two of these Subbasins: the Seaside Area Subbasin and the Monterey Subbasin.

The Seaside Area Subbasin of the Salinas Valley Groundwater Basin is located in Monterey County at the northwest corner of the Salinas Valley, adjacent to Monterey Bay. The Seaside Area Subbasin underlies a hilly coastal plan that includes the coastal communities of Seaside and Marina, as well as the western portion of the former Fort Ord (Langridge et al 2016). The Seaside Area Subbasin is the primary source of water for the City. Groundwater from the basin is produced by 16 well owners through 35 wells (MPWMD 2014).

In August 2003, CalAm requested an adjudication of the Seaside Area Subbasin in *California American Water v. City of Seaside et al.*, Case No. M66343. In 2006, the Monterey County Superior Court gave its adjudication Judgement, which established a physical solution for the Subbasin, defined water rights, and set pumping limits for producers in the area. The court determined that the Seaside Area Subbasin was in overdraft, and that recent groundwater production exceeded the natural safe yield of the basin (which was defined as approximately 2,581 to 2,913 acre-feet per year and potentially contributed to seawater intrusion). The court found that total groundwater production in each of the preceding five years was between 5,100 and 6,100 acre-feet per year. The court defined an operation safe yield as the maximum amount of groundwater that should be allowed to be produced from the Subbasin in a given year. An initial operation safe yield was set at 5,600 acre-feet per year, with the mandate that groundwater pumping from the basin would be reduced to 2,600 acre-feet per year by 2021. The court required that the operation safe yield be met via a reduction in extractions, water transfers, recycled water, and/or artificial means (Langridge et al 2016). The adjudication created the Seaside Watermaster Board, which was tasked with managing the physical solution of the Subbasin. The Seaside Watermaster Board consists of a nine-member board, representing municipal water suppliers, cities, individual pumpers, and water management agencies.

Figure 4.16-2 Groundwater Basins and Subbasins



Imagery provided by Google, ESRI and their licensors © 2017.
Groundwater Basins from DWR Bulletin 118, 2016.

Carmel River and the Carmel Valley Alluvial Aquifer

The Carmel River is located approximately 4.5 miles south of the General Plan Area. The Carmel Valley Alluvial Aquifer, otherwise known as the Carmel Valley Groundwater Basin, underlies and runs parallel to the Carmel River.

According to MPWMD, there is an inherent conflict between the California Department of Water Resources and SWRCB classifications of the Carmel Valley Alluvial Aquifer. The Carmel Valley Groundwater Basin is an identified groundwater basin in the Department of Water Resources Bulletin 118, with a California Statewide Groundwater Elevation Monitoring (CASGEM) Basin Prioritization ranking of "High" (California Department of Water Resources 2014). However, the MPWMD asserts that the water stored in the Carmel Valley Alluvial Aquifer should not be considered "groundwater" as the term is defined by the California Water Code.

California Water Code Section 10721 defines groundwater as "water beneath the surface of the earth within the zone below the water table in which the soil is completely saturated with water, but does not include water that flows in known and definite channels." In 1995, the SWRCB determined that the Carmel Valley Alluvial Aquifer's subsurface flow travels through a known and definite channel. Since this determination, the aquifer has been managed as a surface water source under the jurisdiction of SWRCB (MPWMD 2016).

Surface water in the Carmel River is recharged via four main sources: precipitation, releases from upstream dams, groundwater seepage, and return flow from urban uses. During winter months, heightened precipitation provides enough water for the river to reach the Pacific Ocean (Carmel River Watershed Conservancy 2016). The average annual discharge from the Carmel River at the U.S. Geological Survey gage near Carmel, approximately 3.6 river miles upstream of the Pacific Ocean, was 74,400 acre-feet for the period of record, Water Year 1962-2013 (MPWMD 2014).

It is estimated that approximately 85 percent of the water entering the underlying Carmel Valley Alluvial Aquifer percolates through the bed of the Carmel River. Additional recharge of the aquifer comes from tributary drainages, infiltration of precipitation, subsurface inflow, and return flow from irrigation and septic systems (Carmel River Watershed Conservancy 2016).

The Carmel River and the Carmel Valley Alluvial Aquifer serve jointly as a primary water supply source for the CalAm. The CalAm produces water from these sources via surface water diversions, and as described above, a series of wells along the river. The CalAm has unrestricted rights to 3,376 acre-feet per year. MPWMD and the CalAm share another 6,790 acre-feet per year in water rights that are subject to instream flow requirements (MPWMD 2017a).

In 1995, SWRCB issued Order No. WR 95-10, which found that CalAm was diverting more water from the Carmel River than it was allowed. In 2009, SWRCB issued a Cease and Desist Order (SWRCB 2009-0060) requiring CalAm to reduce its Carmel River diversions and secure replacement water supplies. CalAm production decreased from approximately 11,000 acre-feet per year in 1995 to approximately 7,000 acre-feet per year in 2015 (MPWMD 2017a).

Other Existing Supply Sources

The Aquifer Storage and Recovery Project is a groundwater recharge project implemented by MPWMD and CalAm. MPWMD and CalAm jointly own and operate two injection/extraction sites in the coastal area of the Seaside Area Subbasin. Excess winter flows from the Carmel River are collected via the CalAm distribution system and used to artificially recharge the Seaside Area

Subbasin. The average annual yield of this system varies depending on rainfall and river flows, but it is anticipated to be approximately 1,940 acre-feet per year (MPWMD 2017b).

The Sand City Desalination Facility is owned and operated by the CalAm. The facility includes a reverse osmosis desalination plant, a delivery pipeline connecting the facility to the Sand City distribution system, two water storage tanks, and a connection to CalAm's greater regional distribution system. The facility has the capacity to produce 300 acre-feet per year (CalAm 2016).

In 1996, MCWD constructed a 300-acre-feet-per-year seawater desalination facility between Dunes Drive and the Monterey Bay. Since the Monterey Bay is a national marine sanctuary, open ocean intakes and discharges are not permitted. MCWD's desalination facility was designed and constructed to test whether adequate seawater supply could be produced from shallow beach wells, and also to test the use of beach injection wells for brine discharge. The facility is currently idle; however, it could be restored to function (MCWD 2016).

Additional Future Supply Sources

Recycled water currently is not available within the General Plan Area. However, both MCWD and CalAm plan for future recycled water use in their Urban Water Managements Plans (UWMP) (CalAm 2021; MCWD 2021).

In 2006, MCWD began design of the Regional Urban Water Augmentation Project, an urban recycled water project developed jointly with Monterey One Water (M1W, formerly the Monterey Regional Water Pollution Control Agency). A total of 1,727 acre-feet per year could be made available for urban use without the addition of seasonal recycled water storage by the Regional Urban Water Augmentation Project. MCWD designed the transmission line and most of the distribution system, and has constructed approximately four miles of recycled pipeline. Construction of the Regional Urban Water Augmentation Project began in July 2020. Water sourced from Regional Urban Water Augmentation Project would be used for irrigation of the Bayonet and Black Horse Golf Courses, parks, and other open spaces within the City of Seaside, as well as other spaces within the MCWD service area (MCWD 2021).

The Pure Water Monterey Project is an advanced water recycling project jointly developed by the MPWMD and M1W, with cooperation from MCWD, Monterey County Water Resources Agency, and the City of Salinas. The project will develop recycled water supplies for the Monterey Peninsula region. Artificial recharge of the Seaside Area Subbasin is the primary use of water from the project. However, CalAm has negotiated a water purchase agreement to acquire 3,500 AFY from the project to meet non-potable demands within its service area (MCWD 2021; CalAm 2021).

Over the last decade, CalAm has proposed construction of an ocean water desalination plant at an existing concrete plant located along the coast in the City of Marina. In November 2022, the California Coastal Commission approved a development permit for intake slant wells to provide ocean water for CalAm's proposed desalination plant. Additional approvals and conditions from the California Coastal Commission would be required prior to construction and operation of the plant. As of November 2022, CalAm anticipates that construction would begin in 2024 and the plant would be operational at the end of 2027. The plant would be built in phases and would have an initial 4.8 million gallons per day capacity (CalAm 2022).

b. Wastewater Collection and Treatment

Within the General Plan Area, sanitary sewer service outside the limits of the former Fort Ord is provided by the Seaside County Sanitation District, a Monterey County Special District which serves

the cities of Seaside, Del Rey Oaks and Sand City. Within the boundaries of the former Fort Ord, sanitary sewer service is provided by MCWD. Wastewater discharged to either District's sanitary sewer system is ultimately pumped to the Regional Wastewater Treatment Plant located north of Marina. M1W operates the Regional Wastewater Treatment Plant.

M1W's sanitary sewer system is subdivided into pipeline systems: Monterey Peninsula Interceptor System, Salinas Interceptor System, Castroville Interceptor System, and Outfall System. Seaside is part of the Monterey Peninsula Interceptor System, which represents 46 percent of the total flow to the Regional Wastewater Treatment Plant (M1W 2017).

The Regional Wastewater Treatment Plant receives and treats residential, commercial, and industrial wastewater. Wastewater undergoes primary and secondary treatment at the treatment plant before reuse or discharge. Reuse is generally for agricultural applications and irrigation, and thus, occurs primarily during the summer growing season. In winter months, treated wastewater from the Regional Wastewater Treatment Plant is primarily discharged. Discharge is to the Monterey Bay through a diffuser outlet located approximately two miles offshore at a depth of approximately 100 feet below mean sea level. The treated water meets and exceeds all State discharge requirements (M1W 2017).

The treated wastewater discharge is regulated by the Central Coast Regional Water Quality Control Board (RWQCB) under the *Waste Discharge Requirements for the Monterey Regional Water Pollution Control Agency Treatment Plant* (Order No. R3-2014-0013, NPDES Permit No. CA0048551), as described in the regulatory framework discussion below and in Section 4.9, *Hydrology and Water Quality*. Pursuant to the permit, the Regional Wastewater Treatment Plant has a maximum average dry weather design treatment capacity of 29.6 million gallons per day and peak wet weather design capacity of 75.6 million gallons per day. The diffuser outlet in Monterey Bay is designed to convey ultimate wet weather flows of 81.2 million gallons daily, which is the permitted rate of discharge through the outfall.

According to the *Monterey Regional Water Pollution Control Agency Sewer System Management Plan* (M1W 2019), dry weather wastewater flows to the treatment plant are approximately 21 million gallons per day, and peak wet weather flows are about 40 million gallons per day. Thus, based on the Sewer System Management Plan, as of 2019, the Regional Wastewater Treatment Plant had unused but permitted treatment capacity of approximately 8.6 million gallons per day during dry weather and about 41.2 million gallons per day during peak wet weather conditions. This plan is incorporated by reference and includes discussion of operation and maintenance, design and performance, overflow emergency response planning, Fat Oils and Grease (FOG) Control Program, System Evaluation and Capacity Assurance Plan, SSMP Audits, and Communication Programs.[2]

According to AMBAG's *2022 Regional Growth Forecast*, the region is projected to add 83,099 residents between 2022 and 2040, for an increase of approximately 11 percent (AMBAG 2022). If wastewater flows increase proportionately, regional population growth will yield approximately 23 million gallons per day of dry weather wastewater flows and approximately 44.4 million gallons per day of peak wet weather flows. This is a conservative estimate, since wet weather flows would increase less than proportionately to population growth. Nevertheless, using these cumulative growth estimates, the Regional Wastewater Treatment Plant would have unused but permitted

[2] *Monterey One Water Sewer System Management Plan* (2019): https://www.montereyonewater.org/DocumentCenter/View/180/Sewer-System-Management-Plan-PDF

capacity of approximately 6.4 million gallons per day during dry weather and about 36.8 million gallons per day during peak wet weather conditions in 2040.

c. Stormwater Drainage

The City of Seaside owns, operates, and maintains a storm drain collection system within the General Plan Area. The storm drain system consists of approximately 438 catch basins, 231 manholes, and 15 bubble-ups as identified on the storm drain system map. All stormwater conveyed by the collection system is transported to the Monterey Bay via two outfalls: Bay Avenue outfall and Roberts Lake outfall. The Bay Avenue outfall includes a 90-inch diameter pipeline extending out towards the ocean approximately 124 feet. Roberts Lake outfalls through four parallel 6-foot by 6-foot box culverts that transverse beneath State Route 1 (City of Seaside 2014). As described in Section 4.9, *Hydrology and Water Quality*, discharges from the City's storm drain system into the ocean are permitted under NPDES General Permit for Storm Water Discharges From Small Municipal Separate Storm Sewer Systems (MS4s), Order No. 2013-0001-DWQ (MS4 General Permit).

d. Electric Power

Homes and businesses in Seaside use electricity from various sources, including wind, solar, hydroelectric, nuclear, coal, and natural gas. The main electricity provider in the region is Central Coast Community Energy, which uses Pacific Gas and Electric Company (PG&E) electricity transmission lines. Energy demand is discussed in more detail in Section 4.5, *Energy*.

e. Natural Gas

California relies on out-of-state natural gas imports for nearly 90 percent of its natural gas supply. The California Energy Commission (CEC) estimates that approximately 45 percent of the natural gas burned across the state is used for electricity generation, and much of the remainder is consumed in the residential (21 percent), industrial (25 percent), and commercial (9 percent) sectors. Building and appliance energy efficiency standards account for up to 39 percent in natural gas demand savings since 1990 (CEC 2019a).

The General Plan Area is located within PG&E's natural gas service area, which spans central and northern California (CEC 2018). In 2017, PG&E customers consumed a total of 4.7 billion therms of natural gas. Residential users accounted for approximately 40 percent of PG&E's natural gas consumption. Industrial and commercials users accounted for another 36 percent and 20 percent, respectively. The remainder was used for mining, construction, agricultural, and water pump accounts (CEC 2019b). In 2017, Monterey County users accounted for approximately 2.3 percent of PG&E's total natural gas consumption across the entire service area (CEC 2019c).

PG&E's service area is equipped with approximately 6,700 miles of gas transmission pipelines as 42,000 miles of gas distribution pipelines. A large-diameter gas transmission pipeline runs along Cabrillo Highway, along the western boundary of the General Plan Area (PG&E 2019).

f. Telecommunication

In California, approximately 98 percent of households have access to telecommunication infrastructure, including telephone and cable access (California Cable & Telecommunications Association 2019). The Plan Area located in area code 831 and Local Access and Transport Area 8 (California Public Utilities Commission [CPUC] 2010). A Local Access and Transport Area is a

geographical area within which a divested Regional Bell Operating Company is permitted to offer exchange telecommunications and exchange access services (CPUC 2019c).

The General Plan Area is located in AT&T California's carrier of last resort territory. A carrier of last resort is a telecommunications company that commits, or is required by law, to provide service to any customer in a service area that requests it, even if serving that customer would not be economically viable at prevailing rates (CPUC 2018).

g. Solid Waste

The City currently contracts with GreenWaste Recovery, a private hauler to provide trash, recycling and yard waste collection services to residents and commercial businesses within the City. Nearly all solid waste generated in Seaside is transported to and disposed of at the Monterey Peninsula Landfill and Materials Recovery Facility, which is operated by ReGen Monterey (formerly known as the Monterey Regional Waste Management District). The landfill and facility site consists of 466 acres and is located in Marina, at 14201 Del Monte Boulevard, approximately 8 miles north of the General Plan Area. Approximately 315 acres of the site are permitted for the Monterey Landfill Peninsula.

According to the Solid Waste Facility Permit for the Monterey Peninsula Landfill (CalRecycle 2019), peak traffic volume for incoming waste materials shall not exceed 2,000 trips per day, and the peak tonnage of incoming waste shall not exceed 3,500 tons per day. The maximum permitted capacity of the landfill is 49.7 million cubic yards. According to CalRecycle (2019), the remaining capacity of the landfill in 2019 was 48.5 million cubic yards. According to the Joint Technical Document for the Monterey Peninsula Landfill, ReGen anticipates that the landfill will reach its maximum capacity in year 2161, generally assuming 0.5 percent annual growth. This document is incorporated by reference.[3]

The Materials Recovery Facility at the Monterey Regional Waste Management District site in Marina processes more than 100,000 tons of "dry mixed waste" each year that arrives in debris boxes, dumpsters, pick-up trucks and trailers. The Materials Recovery Facility also receives clean loads of source separated green waste and wood scraps, the raw materials for making compost and wood chips (ReGen 2018). The Materials Recovery Facility does not process loads from residential or commercial garbage trucks nor does it process the curbside recyclables picked up from residents and businesses in its service area, include Seaside. These loads are processed at the Waste Management, Inc. Materials Recovery Facility in Castroville and the City of Monterey Materials Recovery Facility in Ryan Ranch (ReGen 2018).

4.16.2 Water Regulatory Setting

a. Federal

Clean Water Act

The federal Clean Water Act, enacted by Congress in 1972 and amended several times since, is the primary federal law regulating water quality in the United States and forms the basis for several State and local laws throughout the country. The Act established the basic structure for regulating discharges of pollutants into the waters of the United States. The Clean Water Act gave the U.S.

[3] *Monterey Peninsula Landfill Joint Technical Document (2010):* https://www2.calrecycle.ca.gov/swfacilities/Directory/27-AA-0010/Document/77436

Environmental Protection Agency the authority to implement federal pollution control programs, such as setting water quality standards for contaminants in surface water, establishing wastewater and effluent discharge limits for various industry contaminants in surface water, establishing wastewater and effluent discharge limits for various industry categories, and imposing requirements for controlling nonpoint-source pollution. At the federal level, the Clean Water Act is administered by the U.S. Environmental Protection Agency and U.S. Army Corps of Engineers. At the state and regional levels in California, the act is administered and enforced by the SWRCB and the nine RWQCBs.

Clean Water Act Section 402

Section 402 of the Clean Water Act requires that all construction sites on an acre or greater of land, as well as municipal, industrial and commercial facilities discharging wastewater or stormwater directly from a point source (e.g., pipe, ditch, or channel) into a surface water of the United States must obtain permission under the NPDES permit. All NPDES permits are written to ensure that the surface water receiving discharges will achieve specified water quality standards.

In California, the NPDES program is administered by the SWRCB through the RWQCBs and requires municipalities to obtain permits that outline programs and activities to control wastewater and stormwater pollution. Discharges from the City of Seaside's storm drain system are permitted under NPDES General Permit for Storm Water Discharges From Small Municipal Separate Storm Sewer Systems (MS4s), Order No. 2013-0001-DWQ (MS4 General Permit). A discussion of the NPDES permit and other regulations and policies applicable to stormwater management and stormwater discharges is provided in Section 4.9, *Hydrology and Water Quality*.

Safe Drinking Water Act

The Safe Drinking Water Act (SDWA) regulates public water systems (PWSs) that supply drinking water. 42 U.S.C. § 300(f) et seq.; 40 C.F.R. § 141 et seq. The principle objective of the federal SDWA is to ensure that water from the tap is potable (safe and satisfactory for drinking, cooking, and hygiene). The main components of the federal SDWA are to:

- Ensure that water from the tap is potable
- Prevent contamination of groundwater aquifers that are the main source of drinking water for a community
- Regulate the discharge of wastes into underground injection wells pursuant to the Underground Injection Control program (see 40 C.F.R. § 144)
- Regulate distribution systems

b. State

Senate Bill 610

Senate Bill 610 (SB 610) of 2001 amended California Water Code to require detailed analysis of water supply availability for certain types of development projects. SB 610 amended Section 21151.9 of the Public Resources Code; amended Sections 10632, 10656, 10910, 10911, 10912, and 10916 of the California Water Code; repealed Section 10913 of the California Water Code; and added and repealed Section 10657 of the California Water Code. The primary purpose of SB 610 is to improve the linkage between water and land use planning by ensuring greater communication between water providers and local planning agencies, and ensuring that land use decisions for

certain large development projects are fully informed as to whether sufficient water supplies are available to meet project demands. SB 610 requires the preparation of a Water Supply Assessment (WSA) for certain large development projects. Pursuant to SB 610, a WSA was prepared for Seaside 2040 (Appendix F).

California Safe Drinking Water Act

The California SDWA (Health & Safety Code § 116270 et seq.; 22 Cal. Code Regs. § 64400 et seq.) regulates drinking water more rigorously than the federal law. Like the federal SDWA, California requires that primary and secondary maximum contaminant levels (MCLs) be established for pollutants in drinking water; however, some California MCLs are more protective of health. The Act also requires the SWRCB to issue domestic water supply permits to public water systems.

The SWRCB enforces the federal and state SDWAs and regulates more than 7,500 PWSs across the state. (Implementation of the federal SDWA is delegated to the state of California.) The SWRCB's Division of Drinking Water oversees the state's comprehensive Drinking Water Program (DWP). The DWP is the agency authorized to issue PWS permits.

Sustainable Groundwater Management Act

In September 2014, California Governor Jerry Brown signed a three-bill package known as the Sustainable Groundwater Management Act (SGMA) into law. SGMA establishes a framework for local groundwater management and requires local agencies to bring overdrafted basins into balanced levels of pumping and recharge. In Medium- and High-priority groundwater basins, SGMA requires the formation of locally-controlled Groundwater Sustainability Agencies (GSAs). GSAs are responsible for developing and implementing Groundwater Sustainability Plans (GSPs) to guide groundwater management decisions and ensure long-term sustainability in their basins.

The southern approximately half of the General Plan Area coincides with the Seaside Subbasin, which is an adjudicated groundwater basin. Pursuant to SGMA, in adjudicated basins, the adjudication judgment serves as the sustainability plan. No additional GSA or GSP is required. The Seaside Basin Watermaster serves as the GSA for this subbasin, and the Seaside Basin Adjudication Judgment serves as the GSP for this subbasin.

The remaining portion of the General Plan Area overlaps the Monterey Subbasin. The Salinas Valley Basin GSA and the MCWD GSA jointly prepared a GSP for the Monterey Subbasin, which was submitted to DWR in January 2022; the current status of this GSP (as of February 2023), is "Review in Progress," meaning that DWR is currently reviewing the joint GSP for SGMA compliance (DWR 2023). Due to hydraulic connection between the Monterey Subbasin as well as the 180/400-Foot Aquifer Subbasin and the Seaside Subbasin, the Monterey Subbasin GSP outlines coordinated projects, management actions, and implementation actions to provide the regional and cross-basin coordination necessary to achieve sustainable conditions for SGMA compliance. As detailed in the GSP, these include three main types of projects: Multi-subbasin Projects; Marina-Ord Area Local Projects and Management Actions; and Corral de Tierra Area Local Projects and Management Actions (Salinas Valley Basin and MCWD GSA 2022).

Groundwater Adjudication

In the 1970s, improved monitoring and data collection in the Seaside Area Subbasin showed declines in the water table and overdrafting in many areas across the basin. In 1995, the State Water Resources Control Board (SWRCB) issued Order No. WR 95-10, which found that CalAm was

diverting more water from the Carmel River than it was allowed (MPWMD 2014a). CalAm was ordered to reduce surface water intake from the Carmel River. As a result, the utility increased coastal groundwater extraction from the Seaside Area Subbasin to supplement its water supplies.

In the early 2000s, the MPWMD considered implementing groundwater protection ordinances, and began preparing the Seaside Basin Groundwater Management Plan (GMP). Concerned that MPWMD might be taking steps to curtail its groundwater pumping, in August 2003 CalAm requested an adjudication of the Seaside Area Subbasin in California American Water v. City of Seaside et al., Case No. M66343. The utility sought a declaration of rights among parties interested in groundwater production and storage in the basin, and named a number of defendants, including local cities, developers, and landowners that historically extracted groundwater from the basin.

In October 2003, CalAm and a number of defendants executed a stipulated agreement. MCRWA and MPWMD, who had intervened in the adjudication against CalAm and the other parties, did not join in the stipulation. In 2006, the Monterey County Superior Court accepted parts of the stipulation and set forth its findings regarding the Seaside Area Subbasin, including a determination of safe yield, an operating plan, and a determination of water rights.

The court determined that the Seaside Area Subbasin was in overdraft, and that recent groundwater production exceeded the natural safe yield (NSY) of the basin (which was defined as approximately 2,581 to 2,913 AFY) and potentially contributed to seawater intrusion. The court found that total groundwater production in each of the preceding five years was between 5,100 and 6,100 AFY. A physical solution was adopted in order to set pumping limits and establish monitoring and reporting requirements within the basin. The adjudication created a Watermaster, a court-created body with representation of the parties to the adjudication, that was tasked with managing the physical solution of the basin. The Seaside Basin Watermaster Board consists of a nine-member board, representing municipal water suppliers, cities, individual pumpers, and water management agencies. A copy of the Seaside Basin Adjudication is available online.

The court defined an operation safe yield (OSY) as the maximum amount of groundwater that should be allowed to be produced from the basin in a given year. An initial OSY was set at 5,600 AFY; with overdraft conditions in the basin it was mandated that groundwater pumping from the basin be reduced by 2,600 AFY by 2021, in order to achieve the aforementioned OSY. The court determined each party's water right based on their historical production from the basin. Water rights were established as a percentage of the OSY. The physical solution imposed a deliberate and gradual ramp-down of allowed groundwater pumping over time, so as to bring the basin into balance and reduce the risk of seawater intrusion. Cutbacks to the OSY were to be implemented until the OSY was equal to the NSY. The physical solution required a triennial reduction (a reduction every three years) of the OSY.

California Plumbing Code

The California Plumbing Code is codified in Title 24, California Code of Regulations, Part 5. The Plumbing Code contains regulations including, but not limited to, plumbing materials, fixtures, water heaters, water supply and distribution, ventilation, and drainage. More specifically, Part 5, Chapter 4, contains provisions requiring the installation of low flow fixtures and toilets. Existing development will also be required to reduce its wastewater generation by retrofitting existing structures with water efficient fixtures (Senate Bill 407 [2009] Civil Code Sections 1101.1 et seq.).

The Water Conservation Act of 2009 (Senate Bill X7 7 (2009))

New requirements per state law (SB-X7 7) mandate reduction of per capita water use and agricultural water use in throughout the state by 20 percent by 2020.

State Updated Model Landscape Ordinance (Assembly Bill 1881 (2006))

The updated Model Landscape Ordinance requires cities and counties to adopt landscape water conservation ordinances. Section 17.30.040 of the Seaside Municipal Code establishes landscaping standards across the city. The standards strongly encourage the installation of water-efficient and/or drought tolerant landscape materials. Per Seaside Municipal Code Section 17.30.040(B)(1), where projects are subject to the state Model Water Efficient Landscape Ordinance (Title 23 California Code of Regulations Section 490 et seq.), drought-tolerant and water-efficient landscaping and irrigation systems are required to be installed in compliance with the provisions of the model ordinance.

c. Regional

Marina Coast Water District 2020 Urban Water Management Plan

The California Water Code, Division 6, Part 2.6, Section 10610 et. seq. (California Urban Water Management Planning Act) requires any municipal water supplier serving over 3,000 connections or 3,000 AFY to prepare an UWMP. MCWD's 2020 UWMP characterizes historical water supplies and use, projects future demand and supply through 2040, and identifies supply augmentation projects and programs. Supply and demand projections address climate variability and regional cooperative agreements (MCWD 2021).

4.16.3 Wastewater Regulatory Setting

a. Federal

See description of Federal Clean Water Act under Water Regulatory Setting.

b. State and Regional

Standards for wastewater treatment plant effluent are established using state and federal water quality regulations. After treatment, wastewater effluent is either disposed of or reused as recycled water. The RWQCBs set the specific requirements for community and individual wastewater treatment and disposal and reuse facilities through the issuance of Waste Discharge Requirements, required for wastewater treatment facilities under the California Water Code Section 13260.

Wastewater treatment in the City of Seaside is provided by M1W (formerly known as the Monterey Regional Water Pollution Control Agency) at its Regional Wastewater Treatment Plant located north of Marina. Discharges of treated wastewater, also called effluent, from the treatment plan are regulated by the Central Coast RWQCB under the *Waste Discharge Requirements for the Monterey Regional Water Pollution Control Agency Treatment Plant* (Order No. R3-2014-0013, NPDES Permit No. CA0048551). The minimum initial dilution established in the individual NPDES permit at the point of effluent discharge is 1:145 (parts effluent to seawater). The minimum initial dilution is used by the Central Coast RWQCB to determine compliance with the water quality effluent limitations established in the NPDES permit for in-pipe water quality (i.e., prior to discharge) that are based on water quality objectives contained in the SWRCB's Ocean Plan (see Section 4.9, *Hydrology and*

Water Quality). The effluent limitations in the permit are based on and are consistent with the water quality objectives contained in the Ocean Plan.

The California Code of Regulations Title 22, Division 4, Chapter 3, Sections 60301 through 60355 are used to regulate recycled wastewater and are administered by the RWQCBs. Title 22 contains effluent requirements for four levels of wastewater treatment, from un-disinfected secondary recycled water to disinfected tertiary recycled water. Higher levels of treatment have higher effluent standards, allowing for a greater number of uses under Title 22, including irrigation of freeway landscaping, pasture for milk animals, parks and playgrounds, and vineyards and orchards for disinfected tertiary recycled water. Salt concentrations (such as chloride, nitrogen, sodium, etc.) in the effluent are regulated based on the Basin Plan for the Central Coast Region, which also considers local groundwater quality.

In 2016, the SWRCB adopted General Order WQ 2016-0068-DDW, which establishes a separate permitting program for recycled water use. Under this approach, new recycled water uses can be authorized by a single permit that can be used across RWQCB boundaries if certain water reclamation requirements are met. The permitting program governs non-potable uses of treated municipal wastewater, for example landscape and crop irrigation, dust control, and industrial and commercial cooling.

4.16.4 Stormwater Drainage Regulatory Setting

Regulations and policies pertaining to stormwater drainage are discussed in Section 4.9, *Hydrology and Water Quality*.

4.16.5 Electric Power Regulatory Setting

Regulations and policies pertaining to electric power are discussed in Section 4.5, *Energy*.

4.16.6 Natural Gas Regulatory Setting

As the state's primary energy policy and planning agency, the CEC collaborates with state and federal agencies, utilities, and other stakeholders to develop and implement state energy policies. Since 1975, the CEC has been responsible for reducing the state's electricity and natural gas demand, primarily by adopting new Building and Appliance Energy Efficiency Standards that have contributed to keeping California's per capita electricity consumption relatively low. The CEC is also responsible for the certification and compliance of thermal power plants 50 megawatts and larger, including all project-related facilities in California (CEC 2019d).

The California Public Utilities Commission (CPUC) regulates investor-owned electric and natural gas utilities operating in California. The energy work responsibilities of the CPUC are derived from the California State Constitution, specifically Article XII, Section 3 and other sections more generally, numerous state legislative enactments and various federal statutory and administrative requirements. The CPUC regulates natural gas utility service for approximately 10.8 million customers that receive natural gas from PG&E and other natural gas utilities across California (CPUC 2019a).

4.16.7 Telecommunication Regulatory Setting

The CPUC develops and implements policies for the telecommunication industry. The Communications Division is responsible for licensing, registration and the processing tariffs of local exchange carriers, competitive local carriers, and non-dominant interexchange carriers. It is also

responsible for registration of wireless service providers and franchising of video service providers. The Division tracks compliance with commission decisions and monitors consumer protection and service issues and Commission reliability standards for safe and adequate service. The Communications Division is responsible for oversight and implementation of the six public purpose Universal Service Programs (CPUC 2019b).

Draft Seaside 2040

Draft Seaside 2040 contains goals and policies aimed at improving access to utility infrastructure. Policies under Goal CFI-7 intend to ensure that all residents and businesses have access to affordable, reliable, and high-quality energy and telecommunication services. Policies under this goal direct the City to ensure that adequate utility and telecommunication infrastructure support future development, ensure that siting of telecommunication facilities provides efficiency and quality services to emergency response providers in the City, and actively seek a public-private partnership to provide ultra-high speed fiber optic communications to businesses in Seaside.

4.16.8 Solid Waste Regulatory Setting

a. Federal

Title 40 of the Code of Federal Regulations

Title 40 of the Code of Federal Regulations (CFR), Part 258 (Resource Conservation and Recovery Act, Subtitle D), contains regulations for municipal solid waste landfills and requires states to implement their own permitting programs incorporating the Federal landfill criteria.

b. State

California Department of Public Health (CDPH)

The CDPH Drinking Water Program (DWP) is within the Division of Drinking Water and Environmental Management. The DWP regulates public water systems; certifies drinking water treatment and distribution operators; supports and promotes water system security; provides support for small water systems and for improving technical, managerial, and financial capacity; and provides funding opportunities for water system improvements. The Field Operations Branch of the DWP is responsible for the enforcement of the federal and California Safe Drinking Water Acts and the regulatory over-sight of approximately 7,500 public water systems to assure the delivery of safe drinking water to all Californians. In this capacity, Field Operations Branch staff performs field inspections, issues operating permits, reviews plans and specifications for new facilities, takes enforcement actions for non-compliance with laws and regulations, reviews water quality monitoring re-salts, and supports and promote water system security.

Assembly Bill 939

AB 939 (Public Resources Code 41780) requires cities and counties to prepare integrated waste management plans and to divert 50 percent of solid waste from landfills beginning in calendar year 2000 and each year thereafter, and to divert 65 percent of non-hazardous construction and demolition debris. AB 939 also requires cities and counties to prepare source reduction and recycling elements as part of the integrated waste management plans. These elements are designed

to develop recycling services to achieve diversion goals, stimulate local recycling in manufacturing, and stimulate the purchase of recycled products.

In response to AB 939, the ReGen, of which the City of Seaside is a member agency, opened the Materials Recovery Facility (WRF) in April 1996. The MRF diverts 50 percent of the incoming mixed waste through reuse and recycling (ReGen 2016).

Assembly Bill 341 and Senate Bill 1383

The purpose of Assembly Bill (AB) 341 of 2011 (Chapter 476, Statutes of 2011) is to reduce greenhouse gas (GHG) emissions by diverting commercial solid waste to recycling efforts and to expand the opportunity for additional recycling services and recycling manufacturing facilities in California. In addition to Mandatory Commercial Recycling, AB 341 sets a statewide goal for 75 percent disposal reduction by the year 2020.

In addition, SB 1383 of 2016 (Chapter 395, Statutes of 2016) established the following goals: a 50-percent reduction in the level of the statewide disposal of organic waste from 2014 levels by 2020, and a 75-percent reduction in the level of the statewide disposal of organic waste from 2014 levels by 2025. This bill also authorized CalRecycle to adopt regulations, to take effect on or after January 1, 2022, to achieve these targets.

In February 2018, ReGen opened the new MRF 2.0, which allows the facility to recover 75 percent or more of the mixed waste stream arriving from self-haul, commercial, and multi-family sources (ReGen 2018). It is projected to enable the District member agencies to be in full compliance with the State's new diversion goal of 75 percent by 2020 (Local Agency Formation Commission of Monterey County 2015).

Assembly Bill 1826

AB 1826 of 2014 (Chapter 727, Statutes of 2014) requires businesses that generate a specified amount of organic waste per week to arrange for recycling services for that waste, and for jurisdictions to implement a recycling program to divert organic waste from businesses subject to the law, as well as report to CalRecycle on their progress in implementing an organic waste recycling program. As of January 1, 2017, businesses that generate four cubic yards or more of organic waste per week shall arrange for organic waste recycling services.

Senate Bill 1016

SB 1016 of 2007 (Chapter 343, Statutes of 2007) requires that the 50 percent solid waste diversion requirement established by AB 939 be expressed in pounds per person per day. SB 1016 changed the CalRecycle review process for each municipality's integrated waste management plan. After an initial determination of diversion requirements in 2006 and establishing diversion rates for subsequent calendar years, the Board reviews a jurisdiction's diversion rate compliance in accordance with a specified schedule. As of January 1, 2018, the Board is now required to review a jurisdiction's source reduction and recycling element and hazardous waste element once every two years.

After implementation of SB 1016, a city is considered to meet the AB 939 50 percent waste diversion mandate if its annual per capita disposal rates do not exceed its target rate. Seaside's target per capita disposal rate is 5.2 pounds of solid waste per person per day. Between 2007 and 2017, Seaside's annual per capita disposal rate has ranged from 3.6 to 4.4 pounds of solid waste per

person per day. Therefore, Seaside has maintained compliance with AB 939 and SB 1016 (ReGen 2019).

c. Regional and Local

Seaside Municipal Code Residential and Commercial Water Conservation Measures

Seaside Municipal Code Sections 13.18.010 et seq. require the installation of low water-use plumbing fixtures, and low water-use landscape material as part of new construction, requires the installation of low water-use plumbing fixtures in existing hotels and motels, require the retrofitting of plumbing fixtures in all existing residential buildings at the time of change of ownership or physical expansion, or, in the case of commercial property, at the time of change of ownership, or change or expansion of use. All new construction, where landscape approval is required, shall include as part of the exterior landscape development, low water-use or native plant material, and low precipitation sprinkler heads, bubblers, and/or drip irrigation systems and timing devices. Before any permit may be issued for such new construction, the applicant shall submit a landscape plan for review and approval by the board of architectural review in conformity with this chapter and landscaping guidelines.

Seaside Municipal Code Municipal Water System Water Conservation Program

The purpose of this chapter (SSMC Section 13.11.010 et seq.) is to establish standards and procedures consistent with Regulation XV, "Expanded Water Conservation and Standby Rationing Plan," as adopted by the MPWMD, herein referred to as the "MPWMD," to reduce or eliminate the waste of water in the municipal water system and to respond to present and potential water shortages.

4.16.9 Impact Analysis

a. Methodology and Significance Thresholds

Implementation of Seaside 2040 could have a significant effect associated with water supplies, wastewater, solid waste, or stormwater conveyance if demand associated with projected growth would result in any of the following conditions:

1. Require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunication facilities, the construction or relocation of which could cause significant environmental effects?
2. Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?
3. 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?
4. 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?
5. Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

Impacts regarding stormwater drainage facilities under Threshold 1 are discussed in Section 4.9, *Hydrology and Water Quality*; this threshold is therefore not addressed in this section.

b. Project Impacts and Mitigation Measures

Threshold 1:	Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunication facilities, the construction or relocation of which could cause significant environmental effects?
Threshold 2:	Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?
Threshold 3:	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 demand in addition to the provider's existing commitments?

Impact UTIL-1 DEVELOPMENT FACILITATED BY SEASIDE 2040 WOULD INCREASE THE DEMAND FOR LOCAL INFRASTRUCTURE. LOCAL INFRASTRUCTURE IN THE GENERAL PLAN AREA WOULD BE UPGRADED AS DEVELOPMENT PROJECTS ARE IMPLEMENTED. THERE IS ADEQUATE REGIONAL WASTEWATER, STORMWATER DRAINAGE, ELECTRIC POWER, NATURAL GAS, AND TELECOMMUNICATIONS INFRASTRUCTURE TO SERVE DEVELOPMENT FACILITATED BY SEASIDE 2040. HOWEVER, THE CITY OF SEASIDE DOES NOT HAVE SUFFICIENT EXISTING WATER SUPPLY TO ACHIEVE THE COMPLETE BUILD-OUT OF SEASIDE 2040. MITIGATION MEASURE UTIL-1 WOULD REQUIRE APPLICANTS TO PROVIDE WATER VERIFICATION REPORTS FROM THE LOCAL WATER SUPPLIER AND/OR THE CITY OF SEASIDE PRIOR TO ISSUANCE OF ANY FINAL MAP. THEREFORE, PROJECT IMPLEMENTATION UNDER SEASIDE 2040 WOULD BE PROHIBITED UNTIL SUFFICIENT WATER SUPPLIES ARE SECURED. WITH MITIGATION, IMPACTS RELATED TO WATER SUPPLY SUFFICIENCY WOULD BE LESS THAN SIGNIFICANT.

Water

The following impact analysis is based on a Water Supply Assessment (WSA) that Rincon Consultants, Inc. prepared for Seaside 2040. The WSA, which is provided as Appendix F to this EIR, assesses the availability of water supplies in the General Plan Area through 2040.

Development that may occur under Seaside 2040 may increase water demand in the General Plan Area. As discussed in the WSA, the City of Seaside is served by multiple water supply providers, and the associated UWMP boundaries do not align with the boundaries of the General Plan Area. In addition, each of the three separate water suppliers (SMWS, MCWD, and CalAm) have used different types of assumptions to make water demand estimates. Therefore, an "apples to apples" comparison of forecasted water demand associated with growth projections is not possible based on available published data.

Although this analysis assumes that the buildout identified in Seaside 2040 would increase water use above existing conditions, this is a conservative assumption because in reality, some of the buildout envisioned in Seaside 2040 would redevelop existing uses and would therefore replace existing water demand rather than adding to it. Further, some areas of redevelopment would decrease water demands by replacing existing land uses with land uses with lower water demands.

Table 4.16-3 summarizes projected water supplies for CalAm's service area and the MCWD's City of Seaside service area, as identified in their respective UWMPs. The Adjudication Judgement is not included in this table because it is a self-regulating management tool, which strictly limits the amount of groundwater that can be utilized by each producer within the judgment area during any given year, as opposed to the UWMPs, which provide projections of water usage within their service areas but are not enforceable management tools like the Adjudication Judgment.

Table 4.16-3 Acre-Feet of Water Supply

Water Supplies (acre-feet)	2025	2030	2035	2040	2045
CalAm	9,892	16,057	16,057	16,057	16,057
MCWD	5,991	7,792	8,869	9,574	n/a
Total Projected Supplies	15,883	23,849	24,926	25,631	n/a

Units in acre-feet per year (AFY)
Source: Appendix F

Table 4.16-3 above does not include projections for the SMWS system, because SMWS' water supply source is the adjudicated Salinas Valley Groundwater Basin, and its groundwater production is limited by the Seaside Groundwater Basin Adjudication (Appendix F). As shown in the table, water supplies available to water users in the General Plan Area are expected to remain relatively stable through 2040. Development proposed by Seaside 2040 would increase water demand by approximately 1,272 acre-feet by 2040. Without new water supplies, there would not be sufficient supplies to meet the water demand associated with full buildout of the General Plan Area.

The City (along with the entire Monterey Peninsula) relies entirely on local water supplies. Historic supplies, which include the Carmel River, the Seaside Groundwater Basin, and the Salinas Aquifer, are subject to production limitations, which are on a reducing schedule. Based on existing and foreseeable water supplies in the project area, the City of Seaside does not presently have sufficient water supplies to achieve the complete buildout proposed by Seaside 2040. Based on the water demand projections presented herein, projected total water supplies available during normal, single dry, and multiple dry water years over a 20-year projection are not presently sufficient to meet the water demands of the proposed project in addition to the public water systems' existing and planned future uses, including agricultural and manufacturing uses (Appendix F).

A portfolio of new water sources is under development by CalAm, MCWD, M1W, and MPWMD. These include CalAm's Pure Water Monterey, Monterey Peninsula Water Supply Project, and MCWD's Regional Urban Water Augmentation Program recycled water use and desalination plant projects. Until these projects are implemented, water supply availability will limit the potential for both new development and redevelopment within the General Plan Area. However, the developing portfolio of new water supplies in the General Plan Area will provide future supplies that will support development under Seaside 2040. To ensure that development or redevelopment under Seaside 2040 does not occur without confirmation that the associated water supply for each project is available, Mitigation Measure UTIL-1, Water Verification Report, requires that long-term water supply availability for every future project proposed under Seaside 2040 provides proof of water supply availability to the City as a contingency of project approval. For those individual projects that are subject to SB 610 (2001), the required WSA is sufficient to provide that proof to the City. For those individual projects that are not subject to SB 610, the project proponent must provide a Water Verification Report from the local water supplier to the City.

Additionally, Seaside 2040 identifies a series of major strategies and physical improvements that should occur through 2040. Among these strategies is ensuring a sustainable water supply is available to support economic development within the General Plan Area. The strategy lists actions that should be implemented to achieve a sustainable water supply, including promoting water conservation and efficiency in existing buildings; increasing the City's recycled water supply; optimizing groundwater recharge; and supporting a portfolio of new water sources under development by CalAm, MCWD, M1W and MPWMD.

Seaside 2040 also contains several goals and policies, described below, that are consistent with UWMPs regarding the sustainable use and management of water supplies in the General Plan Area.

Goal CFI-2: A sustainable water supply that supports existing community needs and long-term growth and is prepared for the potential impacts of drought.

Intent: To create a strong framework of policies and practices that encourage sustainable water management, accommodate projected growth, and provide benefits beyond the horizon of the General Plan. To achieve this, the City will continue to coordinate with water utilities and regional water supply agencies to seek new water sources and ensure adequate supply for current and future residents. The City will also continue to work to reduce water use and find alternative sources of potable water to ensure a sustainable water supply.

Policies: **Regional coordination.** Continue to work cooperatively with local and regional water utilities, suppliers and agencies to maintain an adequate water supply for existing uses and develop new water supplies for development of the former Fort Ord lands and redevelopment within the city.

New water sources. Aggressively seek new water sources for the Seaside Municipal Water System and other water service areas throughout the City.

City review of new development. Continue to review development proposals to ensure that adequate water supply, treatment, and distribution capacity is available to meet the needs of the proposed development without negatively impacting the existing community.

Water conservation. Continue to actively promote water conservation by City residents and businesses through policies and programs outlined within the Climate Change and Sustainability Element. Provide disadvantaged communities with guidance and funding to increase water conservation and lessen rate burdens.

Recycled water. Partner with California-American Water Company (CalAm), Marina Coast Water District (MCWD), and Seaside Municipal Water System to develop plans for recycled water use diversifying available water sources and implementing high efficacy water reuse projects to create new local water supply. Continue to promote the use of recycled water for irrigation of parks, golf courses, and public and private landscaped areas in Seaside.

Stormwater infiltration. Continue to promote recharge of drinking water aquifers by stormwater infiltration and implement tracking system.

Goal CFI-3: Clean and sustainable groundwater.

Intent: To promote sustainable city practices that alleviate water shortages and ensure access to a clean and sustainable groundwater supply. To achieve this, the City will work with local partners to develop a sustainable regimen of groundwater pumping and recharge and continue to seek new and expanded opportunities to ensure long-term groundwater sustainability.

Policies: **Groundwater recharge in new development.** Continue to optimize groundwater recharge from new and redevelopment projects by infiltrating stormwater in accordance with State, regional, and local requirements.

Groundwater recharge in City projects. Seek opportunities to incorporate groundwater recharge elements into City drainage projects and work with other agencies to implement regional groundwater recharge projects.

Groundwater credits. Seek opportunities to quantify groundwater recharge from stormwater infiltration projects and credit it towards the City's potable water allocation and implement a City-wide tracking and allocation system.

Goal HSC-8: Buildings and landscapes that promote water conservation, efficiency, and the increased use of recycled water.

Intent: To address water supply limitations that significantly affect development opportunities in the City and that have the potential to create water shortages for existing customers. To achieve this, the City will reduce potable water used by buildings and landscapes in Seaside, focusing on water conservation, water efficiency, and recycled water use. Additional water policies are included in the Community Facilities and Infrastructure Element.

Policies: **Partnerships.** Partner with the Marina Coast Water District, California-American Water, Pure Water Monterey, and the Seaside Municipal Water System to promote and implement water conservation measures, leak detection, and water efficient fixtures.

Outreach programs. Perform outreach efforts to residential and commercial owners to increase awareness of existing water efficiency incentive programs through the City's website and other media methods.

Funding sources. Continue to support and implement third-party programs and financing sources, such as the PACE program, to improve energy and water efficiency of existing buildings.

Reduced water use. When feasible, augment regional conservation programs with City resources to encourage reduced water use in homes and businesses.

Recycled water distribution. Continue to expand the recycled water supply and distribution facilities in the city.

Water innovation. Encourage innovative water recycling techniques such as rainwater capture, use of cisterns, and installation of greywater systems.

Conservation design requirements. Continuously update and improve water conservation and landscaping requirements for new development.

Education. Promote education on policies and practices to encourage residents and businesses to conserve water.

Based on the water demand projections presented in the WSA (Appendix F) and summarized above, the local water suppliers' projected water supplies are not sufficient to meet the projected water demand of the development and land use envisioned in Seaside 2040. Implementation of Mitigation Measure UTIL-1, described in detail at the end of this impact criterion discussion, would ensure that water demands imposed by development facilitated by Seaside 2040 would not exceed available supplies.

Wastewater Treatment

As described above, the Regional Wastewater Treatment Plant has an average dry weather design treatment capacity of 29.6 million gallons per day and permitted for a peak wet weather design capacity of 75.6 million gallons per day. The diffuser outlet in Monterey Bay is designed to convey ultimate wet weather flows of 81.2 million gallons daily, which is the permitted rate of discharge through the outfall. In the *Monterey One Water Sewer System Management Plan* (M1W 2019), M1W notes that dry weather flows to the treatment plant were approximately 21 million gallons per day, and peak wet weather flows were about 40 million gallons per day in 2019. Thus, based on the Sewer System Management Plan, as of 2019, the Regional Wastewater Treatment Plant had an excess treatment capacity of approximately 8.6 million gallons per day during dry weather and about 41.2 million gallons per day during peak wet weather conditions.

The projected growth envisioned in Seaside 2040 would require an appropriate increase in wastewater capacity to meet the demand from new development. The total number of housing units planned for the General Plan Area is estimated at 14,143 in 2040, which is an incremental growth of approximately 135 units per year, based on housing units reported in the 2010 Census. This equates to 37 percent increase in the population reported in the 2010 Census, as shown in Table 2-10 in Section 2, *Project Description*.

The sanitary sewer system lift station in Seaside receives wastewater flows from the cities of Seaside, Monterey, and Pacific Grove, as well as flows from the former Ford Ord area sanitary sewer system (Seaside County Sanitation District 2020). Flows from the lift station are then conveyed to the Regional Wastewater Treatment Plant. According to the *Seaside County Sanitation District Sewer Management Plan* (2020), the maximum daily flow of wastewater into the sanitary sewer system lift station in Seaside in 2020 was approximately 2.9 million gallons per day.

When the 37 percent increase in population is applied to the 2.9 million gallons per day of wastewater conveyed to the Regional Wastewater Treatment Plant through the Seaside lift station, the maximum wastewater flow rate to the treatment plant in 2040 would be 4.0 million gallons per day. This would be an increase of approximately 1.1 million gallons per day compared to the maximum flow recorded in 2020. An increase of 1.1 million gallons per day would represent only approximately 3 percent of the remaining treatment capacity at the treatment plant during peak wet weather. The increase of 1.1 million gallons per day of wastewater is a conservative estimate of the wastewater that would be generated by developed facilitated by Seaside 2040 because it is based on flow through the Seaside lift station, which also includes wastewater from Monterey and Pacific Grove, as well as flow from Fort Ord Lift Station and Fort Ord Treatment Plant.

Cumulative growth in the region will increase wastewater flows to the Regional Wastewater Treatment Plant. As discussed previously, if wastewater flows increase proportionately to population growth projected by AMBAG, the Regional Wastewater Treatment Plant would have

unused but permitted capacity of approximately 4.3 million gallons per day during dry weather and about 27.4 million gallons per day during peak wet weather conditions in 2040. The proposed project's increased wastewater flows of 1.1 million gallons per day would account for approximately 30 percent of remaining dry weather capacity and approximately 5 percent of remaining wet weather capacity.

Additionally, the California Plumbing Code contains provisions requiring the installation of low flow fixtures and toilets in new developments and the retrofitting of existing structures with water efficient fixtures. The Regional Wastewater Treatment Plant has capacity to meet the wastewater treatment demands that would be generated from the development and growth envisioned for the General Plan Area in Seaside 2040. Expansion or construction of a new wastewater treatment facility to meet the demands of Seaside 2040 would not be required.

Additionally, goals and policies in Seaside 2040, as described below, would address the need for increased wastewater treatment and sanitary sewer system capacity to meet the demand from new growth and development envisioned for the General Plan Area.

Goal CFI-1: City-wide infrastructure to support existing development and future growth.

Intent: To plan new and improved city-wide infrastructure that supports future growth and sustainable infrastructure best practices. To achieve this, the City will consider strategic approaches to mitigate the cost of services and utilities, while meeting the needs of current and future residents.

Policies: **Aging infrastructure.** Continue to manage and upgrade the City's aging infrastructure, as funds allow and leverage funds whenever possible.

Funding levels. Explore options available to attain sustainable funding levels for maintaining existing infrastructure in the City.

Infrastructure for new development. Require a plan to provide adequate infrastructure and utility service levels before approving new development.

Fair share. Require that new and existing development pay its fair share of infrastructure and public service costs.

Maintenance schedule. Use a routine maintenance schedule for infrastructure that does not require resident complaints or calls.

Goal CFI-4: Well-maintained water and sewer systems that meets the City's current and future needs.

Intent: To ensure Seaside is provided with access to high-quality utility infrastructure that meets current and future demands. To achieve this, the City will work to maintain a standard of service that meets or exceeds the needs of residents and continually monitors and assesses capacity.

Policies: **Level of service.** Work with utility owners to maintain the existing water and sanitary sewer systems to provide a high level of service to Seaside's neighborhoods.

New development. Require new development and redevelopment projects to provide adequate water distribution and sewage collection infrastructure.

Regional sanitary sewer. Continue to monitor and coordinate with partners about the Monterey One Water Regional Wastewater Treatment Plant as new development projects are proposed and treatment capacity needs expand.

In addition, Seaside 2040 water efficiency goals and policies, described in detail under the water supply analysis in Impact UTIL-1, would further reduce per capita wastewater generation in the General Plan Area.

According to Seaside 2040, treatment capacity at the Regional Wastewater Treatment Facility is not anticipated to be a limiting factor for new development and redevelopment within Seaside. This corroborates the above findings that development envisioned in Seaside 2040 would generate approximately 1.1 million gallons per day of wastewater, which is only approximately 3 percent of the available peak wet weather treatment capacity at the treatment plant. The existing treatment plant is sufficient for wastewater treatment demand that would be generated by Seaside 2040. Impacts would be less than significant.

Stormwater Drainage

Impacts regarding stormwater drainage facilities under Threshold 1 are discussed in Section 4.9, *Hydrology and Water Quality*; this threshold is therefore not addressed in this section.

Electric Power

Electricity services in the General Plan Area are provided by Central Coast Community Energy and PG&E. Development facilitated by Seaside 2040 would require modification of existing electrical transmission and distribution systems on site to continue to serve the Plan Area. This service would be provided in accordance with the rules and regulations of PG&E on file with and approved by the CPUC. The construction of electrical lines has been evaluated in context with other physical effects on the environment in applicable sections of this Draft EIR. Impacts regarding electric power demand are discussed in Section 4.5, *Energy*; this threshold is therefore not further addressed in this section.

Natural Gas

Natural gas services in the General Plan Area are provided by PG&E. A large-diameter gas transmission pipeline runs along Cabrillo Highway, along the western boundary of the General Plan Area (PG&E 2019). Development facilitated by Seaside 2040 requires provision of new and upgraded utility infrastructure to meet the needs of site residents and tenants. Improvements include natural gas infrastructure upgrades.

PG&E service would be provided in accordance with the rules and regulations of PG&E on file with an approved by the CPUC. The precise sizing and placement of gas transmission pipelines would be submitted concurrent with each individual project's final tract map and improvement plan and would be subject to City approval. Construction of natural gas transmission pipelines would generally occur within developed areas, such as street corridors, that already contain underground infrastructure for utilities. Natural gas transmission pipelines are typically co-located with underground water pipelines.

The construction of natural gas lines has been evaluated in context with other physical effects on the environment in applicable sections of this Draft EIR. Therefore, development facilitated by

Seaside 2040 would have adequate natural gas facilities to serve the development and impacts related to natural gas would be less than significant.

Telecommunication Facilities

Development facilitated by Seaside 2040 requires provision of new and upgraded utility infrastructure to meet the needs of site residents and tenants. Improvements include telephone and cable lines. Telephone and cable utility plans would be submitted concurrent with the final tract map and improvement plan for projects implemented under Seaside 2040. Telephone and cable lines are typically co-located with energy lines. The construction of telecommunications infrastructure has been evaluated in context with other physical effects on the environment in applicable sections of this Draft EIR. Therefore, development facilitated by Seaside 2040 would have adequate telecommunications facilities to serve the development and impacts related to telecommunications would be less than significant.

Telephone and cable lines would be submitted concurrent with the final tract map and improvement plan per phase and would be subject to City approval. The construction of telecommunications lines has been evaluated in context with other physical effects on the environment in applicable sections of this Draft EIR. Therefore, the Proposed Project would have adequate telecommunication facilities to serve the development and impacts related to telecommunication would be less than significant.

Mitigation Measures

UTIL-1 Water Verification Report

The City shall not approve individual projects envisioned under Seaside 2040 until proof of water supply availability is provided. Any future project proposed under Seaside 2040 that meets the definition of a "Project" under California Water Code Section 10912 will be required to prepare a Water Supply Assessment prior to project implementation. For those individual projects that are subject to California Water Code Section 10910, the City will use the prepared WSA (Appendix F to this Draft EIR) to assess water supply sufficiency.

Any future project proposed under Seaside 2040 that does not meet the definition of a "Project" under California Water Code Section 10912 will be required to provide the City a Water Verification Report from the local water supplier. The City shall prohibit applicants from proceeding with project implementation activities until a Water Verification Report has been issued.

Significance After Mitigation

Impacts would be less than significant after mitigation.

Threshold 4:	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?
Threshold 5:	Would the project comply with federal, state, and local statutes and regulations related to solid waste?

Impact UTIL-2 DEVELOPMENT FACILITATED BY SEASIDE 2040 WOULD INCREASE THE AMOUNT OF SOLID WASTE THAT IS TRANSPORTED TO AND DISPOSED OF AT THE MONTEREY PENINSULA LANDFILL. AT FULL BUILDOUT OF SEASIDE 2040, SOLID WASTE GENERATED FROM USES WITHIN THE GENERAL PLAN AREA WOULD HAVE CAPACITY FOR THE DEVELOPMENT ENVISIONED IN SEASIDE 2040. ADDITIONALLY, GOALS AND POLICIES IN SEASIDE 2040 WOULD INCREASE THE AMOUNT OF WASTE THAT IS DIVERTED FROM THE LANDFILL AND ENCOURAGE REUSE AND RECYCLING. THESE GOALS AND POLICIES ALONGSIDE THE CITY'S ONGOING RECYCLING PROGRAM WOULD ASSIST THE CITY IN COMPLYING WITH STATUTES AND REGULATIONS RELATED TO SOLID WASTE. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

As shown below in Table 4.16-4 the Monterey Peninsula Landfill has received between 21,358 and 28,152 tons per year of solid waste from Seaside between 2011 and 2019. Using these reported volumes of solid waste, and the population of Seaside during each of these years, a per capita solid waste disposal rate was calculated for the City, as shown in Table 4.16-4. As shown in the table, the average per capita solid waste disposal rate in the City, in recent years, is approximately 0.72 tons per year per person.

Table 4.16-4 Annual Solid Waste Disposal Per Capita – Seaside

Year	Solid Waste Disposal Originating from Seaside (annual tons)	Population	Solid Waste Disposal Per Capita (annual tons)
2011	23,773	32,735	0.73
2012	21,635	33,050	0.65
2013	23,285	33,402	0.70
2014	22,933	33,729	0.68
2015	21,393	33,999	0.63
2016	24,853	34,150	0.73
2017	26,859	34,295	0.78
2018	26,278	34,382	0.76
2019	28,152	33,074	0.85
Average			**0.72**

Sources: CalRecycle 2019; U.S. Census Bureau 2015; California Department of Finance 2021

At full buildout of Seaside 2040, the population of Seaside is projected to be 46,297 (Raimi + Associates 2018). Based on the average per capita solid waste disposal rate for the City between 2011 and 2019, as shown in Table 4.16-4, a total of approximately 33,333 tons would be generated in year 2040, under full buildout of Seaside 2040. This can be considered a conservative estimate, given the regulatory diversion requirements discussed above. Thus, the approximately 33,333 tons of solid waste generated from the population of Seaside annually in 2040 would be less than the remaining capacity of the landfill, 48 million tons, reported by ReGen in 2014.

The approximately 33,333 tons of solid waste that would be generated annually at full buildout of Seaside 2040 would be equivalent to approximately 91.3 tons per day. As described above, the

Monterey Peninsula Landfill is permitted to receive 3,500 tons per day. Thus, under implementation of Seaside 2040, solid waste generated by the population of Seaside would be below the permitted daily capacity of the landfill. The reported amount of solid waste disposed of by the population of the City in 2019 was 77.1 tons per day, or approximately 2.2 percent of the total permitted daily capacity of landfill. Thus, the Monterey Peninsula Landfill has permitted capacity to accommodate the solid waste disposal needs that would be anticipated from the growth envisioned in Seaside 2040.

As described above, AB 939 mandated that local jurisdictions divert at least 50 percent of all solid waste generated by January 1, 2000. AB 341 sets a statewide goal for 75 percent disposal reduction by the year 2020. According to Seaside 2040, in 2015 and 2016, the City achieved a diversion rate of 32 percent. Diversion rates are expected to increase, pursuant to the requirements of AB 939 and AB 341. In order to comply with AB 341 and increase the amount of solid waste diverted from the landfill, the General Plan contains the following goals and policies:

Parks and Open Space Element Goals and Policies

Goal PO-7: Environmental sustainability and awareness at new and existing park and recreational facilities.

Intent: Reducing energy and water use, diverting solid waste from the landfill, and capturing stormwater on-site can improve the environmental sustainability of Seaside's parks and open spaces. This goal seeks to increase the City's sustainability efforts in parks, using these actions as an opportunity to educate the community about sustainability.

Policy: **Solid waste diversion.** Promote solid waste diversion at City parks and recreation facilities through recycling and composting.

Healthy and Sustainable Community Element Goals and Policies

Goal HSC-12: A zero-waste program that increases recycling and reduces food scraps and green waste sent to the Regional Waste Management District.

Intent: To ensure the City provides leadership in waste management services to the community. To achieve this, the City will provide quality services too hard to reach populations, including multifamily and commercial buildings, and work to reduce the negative health and environmental impacts of waste, especially for communities in close proximity to these sites. Additional solid waste policies are included in the Community Facilities and Infrastructure Element.

Policies: **Commercial and multifamily recycling.** Promote GreenWaste Recovery's recycling programs expanding outreach to commercial and multifamily residences, including programs that convey the lifecycle from green purchasing and recycling.

Food and green waste. Work with GreenWaste Recovery to expand green waste programs so they collect food waste and green waste from commercial and residential uses, and divert from landfills.

Green purchasing. Promote green purchasing options across all City departments. Consider the lifecyle effects from purchases.

Recycled and locally-sourced materials. Encourage new construction projects to use recycled and locally-sourced building materials in projects.

Salvage and recycle construction materials. Ensure construction demolition achieves the State's 50 percent target for material salvage and recycling of non-hazardous construction materials.

Waste containers. Promote waste reduction, recycling, and composting by making separate containers available in gathering areas of City-owned facilities.

Community reuse. Support community-based programs that promote food sharing, electronics recycling, and the reuse of consumer goods.

Community Facilities Element Goals and Policies

Goal CFI-6: A flexible and effective system that reduces solid waste and waste resources.

Intent: To reduce solid waste sent to the landfill, divert waste to recycling or greenwaste programs, and encourage residents and businesses to reduce consumption of materials that are likely to end up in the landfill. To achieve this, the City will follow sustainable waste management practices to ensure that e-waste and hazardous waste are disposed of properly and will use new technology and innovation to help achieve waste reduction goals.

Policies: **Waste reduction education.** Promote awareness about responsible waste management practices, including recycling, green waste collection, and composting.

Construction demolition. Require construction demolition to meet or exceed the State's 50 percent targets for material salvage and recycling of non-hazardous construction materials.

Separate containers. Promote waste reduction, recycling, and compositing by placing separate containers in all gathering areas of City-owned facilities and sites.

E-waste and hazardous waste campaign. Continue to work with regional agencies to educate residents about available drop-off and/or pickup points for e-waste and hazardous materials and chemicals, to avoid their disposal into the sewer system, waste stream, or open space areas.

Because the amount of solid waste that would be generated from full buildout of Seaside 2040 would be less than the total maximum daily permitted capacity of the Monterey Peninsula Landfill, and Seaside 2040 contains goals and policies to divert waste from the landfill, impacts would be less than significant.

Mitigation Measures

Mitigation measures are not required.

Significance After Mitigation

Impacts would be less than significant without mitigation.

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4.17 Wildfire

This section analyzes impacts associated with wildfire hazards as a result of the implementation of Seaside 2040. This section addresses the potential for Seaside 2040 to exacerbate wildfire risks.

4.17.1 Setting

Overview of Wildfire

A wildfire is an uncontrolled fire in an area of extensive combustible fuel, including vegetation and structures. Wildfires differ from other fires in that they take place outdoors in areas of grassland, woodlands, brushland, scrubland, peatland, and other wooded areas that act as a source of fuel, or combustible material. Buildings may become involved if a wildfire spreads to adjacent communities. The primary factors that increase an area's susceptibility to wildfire include slope and topography, vegetation type and condition, and climate, weather and atmospheric conditions.

The indirect effects of wildland fires can be catastrophic. In addition to stripping the land of vegetation and destroying forest resources, large, intense fires can harm the soil, waterways, and the land itself. Soil exposed to intense heat may lose its capacity to absorb moisture and support life. Regions of dense dry vegetation, particularly in canyon areas and on hillsides, pose the greatest potential for wildfire risks.

Wildfire has three basic elements: how and where its ignition occurred; how and why it moves across a landscape from its point of origin; and what is the fire's nature upon arrival at a location important to the City. In general, a fire's nature is defined by eight characteristics:

- Direction of the advance of the fire front
- Speed of the advance of the fire front (rate of spread)
- Mechanism causing the advance
- Duration at any one location
- Structure-related consumption of fuels
- Flame length
- Intensity
- Gaining control

A fire front's direction of travel is primarily determined by direction of prevailing winds, geographic aspect, and condition of the fuels in the advance direction. The speed of a fire front's advance is a result of conditions at the site of the currently burning material and of lands in the advance direction of the fire. As a fire advances, the overriding influences determining its speed are prevailing wind speed, terrain slope gradient, dominant fuel size classes, and fuel continuity.

Wildfires advance by two principal mechanisms, combustion resulting from radiant heating, and remote ignition resulting from ember production. Fire stays at one location primarily due to the size class of the material being consumed. Grass formations are dominated by low volumes of very "fine" fuels and, depending on the level of dryness, can be consumed, with the fire advancing, in a matter of minutes. On the other hand, tree-dominated formations have significantly greater volumes of available fuel and a far great amount of larger-sized pieces. Fires can remain at these locations for days, often weeks, and sometimes months (on heavily wooded conifer sites).

Fires burn where fuels are available. Fires in grasslands burn at one level set by the height of the grass, while fires in brushlands can burn surface fuels and typically consume the stems and leafy crowns to the full height of the plants. Fires in tree formations have a much more complex pattern of movement based primarily on the continuity (or "connectedness") of the fuels. In these stands there are typically three distinct layers of fuels, arranged vertically, surface, stems and trunks, and the crown composed of branches, twigs and leaves. The continuity of fuels is important to consider in both horizontal and vertical directions. If a fire enters a stand and is advancing only as a surface fire it will continue this manner of advance if there is high horizontal fuel connectivity. However, if there is also a high degree of vertical continuity (provided by fuels referred to as "ladder fuels") then a fire can move into the crown as well as forward across the surface and fuels in the entire stand structure become involved.

Flame lengths are generally determined by the volume of fuels burning, the amount of time to total consumption, and the height of the species in the composition. Grassland produces flame lengths typically ranging from one to three feet as they are composed of low volumes of fine materials that are consumed quickly. Flame lengths are at their maximum when the material is dry. Brush formations can produce flame lengths from 4 to 10 feet. Native oak-dominated hardwood formations can generate 20- to 40-foot flame lengths and stands of exotics, such as *Eucalyptus globulus* or *E. cinerea,* or dense conifer stands, over 100 feet. Flame length is important as it sets the distance over which radiant heating-related combustion can occur.

The temperature achieved in a wildfire is directly related to the amount of cellulosic material available for consumption. Grasslands have very low amounts and attain lower temperatures but woodland, characterized by large amounts of highly concentrated cellulosic material, can attain temperatures on the order of 1,800 degrees Fahrenheit.

Gaining control over a wildfire's behavioral character is the objective of response efforts. Grassland fires, burning in low fuel volume, rapid consumption, and at a single level are the easiest to bring under control. On the other end, fires that are burning in high fuel volumes, full spectrum size classes, and entire stand structure involvement, can require days, weeks, even months, to bring under complete control.

Wildfire Hazard Designations

In California, State and local agencies share responsibility for wildfire prevention and suppression and federal agencies take part as well. Federal agencies are responsible for federal lands in Federal Responsibility Areas (FRA). The State of California has determined that some non-federal lands in unincorporated areas with watershed value are of statewide interest and have classified those lands as State Responsibility Areas (SRA). CAL FIRE manages SRAs. All incorporated areas and unincorporated lands not in FRAs or SRAs are classified as Local Responsibility Areas (LRA).

While nearly all of California is subject to some degree of wildfire hazard, there are specific features that make certain areas more hazardous. 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 4201-4204, California Government Code 51175-89). As described above, the primary factors that increase an area's susceptibility to fire hazards include slope, vegetation type and condition, and atmospheric conditions. CAL FIRE maps fire hazards based on zones, referred to as Fire Hazard Severity Zones (FHSZ). There are three levels of severity: 1) Moderate FHSZs; 2) High FHSZs; and 3) Very High FHSZs. Only the Very High FHSZs are mapped for LRAs. Each of the zones influence how people construct buildings and protect property to reduce risk associated with wildland fires. However, none of the fire zones specifically prohibit development or construction. To reduce fire

risk under State regulations, areas within Very High FHSZs must comply with specific building and vegetation management requirements intended to reduce property damage and loss of life in those areas.

As shown on Figure 4.17-1, the entire Seaside 2040 Plan Area is within a designated LRA, wherein the local government has responsibility for fire protection (CAL FIRE 2007). This area is overlapped by an FRA on the former Fort Ord site denoted on Figure 4.17-1 as "Other" areas. There are no SRAs mapped within the General Plan Area (CAL FIRE 2007); however, SRA mapping indicates that both High and Very High Fire Hazard Severity Zones occur adjacent to the General Plan Area south of Plumas Avenue and north of State Route 218, and an SRA High Severity Zone occurs northeast of the General Plan Area east of 8th Avenue, as denoted on Figure 4.17-1 as "Other" areas.

The majority of the developed portion of the General Plan Area is located outside of a mapped fire hazard severity zone, shown as "LRA Unzoned" on Figure 4.17-1; however, almost all of the undeveloped area in the former Fort Ord east of General Jim Moore Boulevard and south of Gigling Road is within an FRA designated Very High FHSZ, LRA High FHSZ, and LRA Moderate FHSZ.

Seaside has been identified by CAL FIRE as within a wildland-urban interface. This includes areas where homes or other structures are built near or among lands prone to wildland fire (CAL FIRE 2019). Historically, several fires have occurred in the wildland-urban interface in Monterey County and the greatest threat occurs under extreme fire weather conditions. The average interval between large wildfires (over 10,000 acres burning) within Monterey County is 7.3 years (County of Monterey 2023). As shown in Figure 4.17-1, much of the undeveloped area in the eastern half of Seaside, east of General Jim Moore Boulevard, is designated as having a very high fire hazard risk. This undeveloped area within the former Fort Ord is largely vegetated with forests, woodlands, and grasslands.

Citywide Conditions

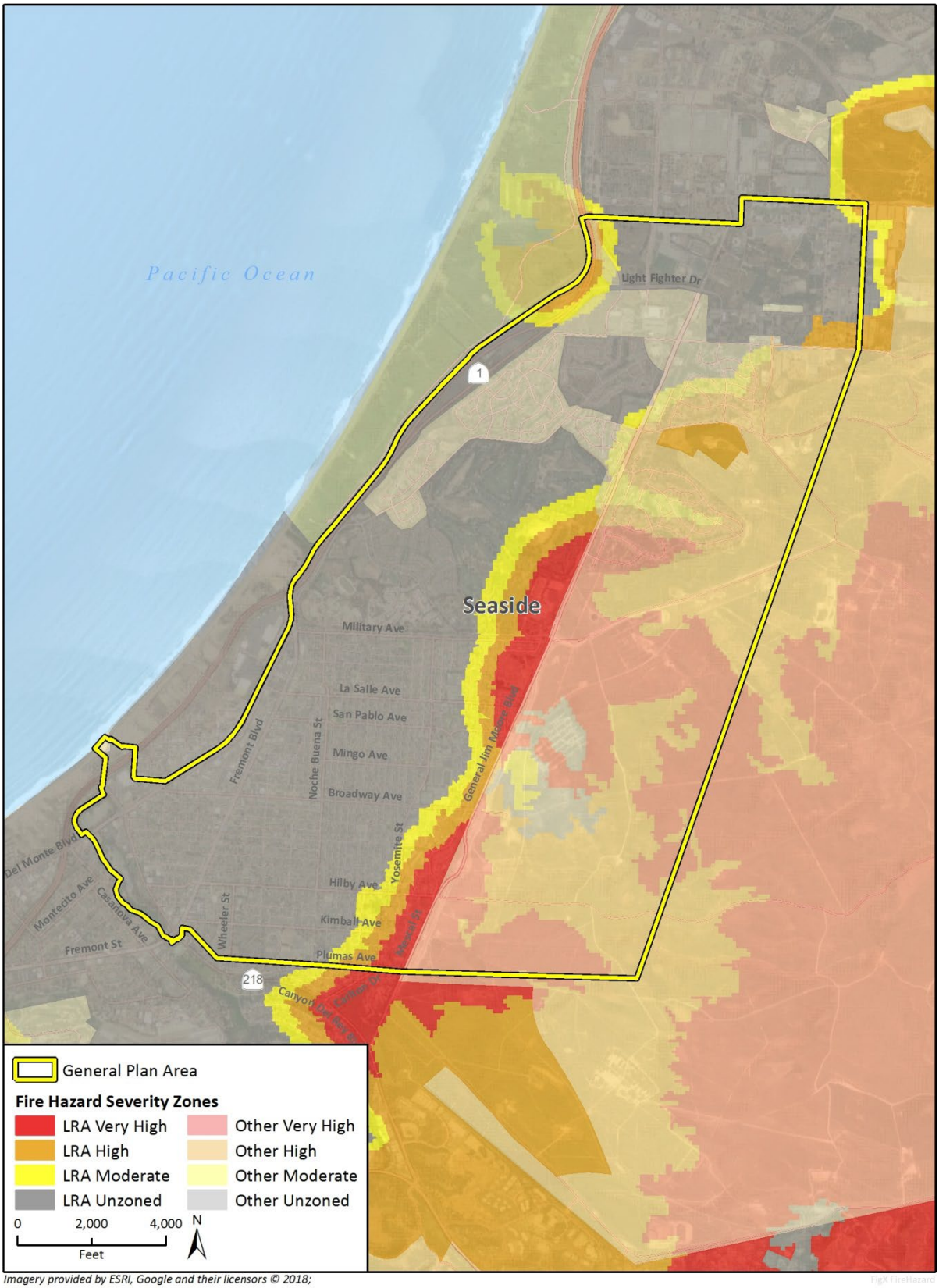
Hillside Slope and Aspect

According to CAL FIRE, sloping land increases susceptibility to wildfire because fire typically burns faster up steep slopes (CAL FIRE 2000). Additionally, steep slopes, defined as slopes greater than 25 percent, may hinder firefighting efforts. Following severe wildfires, sloping land is also more susceptible to landslide or flooding from increased runoff during substantial precipitation events. Aspect is the direction that a slope faces, and it determines how much radiated heat the slope will receive from the sun. Slopes facing south to southwest will receive the most solar radiation. As a result, this slope is warmer and the vegetation drier than on slopes facing a northerly to northeasterly direction, increasing the potential for wildfire ignition and spread (CAL FIRE 2000). Seaside generally slopes west toward the Pacific Ocean at the Monterey Bay.

Vegetation

Vegetation is "fuel" to a wildfire and it changes over time. The relationship between vegetation and wildfire is complex, but generally some vegetation is naturally fire resistant, while other types are more flammable. For example, cured grass is much more flammable than standing trees (CAL FIRE 2017). Grass is considered an open fuel, in which oxygen has free access to promote the spread of fire. Additionally, weather and climate conditions, such as drought, can lead to increasing the prevalence of dry vegetation with low moisture content, increasing its flammability.

Figure 4.17-1 Wildland Fire Hazards Hazard Severity Zones



Imagery provided by ESRI, Google and their licensors © 2018;
Additional data provided by Cal Fire, 2007.

As discussed in Section 4.3, *Biological Resources*, the dominant vegetation type on the former Fort Ord site is maritime chaparral; this vegetation type is highly flammable. Other vegetation types east of General Jim Moore Boulevard include chamise chaparral and coast live oak woodland, which also can also act as wildfire fuels.

Weather and Atmospheric Conditions

Wind, temperature, and relative humidity are the most influential weather elements in fire behavior and susceptibility (CAL FIRE 2016). Fire moves faster under hot, dry, and windy conditions. Wind may also blow burning embers ahead of a fire, causing its spread. Drought conditions also lead to extended periods of excessively dry vegetation, increasing the fuel load and ignition potential.

Most rainfall in the city occurs between November and March, with an average annual rainfall of approximately 20 inches. May through September is the driest part of the year, and coincide with what has traditionally been considered the fire season in California. However, increasingly persistent drought and climatic changes in California have resulted in drier winters, and fires during the autumn, winter, and spring months have become more common.

Marine breezes cause winds from the northwest and west that generally move across the City from the west to the east, from Monterey Bay toward the eastern edge of the city.

4.17.2 Regulatory Setting

a. Federal

The Disaster Mitigation Act of 2000

The Disaster Mitigation Act of 2000 requires a State mitigation plan as a condition of disaster assistance. There are two different levels of State disaster plans: “Standard” and “Enhanced.” States that develop an approved Enhanced State Plan can increase the amount of funding available through the Hazard Mitigation Grant Program. The Act has also established new requirements for local mitigation plans.

National Fire Plan

The National Fire Plan was developed under Executive Order 11246 in August 2000, following a historic wildland fire season. Its intent is to establish plans for active response to severe wildland fires and their impacts to communities while ensuring sufficient firefighting capacity. The plan addresses firefighting, rehabilitation, hazardous fuels reduction, community assistance, and accountability. The program promotes close coordination among local, state, tribal, and federal firefighting resources by conducting training, purchasing equipment, and providing prevention activities on a cost-shared basis. To help protect people and their property from potential catastrophic wildfire, the National Fire Plan directs funding to be provided for projects designed to reduce the fire risks to communities (United States Department of Agriculture [USDA] and United States Department of the Interior [DOI] 2000). High-risk communities identified within the wildland-urban interface, the area where homes and wildlands intermix, were published in the Federal Register in 2001. At the request of Congress, the Federal Register notice only listed those communities neighboring federal lands. CAL FIRE incorporates concepts from this plan into State fire planning efforts.

b. State

California Fire and Building Code (2022)

The 2022 Fire and Building Code establishes the minimum requirements consistent with nationally recognized good practices to safeguard the public health, safety, and general welfare for the hazards of fire, explosion, or dangerous conditions in new and existing buildings, structures and premises, and to provide safety and assistance to firefighters and emergency responders during emergency operations. The provisions of this code apply to the construction, alteration, movement enlargement, replacement, repair, equipment, use and occupancy, location, maintenance, removal, and demolition of every building or structure or any appurtenances connected or attached to such building structures throughout the State of California.

More specifically, the Fire Code is included in Title 24 of the California Code of Regulations. California Fire Code Title 24, Part 9, Chapter 7 addresses Fire-Resistances - Rated Construction, California Building Code (Part 2), Chapter 7A addresses Materials and Construction Methods for Exterior Wildfire Exposure, Fire Code Chapter 8 addresses fire related Interior Finishes, and Fire Code Chapter 9 addresses Fire Protection Systems, and Fire Code Chapter 10 addresses fire related Means of Egress, including Fire Apparatus Access Road width requirements. Fire Code Section 4906 also contains existing regulations for vegetation and fuel management to maintain clearances around structures.

On September 20, 2007, the Building Standards Commission approved the Office of the State Fire Marshal emergency regulations amending the California Code of Regulations to incorporate Wildland Urban Interface Building Standards, Title 24, Part 2, Sections 701A.3.2 et seq. These codes include provisions for ignition-resistant construction standards in the wildland urban interface.

Interface zones are dense housing adjacent to vegetation that can burn and must meet the following criteria:

- Housing density class 2, 3, or 4
- In Moderate, High, or Very High FHSZ
- Not dominated by wildland vegetation (lifeform not herbaceous, hardwood, conifer, or shrub)
- Spatially contiguous groups of 30-meter cells that are 10 acres and larger

Intermix zones are housing development interspersed in an area dominated by wildland vegetation and must meet the following criteria:

- Not interface
- Housing density class 2
- Housing density class 3 or 4, dominated by wildland vegetation
- In Moderate, High, or Very High FHSZ
- Improved parcels only
- Spatially contiguous groups of 30-meter cells 25 acres and larger

Influence zones have wildfire-susceptible vegetation up to 1.5 miles from an interface zone or intermix zone.

The California Fire Plan

The Strategic Fire Plan for California (California Fire Plan) is the State's road map for reducing the risk of wildfire. The most recent version of the Plan was finalized in August 2018 and directs each CAL FIRE Unit to prepare a locally specific fire management plan. In compliance with the California Fire Plan, individual CAL FIRE units are required to develop fire management plans for their areas of responsibility. These documents assess the fire situation within each of the 21 CAL FIRE units and six contract counties. The San Benito-Monterey CAL FIRE unit prepared its most recent fire plan in 2022. The plans include stakeholder contributions and priorities and identify strategic areas for pre-fire planning and fuel treatment as defined by the people who live and work with the local fire problem. The plans are required to be updated annually. With California's extensive wildland-urban interface situation, the list of high-risk communities, including Seaside, extends beyond just those adjacent to federal lands, as discussed above. The California State Forester (CAL FIRE Director) has the responsibility for managing the list of those high-risk communities.

California Disaster Mitigation Act

The California Office of Emergency Services (CalOES) prepares the State of California Multi-Hazard Mitigation Plan (SHMP). The SHMP identifies hazard risks and includes a vulnerability analysis and a hazard mitigation strategy. The SHMP is federally required under the Disaster Mitigation Act of 2000 for the State to receive federal funding. The Disaster Mitigation Act of 2000 requires a State mitigation plan as a condition of disaster assistance.

California Emergency Response Plan

California has developed an emergency response plan to coordinate emergency services provided by federal, State, and local governments and private agencies. Responding to hazardous-materials incidents is one part of this plan. The plan is administered by the California Governor's Office of Emergency Services, which coordinates the responses of other agencies. When the City of Seaside experiences an emergency, an Emergency Operations Center (EOC) may be opened. In the event an EOC is opened, emergency response team members coordinate efforts and work with local fire and police agencies, emergency medical providers, the California Highway Patrol, CAL FIRE, California Department of Fish and Wildlife (CDFW), and California Department of Transportation (Caltrans).

State Emergency Plan

The foundation of California's emergency planning and response is a statewide mutual aid system which is designed to ensure that adequate resources, facilities, and other support is provided to jurisdictions whenever their own resources prove to be inadequate to cope with a given situation.

The California Disaster and Civil Defense Master Mutual Aid Agreement (California Government Code Sections 8555–8561) requires signatories to the agreement to prepare operational plans to use within their jurisdiction, and outside their area. These plans include fire and non-fire emergencies related to natural, technological, and war contingencies. The State of California, all state agencies, all political subdivisions, and all fire districts signed this agreement in 1950.

Section 8568 of the California Government Code, the "California Emergency Services Act," states that "the State Emergency Plan shall be in effect in each political subdivision of the state, and the governing body of each political subdivision shall take such action as may be necessary to carry out the provisions thereof." The Act provides the basic authorities for conducting emergency operations following the proclamations of emergencies by the Governor or appropriate local authority, such as

a City Manager. The provisions of the act are further reflected and expanded on by appropriate local emergency ordinances. The Act further describes the function and operations of government at all levels during extraordinary emergencies, including war.

All local emergency plans are extensions of the State of California Emergency Plan. The State Emergency Plan conforms to the requirements of California's Standardized Emergency Management System (SEMS), which is the system required by Government Code 8607(a) for managing emergencies involving multiple jurisdictions and agencies. The SEMS incorporates the functions and principles of the Incident Command System (ICS), the Master Mutual Aid Agreement (MMAA), existing mutual aid systems, the operational area concept, and multi-agency or inter-agency coordination. Local governments must use SEMS to be eligible for funding of their response-related personnel costs under state disaster assistance programs. The SEMS consists of five organizational levels that are activated as necessary, including: field response, local government, operational area, regional, and state. The State of California Governor's Office of Emergency Services divides the state into several mutual aid regions. The City of Seaside is located in Mutual Aid Region II, which includes Del Norte, Humboldt, Mendocino, Sonoma, Lake, Napa, Marin, Solano, Contra Costa, San Francisco, San Mateo, Alameda, Santa Clara, Santa Cruz, San Benito, and Monterey Counties.

Senate Bill 1241 (Kehoe) of 2012

Senate Bill 1241 requires cities and counties to address fire risk in SRAs and Very High Fire Hazard Severity Zones in the safety element of their general plans. The bill also resulted in amendments to the CEQA Guidelines Initial Study checklist to include questions related to fire hazard impacts for projects located in or near lands classified as SRAs and Very High Fire Hazard Severity Zones. In adopting these Guidelines amendments, OPR recognized that generally, low-density, leapfrog development may create higher fire risks than high-density, infill development.

Subdivision Map Act

Government Code (GC) Section 66474.02, as added by SB 1241, requires that a legislative body of a county make three findings before approving a tentative map, or a parcel map for which a tentative map was not required, for an area located in a state responsibility area or a very high fire hazard severity zone. These findings are as follows:

1) A finding supported by substantial evidence in the record that the design and location of each lot in the subdivision, and the subdivision as a whole, are consistent with any applicable regulations adopted by the State Board of Forestry and Fire Protection pursuant to Sections 4290 and 4291 of the Public Resources Code.
2) A finding supported by substantial evidence in the record that structural fire protection and suppression services will be available for the subdivision through any of the following entities:
    a. A county, city, special district, political subdivision of the state, or another entity organized solely to provide fire protection services that is monitored and funded by a county or other public entity.
    b. The Department of Forestry and Fire Protection by contract entered into pursuant to Section 4133, 4142, or 4144 of the Public Resources Code.
3) A finding that to the extent practicable, ingress and egress for the subdivision meets the regulations regarding road standards for fire equipment access pursuant to Section 4290 of the Public Resources Code and any applicable local ordinance.

Government Code Section 51182

A person who owns, leases, controls, operates, or maintains an occupied dwelling or occupied structure in, upon, or adjoining a mountainous area, forest-covered land, brush-covered land, grass-covered land, or land that is covered with flammable material, which area or land is within a very high fire hazard severity zone shall at all times do all of the following:

(A) Maintain defensible space of 100 feet from each side and from the front and rear of the structure, (B) Remove that portion of a tree that extends within 10 feet of the outlet of a chimney or stovepipe, (C) Maintain a tree, shrub, or other plant adjacent to or overhanging a building free of dead or dying wood, (D) Maintain the roof of a structure free of leaves, needles, or other vegetative materials, and (E) Prior to constructing a new dwelling or structure that will be occupied or rebuilding an occupied dwelling or occupied structure damaged by a fire in that zone, the construction or rebuilding of which requires a building permit, the owner shall obtain a certification from the local building official that the dwelling or structure, as proposed to be built, complies with all applicable state and local building standards.

California Public Resources Code

The California Public Resources Code (PRC) includes fire safety regulations that restrict the use of equipment that may produce a spark, flame, or fire; require the use of spark arrestors on construction equipment that use an internal combustion engine; specify requirements for the safe use of gasoline-powered tools in fire hazard areas; and specify fire suppression equipment that must be provided on-site for various types of work in fire-prone areas. These regulations include the following:

- Earthmoving and portable equipment with internal combustion engines would be equipped with a spark arrestor to reduce the potential for igniting a wildland fire (PRC Section 4442);
- Appropriate fire suppression equipment would be maintained during the highest fire danger period—from April 1 to December 1 (PRC Section 4428);
- On days when a burning permit is required, flammable materials would be removed to a distance of 10 feet from any equipment that could produce a spark, fire, or flame, and the construction contractor would maintain the appropriate fire suppression equipment (PRC Section 4427); and
- On days when a burning permit is required, portable tools powered by gasoline-fueled internal combustion engines would not be used within 25 feet of any flammable materials (PRC Section 4431).

California Public Utilities Commission General Orders

General Order 95

CPUC General Order 95 applies to construction and reconstruction of overhead electric lines in California. The replacement of poles, towers, or other structures is considered reconstruction and requires adherence to all strength and clearance requirements of this order. The CPUC has promulgated various Rules to implement the fire safety requirements of General Order 95, including:

- Rule 18A, which requires utility companies take appropriate corrective action to remedy Safety Hazards and General Order 95 nonconformances. Additionally, this rule requires that each utility company establish an auditable maintenance program.

- Rules 31.2, which requires that lines be inspected frequently and thoroughly. Rule 35, which requires that vegetation management activities be performed in order to establish necessary and reasonable clearances. These requirements apply to all overhead electrical supply and communication facilities that are covered by this General Order, including facilities on lands owned and maintained by California state and local agencies.
- Rule 38, which establishes minimum vertical, horizontal, and radial clearances of wires from other wires.
- Rule 43.2.A.2 which requires that for lines located within Tier 2 or Tier 3 zones, the wind loads required in Rule 43.2.A.1 be multiplied by a wind load factor of 1.1. (CPUC, 2018)

General Order 165

General Order 165 establishes requirements for the inspection of electric distribution and transmission facilities that are not contained within a substation. Utilities must perform "Patrol" inspections, defined as a simple visual inspection of utility equipment and structures that is designed to identify obvious structural problems and hazards, at least once per year for each piece of equipment and structure. "Detailed" inspections, where individual pieces of equipment and structures are carefully examined, are required every five years for all overhead conductor and cables, transformers, switching/protective devices, and regulators/capacitors. By July 1st of each year, each utility subject to this General Order must submit an annual report of its inspections for the previous year under penalty of perjury. (CPUC, 2017b)

General Order 166

General Order 166 Standard 1.E requires that IOUs develop a Fire Prevention Plan which describes measures that the electric utility will implement to mitigate the threat of power-line fires generally. Additionally, this standard requires that IOUs outline a plan to mitigate power line fires when wind conditions exceed the structural design standards of the line during a Red Flag Warning in a high fire threat area. Fire Prevention Plans created by IOUs are required to identify specific parts of the utility's service territory where the conditions described above may occur simultaneously. Standard 11 requires that utilities report annually to the CPUC regarding compliance with General Order 166 (CPUC, 2017c).

Senate Bill 1028

Senate Bill 1028 (2016) requires each electrical corporation to construct, maintain, and operate its electrical lines and equipment in a manner that will minimize the risk of catastrophic wildfire posed by those electrical lines and equipment, and makes a violation of these provisions by an electrical corporation a crime under state law. The bill also requires each electrical corporation to annually prepare a wildfire mitigation plan and submit to CPUC for review. The plan must include a statement of objectives, a description of preventive strategies and programs that are focused on minimizing risk associated with electric facilities, and a description of the metrics that the electric corporation uses to evaluate the overall wildfire mitigation plan performance and assumptions that underlie the use of the metrics.

Assembly Bill 747 and Senate Bill 99

Assembly Bill 747 (2019) requires that the safety element be reviewed and updated to identify emergency evacuation routes and their capacity, safety, and viability under a range of emergency

scenarios. This will be a requirement for all safety elements or updates to hazard mitigation plans completed after January of 2022.

Senate Bill 99 (2019) requires review and update of the safety element to include information to identify residential developments in hazard areas that do not have at least two emergency evacuation routes. In essence, this legislation assists in identifying neighborhoods and households within a hazard area that have limited accessibility. This is intended to assist the City with identifying opportunities to improve connectivity and evacuation capacity (generally).

c. Regional

San Benito Monterey Unit Strategic Fire Plan

The CAL FIRE San Benito Monterey Unit Strategic Fire Plan (Fire Plan) seeks to reduce firefighting costs and property losses, increase firefighter safety, and educate the public on fire prevention. The Fire Plan includes all communities in Monterey and San Benito County that are listed as communities at risk by CAL FIRE.

Monterey County Community Wildfire Protection Plan

The Monterey County Community Wildfire Protection Plan (MCCWFP) was developed by regional stakeholders to provide guidance to wildfire prevention and protection, including recommendations for hazardous fuel mitigation activities and methods for reducing structural ignitability. In 2006, the Monterey Fire Safety Council contracted with CAL FIRE's Fire and Resources Assessment Program , Ron Montague, National Fire Wise Coordinator, and Doug Campbell, Fire Behavior Analyst, to more thoroughly evaluate wildfire threat and risk in Monterey County. While state-level risk analyses are made publicly available by the Fire and Resources Assessment Program, the analysis conducted for Monterey County fuels distribution, fire threat, and fire risk ratings is more detailed and experience-specific, with focused results that were instrumental in identifying overall threat to Monterey County communities. The MCCWPP identifies Seaside as a community at risk, specifically high structural ignitability, medium risk of wildfire occurrence, and low fuel hazard. Seaside is designated in the MCCWPP as having high fire risk, high fuel hazard, high structural ignitability, and as a high overall priority community. As stated in the MCCWFP, undeveloped, former Fort Ord lands within Seaside and other communities may present the single greatest hazardous fuel and fire threat to Wildland-Urban Interface in Monterey County. Along General Jim Moore Boulevard, the City of Seaside has land that is adjacent to the Army's former Fort Ord Multi Range Area (MRA). The Army's former MRA lands will require careful firewise planning as developments are being contemplated. These parcels currently require a 200-foot setback from the former Fort Ord lands where flammable structures may not be developed without preparation and approval of a firewise plan (County of Monterey 2010). These recommendations would apply to the future Seaside East Specific Plan area.

Multi-Jurisdictional Hazard Mitigation Plan

The Monterey County Multi-Jurisdictional Hazard Mitigation Plan (most recently updated in 2022) incorporates hazard mitigation principles and practices into the routine government activities and functions of the County and twelve municipalities (including Seaside) participating in the Plan. The Plan recommends specific actions that are designed to protect people and community assets from losses to those hazards that pose the greatest risk. Chapter 4, Hazard Profiles, states that based on previous occurrences, Monterey County can expect a large wildland fire to occur about every 1 to 2 years. Chapter 7, Mitigation Strategy, provides a blueprint for reducing the potential losses

identified in the vulnerability analysis. Such measures include local plans and regulations, structure and infrastructure projects, natural systems protection, education and awareness programs, and other activities (County of Monterey 2022).

d. Local

Seaside Municipal Code

New development would be subject to statewide standards for fire safety in the California Fire Code, as incorporated by reference in Seaside Municipal Code Section 15.04.170.

City of Seaside Local Hazard Mitigation Plan

As of 2013, the City of Seaside is a participant in the Monterey County Multi-Jurisdictional Hazard Mitigation Plan. Monterey County's most recent Multi-Jurisdictional Hazard Mitigation Plan was updated in 2022. Prior to 2013, Seaside had previously developed its own single jurisdiction plan (Monterey County 2004).

4.17.3 Impact Analysis

a. Methodology and Thresholds of Significance

Methodology

Impacts related to wildfire hazards and risks were evaluated using fire hazard severity zone mapping for Monterey County (CAL FIRE 2007), aerial imagery, and topographic mapping. Additionally, weather patterns related to prevailing winds and precipitation trends were evaluated as they relate to the spread and magnitude of wildfire.

Significance Thresholds

For purposes of this EIR, implementation of the Seaside 2040 may have a significant adverse impact if the project be located in or near state responsibility areas or lands classified as very high fire hazard severity zones and it would do any of the following:

1. Substantially impair an adopted emergency response plan or emergency evacuation plan?
2. 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
3. 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
4. Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes
5. Either directly or indirectly, expose people or structures to a significant risk of loss, injury, or death involving wildland fires

b. Project Impacts and Mitigation Measures

Threshold 1:	Would the project be located in or near state responsibility areas or lands classified as very high fire hazard severity zones and substantially impair an adopted emergency response plan or emergency evacuation plan?

Impact WFR-1 SEASIDE 2040 GENERAL PLAN POLICIES ADDRESS EMERGENCY ACCESS, RESPONSE, AND PREPAREDNESS AND MAINTAINING AN EMERGENCY MANAGEMENT PLAN. HOWEVER, SEASIDE 2040 WOULD FACILITATE DEVELOPMENT WITHIN A VERY HIGH FIRE HAZARD SEVERITY ZONE, AN AREA FOR WHICH EMERGENCY RESPONSE PLANS AND EVACUATION ROUTES HAVE NOT BEEN ESTABLISHED. THEREFORE, SEASIDE 2040 WOULD POTENTIALLY IMPAIR AN EMERGENCY RESPONSE PLAN OR EMERGENCY EVACUATION PLAN. IMPACTS ARE CONSERVATIVELY CONCLUDED AS SIGNIFICANT AND UNAVOIDABLE.

Buildout of the proposed General Plan includes the development of new structures and infrastructure within the City of Seaside. The Safety Element of Seaside 2040 identifies measures to protect public safety in the event of an emergency. Under Goal S-1, the City would identify and inventory critical facilities and establish guidelines for the operation of such facilities during emergencies. Under Goal S-2, the City would implement emergency preparedness planning and outreach, maintain sufficient service levels, and prepare for the potential impacts of climate change. Implementation of proposed policies would ensure coordinated emergency response, promote the City's annual emergency system training, and maintain emergency evacuation procedures in floodplain areas, among other actions. Relevant Seaside 2040 policies listed below would aim to provide adequate emergency response in Seaside.

Safety Element Goals and Policies

Goal S-1: A high standard of police services with a focus on community-based crime prevention.

Intent: To provide high-quality police services, including traditional law enforcement services and community partnership and engagement. The result will improve safety, health, peace of mind, and quality of life through excellent police services and planning.

Policies: **Assess critical facilities.** Identify and inventory critical facilities and establish guidelines for the operation of such facilities during emergencies.

Goal S-2: Effective emergency response following a natural or human-caused disaster.

Intent: To increase the safety of residents. To achieve this, the City will implement emergency preparedness planning and outreach, maintain sufficient service levels, and prepare for the potential impacts of climate change.

Policies: **Service levels.** Maintain sufficient levels of fire protection and emergency services to support existing residents and future growth.

Service delivery and efficiency. Strive to improve service delivery and efficiency of the Seaside Fire Department.

Coordinate emergency response. Implement coordinated emergency response planning.

Preparedness programs. Promote community-based, emergency preparedness programs and disaster education awareness, including the City's annual emergency system training and evacuation trainings.

Emergency evacuation. Maintain emergency procedures for the evacuation and control of population in identified floodplain areas in accordance with Section 8589.5 of the California Government Code. Inform residents and visitors about alternate routes in case of coastal flooding and tsunamis. Design evacuation maps to minimize and mitigate exposure to flood hazards to the maximum extent possible.

Emergency preparation education. Continue to educate City staff regarding appropriate actions to take during an emergency including evacuation procedures, City staff roles, and resource needs.

Partnership. Continue to work with the Monterey County Hazard Mitigation Planning Team during regular updates to the Monterey County Multi-Jurisdictional Hazard Mitigation Plan. Maintain consideration of climate change and sea level rise impacts as part of the County's comprehensive mitigation strategy.

Climate change risks. Re-evaluate existing plans to incorporate climate change hazards, sea level rise, and the populations and infrastructure vulnerable to climate change.

Goal S-6: Minimization of risk of fire hazards in the City and wildfire hazards on former Fort Ord lands through fire prevention design and fuel reduction strategies.

Intent: To encourage planning and design strategies that mitigate wildfire risk. To achieve this, the City will assess and evaluate fire hazards, encourage fire mitigation, and ensure a level of service that meets or exceeds resident needs.

Policies: **Development in the Very High Fire Hazard Severity Zone.** Require new development in the Very High Fire Hazard Severity Zone to develop an evacuation plan and ensure that the plan includes adequate fire access (ingress, egress) to new development, including safe access for emergency response vehicles, visible street signs, and water supplies for structural fire suppression.

Wildfire Evacuation. In planned developments that may occupy the WUI, VHFHSZ, or areas proximal to fire hazard severity zones increase resilience during a potential wildfire evacuation through.

- Enforcing visible address numbers painted on sidewalks enforced through the City,
- Developing multiple language accessible materials for how to prepare your family and home for an evacuation and go kit,
- Identifying and preparing at risk and vulnerable populations that may need assistance to evacuate,
- Maintaining critical evacuation routes, community fire breaks,
- Requiring adequate ingress and egress to new developments, and
- Restrict parking periodically (e.g., on red flag days) along critical evacuation routes.

In addition, the Seaside Fire Department reviews and approves projects to ensure that emergency access meets City standards. Furthermore, all new development would have to comply with Title 24 of the California Code of Regulations, including Fire Code Chapter 10 which addresses fire related Means of Egress, including Fire Apparatus Access Road width requirements. Fire Code Section 4906 also contains existing regulations for vegetation and fuel management to maintain clearances around structures.

The proposed Safety Element also maps designated fire evacuation routes. These routes include Canyon Del Rey Boulevard/State Route 218, Fremont Boulevard, Del Monte Boulevard, State Route 1, Monterey Road, General Jim Moore Boulevard, and eight other roadways that run in an east-west direction. In the event of a fire that requires evacuation for public safety, the City would coordinate the evacuation in accordance with these designated routes. As noted under the regulatory setting above, the Local Coastal Program also provide for planning and evacuation routes in the Coastal Zone.

Seaside 2040 does not propose physical changes such as realigned or closed-off roadways or changes in general transportation circulation and access that would interfere or impair emergency response or evacuation within or through the plan areas. As such, Seaside 2040 would also not result in changes to emergency evacuation routes such that use of an evacuation route would be hindered.

Development facilitated by Seaside 2040 would accommodate future population growth and would increase vehicle miles traveled in the city. This could lead to increased roadway congestion during emergency evacuations. However, the City would review and approve projects within the plan areas to ensure that emergency access meets City standards. Development facilitated by the proposed plan would also comply with road standards and are reviewed by the Seaside Fire Department to ensure development would not interfere with evacuation routes and would not impede the effectiveness of evacuation plans.

Furthermore, work within the existing Caltrans right of way would have to comply with Caltrans permitting requirements. This includes a traffic control plan that adheres to the standards set forth in the California Manual of Uniform Traffic Control Devices (MUTCD) (Caltrans 2014, Rev 3). As part of these requirements, there are provisions for coordination with local emergency services, training for flagmen for emergency vehicles traveling through the work zone, temporary lane separators that have sloping sides to facilitate crossover by emergency vehicles, and vehicle storage and staging areas for emergency vehicles.

However, new development facilitated by Seaside 2040 would result in development of residences within a Very High FHSZ. Seaside 2040 establishes the intent to prepare a Specific Plan for Seaside East, which would facilitate development of 625 acres of land along Seaside's eastern boundary with residential, mixed use, commercial, and recreational land uses. Development within Seaside East would locate residences and businesses within the Very High FHSZ as shown in Figure 4.17-1. Seaside 2040 does not establish emergency response plans or evacuation routes specific to this area, and roadways and evacuation routes for this area cannot be known at this time. Implementation of General Plan policies, including the "Development in the Very High Fire Hazard Severity Zone" and "Wildfire Evacuation" policies under Goal S-6 of the Safety Element, and compliance with requirements established in California Government Code 51182 and the California Fire Code would ensure that emergency response plans, emergency evacuation plans, adequate fire access, and other wildfire safety measures would be prepared and implemented for development facilitated by Seaside 2040 as applicable. Emergency response plans and evacuation routes would be established by the City for Seaside East at the time of Specific Plan preparation and plans for

individual projects within this area. However, it would be speculative to determine that emergency response plans, evacuation routes, fire access, and other wildfire safety measures would be adequate at this time because Seaside 2040 does not propose specific development plans to this area. Therefore, it is conservatively concluded that Seaside 2040 could result in operational impacts related to impairment of an adopted emergency response plan or emergency evacuation plan, and impacts would be potentially significant.

Mitigation Measures

Wildfire mitigation is incorporated as policies of Seaside 2040. However, because specific emergency response plans and emergency evacuation routes of development facilitated by Seaside 2040 within fire hazard severity zones cannot be known at this time, no additional feasible mitigation exists.

Significance After Mitigation

The Seaside 2040 Safety Element contains policies and programs that would address emergency response plans and emergency evacuation plans. However, because no specific development is proposed at this time, it would be speculative to determine that specific emergency response plans and emergency evacuation plans would be adequate. Therefore, it is conservatively concluded that impacts would be significant and unavoidable.

Threshold 2:	Would the project be located in or near state responsibility areas or lands classified as very high fire hazard severity zones and, 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?
Threshold 5:	Would the project, either directly or indirectly, expose people or structures to a significant risk of loss, injury, or death involving wildland fires?

IMPACT WFR-2 THE PROJECT WOULD EXACERBATE WILDFIRE RISKS AND EXPOSE PEOPLE AND STRUCTURES TO RISK INVOLVING WILDLAND FIRES. IMPACTS WOULD BE SIGNIFICANT AND UNAVOIDABLE.

Under existing conditions, development within the City of Seaside is largely focused between Highway 1 (State Route 1) and General Jim Moore Boulevard. In the northern areas of the City there is some development located east of General Jim Moore Boulevard, including existing military housing areas, CSUMB, and previously developed portions of Fort Ord known as Surplus II. As shown in Figure 4.17-1, portions of the City already fall within a High Fire Hazard Severity zone.

As described under Section 4.17.1, *Setting,* the entire Seaside 2040 Plan Area is within a designated LRA, with this area overlapped by an FRA on former Fort Ord lands. High and Very High Fire Hazard Severity Zones occur adjacent to the General Plan Area south of Plumas Avenue and north of State Route 218, and an SRA High Severity Zone occurs northeast of the General Plan Area east of 8th Avenue. Portions of the former military base, particularly those located further east, are largely vegetated with forests, woodlands, and grasslands, which provide fuel for wildfires. Buildout under the General Plan is focused along the eastern edge of the City, including areas designated for Future Specific Plans, which would generally maintain a similar urban interface with wildland/vegetated areas in comparison to existing conditions, and would avoid “leapfrog” development. Leapfrog development, as used here, refers to new development occurring adjacent to the prior development, encroaching further into the wildland-urban interface.

Furthermore, new development is required to be constructed to modern fire safety standards, including Fire Code Title 24, Part 9, Chapter 7 Fire-Resistances - Rated Construction, California Building Code (Part 2), Chapter 7A Materials and Construction Methods for Exterior Wildfire Exposure, Fire Code Chapter 8 Interior Finishes. New development also would be subject to statewide standards for fire safety in the California Fire Code, as incorporated by reference in Seaside Municipal Code Section 15.04.170. New development located in a very high fire hazard zone would also be required to comply with standards in California Government Code 51182 to minimize fire risk. These standards include maintaining a firebreak of at least 30 feet, removing all flammable vegetation and combustible growth, and additional firebreaks within 100 feet by the removal of all brush, flammable vegetation, or combustible growth. In addition, prior to construction of a new dwelling that requires a building permit, California Government Code 51182 requires that the owner obtain certification from the local building official that the building complies with all applicable state and local fire standards.

Relevant Seaside 2040 policies listed below would aim to reduce wildfire risks.

Safety Element Goals and Policies

Goal S-6: Minimization of risk of fire hazards in the City and wildfire hazards on former Fort Ord lands through fire prevention design and fuel reduction strategies.

Intent: To encourage planning and design strategies that mitigate wildfire risk. To achieve this, the City will assess and evaluate fire hazards, encourage fire mitigation, and ensure a level of service that meets or exceeds resident needs.

Policies: **Facility siting.** Ensure that the location of new and existing fire protection facilities provides a consistent level of service to existing neighborhoods/centers and new neighborhoods/centers on former Fort Ord lands. Locate, when feasible, new essential public facilities, including, but not limited to, hospitals and health care facilities, emergency shelters, emergency command centers, and emergency communications facilities, outside of very high fire hazard severity zones, or identify construction methods or other methods to minimize damage if these facilities are in a very high fire hazard severity zone.

Density Management. During development of the Seaside East Specific Plan, develop and implement density management strategies that cluster residential developments to reduce amounts of flammable vegetation and collective exposure to wildfire risk.

Adjacent to undeveloped wildlands. Decrease the extent and amount of edge or wildland urban interface where development is adjacent to undeveloped wildlands, particularly as part of the Seaside East Specific Plan.

Wildland Urban Interface Guidelines. Maintain and implement Wildland/Urban Interface Guidelines for new and existing development within neighborhoods that are proximal to existing fire hazard areas.

Fire hardening structures and homes. To increase resistance of structures to heat, flames, and embers, review current building code standards and other applicable statutes, regulations, requirements, and guidelines regarding construction, and specifically the use and maintenance of non-flammable materials (both residential

and commercial). Promote the use of building materials and installation techniques beyond current building code requirements, to minimize wildfire impacts.

Development in the Very High Fire Hazard Severity Zone. Require new development in the Very High Fire Hazard Severity Zone to develop an evacuation plan and ensure that the plan includes adequate fire access (ingress, egress) to new development, including safe access for emergency response vehicles, visible street signs, and water supplies for structural fire suppression.

Fire education. Continue to provide fire hazard education and fire prevention programs to Seaside residents and businesses with targeted outreach to vulnerable populations.

Fire redevelopment. Evaluate soils and waterways for risks from flooding, water quality, and erosion to ensure that they are suitable to support redevelopment following a large fire.

Goal S-7: Strong coordination with regulatory agencies to ensure safe and effective remediation of hazardous and toxic materials.

Intent: To clean-up and remove hazardous and toxic materials, including clearance, treatment, transport, disposal, and/or closure of such sites containing ordnance and explosives, landfills, above and below ground storage facilities, and buildings with asbestos and/or lead-based paint. To achieve this, the City will help residents avoid human-made hazards by monitoring remediation, coordinating with applicable agencies, and maximizing public safety to the fullest extent.

Policies: **Project Design Wildfire Risk Reduction.** For projects located within or less than two miles from an SRA or very high fire hazard severity zones, project landscape plans (as made available when project applications are submitted) shall include fire-resistant vegetation native to Monterey County and/or the local microclimate of the site and prohibit the use of fire-prone species especially non-native, invasive species. If the project site is within a known landslide area, the site shall be subject to geotechnical review regarding potential post-fire slope instability. Structural engineering features incorporated into the design of a structure to reduce the risk of damage to the structure from post-fire slope instability shall be recommended by a qualified engineer and approved by the City prior to the building permit approval.

Seaside 2040 would contain policies intended to reduce risk of exposing project occupants to the uncontrolled spread of a wildfire. For example, the “fire hardening structures and homes” policy would promote the use of building materials and installation techniques that would increase the fire resistance of future development within FHSZs. Additionally, the “development in the Very High Hazard Severity Zone” policy and the “Project Design Wildfire Risk Reduction” policy would require new development to include adequate fire access and water supplies, as well as fire-resistant vegetation, which would reduce the risk of exposing project occupants to the spread of a wildfire. Nonetheless, given that the General Plan Area and adjacent lands sometimes contain steep terrain surrounded by or containing vegetation, development facilitated by Seaside 2040 would be prone to and exacerbate wildfire risk. Existing codes and regulations and proposed Seaside 2040 policies cannot guarantee that wildfires would not occur or damage structures and harm occupants. This represents a significant wildfire exposure and exacerbation risk impact. With implementation of Seaside 2040 policies, the exacerbation of wildfire risk would be reduced. However, even with these

policies, it is not possible to prevent a significant risk of wildfires or fully protect people and structures from the risks of wildfires. Therefore, impact related to wildfire exposure and exacerbation risk would be significant.

Mitigation Measures

Because wildfire hazards and risk are determined based on site-specific conditions and proposed project design, there are no feasible mitigation measures that would further reduce impacts to wildfire beyond implementation of the proposed Seaside 2040 policies at this time. However, in accordance with the "Project Design Wildfire Risk Reduction" policy of Seaside 2040, new feasible mitigation may be identified once specific project applications are proposed and reviewed by City staff. Those site-specific and project-specific actions may include some of, but are not limited to, the following measures, which are in accordance with the California Attorney General Best Practices for Analyzing and Mitigating Wildfire Impacts of Development Projects Under the California Environmental Quality Act:

- Increasing housing density and consolidated design, relying on higher density infill developments as much as possible
- Avoidance and minimization of low-density exurban development patterns or leapfrog-type developments (i.e., those with undeveloped wildland between developed areas)
- Decreasing the extent and amount of "edge," or interface area, where development is adjacent to undeveloped wildlands
- Creation of buffer zones and defensible space within and adjacent to the development, with particular attention to ensuring that vegetation will not touch structures or overhang roofs. It is also important that legal obligations are structured so that defensible space measures are retained over time
- Siting projects to maximize the role of low-flammability landscape features that may buffer the development from fire spread
- Undergrounding power lines
- Limiting development along steep slopes and amidst rugged terrain, so as to decrease exposure to rapid fire spread and increase accessibility for fire-fighting
- Placement of development close to existing or planned ingress/egress and designated evacuation routes to efficiently evacuate the project population and the existing community population, consistent with evacuation plans, while simultaneously allowing emergency access
- Placement of projects close to adequate emergency services
- Construction of additional points of ingress and egress and modification of evacuation routes to minimize or avoid increasing evacuation times or emergency access response times
- Limiting development along steep slopes and amidst rugged terrain, so as to decrease exposure to rapid fire spread and increase accessibility for fire-fighting
- Placement of development close to existing or planned ingress/egress and designated evacuation routes to efficiently evacuate the project population and the existing community population, consistent with evacuation plans, while simultaneously allowing emergency access
- Placement of projects close to adequate emergency services
- Construction of additional points of ingress and egress and modification of evacuation routes to minimize or avoid increasing evacuation times or emergency access response times

- Fire hardening structures and homes—upgrading the building materials and installation techniques to increase the structure's resistance to heat, flames, and embers—beyond what is required in applicable building codes, both for new structures and existing structures in proximity to the new development
- Requiring fire-hardened communication to the project site including high-speed internet service
- Enhanced communication to the project population about emergency evacuation plans and evacuation zones
- Parking limitations to ensure access roads are not clogged with parked vehicles
- On-site water supply/storage to augment ordinary supplies that may be lost during a wildfire

Significance After Mitigation

With implementation of Seaside 2040 General Plan policies, the risk of loss of structures and the risk of injury or death due to wildfires would be reduced. Project-specific impacts regarding wildfire risk would be addressed prior to project implementation during the planning and design process. As noted above, project-specific measures would be required in accordance with the "Project Design Wildfire Risk Reduction" policy of the Safety Element. Where warranted and feasible, the measures listed above in accordance with the Attorney General Best Practices for Analyzing and Mitigating Wildfire Impacts of Development Projects Under the California Environmental Quality Act may be required on an individual basis.

Compliance with local, State, and federal rules and regulations and local General Plan policies would minimize the potential for adverse wildfire impacts to result from buildout of Seaside 2040. Furthermore, reasonably foreseeable development facilitated by Seaside 2040 would be required to implement additional mitigation if project-specific analysis identifies the potential for wildfire impacts. However, even with mitigation, it is not possible to prevent a significant risk of wildfires or fully protect people and structures from the risks of wildfires. Therefore, the operational impact of Seaside 2040 related to wildfire exposure and exacerbation risk would be significant and unavoidable.

Threshold 3:	Would the project be located in or near state responsibility areas or lands classified as very high fire hazard severity zones and 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?

IMPACT WFR-3 SEASIDE 2040 WOULD FACILITATE GROWTH IN THE SEASIDE EAST AREA, WHICH WOULD REQUIRE INSTALLATION OF INFRASTRUCTURE IN FIRE-PRONE AREAS. HOWEVER, EXISTING REGULATIONS AND SEASIDE 2040 POLICIES WOULD ENSURE THAT THIS INFRASTRUCTURE WOULD NOT EXACERBATE FIRE RISK AND IMPACTS WOULD BE LESS THAN SIGNIFICANT.

The 2040 General Plan would facilitate growth in Seaside, including new residential dwelling units and non-residential development through 2040, as described in Section 2.4.6, *City Growth/General Plan Buildout*. While some roads and utility infrastructure required for the growth facilitated by Seaside 2040 would be existing, some additional facilities would be required to serve planned growth, including infrastructure for water, electricity, telecommunications, stormwater, and sewage.

While buildout under the General Plan would include new infrastructure, this infrastructure is not anticipated to exacerbate fire risk. Seaside 2040 would require future development on former Fort Ord lands, which includes development implemented under Specific Plans, to take steps to reduce wildfire risk as part of the site review process. Policies under Goal S-6 require minimizing risk of fire hazards in the City and wildfire hazards on former Fort Ord lands through fire prevention design and fuel reduction strategies. Policy Inventory risk levels under Goal S-1 would reduce fire hazards risks to an acceptable level by assigning risk levels for wildfire hazards and regulating the type, density, location, and/or design and construction of new developments. Furthermore, Goal S-6 of Seaside 2040 requires fire protection for former Fort Ord by providing fire suppression water system guidelines and implementation plans for existing and acquired former Fort Ord lands, coordination with the U.S. Army, private property owners, and adjacent jurisdictions to maintain fire safe landscaping and buffer zones in areas of wildlife risk, and coordination with water districts to ensure that water pressure for former Fort Ord lands is adequate for firefighting purposes. Goal S-6 requires the City to update the building code to meet or exceed the California Code of Regulations Title 14 State Responsibility Area Fire Safe Regulations and Fire Hazard Reduction Around Buildings and Structures to reduce the risk of wildfire by ensuring new development meets the fire safe requirements. Additionally, new electrical infrastructure would have to comply with fire safety requirements discussed in the regulatory setting discussion above, including fire safety inspections and vegetation clearance, and would have to adhere to the Seaside 2040 policies under Goal CFI-7, which include joint and safe siting of new electrical infrastructure and undergrounding utilities when feasible.

The Safety Element of Seaside 2040 would include the following policies related to the siting of infrastructure.

Safety Element Goals and Policies

Goal S-1: A high standard of police services with a focus on community-based crime prevention.

Intent: To provide high-quality police services, including traditional law enforcement services and community partnership and engagement. The result will improve safety, heath, peace of mind, and quality of life through excellent police services and planning.

Policies: **Assess critical facilities.** Identify and inventory critical facilities and establish guidelines for the operation of such facilities during emergencies.

Goal S-6: Minimization of risk of fire hazards in the City and wildfire hazards on former Fort Ord lands through fire prevention design and fuel reduction strategies.

Intent: To encourage planning and design strategies that mitigate wildfire risk. To achieve this, the City will assess and evaluate fire hazards, encourage fire mitigation, and ensure a level of service that meets or exceeds resident needs.

Policies: **Fire Protection Seaside East Specific Plan.** Provide fire suppression water system guidelines and implementation plans to maintain adequate fire protection water volumes and emergency water storage and identify system distribution upgrades to adequately accommodate new developed envisioned as part of the development of the Seaside East Specific Plan.

Water pressure. Coordinate with water districts to ensure that water pressure for existing developed areas is adequate for firefighting purposes during the season and time of day when domestic water demand on a water system is at its peak.

Facility siting. Ensure that the location of new and existing fire protection facilities provides a consistent level of service to existing neighborhoods/centers and new neighborhoods/centers on former Fort Ord lands. Locate, when feasible, new essential public facilities, including, but not limited to, hospitals and health care facilities, emergency shelters, emergency command centers, and emergency communications facilities, outside of very high fire hazard severity zones, or identify construction methods or other methods to minimize damage if these facilities are in a very high fire hazard severity zone.

Density management. During development of the Seaside East Specific Plan, develop and implement density management strategies that cluster residential developments to reduce amounts of flammable vegetation and collective exposure to wildfire risk.

Adjacent to undeveloped wildlands. Decrease the extent and amount of edge or wildland urban interface where development is adjacent to undeveloped wildlands, particularly as part of the Seaside East Specific Plan.

Wildland Urban Interface Guidelines. Maintain and implement Wildland/Urban Interface Guidelines for new and existing development within neighborhoods that are proximal to existing fire hazard areas.

Fuel reduction. Use strategies, such as sheep grazing and other environmentally friendly fuel reduction and weed abatement approaches, for landscaping, buffering zones, and very high fire hazard zones as prevention measure to minimize the risk of fires. Engage in fire hazard reduction projects, including community fire breaks and private road and public road clearance.

Update building code. Reduce the risk of impacts from wildfire through updating development standards that meet or exceed the California Code of Regulations Title 14 State Responsibility Area Fire Safe Regulations and Fire Hazard Reduction Around Buildings and Structures Regulations and ensure new development meets the fire safe requirements. Require ongoing maintenance and upkeep to be codified as part of building covenants or homeowner covenants, conditions, and restrictions to ensure defensible space measures are retained over time.

Fire hardening structures and homes. To increase resistance of structures to heat, flames, and embers, review current building code standards and other applicable statutes, regulations, requirements, and guidelines regarding construction, and specifically the use and maintenance of non-flammable materials (both residential and commercial). Promote the use of building materials and installation techniques beyond current building code requirements, to minimize wildfire impacts.

Development in the Very High Fire Hazard Severity Zone. Require new development in the Very High Fire Hazard Severity Zone to develop an evacuation plan and ensure that the plan includes adequate fire access (ingress, egress) to new development, including safe access for emergency response vehicles, visible street signs, and water supplies for structural fire suppression.

Fire education. Continue to provide fire hazard education and fire prevention programs to Seaside residents and businesses with targeted outreach to vulnerable populations.

Fire redevelopment. Evaluate soils and waterways for risks from flooding, water quality, and erosion to ensure that they are suitable to support redevelopment following a large fire.

Wildfire Evacuation. In planned developments that may occupy the WUI, VHFHSZ, or areas proximal to fire hazard severity zones increase resilience during a potential wildfire evacuation through.

- Enforcing visible address numbers painted on sidewalks enforced through the City,
- Developing multiple language accessible materials for how to prepare your family and home for an evacuation and go kit,
- Identifying and preparing at risk and vulnerable populations that may need assistance to evacuate,
- Maintaining critical evacuation routes, community fire breaks,
- Requiring adequate ingress and egress to new developments, and
- Restrict parking periodically (e.g., on red flag days) along critical evacuation routes.

Fire Harden Telecommunication. Coordinate with telecommunication service entities and the Monterey County Emergency Communications Department to fire-harden communications.

Underground Overhead Lines. Coordinate with Pacific Gas & Electric to implement an electrical undergrounding plan with a focus on critical evacuation roadways and areas with highest wildfire risk.

Goal CFI-7: City-wide access to high-quality energy utility and telecommunications services.

Intent: To ensure all residents and businesses have access to affordable, reliable and high-quality energy and telecommunication services that are essential to overall quality of life in Seaside. These services play a vital role in day to day life, from ensuring stable home heating and cooling to communications to the basic infrastructure for aging in place. To achieve this, the City will meet current and future demand for accessible, high-quality, and safe utilities, including supporting the connection needs of new and existing business operations.

Policies: **Underground utilities.** When feasible, place new utilities underground to promote attractive neighborhoods and streetscapes.

Safe integration. Ensure that public utilities facilities and infrastructure are designed to be safe and compatible with adjacent uses. Consider aesthetic design, including well maintained grounds and fencing around substations.

Telecommunication facility siting. Ensure that siting of telecommunication facilities provides efficiency and quality services to emergency response providers in the City.

Joint use of power line corridor. Work with PG&E to encourage joint use of the power line corridor adjacent to General Jim Moore Boulevard.

With implementation of state requirements for very high fire hazard areas, California Fire Code standards for new structures, and fire hazard policies in Seaside 2040 that apply to moderate, high, and very high fire hazard areas, buildout of Seaside 2040 infrastructure would not result in a significant impact associated with exacerbating fire risks from infrastructure. Specifically, policies under Goal S-6 would facilitate the provision of fire suppression water systems in the Seaside East area, which is designated as a Very High FHSZ, and facilitate fire hardening of telecommunication facilities. Additionally, the "underground overhead lines" policy would facilitate coordinate with Pacific Gas & Electric to implement an undergrounding plan, which would reduce the risk wildfires caused by overhead power lines. With compliance with state requirements for fire hazard areas and implementation of Seaside 2040 policies, impacts would be less than significant.

Mitigation Measures

No mitigation measures are required.

Significance After Mitigation

Impacts would be less than significant without mitigation.

Threshold 4:	Would the project be located in or near state responsibility areas or lands classified as very high fire hazard severity zones and expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

IMPACT WFR-4 IF A SEVERE WILDFIRE WERE TO OCCUR IN THE FORMER FORT ORD AREA, STRUCTURES DOWNSLOPE WOULD BE AT RISK OF FLOODING OR LANDSLIDES. HOWEVER, SEASIDE 2040 POLICIES WOULD REDUCE THE POTENTIAL FOR WILDFIRE IN THE HILLSIDE AREA. THEREFORE, IMPACTS WOULD BE LESS THAN SIGNIFICANT.

Severe wildfires damage the forest or shrub canopy, the plants below, as well as the soil. This can result in increased runoff after intense rainfall, which in general, can put homes and other structures below a burned area at risk of localized floods and landslides. Seaside does not generally contain substantially sloped land at risk of wildfire. Areas at risk of wildfire in the General Plan Area are generally located in the hills in the former Fort Ord area. However, as discussed in greater detail in Section 4.6, *Geology and Soils,* Seaside has a low susceptibility to landslides, as it has minimal hillside areas and lacks steep bluffs. If a structural fire or large urban fire were to occur in the more flat and urbanized areas of Seaside, the risk of flooding or landslides afterward would be negligible because of the more gently sloping topography.

Seaside 2040 Safety Element policies under Goal S-6, summarized above under Impact WFR-3, would reduce the risk of exacerbating wildfire. As a result, the potential risk for structures and people to be exposed to flooding or landslides downslope of hillside area following a fire would be less than significant.

Mitigation Measures

No mitigation measures are required.

Significance After Mitigation

Impacts would be less than significant without mitigation.

4.18 Effects Found to be Less Than Significant

Section 15128 of the California Environmental Quality Act (CEQA) Guidelines allows an EIR to "briefly indicate the reasons that various possible significant effects of a project were determined not to be significant and were therefore not discussed in detail in the EIR." The environmental factors discussed below are in response to the checklist questions listed in Appendix G of the *CEQA Guidelines*.

4.18.1 Agriculture and Forestry Resources

Thresholds of Significance

Pursuant to the *CEQA Guidelines*, Appendix G checklist, potentially significant impacts would occur if the proposed project would result in any of the following:

1) Convert Prime Farmland, Unique Farmland, Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use;
2) Conflict with existing zoning for agricultural use, or a Williamson Act contract;
3) 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));
4) Result in the loss of forest land or conversion of forest land to non-forest use; and/or
5) 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.

Assessment of Impacts

The General Plan Area is not designated as Prime Farmland, Farmland of Statewide Importance, or Unique Farmland (Farmland), nor is any property within the City limits zoned for agriculture or under a Williamson Act contract. The Plan Area is designated as Developed Land and Other Land on the Farmland Mapping and Monitoring Program (FMMP) Monterey County Important Farmland map (California Department of Conservation 2014, 2016). Therefore, the project would not result in impacts to FMMP farmland or conflict with existing zoning for agricultural use or Williamson Act contract land. The Plan Area does not contain zoning or use for agricultural production. Therefore, the project would have no impact to agriculture as related to Thresholds 1, 2, and 5.

As detailed in Figure 4.3-1 of Section 4.3, *Biological Resources*, the General Plan Area consists of vegetation communities and land cover types; ranging from developed areas to native chaparral and woodlands. The chaparral and woodlands habitats do not meet the definition of forest land as defined in Public Resources Code Section 12220(g), or timberland, as defined by Public Resources Code Section 4526. Further, the General Plan Area is currently zoned for residential, commercial, mixed use, public/institutional, military, or parks/open space uses, not forest land or timber land production; and proposed land use designations in Seaside 2040 do not include agricultural land uses. Therefore, the project would not conflict with existing zoning for, or cause rezoning of, forest land, timber land or conversion of forest land to non-forest use. Further, there is no forest land near the project site. Therefore, there would be no impact to forest land as related to Threshold 3, 4, and 5.

4.18.2 Mineral Resources

Thresholds of Significance

Pursuant to the State CEQA Guidelines, Appendix G checklist, potentially significant impacts would occur if the proposed project would result in any of the following:

1) 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; and/or
2) 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.

Assessment of Impacts

The General Plan Area is not mapped as containing important mineral resources in the state Department of Conservation Mineral Land Classification Maps (DOC 2018). The Plan Area is not utilized for mineral extraction. Therefore, the project would have no impact from the loss of availability of mineral resources as related to Threshold 1 and 2.

5 Other CEQA-Required Discussions

This section discusses other issues for which CEQA requires analysis in addition to the specific issue areas discussed in Section 4, *Environmental Impact Analysis*. These additional issues include the project's potential to induce growth and create significant and irreversible impacts on the environment, as set forth in *CEQA Guidelines* Appendix F.

5.1 Growth Inducement

CEQA Guidelines Section 15126.2(e) requires that EIRs discuss the potential for projects to induce population or economic growth, either directly or indirectly. CEQA also requires a discussion of ways in which a project may remove obstacles to growth.

Seaside 2040 is considered growth-inducing because it encourages new growth in the urbanized areas of the City. Development in these areas would consist of infill development on the remaining vacant sites or redevelopment of underutilized sites. However, infrastructure is largely in place, and commercial growth would be required to comply with the City's zoning regulations and standards for public services and utilities; secondary effects associated with this growth do not represent a new significant environmental impact which has not already been addressed in the individual resource chapters of this EIR.

5.1.1 Population and Economic Growth

As discussed in Section 4.2, *Project Description*, buildout of Seaside 2040 could accommodate an estimated 12,555 new residents and 4,050 new dwelling units in the City. As shown in Table 5-1 below, this residential growth is anticipated to result in up to 1,651 new single-family residences and 2,398 new multi-family housing units, constituting approximately 41 percent and 59 percent of anticipated residential growth, respectively. This would exceed Association of Monterey Bay Area Governments (AMBAG) 2040 growth projections; however, Seaside 2040 is intended to accommodate regional housing needs and includes policies to manage new development and limit growth in such a way to minimize environmental impacts.

Table 5-1 Seaside 2040 Land Use Demand

Land Use	Demand for New Development
Single-family residential	1,651 dwelling units
Multi-family residential	2,398 dwelling units
Total residential units	4,050 dwelling units
Retail space	690,851 square feet
Service industry space	1,084,691 square feet
Industrial space	657,971 square feet
Public space	213,195 square feet
Total employment space	2,646,708 square feet
Hotels	1,670 rooms

Source: Raimi + Associates 2018

As shown in Table 5-2, Seaside 2040 forecasts job growth to be about 28 percent between 2015 and 2040, bringing total employment in Seaside to 12,394 jobs. Additionally, Seaside 2040 would generate temporary employment opportunities during construction of future development projects. Because construction workers would be expected to be drawn from the existing regional work force, construction of future development projects would not be growth-inducing from a temporary employment standpoint.

Table 5-2 Seaside Population, Housing, and Employment 2040 Forecast

Seaside	2015	2040[1]	Growth (2015-2040)
Population	34,185	46,297	12,112
Housing	10,913	14,143	3,230
Employment	9,650	12,394	2,744

[1] Assumed 3.1 people per housing unit, consistent with AMBAG 2018 Regional Growth Forecast (https://ambag.org/sites/default/files/documents/2018_Regional_Growth_Forecast.pdf)..

Source: Appendix B

Seaside 2040 is not expected to induce substantial economic expansion to the extent that direct physical environmental effects would result beyond those disclosed in this EIR. Moreover, the environmental effects associated with any future development in or around Seaside as a result of Seaside 2040 would be addressed as part of the CEQA environmental review for such development projects.

5.1.2 Removal of Obstacles to Growth

Seaside is located within an urbanized area that is served by existing infrastructure. As discussed in Section 4.15, *Utilities and Service Systems*, and Section 4.8, *Hydrology and Water Quality*, existing infrastructure in Seaside would be adequate to serve development under the General Plan update. As shown on Figure 2-3 in Section 2, *Project Description*, Seaside 2040 would accommodate growth in existing Seaside neighborhoods, and future development of former Fort Ord lands, including infill areas designated Mixed-Use Low and High (i.e., Main Gate), and designated Future Specific Plan areas (i.e., Main Gate and Seaside East). In addition, the West Broadway Urban Village Specific Plan, adopted in 2010 to revitalize the City of Seaside's West Broadway Avenue, anticipates 213 mixed-use residential units and 199 multi-family units (City of Seaside 2017); and the Campus Town Specific Plan, adopted in 2020, which plans for 1,485 housing units, 250 hotel rooms, 75 hostel beds, 150,000 square feet of retail/dining/entertainment, 50,000 square feet of office/flex/makerspace, and park/recreation areas (City of Seaside 2020). The growth envisioned under the General Plan Update would result in regional benefits by promoting growth that encourages less automobile dependence, which could have associated air quality and greenhouse gas (GHG) effects. Encouraging infill growth in designated areas would help to reduce development pressures on lands outside the city limit. However, all new development envisioned as part of Seaside 2040 would occur within Seaside's current incorporated boundary.

Furthermore, Seaside 2040 emphasizes the establishment and improvement of a citywide bicycle and pedestrian-oriented network that connects residential, commercial, educational, and recreational uses, and earns Seaside the reputation of a bicycle-friendly city. Seaside 2040 identifies growth areas located in undeveloped former Fort Ord lands, such as Seaside East, Campus Town, and Main Gate. Nonetheless, future development on undeveloped lands in the Seaside East, Campus Town, and Main Gate growth areas would be regulated by the growth strategies contained

in existing or future Specific Plans and any future updates or amendments, as applicable. As these land uses develop, construction of new or realigned roadways would be provided when necessary based on the site location and project characteristics. Improvements would be designed and reviewed in accordance with the Seaside Public Works Department standards. Therefore, implementation of Seaside 2040 would not remove an obstacle to growth.

5.2 Irreversible Environmental Effects

Section 15126.2(d) of the *CEQA Guidelines* requires a discussion of non-renewable resources during the initial and continued phases of project development. Significant irreversible changes as defined by CEQA (Section 15126.2(c) would include the commitment of non-renewable resources toward an alternative and any irreversible environmental changes that could result from the project's implementation. Development consistent with Seaside 2040 would require an irreversible commitment of material or natural resources for building construction, such as wood, refined metal, petroleum, sand, gravel, and stone. It would result in the irretrievable commitment of energy and water resources to support planned uses, including fossil fuels, natural gas, gasoline, and diesel. Additional vehicle trips due to implementation of Seaside 2040 would contribute to future cumulative air quality impacts, both adverse and beneficial impacts on increased transit ridership, and efficient allocation of higher intensity land uses in proximity to existing major transportation infrastructure improvements.

The changes in land use designations proposed by Seaside 2040 would result in commitment of areas to be designated uses for the foreseeable future. Irreversible changes are also likely to occur due to future excavation, grading, and construction activities associated with the development of uses allowed under Seaside 2040. Although these changes can generally be addressed by mitigation measures, the potential for disturbance would represent an irreversible change. Additionally, mitigation measures may not prevent or reduce all potentially significant impacts resulting from construction activities. As described in Section 4.4, *Cultural Resources*, and Section 4.15, *Tribal Cultural Resources*, construction activities could have potentially significant impacts on historical, archaeological, and tribal cultural resources, despite implementation of mitigation.

Growth facilitated by Seaside 2040 would require an irreversible commitment of law enforcement, fire protection, water supply, and wastewater treatment. As discussed in Sections 4.12, *Public Services and Recreation*, and 4.15, *Utilities and Service Systems*, impacts to public services and utilities would be reduced to less than significant levels with implementation of polices included in Seaside 2040.

The additional vehicle trips associated with growth through 2040 would incrementally increase local traffic, noise levels, and regional air pollutant emissions. As discussed in Section 4.2, *Air Quality*, implementation of 2040 General Plan policies and reginal air pollution programs could reduce the air pollutant emissions associated with individual future development projects to below significance thresholds. As discussed in Section 4.10, *Noise*, implementation of proposed Seaside 2040 policies and programs, as well as proposed mitigation measures, would reduce the noise impacts associated with future growth to a less than significant level.

5.3 List of Significant and Unavoidable Impacts

Significant and unavoidable impacts are those that cannot be mitigated to a less than significant level. Section 4 of this EIR identifies significant and unavoidable impacts of Seaside 2040. The following are the impacts identified as significant and unavoidable, listed by impact number:

- Impact CR-1. Development facilitated by Seaside 2040 has the potential to impact historical resources. Impacts would be significant and unavoidable despite the implementation of Mitigation Measure CR-1.
- Impact CR-2. Development facilitated by Seaside 2040 has the potential to impact historical and unique archaeological resources. Impacts would be significant and unavoidable despite the implementation of Mitigation Measure CR-2.
- Impact TC-1. Development facilitated by Seaside 2040 may involve surface excavation, which has the potential to impact previously unidentified tribal cultural resources. Impacts to tribal cultural resources would be significant and unavoidable despite the implementation of Mitigation Measure TC-1.
- Impact WFR-1. Seaside 2040 General Plan policies address emergency access, response, and preparedness and maintaining an emergency management plan. However, Seaside 2040 would facilitate development within a Very High Fire Hazard Severity Zone, an area for which emergency response plans and evacuation routes have not been established. Therefore, Seaside 2040 would potentially impair an emergency response plan or emergency evacuation plan. impacts are conservatively concluded as significant and unavoidable.
- Impact WFR-2. The project would exacerbate wildfire risks and expose people and structures to risk involving wildland fires. Impacts would be significant and unavoidable.

5.4 Cumulative Impacts

This section discusses the cumulative impacts of Seaside 2040. *CEQA Guidelines* Section 15130 describes the requirements for the discussion of cumulative impacts in an EIR. It states that an EIR will discuss cumulative impacts of a project when the project's incremental effect is cumulatively considerable. The discussion will reflect the severity of the impacts and their likelihood of occurrence, but the discussion need not provide as much detail as is provided for the impacts attributable to the project alone.

5.4.1 Approach for Cumulative Analysis

CEQA defines cumulative impacts as "two or more individual effects which, when considered together, are considerable, or which can compound or increase other environmental impacts." Section 15130 of the *CEQA Guidelines* requires that an EIR evaluate environmental impacts that are individually limited but cumulatively considerable. These impacts can result from the proposed project alone, or together with other projects. The *CEQA Guidelines* state: "The cumulative impact from several projects is the change in the environment which results from the incremental impact of the project when added to other closely related past, present and reasonably foreseeable probable future projects" (Section 15355). A cumulative impact of concern under CEQA occurs when the net result of combined individual impacts compounds or increases other overall environmental impacts (*CEQA Guidelines*, Section 15355). In other words, cumulative impacts can result from individually minor but collectively significant projects taking place over time. CEQA does not require an analysis

of incremental effects that are not cumulatively considerable nor is there a requirement to discuss impacts which do not result in part from the project evaluated in the EIR.

CEQA Guidelines Section 15130(b) presents two possible approaches for analyzing cumulative impacts:

- A list of past, present, and reasonably anticipated future projects producing related or cumulative impacts, including those projects outside the control of the agency; or
- A summary of projections contained in an adopted local, regional, or statewide plan, or related planning document, that describes or evaluates conditions contributing to the cumulative effect. Such plans may include: a general plan, regional transportation plan, or plans for the reduction of greenhouse gas emissions. A summary of projections may also be contained in an adopted or certified prior environmental document for such a plan. Such projections may be supplemented with additional information such as a regional modeling program. Any such document shall be referenced and made available to the public at a location specified by the lead agency.

For the purposes of this cumulative analysis, the discussion identifies how impacts of Seaside 2040 could add to impacts of other regional-scale projects. This cumulative impact analysis considers the geographic area of potential impacts as the Monterey Peninsula region, including the nearby cities of Monterey, Marina, Del Rey Oaks, Sand City, Pacific Grove, and Carmel-by-the-Sea, as well as adjacent areas of unincorporated Monterey County.

Cumulative Impact Methodology

Seaside 2040 addresses cumulative conditions within Seaside by design. The General Plan Area is comprised of Seaside's jurisdictional boundaries, and Seaside 2040 defines land use, conservation, infrastructure, safety, economic development, and implementation strategies for the city which is connected by common economic, social, and environmental characteristics. As such, the environmental analysis of Seaside 2040 presented throughout this Draft EIR is essentially a cumulative analysis consistent with CEQA requirements.

The cumulative analysis presented below primarily uses a projections-based approach, with additional consideration of specific large-scale projects consistent with a list approach (see *CEQA Guidelines* Section 15130[B][1]). Under the projections-based approach, land use and growth projections for the region are combined with the growth projections for the nearby areas. Nearby areas are listed as follows:

- **City of Monterey.** Monterey is located immediately south of Seaside and encompasses a major portion of the Monterey Peninsula, covering approximately 12 square miles. Similar to Seaside, Monterey consists of relatively dense urban development. The northern (bayside) portion of Monterey is comprised of more densely developed areas while the south side (inland side) consists of less dense residential development.
- **City of Marina.** Marina is located immediately north of Seaside and is approximately 10 square miles in size. Marina partially overlaps with the California State University, Monterey Bay campus, and consists of relatively dense residential and commercial development. Development is less dense compared to Seaside, with some undeveloped portions of the city along its eastern boundary.

- **City of Del Rey Oaks.** Del Rey Oaks is a small jurisdiction approximately one square mile in size located between Seaside and Monterey along State Route 218. Land uses within Del Rey Oaks are largely residential, with some commercial uses located along its western border with Fremont Boulevard and on State Route 218 in the southeastern portion of the city.
- **Sand City.** Sand City is a relatively small city, approximately three square miles in size, located immediately west of Seaside generally between Del Monte Boulevard and the Pacific Ocean. Sand City consists of mostly industrial and commercial land uses, with some residences located in the central portion of the city.
- **City of Pacific Grove.** Pacific Grove is located west of Monterey and approximately 2.7 miles west of Seaside, encompassing four square miles on the northern and western most portion of the Monterey Peninsula. Pacific Grove is comprised of relatively dense urban and residential development, with more dispersed land uses in its southwestern portion along the Pacific Ocean.
- **City of Carmel-by-the-Sea.** Carmel-by-the-Sea is located approximately 4.5 miles southwest of Seaside and encompasses approximately one square mile south of the Monterey Peninsula along the Pacific Ocean. Carmel-by-the-Sea is surrounded by relatively low-density residential development outside of its borders, and consists of relatively dense residential and commercial development between Highway 1 and the Pacific Ocean.
- **Unincorporated Monterey County**. Unincorporated lands within the county surround the above-listed cities, including the City of Seaside. Lands immediately adjacent to Seaside to the east are within the unincorporated county. This area primarily includes former Fort Ord lands and open space, with some institutional and commercial development located east of 7th Avenue near California State University, Monterey Bay.

As shown in Table 5-3, the population of jurisdictions adjacent to or near Seaside is projected to increase from an estimated 2020 population of 71,752 to approximately 80,767 people by 2040.

Table 5-3 Population, Households, and Employment Projections of Cumulative Impact Analysis Area, 2020-2040

City[1]	Size (square miles)	Population (2020)	Population (2040)	Households (2020)	Households (2040)	Jobs (2020)	Jobs (2040)
Seaside[2]	9	33,537	46,297	10,920	14,970	10,476	15,008
Monterey	12	28,170	29,342	13,705	14,402	40,989	44,465
Marina	10	22,321	28,433	7,784	9,521	6,548	7,055
Del Rey Oaks	1	1,662	2,330	741	1,052	748	815
Sand City	3	385	1,012	189	446	2,092	2,224
Pacific Grove	4	15,265	15,676	8,201	8,400	8,016	8,343
Carmel-by-the-Sea	1	3,949	3,974	3,437	3,453	3,566	3,833
Total	**40**	**105,289**	**127,064**	**44,977**	**52,244**	**72,435**	**81,743**

[1] Unincorporated county projections are not included in this table, as projections are not available for areas of the county that are immediately adjacent to Seaside, and are only available for all unincorporated areas as a whole.

[2] Projections for Seaside include estimated growth facilitated by Seaside 2040

Source: AMBAG 2022

As shown in Table 5-3, Seaside represents the most populated area in the cumulative impact analysis area. Seaside represents 32 percent of the existing population, 24 percent of the existing households, and 14 percent of the existing jobs in the cumulative impact analysis area. By 2040, this proportion is expected to remain relatively similar (36 percent of the population, 29 percent of households, and 18 percent of jobs). Thus, under both current and forecasted future conditions, Seaside represents a relatively significant portion of growth in the cumulative impact area.

5.4.2 Cumulative Impacts Analysis

a. Aesthetics and Visual Resources

The geographic scope for aesthetics and visual resources consists of Seaside and nearby jurisdictions. Future development in this region that could impact aesthetics or visual resources is considered in the analysis. This geographic scope is used to evaluate potential impacts or loss of aesthetic or visual resources within the context of regional impacts to these resources.

IMPACT AES-C-1 CUMULATIVE DEVELOPMENT WOULD AFFECT NIGHT SKY LIGHTING AND DEGRADE EXISTING VISUAL CHARACTER. CUMULATIVE IMPACTS WOULD BE SIGNIFICANT AND SEASIDE 2040 WOULD NOT RESULT IN A CONSIDERABLE CONTRIBUTION TO CUMULATIVE AESTHETICS IMPACTS.

There are two types of aesthetic impacts that may be additive in nature and thus cumulative: night sky lighting and overall changes in the visual environment as the result of increasing urbanization of large areas. Cumulative development could encroach into non-urban areas that is located adjacent to Seaside and neighboring unincorporated county areas. This type of growth and expansion would have the potential to affect night sky lighting experienced both within and outside of the region and lighting may increase in the form of larger and/or more intense nighttime glow in the viewshed. The cumulative impact on night sky lighting is considered significant. Although growth facilitated by Seaside 2040 would primarily be focused on infill areas, development outside of existing urban areas (such as development in the Seaside East area) with long-distance views may result in nighttime lighting becoming more visible, covering a larger area and/or appearing in new areas because of projected development under Seaside 2040. Implementation of applicable lighting ordinances and Seaside 2040 policies and programs would reduce potential impacts, and Seaside 2040 would not result in a considerable contribution to cumulative lighting and glare impacts.

Cumulative development would change the visual environment of the region and existing visual character could be degraded; however, nearby incorporated cities are primarily built out, and cumulative development would be consistent with relevant requirements, policies, and programs associated with each jurisdiction's municipal code and general plan. The cumulative impact on visual character is considered less than significant. Implementation of Seaside 2040 policies and programs intended to minimize impacts to visual resources would reduce potential impacts, and Seaside 2040 would not result in a considerable contribution to cumulative visual character impacts.

b. Air Quality

Seaside and nearby jurisdictions fall within the jurisdiction of the Monterey Bay Area Resources District (MBARD), which has prepared an air quality management plan to improve conditions and meet federal and state air quality standards. Because MBARD is the air resources district for Monterey, Santa Cruz, and San Benito counties, the cumulative impact analysis area for air quality consists of these counties.

Impact AQ-C-1 CONSTRUCTION AND OPERATION OF CUMULATIVE DEVELOPMENT WOULD RESULT IN AN INCREASE OF AIR EMISSIONS. CUMULATIVE IMPACTS WOULD BE SIGNIFICANT. HOWEVER, SEASIDE 2040 WOULD NOT RESULT IN A CONSIDERABLE CONTRIBUTION TO CUMULATIVE AIR QUALITY IMPACTS.

Cumulative development could involve demolition, excavation grading, and paving and other construction activities, as well as operation of new development within the cumulative impact analysis area. Although individual development projects may not generate significant short-term emissions, it is probable that several projects would be under construction simultaneously and would generate cumulative construction emissions that could impact air quality. Additionally, while operational emissions from individual development projects may not generate significant emissions over their operational lifetime, it is possible that simultaneous operation of cumulative development would generate emissions that could impact air quality. Therefore, cumulative impacts to air quality would be significant. With adherence to proposed policies and programs, Seaside 2040 would not result in a considerable contribution to significant air quality impacts.

c. Biological Resources

The cumulative impact analysis area for biological resources consists of Seaside and nearby jurisdictions. Future land use and urban development projects and growth in the region could impact resources in the surrounding cities, and the interaction between the affected environment and Seaside 2040 projects would be limited to this area.

Impact BIO-C-1 CUMULATIVE DEVELOPMENT WOULD HAVE SUBSTANTIAL ADVERSE IMPACTS ON SPECIAL-STATUS PLANT AND ANIMAL SPECIES, AND SENSITIVE NATURAL COMMUNITIES; AND WOULD INTERFERE WITH WILDLIFE MOVEMENT. WHILE CUMULATIVE IMPACTS WOULD BE SIGNIFICANT, SEASIDE 2040 WOULD NOT RESULT IN A CONSIDERABLE CONTRIBUTION TO CUMULATIVE BIOLOGICAL RESOURCE IMPACTS.

Biological resources impacts resulting from cumulative development would include direct and indirect impacts to sensitive/special-status species or their habitat; impacts to riparian, wetland, or other sensitive natural communities; or interference with wildlife movement. As discussed in Section 4.3, *Biological Resources,* there are 10 sensitive natural communities, 44 special-status plants, and 23 special-status animals have the potential to occur within the General Plan Area and the Monterey Peninsula region. Although most future development anticipated in the cumulative impact analysis area across seven cities and unincorporated Monterey County would be considered infill projects, some cumulative development would occur in open space or undeveloped areas; therefore, cumulative impacts to biological resources are conservatively assumed to be significant. With adherence to proposed policies and programs, Seaside 2040 would not result in a considerable contribution to significant biological resource impacts.

d. Cultural Resources

The cumulative impact analysis area for cultural resources consists of Seaside and nearby jurisdictions, based on the historic, ethnographic, and prehistoric period use patterns of the region. This is appropriate because cultural resources identified in this larger region will be similar in type and style to those that are or may be present in nearby jurisdictions. As discussed in Section 4.4, *Cultural Resources*, the changes envisioned in Seaside 2040 could include projects that would require substantial ground disturbance in undisturbed areas or in infill areas, which could impact historic built environment resources and archaeological resources.

Impact CR-C-1 CUMULATIVE DEVELOPMENT WOULD CAUSE SUBSTANTIAL IMPACTS TO KNOWN AND UNKNOWN CULTURAL, HISTORICAL, OR ARCHAEOLOGICAL RESOURCES. CUMULATIVE IMPACTS WOULD BE SIGNIFICANT AND SEASIDE 2040 WOULD RESULT IN A CONSIDERABLE CONTRIBUTION TO CUMULATIVE CULTURAL RESOURCE IMPACTS.

Seaside 2040 would facilitate growth in undeveloped areas of the city, and the increase in growth in previously undisturbed areas contributes to regional impacts on existing and previously undisturbed and undiscovered historic and archaeological resources, including CEQA-defined "historical resources." While most cultural resources are site-specific, with impacts that are project-specific, others may have regional significance; for example, a historic structure that represents the last known example of its kind would constitute a regional impact if it were affected by future Seaside 2040 implementation. In addition, historic districts in the cumulative analysis area could be affected by multiple or successive projects, over time, resulting in a cumulative impact to the historic resource. For such a resource, cumulative impacts would be significant, and the contribution of Seaside 2040 would be cumulatively considerable. Seaside 2040 policies and implementation programs, including those required by Mitigation Measures CR-1 and CR-2, would reduce impacts associated with Seaside 2040 through impact minimization for historical and archaeological resources. However, it cannot be guaranteed that all future project-level impacts can be mitigated to a less than significant level. As such, Seaside 2040 would result in a considerable contribution to cumulative cultural resource impacts, even after mitigation.

e. Energy

Impacts to energy related to implementation of Seaside 2040 are analyzed in Section 4.5, *Energy*. The increase in energy demand that is anticipated to occur as population increases as a result of implementation of Seaside 2040 would contribute cumulatively to state increases in energy consumption. Therefore, the cumulative impact analysis area for energy consists of Seaside, nearby jurisdictions, and the entire state of California.

Impact E-C-1 CUMULATIVE DEVELOPMENT WOULD INCREASE DEMAND FOR ENERGY BEYOND EXISTING CONDITIONS. HOWEVER, CUMULATIVE IMPACTS WOULD BE LESS THAN SIGNIFICANT AND SEASIDE 2040 WOULD NOT RESULT IN A CONSIDERABLE CONTRIBUTION TO CUMULATIVE ENERGY IMPACTS.

Cumulative development would increase demand for energy resources such as natural gas, electricity, and transportation fuels, including short-term energy consumption by construction equipment and vehicles, and long-term energy consumption from operation of cumulative development. Future developments would be subject to CalGreen, California Building Energy Efficiency Standards, and the Low Carbon Fuel Standard, which would ensure the incorporation of energy efficiency measures in the design and operation of cumulative projects. Furthermore, pursuant to the California Public Utilities Commission, utilities such as Pacific Gas and Electric and Central Coast Community Energy must utilize a long-term planning process to plan for increased energy demand in the area and would account for increased development and an increase in population. Renewable energy sources steadily constitute a larger proportion of California's energy supply makeup, resulting in a trend of decreased dependency on fossil fuels and increased dependency on renewable energy sources. As such, cumulative development would not result in the inefficient, unnecessary, or wasteful use of energy, and cumulative energy impacts would not be significant.

Seaside 2040 contains several policies related to reducing energy consumption and using renewable energy in the Healthy and Sustainable Community Element, which would result in lower per capita energy consumption in 2040. Seaside 2040 would not result in a considerable contribution to significant cumulative impacts related to wasteful or inefficient use of energy resources.

f. Geology and Soils

Future development in Seaside and nearby jurisdictions could be impacted by earthquakes or also be located in similar geologic units that may be subject to seismicity or contain potential for paleontological or mineral resources. While some geologic resources, such as paleontological resources, are typically constrained or specific to a particular project site, the resource could extend onto adjoining property. Therefore, the cumulative impact analysis area for geology and soils consists of Seaside and nearby jurisdictions.

IMPACT GEO-C-1 CUMULATIVE DEVELOPMENT WOULD BE SUBJECT TO SEISMIC HAZARDS, SUCH AS FAULT RUPTURE, EARTHQUAKES, AND LANDSLIDES. SEASIDE 2040 WOULD NOT RESULT IN A CONSIDERABLE CONTRIBUTION TO CUMULATIVE GEOLOGY AND SOILS IMPACTS.

Geology and soils impacts may be related to: increased exposure to seismic hazards, increased erosion and/or loss of topsoil, the presence of unstable/expansive soils and alternative waste disposal or septic systems. Individual projects and developments in the cumulative impacts analysis area would be subject to geologic hazards based on site-specific conditions and project design. These effects occur independently of one another and are caused by site-specific and project-specific characteristics and conditions. In addition, existing regulations, such as the California Building Code, specify mandatory actions that must occur during project development, which would minimize effects from construction and operation of projects related to geology, soils and seismicity as discussed above. Cumulative impacts related to geology, soils and seismicity would therefore be less than significant. While projects envisioned under Seaside 2040 may be subject to seismic hazards, including fault rupture, ground-shaking, liquefaction, and landslides, compliance with applicable requirements would reduce impacts. Future development facilitated by Seaside 2040 would be required to comply with the California Building Code, Seismic Hazards Mapping Act, Alquist Priolo Act, and local building codes, general plan goals and policies. Furthermore, geology and soils impacts are site-specific by nature and would not result in cumulative impacts to the surrounding area. Seaside 2040 would not result in a considerable contribution to significant cumulative impacts related to geology, soils and seismicity.

Development and construction in the cumulative impacts analysis area would require excavation and ground disturbance. Excavation and ground disturbance could encounter and damage or destroy subsurface paleontological resources, depending on underlying geologic units and soils. While most paleontological resources are typically site-specific, with impacts that are project-specific, others may have regional significance. For example, fossils may capture a particular type of organism that was endemic to a region and therefore have regional significance. Due to the potential for a fossil of regional significance to be uncovered during excavation and ground-disturbing activities of projects in the cumulative impact analysis area, cumulative impacts would be significant. Mitigation Measure GEO-5 would require implementation of programs designed to reduce impacts to paleontological resources on a project-by-project basis. This program would apply to all development projects facilitated by Seaside 2040 and would ensure that significant fossils present are recovered. Therefore, Seaside 2040 would not result in a considerable contribution to cumulative impacts to paleontological resources.

g. Greenhouse Gas Emissions

The impacts of GHG emissions are, by definition, cumulative impacts, as they add to the global accumulation of greenhouse gases in the atmosphere. The cumulative impact analysis area for GHG emissions consists of Seaside, nearby jurisdictions, and the entire State of California. The entire state is included in the analysis area because GHG emissions from Seaside and nearby jurisdictions would influence the ability for the State to achieve its GHG reduction targets.

Impact GHG-C-1 Cumulative development would generate temporary short-term GHG emissions and generate a significant increase in total GHG emissions from mobile and land use sources which would result in a significant cumulative impact. Implementation of Seaside 2040 would not result in a considerable contribution to cumulative GHG impacts.

Cumulative development would generate temporary and long-term GHG emissions. The temporary construction and long-term operational GHG emissions would occur concurrent with ongoing GHG emissions in the cumulative impact analysis area, such as development within nearby jurisdictions. As discussed in Section 4.7, *Greenhouse Gas Emissions,* Seaside 2040 would not result in significant impacts related to greenhouse gas emissions. However, when combined with construction and operation of future development in the cumulative impact analysis area, emissions could exceed State reduction targets and the resulting cumulative impact would be significant. While cumulative impacts to greenhouse gas emissions would be significant, Seaside 2040 would not result in a considerable contribution to this impact.

h. Hazards and Hazardous Materials

Future development in Seaside and nearby jurisdictions could be impacted by regional hazards or could be located within properties that may contain hazardous materials. While hazardous materials sites are typically limited to a particular area, hazardous sites could extend from a property in Seaside into adjoining areas. Therefore, the cumulative impact analysis area for hazards and hazardous materials consists of the city and nearby jurisdictions.

Impact HAZ-C-1 Cumulative development could result in hazards and exposure to hazardous materials. However, cumulative impacts would not be significant and Seaside 2040 would not result in a considerable contribution to cumulative hazards and hazardous materials impacts.

The potential impacts related to hazards and hazardous materials are generally related to site-specific and project-specific characteristics and conditions; however, hazardous sites or releases can occur across multiple adjoining properties or jurisdictions. Although the transport and use of hazardous materials may occur during construction and operation of cumulative development, there are existing federal, state, and local regulations and oversight in place that would effectively reduce the inherent hazard associated with routine transport of such materials. Regulations and oversight, as outlined in Section 4.9, *Hazards and Hazardous Materials*, would also effectively reduce the potential for individual projects to create a hazard to the public or the environment through reasonably foreseeable upset and accident conditions, within Seaside as well as nearby jurisdictions. Therefore, cumulative impacts related to hazards and hazardous materials would not be significant and Seaside 2040 would not result in a considerable contribution to this cumulative impact.

Impacts related to airport hazards are also site-specific, depending on the characteristics and design of individual projects and their location relative to distance and location of nearby airports. Existing regulations place limitations on the types of development that can be permitted within various aircraft zones surrounding an airport, such as building height restrictions or prohibiting residential occupancy. Mandatory compliance with these regulations would prevent substantial hazards related to airports. Cumulative impacts would be less than significant and Seaside 2040 would not result in a considerable contribution to this cumulative impact.

Emergency response plans are generally specific to a particular city or county or parts thereof. For example, in the event of an imminent emergency in Seaside, emergency response is typically from police, ambulance and fire departments local to the city, and not from areas outside of Seaside such as Pacific Grove. Although some Seaside emergency services participate in mutual aid agreements with nearby jurisdictions, Seaside 2040 would not interfere with the implementation of an emergency response plan. Thus, the cumulative impacts related to conflicts with emergency response plans would be less than significant and Seaside 2040 would not result in a considerable contribution to this cumulative impact.

i. Hydrology and Water Quality

The cumulative impact analysis area for hydrology and water quality encompasses the watersheds and groundwater basins affected by development in the General Plan Area, including creeks and drainages, floodplains, and aquifers. Therefore, the cumulative impact assessment area consists of Seaside and nearby jurisdictions, which encompass the applicable watersheds and basins.

HWQ-C-1 CUMULATIVE DEVELOPMENT WOULD INCREASE IMPERVIOUS SURFACES AND COULD INCREASE EROSION POTENTIAL, INCREASE RUNOFF VOLUMES AND VELOCITY, AND INFILTRATE GROUNDWATER. COMPLIANCE WITH EXISTING REGULATIONS, SUCH AS NPDES AND LOCAL STORMWATER MANAGEMENT REQUIREMENTS, WOULD REDUCE CUMULATIVE IMPACTS TO LESS THAN SIGNIFICANT AND SEASIDE 2040 WOULD NOT RESULT IN A CONSIDERABLE CONTRIBUTION TO CUMULATIVE HYDROLOGY AND WATER QUALITY IMPACTS.

Cumulative development would increase erosion and sedimentation resulting from grading and construction, as well as changes in drainage patterns which could degrade surface and ground water quality. In addition, new development would increase the generation of urban pollutants that may adversely affect water quality in the long term. As with development facilitated by Seaside 2040, individual construction projects within the cumulative impact area would be required to comply with applicable water quality regulations, as discussed in Section 4.9, *Hydrology and Water Quality*. Compliance with these existing requirements would reduce project-level impacts throughout the cumulative impact area; as such, cumulative impacts related to water quality would be less than significant, and Seaside 2040 would not result in a considerable contribution to this cumulative impact.

Cumulative development would increase impervious surfaces and reduce groundwater infiltration. However, the cities and County have regulatory requirements for stormwater management, effectively requiring minimization of stormwater runoff. Because the volume of runoff would be reduced by these regulations, as well as state and federal regulations, precipitation would be retained on individual project sites and infiltrated or treated and discharged to swales, creeks, or other drainages. Compliance with Groundwater Sustainability Plans, where applicable pursuant to the Sustainable Groundwater Management Act, would partially limit these cumulative effects.

Cumulative impacts would be less than significant, and Seaside 2040 would not result in a considerable contribution to this cumulative impact.

Development within a flood hazard area could result in incremental modifications over time that can have cumulative adverse effects during a flood event by impeding and displacing flows, and thereby potentially exacerbating flooding overall. In regard to alterations of the drainage pattern of an area, as development in one area contributes incrementally to surface drainage runoff or degrades water quality, and development in another area up- or down-stream does the same, the capacity of a drainage way to carry flood flows and/or the overall quality of the water may be cumulatively affected. New development facilitated by Seaside 2040 and associated impervious surfaces could be potentially significant on a cumulative basis. As discussed in Impact HWQ-3 of Section 4.9, *Hydrology and Water Quality*, projects facilitated by Seaside 2040 would be required to maintain pre-project hydrology and projects that would disturb more than 1 acre would be subject to Central Coast RWQCB requirements that prevent increased in runoff flows from new development and redevelopment projects. Developments proposed within the 100-year flood zone would be required to meet local, state, and federal flood control design requirements. Lead agencies for development within adjacent jurisdictions would conduct or require project-specific hydrology studies for projects proposed to be constructed within floodplains to demonstrate compliance with Executive Order 11988 (for federally funded projects), the NFIP, the National Flood Insurance Act, and the Cobey-Alquist Floodplain Management Act, as well as any further FEMA or state requirements that are adopted at the local level. These studies would identify project design features that reduce impacts on either floodplains or flood flows that would be required through the permitting process. With these floodplain development requirements, continuing flood protection programs, and drainage requirements, Seaside 2040 would not result in a considerable contribution to this cumulative impact.

It is likely that development would occur in inundation zones given that Seaside and nearby cities are coastal cities on the Monterey Bay. The types of development that would be most likely to result in release of pollutants during inundation include things such as wastewater treatment plants, chemical manufacturing plants, or hazardous materials landfills. Regulations governing these types of development would ensure that cumulative impacts would be less than significant. Generally, Seaside 2040 envisions commercial, residential, and some light industrial uses in land development in already urbanized areas where wastewater treatment plants already exist to serve existing development. Accordingly, the land uses facilitated by Seaside 2040 would not substantially increase the risk of release of pollutants into the environment as a result of inundations, and Seaside 2040 would not result in a considerable contribution to this cumulative impact.

j. Land Use and Planning

Intensified development in Seaside could influence land uses in nearby jurisdictions. Accordingly, the cumulative impact analysis area for land use and planning consists of Seaside and nearby jurisdictions.

Impact LU-C-1 CUMULATIVE DEVELOPMENT WOULD NOT PHYSICALLY DIVIDE AN ESTABLISHED COMMUNITY. THE PROJECT WOULD NOT CONFLICT WITH LOCAL LAND USE PLANS, LOCAL COASTAL PLANS, POLICIES, AND REGULATIONS ADOPTED FOR THE PURPOSE OF AVOIDING OR MITIGATING ENVIRONMENTAL EFFECTS IN THE CUMULATIVE IMPACT ANALYSIS AREA. CUMULATIVE IMPACTS WOULD NOT BE SIGNIFICANT AND SEASIDE 2040 WOULD NOT RESULT IN A CONSIDERABLE CONTRIBUTION TO CUMULATIVE LAND USE AND PLANNING IMPACTS.

Each of the nearby jurisdictions have adopted general plans that generally direct new growth to existing areas within their jurisdictions. Therefore, cumulative impacts related to physically dividing an established community or conflicting with adopted land use plans would be less than significant. Although Seaside 2040 would facilitate development in undeveloped areas, growth and development would not physically divide an established community. The guiding principles and policies within Seaside 2040 aim for the City to weave together existing Seaside neighborhoods with military housing areas and new neighborhoods and employment districts on former Fort Ord lands to create a single, identifiable city on the Monterey Peninsula. The guiding principles also state that new neighborhoods would grow incrementally over time, would connect to the existing circulation network, and would relate physically and architecturally to adjacent neighborhoods. Seaside 2040 would not result in a considerable contribution to this cumulative impact.

k. Noise

Noise resulting from development facilitate by Seaside 2040 could influence ambient noise levels in nearby jurisdictions, if and where the projects are located in proximity to nearby jurisdictions. Therefore, the cumulative impact analysis area for noise consists of Seaside and nearby jurisdictions.

Impact N-C-1 CUMULATIVE DEVELOPMENT WOULD RESULT IN CUMULATIVE SIGNIFICANT IMPACTS RELATED TO CONSTRUCTION AND OPERATIONAL NOISE AND EXCESSIVE NOISE IN PROXIMITY TO AIRPORTS. HOWEVER, SEASIDE 2040 WOULD NOT RESULT IN A CONSIDERABLE CONTRIBUTION TO CUMULATIVE NOISE IMPACTS.

Cumulative development would generate temporary noise impacts, which could combine with other ongoing noise or additional construction noise within the cumulative impact analysis area, resulting in localized construction noise levels exceeding local standards. Cumulative impacts of construction noise could be significant. Implementation of policies and implementation programs of Seaside 2040 would minimize construction noise impacts associated with the project; therefore, while cumulative impacts may be significant, Seaside 2040 would not result in a considerable contribution to this cumulative impact. Operation of cumulative development would introduce on-site activities that generate operational noise, and would increase vehicle trips on local and regional roadways. Noise generated by on-site activities at new development would be subject to maximum allowable exterior and interior noise levels. Policies and implementation programs included in Seaside 2040 would also minimize the expose of new development to ambient noise. Therefore, while cumulative operational impacts to noise may be significant, Seaside 2040 would not result in a considerable contribution to this cumulative impact.

Impacts associated with noise and vibration from cumulative development would be generally experienced locally and are not cumulative in nature. These effects occur independently of one another, related to site-specific and project-specific characteristics and conditions. As discussed in Section 4.11, *Noise,* Seaside 2040 and Mitigation Measure N-1 would include policies and implementation programs that would minimize construction, operation, and transportation noise

and vibration associated with implementation of Seaside 2040. While cumulative growth in the cumulative impact analysis area may result in significant cumulative impacts to vibration, the contribution of Seaside 2040 would not be cumulatively considerable.

Cumulative development could expose people residing or working in the project area to excessive airport noise levels when development occurs within the vicinity and/or within the land use plan of the Monterey Regional Airport or the Marina Municipal Airport. As discussed in Section 4.11, *Noise,* implementation of Seaside 2040 policies would ensure consistency with airport land use planning documents and changes to airport noise contours. While cumulative development may result in cumulative impacts related to airport noise, Seaside 2040 would not result in a considerable contribution to this cumulative impact.

I. Population and Housing

The cumulative impacts analysis area for population and housing consists of Seaside and nearby jurisdictions. This is an acceptable extent for the cumulative impacts analysis area because Seaside 2040 would not influence population and housing trends in more distant counties and cities outside of the Monterey Peninsula region.

Impact PH-C-2 CUMULATIVE DEVELOPMENT COULD RESULT IN THE TEMPORARY OR PERMANENT DISPLACEMENT OF HOUSING, BUT DISPLACEMENT WOULD BE LOCALIZED AND WOULD NOT RESULT IN DISPLACEMENT AT THE REGIONAL SCALE. SEASIDE 2040 WOULD NOT RESULT IN A CONSIDERABLE CONTRIBUTION TO CUMULATIVE POPULATION AND HOUSING IMPACTS.

Development in the cumulative impacts analysis area would result in population growth. Even though Seaside 2040 does not propose new project-level development, the development capacity allowed by Seaside 2040 would exceed AMBAG forecasts. However, Seaside 2040 assumes full buildout of all General Plan and Specific Plan areas (except Seaside East), which may be difficult to achieve due to the requirements and process necessary to carry out development. Similarly, growth within nearby jurisdictions would be facilitated by long-range planning efforts. Cumulative impacts related to inducing substantial unplanned population growth would not be significant and Seaside 2040 would not result in a considerable contribution to this cumulative impact.

The general plans and zoning ordinances of nearby jurisdictions also designate areas for housing development to accommodate planned population growth. While some development may require the demolition of existing housing, each city in the cumulative impacts assessment area must continue to demonstrate it can meet housing requirements established through the Regional Housing Needs Allocation program, enacted throughout the state. Therefore, cumulative population and housing displacement impacts would be less than significant.

Additional population, housing, and employment, as forecasted, would occur with or without implementation of Seaside 2040. While Seaside 2040 would result in additional population growth beyond AMBAG forecasts, it provides a strategy to accommodate growth in such a way as to achieve a more balanced jobs/housing ratio. Therefore, implementation of Seaside 2040 would not result in displacement at the regional scale, and localized displacement would not be expected to increase development in areas surrounding Seaside. Seaside 2040 would not result in a considerable contribution to this cumulative impact.

m. Public Services and Recreation

Generally, public services and recreational facilities are provided and used on a local or regional level. Therefore, the cumulative impact analysis area for public services and recreation consists of Seaside and nearby jurisdictions.

Impact PSU-C-1 Cumulative development would not result in adverse physical impacts associated with the provision of new or physically altered governmental facilities. Seaside 2040 would not result in a considerable contribution to cumulative public services and recreation impacts.

Cumulative development would increase the number of new residents in the cumulative analysis area. This growth would generate increased demand for fire protection, police services, parks and recreational facilities, schools, and other public facilities to the extent that the construction of new or expanded facilities may be required, the construction of which could cause significant environmental impacts. However, development in the cumulative impact analysis area be required to comply with all applicable federal, state, and local regulations governing the provision of fire protection services, police protection services, schools, and other public facilities. Additionally, Seaside and nearby jurisdictions maintain parkland area to population ratios, which would facilitate the development of additional recreational facilities as growth in the cumulative impact analysis area occurs. Therefore, cumulative impacts would not be significant, and Seaside 2040 would not result in a considerable contribution to this cumulative impact.

n. Transportation

The transportation impacts of Seaside 2040 could extend into nearby jurisdictions. Therefore, the cumulative impact analysis area for transportation consists of Seaside and nearby jurisdictions.

Impact TRA-C-1 Cumulative development could result in significant and unavoidable increase in daily vehicle miles traveled (VMT) per capita. However, Seaside 2040 would not result in a considerable contribution to cumulative transportation impacts.

As discussed in Section 4.14, *Transportation,* Seaside 2040 would not result in residential or employment-based VMT per capita that would exceed significance thresholds. However, it is likely that growth projected for the cumulative impact analysis area would result in additional VMT with an increased population and increased vehicle use. It is likely that that some residents would commute outside of the cumulative impact analysis area for employment, recreation, and travel. These trips would contribute to increased VMT in the cumulative impact analysis area, which could exceed significance thresholds established by individual jurisdictions to the state. While cumulative impacts related to VMT would be significant, growth accommodated by Seaside 2040 would not exceed VMT thresholds and would not result in a considerable contribution to this cumulative impact.

Cumulative development would maintain emergency vehicle access and emergency vehicle requirements as cumulative development would be required to comply with state, regional, and local regulations for emergency vehicle access and emergency vehicle requirements. Cumulative impacts related to emergency vehicle access and emergency vehicle requirements would not be significant and Seaside 2040 would not result in a considerable contribution to this cumulative impact.

o. Tribal Cultural Resources

Tribal cultural resources are regionally specific and determined by the local tribes. When resources occur near jurisdictional boundaries, such as city limits, the resource can extend across jurisdictions. Therefore, the cumulative impact analysis area for tribal cultural resources consists of Seaside and nearby jurisdictions.

IMPACT TC-C-1 CUMULATIVE DEVELOPMENT COULD RESULT IN SIGNIFICANT IMPACTS TO TRIBAL CULTURAL RESOURCES THAT WOULD RESULT IN A SIGNIFICANT CUMULATIVE IMPACT. SEASIDE 2040 WOULD RESULT IN A CONSIDERABLE CONTRIBUTION TO CUMULATIVE TRIBAL CULTURAL RESOURCE IMPACTS.

Cumulative development would increasingly extend into previously undeveloped areas, which would contribute to regional impacts on tribal cultural resources. Cumulative impacts would be significant. If there may be tribal cultural resources at the location of a project site, tribal consultation in accordance with AB 52 would help ensure protection of tribal cultural resources. However, tribal territory often crosses the boundaries of multiple jurisdictions within the cumulative impact area, and there could be several minor impacts to tribal cultural resources that together would result in a significant cumulative impact. The cumulative impact would be significant. With adherence to proposed policies and programs that are protective of tribal cultural resources, including those required by Mitigation Measure TC-1, Seaside 2040 would result in a considerable contribution to this cumulative impact, despite implementation of Mitigation Measure TC-1.

p. Utilities and Service Systems

Generally, utilities and service systems are provided on a local or regional level by individual jurisdictions or by a utility service with a regional service area. Therefore, the cumulative impact analysis area for utilities consists of Seaside and nearby jurisdictions.

IMPACT UTIL-C-1 CUMULATIVE DEVELOPMENT WOULD RESULT IN ADVERSE ENVIRONMENTAL IMPACTS ASSOCIATED WITH THE CONSTRUCTION OF NEW OR EXPANDED WATER, WASTEWATER TREATMENT OR STORMWATER DRAINAGE, ELECTRIC POWER, NATURAL GAS, OR TELECOMMUNICATION FACILITIES, AND ASSOCIATED WITH SUFFICIENT WATER SUPPLY AVAILABLE TO SERVE CUMULATIVE DEVELOPMENT. CUMULATIVE IMPACTS WOULD BE SIGNIFICANT. HOWEVER, SEASIDE 2040 WOULD NOT RESULT IN A CONSIDERABLE CONTRIBUTION TO CUMULATIVE UTILITIES IMPACTS..

Cumulative development would result in increased population, housing units, and jobs. This f growth would generate increased demand for utilities services and facilities to the extent that new or expanded facilities could be required, the construction of which could result in significant effects. Therefore, cumulative impacts to utilities and service systems would be significant. However, as discussed in Section 4.16, *Utilities and Service Systems,* there is adequate regional wastewater, stormwater drainage, electric power, natural gas, and telecommunications infrastructure to serve development facilitated by Seaside 2040. Seaside 2040 would not result in a considerable contribution to this significant cumulative impact.

Water supply in the cumulative impact analysis area is derived from a variety of sources that vary depending on the location. As discussed in Section 4.16, *Utilities and Service Systems*, and in the Water Supply Assessment (Appendix F), Seaside does not have sufficient existing water supply to serve complete buildout of Seaside 2040, and Mitigation Measure UTIL-1 would be required to ensure that proof of water supply availability is provided prior to approval of individual

development projects. While Mitigation Measure UTIL-1 would reduce potentially significant impacts resulting from Seaside 2040, it is likely that cumulative development would similarly not have sufficient existing water supply to serve projected growth in the cumulative impact analysis area. Therefore, cumulative water supply impacts would be significant, but Seaside 2040 would not result in a considerable contribution to this cumulative impact.

As discussed in Section 4.16, *Utilities and Service Systems,* the Monterey Peninsula Landfill has adequate capacity to receive the solid waste that would be generated annually at full buildout of Seaside 2040. Because Seaside is the most populated jurisdiction within the cumulative impact analysis area, it would make up the largest portion of solid waste in the region sent to Monterey Peninsula Landfill. The landfill has substantial additional capacity to serve Seaside 2040 in addition to cumulative development in the region. Therefore, it is unlikely that solid waste generated by cumulative development would exceed the available capacity of the Monterey Peninsula Landfill. Cumulative impacts would not be significant and Seaside 2040 would not result in a considerable contribution to cumulative solid waste impacts.

q. Wildfire

Wildfires can cover vast areas of land that cross multiple jurisdictions, regardless of where a fire was started. Therefore, the cumulative impact analysis area for wildfire consists of Seaside and nearby jurisdictions, including northern Monterey County and nearby areas of adjacent counties.

IMPACT W-C-1 CUMULATIVE DEVELOPMENT COULD BE LOCATED IN OR NEAR A STATE RESPONSIBILITY AREA OR A VERY HIGH FIRE HAZARD SEVERITY ZONE. AS SIGNIFICANT RISK OF LOSS, INJURY, OR DEATH COULD OCCUR, CUMULATIVE IMPACTS RELATED TO WILDFIRE WOULD BE SIGNIFICANT. SEASIDE 2040 WOULD RESULT IN A CONSIDERABLE CONTRIBUTION TO CUMULATIVE WILDFIRE IMPACTS.

Cumulative development, including that facilitated by Seaside 2040, would occur within Fire Hazard Severity Zones. Construction and operation of projects would risk exacerbating these existing fire hazards by creating additional potential sources of fire ignition, and development within Fire Hazard Severity Zones would increase wildfire risks for project occupants and structures. Development in the cumulative impact analysis area could also occur within Fire Hazard Severity Zones, and the combination of these projects being constructed concurrently could substantially increase the frequency of fire in the area above natural conditions. Cumulative impacts would be significant and Seaside 2040 would result in a considerable contribution to this cumulative impact.

6 Alternatives

As required by Section 15126.6 of the *CEQA Guidelines*, this EIR examines a range of reasonable alternatives to the proposed Seaside 2040. Section 15126.6 of the *CEQA Guidelines* requires that an EIR "describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project, but would avoid or substantially lessen any of the significant effects of the project and evaluate the comparative merits of the alternatives." An EIR need not consider every conceivable alternative to a project. Rather, it must consider a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation. An EIR is not required to consider alternatives that are infeasible.

The Seaside 2040 objectives are described in Section 2.4 and are summarized in the Executive Summary.

6.1 Alternatives Development and Screening Process

The analysis of alternatives focuses on the various land use scenarios that incorporate different assumptions regarding the combinations of future land uses and associated infrastructure improvements. Alternatives provided are intended to reduce or avoid significant impacts. As discussed in Section 4, *Environmental Impact Analysis*, the proposed Seaside 2040 would have significant and unavoidable impacts related to historical resources (Impact CR-1), archaeological resources (Impact CR-2), tribal cultural resources (TCR-1), and wildfire (Impacts WFR-1 and WFR-2). Other significant impacts which can be reduced or avoided with mitigation include utilities and service systems. An alternate location alternative is not possible because Seaside 2040 is a plan guiding the growth and development of areas that are located specifically within the jurisdiction of the City. However, within Seaside, the alternatives below consider different patterns of land use and infrastructure to accommodate forecasted future growth and regional housing needs.

The following alternatives are evaluated in this EIR:

- Alternative 1: No Project/Continue using 2004 General Plan under 2040 Buildout Conditions
- Alternative 2: Proposed Seaside 2040 with Reduced Density
- Alternative 3: Multi-Family Residential Focused
- Alternative 4: Increased Residential and Commercial Density

Each alternative is described and analyzed below to determine whether environmental impacts would be similar to, less than, or greater than those of the proposed Seaside 2040. This section also includes a discussion of the "environmentally superior alternative" among those studied.

6.2 Alternatives Eliminated from Detailed Consideration

The selection of alternatives included a screening process to determine which alternatives could reduce significant effects but also feasibly meet project objectives. The following alternatives were considered by the City but eliminated from further analysis due to infeasibility or inconsistency with primary project objectives.

6.2.1 Preservation of Former Fort Ord Lands

The Preservation of Former Fort Ord Lands Alternative was developed in response to a comment received on the NOP (Appendix A). The comment requested the analysis of an alternative that avoids disturbance and development of the former Fort Ord lands within the City that are located east of General Jim Moore Boulevard and south of Gigling Road. This area measures approximately 2,110 acres. Under this alternative, the future Seaside East Specific Plan area would not be developed and instead would be designated as Habitat Management, which would preserve the land for wildlife habitat. Additionally, no further development would occur within the Employment and Public/Institutional land use designations south of Gigling Road and east of General Jim Moore Boulevard under this alternative. However, the lands designated as Military in this area in the proposed Seaside 2040 would not change under this alternative because these areas have been retained by the Federal Government and are wholly under the jurisdiction of the U.S. Armed Forces.

This alternative would result in a lower density of residential and commercial developments in Seaside compared to the proposed Seaside 2040, because a substantial area of former Fort Ord lands would not be developed, including the future Seaside East Specific Plan area. Specifically, this alternative would result in 995 fewer residential dwelling units, 220 fewer hotel rooms, and 2,051 fewer jobs and corresponding square feet of retail, service, industrial, and public uses, than under implementation of the proposed Seaside 2040 (Raimi + Associates 2018).

This alternative was eliminated from detailed consideration because it would fail to meet several primary objectives of the project, most notably the following objectives:

- Encourage new development on former Fort Ord lands that supports the regional economy and capitalizes on the proximity to California State University of Monterey Bay (Objectives 6, 9, and 10)
- Support high-quality job placement opportunities for all residents (Objective 9)
- Support thoughtful, planned growth and well-designed neighborhoods that respect and complement the natural environment (Objectives 9, 10, 11, and 12)
- Offer a variety of housing, recreational, and economic development opportunities (Objectives 9, 10, 11, and 12)

Consequently, this alternative is considered infeasible for the reasons described above, including but not limited to an inability to meet the project objectives; and it is legally infeasible, infeasible due to policy considerations, and economically infeasible.

6.3 Alternative 1: No Project/Continue using 2004 General Plan under 2040 Buildout Conditions

6.3.1 Description

Section 15126.6(e) of *the CEQA Guidelines* requires a specific alternative of "no project" be evaluated in an EIR in order to allow decision makers to compare the impacts of approving a proposed project with the impacts of not approving that project. *CEQA Guidelines* Section 15126.6(e)(3) describes the two general types of no project alternative: (1) when the project is the revision of an existing land use or regulatory plan, policy or ongoing operation, the no project alternative would be the continuation of that existing plan; and (2) when the project is not a land use/regulatory plan, such as a specific development on an identifiable property, the no project

alternative is the circumstance under which that project is not processed (i.e., no development occurs). Alternative 1 represents the former alternative type of no project and assumes the continued implementation of the current 2004 General Plan.

This alternative is comprised of a land use pattern that reflects the land use identified in the existing Seaside 2004 General Plan. Under this alternative, the proposed Seaside 2040 would not be adopted and the existing General Plan, including the land use map and all of the 2004 General Plan goals and policies, would remain in place through the horizon year of 2040. Thus, any new development in Seaside would occur consistent with the existing land use designations and the allowed uses within each designation. Similarly, any new infrastructure would occur as envisioned in the existing 2004 General Plan. Compared with Seaside 2040, the current 2004 General Plan places less emphasis on infill development in proximity to transit. Future development would be consistent with the population density and land use intensity set out in the existing 2004 General Plan; however, the estimates for population, households, and employment have been updated assuming a 2040 buildout. Based on a 2040 buildout of the 2004 General Plan, Seaside would have the capacity for 43,278 residents, 13,169 households, and 11,791 jobs.

In addition to the existing 2004 General Plan, information provided in the following analysis of this alternative is derived from the *Final Seaside General Plan EIR* (City of Seaside 2004). The *Final Seaside General Plan EIR* was prepared in conjunction with the existing 2004 General Plan and assessed the potential impacts of implementing the 2004 General Plan. Some physical, regulatory, and social conditions have changed since certification of the *Final Seaside General Plan EIR*, such as the rate of population growth, groundwater supplies, and vehicle emission standards. Additionally, CEQA's statute, case law, guidelines, and methodology may have also changed since the adoption of the 2004 General Plan. Thus, the level of significance for impacts in the following analyses may differ from the impact findings in the *Final Seaside General Plan EIR* based on current conditions.

6.3.2 Impact Analysis

a. Aesthetics

Development under the 2004 General Plan would continue the land use pattern that currently exists in Seaside. As a result, visibility from and of scenic vistas, the City's visual character, and light and glare conditions would be generally the same as currently present in Seaside. Overall, the aesthetic impact of this alternative would not be substantially different than that identified to occur throughout Seaside as a result of the proposed Seaside 2040. Similar to Seaside 2040, the 2004 General Plan includes goals, policies, and implementation measures that promote streetscapes that protect views and visual quality. Impacts would be less than significant and similar to those under Seaside 2040.

b. Air Quality

Implementation of the No Project Alternative would involve less overall development and associated growth than would occur under the proposed Seaside 2040. Therefore, construction-related emissions of air pollutants, including PM_{10}, would be less as compared to the proposed Seaside 2040 because less development would occur. However, the proposed Seaside 2040 and the existing 2004 General Plan both include measures consistent with one another to evaluate construction-related emissions on a project-level basis and implement project-level mitigation to reduce construction emissions, as applicable. Therefore, construction-related impacts on air quality would be similar under this alternative and under Seaside 2040.

Full buildout of the 2004 General Plan would accommodate approximately 974 fewer housing units than the proposed Seaside 2040. Thus, the long-term on-site emissions from use of natural gas for residential heating, cooking, and water heating would be reduced compared to the proposed Seaside 2040. In addition, infill development under Seaside 2040 would incrementally increase density in specified arterial corridors, such as the downtown area. Therefore, the proposed Seaside 2040 would result in higher toxic air contaminants (TAC) for sensitive receptors near arterial corridors compared to the No Project Alternative. However, Seaside 2040 includes policies that would reduce mobile source emissions by promoting mixed-use and infill development and supporting bike, pedestrian, and mass transit. As a result, the proposed Seaside 2040 could reduce the vehicle miles traveled (VMT) within infill and urban areas of Seaside compared to the 2004 General Plan, which does not contain these specific policies. As shown in Table 4.14-5 in Section 4.14, *Transportation*, Seaside 2040 would result in reduced VMT per capita in the AMBAG region in 2040 compared to conditions without implementation of Seaside 2040. Conditions without Seaside 2040 are based on growth projections using existing general plans in the AMBAG region, including the Seaside 2004 General Plan. Therefore, because Seaside 2040 would reduce regional VMT per capita compared to continued implementation of the 2004 General Plan, Alternative 1 would result in more mobile source emissions that Seaside 2040. Because most air quality emissions are from mobile sources, overall air quality impacts would be greater under this alternative than under Seaside 2040.

c. Biological Resources

Implementation of the No Project Alternative would involve less overall development and associated growth than would occur under the proposed Seaside 2040, specifically in areas that the existing 2004 General Plan designates as parks and open space. Open space and parks could be habitat for some species of wildlife and plants, depending on the specific site conditions and habitat preferences of the species. Therefore, the No Project Alternative would convert less potential special-status species habitat to developed uses compared to the proposed Seaside 2040 within the City's boundaries.

The Conservation/Open Space Element of the existing 2004 General Plan includes Implementation Plan COS-4.1.1 and Implementation Plan COS-4.2.1. Implementation Plan COS-4.1.1 requires the use of proper land use planning and environmental review to minimize the impact of development on sensitive biological resources, and where feasible, establish easements or buffers to avoid impacts on sensitive biological resources. Implementation Plan COS-4.2.1 requires the City to work closely with the U.S. Army Corps of Engineers (USACE), U.S. Fish and Wildlife Service (USFWS), and the California Department of Fish and Wildlife (CDFW) during the discretionary project permitting and CEQA review.

These Implementation Plans are consistent with goals and policies of the proposed Seaside 2040. However, the proposed Seaside 2040 includes additional goals and policies intended to protect or minimize impacts of development on sensitive biological resources. Although Implementation Plan COS-4.1.1 and Implementation Plan COS-4.2.1 would reduce impacts of the No Project Alternative to less than significant, the 2004 General Plan does not provide as comprehensive protection or avoidance policies as the proposed Seaside 2040. Therefore, compared to the proposed Seaside 2040, the No Project Alternative would have slightly greater impacts on biological resources.

d. Cultural Resources

Implementation of the No Project Alternative would involve less overall development and associated growth than would occur under the proposed Seaside 2040, including in areas that the existing 2004 General Plan designates as parks and open space. For example, the 2004 General Plan designates land adjacent to the south side of Normandy Road in northeastern Seaside as Parks and Open Space. This area would be designated as Public/Institutional under the proposed Seaside 2040, which would allow for the development of structures. Construction of these structures would require subsurface ground disturbance and excavation, whereas open space and park uses would not. Therefore, the No Project Alternative would have less potential to encounter or disturb unknown or undiscovered cultural resources compared to the proposed Seaside 2040. The No Project Alternative would include continued development in Seaside consistent with the existing land use map and designations, which could impact unknown or undiscovered cultural resources. The 2004 General Plan includes Implementation Plan COS-5.1.1, which requires the City to continue to assess development proposals and require mitigation for potential impacts on sensitive historic, archaeological, and paleontological resources pursuant to CEQA. This Implementation Plan is consistent with the cultural resources avoidance and recovery measures identified in Seaside 2040. Therefore, some impacts would be less than significant with adherence to 2004 General Plan Implementation Plan COS-5.1.1. However, in some cases, specific resources may not be avoidable, such as demolition of historic structures, which could be potentially significant and unavoidable, similar to Seaside 2040 impacts. Overall, cultural resources impacts under the No Project Alternative would be slightly less as compared to the proposed Seaside 2040.

e. Energy

Implementation of the No Project Alternative would involve less overall development and associated growth than would occur under the proposed Seaside 2040. Thus, energy consumed for construction, primarily fuel consumption for heavy equipment, would be reduced compared to the proposed Seaside 2040. Because there would be fewer residential dwelling units and commercial space under the No Project Alternative, the long-term energy consumption from use of natural gas for heating, cooling, cooking, and water heating would be reduced compared to the proposed Seaside 2040. Although energy consumption associated with heating, cooling, cooking, and water heating would be reduced, as described in Section 4.14, *Transportation*, regional VMT in 2040 would increase compared to conditions without adoption and implementation of Seaside 2040. Conditions without Seaside 2040 are continued implementation of current general plans in the region, and thus indicative of the No Project Alternative. Because regional VMT per capita would be greater under this alternative as compared with Seaside 2040, fuel consumption would also be higher. Compliance with regulatory programs to reduce waste and excessive energy consumption, such as CalGreen, would reduce impacts to less than significant. However, impacts would be greater compared with Seaside 2040.

f. Geology and Soils

Similar to the proposed Seaside 2040, several policies and implementation plans are included in the existing 2004 General Plan to protect people and property from geologic and seismic hazards. Full buildout of the 2004 General Plan would accommodate fewer residents and fewer housing units than the proposed Seaside 2040. Thus, compared to the proposed Seaside 2040, the No Project Alternative would expose fewer people and structures to geologic and seismic hazards. Impacts would be less than significant with compliance with existing 2004 General Plan goals and policies

and less ground disturbance to potentially impact paleontological resources, and would be slightly less as compared to the proposed Seaside 2040.

g. Greenhouse Gas Emissions

Implementation of the No Project Alternative would involve less overall development and associated growth than would occur under the proposed Seaside 2040. However, as discussed in Section 4.2, *Air Quality*, policies in the proposed Seaside 2040 are intended to reduce mobile source emissions by promoting mixed-use and infill development and supporting bike, pedestrian, and mass transit. A reduction in mobile source emissions would reduce GHG emissions from a regional perspective. Additionally, as discussed in Section 4.7, *Greenhouse Gas Emissions*, policies in the proposed Seaside 2040 establish GHG reduction targets for the City of 1990 levels by 2020, 40 percent below 1990 levels by 2030, and 60 percent below 1990 levels by 2040. These targets are consistent with SB 32 and California's long-term reduction goals. Therefore, implementation of the proposed Seaside 2040 would reduce overall per capita GHG emissions in Seaside and ensure that the City's emissions reductions are on the trajectory to meet the state's long-term emissions goals. Alternative 1 does not focus on infill development or emissions reduction targets. However, the estimated citywide traffic growth between 2017 and 2040 under implementation of Alternative 1 would be 31 percent, while citywide traffic growth under the proposed Seaside 2040 would be approximately 40 percent. Although there would be less traffic growth in Seaside under the 2004 General Plan, as discussed in Section 4.14, *Transportation*, implementation of Seaside 2040 would reduce VMT in the AMBAG region compared to conditions without its implementation. Conditions without implementation of Seaside 2040 assume continued implementation of current general plans in the region, including Seaside's 2004 General Plan. Therefore, when compared to one another, Seaside 2040 results in less VMT than continued implementation of the 2004 General Plan, on a regional basis. VMT is measurement of the miles a vehicle travels, and each VMT emits GHGs, assuming the vehicle is powered with a combustion engine. Therefore, because the 2004 General Plan would result in more regional VMT than Seaside 2040, it would also result in more mobile-source GHG emissions. Impacts related to GHG emissions under the No Project Alternative would therefore be and less than significant and slightly greater than those of the proposed Seaside 2040.

h. Hazards and Hazardous Materials

Under the No Project Alternative, the existing land use designations in the 2004 General Plan would continue to define the type of development that occurs throughout Seaside. Full buildout of the 2004 General Plan would accommodate fewer residents and fewer housing units than the proposed Seaside 2040. Therefore, the No Project Alternative would expose fewer people to potential hazards and hazardous materials as compared to the proposed Seaside 2040. However, compliance with existing regulatory requirements would address potential impacts related to hazards and hazardous materials, regardless of the potential implementation of the No Project Alternative or proposed Seaside 2040. Therefore, impacts under the No Project Alternative would be less than significant and similar to the proposed Seaside 2040.

i. Hydrology and Water Quality

Implementation of the No Project Alternative would involve less overall development and associated growth than would occur under the proposed Seaside 2040. Less overall development could result in less impervious surface and stormwater runoff. However, the proposed Seaside 2040 includes policies that promote infill development, which could result in less or comparable impervious surface as the existing 2004 General Plan. Regardless of the potential implementation of

either the No Project Alternative or the proposed Seaside 2040, goals, policies, and implementation plans would reduce potential water quality impacts to less than significant. Additionally, development under this alternative would be subject to the same regulatory requirements, such as NPDES permit requirements, governing runoff and protecting water quality and supply as the proposed Seaside 2040. Impacts under this alternative would be less than significant and similar to the proposed Seaside 2040.

j. Land Use and Planning

Implementation of the No Project Alternative would result in additional development within Seaside pursuant to the existing 2004 General Plan. The 2004 General Plan envisions Seaside as a cohesive and connected community, without creating barriers or other features that would physically divide or separate neighborhoods. The existing 2004 General Plan was also designed for consistency and compatibility with other applicable land use plans, policies, and regulations, similar to the proposed Seaside 2040. Therefore, impacts would be less than significant and similar to the proposed Seaside 2040.

k. Noise

Implementation of the No Project Alternative would result in additional development within Seaside pursuant to the existing 2004 General Plan, which would generate noise and vibration during construction activity. The existing 2004 General Plan contains policies and implementation plans to reduce construction noise. Implementation plans require that the City analyze noise impacts of projects requiring discretionary approval and mitigate significant noise impacts. All construction activities must comply with the City's Noise Ordinance.

Full buildout of the 2004 General Plan would accommodate fewer housing units than the proposed Seaside 2040. Therefore, less construction and associated construction noise would occur under the No Project Alternative as compared to the proposed Seaside 2040. However, Seaside 2040 includes policies that promote mixed-use and infill development and support bike, pedestrian, and mass transit. As a result, the proposed Seaside 2040 could reduce the VMT and associated vehicle noise compared to the 2004 General Plan, which does not contain these specific policies. However, the estimated citywide traffic growth between 2020 and 2040 under implementation of Alternative 1 would be 31 percent, while citywide traffic growth under the proposed Seaside 2040 would be approximately 40 percent. Therefore, Alternative 1 would reduce overall localized vehicle trips, on a citywide basis, as compared to the proposed Seaside 2040. Thus, traffic-related noise would be slightly less. Overall, noise and vibration impacts under this alternative would be less than significant and slightly less than the proposed Seaside 2040.

l. Population and Housing

Under the No Project Alternative, the existing land use designations in the 2004 General Plan would continue to define the type of development that occurs throughout Seaside. Full buildout of the 2004 General Plan would accommodate 43,278 residents and 13,169 housing units in Seaside. This would be approximately 3,019 fewer residents and 974 fewer housing units than would be accommodated by full implementation of the proposed Seaside 2040. Thus, compared to the proposed Seaside 2040, the No Project Alternative would allow for less population growth. The displacement of people or housing units as a result of the No Project Alternative would be minimal because development in Seaside would continue pursuant to the existing General Plan and land uses, rather than creating new or revised land use designations in areas of existing housing. Impacts

would be less than significant. Compared to the proposed Seaside 2040, the No Project Alternative would have a lesser impact on population and housing.

m. Public Services and Recreation

Under the No Project Alternative, the existing land use designations in the 2004 General Plan would continue to define the type of development that occurs throughout Seaside. Full buildout of the 2004 General Plan would accommodate fewer residents and fewer housing units than the proposed Seaside 2040. Therefore, the No Project Alternative would generate less localized demand for fire, police, school, and library services compared to the proposed Seaside 2040. Impacts would be less than significant and less than the proposed 2040 General Plan.

Several areas currently designated as Parks and Open Space in the existing 2004 General Plan would be designated under the proposed Seaside 2040 for other types of land uses, including Employment and Public/Institutional. Additionally, a relatively large area on the north side of Eucalyptus Drive is currently designated as Recreational Commercial in the existing 2004 General Plan but would be subject to undetermined land uses developed under a future specific plan if Seaside 2040 were implemented. Therefore, the No Project Alternative would preserve more areas in Seaside for open space and recreation uses compared to the proposed Seaside 2040. Additionally, full buildout of the 2004 General Plan would accommodate approximately 3,019 fewer residents than the proposed Seaside 2040. Therefore, the No Project Alternative would generate less demand for and use of existing recreational amenities and spaces in Seaside.

However, the proposed Seaside 2040 envisions several new parks and recreational facilities that are not included in the existing 2004 General Plan. These parks would reduce demand at existing parks and facilities, such that the additional population accommodated under the Seaside 2040 would not substantially increase use of existing parks and facilities. Impacts would be less than significant. Therefore, compared to the proposed Seaside 2040, the No Project Alternative would have similar impacts.

o. Transportation

When compared to the proposed Seaside 2040, full buildout of the 2004 General Plan would result in fewer residents. The average daily vehicle trips that would have been generated from these residents under the proposed Seaside 2040 would be avoided. Additionally, approximately 603 fewer jobs would be developed under this alternative, and the vehicle trips with these jobs would be avoided. Therefore, implementation of Alternative 1 would result in reduced local traffic volumes within Seaside compared to the proposed Seaside 2040. Estimated citywide traffic growth between 2017 and 2040 under implementation of Alternative 1 would be 31 percent, while citywide traffic growth under the proposed Seaside 2040 would be approximately 40 percent. Although there would be less traffic growth in Seaside under the 2004 General Plan, as discussed in Section 4.14, *Transportation*, implementation of Seaside 2040 would reduce VMT in the AMBAG region compared to conditions without its implementation. Conditions without implementation of Seaside 2040 assume continued implementation of current general plans in the region, including Seaside's 2004 General Plan. Therefore, when compared to one another, the 2004 General Plan would result in more VMT in the region than Seaside 2040. Overall, impacts of Alternative 1 would be slightly greater than Seaside 2040, but would be less than significant.

p. Tribal Cultural Resources

Implementation of the No Project Alternative would involve less overall development and associated growth than would occur under the proposed Seaside 2040, including in areas that the existing 2004 General Plan designates as parks and open space. For example, the 2004 General Plan designates land adjacent to the south side of Normandy Road in northeastern Seaside as Parks and Open Space. This area would be designated as Public/Institutional under the proposed Seaside 2040, which would allow for the development of structures. The existing Parks and Open Space land use designation of these areas would minimize the potential for development to disturb or otherwise impact tribal cultural resources. Development that would be accommodated under the existing 2004 General Plan would be subject to laws and regulations requiring Native American consultation, protection of human remains, and pre-historic artifacts. Impacts would be less than significant with adherence to applicable laws and regulations. However, given the potential to encounter undiscovered resources and result in destruction or damage to these resources, impacts would be potentially significant. Compared to the proposed Seaside 2040, the No Project Alternative would have slightly lesser impacts on tribal cultural resources.

q. Utilities and Service Systems

Under the No Project Alternative, the existing land use designations in the 2004 General Plan would continue to define the type of development that occurs throughout Seaside. Full buildout of the 2004 General Plan would accommodate fewer residents and fewer housing units than the proposed Seaside 2040. However, the 2004 General Plan places less emphasis on infill and mixed-use development as compared to Seaside 2040. Mixed-use development is typically higher density compared to other types of residential development, such as single-family housing. High density, mixed-use development results in less water consumption per capita than lower density development. Therefore, the Alternative 1 could result in more demand for water supplies than Seaside 2040. As described in Section 4.16, *Utilities and Service Systems*, water supplies would be insufficient to meet water demands in 2040 under Seaside 2040. Because water demand would be greater under the 2004 General Plan, greater impacts related to water supply would occur. Therefore, the No Project Alternative would have slightly greater impacts on utilities and service systems compared to the proposed Seaside 2040, and Mitigation Measure UTIL-1 would be required under this alternative.

r. Wildfire

Under the No Project Alternative, the existing land use designations in the 2004 General Plan would continue to define the type of development that occurs throughout Seaside. Full buildout of the 2004 General Plan would accommodate fewer residents and fewer housing units than the proposed Seaside 2040. Additionally, fewer commercial and hotel rooms would be provided through 2040 in Seaside under Alternative 1 compared with the proposed Seaside 2040. This would result in fewer structures within fire hazard zones and potentially susceptible to damage or destruction during a wildland fire. Additionally, the current 2004 General Plan places less emphasis on infill development, which is typically located in more developed and urbanized areas where intact tracts of shrub, trees, or other wildland fire fuels are absent. Further, the current 2004 General Plan also places less emphasis on multi-family and mixed-use development, particularly in the eastern areas of the City where fuels are more abundant; however, lower-density development in this area is included under the 2004 General Plan. Mixed-use and multi-family development is typically easier for wildland firefighters to defend from fire than single-family development, or urban sprawl type development with tracts of fuels in between subdivisions of single-family development. Therefore,

impacts would greater when compared with the proposed Seaside 2040, and would remain significant and unavoidable.

6.4 Alternative 2: Proposed Seaside 2040 with Reduced Density

6.4.1 Description

One of the primary strategies of the proposed Seaside 2040 is development of the future Seaside East Specific Plan area in a way that balances new diverse neighborhoods with the preservation of natural areas and resources. The future Seaside East Specific Plan area corresponds with the area that would be designated as Future Specific Plan designation south of Gigling Road and east of General Jim Moore Boulevard, as depicted on Figure 2-5.

Alternative 2: Proposed Seaside 2040 with Reduced Density Alternative would also develop the future Seaside East Specific Plan area with new and diverse neighborhoods while preserving natural areas and resources, consistent with the strategy contained in Seaside 2040. However, this alternative would build on the preservation of natural areas within the future Seaside East Specific Plan area by reducing the amount and density of new development compared to the proposed Seaside 2040.

Under Alternative 2, a total of approximately 1,690 residential dwelling units would be constructed within Seaside by 2040. This would be approximately 2,360 fewer units that would be constructed under implementation of the proposed Seaside 2040. Additionally, fewer hotel rooms and employment (i.e., retail and commercial space) would be constructed as compared to the proposed Seaside 2040. A comparison of the development that would occur under Alternative 2 and the proposed Seaside 2040 is provided in Table 6-1.

Table 6-1 Alternative 2 Development Demand Comparison through 2040

Land Use	Seaside 2040[1]	Alternative 2	Relative Change Compared to Seaside 2040
Single-Family Residential	1,651 Dwelling Units	1,352 Dwelling Units	Decrease of 299 Dwelling Unit
Multi-Family Residential	2,398 Dwelling Units	338 Dwelling Units	Decrease of 2,060 Dwelling Units
Total Residential Units	**4,050 Dwelling Units**	**1,690 Dwelling Units**	**Decrease of 2,360 Dwelling Units**
Hotel/Temporary Lodging	165 Jobs 220 Rooms	75 Jobs 100 Rooms	Decrease of 90 Jobs Decrease of 120 Rooms
Retail Jobs	1,300 Jobs (198,470 SF)	655 Jobs (100,000 SF)	Decrease of 645 Jobs (Decrease of 98,470 SF)
Service Jobs	2,063 Jobs (416,400 SF)	1,981 Jobs (400,000 SF)	Decrease of 82 Jobs (Decrease of 16,400 SF)
Industrial Jobs	665 Jobs (340,691 SF)	481 Jobs (250,000 SF)	Decrease of 174 Jobs (Decrease of 90,691 SF)
Public Jobs	576 Jobs (117,232 SF)	294 Jobs (60,000 SF)	Decrease of 282 Jobs (Decrease of 57,232 SF)

Land Use	Seaside 2040[1]	Alternative 2	Relative Change Compared to Seaside 2040
Total Employment	**4,759 Jobs (1,072,793 SF)**	**3,486 Jobs (810,000 SF)**	**Decrease of 2,273 Jobs (Decrease of 262,793 SF)**

[1] Source: Raimi + Associates 2018

Because approximately 2,360 fewer dwelling units would be constructed within the future Seaside East Specific Plan area under Alternative 2, population density of the focus area would also be reduced compared to Seaside 2040. Assuming 3.1 people per household, full buildout of Alternative 2 would result in a population of approximately 38,981 in 2040. This would be approximately 7,316 fewer residents compared to the 2040 population under implementation of the proposed Seaside 2040 (46,297 people).

Under Alternative 2, the land use designation of future Seaside East Specific Plan would not change from the proposed Seaside 2040, but rather the development density, as described above. Likewise, no other land use designations, goals, or policies included the proposed Seaside 2040 would change under implementation of Alternative 2.

6.4.2 Impact Analysis

a. Aesthetics

This alternative would result in fewer residential units and less commercial, retail, office, and visitor-serving development than would occur under the proposed Seaside 2040 within the Seaside East focus area. The potential aesthetic impacts associated with development of this area, as described in Section 4.1, *Aesthetics*, would also occur under this alternative. However, impacts would be reduced because development density would be less and more natural vegetation cover would be retained. Therefore, the existing visual character of the future Seaside East Specific Plan area would be altered less under this alternative. Potential impacts associated with scenic resources and visual character would be less as compared to the proposed Seaside 2040. Additionally, because fewer residential units and employment structures would be developed under Alternative 2, fewer sources of light and glare would also be created from this alternative. Overall, Alternative 2 would have less than significant impacts on aesthetics and those impacts would be reduced as compared to the proposed Seaside 2040.

b. Air Quality

Implementation of Alternative 2 would involve less construction-related emissions of air pollutants than would occur under the proposed Seaside 2040 because the future Seaside East Specific Plan area would be developed at a reduced density, with less overall construction. Full buildout of Alternative 2 would result in fewer residential units than the proposed Seaside 2040, as shown in Table 6-1. Therefore, the long-term on-site emissions from use of natural gas for residential heating, cooking, and water heating would be reduced compared to the proposed Seaside 2040. Additionally, less commercial, retail, office, and hotel uses would be developed, and on-site emissions from natural gas for heating of these uses would also be reduced under this alternative.

The Seaside 2040 policies that would reduce mobile source emissions by promoting mixed-use and infill development and supporting bike, pedestrian, and mass transit would not be modified by Alternative 2. As a result, this alternative would result in a reduction of regional VMT per capita as compared to conditions in 2040 without Alternative 2 or Seaside 2040. However, because new

employment would be created along with fewer new residential units in the City, people may reside elsewhere and commute into Seaside for employment. Therefore, regional VMT per capita under Alternative 2 would be potentially higher than under the proposed Seaside 2040, resulting in slightly more mobile-source emissions. Because construction emissions and on-site emissions would be reduced as compared to the proposed project, but mobile-source emissions would be slightly more and are the major source of emissions, Alternative 2 would have slightly greater air quality impacts than the proposed Seaside 2040, overall. Similar to the proposed Seaside 2040, impacts of this alternative would be less than significant.

c. Biological Resources

Implementation of Alternative 2 would involve less overall development and associated growth in Seaside than would occur under the proposed Seaside 2040 because the future Seaside East Specific Plan area would be developed at a reduced density. As described above, Alternative 2 would preserve more natural areas within the future Seaside East Specific Plan area as compared to the proposed Seaside 2040. As shown on Figure 4.3-1 in Section 4.3, *Biological Resources*, vegetation communities in the future Seaside East Specific Plan area consist predominantly of native shrub, chaparral, and woodland communities. Therefore, Alternative 2 would result in reduced impacts on native vegetation cover, including oak trees, as compared to the proposed Seaside 2040. Potential conflicts with local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance would be reduced compared to the proposed Seaside 2040. Similar to Seaside 2040, impacts would be less than significant.

As shown on Figure 4.3-2 in Section 4.3, *Biological Resources*, the future Seaside East Specific Plan area coincides with several reported occurrences of special-status species, such as Monterey gilia and sand-loving wallflower. The future Seaside East Specific Plan area also coincides with Central Maritime Chaparral natural community. Therefore, Alternative 2 would result in reduced impacts on special-status species and sensitive natural communities compared to the proposed Seaside 2040 because more habitat and natural community would be preserved.

Overall, compared to the proposed Seaside 2040, implementation of Alternative 2 would have reduced impacts on biological resources. Alternative 2 would also involve implementation of Seaside 2040 policies and implementation programs intended to reduce potential impacts to biological resources.

d. Cultural Resources

As shown on Figure 4.4-2 in Section 4.4, *Cultural Resources*, the archeological sensitivity is undetermined for the future Seaside East Specific Plan area. Alternative 2 would result in less ground disturbance in areas of undetermined archaeological sensitivity because less construction would occur within the future Seaside East Specific Plan area, and more natural areas would be preserved. Therefore, Alternative 2 would have less potential to encounter or disturb unknown or undiscovered cultural resources compared to the proposed Seaside 2040. Additionally, because less construction and subsurface ground disturbance would occur under this alternative, the potential to encounter paleontological resources would also be reduced compared to the proposed Seaside 2040. However, this alternative would include some development in the future Seaside East Specific Plan area, as well as the development envisioned in Seaside 2040 for the other areas of Seaside. Therefore, Alternative 2 would have potential to encounter cultural resources. Similar to Seaside 2040, Alternative 2 would include policies and implementation programs that would reduce potentially significant impacts to cultural resources, and would require the implementation of

Mitigation Measures CR-1 and CR-2. Because Alternative 2 would involve less ground disturbance in areas of undetermined archaeological sensitivity, impacts to cultural resources would be slightly less as compared to the proposed Seaside 2040. However, impacts would remain significant and avoidable as development would still occur in areas of undetermined archaeological sensitivity.

e. Energy

Implementation of Alternative 2 would involve less overall development and associated growth in Seaside than would occur under the proposed Seaside 2040 because the future Seaside East Specific Plan area would be developed at a reduced density. Thus, energy consumed for construction, primarily fuel consumption for heavy equipment, would be reduced compared to the proposed Seaside 2040. Because there would be fewer residential dwelling units and commercial space under Alternative 2, the long-term energy consumption from use of natural gas for heating, cooling, cooking, and water heating would be reduced compared to the proposed Seaside 2040. Although energy consumption associated with heating, cooling, cooking, and water heating would be reduced, as described below under "*Transportation*," regional VMT per capita under this alternative would be slightly greater in 2040 compared with regional VMT per capita under Seaside 2040 because more people may reside outside of Seaside but commute into the City for employment. Because regional VMT per capita would be greater under this alternative as compared with Seaside 2040, fuel consumption would also be higher under this alternative. Compliance with regulatory programs to reduce waste and excessive energy consumption, such as CalGreen, would reduce impacts to less than significant. However, impacts of Alternative 2 would be slightly greater compared with Seaside 2040 due to increase VMT.

f. Geology and Soils

Implementation of Alternative 2 would result in less construction of new development compared to the proposed Seaside 2040 because the future Seaside East Specific Plan area would be developed at a reduced density under this alternative. Less construction would result in less ground disturbance and reduced potential for soil erosion. Full buildout of Alternative 2 would result in fewer residential units compared to the proposed Seaside 2040. Additionally, buildout of Alternative 2 would also result in fewer structures associated with commercial, retail, office, and visitor-serving uses. Therefore, compared to the proposed Seaside 2040, Alternative 2 would expose fewer people and structures to geologic and seismic hazards. However, Alternative 2 would involve construction in the future Seaside East Specific Plan area, where existing development does not exist. Construction in this area would have the potential to uncover and impact paleontological resources, similar to Seaside 2040. Overall, Alternative 2 would have slightly less impacts than Seaside 2040. With implementation of Seaside 2040 policies and Mitigation Measure GEO-5, impacts would be less than significant.

g. Greenhouse Gas Emissions

Implementation of Alternative 2 would involve less overall development and associated growth than would occur under the proposed Seaside 2040 because the future Seaside East Specific Plan area would be developed at a reduced density. Because fewer structures would be constructed under Alternative 2, construction-source GHG emissions would be reduced as compared to the proposed Seaside 2040.

Compared to the proposed Seaside 2040, full buildout of Alternative 2 would result in 495 fewer residential units and approximately 1,535 fewer residents. The average daily vehicle trips that would

have been generated from these residents under the proposed Seaside 2040 would be avoided. Additionally, fewer jobs and hotel rooms would be developed under this alternative, and vehicle trips associated with these jobs and lodging would be avoided. However, the reduction in new residential units would be greater than the reduction of jobs, and therefore people could choose to reside elsewhere and commute into Seaside for employment. These commuter trips would generate VMT. Therefore, Alternative 2 would potentially result in more VMT per capita, regionally, than Seaside 2040. Regional VMT per capita would be reduced below 2040 conditions though because population under Alternative 2 would be below 2040 population modeled in AMBAG's 2045 MTP/SCS. Therefore, implementation of Alternative 2 would result in reduced operational-source, including mobile-source, GHG emissions compared to conditions in 2040 without Alternative 2, but the reduction would be less than what would occur under the proposed Seaside 2040. Overall, impacts would be less than significant, and compared to the proposed Seaside 2040, the incremental impacts on global climate change would be slightly greater.

h. Hazards and Hazardous Materials

Implementation of Alternative 2 would allow for less overall development and associated population growth in Seaside than would occur under the proposed Seaside 2040 because the future Seaside East Specific Plan area would be developed at a reduced density. As shown in Table 6-1, compared to Seaside 2040, full buildout of Alternative 2 would result in fewer residents of Seaside than the proposed Seaside 2040. Additionally, buildout of Alternative 2 would also result in 120 fewer hotel rooms and approximately 2,273 fewer jobs. Therefore, Alternative 2 would expose fewer people to potential hazards and hazardous materials as compared to Seaside 2040. Mandatory compliance with applicable regulations related to the handling and storage of hazardous materials and adherence to proposed Seaside 2040 policies would minimize the risk of spills and the public's potential exposure to these substances. Similar to Seaside 2040, impacts of Alternative 2 related to hazardous materials would be less than significant.

i. Hydrology and Water Quality

Implementation of Alternative 2 would involve less overall development and associated growth than would occur under the proposed Seaside 2040 because the future Seaside East Specific Plan area would be developed at a reduced density. Less overall development would result in less impervious surface and stormwater runoff. Additionally, because fewer employment uses would be constructed, less surface parking would be required. Urban pollutants that accumulate on parking lots and become mobile in stormwater runoff would be reduced. Regardless of the potential implementation of either Alternative 2 or the proposed Seaside 2040, the goals and policies contained in the proposed Seaside 2040 would be implemented and applicable. These goals and policies would reduce potential water quality impacts to less than significant. Additionally, development under this alternative would be subject to the same regulatory requirements, such as NPDES permit requirements, governing runoff and protecting water quality and supply as the proposed Seaside 2040. Impacts under this alternative would be less than significant and similar to Seaside 2040.

j. Land Use and Planning

Implementation of Alternative 2 would involve less overall development and associated growth than would occur under the proposed Seaside 2040 because the future Seaside East Specific Plan area would be developed at a reduced density. Compared to Seaside 2040, Alternative 2 would not result in additional or other inconsistencies with applicable land use plans, policies, or regulations of an

agency with jurisdiction over the project. However, because Alternative 2 would result in fewer residential units and jobs within Seaside, it would be less consistent with AMBAG *Monterey Bay 2045 MTP/SCS* (AMBAG 2022). The AMBAG *Monterey Bay 2045 MTP/SCS* (AMBAG 2022) promotes high-density infill development in order to reduce vehicle trips and GHG emissions. As described above, Alternative 2 would have slightly less GHG emissions compared to the proposed Seaside 2040. Therefore, impacts related to consistency with applicable land use plans, policies, or regulations would be less than significant, and similar to the proposed Seaside 2040.

k. Noise

Alternative 2 would result in less overall construction compared to the proposed Seaside 2040 because development density would be less within the future Seaside East Specific Plan area under this alternative. Therefore, implementation of Alternative 2 would result in reduced impacts related to temporary and short-term increases in ambient noise levels as compared to the proposed Seaside 2040. Additionally, vibration impacts from construction activities, such as pile driving, could also be reduced compared to the proposed Seaside 2040.

The future Seaside East Specific Plan area is located adjacent to the east side of General Jim Moore Boulevard. As shown in Figure 4.11-1, existing noise contours along General Jim Moore Boulevard reach 70 dBA Ldn. Implementation of Alternative 2 would result in less residential development along General Jim Moore Boulevard compared to the proposed Seaside 2040 because less residential development would be constructed in the future Seaside East Specific Plan area.

Alternative 2 would result in potentially significant impacts from the development that would occur in other areas of Seaside, outside of the future Seaside East Specific Plan area. These impacts would be the same as described for the proposed Seaside 2040 in Section 4.11, *Noise*. Similar to Seaside 2040, this alternative would include implementation of noise policies and implementation programs N 6 (Construction Vibration Control Measures), N 7 (Reduce Motor Vehicle Noise), and N 8 (Reduce Rail Noise). With implementation of these policies and programs, in addition to Mitigation Measure N-1, noise impacts would be less than significant. Overall, Alternative 2 would result in slightly reduced noise impacts compared to the proposed Seaside 2040.

l. Population and Housing

Implementation of Alternative 2 would allow for less residential development and associated direct population growth in Seaside than would occur under the proposed Seaside 2040 because the future Seaside East Specific Plan area would be developed at a reduced density. Implementation of Alternative 2 would also allow for less indirect population growth because approximately 2,273 fewer jobs would be created in Seaside than compared to the proposed Seaside 2040.

Alternative 2 would not change the land use development and redevelopment envisioned in the proposed Seaside 2040 for other areas of Seaside, outside of the future Seaside East Specific Plan area. As described in Section 4.12, *Population and Housing*, redevelopment in these areas could displace existing residential units, potentially necessitating the need for replacement housing for displaced residents. Full buildout of Alternative 2 would add approximately 1,690 fewer new residential units to Seaside as compared to the proposed Seaside 2040. Therefore, implementation of Alternative 2 would provide less potential replacement housing for displaced residents as compared to the proposed Seaside 2040. Nonetheless, compliance with Seaside 2040 Policy "No net loss" under Goal LUD-9 in combination with Policy "Neighborhood character" under Goal LUD-10 would ensure that housing placement is provided for potentially displaced residents under

Alternative 2. Impacts of Alternative 2 on population and housing would be less than significant, and impacts would be similar to the proposed Seaside 2040.

m. Public Services and Recreation

Compared to the proposed Seaside 2040, full buildout of Alternative 2 would result in approximately 7,316 fewer residents in Seaside. Therefore, implementation of Alternative 2 would generate less demand for fire, police, school, and library services compared to the proposed Seaside 2040. As a result, less expansion of existing fire, police, school, and library facilities, or new construction of these facilities would be required under Alternative 2. However, Seaside 2040's goals and policies would mitigate some potential impacts associated with demand increases (including but not limited to Goal S-1: A High Standard of Police Services with a Focus on Community-based Crime Prevention, and Goal S-6: Minimization of Risk of Fire Hazards in the City and Wildfire Hazards on Former Fort Ord Lands through Fire Prevention Design and Fuel Reduction Strategies**).** Potential adverse impacts would be less than significant and reduced compared to the proposed Seaside 2040.

Full buildout of Alternative 2 would result in fewer residential units and residents compared to the proposed Seaside 2040 because the future Seaside East Specific Plan area would be developed at a reduced density under this alternative. Therefore, demand of existing parks and recreational facilities would be less under Alternative 2 as compared to the proposed Seaside 2040.

Implementation of Alternative 2 would result in more land within the future Seaside East Specific Plan area being managed for the preservation of natural resources than would otherwise be developed within Seaside under the proposed Seaside 2040. While preservation as habitat would create additional natural and open space, recreational opportunities in this area would be limited to certain dispersed recreational activities not requiring development facilities. However, the new parks, trails and recreational facilities envisioned in Seaside 2040 within or near future Seaside East Specific Plan area would also be constructed under implementation of Alternative 2. Alternative 2 would result in less demand on existing recreational facilities and parks, and would also result in less environmental impacts associated with development of new recreational facilities. Therefore, compared to the proposed Seaside 2040, implementation of Alternative 2 would be less than significant and would result in reduced recreation impacts.

o. Transportation

Compared to the proposed Seaside 2040, full buildout of Alternative 2 would result in approximately 2,360 fewer residential units and approximately 7,316 fewer residents in Seaside. The average daily vehicle trips that would have been generated from these residents under Seaside 2040 would be avoided. Additionally, fewer jobs and hotel rooms would be developed under this alternative, and vehicle trips associated with these jobs and lodging would be avoided. Therefore, implementation of Alternative 2 would result in reduced traffic volumes within Seaside compared to the proposed Seaside 2040.

While citywide traffic growth would be less under Alternative 2 than Seaside 2040, regional VMT per capita would potentially be greater. As described above, Alternative 2 would result in fewer residential units and fewer jobs in Seaside. However, the reduction in residential units would be greater than the reduction in jobs, which could result in people living near Seaside and commuting into the city for employment. Because the total commute distance would be greater under this scenario, regional VMT per capita would increase compared to Seaside 2040, which accommodates more residential units in proximity to employment. However, because this alternative includes the

same policies as Seaside 2040 promoting transit and active transportation, and would also still include infill and mixed-use development, regional VMT per capita would be less than conditions without this alternative in 2040. Thus, overall, impacts of Alternative 2 would be less than significant, but would be slightly greater than the proposed Seaside 2040.

p. Tribal Cultural Resources

The future Seaside East Specific Plan area would be developed at a reduced density under this alternative. As a result, ground disturbance and excavation required for construction of the development envisioned in the proposed Seaside 2040 for the future Seaside East Specific Plan area would be reduced. Therefore, implementation of Alternative 2 would have less potential to encounter unknown or undiscovered tribal cultural resources as compared to the proposed Seaside 2040. Development facilitated by Alternative 2 would similarly be required to comply with laws and regulations requiring Native American consultation, protection of human remains, and pre-historic artifacts. Compared to the proposed Seaside 2040, Alternative 2 would have reduced impacts.

Furthermore, the future Seaside East Specific Plan area does not contain goals or policies to directly address Native American cultural resources. However, the proposed Comprehensive Land Use Update contains a goal and policy to "provide for the protection and/or support of tribal cultural resources in the city and at the former Ford Ord" (Goal C-8: A strong sense of cultural and historic heritage). Seaside 2040 would also include policies and an implementation program that would reduce potential impacts to tribal cultural resources. This alternative would similarly require the implementation of Mitigation Measure TC-1. Despite these policies and less ground disturbance in Seaside, there would remain the potential for tribal cultural resources to be impacted from construction activities under Alternative 2. Impacts would be significant and unavoidable, as they are for the proposed project.

q. Utilities and Service Systems

Full buildout of Alternative 2 would result in approximately 2,360 fewer residential units compared to the proposed Seaside 2040. Additionally, buildout of Alternative 2 would also result in fewer structures associated with commercial, retail, office, and visitor-serving uses. Therefore, compared to the proposed Seaside 2040, Alternative 2 would generate less demand for utilities and service systems. However, because this alternative would place less emphasis on mixed-use, high-density development, and high-density development typically results in less water consumption that an equivalent number of single-family units, Alternative 2 would potentially generate more demand for water than there would be supplies in 2040. Impacts would be potentially significant and greater than impacts of Seaside 2040.

r. Wildfire

As shown on Figure 4.17-1 in Section 4.17, *Wildfire*, almost all of the future Seaside East Specific Plan area is designated as having a very-high, high, or moderate fire hazard. Because the future Seaside East Specific Plan area would be developed at a reduced density under this alternative, fewer people, structures, and infrastructure would be exposed to wildland fire hazard. However, because more natural area would be preserved, this alternative could result in increased fire fuels within proximity to development. Nonetheless, because fewer people and structures would be exposed to potential hazardous materials and wildland fire hazards as compared to the proposed Seaside 2040, impacts of Alternative 2 would be slightly reduced. Due to development occurring

within fire hazard severity zones, impacts to wildfire under Alternative 2 would remain significant and unavoidable.

6.5 Alternative 3: Multi-Family Residential Focused

6.5.1 Description

As described above, the future Seaside East Specific Plan area is one of the City's primary growth areas. One of the primary strategies of Seaside 2040 is development of the future Seaside East Specific Plan area in a way that balances new diverse neighborhoods with the preservation of natural areas and resources. The future Seaside East Specific Plan area corresponds with the area that would be designated as future Seaside East Specific Plan designation south of Gigling Road and east of General Jim Moore Boulevard.

Alternative 3: Multi-Family Residential Focused Alternative would also develop the future Seaside East Specific Plan area with new and diverse neighborhoods while preserving natural areas and resources, consistent with the strategy contain in the proposed Seaside 2040. However, this alternative would build on the preservation of natural areas within the future Seaside East Specific Plan area by reducing the amount of new development compared to the proposed Seaside 2040. This alternative would also focus residential development within the future Seaside East Specific Plan area on multi-family dwelling units. Generally, multi-family residential units allow for more compact development compared to single-family residential units. Therefore, this alternative would further maximize the preservation of natural areas within the future Seaside East Specific Plan area.

Under Alternative 3, a total of approximately 1,690 residential dwelling units would be constructed within Seaside by 2040. This would be approximately 2,360 fewer units than would be constructed under implementation of the proposed Seaside 2040. However, under Alternative 3, the approximately 1,390 residential dwelling units would consist of approximately 1,014 multi-family residential dwelling units and approximately 676 single-family residential dwelling units. This alternative would construct 220 hotel and temporary lodging rooms, which is the same number of rooms that would be constructed under the proposed Seaside 2040. Additionally, less employment would be constructed as compared to Seaside 2040 because less commercial and retail space would be constructed. A comparison of the development that would occur under Alternative 3 and the proposed Seaside 2040 is provided in Table 6-2.

Table 6-2 Alternative 3 Development Demand Comparison through 2040

Land Use	Seaside 2040[1]	Alternative 3	Relative Change Compared to Seaside 2040
Single-Family Residential	1,651 Dwelling Units	676 Dwelling Units	Decrease of 975 Dwelling Units
Multi-Family Residential	2,398 Dwelling Units	1,014 Dwelling Units	Decrease of 1,384 Dwelling Units
Total Residential Units	**4,050 Dwelling Units**	**1,690 Dwelling Units**	**Decrease of 2,360 Dwelling Units**
Hotel/Temporary Lodging	165 Jobs 220 Rooms	165 Jobs 220 Rooms	Decrease of 0 Jobs No Change
Retail Jobs	1,300 Jobs (198,470 SF)	655 Jobs (100,000 SF)	Decrease of 645 Jobs (Decrease of 98,470 SF)
Service Jobs	2,063 Jobs (416,400 SF)	1,981 Jobs (400,000 SF)	Decrease of 82 Jobs (Decrease of 16,400 SF)

Land Use	Seaside 2040[1]	Alternative 3	Relative Change Compared to Seaside 2040
Industrial Jobs	665 Jobs (340,691 SF)	481 Jobs (250,000 SF)	Decrease of 174 Jobs (Decrease of 90,691 SF)
Public Jobs	576 Jobs (117,232 SF)	294 Jobs (60,000 SF)	Decrease of 282 Jobs (Decrease of 57,232 SF)
Total Employment	**4,759 Jobs (1,072,793 SF)**	**3,576 Jobs (810,000 SF)**	**Decrease of 1,183 Jobs (Decrease of 262,793 SF)**

[1] Source: Raimi + Associates, Seaside Growth Projections, February 20, 2018

Because approximately 2,360 fewer dwelling units would be constructed within the future Seaside East Specific Plan area under Alternative 3, population density of the focus area would also be reduced compared to Seaside 2040. Assuming 3.1 people per household, full buildout of Alternative 3 would result in a population of approximately 38,981 in 2040. This would be approximately 7,316 fewer residents compared to the 2040 population under implementation of the proposed Seaside 2040 (46,297 people).

Under Alternative 3, the land use designation of future Seaside East Specific Plan would not change from the proposed Seaside 2040, but rather the development density, as described above. Likewise, no other land use designations, goals, or policies included the proposed Seaside 2040 would change under implementation of Alternative 3.

6.5.2 Impact Analysis

a. Aesthetics

Alternative 3 would result in fewer residential units and less commercial, retail, office, and industrial development than would occur under the proposed Seaside 2040 within the future Seaside East Specific Plan area. The potential aesthetic impacts associated with development of this area, as described in Section 4.1, *Aesthetics*, would also occur under this alternative. However, impacts would be reduced because development density would be lower and more natural vegetation cover would be retained. Therefore, the existing visual character of the future Seaside East Specific Plan area would be altered less under this alternative. Potential impacts associated with scenic resources and visual character would be less as compared to Seaside 2040. Additionally, because fewer residential units and employment structures would be developed under Alternative 3, fewer sources of light and glare would also be created from this alternative. Overall, Alternative 3 would have less than significant impacts on aesthetics which would be reduced as compared to Seaside 2040.

b. Air Quality

Implementation of Alternative 3 would involve less construction-related emissions of air pollutants than would occur under the proposed Seaside 2040 because the future Seaside East Specific Plan area would be developed at a reduced density, with less overall construction. Full buildout of Alternative 3 would result in approximately 2,360 fewer residential units compared to Seaside 2040, as shown in Table 6-2. Therefore, the long-term on-site emissions from use of natural gas for residential heating, cooking, and water heating would be reduced compared to the proposed Seaside 2040. Additionally, less commercial, retail, office, and industrial uses would be developed, and on-site emissions from natural gas for heating of these uses would also be reduced under this alternative.

The Seaside 2040 policies that would reduce mobile source emissions by promoting mixed-use and infill development and supporting bike, pedestrian, and mass transit would not be modified by Alternative 3. As a result, this alternative would result in a reduction of regional VMT per capita as compared to conditions in 2040 without this alternative or the proposed Seaside 2040. However, because fewer residential units would be constructed in Seaside under Alternative 3, people may live elsewhere and commute into the City for employment. These trips would be longer than trips originating from within the City, resulting in increased regional VMT per capita compared to Seaside 2040. The increased regional VMT per capita compared with the Seaside 2040 would result in a corresponding increase in the level of mobile-source emissions. Because mobile-source emissions are the predominant source of operational emissions and would be slightly greater under this alternative, overall Alternative 3 would have slightly greater air quality impacts than the proposed Seaside 2040. Similar to the proposed Seaside 2040, impacts of this alternative would be less than significant.

c. Biological Resources

Implementation of Alternative 3 would involve less overall development and associated growth in Seaside than would occur under the proposed Seaside 2040 because the future Seaside East Specific Plan area would be developed at a reduced density. As described above, Alternative 3 would preserve more natural areas within the future Seaside East Specific Plan area as compared to Seaside 2040. As shown on Figure 4.3-1 in Section 4.3, *Biological Resources*, vegetation communities in the future Seaside East Specific Plan area consist predominantly of native shrub, chaparral, and woodland communities. Therefore, Alternative 3 would result in reduced impacts on native vegetation cover, including oak trees, as compared to the proposed Seaside 2040. Potential conflicts with local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance would be reduced compared to Seaside 2040. Similar to proposed Seaside 2040, impacts would be less than significant.

As shown on Figure 4.3-2 in Section 4.3, *Biological Resources*, the future Seaside East Specific Plan area coincides with several reported occurrences of special-status species, such as Monterey gilia and sand-loving wallflower. The future Seaside East Specific Plan area also coincides with Central Maritime Chaparral natural community. Therefore, Alternative 3 would result in reduced impacts on special-status species and sensitive natural communities compared to the proposed Seaside 2040 because more habitat and natural community would be preserved.

Overall, compared to the proposed Seaside 2040, implementation of Alternative 3 would have reduced impacts on biological resources. However, this alternative would include some development in the future Seaside East Specific Plan area, as well as the development envisioned in Seaside 2040 for the other areas of Seaside. Therefore, Alternative 3 would have potential to have potentially significant impacts on biological resources. Similar to the proposed Seaside 2040, implementation of policies and implementation programs would reduce potentially significant impacts. Impacts would be less than significant, similar to the proposed Seaside 2040.

d. Cultural Resources

As shown on Figure 4.4-2 in Section 4.4, *Cultural Resources*, the archeological sensitivity is undetermined for the future Seaside East Specific Plan area. Alternative 3 would result in less ground disturbance in areas of undetermined archaeological sensitivity because less construction would occur within the future Seaside East Specific Plan area, and more natural areas would be

preserved. Therefore, Alternative 3 would have less potential to encounter or disturb unknown or undiscovered cultural resources in the City compared to the proposed Seaside 2040.

However, this alternative would include some development in the future Seaside East Specific Plan area, as well as the development envisioned in Seaside 2040 for the other areas of Seaside. Therefore, Alternative 3 would have potential to encounter cultural resources. Implementation of Seaside 2040 policies and programs, and Mitigation Measures CR-1 and CR-2 would reduce impacts to be slightly less than the proposed Seaside 2040, but impacts would be significant and unavoidable.

e. Energy

Implementation of Alternative 3 would involve less overall development and associated growth in Seaside than would occur under the proposed Seaside 2040 because the future Seaside East Specific Plan area would be developed at a reduced density. Thus, energy consumed for construction, primarily fuel consumption for heavy equipment, would be reduced compared to the proposed Seaside 2040. Because there would be fewer residential dwelling units and commercial space under Alternative 3, the long-term energy consumption from use of natural gas for heating, cooling, cooking, and water heating would be reduced compared to the proposed Seaside 2040. Although energy consumption associated with heating, cooling, cooking, and water heating would be reduced, as described below under "*Transportation*," regional VMT per capita under this alternative would be slightly greater in 2040 compared with regional VMT per capita under Seaside 2040 because more people may reside outside of Seaside but commute into the city for employment. Because regional VMT per capita would be greater under this alternative as compared with Seaside 2040, fuel consumption would also be higher under this alternative. Compliance with regulatory programs to reduce waste and excessive energy consumption, such as CalGreen, would reduce impacts to less than significant. However, impacts of Alternative 3 would be slightly greater compared with Seaside 2040 due to increased VMT.

f. Geology and Soils

Implementation of Alternative 3 would result in less construction of new development compared to the proposed Seaside 2040, because the future Seaside East Specific Plan area would be developed at a reduced density under this alternative. Less construction would result in less ground disturbance and reduced potential for soil erosion. Full buildout of Alternative 3 would result in fewer residential units and residents compared to the proposed Seaside 2040. Additionally, buildout of Alternative 3 would also result in fewer structures associated with commercial, retail, office, and industrial uses. Therefore, compared to Seaside 2040, Alternative 3 would expose fewer people and structures to geologic and seismic hazards. Alternative 3 would result less than significant impacts on geology and soils.

Alternative 3 would facilitate development in previously undisturbed areas where paleontological resources could be present. While less ground disturbance would occur under this alternative as compared to Seaside 2040, the potential to encounter paleontological resources would remain a possibility. Therefore, this alternative would have similar significant impacts to paleontological resources. Construction in this area would have the potential to uncover and impact paleontological resources, similar to Seaside 2040, requiring the implementation of Mitigation Measure GEO-5. Because paleontological resources impacts would be similar but geologic impacts would be less compared to the proposed Seaside 2040, impacts of Alternative 3 would be slightly reduced.

g. Greenhouse Gas Emissions

Because fewer structures would be constructed in Seaside under Alternative 3, construction-source GHG emissions would be reduced as compared to the proposed Seaside 2040. Compared to Seaside 2040, full buildout of Alternative 3 would result in approximately 7,316 fewer residents. The average daily vehicle trips that would have been generated from these residents under the proposed Seaside 2040 would be avoided. Additionally, fewer jobs would be developed under this alternative, and localized vehicle trips associated with these jobs would be avoided. However, because this alternative would generate some new employment in the City while also reducing the number of new residential units, people may choose to reside elsewhere but commute into Seaside for employment. These trips would generate VMT and associated mobile-source emissions. Therefore, implementation of Alternative 3 would result in slightly greater operational-source emissions due to increased regional VMT compared to the proposed Seaside 2040. Overall, compared to Seaside 2040, the incremental impacts on global climate change would be slightly greater, and less than significant.

h. Hazards and Hazardous Materials

Buildout of Alternative 3 would result in fewer residents and fewer jobs within the future Seaside East Specific Plan area. Therefore, Alternative 3 would expose fewer people to potential hazards and hazardous materials as compared to the proposed Seaside 2040. Mandatory compliance with applicable regulations related to the handling and storage of hazardous materials and adherence to Seaside 2040 policies would minimize the risk of spills and the public's potential exposure to these substances. Similar to Seaside 2040, impacts of Alternative 3 related to hazardous materials would be less than significant.

i. Hydrology and Water Quality

Implementation of Alternative 3 would involve less overall development and associated growth than would occur under the proposed Seaside 2040 because the future Seaside East Specific Plan area would be developed at a reduced density. Less overall development would result in less impervious surface and stormwater runoff. Additionally, multi-family residential dwelling units would make up a larger percentage of the residential development under this alternative compared to the proposed Seaside 2040. Because multi-family residential development allows for multiple households to reside within the same structure, less impervious surface would be required to house the same number of people in single-family residential dwelling units. This would generate less stormwater runoff and allow for more infiltration of groundwater compared with the proposed Seaside 2040.

Because fewer employment uses would be constructed under Alternative 3, less surface parking would be required within the future Seaside East Specific Plan area. Urban pollutants that accumulate on parking lots and become mobile in stormwater runoff would be reduced. Regardless of the potential implementation of either Alternative 3 or the proposed Seaside 2040, the goals and policies contained in Seaside 2040 would be implemented and applicable. These goals and policies would reduce potential water quality impacts to less than significant. Additionally, development under this alternative would be subject to the same regulatory requirements, such as NPDES permit requirements, governing runoff and protecting water quality and supply as proposed Seaside 2040. Impacts under Alternative 3 would be less than significant and reduced as compared to proposed Seaside 2040.

j. Land Use and Planning

Implementation of Alternative 3 would involve less overall development and associated growth than would occur under the proposed Seaside 2040 because the future Seaside East Specific Plan area would be developed at a reduced density. Compared to the proposed Seaside 2040, Alternative 3 would not result in additional or other inconsistencies with applicable land use plans, policies, or regulations of an agency with jurisdiction over the project. However, because Alternative 3 would result in fewer residential units and jobs within Seaside, it would be less consistent with AMBAG *Monterey Bay 2045 MTP/SCS* (AMBAG 2022). The AMBAG *Monterey Bay 2045 MTP/SCS* (AMBAG 2022) promotes high-density infill development in order to reduce vehicle trips and GHG emissions. As described above, Alternative 3 would have slightly greater GHG emissions compared to the proposed Seaside 2040 because Alternative 3 could result in lengthier commute trips originating from outside of the City. Impacts related to consistency with applicable land use plans, policies, or regulations would be less than significant, and similar to the proposed Seaside 2040.

k. Noise

Alternative 3 would result in less overall construction compared to the proposed Seaside 2040 because development density would be less within the future Seaside East Specific Plan area under this alternative. Therefore, implementation of Alternative 3 would result in reduced impacts related to temporary and short-term increases in ambient noise levels as compared to the proposed Seaside 2040. Additionally, vibration impacts from construction activities, such as pile driving, could also be reduced compared to the proposed Seaside 2040.

The future Seaside East Specific Plan area is located adjacent to the east side of General Jim Moore Boulevard. As shown in 26, existing noise contours along General Jim Moore Boulevard reach 70 dBA L_{dn}. Implementation of Alternative 3 would result in less residential development along General Jim Moore Boulevard compared to the proposed Seaside 2040 because less residential development would be constructed in the future Seaside East Specific Plan area.

Alternative 3 would result in potentially significant impacts from the development that would occur in other areas of Seaside, outside of the future Seaside East Specific Plan area. These impacts would be the same as described for Seaside 2040 in Section 4.11, *Noise*. Similar to Seaside 2040, this alternative would include implementation of noise policies and implementation programs N 6 (Construction Vibration Control Measures), N 7 (Reduce Motor Vehicle Noise), and N 8 (Reduce Rail Noise). With implementation of these policies and programs, in addition to Mitigation Measure N-1, noise impacts would be less than significant. Overall, Alternative 3 would result in slightly reduced noise impacts compared to the proposed Seaside 2040.

l. Population and Housing

Implementation of Alternative 3 would allow for less overall development and associated population growth in Seaside than would occur under the proposed Seaside 2040 because the future Seaside East Specific Plan area would be developed at a reduced density. Compared to the proposed Seaside 2040, implementation of Alternative 3 would allow for less direct population growth in Seaside. Implementation of Alternative 3 would also allow for less indirect population growth because fewer jobs would be created in Seaside than compared to Seaside 2040.

Alternative 3 would not change the land use development and redevelopment envisioned in the proposed Seaside 2040 for other areas of Seaside, outside of the future Seaside East Specific Plan area. As described in Section 4.12, *Population and Housing*, redevelopment in these areas could

displace existing residential units, potentially necessitating the need for replacement housing for displaced residents. Full buildout of Alternative 3 would add fewer new residential units to Seaside as compared to the proposed Seaside 2040. Therefore, implementation of Alternative 3 would provide less potential replacement housing for displaced residents as compared to the proposed Seaside 2040. Nonetheless, compliance with Seaside 2040 Policy "No net loss" under Goal LUD-9 in combination with Policy "Neighborhood character" under Goal LUD-10 would ensure that housing placement is provided for potentially displaced residents under Alternative 3. Compared to the proposed Seaside 2040, implementation of Alternative 3 would have a similar impact on population and housing, and impacts would be less than significant.

m. Public Services and Recreation

Compared to the proposed Seaside 2040, implementation of Alternative 3 would generate less demand for fire, police, school, and library services compared to the proposed Seaside 2040. As a result, less expansion of existing fire, police, school, and library facilities, or new construction of these facilities would be required under Alternative 3. Potential adverse impacts would be reduced compared to the proposed Seaside 2040 and less than significant without mitigation.

Full buildout of Alternative 3 would result in fewer residents compared to the proposed Seaside 2040. Therefore, demand of existing parks and recreational facilities would be less under Alternative 3 as compared to the proposed Seaside 2040.

Implementation of Alternative 3 would result in more land within the future Seaside East Specific Plan area being managed for the preservation of natural resources than would otherwise be developed within Seaside under the proposed Seaside 2040. While preservation as habitat would create additional natural and open space, recreational opportunities in this area would be limited to certain dispersed recreational activities not requiring development facilities. However, the new parks, trails and recreational facilities envisioned in the proposed Seaside 2040 within or near future Seaside East Specific Plan area would also be constructed under implementation of Alternative 3. Alternative 3 would result in less demand on existing recreational facilities and parks, and would also result in less environmental impacts associated with development of new recreational facilities. Therefore, compared to the proposed Seaside 2040, implementation of Alternative 3 would result in reduced recreation impacts. Impacts would be less than significant without mitigation.

o. Transportation

Compared to the proposed Seaside 2040, full buildout of Alternative 3 would result in fewer residents in Seaside. The localized average daily vehicle trips that would have been generated from these residents under Seaside 2040 would be avoided. Additionally, fewer jobs would be developed under this alternative, and the localized vehicle trips associated with these jobs would be avoided. Therefore, implementation of Alternative 3 would result in reduced traffic volumes within Seaside compared to the proposed Seaside 2040.

While citywide traffic growth would be less under Alternative 3 than Seaside 2040, regional VMT per capita would potentially be greater. As described above, Alternative 3 would result in fewer residential units and fewer jobs in Seaside. However, the reduction in residential units would be greater than the reduction in jobs, which could result in people living near Seaside and commuting into the City for employment. Because the total commute distance would increase, regional VMT per capita would increase compared to Seaside 2040, which accommodates more residential units in proximity to employment than Alternative 3. However, because this alternative includes the same policies as Seaside 2040 promoting transit and active transportation, and would also still include

infill and mixed-use development, regional VMT per capita would be less than conditions without this alternative in 2040. Overall, impacts of Alternative 3 would be less than significant, but would be slightly greater than the proposed Seaside 2040.

p. Tribal Cultural Resources

Alternative 3 would be developed at a reduced density under this alternative. As a result, ground disturbance and excavation required for construction of the development envisioned in Seaside 2040 for the future Seaside East Specific Plan area would be reduced. Therefore, implementation of Alternative 3 would have less potential to encounter unknown or undiscovered tribal cultural resources as compared to the proposed Seaside 2040. Impacts would be reduced with required adherence to laws and regulations requiring Native American consultation, protection of human remains, and pre-historic artifacts, and implementation of Mitigation Measure TC-1; but some resources could be unavoidable. Therefore, impacts would remain significant and unavoidable.

q. Utilities and Service Systems

Full buildout of Alternative 3 would result in fewer residents than under implementation of the proposed Seaside 2040. Additionally, buildout of Alternative 3 would also result in fewer structures associated with commercial, retail, office, and visitor-serving uses. Therefore, compared to the proposed Seaside 2040, Alternative 3 would generate less demand for utilities and service systems. Impacts would be less than the proposed Seaside 2040 and would be less than significant.

r. Wildfire

As shown on Figure 4.17-1 in Section 4.17, *Wildfire*, most of the future Seaside East Specific Plan area is designated as having a very-high, high, or moderate fire hazard. Because the future Seaside East Specific Plan area would be developed at a reduced density under this alternative, fewer people, structures, and infrastructure would be exposed to wildland fire hazard. Additionally, a higher percentage of the residential dwelling units that would be constructed under this alternative would be multi-family dwelling units. Because multi-family residential development allows for multiple households to reside within the same structure, it could be easier for firefighting efforts to protect a larger number of residential dwelling units in the event of a wildland fire. However, alternatively, because more natural area would be preserved, this alternative could result increase fire fuels within proximity to development. Nonetheless, because fewer people and structures would be exposed to potential wildland fire hazards as compared to the proposed Seaside 2040, impacts would be slightly reduced. Due to development occurring within fire hazard severity zones, impacts to wildfire under Alternative 3 would remain significant and unavoidable.

6.6 Alternative 4: Increased Residential and Commercial Density

6.6.1 Description

Seaside 2040 encourages infill and mixed-use development, locating peoples place of residency near other uses, such as employment and retail. Alternative 4: Increased Residential and Commercial Density, would build on this concept and facilitate the growth of new housing units in Seaside to achieve approximately 75 percent more residential density than that of Seaside 2040. Under Alternative 4, a total of approximately 7,163 residential dwelling units would be constructed within Seaside by 2040, which would be an increase of approximately 3,113 units compared with Seaside

2040. This alternative would also increase the density of employment (i.e., retail and commercial space) such that total jobs in the City increases by 50 percent above jobs created under Seaside 2040. A comparison of the development that would occur under Alternative 4 and the proposed Seaside 2040 is provided in Table 6-3.

Table 6-3 Alternative 4 Development Demand Comparison through 2040

Growth Parameter	Seaside 2040[1]	Alternative 4	Relative Change Compared to Seaside 2040
Population	12,555 People	22,205 People	Increase of 9,650 People
Total Residential	4,050 Dwelling Units	7,163 Dwelling Units	Increase of 3,113 Dwelling Units
Total Employment	4,604 Jobs	6,906 Jobs	Increase of 2,602 Jobs

[1] Source: Raimi + Associates, Seaside Growth Projections, September 27, 2017

Because approximately 3,113 more dwelling units would be constructed within Seaside under Alternative 4, population density would also be greater compared to Seaside 2040. Assuming 3.1 people per household, full buildout of Alternative 4 would result in a population of approximately 55,947 in 2040. This would be approximately 9,650 more residents compared to the 2040 population under implementation of the proposed Seaside 2040 (46,297 people).

6.6.2 Impact Analysis

a. Aesthetics

Alternative 4 would result in more and larger residential units in Seaside than would occur under the proposed Seaside 2040 and more commercial, retail, office, and industrial development. The potential aesthetic impacts associated with development of Seaside, as described in Section 4.1, *Aesthetics*, would also occur under this alternative. However, impacts would be greater because residential and commercial development density would be increased, resulting more and potentially larger buildings and less open space and natural vegetation. Additionally, to accommodate the approximately 7,163 new dwelling units in the City under this alternative, there would be more multi-family units and residential buildings would likely be larger and possibly taller than under Seaside 2040 and existing conditions. Therefore, the existing visual character of Seaside would be altered more under this alternative. Potential impacts associated with scenic resources and visual character would be more as compared to Seaside 2040. Additionally, because larger residential units and commercial buildings would be constructed, views of the hillsides to the east of Seaside may be obstructed from more locations than would occur under Seaside 2040. Overall, Alternative 4 would have greater impacts on aesthetics than Seaside 2040, and impacts would be potentially significant.

b. Air Quality

Implementation of Alternative 4 would involve more construction-related emissions of air pollutants than would occur under the proposed Seaside 2040 because more residential and commercial development would be constructed in the City. Full buildout of Alternative 4 would result in approximately 3,113 more residential units compared to Seaside 2040, as shown in Table 6-3. Therefore, the long-term on-site emissions from use of natural gas for residential heating, cooking, and water heating would be increased compared to the proposed Seaside 2040. Additionally, more

commercial, retail, office, and industrial uses would be developed, and on-site emissions from natural gas for heating of these uses would also occur consistent with Seaside 2040 under this alternative.

As described in Section 4.2, *Air Quality*, population growth forecasted under Seaside 2040 would exceed the growth forecasts used to develop the MBARD AQMP. This alternative would result in approximately 9,650 more residents in the City by 2040 than what is projected under Seaside 2040. Therefore, Alternative 4 would exceed the MBARD AQMP growth forecasts to a greater degree than Seaside 2040. However, future growth forecasts would be updated to reflect the land use scenario of this alternative, and this alternative includes the same Seaside 2040 policies to reduce emissions associated with development. Therefore, impacts related to conflicts with applicable air quality plans would be less than significant, and slightly greater than Seaside 2040.

The Seaside 2040 policies that would reduce mobile source emissions by promoting mixed-use and infill development and supporting bike, pedestrian, and mass transit would not be modified by Alternative 4. Additionally, because much of Seaside is currently developed, the increased residential density under this alternative would likely consist largely of infill development. To accommodate the number of residential dwelling units envisioned under Alternative 4, infill residential development would likely be higher density compared to Seaside 2040. This would result in more people within urban centers of the city, where transit and opportunities for active transportation are more readily available. Additionally, because commercial space would also increase, there would likely be more mixed-use development providing commercial and retail space in the same structure. The availability of transit and the ability to walk or bicycle to a variety of land uses, such as employment or shopping, would reduce citywide VMT per capita. Given the number of people that would be able to reside in proximity to transit and employment under Alternative 4, the regional increase would likely be greater than under Seaside 2040. Overall, air quality impacts would be less than significant and slightly less than Seaside 2040 impacts.

c. Biological Resources

Implementation of Alternative 4 would involve more development and associated growth in Seaside than would occur under the proposed Seaside 2040 because residential and commercial development would be constructed at a greater density. However, development would likely occur in the same areas of the City as development under Seaside 2040, only the structures would be larger and there would be more multi-family units and mixed-use development. Therefore, Alternative 4 would result in approximately the same amount of construction disturbance in native vegetation cover and impact approximately the same number of trees and species as Seaside 2040.Overall, compared to the proposed Seaside 2040, implementation of Alternative 4 would result in similar impacts on biological resources. Therefore, Alternative 4 would have potential to have potentially significant impacts on biological resources. Implementation of Seaside 2040 policies and programs under this alternative would reduce potentially significant impacts to a less than significant level, similar to the proposed Seaside 2040.

d. Cultural Resources

Implementation of Alternative 4 would involve more development and associated growth in Seaside than would occur under the proposed Seaside 2040 because residential and commercial development would be constructed at a greater density. However, development would likely occur in the same areas of the City as development under Seaside 2040, only the structures would be larger and there would be more multi-family units and mixed-use development. Therefore,

Alternative 4 would result in approximately the same amount of construction disturbance as Seaside 2040. Because there would be more multi-family residential and mixed-use development, there could be more underground parking provided and greater depth of disturbance related to the foundations of taller structures, which would require excavation to depths greater than could be required for development under Seaside 2040. This would increase the potential to encounter resources, even on infill properties. With implementation of Seaside 2040 policies and programs and Mitigation Measures CR-1 and CR-2, impacts would be reduced, but would remain significant and unavoidable. Overall, impacts to cultural resources under Alternative 4 would be slightly greater compared to the proposed Seaside 2040.

e. Energy

Implementation of Alternative 4 would more development and associated growth in Seaside than would occur under the proposed Seaside 2040 because residential and commercial development would be constructed at a greater density. Thus, the long-term energy consumption from use of natural gas for residential heating, cooking, and water heating would be increased, as would for commercial uses compared to the proposed Seaside 2040. However, new housing and commercial structures constructed under this alternative would be compliant with regulations and programs that increase efficiency and reduce waste and energy consumption, such as CalGreen. Additionally, as described below under "*Transportation*," Alternative 4 would result in less VMT per capita than the proposed Seaside 2040. A reduction in VMT would correlate with less fuel consumption than Seaside 2040. Considering residential and commercial energy use would be increased but mobile fuel consumption would be reduced, impacts of Alternative 4 would be similar to Seaside 2040 and less than significant.

f. Geology and Soils

Implementation of Alternative 4 would involve more development and associated growth in Seaside than would occur under the proposed Seaside 2040 because residential and commercial development would be constructed at a greater density. However, development would likely occur in the same areas of the City as development under Seaside 2040, only the structures would be larger and there would be more multi-family units and mixed-use development. Therefore, Alternative 4 would result in approximately the same amount of construction disturbance as Seaside 2040. The potential for soil erosion from construction disturbance would be approximately the same under this alternative and Seaside 2040. However, because this alternative would result in more multi-family residential and mixed-use construction, there could be a need for more below-grade parking garages and deeper foundation excavations. Construction of these garages could require deeper excavation than would be required under Seaside 2040, potentially resulting in more impacts to paleontological resources. Although impacts would increase compared to Seaside 2040, with implementation of Seaside 2040 policies and programs and Mitigation Measure GEO-5, impacts to paleontological resources would be reduced to less than significant.

Alternative 4 would result in approximately 9,650 more people residing in the City through 2040 than would occur under Seaside 2040. This alternative would also result in more residential structures and jobs. Therefore, compared to Seaside 2040, Alternative 4 would expose more people and structures to geologic and seismic hazards. Alternative 4 would result less than significant impacts on geology and soils, and impacts would be slightly greater than Seaside 2040.

g. Greenhouse Gas Emissions

Because more commercial structures and more residential structures would be constructed in Seaside under Alternative 4, construction-source GHG emissions would be increased as compared to the proposed Seaside 2040. Compared to Seaside 2040, full buildout of Alternative 4 would result in approximately 9,650 more residents and approximately 2,602 more jobs.

The Seaside 2040 policies that would reduce mobile source emissions by promoting mixed-use and infill development and supporting bike, pedestrian, and mass transit would not be modified by Alternative 4. Additionally, because much of Seaside is currently developed, the increased density under this alternative would likely consist largely of infill development and mixed-use development. To accommodate the number of residential dwelling units and additional commercial space envisioned under Alternative 4, development would likely be higher density compared to Seaside 2040. This would result in more people and jobs within the urban center of the city, where transit and opportunities for active transportation are more readily available. The availability of transit and the ability to walk or bicycle to a variety of land uses, such as employment or shopping, would reduce citywide VMT per capita. Given the number of people that would be able to reside in proximity to transit and employment under Alternative 4, the regional VMT per capita would be less than under Seaside 2040. Overall, GHG impacts would be less than significant and slightly less than Seaside 2040 impacts.

h. Hazards and Hazardous Materials

Buildout of Alternative 4 would result in more residents and more jobs within the city as compared to Seaside 2040, as shown in Table 6-3, above. Therefore, Alternative 4 would expose more people to potential hazards and hazardous materials as compared to the proposed Seaside 2040. Mandatory compliance with applicable regulations related to the handling and storage of hazardous materials and adherence to Seaside 2040 policies, which would also apply to this alternative, would minimize the risk of spills and the public's potential exposure to these substances. Similar to Seaside 2040, impacts of Alternative 4 related to hazardous materials would be less than significant.

i. Hydrology and Water Quality

Implementation of Alternative 4 would involve more overall development and associated growth than would occur under the proposed Seaside 2040 because more residential and commercial development would occur in the city. Multi-family residential dwelling units would make up a larger percentage of the residential development under this alternative compared to the proposed Seaside 2040, but the increased number of dwelling units and commercial uses would result in similar amounts of impervious surfaces to be developed within the city. Regardless of the potential implementation of either Alternative 4 or the proposed Seaside 2040, the goals and policies contained in Seaside 2040 would be implemented and applicable. These goals and policies would reduce potential water quality impacts to less than significant. Additionally, development under this alternative would be subject to the same regulatory requirements, such as NPDES permit requirements, governing runoff and protecting water quality and supply as proposed Seaside 2040. Impacts under Alternative 4 would be less than significant and similar to proposed Seaside 2040.

j. Land Use and Planning

Implementation of Alternative 4 would involve more development and associated growth in Seaside than would occur under the proposed Seaside 2040 because residential and commercial development would be constructed at a greater density. Compared to Seaside 2040, Alternative 4

would not result in additional or other inconsistencies with applicable land use plans, policies, or regulations of an agency with jurisdiction over the project. However, because Alternative 4 would result in more residential units within Seaside on infill lots and at higher density and provide more jobs in proximity to these units, it would be more consistent with AMBAG *Monterey Bay 2045 MTP/SCS* (AMBAG 2022). The AMBAG *Monterey Bay 2045 MTP/SCS* (AMBAG 2022) promotes high-density infill development in order to reduce vehicle trips and GHG emissions. As described above, Alternative 4 would have slightly less GHG emissions compared to the proposed Seaside 2040 because Alternative 4 could result in higher use of transit and more active transportation mode within the City. Impacts related to consistency with applicable land use plans, policies, or regulations would be less than significant and slightly reduced compared to the proposed Seaside 2040.

k. Noise

Implementation of Alternative 4 would involve more development and associated growth in Seaside than would occur under the proposed Seaside 2040 because residential and commercial development would be constructed at a greater density. Therefore, implementation of this alternative would result in more temporary and short-term construction noise. Additionally, vibration impacts from construction activities, such as pile driving, could also be increased compared to the proposed Seaside 2040.

Alternative 4 would increase population in Seaside by approximately 9,650 people compared with Seaside 2040, and it would also create an additional approximately 2,602 jobs. This could increase localized traffic-related noise. However, to accommodate the increased development density envisioned under Alternative 4, a larger percentage of development would likely be infill and mixed-use compared to Seaside 2040. This would result in more people within the urban center of the City, where transit and opportunities for active transportation are more readily available. The availability of transit and the ability to walk or bicycle to a variety of land uses, such as employment or shopping, would reduce vehicle trips per capita and associated traffic noise.

Nonetheless, Alternative 4 would result in potentially significant impacts from the development that would occur in Seaside, similar to impacts of Seaside 2040. These impacts would be the same as described for Seaside 2040 in Section 4.11, *Noise*. Similar to Seaside 2040, this alternative would include implementation of noise policies and implementation programs N 6 (Construction Vibration Control Measures), N 7 (Reduce Motor Vehicle Noise), and N 8 (Reduce Rail Noise). With implementation of these policies and programs, in addition to Mitigation Measure N-1, noise impacts would be less than significant. Overall, Alternative 4 would result in slightly greater noise impacts compared to the proposed Seaside 2040.

l. Population and Housing

Implementation of Alternative 4 would involve more development and associated growth in Seaside than would occur under the proposed Seaside 2040 because residential and commercial development would be constructed at a greater density. Compared to the proposed Seaside 2040, implementation of Alternative 4 would allow for more direct population growth in Seaside by providing an additional approximately 3,113 dwelling units. Implementation of Alternative 4 would also allow for more indirect population growth than Seaside 2040 because 1,372 more jobs would be created.

As described in Section 4.12, *Population and Housing*, redevelopment envisioned by Seaside 2040 could displace existing residential units, potentially necessitating the need for replacement housing for displaced residents. Full buildout of Alternative 4 would add approximately 3,113 more new

residential units to Seaside as compared to the proposed Seaside 2040. Therefore, implementation of Alternative 4 would provide more potential replacement housing for displaced residents as compared to the proposed Seaside 2040. Nonetheless, compliance with Seaside 2040 Policy "No net loss" under Goal LUD-9 in combination with Policy "Neighborhood character" under Goal LUD-10 would ensure that housing placement is provided for potentially displaced residents under Alternative 4. Compared to the proposed Seaside 2040, implementation of Alternative 4 would have a slightly reduced impact on population and housing, and impacts would be less than significant.

m. Public Services and Recreation

Compared to the proposed Seaside 2040, implementation of Alternative 4 would increase direct population growth in the City by approximately 9,650 people. The increase in population would generate more demand for fire, police, school, and library services compared to the proposed Seaside 2040. As a result, expansion of existing fire, police, school, and library facilities, or new construction of these facilities could be required under Alternative 4 that would otherwise not be required under Seaside 2040. Potential adverse impacts would be increased compared to the proposed Seaside 2040. It is not possible to know where new facilities would be constructed, if required, and therefore, it is unknown whether site-specific conditions would result in significant impacts or less than significant impacts. However, because Seaside 2040 envisions development in more areas of the city other than sensitive habitats and designated spaces, such as Fort Ord National Monument, it is likely that new police, fire, library, or school facility would be located on an area also envisioned for development in Seaside 2040.

Full buildout of Alternative 4 would result in approximately 9,650 more residents compared to the proposed Seaside 2040. Therefore, demand of existing parks and recreational facilities would be more under Alternative 4 as compared to the proposed Seaside 2040. Given the increased residential and commercial density and that much of Seaside is currently developed, there would be little room for new parks beyond those that exist or are envisioned in Seaside 2040. Thus, this alternative would not result in additional impacts associated with construction of new recreation facilities beyond those that would also occur under Seaside 2040. However, Alternative 4 would result in increased use and wear of recreational facilities. Impacts would be less than significant without mitigation, and slightly greater than the proposed Seaside 2040.

o. Transportation

Implementation of Alternative 4 would involve more development and associated growth in Seaside than would occur under the proposed Seaside 2040 because residential and commercial development would be constructed at a greater density. Full buildout of Alternative 4 would result in approximately 9,650 more residents and approximately 2,602 more jobs compared to the proposed Seaside 2040. The Seaside 2040 policies that would reduce mobile source emissions by promoting mixed-use and infill development and supporting bike, pedestrian, and mass transit would not be modified by Alternative 4. Multi-family residential dwelling units, mixed-use, and infill development would make up a larger percentage of the development under this alternative compared to the proposed Seaside 2040 due to increased density. This would result in more people within the urban center of the city, where transit and opportunities for active transportation are more readily available. The availability of transit and the ability to walk or bicycle to a variety of land uses, such as employment or shopping, would reduce citywide VMT per capita. Given the number of people that would be able to reside in proximity to transit and employment and commercial uses under Alternative 4, the regional VMT per capita would likely be less than under Seaside 2040.

Overall, transportation impacts would be less than significant and slightly less than Seaside 2040 impacts.

p. Tribal Cultural Resources

Implementation of Alternative 4 would involve more development and associated growth in Seaside than would occur under the proposed Seaside 2040 because residential and commercial development would be constructed at a greater density. However, development would likely occur in the same areas of the City as development under Seaside 2040, only the structures would be larger and there would be more multi-family units and mixed-use development than single-family units. Therefore, Alternative 4 would result in approximately the same amount of construction disturbance as Seaside 2040. Because there would be more multi-family residential and mixed-use development, there could be more underground parking provided and deeper excavations for building foundations, which would require excavation to depths greater than could be required for development under Seaside 2040. This would increase the potential to encounter tribal cultural resources, even on infill properties. This alternative would similarly require the implementation of Mitigation Measure TC-1. Impacts would be reduced with required adherence to laws and regulations requiring Native American consultation, protection of human remains, and pre-historic artifacts, but some resources could be unavoidable. Therefore, impacts would remain significant and unavoidable.

q. Utilities and Service Systems

Implementation of Alternative 4 would involve more development and associated growth in Seaside than would occur under the proposed Seaside 2040 because residential and commercial development would be constructed at a greater density. Full buildout of Alternative 4 would result in approximately 9,650 more residents and approximately 2,602 more jobs compared to the proposed Seaside 2040. Therefore, compared to the proposed Seaside 2040, Alternative 4 would generate more demand for utilities and service systems. As described in Section 4.16, *Utilities and Service Systems*, population growth under the proposed Seaside 2040 would generate demand for water that exceeds supplies in 2040. Therefore, because Alternative 4 would result in even more population growth than Seaside 2040, this alternative would also exceed available water supplies in 2040. Impacts would be less than significant but greater than Seaside 2040 impacts.

r. Wildfire

Implementation of Alternative 4 would involve more development and associated growth in Seaside than would occur under the proposed Seaside 2040 because residential and commercial development would be constructed at a greater density. While this increased density would result in more people residing in Seaside, including eastern areas of the City closer to wildland fire fuels, it would also result in a larger percentage of new development consisting of either multi-family or mixed-use development as compared with Seaside 2040. Typically, multi-family and mixed-use development is easier to defend from a wildland fire as less tracts of wildland vegetation (i.e., fuels) are left intact and because many residents and uses are within one building as opposed to the same number of people dispersed among many single-family dwelling units. Because this alternative would intensify urbanization of Seaside, there would be fewer isolated developments within the wildland-urban interface. However, impacts would be similar as compared to Seaside 2040. However, due to development occurring in fire hazard severity zones, impacts to wildfire would be significant and unavoidable.

6.7 Environmentally Superior Alternative

CEQA Guidelines Section 15126.6 requires that an EIR identify the environmentally superior alternative among the alternatives analyzed. This section compares the impacts of the four alternatives under consideration to those of the proposed Seaside 2040, in compliance with the CEQA Guidelines. There are different tradeoffs for each alternative (e.g., local versus regional impacts), which are dependent upon the specific resource area. Individuals and the decision-makers may weigh these environmental issues differently.

Based on the above analysis and summary in Table 6-4, Alternative 3 is the environmentally superior alternative, assuming all environmental issue areas are weighted equally. Under Alternative 3, development density in the future Seaside East Specific Plan area would be reduced, resulting in more of the area being retained for preservation of natural resources. Alternative 3 could be considered environmentally superior to Seaside 2040 primarily because, as shown in Table 6-4, compared to Seaside 2040 overall impacts to nearly every resource analyzed would be similar or less, with the exception of air quality, biological resources, energy, GHG emissions, and transportation. Impacts on these five resources would be more severe compared to Seaside 2040.

As shown in Table 6-4, Alternative 3 and Alternative 2 would both result in lesser impacts on the many of the same resources relative to the proposed Seaside 2040. However, Alternative 3 would be environmentally superior to Alternative 2 because Alternative 3 would focus residential development on multi-family residential dwelling units. Multi-family residential development is typically more compact than single-family residential development. Therefore, impacts related to surface disturbance, such as impacts on wildlife habitat, soils, and increased impervious surface would be less under Alternative 3 than under Alternative 2, while also providing the same number of total dwelling units in the future Seaside East Specific Plan area. Additionally, Alternative 3 would result in slightly less VMT per capita in 2040 compared to Alternative 2, which would be beneficial for reducing traffic congestion and mobile-source GHG emissions.

Alternative 3, as well as Alternative 2, would meet many of the primary project objectives, such as supporting thoughtful and well-designed neighborhoods that respect and complement the natural environment, and placing value on in natural resources and open space networks. As both of these alternatives would allow for less development and jobs in the future Seaside East Specific Plan area compared to Seaside 2040, they would be less effective at achieving the following objectives relative to Seaside 2040:

- Encourage new development on former Fort Ord lands that supports the regional economy and capitalizes on the proximity to California State University of Monterey Bay (Objectives 6, 9, and 10)
- Support high-quality job placement opportunities for all residents (Objective 9)
- Support thoughtful, planned growth and well-designed neighborhoods that respect and complement the natural environment (Objectives 9, 10, 11, and 12)
- Offer a variety of housing, recreational, and economic development opportunities (Objectives 9, 10, 11, and 12)

The No Project Alternative (Alternative 1) would result in similar total adverse impacts compared to Seaside 2040. However, impacts on air quality, biological resources, cultural resources, energy, greenhouse gas emissions, transportation, utilities and service systems, and wildfire would be greater under Alternative 1 compared to the proposed Seaside 2040, as shown in Table 6-4.

Alternative 4 would increase development density in Seaside, which would reduce impacts associated with regional vehicle travel, including transportation, air quality, and GHG emissions, as shown in Table 6-4. However, because of the increased density, impacts to other resources such as aesthetics, cultural resources, noise, public services and recreation, tribal cultural resources, and utilities and service systems would be more severe as compared to Seaside 2040.

Table 6-4 Impact Comparison of Alternatives

Issue	Seaside 2040 (Proposed Project)	Alternative 1: No Project	Alternative 2: Proposed Seaside 2040 with Reduced Density	Alternative 3: Multi-Family Residential Focused	Alternative 4: Increased Residential and Commercial Density
Aesthetics	**LTSM**	=	+	+	—
Air Quality	**LTS**	—	—	—	+
Biological Resources	**LTS**	—	+	—	=
Cultural Resources	**SU**	+	+	+	—
Energy	**LTS**	—	—	—	=
Geology and Soils	**LTSM**	+	+	+	—
Greenhouse Gas Emissions	**LTS**	—	—	—	+
Hazards and Hazardous Materials	**LTS**	=	=	=	=
Hydrology and Water Quality	**LTS**	=	=	+	=
Land Use and Planning	**LTS**	=	=	=	+
Noise	**LTSM**	+	+	+	—
Population and Housing	**LTS**	+	=	=	+
Public Services and Recreation	**LTS**	+	+	+	—
Transportation	**LTS**	—	—	—	+
Tribal Cultural Resources	**SU**	+	+	+	—
Utilities and Service Systems	**LTSM**	—	—	+	—
Wildfire	**SU**	—	+	+	=
Total		**6 +** **4 =** **7 —**	**8 +** **4 =** **5 —**	**9 +** **3 =** **5 —**	**5 +** **5 =** **7—**

Note: Comparison of impacts is based on the overall impact of the alternative on the resource or issue.
LTS = less than significant
LTSM = less than significant with mitigation
SU = significant and unavoidable
+ Alternative would result in less impacts than Seaside 2040
= Alternative would result in impacts similar to Seaside 2040
— Alternative would result in greater impacts than Seaside 2040

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List of Preparers

This EIR was prepared by the City of Seaside, with the assistance of Rincon Consultants, Inc. Consultant staff involved in the preparation of the EIR are listed below.

RINCON CONSULTANTS, INC.

Megan Jones, MPP, Principal-in-Charge
Aileen Mahoney, Project Manager, Senior Environmental Planner
Matthew Maddox, MESM, Principal
David Daitch, Ph.D, Principal
Aubrey Mescher, Supervising Environmental Planner/Water Resources Specialist
Kayleigh Limbach, Associate Environmental Planner
Samantha Kehr, Senior Biologist
Hannah Haas, M.A., RPA, Supervising Archeologist
Luis Apolinar, Publishing Specialist
Yaritza Ramirez, Publishing Specialist

Appendix A

Notice of Preparation (NOP) and NOP Comment Letters

CITY OF SEASIDE/COMMUNITY & ECONOMIC DEVELOPMENT
440 Harcourt Avenue
Seaside, CA 93955
Telephone (831) 899-6736
FAX (831) 899-6211

NOTICE OF PREPARATION

TO: Agencies, Organizations and Interested Parties

SUBJECT: Notice of Preparation of a Draft Environmental Impact Report in Compliance with Title 14, Section 15082(a) of the California Code of Regulations

Pursuant to Public Resources Code Section 21165 and the Guidelines for the California Environmental Quality Act (CEQA) Section 15050, the City of Seaside is the Lead Agency responsible for preparation of an Environmental Impact Report (EIR) addressing potential impacts associated with the project identified below.

AGENCIES: The purpose of this notice is to serve as a Notice of Preparation (NOP) of an EIR pursuant to the State CEQA Guidelines Section 15082, and solicit comments and suggestions regarding the scope and content of the EIR to be prepared for the proposed project. Specifically, the City of Seaside requests input on environmental information germane to your agency's statutory responsibility in connection with the proposed project. Responsible agencies may rely on the Draft EIR prepared by the City when considering permits or other approvals for this project.

ORGANIZATIONS AND INTERESTED PARTIES: The City of Seaside requests your comments regarding the proposed scope and content of the environmental information to be included in the EIR.

PROJECT TITLE: Seaside General Plan Update (Seaside 2040 Plan)

PROJECT LOCATION: All land within Seaside City limits

PROJECT DESCRIPTION: The Seaside 2040 Plan (the proposed project) is a comprehensive update of the City's General Plan, and provides a vision for the future of Seaside over the next 20 to 30 years.

The General Plan functions as a guide to the type of community that Seaside citizens desire, and provides the means by which that desired future can be achieved. The General Plan addresses a range of immediate, mid-, and long-term issues with which the community is concerned. The General Plan is intended to allow land use and policy determinations to be made within a comprehensive framework that incorporates public health, safety, and "quality of life" considerations in a manner that recognizes resource limitations and the sensitive habitats of the community's natural environment. Under State law, the General Plan must serve as the foundation upon which all land use decisions are to be based, and must also be comprehensive, internally consistent, and have a long-term perspective. State law further mandates that the General Plan:

- Identify land use, circulation, environmental, economic, and social goals and policies for the City and its surrounding planning area as they relate to future growth and development;
- Provide a basis for local government decision-making, including decisions on development approvals and exactions/dedications;
- Provide citizens the opportunity to participate in the planning and decision-making process of their community/neighborhoods;
- Inform citizens, developers, decision-makers, and other cities and counties of the ground rules/thresholds that guide development within a particular community.

According to State law, General Plans are required to cover seven topics: land use, circulation, housing, conservation, open space, noise and safety. Jurisdictions may include any other topic that is relevant to planning its future. The updated City of Seaside General Plan will include the above topics plus economic development, urban design, public facilities and infrastructure, public health, sustainability, and governance.

The Housing Element is one of the seven mandated elements of the General Plan. The Housing Element is the primary planning guide for local jurisdictions to identify and prioritize the housing needs of the city and determine ways to best meet these needs while balancing community objectives and resources. State law (Government Code §65588) requires Housing Elements to be updated every eight years. Seaside's Housing Element is being updated concurrently with the General Plan, representing the fifth cycle update and covers the planning period of December 15, 2015 through December 15, 2023.

Seaside is an ethnically diverse community which is seeking to establish a thoughtful, planned growth and well-designed neighborhoods that respect and complement the natural environment. A variety of housing, recreational, and economic development opportunities are available that clearly identify Seaside as a destination on the Monterey Peninsula with access to regional-serving employment, CSUMB and the Fort Ord National Monument. A multimodal transportation system supports land uses and mobility for all residents. The Seaside 2040 Plan's vision focuses on the following guiding principles:

1. **An Inclusive City for All.** Seaside honors diversity, embracing the City's history as a place where everyone can thrive, regardless of race, class, income, age, culture, or sexual orientation. The people of the City value the diversity of our community and that everyone has the opportunity to participate in City government.

2. **One City.** Seaside weaves together existing Seaside neighborhoods with military housing areas and new neighborhoods and employment districts on former Fort Ord lands to create a single, identifiable City on the Peninsula. New

neighborhoods grow incrementally over time, connect to the existing circulation network, and relate physically and architecturally to adjacent neighborhoods.

3. **A Destination.** Seaside is a regional destination for culture, business, economic opportunity, education, and recreation on the Peninsula. The City is home to small, unique businesses, music and cultural events, CSUMB and educational institutions, corporations, and the Fort Ord National Monument. The City encourages housing, services, and amenities that serve Fort Ord National Monument and Dunes State Park visitors and CSUMB students and faculty.

4. **A City where Economic Prosperity Is Shared by All.** Seaside's diverse economy allows prosperity to be shared by all residents. Residents have access to educational and training opportunities to overcome employment barriers. A highly-trained and skilled workforce helps attract new businesses to the City.

5. **An Economically Diverse City.** Seaside leverages its unique Peninsula location, proximity to CSUMB, and the former Fort Ord lands to create new job opportunities and support a range of economic sectors. The City supports small, local businesses and start-up entrepreneurs.

6. **A City that Celebrates and Learns from its History.** Seaside connects residents and visitors to its unique past as a center of the Civil Rights movement on the Monterey Peninsula and the home of the former Fort Ord, the first integrated military base in the country. The City's rich and complex history of civil rights helps define the City's path forward on an inclusive, vibrant community.

7. **A City with a Downtown.** West Broadway is the heart of the City, creating a vibrant, walkable downtown with high-quality streetscape design, community gathering spaces, and buildings that support pedestrian comfort and safety.

8. **A City with Distinct and Complete Neighborhoods.** Seaside's new and existing neighborhoods have distinct characteristics and identities that help to distinguish them and instill a sense of pride and belonging among residents. Neighborhoods have housing, amenities, and parks and recreational uses.

9. **A City with a Range of Housing Options.** Safe and healthy housing options meet the needs for multiple generations and incomes. Seaside provides a diversity of housing types to serve a broad and diverse community of new and existing residents, allowing people and families to transition from one housing type to another as their needs change over time, socially and economically.

10. **A City with Affordable Housing.** Seaside preserves and expands the supply of affordable housing opportunities for current and future residents. Site redevelopment results in no net loss of affordable housing. The impacts of

displacement for residents during redevelopment is minimized.

11. **An Active City.** The City provides high-quality, safe community and recreational facilities, parks, and open spaces to meet recreational and social needs of youth and adults. Seaside residents, workers, and visitors have the opportunity to participate in a broad range of recreational and sports activities.

12. **A Healthy City.** Seaside makes decisions to support the physical and mental health of its residents. The City improves access to healthy food, limits pollution, and increases access to health, mental health, and preventive care services.

13. **A City with a Focus on Active Transportation.** Seaside supports a multi-modal transportation network that enhances neighborhood connectivity and provides opportunities for active transportation and complete streets. New pedestrian and bicycle connections and programs will make it easier, more comfortable, and safer for residents, workers, and visitors to meet their daily needs and access regional destinations, such as the Fort Ord National Monument, Fort Ord Dunes State Park, Seaside beach, CSUMB, and adjacent communities.

14. **A Safe City.** Seaside promotes safe neighborhoods free from violence and crime that have a trusting, collaborative relationship between law enforcement and residents. The City fosters safe neighborhoods through good community and environmental design that promotes a mix of uses and active streets.

15. **A Creative City.** Seaside embraces the creative culture and the artistic pursuits of our community, cultivating the talents and expertise of the Seaside community. The City continues to support cultural events and parades that promote the cultural diversity and ecological sustainable ideals of our community.

16. **A Sustainable, Resilient City.** Seaside supports innovative programs and policies for environmental sustainability and climate change. The City uses cleaner energy, conserves water, and reduces greenhouse gas emissions to increase community awareness and resiliency to climate change.

17. **An Environmentally-Sensitive City.** Seaside stewards natural resources and habitat in the City and former Fort Ord lands. New development uses land efficiently to protect sensitive areas. Native trees are maintained and protected.

18. **A Responsible, Transparent, and Responsive City.** Seaside is a Peninsula leader by actively working towards its vision, monitoring its actions, and adjusting course. Seaside conducts business in an open and transparent way that encourages everyone to participate. The City works with residents and organizations to achieve its vision.

The Seaside 2040 Plan identifies major strategies and physical improvements for the City over the next 20 to 30 years. These strategies include neighborhood enhancement strategies, revitalizing Broadway Boulevard into a “downtown” for the City, transforming Fremont Avenue from an autocentric corridor into a mixed use corridor, expanding jobs and visitor serving uses, revitalizing multi-family neighborhoods with new affordable and market-rate housing, planning for a new “campus town” adjacent to CSUMB to capitalize on the City’s proximity to the University, planning for two new job centers in the former Fort Ord, and envisioning new, environmentally sensitive neighborhoods on the former Fort Ord lands located immediately to the East of the City. To achieve this direction, the City will also need to aggressively pursue new sources of water, ensure the history and identity of the community is preserved, construct significant new parks and recreational facilities and create a multimodal transportation system.

The proposed project would involve adoption of an updated General Plan, including a revised General Plan Land Use Map with revised land use designations. Figure 1 shows the proposed General Plan Land Use Map. For purposes of environmental review and to plan new infrastructure, growth projections were developed for the year 2040. The EIR will analyze approximately an additional 6,000 housing units, 4,500 jobs and 1,100 hotel rooms over the General Plan horizon to the year 2040. These numbers are for analysis purposes and are higher than the existing AMBAG projections for the City. Concurrent with the updated General Plan, the proposed project would include a zoning code amendment to make targeted and specific amendments to land use, zones, standards, and procedures to implement the goals, policies, and implementation programs of the updated General Plan. The proposed amendments would ensure consistency with adopted regulatory documents, including but not limited to the Fort Ord Base Reuse Plan, recently adopted Specific Plans, and the updated General Plan.

PROBABLE ENVIRONMENTAL EFFECTS OF THE PROJECT: All potentially significant environmental impacts will be studied in the EIR. These include the following environmental factors: Aesthetics, Air Quality, Biological Resources, Cultural Resources, Energy, Geology and Soils, Greenhouse Gas Emissions, Hazards and Hazardous Materials, Hydrology and Water Quality, Land Use and Planning, Noise, Population and Housing, Public Services and Recreation, Transportation/Circulation, Tribal Cultural Resources, and Utilities.

SCOPING MEETING/COMMUNITY WORKSHOP: The City of Seaside, in its role as Lead Agency, will hold a public scoping meeting to provide an opportunity for the public and representatives of public agencies to address the scope of the Environmental Impact Report. The Scoping Meeting for the project will be held in conjunction with the Planning Commission meeting, and is scheduled for **Wednesday, July 26, 2017, 7:00 pm** at the following location:

Seaside City Hall Council Chambers
440 Harcourt Avenue
Seaside, CA 93955

PUBLIC REVIEW PERIOD: This NOP is available for public review and comment pursuant to California Code of Regulations, Title 14, Section 15082(b). The public review and comment period during which the City of Seaside will receive comments on the NOP for the General Plan Update **begins July 12, 2017 and ends on August 11, 2017.**

THE NOP IS AVAILABLE FOR PUBLIC REVIEW AT THE FOLLOWING LOCATIONS:

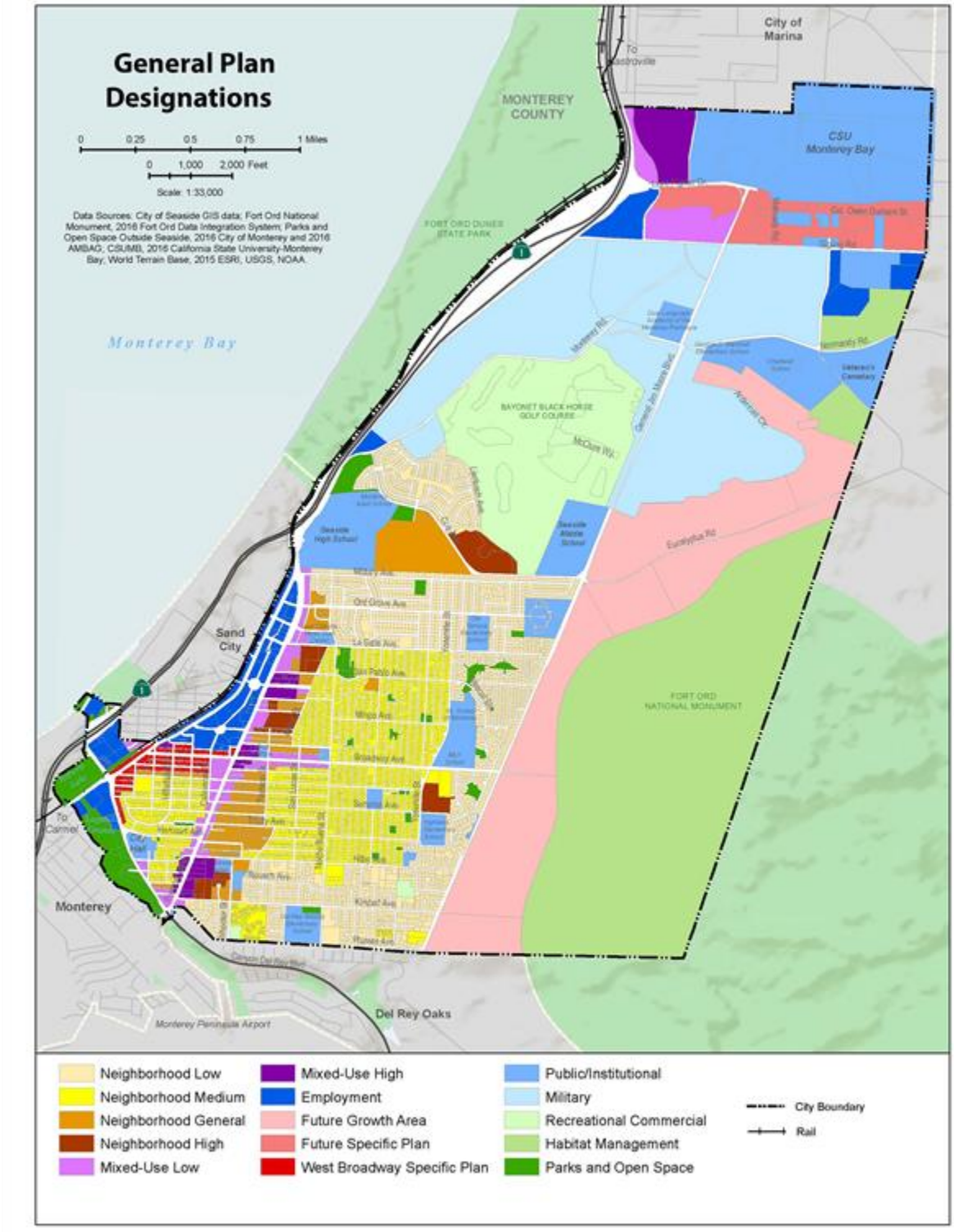
- Oldemeyer Center, 986 Hilby Avenue, Seaside, CA
- City of Seaside, Planning Division, 440 Harcourt Avenue, Seaside, CA
- Seaside Branch Library, 550 Harcourt Avenue, Seaside, CA
- Online at: http://seaside2040.com/

RESPONSES AND COMMENTS: Please list a contact person for your agency or organization, include U.S. mail and email addresses, and send your comments to:

City of Seaside
Economic Development Department
Attn: Sharon Mikesell
440 Harcourt Avenue
Seaside, CA 93955

Or via email to: SMikesell@ci.seaside.ca.us

Figure 1: Proposed General Plan Land Use Map



Print Form

Appendix C

Notice of Completion & Environmental Document Transmittal

Mail to: State Clearinghouse, P.O. Box 3044, Sacramento, CA 95812-3044 (916) 445-0613
For Hand Delivery/Street Address: 1400 Tenth Street, Sacramento, CA 95814

SCH #

Project Title: Seaside General Plan, "Seaside 2040"

Lead Agency: City of Seaside | Contact Person: Sharon Mikesell
Mailing Address: 440 Harcourt Avenue | Phone: (831) 899-6734
City: Seaside | Zip: 93955 | County: Monterey County

Project Location: County: Monterey County | City/Nearest Community: Seaside
Cross Streets: n/a, City-wide | Zip Code: 93955
Longitude/Latitude (degrees, minutes and seconds): n/a ° ' " N / ° ' " W | Total Acres: n/a
Assessor's Parcel No.: n/a | Section: n/a | Twp.: n/a | Range: n/a | Base: n/a
Within 2 Miles: State Hwy #: State Route 1, 218 & 68 | Waterways: multiple, incl. Pac. Ocean, Laguna Grande,Roberts Lake
Airports: Monterey Regional Airport | Railways: none | Schools: multiple

Document Type:

CEQA: ☒ NOP ☐ Draft EIR | NEPA: ☐ NOI | Other: ☐ Joint Document
☐ Early Cons ☐ Supplement/Subsequent EIR ☐ EA ☐ Final Document
☐ Neg Dec (Prior SCH No.) ☐ Draft EIS ☐ Other:
☐ Mit Neg Dec Other: ☐ FONSI

Local Action Type:

☒ General Plan Update ☐ Specific Plan ☐ Rezone ☐ Annexation
☐ General Plan Amendment ☐ Master Plan ☐ Prezone ☐ Redevelopment
☐ General Plan Element ☐ Planned Unit Development ☐ Use Permit ☐ Coastal Permit
☐ Community Plan ☐ Site Plan ☐ Land Division (Subdivision, etc.) ☐ Other:

Development Type:

☐ Residential: Units _____ Acres _____
☐ Office: Sq.ft. _____ Acres _____ Employees _____ ☐ Transportation: Type _____
☐ Commercial: Sq.ft. _____ Acres _____ Employees _____ ☐ Mining: Mineral _____
☐ Industrial: Sq.ft. _____ Acres _____ Employees _____ ☐ Power: Type _____ MW _____
☐ Educational: _____ ☐ Waste Treatment: Type _____ MGD _____
☐ Recreational: _____ ☐ Hazardous Waste: Type _____
☐ Water Facilities: Type _____ MGD _____ ☐ Other: _____

Project Issues Discussed in Document:

☒ Aesthetic/Visual ☐ Fiscal ☒ Recreation/Parks ☒ Vegetation
☐ Agricultural Land ☒ Flood Plain/Flooding ☒ Schools/Universities ☒ Water Quality
☒ Air Quality ☒ Forest Land/Fire Hazard ☐ Septic Systems ☒ Water Supply/Groundwater
☒ Archeological/Historical ☒ Geologic/Seismic ☒ Sewer Capacity ☒ Wetland/Riparian
☒ Biological Resources ☐ Minerals ☐ Soil Erosion/Compaction/Grading ☒ Growth Inducement
☒ Coastal Zone ☒ Noise ☒ Solid Waste ☒ Land Use
☐ Drainage/Absorption ☒ Population/Housing Balance ☒ Toxic/Hazardous ☒ Cumulative Effects
☐ Economic/Jobs ☒ Public Services/Facilities ☒ Traffic/Circulation ☒ Other: Energy & TCR

Present Land Use/Zoning/General Plan Designation:

Varies, City-wide

Project Description: *(please use a separate page if necessary)*

The proposed project, the Seaside 2040 Plan is a comprehensive update of the City's General Plan, and provides a vision for the future of Seaside over the next 20 to 30 years. The proposed project would involve the adoption of an updated General Plan Land Use Map, an update to the seven mandated General Plan elements plus six other non-required topics (see Attachment). The Seaside 2040 Plan will be based on 2040 growth projections completed by Raimi + Associates, based upon the 2035 AMBAG projections. The 2040 projections for Seaside represent incremental or net new development, and are generally higher than existing 2035 AMBAG projections. Seaside's Housing Element is being updated concurrently with the General Plan, representing the fifth cycle update and covers the planning period of December 15, 2015 through December 15, 2023.

Note: The State Clearinghouse will assign identification numbers for all new projects. If a SCH number already exists for a project (e.g. Notice of Preparation or previous draft document) please fill in.

Reviewing Agencies Checklist

Lead Agencies may recommend State Clearinghouse distribution by marking agencies below with and "**X**".
If you have already sent your document to the agency please denote that with an "**S**".

X	Air Resources Board	X	Office of Historic Preservation
	Boating & Waterways, Department of		Office of Public School Construction
	California Emergency Management Agency	X	Parks & Recreation, Department of
	California Highway Patrol		Pesticide Regulation, Department of
X	Caltrans District #5		Public Utilities Commission
	Caltrans Division of Aeronautics	X	Regional WQCB #3
X	Caltrans Planning	X	Resources Agency
	Central Valley Flood Protection Board		Resources Recycling and Recovery, Department of
	Coachella Valley Mtns. Conservancy		S.F. Bay Conservation & Development Comm.
X	Coastal Commission		San Gabriel & Lower L.A. Rivers & Mtns. Conservancy
	Colorado River Board		San Joaquin River Conservancy
X	Conservation, Department of		Santa Monica Mtns. Conservancy
	Corrections, Department of		State Lands Commission
	Delta Protection Commission		SWRCB: Clean Water Grants
X	Education, Department of		SWRCB: Water Quality
	Energy Commission		SWRCB: Water Rights
X	Fish & Game Region #4		Tahoe Regional Planning Agency
	Food & Agriculture, Department of	X	Toxic Substances Control, Department of
X	Forestry and Fire Protection, Department of	X	Water Resources, Department of
	General Services, Department of		
	Health Services, Department of		Other:
X	Housing & Community Development		Other:
X	Native American Heritage Commission		

Local Public Review Period (to be filled in by lead agency)

Starting Date July 12, 2017 Ending Date August 11, 2017

Lead Agency (Complete if applicable):

Consulting Firm: Rincon Consultants,Inc.
Address: 437 Figueroa Ave., Suite 203
City/State/Zip: Monterey, CA 93940
Contact: Christy Sabdo, AICP
Phone: (831) 920-5423

Applicant: City of Seaside
Address: 440 Harcourt Avenue
City/State/Zip: Seaside, CA 93955
Phone: (831) 899-6734

Signature of Lead Agency Representative: Rick Medina **Date:** 7-11-17

Authority cited: Section 21083, Public Resources Code. Reference: Section 21161, Public Resources Code.

DEPARTMENT OF TRANSPORTATION
50 HIGUERA STREET
SAN LUIS OBISPO, CA 93401-5415
PHONE (805) 549-3101
FAX (805) 549-3329
TTY 711
http://www.dot.ca.gov/dist05/

Serious drought
Help save water!

August 10, 2017

SCH#2017071021

Ms. Sharon Mikesell
City of Seaside Economic Development Department
440 Harcourt Avenue
Seaside, CA 93955

Dear Ms. Mikesell:

COMMENTS FOR THE NOTICE OF PREPARATION (NOP) FOR THE SEASIDE GENERAL PLAN "SEASIDE 2040" DRAFT ENVIRONMENTAL IMPACT REPORT (DEIR) – SEASIDE, CA

The California Department of Transportation (Caltrans), District 5, Development Review, has reviewed the NOP for the Seaside General Plan "Seaside 2040" DEIR. Caltrans supports local development that is consistent with State planning priorities intended to promote equity, strengthen the economy, protect the environment, and promote public health and safety. We accomplish this by working with local jurisdictions to achieve a shared vision of how the transportation system should and can accommodate interregional and local travel and development. Projects that support smart growth principles which include improvements to pedestrian, bicycle, and transit infrastructure (or other key Transportation Demand Strategies) are supported by Caltrans and are consistent with our mission, vision, and goals.

Further, we seek to reduce vehicle trips and new vehicle miles traveled associated with the development by appropriate measures that avoid, minimize, or mitigate impacts through smart mobility community design and multimodal demand strategies. Caltrans offers the following comments in response to the NOP for the Seaside General Plan "Seaside 2040" DEIR:

1. The Transportation Agency for Monterey County (TAMC) collects development impact fees to help fund transportation projects of regional significance to address project long-range traffic impacts. Caltrans supports payment of the adopted TAMC development impact fees as required to mitigate any cumulative impacts for future development projects.

2. Caltrans commends the Seaside General Plan's guiding principles with a focus on Active Transportation. Caltrans supports six smart mobility principles of location efficiency, reliable mobility, health and safety, environmental stewardship, social equity, and robust economy. We look forward to reviewing the draft General Plan specifically the circulation and land use

elements with particular interest in key interchanges with Highway 1 and State Route 218. We are happy to participate with development to help in consistency with adopted Caltrans facilities system planning documents, relinquishments, State Highway Operation and Protection Program (SHOPP) projects, and grant projects.

3. At any time during the environmental review and approval process for development projects, Caltrans retains the statutory right to request a formal scoping meeting to resolve any issues of concern. Such formal scoping meeting requests are allowed per the provisions of the California Public Resources Code Section 21083.9 [a] [1].

Thank you for the opportunity to review and comment on the proposed plan. If you have any questions, or need further clarification on items discussed above, please contact me at (805) 549-3282 or email jill.morales@dot.ca.gov.

Sincerely,

JILLIAN R. LEAL-MORALES
Associate Transportation Planner, District 5
jill.morales@dot.ca.gov

cc: Orchid Monroy-Ochoa (D5)
Grant Leonard (TAMC)
Heather Adamson (AMBAG)

COUNTY OF MONTEREY
HEALTH DEPARTMENT
Elsa Jimenez, Director of Health

Administration
Behavioral Health
Clinic Services
Emergency Medical Services
Environmental Health/Animal Services
Public Health
Public Administrator/Public Guardian

Recipient of The California Endowment's 2017 Arnold X. Perkins Award for Outstanding Health Equity Practice

August 10, 2017

Sharon Mikesell
City of Seaside
Economic Development Department
440 Harcourt Avenue

Dear Ms. Mikesell:

The Monterey County Health Department's Planning, Evaluation, and Policy Unit (PEP) offers the following suggestions and comments regarding potential environmental impacts and the scoping of the Environmental Impact Review (EIR) that will be done for the Seaside General Plan Update (Seaside 2040). We enthusiastically support the efforts to involve the public that the city has engaged in to date. We embrace the 10 important characteristics outlined in the Overview of the Health and Sustainability Workshop (July 27th, 2017). We offer the following support and specific comments for the scoping of the EIR.

Quality affordable housing and thoughtful community planning and design can positively impact resident's health and improve overall community outcomes. The Health Department's PEP Unit encourages continued attention to these areas:

- Neighborhoods should be designed to encourage a healthy and active lifestyle. Positive neighborhood attributes that support this include:
  - walkable/bike-able streets
  - access to public transportation
  - park and recreation spaces and open public space
  - safe routes to schools for children
  - convenient access to healthy and affordable fresh food.

- A cohesive and vibrant community is designed in a way that it reduces psychological impacts from such things as
  - traffic
  - road or industrial/commercial noise
  - inadequate or excessive light

- overcrowding
- lack of common spaces for developing social cohesion
- public safety issues that are exacerbated by the design of buildings and common space.

With respect to the EIR we make the following suggestions:

- Any traffic circulation analysis should assess provisions for safe and adequate pedestrian and bicycle routes for the community which specifically provide safe routes to schools for children and link up effectively with existing or future, regional assets for walking and biking.
- Any traffic circulation analysis should assess the benefits of incorporating traffic calming measures which may enhance neighborhood safety for children, pedestrians, and cyclists.
- Residents should have easy access to stores that sell healthy food. Traffic circulation analysis should assess current and proposed commercial parcels where grocery stores are likely to be located to ensure they are easily accessible by pedestrians, cyclists, as well as local vehicle traffic.
- We encourage Seaside to size and site parks, recreation, and open space elements to be adequate and distributed throughout the community so they are accessible to all residents.
- Crime Prevention Through Environmental Design is a strategy for environmental and building design that can improve safety and result in crime prevention. Some strategies include: Natural Surveillance which ensures common areas have visibility to residents, Territoriality which provides clarity as the intended use of private and common areas, and Activity Support which encourages responsible use of common areas by providing pleasing elements that foster "ownership" by residents. Examples include landscaping that encourages utilization of pedestrian areas, safety from car traffic, and public art.

These considerations would offer great value to Seaside and future development projects. The Seaside 2040 plan offers a once in a lifetime chance to make design decisions that will have lasting impact for Seaside residents. Building a future city that, by design, encourages a safe, physically active, healthy, and cohesive community for its residents is a rare opportunity

Please contact Dr. Krista Hanni, (831) 755-4586 or hannikd@co.monterey.ca.us, to learn more about these and other nationally recognized healthy housing strategies that could benefit the physical and mental health Seaside residents.

Sincerely.

Krista Hanni, MS, PhD
Program Manager II
Planning, Evaluation, and Policy Unit
Monterey County Health Department

From: Lacey Raak
To: Sharon Mikesell
Subject: Comments for NOP
Date: Sunday, August 13, 2017 9:55:50 PM

Hi Sharon,

I hope you accept these comments. I'm not a CEQA expert and I know these were due Friday. My daughter has pneumonia so it's been a little crazy.

I would like to express the following concerns, thoughts, suggestions in regards to the seaside master plan.

1. Include a minimum class 2 bikeway from north Fremont up broadway to general Jim Moore then along general Jim to CSUMB. There are over 6 schools (I think) along that route and multiple locations where a cyclist is pushed directly into lanes of traffic by the loss of even a shoulder to cycle on.

2. Exploring options that focus on connecting parks, including the use of alleyways and public spaces that can be utilized for more than one purpose.

3. Explain what legal requirement associated with the closure of fort ord require you to develop the land between south boundary road and giggling east of general Jim Moore blvd. As well as any other alternative scenarios (such as growth of CSUMB) that could provide a similar opportunity for economic growth without disturbing that area.

4. Potential policies that may help provide options to address the high amount of on street parking as well as the inability of a wheelchair or stroller to travel on sidewalks.

- limit parking to one side of the street along select streets. And providing barriers on the other that would protect people without the expense of expanding sidewalks.

- parking permits for residential addresses, limiting the number per address or requiring exception if required.

Thanks for your consideration.

Regards
L
Sent from my iPhone

State of California • Natural Resources Agency
Edmund G. Brown Jr., *Governor*
Department of Conservation
Division of Oil, Gas, and Geothermal Resources – District 3
195 South Broadway • Suite 101
Orcutt, CA 93455
(805) 937-7246 • FAX (805) 937-0673

August 26, 2017

City of Seaside
Econmic Development Department
Attn: Ms. Sharon Mikesell
440 Harcourt Avenue
Seaside, CA 93955

Dear Ms. Mikesell:

SCH #2017071021 SEASIDE NOP GENERAL PLAN

The Division of Oil, Gas, and Geothermal Resources (Division) has reviewed the Notice of Preparation for the Seaside General Plan above referenced project. The Division has no jurisdiction or statutory responsibility for the project. The Division is mandated by Section 3106 of the Public Resources Code to supervise the drilling, operation, maintenance, and abandonment of oil and gas wells. This is for the purposes of preventing: 1) damage to life, health, property, and natural resources; 2) damage to underground and surface waters suitable for irrigation or domestic use; 3) loss of oil, gas, or reservoir energy; and 4) damage to oil and gas deposits by infiltration of water and other causes.

The Division of Oil, Gas, and Geothermal Resources (Division) possesses records regarding oil and gas wells drilled and operated in the State of California. (Cal. Public Res. Code, §§ 3215, 3126.) The Division provides the information below to facilitate local permitting agencies' exercise of local land use authority regarding use of land where oil and gas wells are situated. In contrast, the Division does not possess local land use decision authority, but alternatively has authority for permitting any necessary work on any well in the State. (Cal. Public Res. Code, §§ 3106 and 3203.)

The Division has record of two wells that are located within the plan boundary. Those wells are identified as Estate of J Stephen Horn "G-J" 1 (API 05301206) and Sand Bowl Group "Metz" 1 (API 05301302). The following map shows the approximate location of the wells. Well records are available on our Division website (https://secure.conservation.ca.gov/WellSearch/). While the enclosed map shows the general well location, precise measurements are provided in the well histories found online. The wells may have been plugged to meet the standards applicable at the time of abandonment, however may not meet current Division regulations.

In general, a well may be considered adequately abandoned when both the record review and on-site evaluation process reflect that steps have been taken to isolate all oil-bearing or gas-bearing strata encountered in the well, and to protect underground or surface water suitable for irrigation or farm or domestic purposes from the infiltration or addition of any detrimental substance, and to prevent damage to life, health, property, and other resources. (Cal. Public Res. Code, § 3208.)

The Division offers the following information as it pertains to plugged and abandoned wells:

1. It is recommended that access to any well located on a property be maintained in the event abandonment or re-abandonment of the well becomes necessary in the future. Impeding access to a well could result in the need to remove any structure or obstacle that prevents or impedes access. This includes, but is not limited to, buildings, housing, fencing, landscaping, trees, pools, patios, sidewalks, and decking.

2. Nothing guarantees that wells abandoned to current standards will not start leaking oil, gas, and/or water in the future. It always remains a possibility that any well may start to leak oil, gas, and/or water after abandonment, no matter how thoroughly the well was plugged and abandoned. The Division acknowledges wells that are presently abandoned to current standards have a lower probability of leaking oil, gas, and/or water in the future, but makes no guarantees as to the adequacy of the abandonment or the potential need for future re-abandonment.

3. Activity consistent with oil development include construction of oil sumps, storage tanks, pipelines or other infrastructure, commonly associated with oil production, which may have impacted the site. Also, equipment attendant to oilfield operations may be encountered during excavation of the area around plugged and abandoned wells.

Again, the Division does not recommend that any structures be built that would impede access to the plugged and abandoned wells. It is suggested that the wells be unearthed, their locations GPS and that information be supplied to the Division, and the wells be tested for leakage.

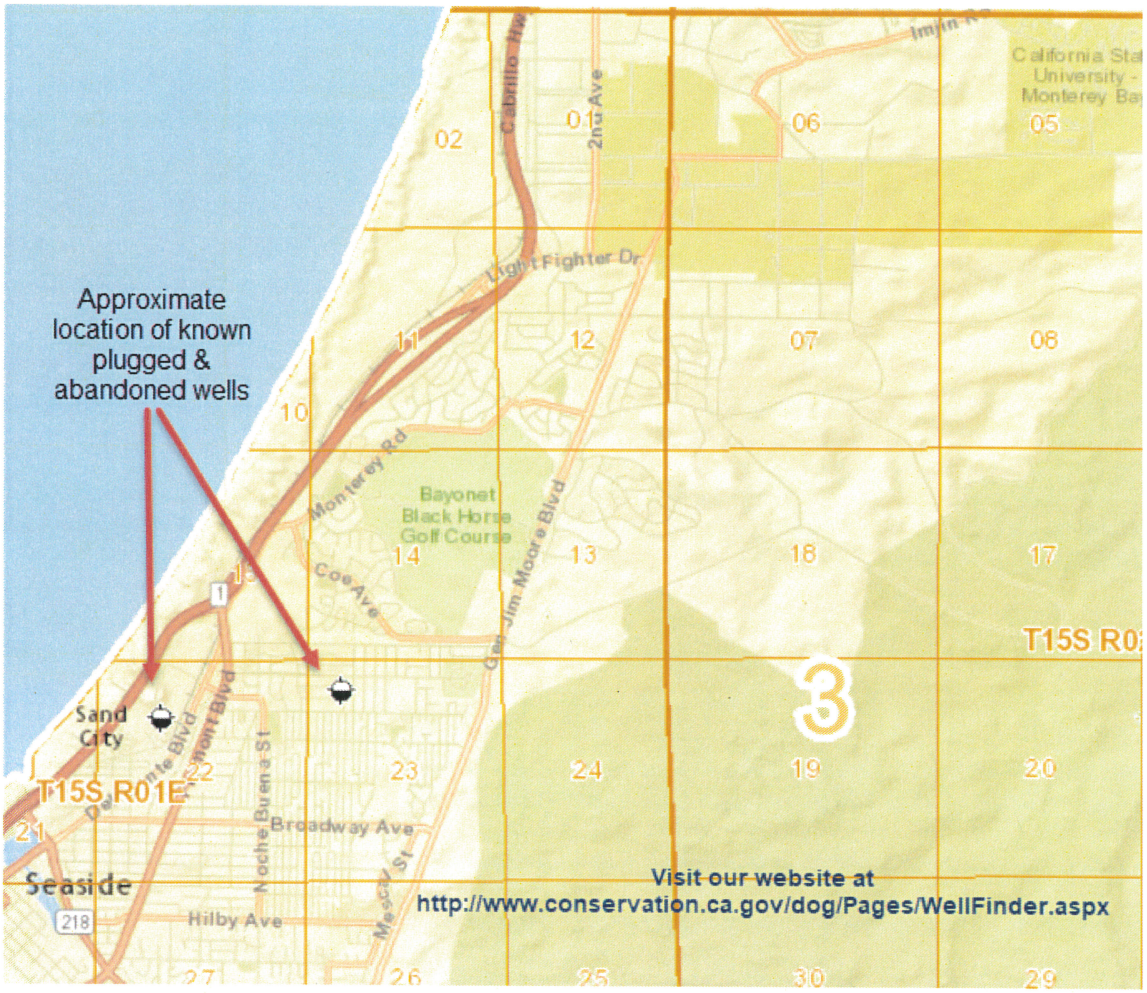
Should you have any questions regarding the wells during your planning process, please do not hesitate to contact our office.

Sincerely,

Patricia A. Abel
Coastal District Deputy

cc: Well files
Chrono
smikesell@ci.seaside.ca.us

Map of the Seaside Area



This information may be accessed off of the Division's website under the Well Finder feature.

SIERRA CLUB
FOUNDED 1892

----------The Ventana Chapter----------
P.O. Box 5667, Carmel, CA 93921
Web site: www.ventana.sierraclub.org

August 11, 2017 email to SMikesell@ci.seaside.ca.us

Ms. Gloria Stearns, Economic Program Development Manager
City of Seaside Economic Development Department
440 Harcourt Avenue Seaside, CA 93955

Re: Notice of Preparation (NOP) of a Draft Environmental Impact Report (DEIR)

Dear Ms. Stearns:

Please consider the following as comments and suggestions from the Sierra Club Ventana Chapter in response to the NOP of a DEIR for the Seaside General Plan Update.

The DEIR for the Seaside General Plan Update (Seaside 2040 Plan) should include:

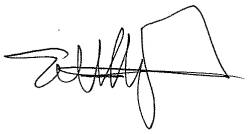
1.) A detailed Environmental analysis addressing the question: "*Where are popular and valuable public places to look out over the natural landscapes of the Monterey Bay and Monterey Peninsula region, and how would the project change the views from these places?"* (See 26 October 2012 letter from Fred Watson to the City of Seaside re: scoping comments for DEIR for the Monterey Downs and Horse Park and Central Coast Veteran's Cemetery Specific Plan; attached)
2.) A detailed Environmental analysis responding to the question: "What are the short term and long term effects on the regional hydrology and water supply, particularly given the complex arrangement of Seaside water providers?

With regard to the first point above, although Dr. Watsons' letter of 26 October 2012 specifically comments on the DEIR for the former Monterey Downs and Central Coast Veteran's Cemetery, the analytic elements and procedures, as well as the level of rigor, are applicable to an Environmental analysis for the Seaside General Plan Update and should be included in the same. With reference to analytic rigor, see the 19 June 2015 letter from Fred Watson to the City of Seaside re: SEIR for the Monterey Downs and Central Coast Veteran's Cemetery specific plan (attached).

With regard to the second point above, the City of Seaside currently receives municipal water from three separate agencies: California American Water, City of Seaside, and Marina Coast Water District; thereby, the City of Seaside's water use has an impact on natural resources both within and beyond the City limits. As part of its commitment to the guiding principle of being a "Sustainable, Resilient City" and an "Environmentally-Sensitive City", the DEIR should include an analysis of the impact on both local and

regional hydrology and other environmental impacts related to water use. In particular, the DEIR should include a detailed description of the water management for and hydrological implications of water Blackhorse and Bayonet Golf Course.

Yours Sincerely,



Scott B. Waltz, member
Sierra Club Ventana Chapter

To:
Teri Wissler Adam, Contract Project Manager
City of Seaside, Resource Management Department, 440 Harcourt Avenue, Seaside, CA 93955

From:
Fred Watson, PhD, Associate Professor, Division of Science and Environmental Policy
California State University Monterey Bay, 100 Campus Center, Seaside, 93955

26 Oct 2012

Dear Teri,

Thank you for the opportunity to comment on the scope of the DEIR for the Monterey Downs and Horse Park and Central Coast Veteran's Cemetery Specific Plan, and thank you for granting my request on 10/22 to allow my comments to be submitted today on 10/26.

This letter represents my professional comment as an individual environmental scientist with 13 years of experience living and working on the former Fort Ord. It should not be construed as an official comment on behalf of the university.

I refer to the following acronyms in my letter

- BLM – the Bureau of Land Management
- BSOL - Big Sur Ornithological Laboratory
- CDFG – California Department of Fish and Game
- CSUMB – California State University Monterey Bay
- DOD – The Department of Defense (Army)
- FODSP – Fort Ord Dunes State Park
- FONM – Fort Ord National Monument (BLM and DOD lands)
- FONR – Fort Ord Natural Reserve (UC lands)
- FORHA – Fort Ord Recreational Habitat Area (County lands)
- GRRP – Garland Ranch Regional Park
- JPRP – Jacks Peak Regional Park
- MBCRT – Monterey Bay Coastal Recreation Trail
- MPRPD - Monterey Peninsula Regional Parks District
- PRBO - Point Reyes Bird Observatory
- SRNWR – Salinas River National Wildlife Refuge
- TCP – Toro County Park
- USFWS – US Fish and Wildlife Service

I have organized my comments according to the proposed structure of the Draft EIR as indicated in the Professional Services Agreement between the City of Seaside and RBF Consulting (16 Feb 2012).

1. Environmental Analysis
    a. Aesthetics and Visual Resources
        i. A viewshed analysis should be conducted to answer the question "Where are popular and valuable public places to look out over the natural landscapes of the Monterey Bay and Monterey Peninsula region, and how would the project change the views from these places?" The viewshed analysis should include:
            1. A map of all locations within 15 km of the proposed project area from which proposed structures would be visible (existing advanced GIS algorithms should be used to produce this). This map should include:
                a. Aerial photography as a base layer
                b. Proposed project boundary and locations of major structures
                c. Boundaries of all public open space areas and reserves, including: FONM, FORHA, FONR, TCP, GRRP, JPCP, FODSP, SRNWR, and MBCRT.
                d. Line art showing trail networks associated with those lands, including trails indicated in the FORHA Trail Master Plan draft.
                e. Locations of specific high-use and/or high-aesthetic-value viewpoints. For example:
                    i. Intersection of Trails 67 & 68 in FONM
                    ii. Elliot Hill in FONM
                    iii. Park benches and managed viewpoints in JPRP
                    iv. Park benches on Point Pinos and MBCRT
                    v. Ridgeline trails in TCP
                    vi. Pinyon Peak, Vasquez Knob, and Sniveley's trail in GRRP
            2. Before-and-after 3D Visualizations of the view of the proposed project area from these locations
            3. Literature review of the effects of viewshed impacts on property values, public open space values, and recreational values.
    b. Air Quality – No comment
    c. Biological Resources
        i. In general, a biological assessment should be conducted to answer questions such as: "How valuable is the biological resource of the former Fort Ord, and how would this value change under the proposed project? How many wildlife species are estimated to use the project area? What special status species of any kind would lose habitat as a result of the project? How much oak woodland remains on the former Fort Ord, how much is protected, and what fraction of the total Fort Ord amount would be removed by the project? What role does the particular location of the proposed project area currently play in the regional spatial configuration of wildlife corridors? Is the project consistent with general intent of county ordinances and State and Federal conservation laws?"
        ii. A list should be included of all protected species known or expected to occur at any time of year within 2 km of the proposed project area. This list may include

the following plants, in addition to some of the "special animals" listed in the item below this one:

1. Eastwood's golden fleece / California goldenbush / *Ericameria fascilulata*
2. Monterey (sand) gilia
3. Monterey spineflower
4. Monterey ceonothus
5. Sandmat manzanita
6. Hooker's manzanita

iii. A list should be included of all "Special animals" (as listed by CDFG in January 2011, or more recently if applicable) known or expected to occur within 2 km of the proposed project area. This list may include the following animals:

1. American badger
2. Monterey ornate shrew
3. California tiger salamander
4. Coopers hawk
5. Sharp shinned hawk
6. White-tailed kite
7. Nuttall's woodpecker
8. Oak titmouse
9. Lawrence's goldfinch
10. Northern harrier
11. Bryant's savannah sparrow

iv. An estimate should be included of the number of nesting attempts currently being made each year by the bird species on the above list within either: 5 km of the proposed project area in the case of raptors, and 500 m of the proposed project area in the case of other animals.

v. In order to understand the existing biodiversity value of the proposed area, a list should be included of all bird species known or expected to occur within 500 m of the proposed project area, the "special status" of these where applicable, and the degree of dependency of these on oak woodland habitat. This information should be compiled either directly or indirectly from field surveys or comparable existing local data - in the spring breeding season (e.g. Apr/May), in early summer (Jun), during the fall migration (Oct), during winter (Jan), and during the spring migration season (Mar). Numerous bird species generally use Fort Ord during only one of these five periods (local birders have collected data of this nature for many years).

vi. Potential effects urban encroachment on important species should be characterized. This should include:

1. A map of the distance to the nearest urban edge at several "time-points" along the timeline of Fort Ord redevelopment: (1) at the time of base closure, (2) the current condition, (3) the condition after construction of the proposed project, and (3) the condition after build-out of all land units on Fort Ord targeted for development (see Cumulative Impacts

below). The map should include aerial imagery for a base layer, and should depict distance from urban edge using hachures for 0-1 km (dense hachures), 1-2 km (medium hachures), 2-5 km (sparse hachures), > 5 km (no hachures), 0 km (transparent solid color).

2. Literature review to identify important species that are sensitive to urban proximity within the 0-10 km range. "Important species" in this context includes large mammals, meso-carnivores, raptors, and salamanders and other herpetofauna that are mobile at these scales.
3. Conceptual maps of the ideal range for such species within the former Fort Ord at each of the four time-points listed above.

vii. The impact of the proposed project on coastal oak woodland should be characterized in detail.

1. A literature review should be conducted on decline and factors causing decline in coastal oak woodland within California
2. A literature review should be conducted on animal species that are dependent on oak woodland
3. The amount of oak woodland in the former Fort Ord should be accurately mapped and cross-tabulated with respect to several organizing variables: (1) each of the four time-points listed above, (2) the current and future land ownership, (3) the current and future level of habitat protection (e.g. FONM, FONR, and FORHA lands would qualify as being 'protected' to varying extents), (4) total area within the proposed project area as compared with the entire former Fort Ord.
4. A characterization of the uniqueness of coastal oak woodland occurring within a bioregional, ecosystem-level, geological, and geomorphological context such as that which occurs on Fort Ord (i.e. on sand dunes, close to the coast, with relatively flat terrain, juxtaposed against maritime chaparral, grasslands, and vernal pools).
5. A characterization of the total area of oak woodland in the Monterey Peninsula region that is recreationally available (e.g. within 500 m of public open space trails), and the total recreationally available area that was, is, or would be within the proposed project area under four scenarios: (1) unregulated ad hoc use of the area by the community after base closure and before ESCA closures, (2) current conditions, (3) implementation of the proposed project, (4) non-implementation of the proposed project and conversion of the land to recreational habitat area (e.g. MPRPD) use.
6. A literature review should be conducted on the comparative ecological value of different types of oak woodland, with respect to: (1) intact understory versus cleared understory and 'limbed up' trees, (2) retention vs removal of dead trees and fallen limbs, (3) size of contiguous areas of oak woodland (i.e. large areas vs fragmented areas within urban matrix), (4) presence of edges between oak woodland and other open-space habitats (e.g. for raptor habitat), (5) age/size of trees (e.g. for cavity

nesters). This review should be used to inform a characterization of the effects of the proposed project in terms of the value of the existing oak woodland as compared with other forms (restored, limbed, regenerating, etc.)

7. Recent trends and patterns in sudden oak death and oakworm defoliation should be characterized, and their impacts on the above analyses should be considered.
8. The EIR should examine the project's consistency with the underlying goals of the California Oak Woodlands Conservation Act of 2001, and it should explore any opportunities for the Fort Ord region to benefit from the programs enabled by this act under each of the alternatives being considered.
9. The EIR should examine the project's consistency with the Monterey County Zoning Ordinance Title 21 on "Preservation of Oak and other Protected Trees"
10. The EIR should examine the project's consistency with the "The Oak Woodland Bird Conservation Plan" released in 2002 by California Partners in Flight.

viii. The EIR should characterize the proposed project's potential impacts on wildlife corridors. It should examine the project's consistency with the underlying goals of AB 2785 (Ruskin), which emphasizes the value of wildlife corridors and California's need to document and protect them. A map of wildlife corridors should be produced, with an aerial photo base layer, hachuring indicating the level of protection of land, cross-hachuring indicating the quality of habitat (pristine, wild, trailed, roaded, ruderal, or developed), and large conceptual arrows indicating potential movement pathways through corridor lands. Particular attention should be paid to the corridor that extends along the Central California Coast including from south to north:

1. The Ventana Wilderness, Los Padres National Forest, Palo Corona Regional Park, and various Big Sur Land Trust lands
2. GRRP, TCP, and JPRP, as well as smaller peri-urban units such as the Seaside Frog Pond and Laguna Grande Park
3. FONM and FORHA
4. The proposed project area
5. The potential bottleneck crossing Inter-Garrison Road into either
    a. The Landfill, some FONR land to the NW, near the Marina Equestrian Center, and FODSP, or
    b. The FORHA "East Garrison North" land unit, and FONR land just north of East Campus housing
6. FONR land adjacent to Marina Airport
7. Currently open grasslands and shrublands northwest and east of Marina Airport
8. The Salinas River riparian corridor

9. Martin Dunes and any other coastal dune properties overseen by the Big Sur Land Trust
10. SRNWR
11. Salinas River State Park
12. Elkhorn Slough National Estuarine Research Reserve
13. The Santa Cruz Mountains and Peninsula Open Space Trust lands

ix. In general, the above information should be compiled using:
1. Peer-reviewed literature searches
2. "Gray" literature searches – e.g. publications by PRBO and BSOL, web-posted theses, consulting reports, non-profit web sites, birding bulletin boards, and natural history authors and texts.
3. Interviews with relevant organizational staff such as staff from the BLM, the Nature Conservancy, USFWS, Big Sur Land Trust, CDFG staff associated with AB 2785, CSUMB Division of Science and Environmental Policy, CSUMB athletics, UCSC Environmental Studies Department staff, UC Natural Reserve System staff.
4. Interviews with experienced local recreational leaders and naturalists, who can be identified through the Monterey Audubon Society, the California Native Plant Society, the Monterey Bay Tracking Club, Keep Fort Ord Wild, Ford Ord Recreational Trails group, CCCX, MORCA etc.

d. Cultural Resources – No comment
e. Geology and Soils – No comment
f. Greenhouse Gas Analysis – No comment
g. Hazards and Hazardous Materials – No comment
h. Hydrology and Water Quality – No comment
i. Land Use and Planning – No comment, other than relevant components of my comment on Biological Resources (above)
j. Noise
i. The EIR should answer the question "Will the projects activities be audible to people and wildlife in existing recreational areas, campus areas, and residential areas, particularly during events?" The EIR should include comparative noise maps. These maps should:
1. Span the entire former Fort Ord
2. Have aerial photography as a base layer
3. Show noise thresholds in decibels using hachuring of different densities representing different noise thresholds
4. Show noise distribution both before and after the project itself, and before and after the overall proposed build-out of the former Fort Ord
5. Show different kinds of noise: e.g. ambient traffic noise on the proposed Eastside Parkway during commuter periods, event noise, etc.
6. Include existing noise sources such as Laguna Seca, the motorized vehicle traiing/racing (?) operation at Marina Airport, and major thoroughfares such as Reservation Road and General Jim Moore Blvd.

7. Be based on field-validated spatial modeling of noise propagation taking into account terrain and land cover

ii. The EIR should include a literature review on the effects of relevant ambient noise and event noise on wildlife, property values, open-space recreation, and residential and campus quality of life.

k. Population and Housing
   i. The EIR should include a map or table of the size (in persons) of educational populations within different distances from the proposed project. The information presented should be broken down in terms of:
      1. Type of student – K-6, K-8, 9-12, university
      2. Land use – school, university, university dorms, campus housing etc.
      3. Distance zones – 0-2 km, 2-5 km etc

l. Public Services and Recreation
   i. The EIR should answer questions such as "Will the project impact the ability of CSUMB staff and students to access recreational habitat areas from campus on foot?" It should characterize existing levels (e.g. visitors per day) of open-space use at trailheads within walking distance of CSUMB dorms or CSUMB housing (e.g. Eighth and Gigling, and the Jerry Smith Corridor), and how these would be impacted by the proposed project and its potential cumulative effects (e.g. the Eastside Parkway), versus alternative uses of the proposed area (e.g. as MPRPD or FONM lands). Such estimates should be based on surveys at multiple times of day, different days of the week, and different times of the year.

m. Utilities and Service Systems – No comment

n. Transportation and Circulation
   i. The EIR should characterize the degree to which the proposed project would contribute to the "need" to build the Eastside Parkway.

2. Cumulative Impacts
   a. All relevant analyses in the EIR should be conducted with respect the implementation of the proposed project both as an individual project, and as one of many projects that would arise if all other land slated for development was developed. This other land includes:
      i. The proposed Eastside Parkway
      ii. Developments to the east of the Marina Airport
      iii. Developments along the east side of General Jim Moore Boulevard adjacent to the current DOD lands
      iv. Any others
3. Alternatives to the Project
   a. In addition to the "No Project" alternative required by CEQA, an "recreational and habitat area" alternative should be considered. This is essentially how it was used between the late 1990s and the late 2000s, when much of it became known by the trail use community as "Happy Trails". Such a designation could be implemented by annexing the land into the existing FONM land, FORHA land, or a new component of the MPRPD system.
   b. All applicable analyses suggested above should be conducted for each project alternative that is considered. The same metrics should be estimated for each alternative, to facilitate

informed comparison of the alternatives.

4. Other CEQA considerations
    a. Growth inducing effects
        i. The EIR should consider the degree to which the proposed project would modify the landscape to the extent that additional proposed development nearby (e.g. Eastside parkway) would be considered “in fill”, and could thus be subject to a lower level of environmental scrutiny.

Sincerely,
Fred Watson

To:
Teri Wissler Adam, Contract Project Manager
City of Seaside, Resource Management Department, 440 Harcourt Avenue, Seaside, CA 93955

From:
Fred Watson, PhD, Associate Professor, Division of Science and Environmental Policy
California State University Monterey Bay, 100 Campus Center, Seaside, 93955

19 June 2015

Dear Teri,

Please find attached to this letter my comments on the SEIR for the Monterey Downs and Horse Park and Central Coast Veteran's Cemetery.

These comments stem from my background as an environmental scientist with 16 years of experience living and working on the former Fort Ord. My comments should not be construed as an official opinion of CSUMB.

My comments address the Aesthetics section of the Environmental Analysis, and they stem from my earlier letter to you (26 Oct 2012) in response to the NOP. That letter appears as Comment Letter 48 in Section 10.1 of the SEIR.

Sincerely,
Fred Watson

(see attachment)

Comments on Aesthetics section of Environmental Analysis of SEIR for MDHPCCVC.

1. *Summary*.
    a. The SEIR analysis is inadequate and incorrect to conclude "Less than significant impact" on Scenic Vistas, and only "Potentially Significant Impact" to surroundings.
    b. Instead, my analysis indicates that the project would have a significant and unavoidable impact on Scenic Vistas (Impact 4.1-1) and the site's surroundings (Impact 4.1-4).
2. My comments from 2012 on the NOP are reproduced in italics below:
   A viewshed analysis should be conducted to answer the question "Where are popular and valuable public places to look out over the natural landscapes of the Monterey Bay and Monterey Peninsula region, and how would the project change the views from these places?" The viewshed analysis should include:
    a. *A map of all locations within 15 km of the proposed project area from which proposed structures would be visible (existing advanced GIS algorithms should be used to produce this). This map should include:*
        i. *Aerial photography as a base layer*
        ii. *Proposed project boundary and locations of major structures*
        iii. *Boundaries of all public open space areas and reserves, including: FONM, FORHA, FONR, TCP, GRRP, JPCP, FODSP, SRNWR, and MBCRT.*
        iv. *Line art showing trail networks associated with those lands, including trails indicated in the FORHA Trail Master Plan draft.*
        v. *Locations of specific high-use and/or high-aesthetic-value viewpoints. For example:*
            1. *Intersection of Trails 67 & 68 in FONM*
            2. *Elliot Hill in FONM*
            3. *Park benches and managed viewpoints in JPRP*
            4. *Park benches on Point Pinos and MBCRT*
            5. *Ridgeline trails in TCP*
            6. *Pinyon Peak, Vasquez Knob, and Sniveley's trail in GRRP*
    b. *Before-and-after 3D Visualizations of the view of the proposed project area from these locations*
    c. *Literature review of the effects of viewshed impacts on property values, public open space values, and recreational values.*
3. The above-requested analysis was apparently not done.
4. The analysis in the SEIR refers to having used "accepted" methods (Page 4.1-1), but no such methods are cited. Thus, no basis is given for the acceptability of the methods used. EIRs have been completed in the Central Coast region with superior methods (e.g. 3D visual simulation).
5. The analysis in the SEIR was flawed because it is based on insufficient and inappropriate viewpoints. None of the viewpoints used were typical of places where people tend or would be expected to stand and look toward the site. Numerous popular and obvious viewpoints surround the site, and none of these were used. The entire area within and surrounding the site in the "FORHA" and FONM lands is well-known to be heavily used for hiker/biker/equestrian open-space recreation. Evidence for this is clear to anyone who passes by either the 8th & Gigling or Jerry Smith trailheads each day and sees these areas never devoid of parked vehicles, and usually

full of vehicles on weekends and after 4:30 pm on Wednesdays & Fridays. Obvious viewpoints that should have been considered include:

a. The proposed Flagpole Plaza at Artillery Hill in the proposed Veteran's Cemetery site
b. Numerous popular outlooks within the Fort Ord National Monument including:
    i. The recently erected public bench at the intersection of Trails 67 & 68. The erection of a bench with a view (prior to the NOP) is, in particular, a strong indication of a place as a "Scenic Vista" that should be considered under CEQA.
    ii. The popular recreational hiker/biker route along Watkins Gate Road near where it intersects Trail 70.
    iii. The 360° view from Trail 69.
    iv. Several 360° views from Little Moab / Elliott Hill.
    v. Views from Eucalyptus Road east of Parker Flats Cutoff.

6. The analysis in the SEIR was also flawed because it relied on crucial policies in the Fort Ord Reuse Plan (FORP) that have not been adopted; for example, regarding the yet-to-be completed Regional Urban Design Guidelines (RUDG). The SEIR analysis essentially assumed that if a visual guideline was not in FORP or other cited documents, it was inapplicable. Given FORP's incomplete policies, other guidelines should have been considered in place of the missing guidance.
7. One such guideline that should have been used in the absence of FORP guidelines is the nation-wide "Bureau of Land Management Visual Resource Management (VRM) Guide". The federal VRM guidelines apply to Fort Ord by way of the "Resource Management Plan for the Southern Diablo Mountain Range and Central Coast of California" (2007) which dictates that the "Fort Ord BLM lands should be managed as VRM Class II", which emphasizes retention of the "predominant natural features of the characteristic landscape". The existence of this BLM guideline and the absence of complete FORP guidance warrants consideration of the visual impacts to FONM of projects adjacent to FONM in the spirit of the language of BLM VRM Class II.
8. The limited applicability of FORP and the enhanced need for environmental sensitivity is further emphasized by the fact that in the intervening period between adoption of FORP (1997) and attainment of its policies (as yet incomplete), the Fort Ord Public Lands have been promoted by Presidential declaration to become the Fort Ord National Monument.
9. The analysis in the SEIR was insufficient because photo points alone are completely inadequate for discovering and describing the visual impacts of a project of this scale. Firstly, the choice of photo point locations is highly subjective and unlikely to be representative. Secondly, the results are essentially interpretable; in the SEIR, areas to be developed were indicated merely with single lines drawn above the photos, whereas other EIRs in our region have used far more advanced visual simulation (e.g. 3D computer renderings of what the developed areas would look like from the viewpoints). Technologies exist that are far more comprehensive, objective, and illustrative than the ones used in the SEIR, as I partially demonstrate below.
10. The subjectivity (and thus inadequacy) of the viewpoint selection deepens to fallibility on Page 4.1-9 where it is erroneously stated that "The National Monument public open space also includes a trail system that is generally located northeast and northwest of the Gigling Road/Watkins Gate Road intersection.". Apparently, the preparers did not know where the trails were; the Monument trails are almost exclusively **south** of the stated intersection (or, southeast, at most).

11. Below, I present my own analyses that overcome some of the limitations of the analysis in the SEIR and that reveal newly described and unavoidable significant aesthetic impacts. My analyses are closer to being sufficient than the SEIR analysis (in my professional opinion as an environmental scientist with publications in visualization and landscape analysis). My analysis was completed in one day using standard tools that are widely used within the environmental consulting industry (ArcGIS with Spatial Analyst, and Google Earth Professional).
12. Analysis 1: Viewshed Analysis.
    a. *Methods*. I delineated boundaries of all structures or groups of similar structures in proposed Monterey Downs and Monterey Horse Park (I excluded Veterans Cemetery, both to save time, and because it's visual impacts are likely to be lesser given the terrain and the limited number of structures). I estimated the height of structures based on indications in the Specific Plan and I quantified the elevations of underling terrain. I designated 61 indicator points at corners of structures or groups of structures, and at other highpoints in the proposed built environment. I used the Arc GIS Viewshed tool to map the number of these indicator points that would be visible from any point within the Fort Ord region.
    b. *Results*. See Figures 1 & 2 below.
    c. *Interpretation*. The proposed structures in Monterey Downs and Monterey Horse Park would be visible from far more locations than were indicated by the SEIR analysis, including:
        i. A well-known public bench within FONM
        ii. Several frequently used trails within FONM
        iii. Numerous trails within FORHA
        iv. CSUMB Main Campus
        v. CSUMB East Campus housing
        vi. Jacks Peak County Park (distant)
        vii. Toro County Park (distant)
        viii. Cannery Row & Monterey Bay Aquarium (distant)

        Collectively, this level of visibility amounts to a significant and unavoidable aesthetic impact both on Scenic Vistas (Impact 4.1-1) and the general site surroundings (Impact 4.1-4).

13. Analysis 2: Visual simulation.
    a. Methods. I used the above delineation of structures & estimation of heights. I opened same file in Google Earth Professional, which automatically placed structures within 3D environment at approximately correct heights. I "Flew" to a sample of viewpoints and saved the resulting image. (Note that a more sophisticated visual simulation can easily be achieved by using Trimble SketchUp in conjunction with Google Earth. I neglected to do this, in the interest of time. But worthy consultants could easily be contracted to do this kind of work.)
    b. *Results*. See Figures 3 through 6 below.
    c. *Interpretation*.

i. The view north from Watkins Gate Rd currently comprises mostly natural ridge-lines, except for the DOD building in the distance, and some electrical transmission lines. The proposed project would replace most of this view with MHP buildings etc. in the foreground, backed by the MD arena & and grandstand, flanked by other MD and residential buildings (Figure 4). This would detract from the "wilderness at your doorstep" character for which FONM is renowned. This amounts to a significant and unavoidable aesthetic impact.
ii. The view northwest from the Trail 67/68 bench currently comprises all of Monterey Bay. This would be replaced by various project buildings projecting into the view of the bay (Figure 5). This would detract from the "wilderness by the bay" character for which FONM is renowned. This amounts to a significant and unavoidable aesthetic impact.
iii. The view northwest from the 360° vista point on Trail 69 currently exemplies the wilderness character of FONM, with rolling chaparral hills fading into oak woodland, backed by a near-complete view of Monterey Bay, and framed by the Monterey Peninsula and Santa Cruz Mountains. This would be replaced by a view of almost every building in the proposed project at a range of 3,000 to 10,000 feet (Figure 6). This would detract from the "wilderness by the bay" character for which FONM is renowned. This amounts to a significant and unavoidable aesthetic impact.

Figure 1. Viewshed analysis – visibility of proposed Monterey Downs & Monterey Horse Park from areas within the greater Fort Ord region.

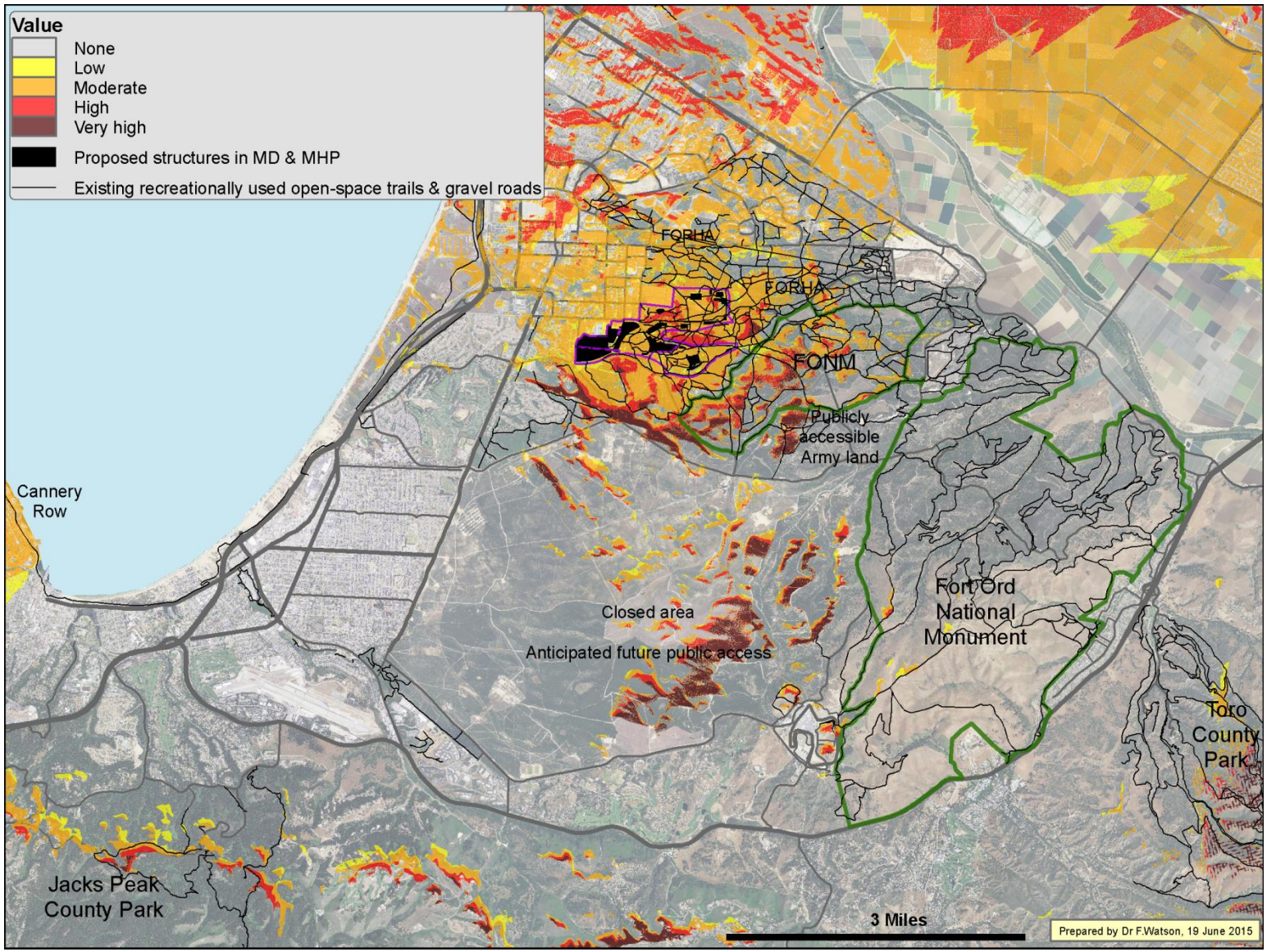


Figure 2. Viewshed analysis – as for Figure 1, but zoomed in to the immediate surroundings of the proposed project.

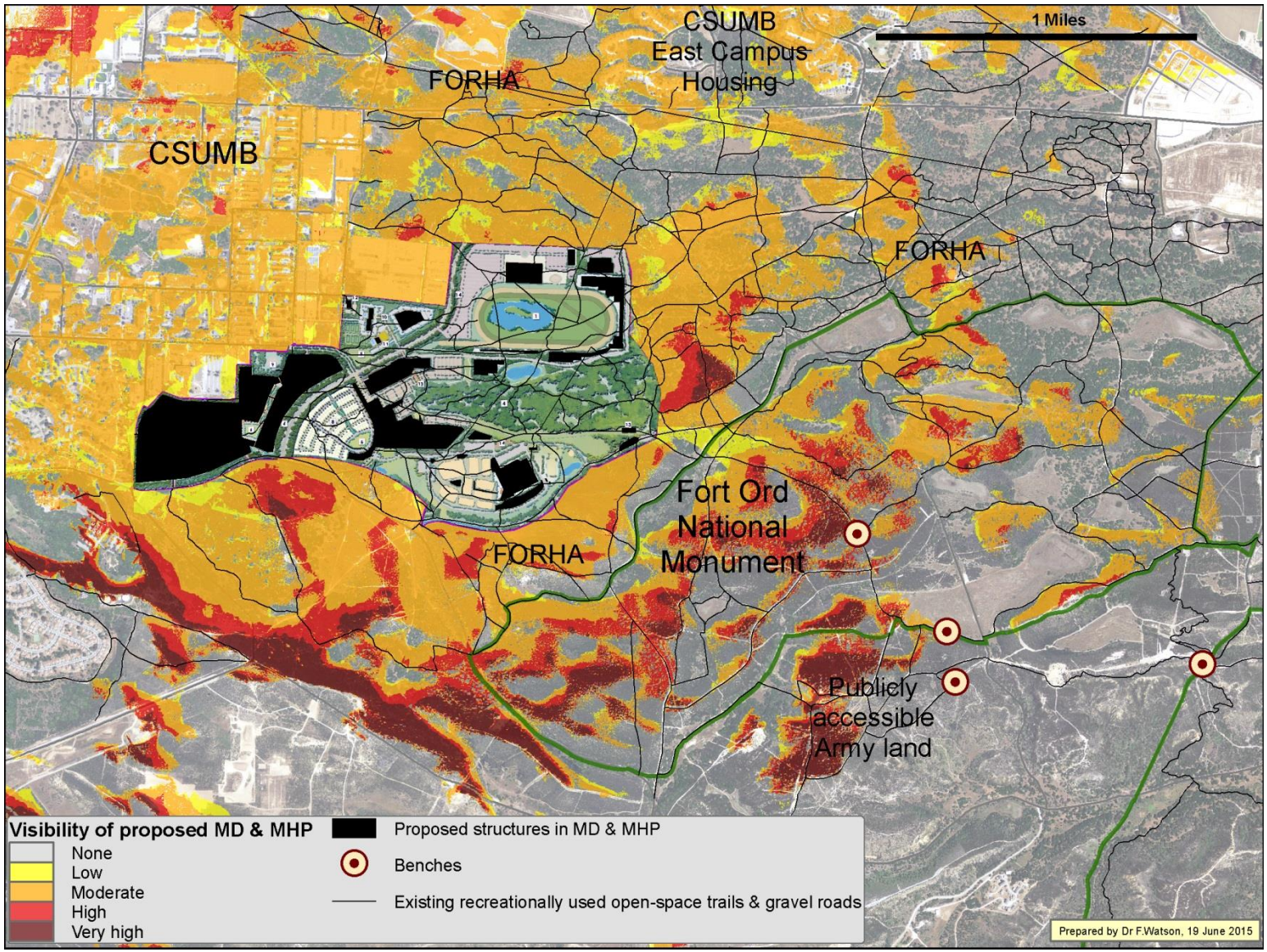


Figure 3. Visual simulation – overview from above CSUMB.

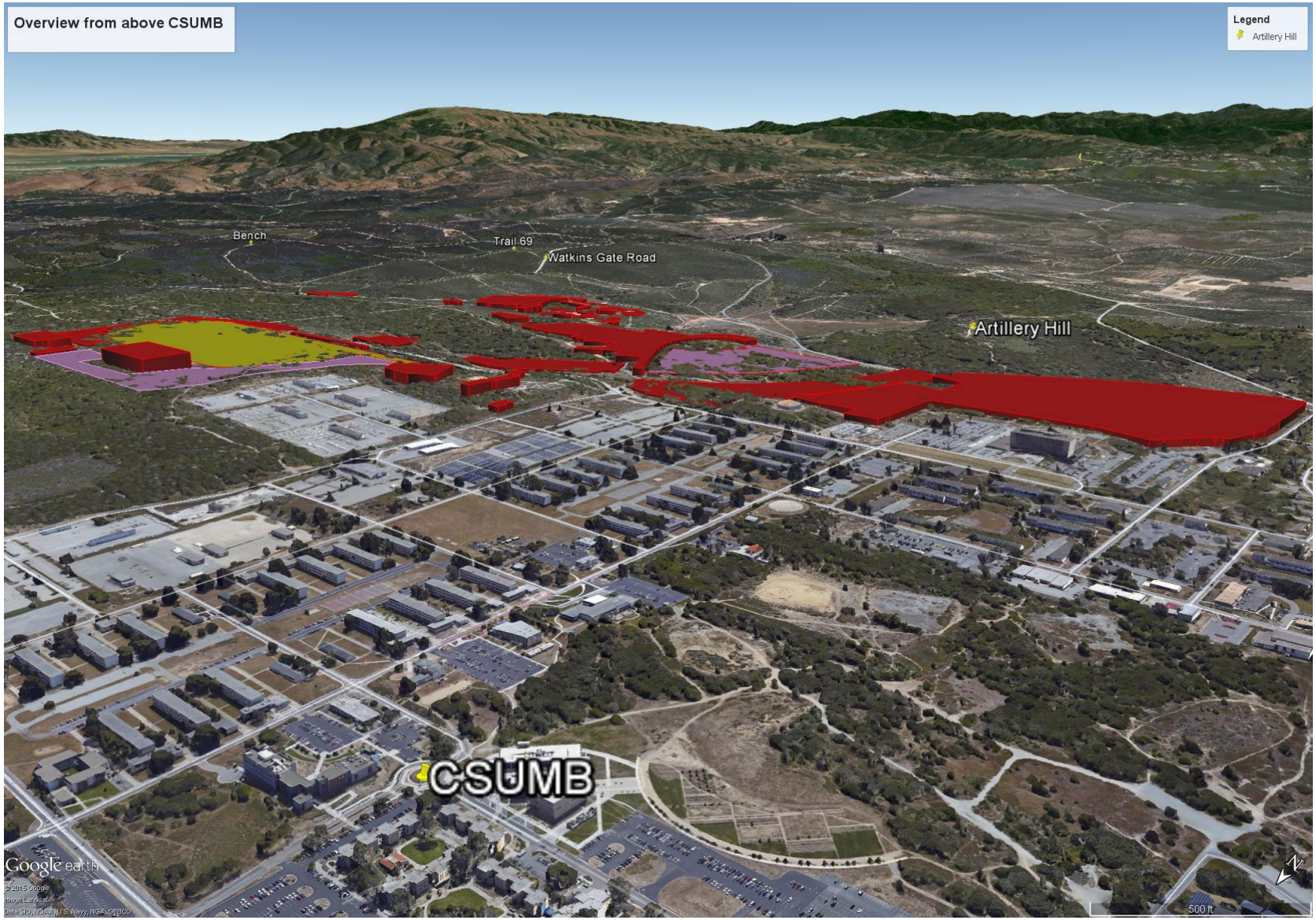


Figure 4. Visual simulation – view from the popular hiker/biker route along Watkins Gate Rd.

Figure 2. Visual simulation – view from the public bench in FONM at Trail 67 & 68.

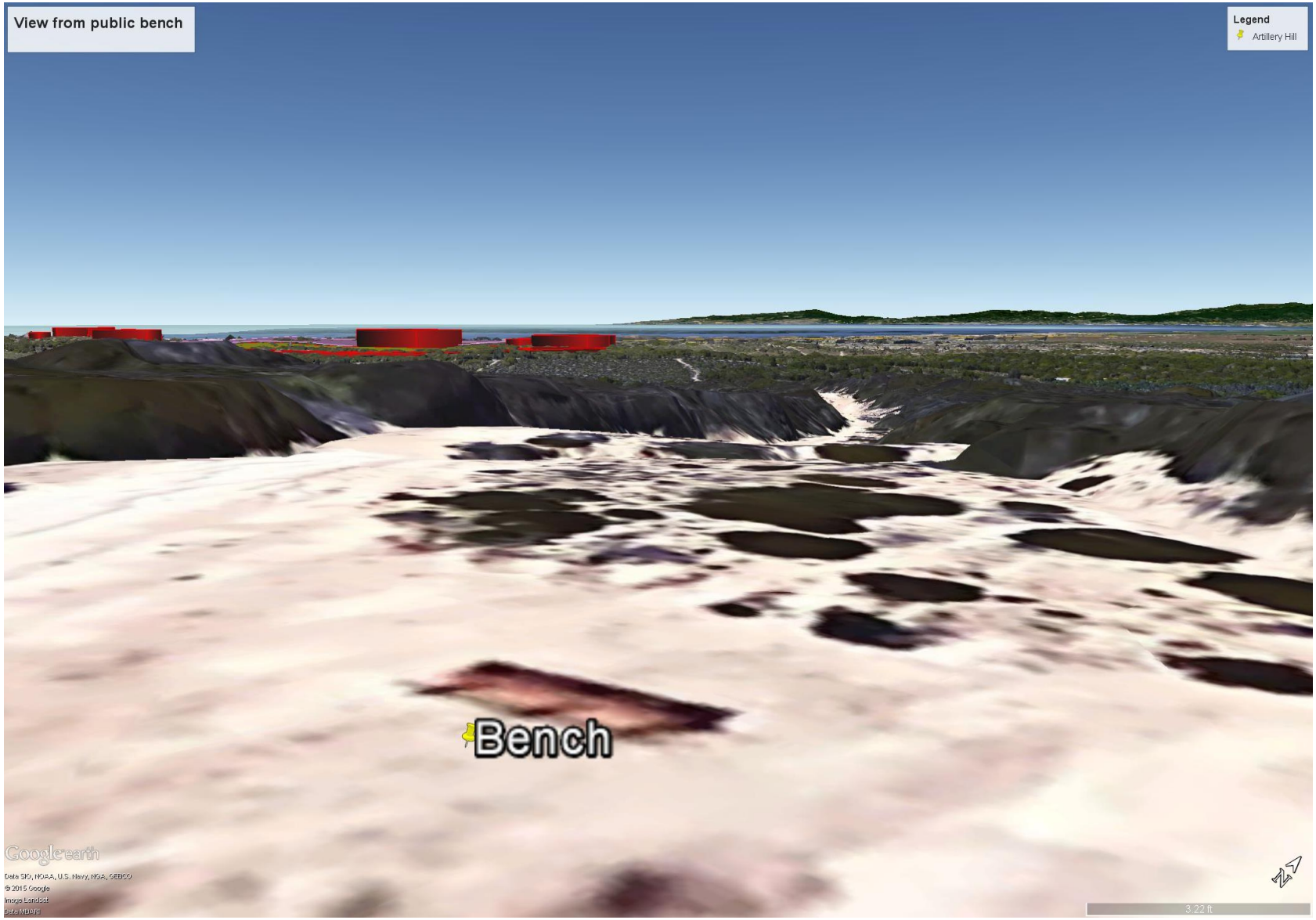
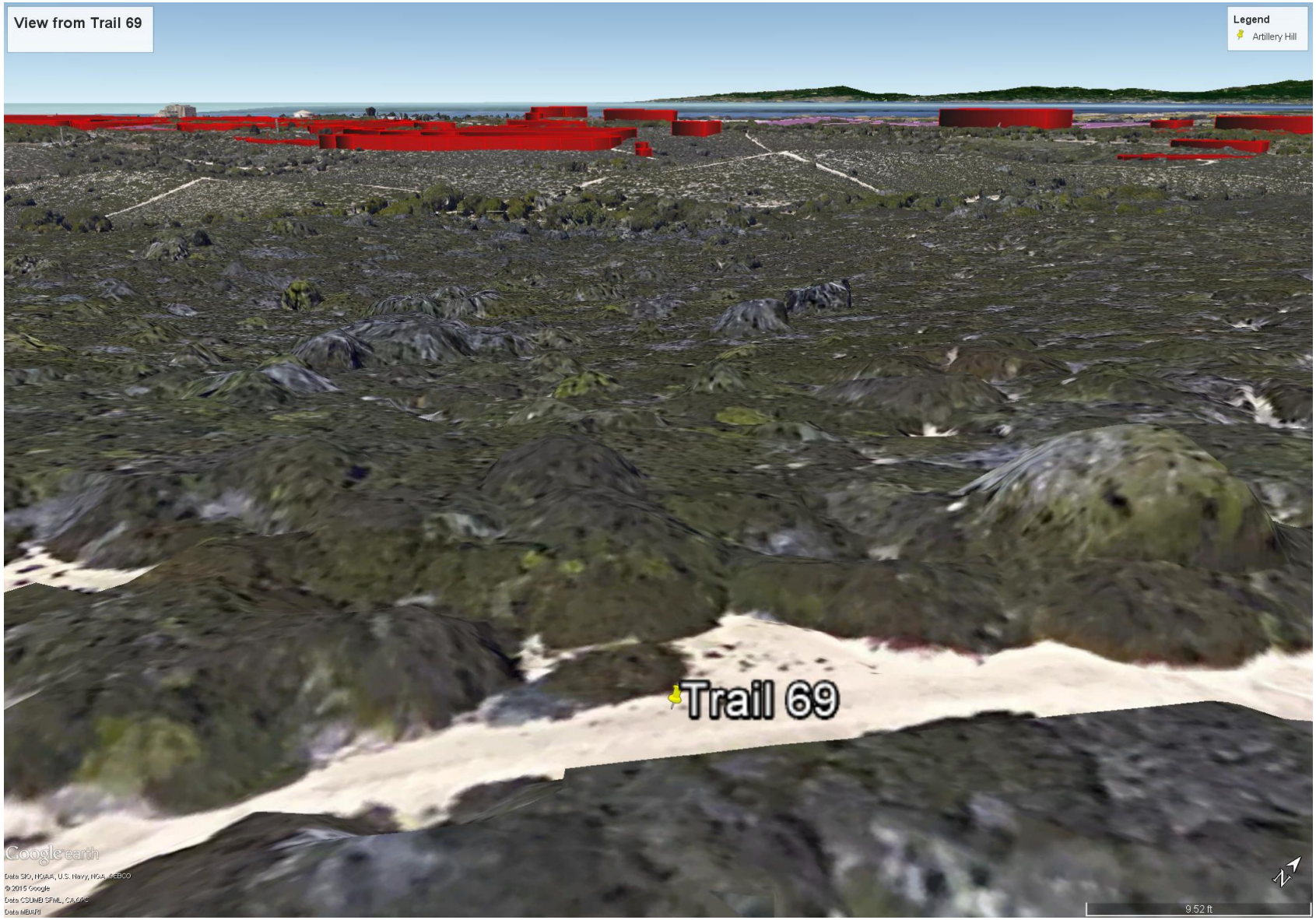


Figure 2. Visual simulation – view from the 360 vista point on Trail 69.



Appendix B

Growth Projection Memorandum

Memo

To: City of Seaside
From: Raimi + Associates
Date: February 20, 2018
Re: Seaside General Plan Update (Seaside 2040) Growth Projections

This memorandum summarizes the growth projections completed by Raimi + Associates for the Seaside General Plan and EIR. The level of development evaluated in the General Plan Environmental Impact Report is based upon worst-case assumptions for development activity up to the 2040 horizon year of the Seaside General Plan. Actual development in any city or county is typically less than the theoretical limit of development allowed under the population density and building intensity standards of the General Plan and may be less than the worst-case assumptions contained herein. Buildout in any jurisdiction is only partially controlled by the General Plan and land use regulations. Most growth is market driven and dependent upon a number of factors, including population growth (including birth rates, death rates, and immigration rates), availability of resources (e.g. water), other federal, state, and local regulations, economic forces, and the intent of individual property owners.

The City of Seaside has development limits that can accommodate new development within the General Plan Update horizon of 2040. For the 2040 General Plan EIR growth projections, the City of Seaside considered census data, historic growth data, knowledge of the Seaside market and development community, staff recommendations, and regional growth projections from the Association of Monterey Bay Area Governments (AMBAG).

This memo describes the methodologies used to estimate worst-case assumptions for buildout under the proposed General Plan by 2040, which are summarized in Table 1. As detailed in this memorandum, City Staff and consultants made worst-case assumptions, and then compared those assumptions to AMBAG's 2018 growth projections for the year 2040. This comparison confirms that the worst-case assumptions in this memorandum are conservative for the purposes of the environmental analysis. As described in Section 5, the population projections are approximately three times higher than those calculated by AMBAG, housing unit and employment projections are approximately two times higher than those calculated by AMBAG, and are higher than historic growth rates.

TABLE 1 – ALL PROJECTIONS SUMMARY

Plan Area / Designation	Single Family Units	Multifamily Units	*Total Units*	Retail Jobs	Service Jobs	Industrial Jobs	Public Jobs	*Total Jobs*	Hotel Rooms
Neighborhood Low	22	-	*22*	-	-	-	-	*0*	-
Neighborhood Medium	47	-	*47*	-	-	-	-	*0*	-
Neighborhood General	50	25	*75*	-	-	-	-	*0*	-
Neighborhood High	-	99	*99*	-	-	-	-	*0*	-
Mixed Use Low	-	135	*135*	115	116	-	-	*231*	-
Mixed Use High	-	120	*120*	81	163	-	-	*244*	-
Employment	-	-	*0*	-	481	163	240	*884*	-
Seaside East	401	594	*995*	281	1,206	227	336	*2,051*	220
Campus Town / Main Gate Area	913	1,015	*1,928*	370	-	275	-	*645*	700
West Broadway Urban Village SP	-	410	*410*	52	97	-	-	*149*	250
New Auto Mall	-	-	*0*	100	-	-	-	*100*	-
Bayonet–Blackhorse Golf Course	168	-	*168*	300	-	002D	-	*300*	500
Military Housing Renovations	50	-	*50*	-	-	-	-	*0*	-
TOTAL	**1,651**	**2,398**	**4,050**	**1,300**	**2,063**	**665**	**576**	**4,604**	**1,670**

The growth projections do not use a maximum theoretical buildout approach. The maximum theoretical buildout approach assumes the development of every parcel with the maximum amount of development allowed under the General Plan. Actual development is typically less than the theoretical limit of development; therefore a worst-case scenario was developed. As outlined below these assumptions are largely based upon the underlying land use designations. As discussed above and in Section 5 below, buildout within the City of Seaside can be affected by a variety of other factors, consequently this methodology is considered conservative.

Since the time these growth assumptions were initially made and incorporated into the technical analyses, parcel specific/project-specific growth may have changed in minor ways. However, this memorandum is intended to estimate City-wide growth, and minor variations in parcel specific/project-specific buildout assumptions are not anticipated to change these overall city-wide buildout assumptions. This is due in part to the highly conservative nature of the growth rates assumed herein, and the fact that growth rates are always highly variable when viewed on a parcel specific-basis (individual projects may not ultimately be developed, or may proceed at increased or decreased densities depending upon a variety of factors).

1. Residential Land Use Designations

Neighborhood Low Designation (Accessory Dwelling Units)

The maximum allowed density under the previous General Plan Land Use Element and the new 2040 General Plan for the least intense residential area is identical: 8 dwelling units per acre (du/ac). The designation was called “Low Density Single Family Residential” in the 2004 General Plan and “Neighborhood Low” in the 2040 General Plan. In addition to the maximum density of 8 du/ac, development is limited to one unit per lot, plus accessory dwelling unit (ADU) as applicable. Growth is possible within this land use designation, in particular as an ADU.

To calculate a reasonably foreseeable growth estimate for Neighborhood Low parcels, all parcels in this designation are assumed to have a very small chance of building an accessory dwelling unit. The rate used for ADU development was 1% of all Neighborhood Low parcels, given the existing scarcity of ADUs in Seaside, the relatively small lot size of many parcels in this General Plan Land Use Designation, the challenges in meeting the parking and setback requirements for ADUs, and the financial investment required for single-family owners to construct ADUs. This equates to approximately 1 new occupied unit per year. New units were assumed to be single-family.

TABLE 2 – NEIGHBORHOOD LOW PROJECTIONS

Total Acreage	Maximum Allowed Density	ADU Growth Rate	Total Net New Units	Single Family Units	Multifamily Units
405	1 unit + ADU	1%	**22**	22	0

Neighborhood Medium

Compared to the 2004 General Plan, the maximum allowed density was increased in this residential designation, from 12 du/ac to 15 du/ac (previously known as "Medium Density Single Family Residential" under the 2004 General Plan). To estimate the future growth, analysis was performed using the following steps: 1) all existing condominium developments were exempted, as they are unlikely to change, 2) parcels developed at less than 8 du/ac were identified as potential "change parcels", 3) the potential capacity for new development in change parcels was calculated, and 4) a realistic growth adjustment of 10% was applied to this total potential development capacity. New units were assumed to be single-family.

TABLE 3 – NEIGHBORHOOD MEDIUM PROJECTIONS

Total Acreage	Maximum Allowed Density	Assumed Realistic Density	Potential Change Area	Total Net New Growth Capacity*	Realistic Growth Adjustment	Total Net New Units	Single Family Units	Multifamily Units
337	15 du/ac	15 du/ac	40 acres	470 units	10%	**47**	47	0

**Excludes existing residential units*

Neighborhood General

Compared to the 2004 General Plan, the maximum allowed density was increased in this residential designation, from 15 du/ac to 30 du/ac (previously known as "Medium Density Residential" under the 2004 General Plan). To estimate the future growth in this designation, analysis was performed using the following steps: 1) existing condominium developments and mobile home parks were exempted, as they are unlikely to change, 2) a parcel-by-parcel investigation was performed using vacancy, age of building, and existing density/height as the criteria for determining change parcels, 3) it was assumed these change parcels would redevelop to 90% of their maximum allowable density, as not every project will develop to its maximum allowable intensity, and 4) a realistic growth adjustment of 10% was applied to the potential growth from these change parcels. One-third of the units were assumed to be single family and two-thirds were assumed to be multifamily.

TABLE 4 – NEIGHBORHOOD GENERAL PROJECTIONS

Total Acreage	Maximum Allowed Density	Assumed Realistic Density	Potential Change Area	Total Net New Growth Capacity*	Realistic Growth Adjustment	Total Net New Units	Single Family Units	Multifamily Units
72	30 du/ac	27 du/ac	37 acres	750 units	10%	**75**	25	50

**Excludes existing residential units*

Neighborhood High

Compared to the 2004 General Plan, the maximum allowed density was increased in this residential designation, from 25 du/ac to 45 du/ac (previously known as "High Density Residential" under the 2004 General Plan). To estimate the future growth in this designation, a simple analysis was performed: 1) existing mobile home parks and major existing affordable housing complexes – Del Monte Manor and the Bayview Apartments – were exempted, as they are unlikely to change, 2) a parcel-by-parcel review identified six parcels that were had potential to change during the General Plan timeline using vacancy, age of building, and existing density/height as the criteria, 3) it was assumed these change parcels would redevelop to 90% of their maximum allowable density, as not every project will develop to its maximum allowable intensity, and 4) a realistic growth adjustment of 40% was applied to these potential change parcels, higher than other designations given the potential for opportunity redevelopment on the identified parcels. All units were assumed to be multifamily.

TABLE 5 – NEIGHBORHOOD HIGH PROJECTIONS

Total Acreage	Maximum Allowed Density	Assumed Realistic Density	Potential Change Area	Total Net New Growth Capacity*	Realistic Growth Adjustment	Total Net New Units	Single Family Units	Multifamily Units
14	45 du/ac	41 du/ac	7 acres	246 units	40%	**99**	0	99

**Excludes existing residential units*

Mixed-Use Low

The maximum allowed intensity in this mixed-use designation is 2.5 FAR (or 45 du/ac). Note: FAR was used to calculate future growth as it is necessary to use floor area to generate employment projections. The following assumptions about the allocation of floor area was: 70% residential, 20% retail, 10% office. The projections related to employment growth are explained below in section #2:

To estimate future residential growth in this designation, the following analysis was performed:

1. Redeveloped parcels were assigned 70% of the allowed maximum FAR for a realistic intensity of 1.75 FAR, as developers often build a variety of building/product types of which some could be at a lower density than the maximum allowed and site-specific constraints often limit the maximum building envelope (assumed realistic density).
2. A parcel-by-parcel analysis using vacancy, existing FAR, age of existing building, ownership, parcel size, and other quantitative measures was performed to assess the likelihood of a given parcel redeveloping (potential change area).
3. It was assumed 15% of the total floor area is reserved for internal circulation.
4. For all Mixed-Use Low parcels determined 'likely' to redevelop, it was assumed 15% of these parcels redeveloped during the 2040 timeframe (realistic growth adjustment). The 15% assumption regarding a realistic level of growth for mixed-use low parcels is based on market trends, recent development history along major Seaside commercial corridors, constraints related to water supply, and City staff's knowledge and expertise of the plan area.
5. Average unit size = 1,100 SF

TABLE 6 – MIXED USE LOW PROJECTIONS

Total Acreage	Maximum Allowed Density	Assumed Realistic Density	Potential Change Area	Total Net New Growth Capacity*	Realistic Growth Adjustment	Total Net New Units	Single Family Units	Multifamily Units
37	2.5 FAR 45 du/ac	1.75 FAR 41 du/ac	25 acres	900 units	15%	**135**	0	135

**Excludes existing residential units and non-residential square footage.*

Mixed-Use High

The maximum allowed intensity in this mixed-use designation is 3.0 FAR (or 60 du/a). FAR (rather than density) was used to calculate future growth as it is necessary to use floor area to generate employment projections. The following assumptions about the allocation of floor area and residential unit size was used:

- *Mixed Use Allocation: 70% residential, 15% retail, 15% office*
- *Average unit size = 1,000 SF*

To estimate future residential growth in this designation, the following analysis was performed (the projections related to employment growth are explained below in section #2):

1. Redeveloped parcels were assigned 80% of the allowed maximum FAR for a more realistic intensity of 2.4 FAR, as developers often build a variety of building/product types of which some could be at a lower density than the maximum allowed and site-specific constraints often limit the maximum building envelope (assumed realistic density). Mixed-Use High parcels on average were larger than Mixed-Use Low parcels, accounting for the higher realistic maximum intensity.

2. A parcel-by-parcel analysis using vacancy, existing FAR, age of existing building, ownership, parcel size, and other quantitative measures was performed to assess redevelopment potential (potential change area).
3. It was assumed 15% of the total floor area is reserved for internal circulation.
4. For all Mixed-Use Low parcels determined 'likely' to redevelop, it was assumed 10% of these parcels redeveloped during the 2040 timeframe (realistic growth adjustment). The 10% assumption regarding a realistic level of growth for mixed-use low parcels is based on market trends, recent development history along major Seaside commercial corridors (and a corresponding lack of existing large mixed-use development projects in the City), constraints related to water supply, and City staff's knowledge and expertise of the plan area.

TABLE 7 – MIXED USE HIGH PROJECTIONS

Total Acreage	Maximum Allowed Density	Assumed Realistic Density	Potential Change Area	Total Net New Growth Capacity*	Realistic Growth Adjustment	Total Net New Units	Single Family Units	Multifamily Units
21	3.0 FAR 60 du/a	2.4 FAR 48 du/ac	20 acres	1,201 units	10%	**120**	0	120

**Excludes existing residential units and non-residential square footage.*

2. Employment Projections

Employment

The maximum allowed intensity in this mixed-use designation ranges from 0.65 to 2.5 FAR. Differing assumptions were used for several different geographic areas of the City, based on existing conditions, parcel sizes, and other known market factors. The three employment growth areas are: 1) Auto Center, 2) Del Monte Boulevard (adjacent to Sand City), and 3) new growth areas on former Fort Ord lands. The employment areas currently containing multiple regional commercial developments ("Big Box" retail) located along Canyon Del Rey Boulevard and northern portion of Fremont Boulevard are *not projected for change/growth*.

Del Monte Boulevard Redevelopment Assumptions:

- Parcels were assigned 80% of the allowed maximum FAR for a realistic intensity of 1.25 FAR.
- Service jobs were assumed to be 50% of total new jobs and industrial jobs are 50% of total new jobs.
- Assumed 20% of parcels redevelop to a mixture of new job-generating uses (realistic growth adjustment).
- Service jobs were assigned as 1 per 400 sf, and Industrial jobs were 1 per 1500 sf.

TABLE 8 –DEL MONTE BOULEVARD / SAND CITY EDGE EMPLOYMENT PROJECTIONS

Maximum Allowed Intensity	Assumed Realistic Intensity	Potential Change Area	Total Net New Growth Capacity*	Realistic Growth Adjustment	Conversion to Jobs			Total Jobs
					Growth by Type	Jobs Rate	Jobs by Type	
1.5 FAR	1.25 FAR	7 acres	Service: 173,050 sf (50%)	20%	Service: 34,610 sf	1/400	87 service jobs	110
			Industrial: 173,050 sf (50%)		Industrial: 34,610 sf	1/1500	23 industrial jobs	

**Excludes existing non-residential square footage.*

New Growth Area Assumptions (south of Gigling Road and north of Parker Flats Cut Off Road):

- Parcels were assigned 66% of the allowed maximum FAR for a realistic intensity of 0.5 FAR.
- Assumed 30% of floor area redevelops to a mixture of new job-generating uses. This assumption is higher than the other employment areas as the new growth area is mostly undeveloped at present.
- Service jobs are 50% of total new jobs, public jobs are 40% of total new jobs, and industrial jobs are 10% of total new jobs. The vision for this new growth area is a mixture of federal agency/institutional employers, suburban office parks, makerspaces, light industrial, etc.
- Service jobs are 1 per 400 sf, public jobs are 1 per 400 sf, and industrial jobs are 1 per 1500 sf.

TABLE 9 – NEW GROWTH EMPLOYMENT PROJECTIONS

Maximum Allowed Intensity	Assumed Realistic Intensity	Potential Change Area	Total Net New Growth Capacity*	Realistic Growth Adjustment	Conversion to Jobs			Total Jobs
					Growth by Type	Jobs Rate	Jobs by Type	
0.75 FAR	0.5 FAR	37 acres	Service: 400,000 sf (50%)	30%	Service: 120,000 sf	1/400	300 service jobs	556
			Industrial: 80,000 sf (10%)		Industrial: 24,000 sf	1/1500	16 industrial jobs	
			Public: 320,000 sf (40%)		Public: 95,963 sf	1/400	240 public jobs	

**Excludes existing non-residential square footage.*

Auto Center Redevelopment Assumptions:

- Parcels were assigned 75% of the allowed maximum FAR for a realistic intensity of 1.5 FAR
- Service jobs are 66% of total new jobs and industrial jobs are 33% of total new jobs.
- Assumed 20% of parcels redevelop to a mixture of new job-generating uses (realistic growth adjustment).
- Service jobs were assigned at 1 per 500 sf, and industrial jobs were 1 per 1,200 sf.

TABLE 10 – AUTO CENTER HIGH EMPLOYMENT PROJECTIONS

Maximum Allowed Intensity	Assumed Realistic Intensity	Potential Change Area	Total Net New Growth Capacity*	Realistic Growth Adjustment	Conversion to Jobs			Total Jobs
					Growth by Type	Jobs Rate	Jobs by Type	
2.0 FAR	1.5 FAR	37 acres	Service: 1,485,300 sf (66%)	20%	Service: 297,340 sf	1/500	95 service jobs	219
			Industrial: 743,320 sf (33%)		Industrial: 148,670 sf	1/1,200	124 industrial jobs	

**Excludes existing non-residential square footage.*

Mixed-Use Low

To estimate future employment growth in this designation, the following analysis was performed:

- Parcels were assigned 70% of the allowed maximum FAR for a realistic intensity of 1.75 FAR
- 70% of the redeveloped floor area was residential, with remainder as *20% retail* and *10% office.*
- 25% of this floor area redeveloped during the 2040 timeframe. This assumption was more aggressive than the 10% assumption used for residential above as the Mixed-Use Low area is predominantly non-residential as of Plan adoption, and the non-residential market is stronger.
- Retail jobs were assigned as 1 per 800 sf, and service jobs were 1 per 400 sf.

TABLE 11 – MIXED USE LOW EMPLOYMENT PROJECTIONS

Maximum Allowed Intensity	Assumed Realistic Intensity	Potential Change Area	Total Net New Growth Capacity*	Realistic Growth Adjustment	Conversion to Jobs			Total Jobs
					Growth by Type	Jobs Rate	Jobs by Type	
2.5 FAR	1.75 FAR	27 acres	Retail: 369,580 sf (20%)	25%	Retail: 92,395 sf	1/800	115 retail jobs	231
			Service: 184,790 sf (10%)		Service: 46,198 sf	1/400	116 service jobs	

**Excludes existing non-residential square footage.*

Mixed-Use High

The maximum allowed intensity in this mixed-use designation is 3.0 FAR. Additional change parcels were added to the non-residential portion of the mixed-use low projections (compared to residential projections). It was assumed that:

- Parcels were assigned 80% of the allowed maximum FAR for a realistic intensity of 2.4 FAR
- 70% of the redeveloped floor area was residential, with remainder as *15% retail* and *15% office.*
- 25% of this floor area redeveloped during the 2040 timeframe. This assumption was more aggressive than the 10% assumption used for residential above as the Mixed-Use Low area is predominantly non-residential as of Plan adoption, and the non-residential market is more robust in the present/near-term.
- Retail jobs were assigned as 1 per 800 sf, and service jobs were 1 per 400 sf.

TABLE 12 – MIXED USE HIGH EMPLOYMENT PROJECTIONS

Maximum Allowed Intensity	Assumed Realistic Intensity	Potential Change Area	Total Net New Growth Capacity*	Realistic Growth Adjustment	Conversion to Jobs			Total Jobs
					Growth by Type	Jobs Rate	Jobs by Type	
3.0 FAR	2.4 FAR	21 acres	Retail: 260,143 sf (15%)	25%	Retail: 65,036 sf	1/800	81 retail jobs	244
			Service: 260,143 sf (15%)		Service: 65,036 sf	1/400	163 service jobs	

**Excludes existing non-residential square footage.*

3. Specific Plan and Existing Project Estimates

This section covers the assumptions for specific plans (existing and on-going) and "pipeline projects;" those projects either already being evaluated by the City or slated for development in the near future. Those "pipeline projects" expected to occur under the General Plan Update are listed below, along with their projected build-out percentages and total program.

Specific Plan Areas

Projected residential units and commercial square footage totals come directly from Specific Plan EIRs or conversations with City staff. The assumed level of growth for each of these projects by 2040 is based on City staff's knowledge and expertise of each specific project area.

- Campus Town Specific Plan (Surplus II and 26 Acres): Projections are based on an early draft of the Campus Specific Plan, which was underway during the planning process. Industrial jobs in this Plan area are intended as R&D, makerspaces, and 'flex' spaces, and thus are estimated at 1 job per 400 sf, consistent with the ratio used for Service Jobs.
- Main Gate Specific Plan: Using the responses to the City-issued Main Gate RFP, City staff provide an estimate for housing units, non-residential square footage, and hotel rooms for the Specific Plan area was estimated by staff. Industrial jobs in this Plan area are intended as intensive makerspaces and 'flex' spaces, and thus are estimated at 1 job per 400 sf, higher than industrial job rates elsewhere in the City.
- West Broadway Urban Village Specific Plan: Projected growth numbers for this Specific Plan area were taken directly from the WBUV Specific Plan EIR. It was assumed that 100% of the growth forecast is built by 2040.

TABLE 13 – SPECIFIC PLAN PROJECTION TOTALS

Specific Plan Areas	Single Family Units	Multifamily Units	Total Units	Retail Jobs	Service Jobs	Industrial Jobs	Public Jobs	*Total Jobs*
Campus Town	798	540	1,338	184 (147,000 sf @ 800 per)	-	140 (56,000 sf @ 400 per)	-	324
Main Gate	115*	475*	590*	186 (149,000 sf @ 800 per)	-	135 (54,000 sf @ 400 per)	-	321
West Broadway Urban Village SP	-	410	410	52 (38,950 sf @ 750 per)	97 (38,950 sf @ 400 per)	-	-	149
Subtotal	**1,005**	**1,510**	**2,338**	**422**	**97**	**275**	**0**	**794**

* The Main Gate Specific Plan project and EIR were approved in 2010. However, this site has not been developed. The applicant has considered potentially adding housing, however no final decision has been made, nevertheless housing in this area was assumed to be conservative.

Existing/Ongoing Projects

Projected residential units and commercial square footage totals were provided by City staff based on intimate working knowledge of the projects below and/or explicitly entitled program amounts.

- Luxury Auto Mall: It was assumed that 100% of the project is built by 2040 (100,000 sf of retail / 100 retail jobs). The job generation rate of 1 per 1,000 sf is lower than other comparative retail job areas, as the projected project is one with a large footprint relative to the intensity of the use (high-end auto sales).
- Bayonet – Blackhorse Golf Course Expansion: It was assumed that 100% of the project is built by 2040 (168 single-family units, and 300 retail jobs). This project is already underway.
- Renovations/Duplexing of Existing Military Housing: It was assumed that 100% of the project is built by 2040 (50 single-family units). This project is already underway as of Plan adoption. An estimated program for the ongoing renovation of the military housing was used to determine the future unit count in the military housing areas.

TABLE 14 – EXISTING PROJECT PROJECTION TOTALS

Existing/Ongoing Projects	Single Family Units	Multifamily Units	*Total Units*	Retail Jobs	Service Jobs	Industrial Jobs	Public Jobs	*Total Jobs*
Luxury Auto Mall	-	-	0	100	-	-	-	100
Bayonet–Blackhorse Golf Course	168	-	*168*	300	-	-	-	300
Military Housing Renovations	50	-	*50*	-	-	-	-	0
Total	**218**	**0**	**218**	**400**	**0**	**0**	**0**	**400**

4. Seaside East Projection Methodology

Seaside East is a former area of Fort Ord. The area is specified as a future specific plan area. The growth projections for this area are based on an initial estimate of the planned mix of land uses for the area. The planned land use mix is defined in the General Plan.

Developable acres for each designation was estimated by staff using knowledge of existing topography in Seaside East and a Conceptual Master Plan previously prepared for the area in 2010. Projections and their related assumptions for new development are described in detail below.

TABLE 15 – PROJECTIONS FOR RESIDENTIAL UNITS IN SEASIDE EAST

Designation	Total Acreage	Maximum Allowed Density	Assumed Realistic Density	Total Net New Growth Capacity	Realistic Growth Adjustment	Total Net New Units	Single Family Units	Multifamily Units
Neighborhood Low	54	8 du/ac	6.5 du/ac	345 units	35%	**120**	120	0
Neighborhood Medium	67	15 du/ac	15 du/ac	804 units	35%	**281**	281	0
Mixed Use Low	45	45 du/ac	38 du/ac	1,697 units	35%	**594**	0	594
Total						**995**	401	594

TABLE 16 – PROJECTIONS FOR EMPLOYMENT IN SEASIDE EAST

Designation	Total Acreage	Maximum Allowed Density	Assumed Realistic Density	Total Net New Growth Capacity	*Realistic Growth Adjustment*	*Conversion to Jobs*		
						Growth by Type	*Jobs Rate*	*Jobs by Type*
Employment	100 acres	0.75 FAR	0.65 FAR	2,163,117 sf, Includes 117,000 sf hotel	35%	Service: 416,400 sf (55%)	1/400	1,041 service jobs
						Industrial: 340,691 sf (45%)	1/1500	227 industrial jobs
Public	25 acres	0.4 FAR	0.35 FAR	333,234 sf	35%	Public: 117,232 sf (100%)	1/350	336 service jobs
Mixed Use Low	45 acres	2.5 FAR	2.1 FAR	755,776 sf (20% of area)	35%	Retail: 198,470 sf (75%)	1/800	248 retail jobs
						Service: 66,157 sf (25%)	1/400	165 service jobs

5. Historic Growth Rates and AMBAG Regional Growth Forecast Comparison

From 2000 to 2010 Monterey County as a whole saw a population increase of less than 13,300 residents (3%). Five jurisdictions lost population (Carmel-By-The-Area, -9%; Del Rey Oaks, -2%, Monterey, -6%, Pacific Grove, -3%, unincorporated Monterey County, -1%). The City of Seaside population remained virtually unchanged from 2000 through 2010, and currently represents approximately 7.7 percent of Monterey County's total population. During this same time period, the Cities of Salinas and Soledad grew (5% and 12% respectively). Gonzales, Greenfield, King City and Marina also grew. Sand City recorded a rapid rate of population growth due to its small size, but added only 73 people from 2000 through 2010. For additional details on historic growth rates in the Region, Monterey County, the City of Seaside, and Fort Ord, please see Section 4 of AMBAG's Growth Forecast, titled Demographic History of the AMBAG Region. Additional details on Seaside's historic population growth rates are provided in Tables 17, and 18 below.

TABLE 17 HISTORIC POPULATION GROWTH IN SEASIDE

Year	Population	Growth Percentage
2000	33,097	–
2001	33,357	0.8%
2002	33,756	1.2%
2003	33,337	-1.2%
2004	32,927	-1.2%
2005	33,037	0.3%
2006	32,344	-2.1%
2007	31,954	-1.2%
2008	32,657	2.2%
2009	32,660	<0.1%
2010	32,955	0.9%
2011	32,881	-0.2%
2012	33,359	1.5%
2013	33,756	1.2%
2014	33,806	0.1%
2015	34,192	1.1%
2016	34,150	-0.1%
2017	34,165	<0.1%

Sources: DOF. 2012a. *E-4 Population Estimates for Cities, Counties, and the State, 2001-2010, with 2000 & 2010 Census Counts*. http://www.dof.ca.gov/Forecasting/Demographics/Estimates/E-4/2001-10/.

DOF, 2017a. *E-4 Population Estimates for Cities, Counties, and the State, 2011-2017 with 2010 Census Benchmark*. http://www.dof.ca.gov/Forecasting/Demographics/Estimates/E-4/2010-17/.

TABLE 18 HISTORIC HOUSEHOLD UNIT GROWTH IN SEASIDE

Year	Single Family Homes		Multifamily Homes		Mobile Homes	Vacancy Rate	Total Household Units	Growth Percentage
	Detached	Attached	Two to Four	Five Plus				
2000	8,386[1]		2,187[2]		432	10.7%	11,005	-
2010	6,779	1,265	877	1,368	583	7.2%	10,872	-1.2% (from 2000)
2017	6,810	1,271	883	1,368	583	7.5%	10,915	0.4% (from 2010)

[1]Single Detached and Attached are provided as a combined "Single" number by the DOF for the years 2000 through 2009.

[2]Two to Four and Five Plus categories are provided as a combined "Multiple" number by the DOF for the years 2000 through 2009.

Sources: DOF. 2012b. *E-8 Historical Population and Housing Estimates for Cities, Counties, and the State, 2000-2010*. http://www.dof.ca.gov/Forecasting/Demographics/Estimates/E-8/2000-10/.

DOF. 2017b. *E-5 Population and Housing Estimates for Cities, Counties, and the State, 2011-2017 with 2010 Census Benchmark.* http://www.dof.ca.gov/Forecasting/Demographics/Estimates/E-5/.

On June 13, 2018 AMBAG adopted their Regional Growth Forecast for the region's population, housing and employment out to the year 2040.[1] The AMBAG projections include regional projections (including Monterey County, San Benito County, and Santa Cruz County), as well as sub-regional projections for individual cities. The growth forecast is used to support regional planning efforts such as the Regional Travel Demand Model, the Metropolitan Transportation Plan, and local planning, such as the development of General Plans and project level review.

Historically, AMBAG's traditional approach to forecasting population used a cohort-component approach which considered three factors: births, deaths and migration. While birth and death data are readily available and trends are relatively predictable over time, migration tends to be much more difficult to track and to forecast as it is heavily influenced by political and economic climates. For the development of AMBAG's new forecast, it chose to place a greater emphasis on employment.

AMBAG implemented an employment-driven forecast model for the first time in the 2014 forecast and contracted with the Population Reference Bureau (PRB) to test and apply the model again for the 2018 Regional Growth Forecast. To ensure the reliability of the population projections, PRB compared the employment driven model results with results from a cohort-component forecast, a growth trend forecast and the most recent forecast published by the California Department of Finance (DOF). All four models resulted in similar population growth trends. As a result of these reliability tests, AMBAG and PRB chose to implement the employment-driven model again for the 2018 Regional Growth Forecast.

AMBAG's 2018 forecast projects that the region's population will grow by approximately 120,600 people between 2015 and 2040, for a total population of 883,300 in 2040. This is slightly lower than prior forecasts and follows the slowing growth rates seen at both the state and national level. This revised growth trend also reflects the most current population estimate for the region. Despite an upward revision to the estimate, the revised DOF

[1] The 2018 AMBAG growth projections are incorporated by reference and available online at: https://ambag.org/sites/default/files/documents/2018_Regional_Growth_Forecast.pdf. The growth projections document growth projections and historic growth rates.

population estimate for 2015 was more than 3,000 lower than prior forecasts predicted. As such, an adjustment was made to AMBAG's 2018 forecast of population growth to account for the sharp fall in fertility rates and international migration that occurred during the recession years that have not fully rebounded.

Table 2 summarizes the total General Plan EIR growth projections as compared to existing 2040 AMBAG projections on a rate change basis. AMBAG is the regional planning entity (Association of Monterey Bay Area Governments). Seaside GP 2040 Project projections are higher than existing AMBAG projections. This comparison confirms the conservative nature of the assumptions in this memorandum and utilized for the EIR for the Seaside 2040 General Plan.

TABLE 19 – PROJECTION COMPARISON TO AMBAG ESTIMATE

			2018 AMBAG Growth Projections			Seaside GP 2040 Growth Projections		
	2015 AMBAG Estimate	2020 AMBAG Estimate	Net New Growth	2040	Compound Annual Growth Rate	Net New Growth	2040	Compound Annual Growth Rate
Population	34,185*	34,301	3,617 (3,501 compared to 2020)	37,802	0.3%	12,112 (11,996 compared to 2020)	46,297	1.0%
Housing Units	10,913	11,126	1,429 (1,216 compared to 2020)	12,342	0.3%	3,230 (3,017 compared to 2020)	14,143	0.8%
Employment	9,650	10,161	1,649 (1,138 compared to 2020)	11,299	0.4%	2,744 (2,233 compared to 2020)	12,394	0.7%

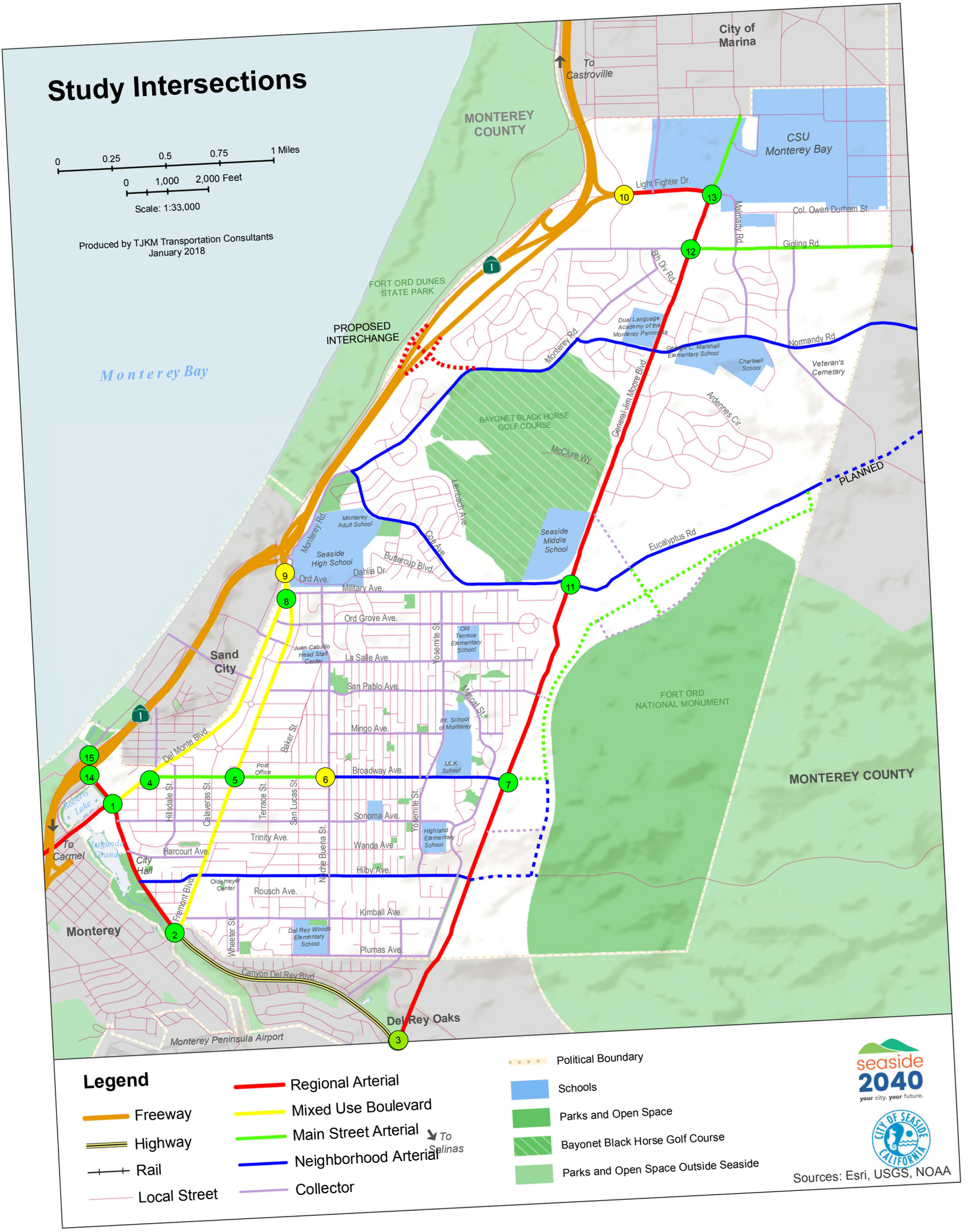
*The Department of Finance estimated the City of Seaside's 2017 population at 34,165, which represents a minor difference in comparison to the AMBAG estimate.

Appendix C

Traffic Volume Comparison and VMT Analysis

Appendix I– Transportation & Circulation Data Sheets

Peak Hour Traffic Volumes


Study Intersections
0 0.25 0.5 0.75 1 Miles
0 1,000 2,000 Feet
Scale: 1:33,000
Produced by TJKM Transportation Consultants
January 2018
City of Marina
To Castroville
MONTEREY COUNTY
CSU Monterey Bay
Light Fighter Dr.
Col. Owen Durham St.
Gigling Rd.
Malmedy Rd.
6th Div Rd.
FORT ORD DUNES STATE PARK
PROPOSED INTERCHANGE
Monterey Bay
Monterey Rd.
Dual Language Academy of the Monterey Peninsula
George C. Marshall Elementary School
Chartwell School
Normandy Rd.
Veteran's Cemetery
Ardennes Cir.
Gen. Jim Moore Blvd.
BAYONET BLACK HORSE GOLF COURSE
McClure Wy.
Lienbach Ave.
PLANNED
Monterey Adult School
Seaside High School
Seaside Middle School
Cass Ave
Buttercup Blvd
Dahlia Dr.
Ord Ave.
Military Ave.
Eucalyptus Rd
Ord Grove Ave.
Yosemite St.
Old Terrace Elementary School
Juan Cabrillo Head Start Center
La Salle Ave.
Sand City
San Pablo Ave.
Muscal St.
Int. School of Monterey
Mingo Ave.
FORT ORD NATIONAL MONUMENT
Del Monte Blvd.
Baker St.
Post Office
Broadway Ave.
MLK School
MONTEREY COUNTY
Roberts Lake
Laguna Grande
To Carmel
Hillsdale St.
Calaveras St.
Terrace St.
San Lucas St.
Sonoma Ave.
Highland Elementary School
Trinity Ave.
Wanda Ave
Harcourt Ave.
City Hall
Hilby Ave.
Oldemeyer Center
Rousch Ave.
Noche Buena St.
Fremont Blvd.
Kimball Ave.
Monterey
Wheeler St.
Del Rey Woods Elementary School
Plumas Ave.
Canyon Del Rey Blvd.
Del Rey Oaks
Monterey Peninsula Airport
To Salinas
Legend
Freeway
Highway
Rail
Local Street
Regional Arterial
Mixed Use Boulevard
Main Street Arterial
Neighborhood Arterial
Collector
Political Boundary
Schools
Parks and Open Space
Bayonet Black Horse Golf Course
Parks and Open Space Outside Seaside
seaside 2040
your city. your future.
CITY OF SEASIDE CALIFORNIA
Sources: Esri, USGS, NOAA

Existing Conditions Peak Hour Traffic Volumes

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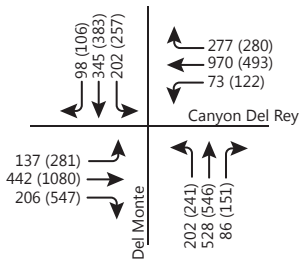
Del Monte / Canyon Del Rey



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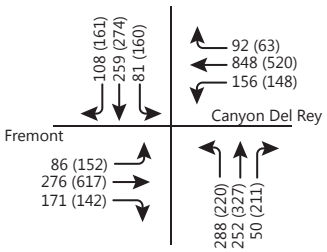

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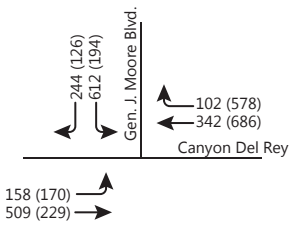
Gen. J. Moore Blvd. / Canyon Del Rey



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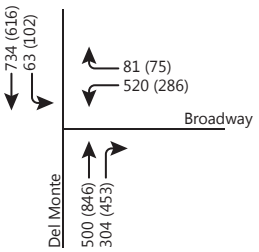
Broadway / Del Monte



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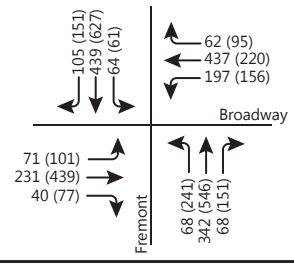

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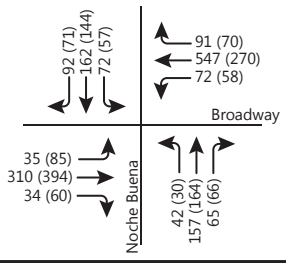
Noche Buena / Broadway



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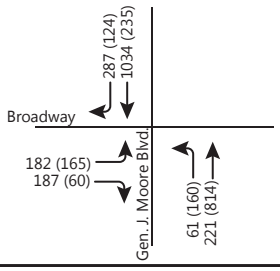

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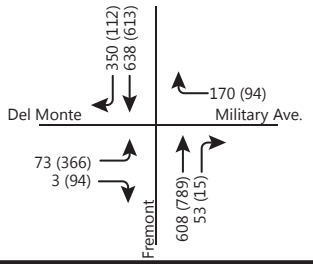

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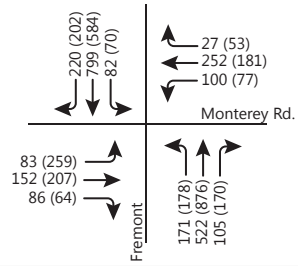

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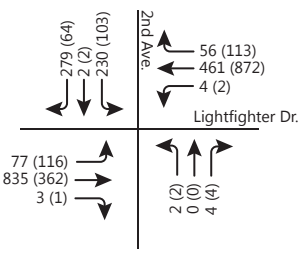

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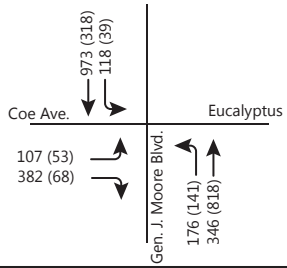

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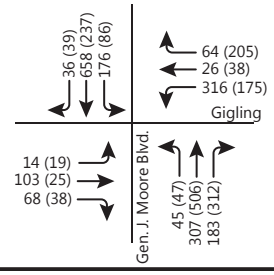

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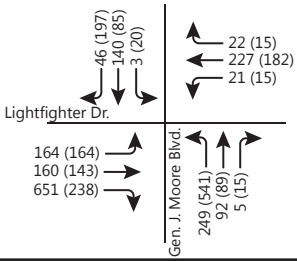
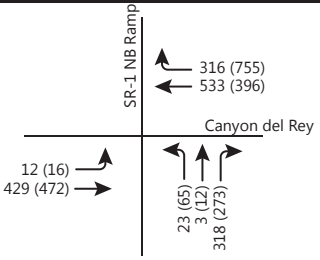


Intersection #14
Hwy 1 NB Ramps / Canyon del Rey



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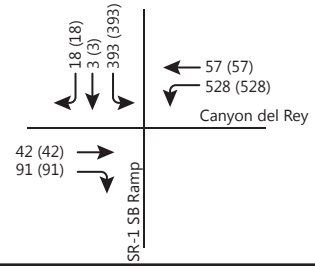
Hwy 1 SB Ramps / Canyon del Rey



LEGEND

X — Study Intersection
XX — AM Peak Hour Volumes
(XX) — PM Peak Hour Volumes

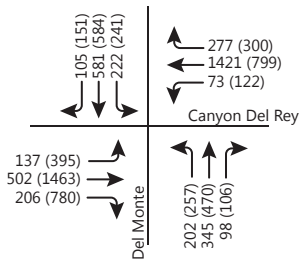
N

TJKM

Seaside 2040 General Plan Update

2040 Baseline Conditions Peak Hour Traffic Volumes

Intersection #1
Del Monte / Canyon Del Rey



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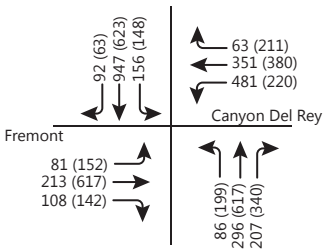
Fremont / Canyon Del Rey



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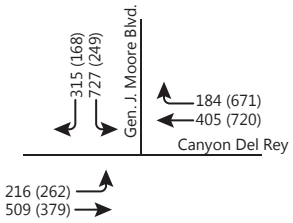

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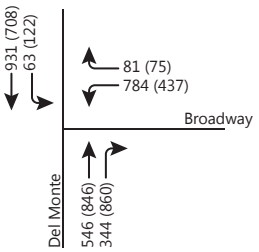
Broadway / Del Monte



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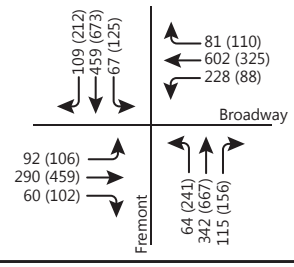

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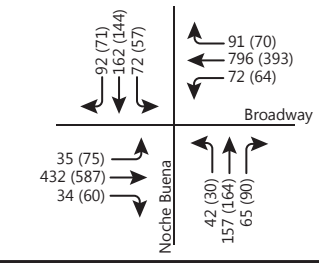

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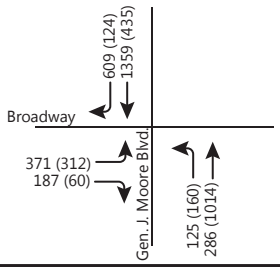

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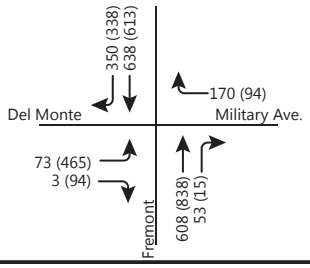

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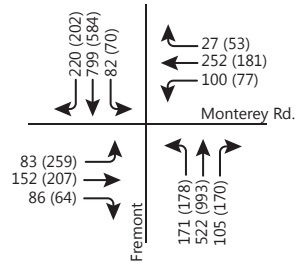

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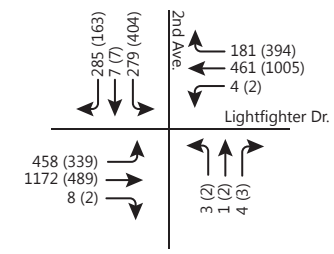
Lightfighter Dr. / 2nd Ave.



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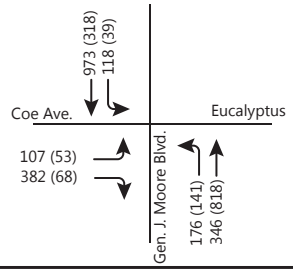
Coe - Eucalyptus / Gen. J. Moore Blvd.



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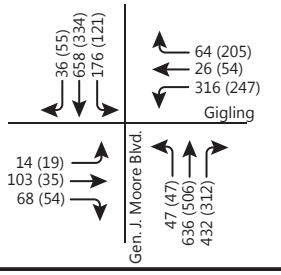
Gigling / Gen. J. Moore Blvd.



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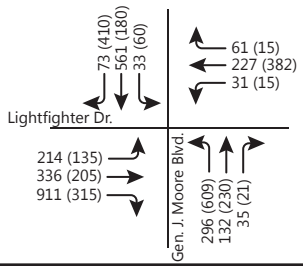
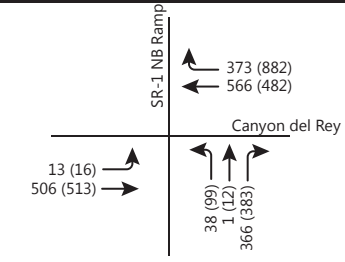
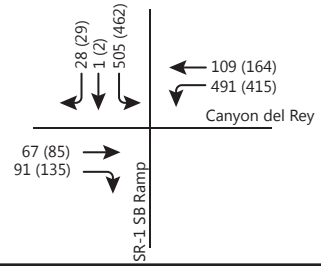
Lightfighter Dr. / Gen. J. Moore Blvd.



Intersection #14
Hwy 1 NB Ramps / Canyon del Rey



Intersection #15
Hwy 1 SB Ramps / Canyon del Rey



LEGEND

X — Study Intersection
XX — AM Peak Hour Volumes
(XX) — PM Peak Hour Volumes

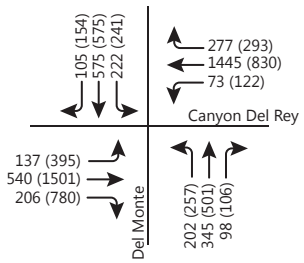
N

TJKM

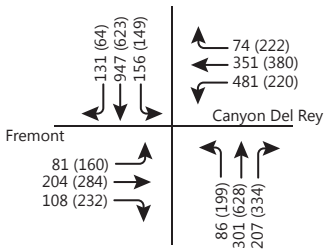
Seaside 2040 General Plan Update

2040 with Proposed General Plan Conditions Peak Hour Traffic Volumes

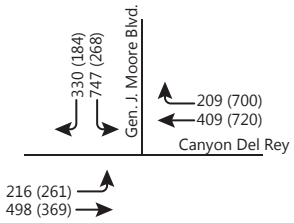
Intersection #1
Del Monte / Canyon Del Rey



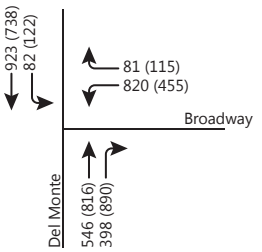
Intersection #2
Fremont / Canyon Del Rey



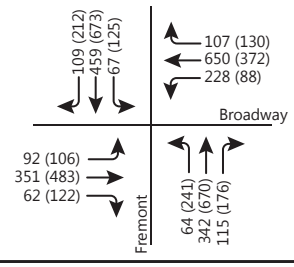
Intersection #3
Gen. J. Moore Blvd. / Canyon Del Rey



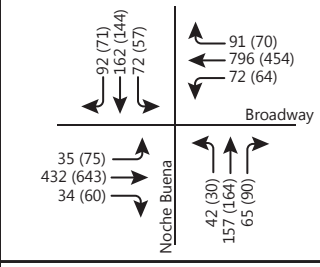
Intersection #4
Broadway / Del Monte



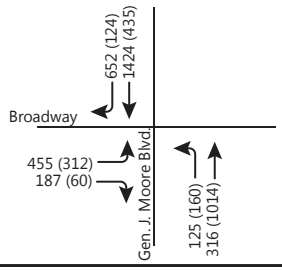
Intersection #5
Fremont / Broadway



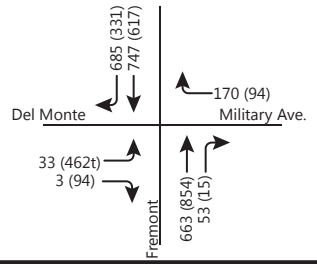
Intersection #6
Noche Buena / Broadway



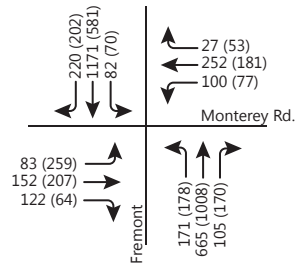
Intersection #7
Gen. J. Moore / Broadway



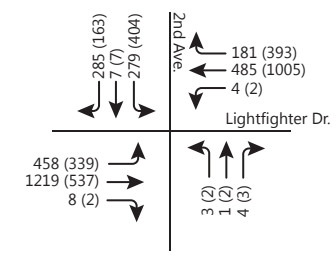
Intersection #8
Fremont / Del Monte



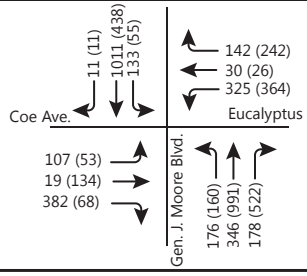
Intersection #9
Fremont / Monterey Rd.



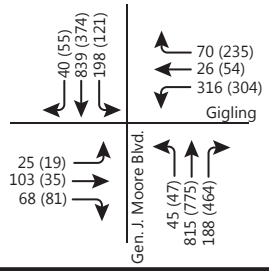
Intersection #10
Lightfighter Dr. / 2nd Ave.



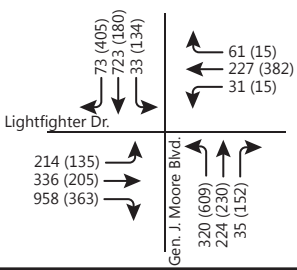
Intersection #11
Coe - Eucalyptus / Gen. J. Moore Blvd.



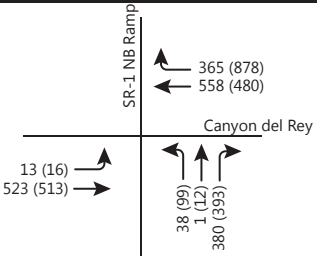
Intersection #12
Gigling / Gen. J. Moore Blvd.



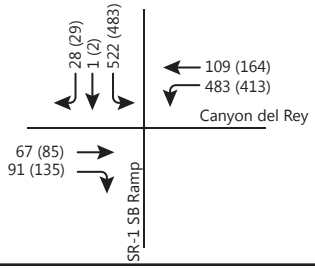
Intersection #13
Lightfighter Dr. / Gen. J. Moore Blvd.



Intersection #14
Hwy 1 NB Ramps / Canyon del Rey



Intersection #15
Hwy 1 SB Ramps / Canyon del Rey



LEGEND

X — Study Intersection
XX — AM Peak Hour Volumes
(XX) — PM Peak Hour Volumes

N

TJKM

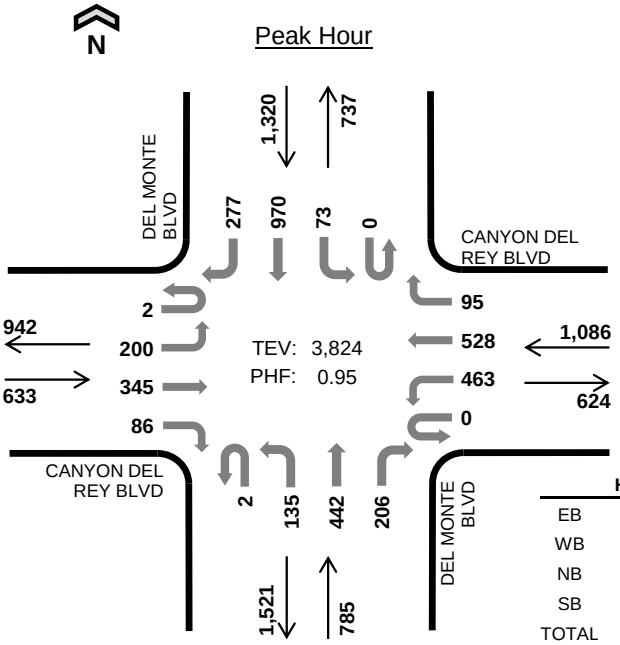
Seaside 2040 General Plan Update

035 - 016

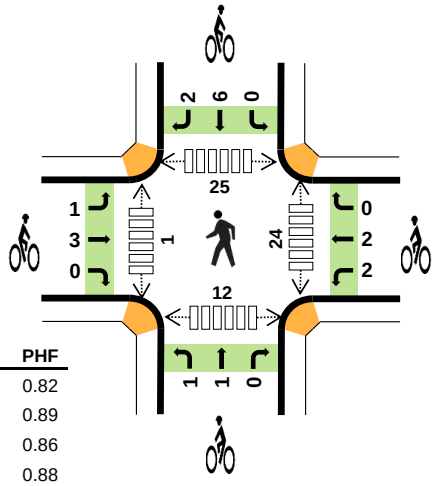
Existing Conditions – Peak Period Intersection Counts

DEL MONTE BLVD
CANYON DEL REY BLVD

Date: 05/09/2017
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:30 AM to 8:30 AM



	HV %:	PHF
EB	1.3%	0.82
WB	0.2%	0.89
NB	0.4%	0.86
SB	0.8%	0.88
TOTAL	0.6%	0.95



Two-Hour Count Summaries

Interval Start	CANYON DEL REY BLVD Eastbound				CANYON DEL REY BLVD 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	3	15	91	19	0	60	81	16	0	13	48	30	0	11	130	35	552	0
7:15 AM	0	33	66	17	0	105	110	22	1	21	82	29	0	18	231	77	812	0
7:30 AM	**0**	**42**	**65**	**10**	**0**	**124**	**159**	**23**	**1**	**32**	**78**	**52**	**0**	**23**	**278**	**72**	**959**	0
7:45 AM	**2**	**51**	**81**	**20**	**0**	**148**	**125**	**21**	**1**	**25**	**145**	**57**	**0**	**16**	**248**	**64**	**1,004**	3,327
8:00 AM	**0**	**57**	**88**	**24**	**0**	**102**	**136**	**29**	**0**	**33**	**98**	**48**	**0**	**10**	**263**	**77**	**965**	3,740
8:15 AM	**0**	**50**	**111**	**32**	**0**	**89**	**108**	**22**	**0**	**45**	**121**	**49**	**0**	**24**	**181**	**64**	**896**	**3,824**
8:30 AM	1	54	99	22	0	86	100	30	0	29	100	56	1	22	166	73	839	3,704
8:45 AM	0	45	113	20	0	95	100	28	0	35	98	57	1	20	158	75	845	3,545
Count Total	6	347	714	164	0	809	919	191	3	233	770	378	2	144	1,655	537	6,872	0
Peak Hour All	**2**	**200**	**345**	**86**	**0**	**463**	**528**	**95**	**2**	**135**	**442**	**206**	**0**	**73**	**970**	**277**	**3,824**	**0**
Peak Hour HV	**0**	**2**	**4**	**2**	**0**	**0**	**2**	**0**	**0**	**1**	**1**	**1**	**0**	**0**	**9**	**1**	**23**	**0**
Peak Hour HV%	**0%**	**1%**	**1%**	**2%**	**-**	**0%**	**0%**	**0%**	**0%**	**1%**	**0%**	**0%**	**-**	**0%**	**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
7:00 AM	1	2	2	1	*6*	0	1	0	5	*6*	3	1	1	0	*5*
7:15 AM	1	0	1	3	*5*	1	1	0	1	*3*	1	3	4	2	*10*
7:30 AM	**0**	**0**	**0**	**2**	***2***	**2**	**2**	**1**	**0**	***5***	**12**	**0**	**11**	**4**	*27*
7:45 AM	**3**	**0**	**1**	**2**	***6***	**1**	**0**	**0**	**2**	***3***	**11**	**0**	**13**	**1**	*25*
8:00 AM	**1**	**2**	**2**	**4**	***9***	**0**	**2**	**1**	**2**	***5***	**0**	**0**	**1**	**4**	*5*
8:15 AM	**4**	**0**	**0**	**2**	***6***	**1**	**0**	**0**	**4**	***5***	**1**	**1**	**0**	**3**	***5***
8:30 AM	1	1	2	2	*6*	1	0	0	1	*2*	0	6	0	6	*12*
8:45 AM	0	1	6	2	*9*	1	5	0	2	*8*	13	4	12	6	*35*
Count Total	11	6	14	18	*49*	7	11	2	17	*37*	41	15	42	26	*124*
Peak Hour	**8**	**2**	**3**	**10**	***23***	**4**	**4**	**2**	**8**	***18***	**24**	**1**	**25**	**12**	***62***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	CANYON DEL REY BLVD Eastbound				CANYON DEL REY BLVD 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	1	0	0	0	2	0	0	0	2	0	0	0	1	0	6	0
7:15 AM	0	0	0	1	0	0	0	0	0	0	1	0	0	0	3	0	5	0
7:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**2**	0
7:45 AM	**0**	**1**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**2**	**0**	**6**	19
8:00 AM	**0**	**0**	**1**	**0**	**0**	**0**	**2**	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**4**	**0**	**9**	22
8:15 AM	**0**	**1**	**1**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**6**	**23**
8:30 AM	0	0	1	0	0	0	1	0	0	0	2	0	0	1	0	1	6	27
8:45 AM	0	0	0	0	0	0	1	0	0	1	5	0	0	0	2	0	9	30
Count Total	0	2	6	3	0	0	6	0	0	2	11	1	0	1	15	2	49	0
Peak Hour	**0**	**2**	**4**	**2**	**0**	**0**	**2**	**0**	**0**	**1**	**1**	**1**	**0**	**0**	**9**	**1**	**23**	**0**

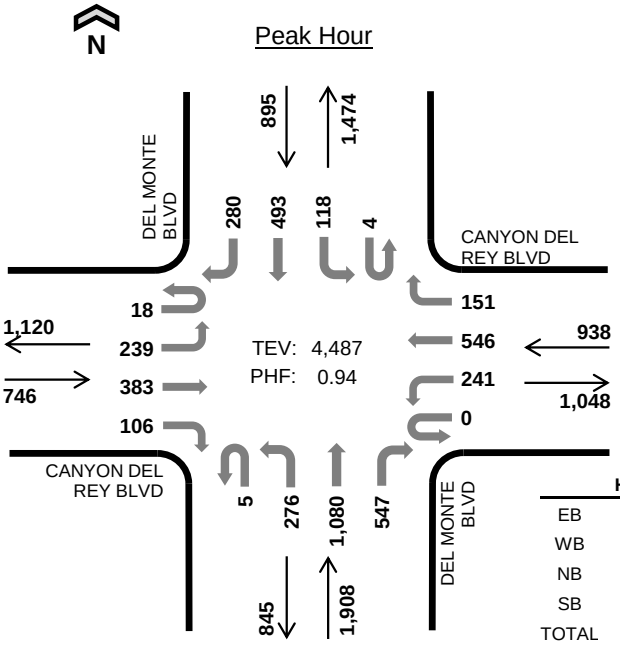
Two-Hour Count Summaries - Bikes

Interval Start	CANYON DEL REY BLVD Eastbound			CANYON DEL REY BLVD 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	1	0	0	0	0	0	5	0	6	0
7:15 AM	0	1	0	1	0	0	0	0	0	0	1	0	3	0
7:30 AM	**0**	**2**	**0**	**1**	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**5**	0
7:45 AM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**3**	17
8:00 AM	**0**	**0**	**0**	**1**	**1**	**0**	**1**	**0**	**0**	**0**	**2**	**0**	**5**	16
8:15 AM	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**0**	**5**	**18**
8:30 AM	0	1	0	0	0	0	0	0	0	0	1	0	2	15
8:45 AM	1	0	0	5	0	0	0	0	0	0	2	0	8	20
Count Total	2	5	0	8	3	0	1	1	0	0	15	2	37	0
Peak Hour	**1**	**3**	**0**	**2**	**2**	**0**	**1**	**1**	**0**	**0**	**6**	**2**	**18**	**0**

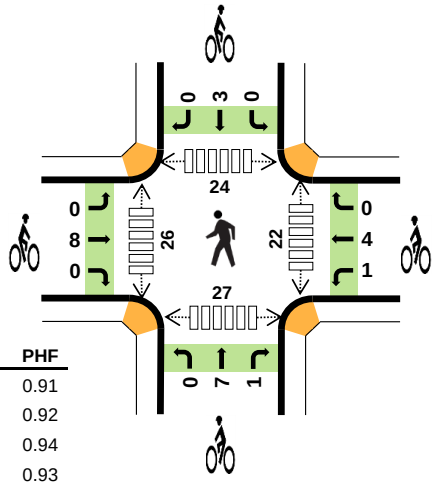
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

DEL MONTE BLVD
CANYON DEL REY BLVD

Date: 05/09/2017
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:30 PM to 5:30 PM



	HV %:	PHF
EB	0.1%	0.91
WB	0.4%	0.92
NB	0.4%	0.94
SB	0.3%	0.93
TOTAL	0.3%	0.94



Two-Hour Count Summaries

Interval Start	CANYON DEL REY BLVD Eastbound				CANYON DEL REY BLVD 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	9	74	121	29	0	55	124	27	2	82	227	137	2	36	125	55	1,105	0
4:15 PM	3	52	98	23	1	81	119	27	1	53	279	107	4	45	131	72	1,096	0
4:30 PM	**2**	**51**	**77**	**32**	**0**	**66**	**129**	**43**	**0**	**52**	**273**	**136**	**0**	**27**	**122**	**61**	**1,071**	0
4:45 PM	**3**	**63**	**97**	**25**	**0**	**50**	**138**	**33**	**1**	**72**	**250**	**129**	**1**	**41**	**124**	**62**	**1,089**	4,361
5:00 PM	**10**	**73**	**95**	**28**	**0**	**78**	**136**	**42**	**2**	**67**	**264**	**153**	**0**	**24**	**130**	**86**	**1,188**	4,444
5:15 PM	**3**	**52**	**114**	**21**	**0**	**47**	**143**	**33**	**2**	**85**	**293**	**129**	**3**	**26**	**117**	**71**	**1,139**	**4,487**
5:30 PM	6	42	85	22	0	60	128	39	1	62	242	120	2	31	110	53	1,003	4,419
5:45 PM	4	65	110	26	0	61	110	29	1	56	206	109	0	32	113	61	983	4,313
Count Total	40	472	797	206	1	498	1,027	273	10	529	2,034	1,020	12	262	972	521	8,674	0
Peak Hour All	**18**	**239**	**383**	**106**	**0**	**241**	**546**	**151**	**5**	**276**	**1,080**	**547**	**4**	**118**	**493**	**280**	**4,487**	**0**
Peak Hour HV	**0**	**1**	**0**	**0**	**0**	**0**	**2**	**2**	**0**	**2**	**4**	**1**	**0**	**1**	**2**	**0**	**15**	**0**
Peak Hour HV%	**0%**	**0%**	**0%**	**0%**	**-**	**0%**	**0%**	**1%**	**0%**	**1%**	**0%**	**0%**	**0%**	**1%**	**0%**	**0%**	**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	2	3	0	4	*9*	0	1	1	0	*2*	0	4	4	6	*14*
4:15 PM	1	0	3	2	*6*	0	0	1	1	*2*	0	7	2	7	*16*
4:30 PM	**1**	**2**	**2**	**2**	***7***	**1**	**1**	**2**	**0**	***4***	**11**	**6**	**12**	**10**	*39*
4:45 PM	**0**	**0**	**1**	**0**	***1***	**0**	**1**	**2**	**1**	***4***	**5**	**6**	**2**	**3**	*16*
5:00 PM	**0**	**1**	**0**	**1**	***2***	**3**	**1**	**1**	**2**	***7***	**2**	**14**	**10**	**12**	*38*
5:15 PM	**0**	**1**	**4**	**0**	***5***	**4**	**2**	**3**	**0**	***9***	**4**	**0**	**0**	**2**	***6***
5:30 PM	1	0	3	2	*6*	0	2	2	2	*6*	0	2	0	4	*6*
5:45 PM	0	0	0	0	*0*	0	1	2	2	*5*	0	0	5	2	*7*
Count Total	5	7	13	11	*36*	8	9	14	8	*39*	22	39	35	46	*142*
Peak Hour	**1**	**4**	**7**	**3**	***15***	**8**	**5**	**8**	**3**	***24***	**22**	**26**	**24**	**27**	***99***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	CANYON DEL REY BLVD Eastbound				CANYON DEL REY BLVD 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	2	0	0	0	0	2	1	0	0	0	0	0	1	3	0	9	0
4:15 PM	0	0	1	0	0	0	0	0	0	1	2	0	0	0	2	0	6	0
4:30 PM	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**1**	**1**	**0**	**1**	**1**	**0**	**7**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	23
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**2**	16
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**2**	**2**	**0**	**0**	**0**	**0**	**0**	**5**	**15**
5:30 PM	0	1	0	0	0	0	0	0	0	0	2	1	0	1	1	0	6	14
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13
Count Total	0	4	1	0	0	0	4	3	0	3	8	2	0	3	8	0	36	0
Peak Hour	**0**	**1**	**0**	**0**	**0**	**0**	**2**	**2**	**0**	**2**	**4**	**1**	**0**	**1**	**2**	**0**	**15**	**0**

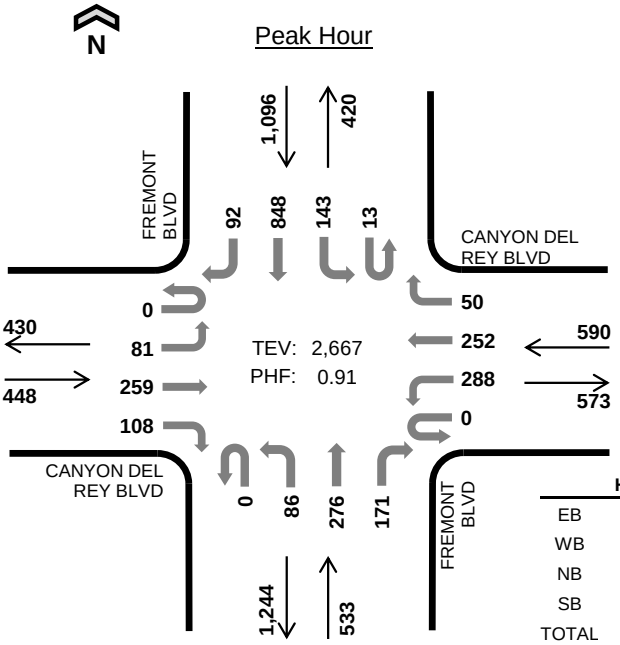
Two-Hour Count Summaries - Bikes

Interval Start	CANYON DEL REY BLVD Eastbound			CANYON DEL REY BLVD 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	1	0	0	1	0	0	0	0	2	0
4:15 PM	0	0	0	0	0	0	0	1	0	0	1	0	2	0
4:30 PM	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**4**	0
4:45 PM	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**2**	**0**	**0**	**1**	**0**	**4**	12
5:00 PM	**0**	**3**	**0**	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**2**	**0**	**7**	17
5:15 PM	**0**	**4**	**0**	**0**	**2**	**0**	**0**	**2**	**1**	**0**	**0**	**0**	**9**	**24**
5:30 PM	0	0	0	0	2	0	2	0	0	0	2	0	6	26
5:45 PM	0	0	0	0	1	0	0	2	0	0	2	0	5	27
Count Total	0	8	0	1	8	0	2	11	1	0	8	0	39	0
Peak Hour	**0**	**8**	**0**	**1**	**4**	**0**	**0**	**7**	**1**	**0**	**3**	**0**	**24**	**0**

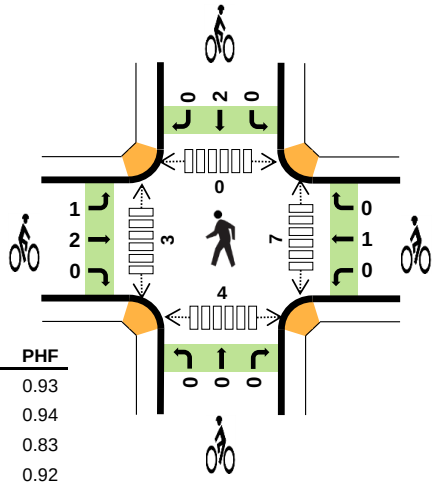
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

FREMONT BLVD
CANYON DEL REY BLVD

Date: 05/09/2017
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:15 AM to 8:15 AM



	HV %:	PHF
EB	1.1%	0.93
WB	0.5%	0.94
NB	2.1%	0.83
SB	0.9%	0.92
TOTAL	1.1%	0.91



Two-Hour Count Summaries

Interval Start	CANYON DEL REY BLVD Eastbound				CANYON DEL REY BLVD Westbound				FREMONT BLVD Northbound				FREMONT 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	14	52	6	0	51	61	7	0	12	47	25	2	17	124	7	425	0
7:15 AM	**0**	**11**	**75**	**29**	**0**	**79**	**54**	**16**	**0**	**16**	**55**	**39**	**0**	**29**	**189**	**20**	**612**	0
7:30 AM	**0**	**22**	**67**	**22**	**0**	**74**	**63**	**8**	**0**	**22**	**56**	**39**	**0**	**36**	**238**	**15**	**662**	0
7:45 AM	**0**	**30**	**56**	**34**	**0**	**71**	**73**	**13**	**0**	**24**	**82**	**54**	**12**	**40**	**221**	**26**	**736**	2,435
8:00 AM	**0**	**18**	**61**	**23**	**0**	**64**	**62**	**13**	**0**	**24**	**83**	**39**	**1**	**38**	**200**	**31**	**657**	**2,667**
8:15 AM	0	17	76	34	0	64	45	12	0	12	58	42	2	36	178	10	586	2,641
8:30 AM	0	22	77	34	0	52	57	25	0	18	68	36	2	38	153	8	590	2,569
8:45 AM	0	27	77	23	0	57	62	18	0	15	73	38	3	37	149	26	605	2,438
Count Total	0	161	541	205	0	512	477	112	0	143	522	312	22	271	1,452	143	4,873	0
Peak Hour All	**0**	**81**	**259**	**108**	**0**	**288**	**252**	**50**	**0**	**86**	**276**	**171**	**13**	**143**	**848**	**92**	**2,667**	**0**
Peak Hour HV	**0**	**0**	**3**	**2**	**0**	**1**	**1**	**1**	**0**	**0**	**9**	**2**	**0**	**1**	**9**	**0**	**29**	**0**
Peak Hour HV%	**-**	**0%**	**1%**	**2%**	**-**	**0%**	**0%**	**2%**	**-**	**0%**	**3%**	**1%**	**0%**	**1%**	**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
7:00 AM	0	0	1	3	*4*	1	0	0	0	*1*	0	0	0	1	*1*
7:15 AM	**1**	**0**	**3**	**3**	***7***	**1**	**0**	**0**	**0**	***1***	**1**	**0**	**0**	**0**	*1*
7:30 AM	**1**	**0**	**5**	**2**	***8***	**0**	**1**	**0**	**2**	***3***	**0**	**1**	**0**	**2**	*3*
7:45 AM	**2**	**0**	**1**	**3**	***6***	**1**	**0**	**0**	**0**	***1***	**3**	**0**	**0**	**0**	*3*
8:00 AM	**1**	**3**	**2**	**2**	***8***	**1**	**0**	**0**	**0**	***1***	**3**	**2**	**0**	**2**	***7***
8:15 AM	2	0	2	1	*5*	0	0	0	0	*0*	7	2	0	0	*9*
8:30 AM	3	2	5	2	*12*	1	6	0	0	*7*	4	0	0	0	*4*
8:45 AM	0	1	3	1	*5*	0	2	0	1	*3*	1	2	0	1	*4*
Count Total	10	6	22	17	*55*	5	9	0	3	*17*	19	7	0	6	*32*
Peak Hour	**5**	**3**	**11**	**10**	***29***	**3**	**1**	**0**	**2**	***6***	**7**	**3**	**0**	**4**	***14***

Deon Fouche: 415 - 757 - 7714 deon.fouche@idaxdata.com

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	CANYON DEL REY BLVD				CANYON DEL REY BLVD				FREMONT BLVD				FREMONT 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	0	0	0	1	0	0	0	3	0	4	0
7:15 AM	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**1**	**0**	**0**	**3**	**0**	**7**	0
7:30 AM	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**1**	**0**	**0**	**2**	**0**	**8**	0
7:45 AM	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**2**	**0**	**6**	25
8:00 AM	**0**	**0**	**1**	**0**	**0**	**1**	**1**	**1**	**0**	**0**	**2**	**0**	**0**	**0**	**2**	**0**	**8**	**29**
8:15 AM	0	0	1	1	0	0	0	0	0	0	1	1	0	0	1	0	5	27
8:30 AM	0	1	1	1	0	0	2	0	0	1	1	3	0	0	2	0	12	31
8:45 AM	0	0	0	0	0	0	1	0	0	0	1	2	0	0	1	0	5	30
Count Total	0	1	5	4	0	1	4	1	0	1	13	8	0	1	16	0	55	0
Peak Hour	**0**	**0**	**3**	**2**	**0**	**1**	**1**	**1**	**0**	**0**	**9**	**2**	**0**	**1**	**9**	**0**	**29**	**0**

Two-Hour Count Summaries - Bikes

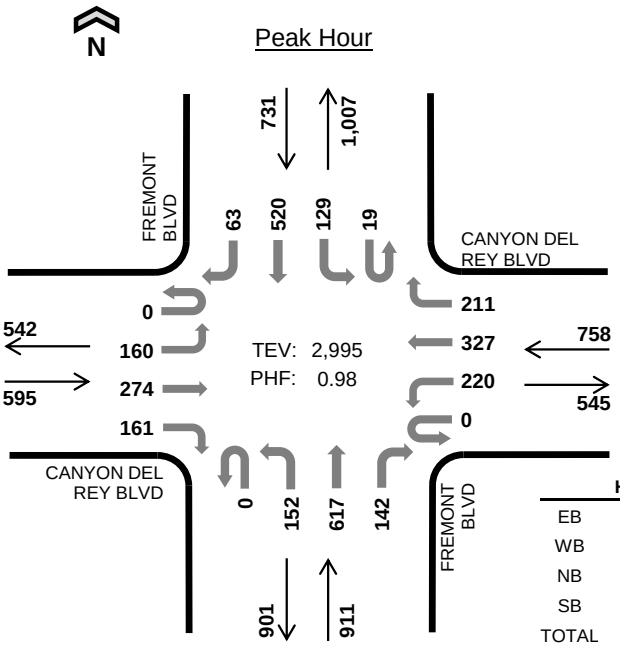
Interval Start	CANYON DEL REY BLVD			CANYON DEL REY BLVD			FREMONT BLVD			FREMONT BLVD			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	1	0
7:15 AM	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	0
7:30 AM	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**3**	0
7:45 AM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	6
8:00 AM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**6**
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	5
8:30 AM	0	1	0	0	6	0	0	0	0	0	0	0	7	9
8:45 AM	0	0	0	0	2	0	0	0	0	0	0	1	3	11
Count Total	1	4	0	0	9	0	0	0	0	0	2	1	17	0
Peak Hour	**1**	**2**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**6**	**0**

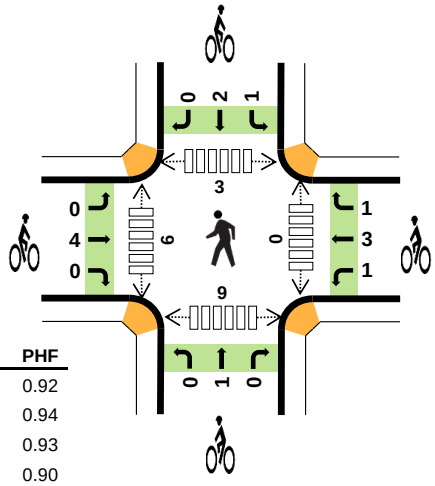
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Deon Fouche: 415 - 757 - 7714 deon.fouche@idaxdata.com

FREMONT BLVD
CANYON DEL REY BLVD

Date: 05/09/2017
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:45 PM to 5:45 PM





	HV %:	PHF
EB	0.3%	0.92
WB	0.1%	0.94
NB	1.0%	0.93
SB	1.0%	0.90
TOTAL	0.6%	0.98

Two-Hour Count Summaries

Interval Start	CANYON DEL REY BLVD Eastbound				CANYON DEL REY BLVD Westbound				FREMONT BLVD Northbound				FREMONT BLVD Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	44	66	41	0	55	72	35	1	25	146	38	8	35	139	11	716	0
4:15 PM	0	33	65	40	0	45	76	46	0	29	141	38	10	33	115	19	690	0
4:30 PM	0	28	60	26	0	55	70	39	0	56	159	32	4	35	150	13	727	0
4:45 PM	**0**	**31**	**88**	**42**	**0**	**47**	**88**	**56**	**0**	**37**	**168**	**38**	**3**	**35**	**115**	**17**	**765**	2,898
5:00 PM	**0**	**47**	**77**	**38**	**0**	**66**	**78**	**57**	**0**	**40**	**143**	**45**	**2**	**30**	**109**	**17**	**749**	2,931
5:15 PM	**0**	**43**	**58**	**38**	**0**	**52**	**83**	**53**	**0**	**38**	**127**	**29**	**5**	**30**	**153**	**13**	**722**	2,963
5:30 PM	**0**	**39**	**51**	**43**	**0**	**55**	**78**	**45**	**0**	**37**	**179**	**30**	**9**	**34**	**143**	**16**	**759**	**2,995**
5:45 PM	0	41	47	40	0	47	56	39	0	42	152	39	7	34	110	11	665	2,895
Count Total	0	306	512	308	0	422	601	370	1	304	1,215	289	48	266	1,034	117	5,793	0
Peak Hour All	**0**	**160**	**274**	**161**	**0**	**220**	**327**	**211**	**0**	**152**	**617**	**142**	**19**	**129**	**520**	**63**	**2,995**	**0**
Peak Hour HV	**0**	**0**	**1**	**1**	**0**	**0**	**1**	**0**	**0**	**1**	**7**	**1**	**0**	**1**	**6**	**0**	**19**	**0**
Peak Hour HV%	**-**	**0%**	**0%**	**1%**	**-**	**0%**	**0%**	**0%**	**-**	**1%**	**1%**	**1%**	**0%**	**1%**	**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	0	7	0	*7*	0	1	1	0	*2*	0	1	1	1	*3*
4:15 PM	0	0	2	3	*5*	2	0	1	0	*3*	1	0	1	3	*5*
4:30 PM	1	2	4	0	*7*	3	0	1	0	*4*	0	3	4	1	*8*
4:45 PM	**1**	**1**	**3**	**2**	***7***	**1**	**1**	**0**	**0**	***2***	**0**	**2**	**1**	**7**	*10*
5:00 PM	**0**	**0**	**3**	**1**	***4***	**0**	**1**	**1**	**0**	***2***	**0**	**0**	**0**	**1**	*1*
5:15 PM	**0**	**0**	**2**	**3**	***5***	**0**	**3**	**0**	**2**	***5***	**0**	**2**	**0**	**0**	*2*
5:30 PM	**1**	**0**	**1**	**1**	***3***	**3**	**0**	**0**	**1**	***4***	**0**	**2**	**2**	**1**	***5***
5:45 PM	0	0	4	0	*4*	0	0	1	0	*1*	1	1	1	3	*6*
Count Total	3	3	26	10	*42*	9	6	5	3	*23*	2	11	10	17	*40*
Peak Hour	**2**	**1**	**9**	**7**	***19***	**4**	**5**	**1**	**3**	***13***	**0**	**6**	**3**	**9**	***18***

Deon Fouche: 415 - 757 - 7714 deon.fouche@idaxdata.com

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	CANYON DEL REY BLVD				CANYON DEL REY BLVD				FREMONT BLVD				FREMONT 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	2	4	1	0	0	0	0	7	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	3	0	5	0
4:30 PM	0	0	0	1	0	0	2	0	0	0	4	0	0	0	0	0	7	0
4:45 PM	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**2**	**0**	**7**	26
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**1**	**0**	**0**	**1**	**0**	**4**	23
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**1**	**2**	**0**	**5**	23
5:30 PM	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**3**	**19**
5:45 PM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	4	16
Count Total	0	0	1	2	0	0	3	0	0	3	20	3	0	1	9	0	42	0
Peak Hour	**0**	**0**	**1**	**1**	**0**	**0**	**1**	**0**	**0**	**1**	**7**	**1**	**0**	**1**	**6**	**0**	**19**	**0**

Two-Hour Count Summaries - Bikes

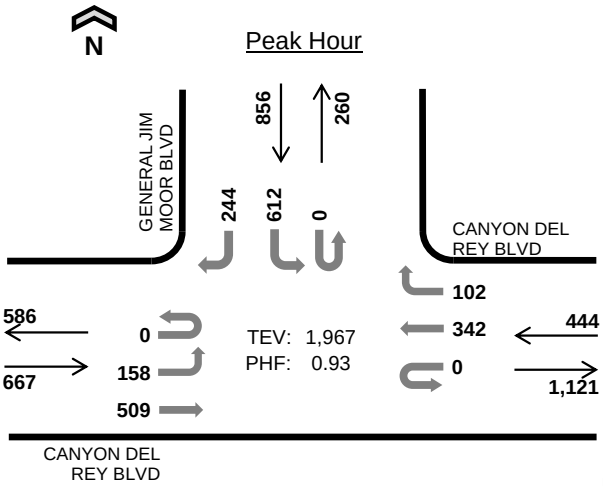
Interval Start	CANYON DEL REY BLVD			CANYON DEL REY BLVD			FREMONT BLVD			FREMONT BLVD			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	1	0	0	1	0	0	0	0	2	0
4:15 PM	0	2	0	0	0	0	0	1	0	0	0	0	3	0
4:30 PM	2	1	0	0	0	0	1	0	0	0	0	0	4	0
4:45 PM	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	11
5:00 PM	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**2**	11
5:15 PM	**0**	**0**	**0**	**1**	**2**	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**5**	13
5:30 PM	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**4**	**13**
5:45 PM	0	0	0	0	0	0	0	1	0	0	0	0	1	12
Count Total	2	7	0	1	4	1	1	4	0	1	2	0	23	0
Peak Hour	**0**	**4**	**0**	**1**	**3**	**1**	**0**	**1**	**0**	**1**	**2**	**0**	**13**	**0**

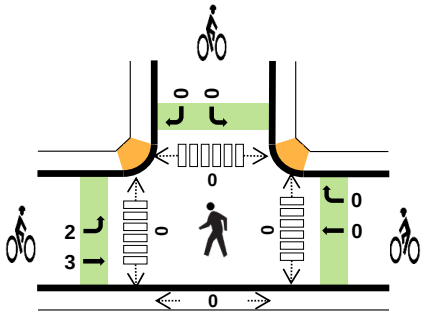
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Deon Fouche: 415 - 757 - 7714 deon.fouche@idaxdata.com

GENERAL JIM MOOR BLVD
CANYON DEL REY BLVD

Date: 05/09/2017
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:30 AM to 8:30 AM





	HV %:	PHF
EB	1.3%	0.92
WB	0.9%	0.76
NB	-	-
SB	0.5%	0.90
TOTAL	0.9%	0.93

Two-Hour Count Summaries

Interval Start	CANYON DEL REY BLVD Eastbound				CANYON DEL REY BLVD Westbound				0 Northbound				GENERAL JIM MOOR 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	20	81	0	0	0	50	16	0	0	0	0	0	70	0	31	268	0
7:15 AM	0	24	113	0	0	0	54	21	0	0	0	0	0	95	0	59	366	0
7:30 AM	**0**	**42**	**139**	**0**	**0**	**0**	**61**	**28**	**0**	**0**	**0**	**0**	**0**	**169**	**0**	**70**	**509**	0
7:45 AM	**0**	**48**	**129**	**0**	**0**	**0**	**81**	**16**	**0**	**0**	**0**	**0**	**0**	**177**	**0**	**52**	**503**	1,646
8:00 AM	**0**	**25**	**119**	**0**	**0**	**0**	**113**	**33**	**0**	**0**	**0**	**0**	**0**	**155**	**0**	**82**	**527**	1,905
8:15 AM	**0**	**43**	**122**	**0**	**0**	**0**	**87**	**25**	**0**	**0**	**0**	**0**	**0**	**111**	**0**	**40**	**428**	**1,967**
8:30 AM	0	25	117	0	0	0	86	29	0	0	0	0	0	81	0	42	380	1,838
8:45 AM	0	21	99	0	0	0	107	27	0	0	0	0	0	83	0	29	366	1,701
Count Total	0	248	919	0	0	0	639	195	0	0	0	0	0	941	0	405	3,347	0
Peak Hour All	**0**	**158**	**509**	**0**	**0**	**0**	**342**	**102**	**0**	**0**	**0**	**0**	**0**	**612**	**0**	**244**	**1,967**	**0**
Peak Hour HV	**0**	**0**	**9**	**0**	**0**	**0**	**2**	**2**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**2**	**17**	**0**
Peak Hour HV%	**-**	**0%**	**2%**	**-**	**-**	**-**	**1%**	**2%**	**-**	**-**	**-**	**-**	**-**	**0%**	**-**	**1%**	**1%**	**0**

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

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
7:00 AM	0	0	0	0	*0*	1	0	0	0	*1*	0	0	0	0	*0*
7:15 AM	1	0	0	0	*1*	1	0	0	0	*1*	0	0	0	0	*0*
7:30 AM	**2**	**0**	**0**	**1**	***3***	**3**	**0**	**0**	**0**	***3***	**0**	**0**	**0**	**0**	*0*
7:45 AM	**1**	**2**	**0**	**0**	***3***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
8:00 AM	**3**	**1**	**0**	**2**	***6***	**2**	**0**	**0**	**0**	***2***	**0**	**0**	**0**	**0**	*0*
8:15 AM	**3**	**1**	**0**	**1**	***5***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***
8:30 AM	2	1	0	0	*3*	2	0	0	0	*2*	0	1	3	0	*4*
8:45 AM	1	0	0	0	*1*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	13	5	0	4	*22*	9	0	0	0	*9*	0	1	3	0	*4*
Peak Hr	**9**	**4**	**0**	**4**	***17***	**5**	**0**	**0**	**0**	***5***	**0**	**0**	**0**	**0**	***0***

Deon Fouche: 415 - 757 - 7714 deon.fouche@idaxdata.com

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	CANYON DEL REY BLVD				CANYON DEL REY BLVD				0				GENERAL JIM MOOR 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	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
7:30 AM	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**3**	0
7:45 AM	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	7
8:00 AM	**0**	**0**	**3**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**6**	13
8:15 AM	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**5**	**17**
8:30 AM	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	3	17
8:45 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	15
Count Total	0	0	13	0	0	0	3	2	0	0	0	0	0	2	0	2	22	0
Peak Hour	**0**	**0**	**9**	**0**	**0**	**0**	**2**	**2**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**2**	**17**	**0**

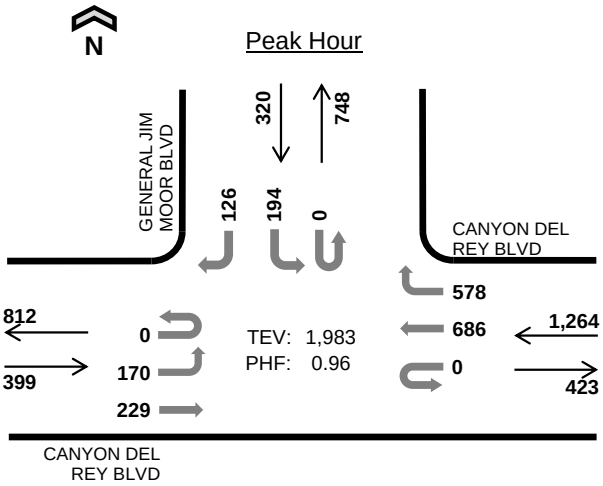
Two-Hour Count Summaries - Bikes

Interval Start	CANYON DEL REY BLVD			CANYON DEL REY BLVD			0			GENERAL JIM MOOR 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	1	0	0	0	0	0	0	0	0	0	0	1	0
7:15 AM	0	1	0	0	0	0	0	0	0	0	0	0	1	0
7:30 AM	**1**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	5
8:00 AM	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	6
8:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**
8:30 AM	1	1	0	0	0	0	0	0	0	0	0	0	2	4
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	4
Count Total	3	6	0	0	0	0	0	0	0	0	0	0	9	0
Peak Hour	**2**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**0**

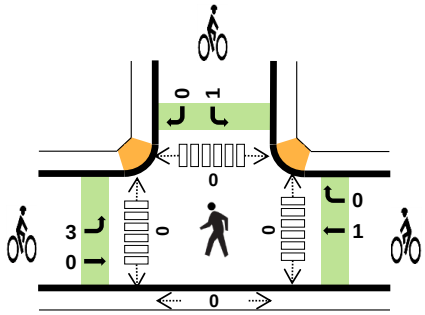
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Deon Fouche: 415 - 757 - 7714 deon.fouche@idaxdata.com

GENERAL JIM MOOR BLVD
CANYON DEL REY BLVD



Date: 05/09/2017
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:45 PM to 5:45 PM



	HV %:	PHF
EB	1.0%	0.90
WB	0.0%	0.93
NB	-	-
SB	0.3%	0.91
TOTAL	0.3%	0.96

Two-Hour Count Summaries

Interval Start		CANYON DEL REY BLVD Eastbound				CANYON DEL REY BLVD Westbound				0 Northbound				GENERAL JIM MOOR 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	35	66	0	0	0	131	89	0	0	0	0	0	48	0	34	403	0
4:15 PM		0	23	70	0	0	0	146	122	0	0	0	0	0	35	0	35	431	0
4:30 PM		0	32	69	0	0	0	182	118	0	0	0	0	0	40	0	33	474	0
4:45 PM		**0**	**47**	**64**	**0**	**0**	**0**	**171**	**127**	**0**	**0**	**0**	**0**	**0**	**49**	**0**	**22**	**480**	1,788
5:00 PM		**0**	**54**	**55**	**0**	**0**	**0**	**156**	**139**	**0**	**0**	**0**	**0**	**0**	**37**	**0**	**36**	**477**	1,862
5:15 PM		**0**	**44**	**52**	**0**	**0**	**0**	**161**	**169**	**0**	**0**	**0**	**0**	**0**	**54**	**0**	**34**	**514**	1,945
5:30 PM		**0**	**25**	**58**	**0**	**0**	**0**	**198**	**143**	**0**	**0**	**0**	**0**	**0**	**54**	**0**	**34**	**512**	**1,983**
5:45 PM		0	38	42	0	0	0	129	97	0	0	0	0	0	38	0	31	375	1,878
Count Total		0	298	476	0	0	0	1,274	1,004	0	0	0	0	0	355	0	259	3,666	0
Peak Hour	**All**	**0**	**170**	**229**	**0**	**0**	**0**	**686**	**578**	**0**	**0**	**0**	**0**	**0**	**194**	**0**	**126**	**1,983**	**0**
	HV	**0**	**1**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**5**	**0**
	HV%	**-**	**1%**	**1%**	**-**	**-**	**-**	**0%**	**0%**	**-**	**-**	**-**	**-**	**-**	**1%**	**-**	**0%**	**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	3	0	0	1	*4*	0	0	0	0	*0*	0	0	0	0	*0*
4:15 PM	4	0	0	1	*5*	0	0	0	0	*0*	0	0	0	0	*0*
4:30 PM	0	1	0	0	*1*	0	0	0	0	*0*	0	0	0	0	*0*
4:45 PM	**1**	**0**	**0**	**0**	***1***	**0**	**1**	**0**	**1**	***2***	**0**	**0**	**0**	**0**	*0*
5:00 PM	**2**	**0**	**0**	**0**	***2***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
5:15 PM	**0**	**0**	**0**	**1**	***1***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
5:30 PM	**1**	**0**	**0**	**0**	***1***	**3**	**0**	**0**	**0**	***3***	**0**	**0**	**0**	**0**	***0***
5:45 PM	2	0	0	0	*2*	0	1	0	0	*1*	0	0	1	0	*1*
Count Total	13	1	0	3	*17*	3	2	0	1	*6*	0	0	1	0	*1*
Peak Hr	**4**	**0**	**0**	**1**	***5***	**3**	**1**	**0**	**1**	***5***	**0**	**0**	**0**	**0**	***0***

Deon Fouche: 415 - 757 - 7714 deon.fouche@idaxdata.com

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	CANYON DEL REY BLVD				CANYON DEL REY BLVD				0				GENERAL JIM MOOR 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	3	0	0	0	0	0	0	0	0	0	0	1	0	0	4	0
4:15 PM	0	1	3	0	0	0	0	0	0	0	0	0	0	1	0	0	5	0
4:30 PM	0	0	0	0	0	0	0	1	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**	**0**	**0**	**0**	**0**	**1**	11
5:00 PM	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	9
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	5
5:30 PM	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**5**
5:45 PM	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	6
Count Total	0	3	10	0	0	0	0	1	0	0	0	0	0	3	0	0	17	0
Peak Hour	**0**	**1**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**5**	**0**

Two-Hour Count Summaries - Bikes

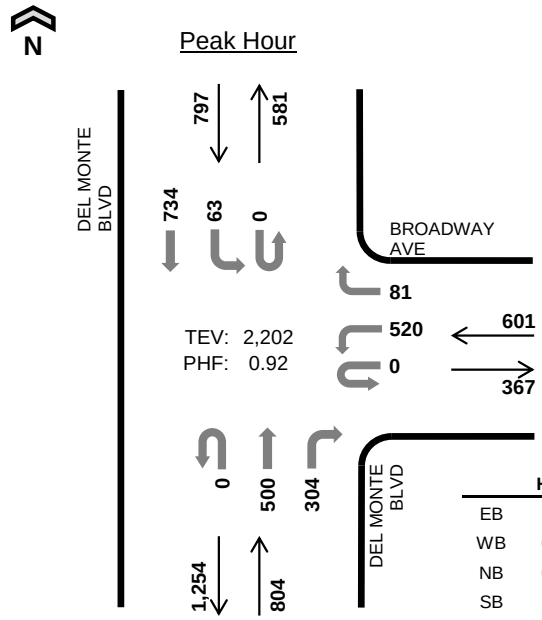
Interval Start	CANYON DEL REY BLVD			CANYON DEL REY BLVD			0			GENERAL JIM MOOR BLVD			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**2**	2
5:00 PM	**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**	2
5:30 PM	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**5**
5:45 PM	0	0	0	0	1	0	0	0	0	0	0	0	1	4
Count Total	3	0	0	0	2	0	0	0	0	1	0	0	6	0
Peak Hour	**3**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**5**	**0**

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

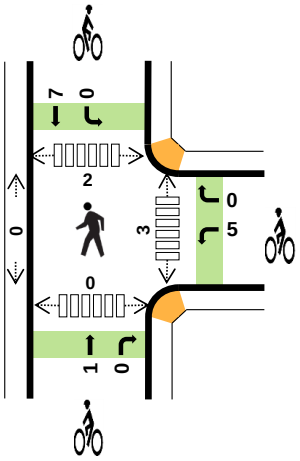
Deon Fouche: 415 - 757 - 7714 deon.fouche@idaxdata.com

DEL MONTE BLVD
BROADWAY AVE

Date: 05/09/2017
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:30 AM to 8:30 AM



	HV %:	PHF
EB	-	-
WB	0.2%	0.81
NB	0.6%	0.83
SB	1.8%	0.83
TOTAL	0.9%	0.92



Two-Hour Count Summaries

Interval Start		0 Eastbound				BROADWAY 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	0	0	63	0	13	0	0	47	27	0	7	108	0	265	0
7:15 AM		0	0	0	0	0	144	0	16	0	0	91	48	0	9	167	0	475	0
7:30 AM		**0**	**0**	**0**	**0**	**0**	**168**	**0**	**17**	**0**	**0**	**102**	**74**	**0**	**15**	**225**	**0**	**601**	0
7:45 AM		**0**	**0**	**0**	**0**	**0**	**115**	**0**	**25**	**0**	**0**	**150**	**91**	**0**	**15**	**165**	**0**	**561**	1,902
8:00 AM		**0**	**0**	**0**	**0**	**0**	**125**	**0**	**22**	**0**	**0**	**134**	**62**	**0**	**16**	**189**	**0**	**548**	2,185
8:15 AM		**0**	**0**	**0**	**0**	**0**	**112**	**0**	**17**	**0**	**0**	**114**	**77**	**0**	**17**	**155**	**0**	**492**	**2,202**
8:30 AM		0	0	0	0	0	109	0	11	0	0	114	61	0	14	156	0	465	2,066
8:45 AM		0	0	0	0	0	104	0	28	1	0	122	61	0	20	142	0	478	1,983
Count Total		0	0	0	0	0	940	0	149	1	0	874	501	0	113	1,307	0	3,885	0
Peak Hour	**All**	**0**	**0**	**0**	**0**	**0**	**520**	**0**	**81**	**0**	**0**	**500**	**304**	**0**	**63**	**734**	**0**	**2,202**	**0**
	HV	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**4**	**1**	**0**	**3**	**11**	**0**	**20**	**0**
	HV%	**-**	**-**	**-**	**-**	**-**	**0%**	**-**	**0%**	**-**	**-**	**1%**	**0%**	**-**	**5%**	**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
7:00 AM	0	2	1	1	*4*	0	2	1	2	*5*	1	0	0	0	*1*
7:15 AM	0	2	3	2	*7*	0	2	0	1	*3*	0	0	0	0	*0*
7:30 AM	**0**	**0**	**0**	**3**	***3***	**0**	**2**	**0**	**1**	***3***	**0**	**0**	**1**	**0**	*1*
7:45 AM	**0**	**0**	**1**	**3**	***4***	**0**	**0**	**0**	**1**	***1***	**0**	**0**	**0**	**0**	*0*
8:00 AM	**0**	**1**	**2**	**5**	***8***	**0**	**1**	**0**	**2**	***3***	**3**	**0**	**1**	**0**	*4*
8:15 AM	**0**	**0**	**2**	**3**	***5***	**0**	**2**	**1**	**3**	***6***	**0**	**0**	**0**	**0**	***0***
8:30 AM	0	0	1	3	*4*	0	1	0	2	*3*	5	0	0	0	*5*
8:45 AM	0	0	6	3	*9*	0	0	1	0	*1*	0	0	1	0	*1*
Count Total	0	5	16	23	*44*	0	10	3	12	*25*	9	0	3	0	*12*
Peak Hr	**0**	**1**	**5**	**14**	***20***	**0**	**5**	**1**	**7**	***13***	**3**	**0**	**2**	**0**	***5***

Deon Fouche: 415 - 757 - 7714 deon.fouche@idaxdata.com

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	0				BROADWAY AVE				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	2	0	0	0	0	1	0	0	1	0	0	4	0
7:15 AM	0	0	0	0	0	2	0	0	0	0	3	0	0	0	2	0	7	0
7:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**2**	**0**	**3**	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**2**	**0**	**4**	18
8:00 AM	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**1**	**4**	**0**	**8**	22
8:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**3**	**0**	**5**	**20**
8:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	3	0	4	21
8:45 AM	0	0	0	0	0	0	0	0	0	0	3	3	0	1	2	0	9	26
Count Total	0	0	0	0	0	5	0	0	0	0	12	4	0	5	18	0	44	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**4**	**1**	**0**	**3**	**11**	**0**	**20**	**0**

Two-Hour Count Summaries - Bikes

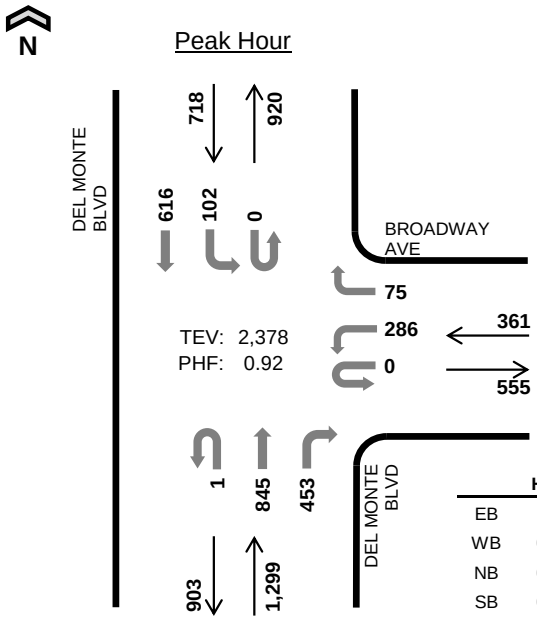
Interval Start	0			BROADWAY AVE			DEL MONTE BLVD			DEL MONTE BLVD			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	0	2	0	0	0	1	0	0	2	0	5	0
7:15 AM	0	0	0	1	0	1	0	0	0	0	1	0	3	0
7:30 AM	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**3**	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	12
8:00 AM	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**3**	10
8:15 AM	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**1**	**0**	**0**	**3**	**0**	**6**	**13**
8:30 AM	0	0	0	1	0	0	0	0	0	0	2	0	3	13
8:45 AM	0	0	0	0	0	0	0	1	0	0	0	0	1	13
Count Total	0	0	0	9	0	1	0	3	0	0	12	0	25	0
Peak Hour	**0**	**0**	**0**	**5**	**0**	**0**	**0**	**1**	**0**	**0**	**7**	**0**	**13**	**0**

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

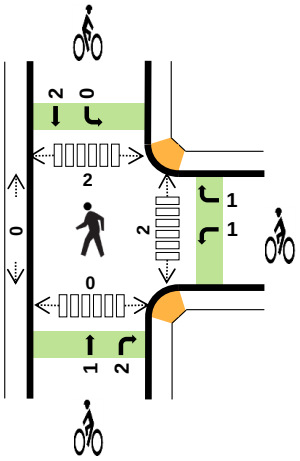
Deon Fouche: 415 - 757 - 7714 deon.fouche@idaxdata.com

DEL MONTE BLVD
BROADWAY AVE

Date: 05/09/2017
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:15 PM to 5:15 PM



	HV %:	PHF
EB	-	-
WB	0.3%	0.89
NB	0.8%	0.93
SB	0.8%	0.89
TOTAL	0.7%	0.92



Two-Hour Count Summaries

Interval Start	0 Eastbound				BROADWAY 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	66	0	21	2	0	193	128	0	35	136	0	581	0
4:15 PM	**0**	**0**	**0**	**0**	**0**	**63**	**0**	**17**	**0**	**0**	**205**	**121**	**0**	**27**	**174**	**0**	**607**	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**78**	**0**	**23**	**1**	**0**	**219**	**104**	**0**	**23**	**126**	**0**	**574**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**67**	**0**	**14**	**0**	**0**	**207**	**93**	**0**	**25**	**146**	**0**	**552**	2,314
5:00 PM	**0**	**0**	**0**	**0**	**0**	**78**	**0**	**21**	**0**	**0**	**214**	**135**	**0**	**27**	**170**	**0**	**645**	**2,378**
5:15 PM	0	0	0	0	0	74	0	14	0	0	226	115	0	23	126	0	578	2,349
5:30 PM	0	0	0	0	0	61	0	10	0	0	209	115	0	20	135	0	550	2,325
5:45 PM	0	0	0	0	0	74	0	14	0	0	197	123	0	22	135	0	565	2,338
Count Total	0	0	0	0	0	561	0	134	3	0	1,670	934	0	202	1,148	0	4,652	0
Peak Hour All	**0**	**0**	**0**	**0**	**0**	**286**	**0**	**75**	**1**	**0**	**845**	**453**	**0**	**102**	**616**	**0**	**2,378**	**0**
Peak Hour HV	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**8**	**2**	**0**	**0**	**6**	**0**	**17**	**0**
Peak Hour HV%	**-**	**-**	**-**	**-**	**-**	**0%**	**-**	**0%**	**0%**	**-**	**1%**	**0%**	**-**	**0%**	**1%**	**-**	**1%**	**0**

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

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	0	4	4	2	*10*	0	0	2	0	*2*	0	0	0	0	*0*
4:15 PM	**0**	**0**	**3**	**3**	***6***	**0**	**1**	**0**	**1**	***2***	**0**	**0**	**0**	**0**	*0*
4:30 PM	**0**	**0**	**2**	**2**	***4***	**0**	**0**	**1**	**0**	***1***	**1**	**0**	**0**	**0**	*1*
4:45 PM	**0**	**1**	**3**	**0**	***4***	**0**	**1**	**1**	**0**	***2***	**0**	**0**	**0**	**0**	*0*
5:00 PM	**0**	**0**	**2**	**1**	***3***	**0**	**0**	**1**	**1**	***2***	**1**	**0**	**2**	**0**	***3***
5:15 PM	0	0	3	0	*3*	0	0	1	0	*1*	0	0	0	0	*0*
5:30 PM	0	0	4	2	*6*	0	0	0	2	*2*	0	0	0	0	*0*
5:45 PM	0	0	1	0	*1*	0	1	2	1	*4*	0	0	0	0	*0*
Count Total	0	5	22	10	*37*	0	3	8	5	*16*	2	0	2	0	*4*
Peak Hr	**0**	**1**	**10**	**6**	***17***	**0**	**2**	**3**	**2**	***7***	**2**	**0**	**2**	**0**	***4***

Deon Fouche: 415 - 757 - 7714 deon.fouche@idaxdata.com

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	0				BROADWAY AVE				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	2	0	2	0	0	3	1	0	0	2	0	10	0
4:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**1**	**0**	**0**	**3**	**0**	**6**	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**2**	**0**	**4**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**4**	24
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**1**	**0**	**3**	**17**
5:15 PM	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	3	14
5:30 PM	0	0	0	0	0	0	0	0	0	0	3	1	0	0	2	0	6	16
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	13
Count Total	0	0	0	0	0	3	0	2	0	0	16	6	0	0	10	0	37	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**8**	**2**	**0**	**0**	**6**	**0**	**17**	**0**

Two-Hour Count Summaries - Bikes

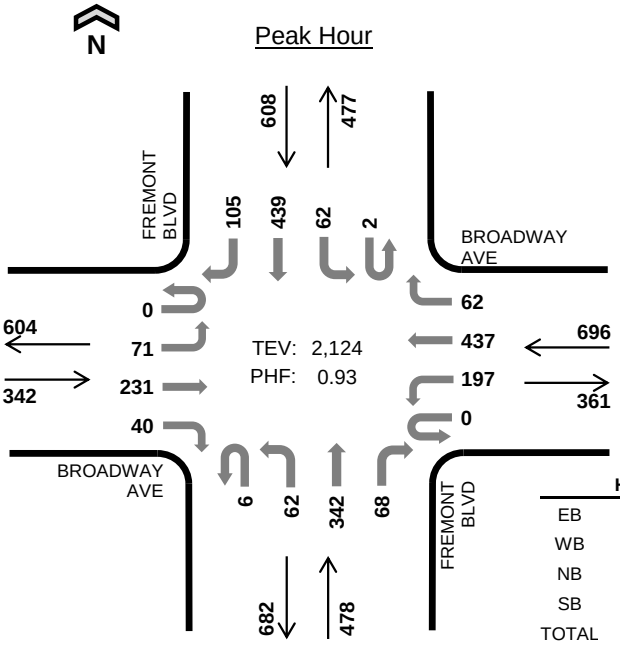
Interval Start	0			BROADWAY AVE			DEL MONTE BLVD			DEL MONTE BLVD			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	2	0	0	0	2	0
4:15 PM	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**2**	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**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**2**	7
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**2**	**7**
5:15 PM	0	0	0	0	0	0	0	1	0	0	0	0	1	6
5:30 PM	0	0	0	0	0	0	0	0	0	1	1	0	2	7
5:45 PM	0	0	0	1	0	0	0	1	1	0	1	0	4	9
Count Total	0	0	0	2	0	1	0	3	5	1	4	0	16	0
Peak Hour	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**1**	**2**	**0**	**2**	**0**	**7**	**0**

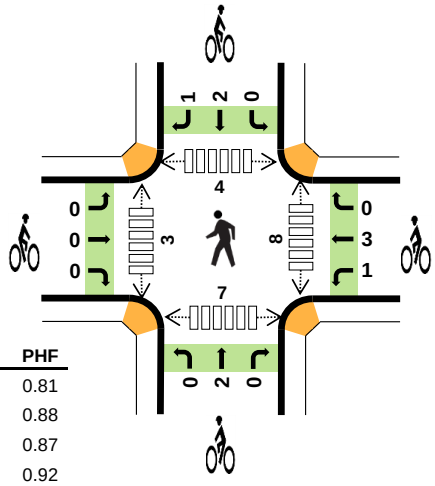
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Deon Fouche: 415 - 757 - 7714 deon.fouche@idaxdata.com

FREMONT BLVD
BROADWAY AVE

Date: 05/09/2017
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:30 AM to 8:30 AM





	HV %:	PHF
EB	1.2%	0.81
WB	0.4%	0.88
NB	1.3%	0.87
SB	0.2%	0.92
TOTAL	0.7%	0.93

Two-Hour Count Summaries

Interval Start		BROADWAY AVE Eastbound				BROADWAY AVE Westbound				FREMONT BLVD Northbound				FREMONT 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	15	3	0	38	58	8	1	5	52	19	4	7	80	17	316	0
7:15 AM		0	9	35	7	0	43	120	10	0	18	75	20	2	9	80	25	453	0
7:30 AM		**0**	**14**	**58**	**4**	**0**	**50**	**116**	**15**	**1**	**17**	**93**	**18**	**0**	**17**	**107**	**33**	**543**	0
7:45 AM		**0**	**14**	**78**	**14**	**0**	**41**	**106**	**17**	**2**	**23**	**96**	**17**	**0**	**18**	**116**	**31**	**573**	1,885
8:00 AM		**0**	**20**	**51**	**11**	**0**	**58**	**119**	**20**	**0**	**8**	**80**	**14**	**2**	**14**	**118**	**26**	**541**	2,110
8:15 AM		**0**	**23**	**44**	**11**	**0**	**48**	**96**	**10**	**3**	**14**	**73**	**19**	**0**	**13**	**98**	**15**	**467**	**2,124**
8:30 AM		0	17	48	13	0	30	90	14	2	10	70	12	1	14	116	24	461	2,042
8:45 AM		0	17	32	13	0	26	68	5	1	10	78	25	1	19	92	28	415	1,884
Count Total		0	123	361	76	0	334	773	99	10	105	617	144	10	111	807	199	3,769	0
Peak Hour	**All**	**0**	**71**	**231**	**40**	**0**	**197**	**437**	**62**	**6**	**62**	**342**	**68**	**2**	**62**	**439**	**105**	**2,124**	**0**
	HV	**0**	**2**	**1**	**1**	**0**	**2**	**1**	**0**	**0**	**0**	**4**	**2**	**0**	**0**	**1**	**0**	**14**	**0**
	HV%	**-**	**3%**	**0%**	**3%**	**-**	**1%**	**0%**	**0%**	**0%**	**0%**	**1%**	**3%**	**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
7:00 AM	1	2	0	1	*4*	0	3	0	0	*3*	2	1	0	1	*4*
7:15 AM	0	3	2	1	*6*	0	3	0	2	*5*	2	1	1	3	*7*
7:30 AM	**0**	**0**	**2**	**0**	***2***	**0**	**0**	**0**	**2**	***2***	**1**	**1**	**1**	**0**	*3*
7:45 AM	**3**	**1**	**1**	**0**	***5***	**0**	**1**	**1**	**0**	***2***	**2**	**1**	**0**	**1**	*4*
8:00 AM	**1**	**1**	**3**	**1**	***6***	**0**	**0**	**1**	**0**	***1***	**3**	**1**	**3**	**4**	*11*
8:15 AM	**0**	**1**	**0**	**0**	***1***	**0**	**3**	**0**	**1**	***4***	**2**	**0**	**0**	**2**	***4***
8:30 AM	0	1	2	0	*3*	0	2	0	0	*2*	3	2	0	1	*6*
8:45 AM	1	0	2	2	*5*	0	2	0	2	*4*	4	3	1	2	*10*
Count Total	6	9	12	5	*32*	0	14	2	7	*23*	19	10	6	14	*49*
Peak Hour	**4**	**3**	**6**	**1**	***14***	**0**	**4**	**2**	**3**	***9***	**8**	**3**	**4**	**7**	***22***

Deon Fouche: 415 - 757 - 7714 deon.fouche@idaxdata.com

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	BROADWAY AVE Eastbound				BROADWAY AVE Westbound				FREMONT BLVD Northbound				FREMONT 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	1	1	0	0	0	0	0	0	0	1	0	4	0
7:15 AM	0	0	0	0	0	2	1	0	0	0	1	1	0	0	1	0	6	0
7:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**2**	0
7:45 AM	**0**	**1**	**1**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**5**	17
8:00 AM	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**2**	**1**	**0**	**0**	**1**	**0**	**6**	19
8:15 AM	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**14**
8:30 AM	0	0	0	0	0	1	0	0	0	0	0	2	0	0	0	0	3	15
8:45 AM	0	0	1	0	0	0	0	0	0	0	2	0	0	0	2	0	5	15
Count Total	0	2	2	2	0	6	3	0	0	0	7	5	0	0	5	0	32	0
Peak Hour	**0**	**2**	**1**	**1**	**0**	**2**	**1**	**0**	**0**	**0**	**4**	**2**	**0**	**0**	**1**	**0**	**14**	**0**

Two-Hour Count Summaries - Bikes

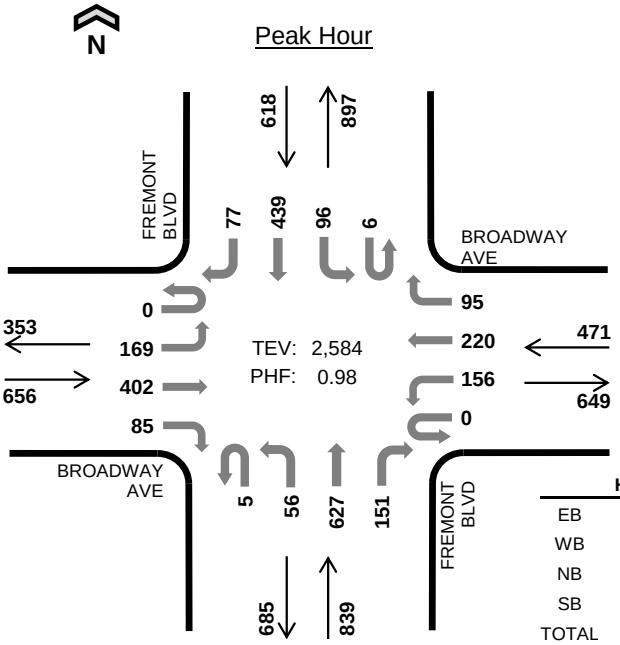
Interval Start	BROADWAY AVE Eastbound			BROADWAY AVE Westbound			FREMONT BLVD Northbound			FREMONT BLVD Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	0	0	3	0	0	0	0	0	0	0	3	0
7:15 AM	0	0	0	1	2	0	0	0	0	0	1	1	5	0
7:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**2**	0
7:45 AM	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**2**	12
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	10
8:15 AM	**0**	**0**	**0**	**1**	**2**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**4**	**9**
8:30 AM	0	0	0	0	2	0	0	0	0	0	0	0	2	9
8:45 AM	0	0	0	0	2	0	0	0	0	0	2	0	4	11
Count Total	0	0	0	2	12	0	0	2	0	0	5	2	23	0
Peak Hour	**0**	**0**	**0**	**1**	**3**	**0**	**0**	**2**	**0**	**0**	**2**	**1**	**9**	**0**

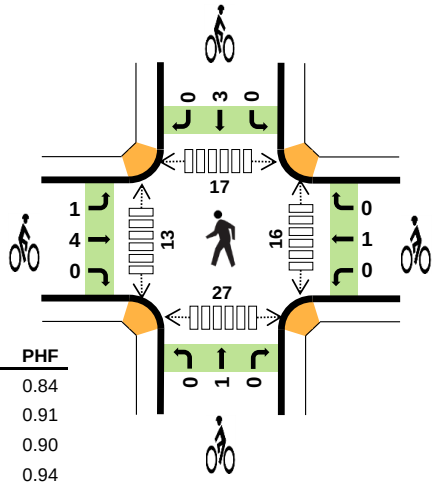
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Deon Fouche: 415 - 757 - 7714 deon.fouche@idaxdata.com

FREMONT BLVD
BROADWAY AVE

Date: 05/09/2017
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:45 PM to 5:45 PM





	HV %:	PHF
EB	0.5%	0.84
WB	0.8%	0.91
NB	0.7%	0.90
SB	0.2%	0.94
TOTAL	0.5%	0.98

Two-Hour Count Summaries

Interval Start		BROADWAY AVE Eastbound				BROADWAY AVE Westbound				FREMONT BLVD Northbound				FREMONT 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	41	103	23	0	29	57	22	2	18	157	29	0	14	122	16	633	0
4:15 PM		0	36	109	25	0	39	62	20	2	17	123	39	0	18	106	15	611	0
4:30 PM		0	36	86	20	0	26	59	20	0	21	130	44	1	25	116	21	605	0
4:45 PM		**0**	**47**	**100**	**17**	**0**	**47**	**57**	**26**	**1**	**11**	**159**	**34**	**1**	**26**	**108**	**18**	**652**	2,501
5:00 PM		**0**	**33**	**102**	**20**	**0**	**30**	**61**	**19**	**1**	**23**	**165**	**43**	**1**	**26**	**118**	**19**	**661**	2,529
5:15 PM		**0**	**48**	**117**	**30**	**0**	**40**	**56**	**24**	**1**	**10**	**131**	**27**	**1**	**20**	**104**	**19**	**628**	2,546
5:30 PM		**0**	**41**	**83**	**18**	**0**	**39**	**46**	**26**	**2**	**12**	**172**	**47**	**3**	**24**	**109**	**21**	**643**	**2,584**
5:45 PM		0	46	102	21	0	28	42	31	2	12	157	28	1	17	100	18	605	2,537
Count Total		0	328	802	174	0	278	440	188	11	124	1,194	291	8	170	883	147	5,038	0
Peak Hour	**All**	**0**	**169**	**402**	**85**	**0**	**156**	**220**	**95**	**5**	**56**	**627**	**151**	**6**	**96**	**439**	**77**	**2,584**	**0**
	HV	**0**	**1**	**1**	**1**	**0**	**4**	**0**	**0**	**0**	**1**	**3**	**2**	**0**	**0**	**1**	**0**	**14**	**0**
	HV%	**-**	**1%**	**0%**	**1%**	**-**	**3%**	**0%**	**0%**	**0%**	**2%**	**0%**	**1%**	**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	1	2	2	0	*5*	1	1	0	2	*4*	9	4	1	9	*23*
4:15 PM	1	0	1	0	*2*	1	0	1	2	*4*	7	3	0	6	*16*
4:30 PM	1	0	2	0	*3*	1	0	2	1	*4*	10	3	0	7	*20*
4:45 PM	**0**	**1**	**3**	**0**	***4***	**1**	**0**	**1**	**0**	***2***	**3**	**2**	**5**	**3**	*13*
5:00 PM	**0**	**2**	**0**	**1**	***3***	**2**	**0**	**0**	**2**	***4***	**4**	**4**	**3**	**6**	*17*
5:15 PM	**2**	**0**	**3**	**0**	***5***	**1**	**0**	**0**	**0**	***1***	**2**	**4**	**5**	**12**	*23*
5:30 PM	**1**	**1**	**0**	**0**	***2***	**1**	**1**	**0**	**1**	***3***	**7**	**3**	**4**	**6**	***20***
5:45 PM	0	1	2	0	*3*	2	1	0	1	*4*	3	2	0	2	*7*
Count Total	6	7	13	1	*27*	10	3	4	9	*26*	45	25	18	51	*139*
Peak Hour	**3**	**4**	**6**	**1**	***14***	**5**	**1**	**1**	**3**	***10***	**16**	**13**	**17**	**27**	***73***

Deon Fouche: 415 - 757 - 7714 deon.fouche@idaxdata.com

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	BROADWAY AVE Eastbound				BROADWAY AVE Westbound				FREMONT BLVD Northbound				FREMONT 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	1	0	0	1	1	0	0	1	0	1	0	0	0	0	5	0
4:15 PM	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	2	0
4:30 PM	0	1	0	0	0	0	0	0	0	0	1	1	0	0	0	0	3	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**2**	**0**	**0**	**0**	**0**	**0**	**4**	14
5:00 PM	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**3**	12
5:15 PM	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**2**	**0**	**0**	**0**	**0**	**5**	15
5:30 PM	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**14**
5:45 PM	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	3	13
Count Total	0	2	3	1	0	5	2	0	0	2	6	5	0	0	1	0	27	0
Peak Hour	**0**	**1**	**1**	**1**	**0**	**4**	**0**	**0**	**0**	**1**	**3**	**2**	**0**	**0**	**1**	**0**	**14**	**0**

Two-Hour Count Summaries - Bikes

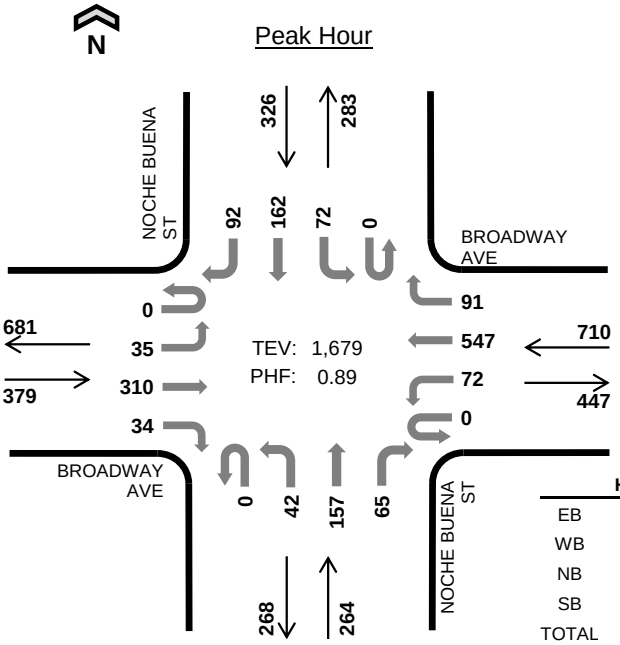
Interval Start	BROADWAY AVE Eastbound			BROADWAY AVE Westbound			FREMONT BLVD Northbound			FREMONT BLVD Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	1	0	0	1	0	0	0	0	0	2	0	4	0
4:15 PM	0	1	0	0	0	0	0	1	0	0	2	0	4	0
4:30 PM	0	1	0	0	0	0	0	2	0	0	1	0	4	0
4:45 PM	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**2**	14
5:00 PM	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**4**	14
5:15 PM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	11
5:30 PM	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**3**	**10**
5:45 PM	0	1	1	0	1	0	0	0	0	0	1	0	4	12
Count Total	1	8	1	0	3	0	0	4	0	0	9	0	26	0
Peak Hour	**1**	**4**	**0**	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**3**	**0**	**10**	**0**

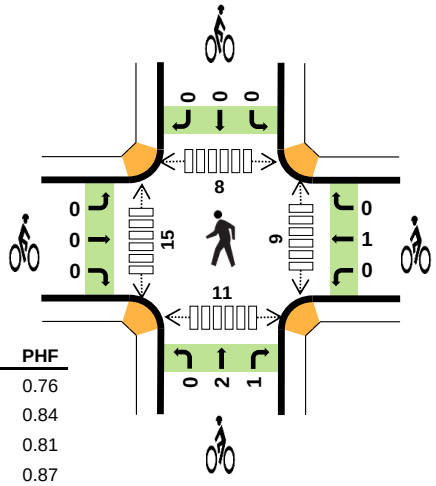
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Deon Fouche: 415 - 757 - 7714 deon.fouche@idaxdata.com

NOCHE BUENA ST
BROADWAY AVE

Date: 05/09/2017
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:15 AM to 8:15 AM





	HV %:	PHF
EB	1.3%	0.76
WB	0.7%	0.84
NB	0.8%	0.81
SB	0.6%	0.87
TOTAL	0.8%	0.89

Two-Hour Count Summaries

Interval Start	BROADWAY AVE Eastbound				BROADWAY AVE Westbound				NOCHE BUENA ST Northbound				NOCHE BUENA 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	6	30	5	0	4	72	7	0	7	20	15	0	11	17	29	223	0
7:15 AM	**0**	**8**	**60**	**3**	**0**	**7**	**132**	**14**	**0**	**5**	**24**	**13**	**0**	**18**	**25**	**31**	**340**	0
7:30 AM	**0**	**10**	**94**	**20**	**0**	**20**	**130**	**21**	**0**	**7**	**42**	**22**	**0**	**16**	**44**	**22**	**448**	0
7:45 AM	**0**	**10**	**107**	**4**	**0**	**23**	**121**	**30**	**0**	**11**	**53**	**17**	**0**	**24**	**52**	**18**	**470**	1,481
8:00 AM	**0**	**7**	**49**	**7**	**0**	**22**	**164**	**26**	**0**	**19**	**38**	**13**	**0**	**14**	**41**	**21**	**421**	**1,679**
8:15 AM	0	12	63	4	0	13	106	15	0	10	33	9	0	3	29	14	311	1,650
8:30 AM	0	3	52	7	0	4	73	9	0	6	24	6	0	15	29	20	248	1,450
8:45 AM	0	10	50	5	0	8	60	1	0	6	21	6	0	7	22	19	215	1,195
Count Total	0	66	505	55	0	101	858	123	0	71	255	101	0	108	259	174	2,676	0
Peak Hour All	**0**	**35**	**310**	**34**	**0**	**72**	**547**	**91**	**0**	**42**	**157**	**65**	**0**	**72**	**162**	**92**	**1,679**	**0**
Peak Hour HV	**0**	**0**	**4**	**1**	**0**	**0**	**5**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**2**	**0**	**14**	**0**
Peak Hour HV%	**-**	**0%**	**1%**	**3%**	**-**	**0%**	**1%**	**0%**	**-**	**0%**	**1%**	**0%**	**-**	**0%**	**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
7:00 AM	0	2	1	1	*4*	0	2	0	1	*3*	1	1	4	0	*6*
7:15 AM	**1**	**3**	**1**	**1**	***6***	**0**	**1**	**0**	**0**	***1***	**7**	**4**	**2**	**0**	*13*
7:30 AM	**1**	**0**	**0**	**0**	***1***	**0**	**0**	**0**	**0**	***0***	**1**	**7**	**1**	**7**	*16*
7:45 AM	**1**	**1**	**1**	**1**	***4***	**0**	**0**	**1**	**0**	***1***	**1**	**2**	**3**	**2**	*8*
8:00 AM	**2**	**1**	**0**	**0**	***3***	**0**	**0**	**2**	**0**	***2***	**0**	**2**	**2**	**2**	***6***
8:15 AM	0	2	0	1	*3*	1	1	0	0	*2*	0	2	2	1	*5*
8:30 AM	1	0	1	0	*2*	0	0	0	0	*0*	0	1	1	0	*2*
8:45 AM	2	0	1	1	*4*	0	0	0	0	*0*	1	0	3	0	*4*
Count Total	8	9	5	5	*27*	1	4	3	1	*9*	11	19	18	12	*60*
Peak Hour	**5**	**5**	**2**	**2**	***14***	**0**	**1**	**3**	**0**	***4***	**9**	**15**	**8**	**11**	***43***

Deon Fouche: 415 - 757 - 7714 deon.fouche@idaxdata.com

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	BROADWAY AVE Eastbound				BROADWAY AVE Westbound				NOCHE BUENA ST Northbound				NOCHE BUENA 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	0	0	0	0	2	0	0	0	1	0	0	1	0	0	4	0
7:15 AM	**0**	**0**	**1**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**6**	0
7:30 AM	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	0
7:45 AM	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**4**	15
8:00 AM	**0**	**0**	**2**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**14**
8:15 AM	0	0	0	0	0	0	2	0	0	0	0	0	0	0	1	0	3	11
8:30 AM	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	2	12
8:45 AM	0	0	2	0	0	0	0	0	0	0	1	0	0	0	1	0	4	12
Count Total	0	0	7	1	0	0	9	0	0	0	5	0	0	1	4	0	27	0
Peak Hour	**0**	**0**	**4**	**1**	**0**	**0**	**5**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**2**	**0**	**14**	**0**

Two-Hour Count Summaries - Bikes

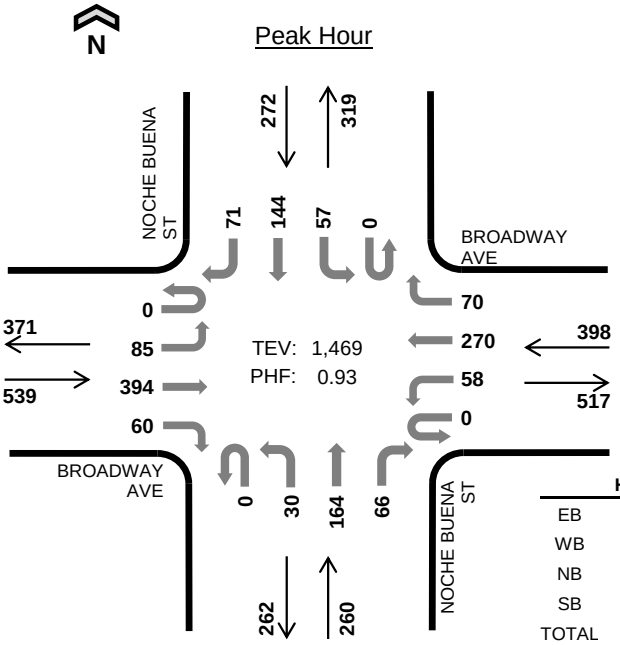
Interval Start	BROADWAY AVE Eastbound			BROADWAY AVE Westbound			NOCHE BUENA ST Northbound			NOCHE BUENA ST Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	0	0	2	0	0	0	0	1	0	0	3	0
7:15 AM	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**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**	**1**	**0**	**0**	**0**	**1**	5
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**2**	**4**
8:15 AM	0	1	0	0	1	0	0	0	0	0	0	0	2	5
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	5
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	4
Count Total	0	1	0	0	4	0	0	2	1	1	0	0	9	0
Peak Hour	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**2**	**1**	**0**	**0**	**0**	**4**	**0**

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

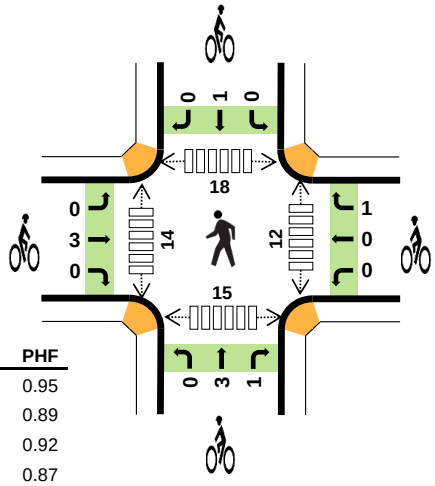
Deon Fouche: 415 - 757 - 7714 deon.fouche@idaxdata.com

NOCHE BUENA ST
BROADWAY AVE

Date: 05/09/2017
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:30 PM to 5:30 PM



	HV %:	PHF
EB	0.6%	0.95
WB	0.8%	0.89
NB	0.8%	0.92
SB	0.7%	0.87
TOTAL	0.7%	0.93



Two-Hour Count Summaries

Interval Start	BROADWAY AVE Eastbound				BROADWAY AVE Westbound				NOCHE BUENA ST Northbound				NOCHE BUENA 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	17	84	10	0	15	60	7	0	6	23	15	0	11	40	20	308	0
4:15 PM	0	24	104	16	0	22	68	11	0	9	45	18	0	9	37	16	379	0
4:30 PM	**0**	**11**	**100**	**14**	**0**	**16**	**69**	**18**	**0**	**5**	**47**	**19**	**0**	**14**	**34**	**15**	**362**	0
4:45 PM	**0**	**21**	**92**	**17**	**0**	**9**	**67**	**14**	**0**	**10**	**34**	**17**	**0**	**9**	**36**	**12**	**338**	1,387
5:00 PM	**0**	**31**	**92**	**19**	**0**	**12**	**62**	**19**	**0**	**4**	**40**	**18**	**0**	**21**	**37**	**20**	**375**	1,454
5:15 PM	**0**	**22**	**110**	**10**	**0**	**21**	**72**	**19**	**0**	**11**	**43**	**12**	**0**	**13**	**37**	**24**	**394**	**1,469**
5:30 PM	0	17	91	10	0	10	65	13	0	7	38	13	0	20	37	12	333	1,440
5:45 PM	0	20	84	19	0	20	43	12	0	7	42	15	0	14	43	13	332	1,434
Count Total	0	163	757	115	0	125	506	113	0	59	312	127	0	111	301	132	2,821	0
Peak Hour All	**0**	**85**	**394**	**60**	**0**	**58**	**270**	**70**	**0**	**30**	**164**	**66**	**0**	**57**	**144**	**71**	**1,469**	**0**
Peak Hour HV	**0**	**0**	**3**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**2**	**0**	**10**	**0**
Peak Hour HV%	**-**	**0%**	**1%**	**0%**	**-**	**0%**	**1%**	**0%**	**-**	**0%**	**1%**	**0%**	**-**	**0%**	**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	1	2	0	0	*3*	0	0	1	0	*1*	0	3	5	0	*8*
4:15 PM	1	0	1	2	*4*	2	0	0	0	*2*	6	0	6	2	*14*
4:30 PM	**0**	**1**	**1**	**1**	***3***	**1**	**0**	**0**	**1**	***2***	**3**	**7**	**5**	**9**	*24*
4:45 PM	**1**	**0**	**0**	**0**	***1***	**1**	**0**	**1**	**0**	***2***	**2**	**6**	**3**	**5**	*16*
5:00 PM	**0**	**2**	**0**	**1**	***3***	**0**	**0**	**2**	**0**	***2***	**5**	**0**	**5**	**1**	*11*
5:15 PM	**2**	**0**	**1**	**0**	***3***	**1**	**1**	**1**	**0**	***3***	**2**	**1**	**5**	**0**	***8***
5:30 PM	1	1	1	0	*3*	1	0	0	0	*1*	2	1	4	2	*9*
5:45 PM	1	0	0	1	*2*	1	0	0	1	*2*	3	7	0	2	*12*
Count Total	7	6	4	5	*22*	7	1	5	2	*15*	23	25	33	21	*102*
Peak Hour	**3**	**3**	**2**	**2**	***10***	**3**	**1**	**4**	**1**	***9***	**12**	**14**	**18**	**15**	***59***

Deon Fouche: 415 - 757 - 7714 deon.fouche@idaxdata.com

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	BROADWAY AVE Eastbound				BROADWAY AVE Westbound				NOCHE BUENA ST Northbound				NOCHE BUENA 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	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	3	0
4:15 PM	0	0	1	0	0	0	0	0	0	0	1	0	0	0	2	0	4	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**3**	0
4:45 PM	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	11
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**3**	11
5:15 PM	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**3**	**10**
5:30 PM	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0	0	3	10
5:45 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	2	11
Count Total	0	0	7	0	0	0	6	0	0	0	4	0	0	0	5	0	22	0
Peak Hour	**0**	**0**	**3**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**2**	**0**	**10**	**0**

Two-Hour Count Summaries - Bikes

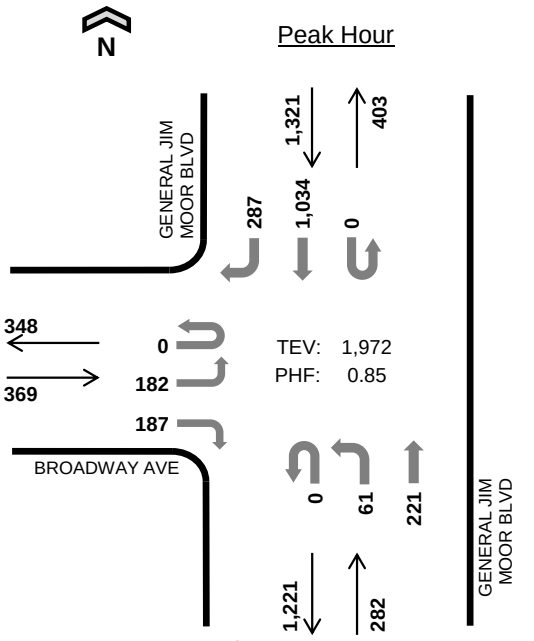
Interval Start	BROADWAY AVE Eastbound			BROADWAY AVE Westbound			NOCHE BUENA ST Northbound			NOCHE BUENA ST Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	1	0	0	0	0	1	0
4:15 PM	0	2	0	0	0	0	0	0	0	0	0	0	2	0
4:30 PM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**2**	0
4:45 PM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**2**	7
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**2**	8
5:15 PM	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**3**	**9**
5:30 PM	0	1	0	0	0	0	0	0	0	0	0	0	1	8
5:45 PM	0	1	0	0	0	0	0	0	0	0	1	0	2	8
Count Total	0	7	0	0	0	1	0	4	1	0	2	0	15	0
Peak Hour	**0**	**3**	**0**	**0**	**0**	**1**	**0**	**3**	**1**	**0**	**1**	**0**	**9**	**0**

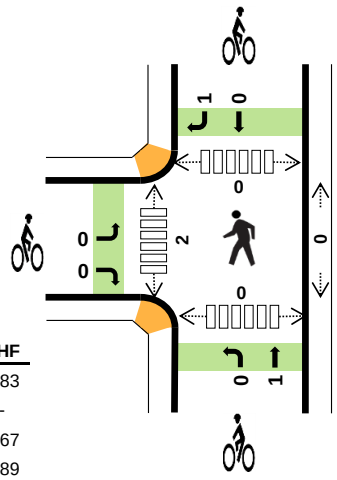
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Deon Fouche: 415 - 757 - 7714 deon.fouche@idaxdata.com

GENERAL JIM MOOR BLVD
BROADWAY AVE

Date: 05/09/2017
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:15 AM to 8:15 AM





	HV %:	PHF
EB	0.5%	0.83
WB	-	-
NB	0.4%	0.67
SB	0.4%	0.89
TOTAL	0.4%	0.85

Two-Hour Count Summaries

Interval Start		BROADWAY AVE Eastbound				0 Westbound				GENERAL JIM MOOR BLVD Northbound				GENERAL JIM MOOR 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	24	0	26	0	0	0	0	0	7	28	0	0	0	119	27	231	0
7:15 AM		**0**	**26**	**0**	**47**	**0**	**0**	**0**	**0**	**0**	**10**	**36**	**0**	**0**	**0**	**223**	**56**	**398**	0
7:30 AM		**0**	**49**	**0**	**42**	**0**	**0**	**0**	**0**	**0**	**15**	**49**	**0**	**0**	**0**	**292**	**78**	**525**	0
7:45 AM		**0**	**53**	**0**	**58**	**0**	**0**	**0**	**0**	**0**	**28**	**78**	**0**	**0**	**0**	**290**	**72**	**579**	1,733
8:00 AM		**0**	**54**	**0**	**40**	**0**	**0**	**0**	**0**	**0**	**8**	**58**	**0**	**0**	**0**	**229**	**81**	**470**	**1,972**
8:15 AM		0	31	0	47	0	0	0	0	0	16	61	0	0	0	169	60	384	1,958
8:30 AM		0	13	0	26	0	0	0	0	0	12	49	0	0	0	123	31	254	1,687
8:45 AM		0	20	0	26	0	0	0	0	0	15	39	0	0	0	87	23	210	1,318
Count Total		0	270	0	312	0	0	0	0	0	111	398	0	0	0	1,532	428	3,051	0
Peak Hour	**All**	**0**	**182**	**0**	**187**	**0**	**0**	**0**	**0**	**0**	**61**	**221**	**0**	**0**	**0**	**1,034**	**287**	**1,972**	**0**
	HV	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**4**	**8**	**0**
	HV%	**-**	**1%**	**-**	**0%**	**-**	**-**	**-**	**-**	**-**	**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 EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
7:00 AM	1	0	0	1	*2*	0	0	0	0	*0*	0	1	0	0	*1*
7:15 AM	**0**	**0**	**0**	**1**	***1***	**0**	**0**	**0**	**1**	***1***	**0**	**0**	**0**	**0**	*0*
7:30 AM	**0**	**0**	**0**	**2**	***2***	**0**	**0**	**1**	**0**	***1***	**0**	**0**	**0**	**0**	*0*
7:45 AM	**0**	**0**	**1**	**0**	***1***	**0**	**0**	**0**	**0**	***0***	**0**	**2**	**0**	**0**	*2*
8:00 AM	**2**	**0**	**0**	**2**	***4***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***
8:15 AM	0	0	0	1	*1*	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*
8:45 AM	2	0	0	0	*2*	0	0	0	1	*1*	0	0	0	0	*0*
Count Total	5	0	1	7	*13*	0	0	1	2	*3*	0	3	0	0	*3*
Peak Hr	**2**	**0**	**1**	**5**	***8***	**0**	**0**	**1**	**1**	***2***	**0**	**2**	**0**	**0**	***2***

Deon Fouche: 415 - 757 - 7714 deon.fouche@idaxdata.com

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	BROADWAY AVE				0				GENERAL JIM MOOR BLVD				GENERAL JIM MOOR 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	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0
7:15 AM	**0**	**0**	**0**	**0**	**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**	**1**	**1**	**2**	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	6
8:00 AM	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**4**	**8**
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	8
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
8:45 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	7
Count Total	0	5	0	0	0	0	0	0	0	0	1	0	0	0	2	5	13	0
Peak Hour	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**4**	**8**	**0**

Two-Hour Count Summaries - Bikes

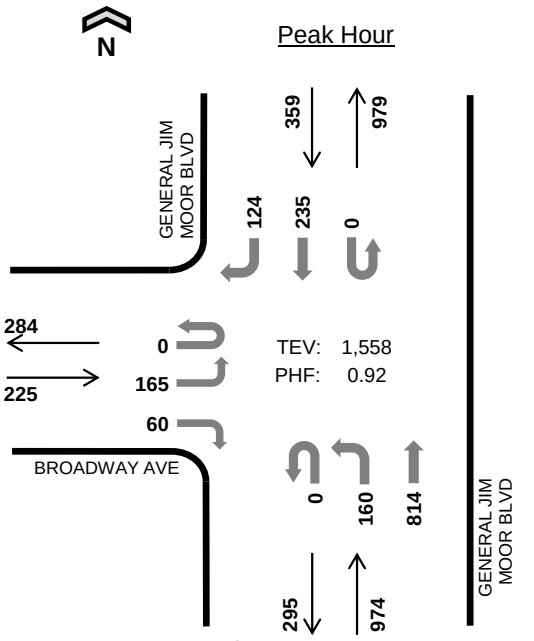
Interval Start	BROADWAY AVE			0			GENERAL JIM MOOR BLVD			GENERAL JIM MOOR BLVD			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	0
7:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**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	1	0	1	1
Count Total	0	0	0	0	0	0	0	1	0	0	1	1	3	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**2**	**0**

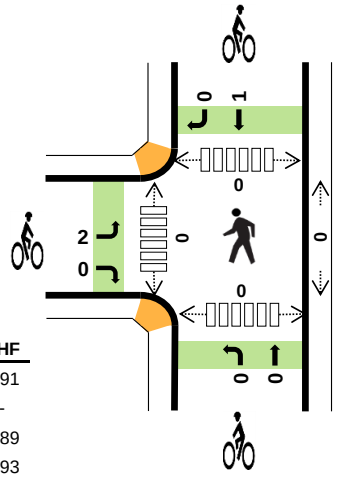
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Deon Fouche: 415 - 757 - 7714 deon.fouche@idaxdata.com

GENERAL JIM MOOR BLVD
BROADWAY AVE

Date: 05/09/2017
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:30 PM to 5:30 PM





	HV %:	PHF
EB	0.4%	0.91
WB	-	-
NB	0.0%	0.89
SB	0.6%	0.93
TOTAL	0.2%	0.92

Two-Hour Count Summaries

Interval Start	BROADWAY AVE Eastbound				0 Westbound				GENERAL JIM MOOR BLVD Northbound				GENERAL JIM MOOR 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	35	0	20	0	0	0	0	0	34	132	0	0	0	56	42	319	0
4:15 PM	0	34	0	11	0	0	0	0	0	41	143	0	0	0	36	32	297	0
4:30 PM	**0**	**45**	**0**	**17**	**0**	**0**	**0**	**0**	**0**	**35**	**194**	**0**	**0**	**0**	**50**	**25**	**366**	0
4:45 PM	**0**	**34**	**0**	**17**	**0**	**0**	**0**	**0**	**0**	**34**	**184**	**0**	**0**	**0**	**61**	**36**	**366**	1,348
5:00 PM	**0**	**45**	**0**	**11**	**0**	**0**	**0**	**0**	**0**	**44**	**209**	**0**	**0**	**0**	**64**	**28**	**401**	1,430
5:15 PM	**0**	**41**	**0**	**15**	**0**	**0**	**0**	**0**	**0**	**47**	**227**	**0**	**0**	**0**	**60**	**35**	**425**	**1,558**
5:30 PM	0	31	0	18	0	0	0	0	1	36	155	0	0	0	45	26	312	1,504
5:45 PM	0	33	0	15	0	0	0	0	0	33	122	0	0	0	35	19	257	1,395
Count Total	0	298	0	124	0	0	0	0	1	304	1,366	0	0	0	407	243	2,743	0
Peak Hour All	**0**	**165**	**0**	**60**	**0**	**0**	**0**	**0**	**0**	**160**	**814**	**0**	**0**	**0**	**235**	**124**	**1,558**	**0**
Peak Hour HV	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**3**	**0**
Peak Hour HV%	**-**	**1%**	**-**	**0%**	**-**	**-**	**-**	**-**	**-**	**0%**	**0%**	**-**	**-**	**-**	**1%**	**0%**	**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	0	0	*0*	0	0	0	0	*0*	0	1	0	0	*1*
4:15 PM	1	0	0	0	*1*	0	0	0	0	*0*	0	1	0	0	*1*
4:30 PM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
4:45 PM	**0**	**0**	**0**	**0**	***0***	**2**	**0**	**0**	**0**	***2***	**0**	**0**	**0**	**0**	*0*
5:00 PM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
5:15 PM	**1**	**0**	**0**	**2**	***3***	**0**	**0**	**0**	**1**	***1***	**0**	**0**	**0**	**0**	***0***
5:30 PM	0	0	0	1	*1*	0	0	4	0	*4*	0	2	0	0	*2*
5:45 PM	0	0	0	0	*0*	0	0	2	2	*4*	0	0	0	0	*0*
Count Total	2	0	0	3	*5*	2	0	6	3	*11*	0	4	0	0	*4*
Peak Hr	**1**	**0**	**0**	**2**	***3***	**2**	**0**	**0**	**1**	***3***	**0**	**0**	**0**	**0**	***0***

Deon Fouche: 415 - 757 - 7714 deon.fouche@idaxdata.com

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	BROADWAY AVE				0				GENERAL JIM MOOR BLVD				GENERAL JIM MOOR 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	0	0	0	0	0	0	0	0
4:15 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	1
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	1
5:15 PM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**3**	**3**
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	4
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
Count Total	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2	1	5	0
Peak Hour	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**3**	**0**

Two-Hour Count Summaries - Bikes

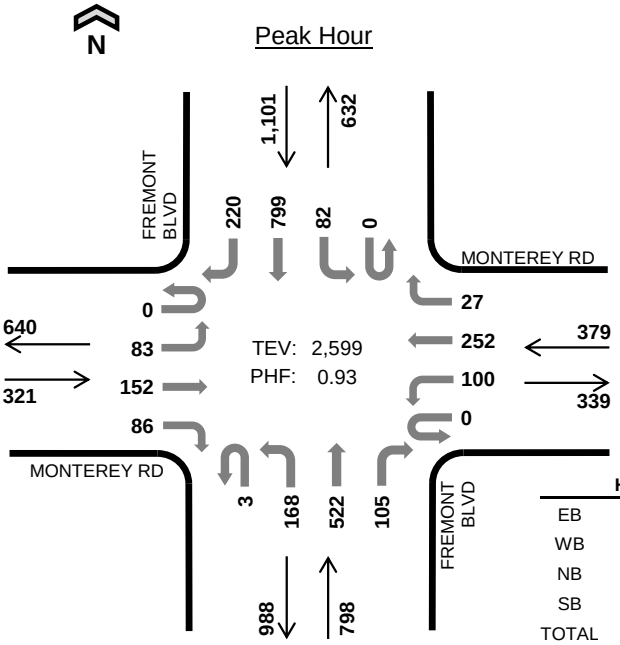
Interval Start	BROADWAY AVE			0			GENERAL JIM MOOR BLVD			GENERAL JIM MOOR BLVD			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:45 PM	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	2
5:00 PM	**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**	**1**	**0**	**1**	**3**
5:30 PM	0	0	0	0	0	0	0	4	0	0	0	0	4	7
5:45 PM	0	0	0	0	0	0	0	2	0	0	0	2	4	9
Count Total	2	0	0	0	0	0	0	6	0	0	1	2	11	0
Peak Hour	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**3**	**0**

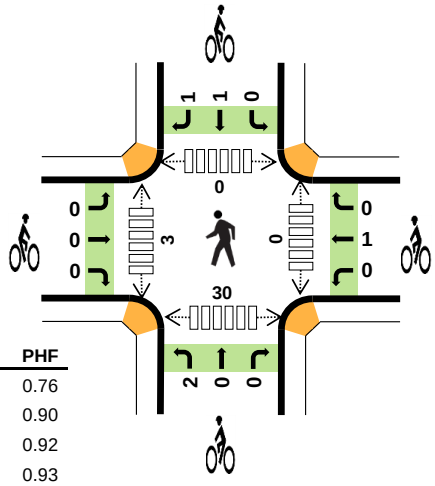
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Deon Fouche: 415 - 757 - 7714 deon.fouche@idaxdata.com

FREMONT BLVD
MONTEREY RD

Date: 05/09/2017
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:15 AM to 8:15 AM





	HV %:	PHF
EB	1.9%	0.76
WB	0.5%	0.90
NB	1.5%	0.92
SB	1.0%	0.93
TOTAL	1.2%	0.93

Two-Hour Count Summaries

Interval Start	MONTEREY RD Eastbound				MONTEREY RD Westbound				FREMONT BLVD Northbound				FREMONT 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	12	16	6	0	9	79	8	1	29	76	11	1	19	211	51	529	0
7:15 AM	**0**	**17**	**26**	**17**	**0**	**15**	**72**	**11**	**1**	**36**	**123**	**11**	**0**	**13**	**191**	**52**	**585**	0
7:30 AM	**0**	**19**	**41**	**19**	**0**	**21**	**70**	**5**	**0**	**49**	**134**	**24**	**0**	**26**	**198**	**63**	**669**	0
7:45 AM	**0**	**20**	**59**	**26**	**0**	**22**	**53**	**5**	**0**	**47**	**118**	**51**	**0**	**34**	**204**	**58**	**697**	2,480
8:00 AM	**0**	**27**	**26**	**24**	**0**	**42**	**57**	**6**	**2**	**36**	**147**	**19**	**0**	**9**	**206**	**47**	**648**	**2,599**
8:15 AM	0	20	29	22	0	32	60	10	0	30	121	23	0	14	164	31	556	2,570
8:30 AM	0	28	23	19	0	22	37	6	2	48	122	12	0	2	112	34	467	2,368
8:45 AM	0	17	27	21	0	16	46	11	0	46	107	7	1	5	144	43	491	2,162
Count Total	0	160	247	154	0	179	474	62	6	321	948	158	2	122	1,430	379	4,642	0
Peak Hour All	**0**	**83**	**152**	**86**	**0**	**100**	**252**	**27**	**3**	**168**	**522**	**105**	**0**	**82**	**799**	**220**	**2,599**	**0**
Peak Hour HV	**0**	**3**	**2**	**1**	**0**	**1**	**1**	**0**	**0**	**0**	**11**	**1**	**0**	**0**	**8**	**3**	**31**	**0**
Peak Hour HV%	**-**	**4%**	**1%**	**1%**	**-**	**1%**	**0%**	**0%**	**0%**	**0%**	**2%**	**1%**	**-**	**0%**	**1%**	**1%**	**1%**	**0**

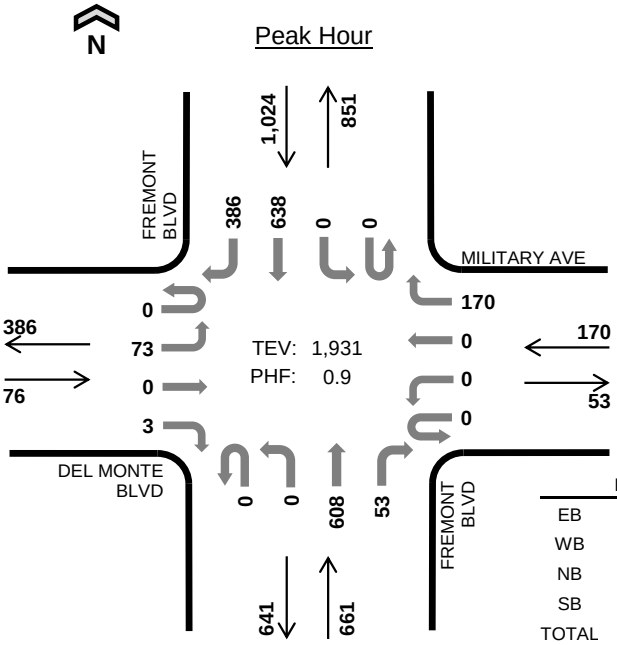
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

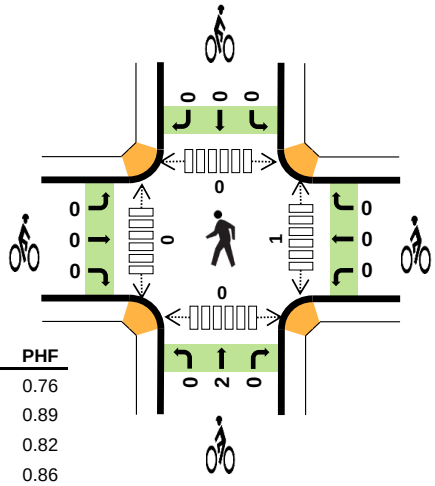
Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	2	1	4	4	*11*	0	1	0	0	*1*	0	0	0	2	*2*
7:15 AM	**2**	**0**	**3**	**1**	***6***	**0**	**0**	**1**	**0**	***1***	**0**	**0**	**0**	**12**	*12*
7:30 AM	**2**	**1**	**1**	**2**	***6***	**0**	**0**	**0**	**0**	***0***	**0**	**1**	**0**	**10**	*11*
7:45 AM	**1**	**1**	**3**	**3**	***8***	**0**	**1**	**1**	**2**	***4***	**0**	**2**	**0**	**5**	*7*
8:00 AM	**1**	**0**	**5**	**5**	***11***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**3**	***3***
8:15 AM	2	0	9	6	*17*	0	2	1	1	*4*	0	0	0	1	*1*
8:30 AM	1	1	5	6	*13*	2	0	0	2	*4*	0	0	0	3	*3*
8:45 AM	1	0	6	4	*11*	0	1	0	0	*1*	0	1	0	1	*2*
Count Total	12	4	36	31	*83*	2	5	3	5	*15*	0	4	0	37	*41*
Peak Hour	**6**	**2**	**12**	**11**	***31***	**0**	**1**	**2**	**2**	***5***	**0**	**3**	**0**	**30**	***33***

Deon Fouche: 415 - 757 - 7714 deon.fouche@idaxdata.com

FREMONT BLVD
DEL MONTE BLVD

Date: 05/09/2017
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:15 AM to 8:15 AM





	HV %:	PHF
EB	9.2%	0.76
WB	0.0%	0.89
NB	0.8%	0.82
SB	1.4%	0.86
TOTAL	1.3%	0.90

Two-Hour Count Summaries

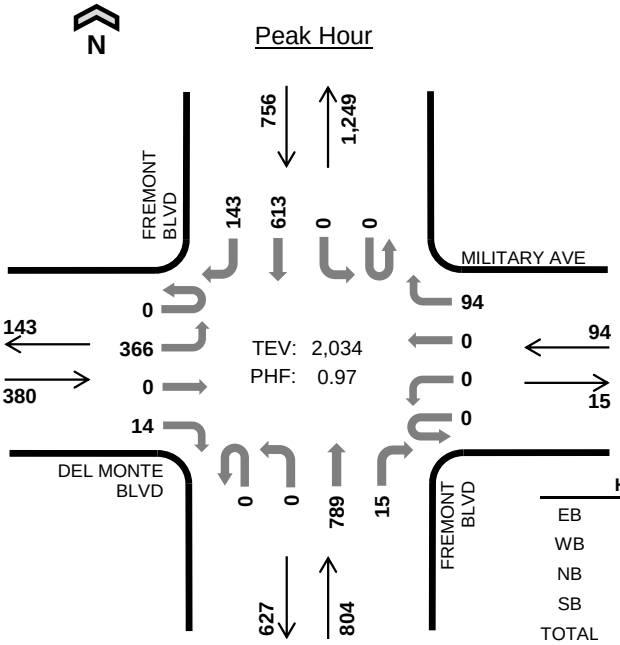
Interval Start	DEL MONTE BLVD Eastbound				MILITARY AVE Westbound				FREMONT BLVD Northbound				FREMONT BLVD Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	14	0	0	0	0	0	25	0	0	76	1	0	0	125	94	335	0
7:15 AM	**0**	**10**	**0**	**0**	**0**	**0**	**0**	**39**	**0**	**0**	**131**	**2**	**0**	**0**	**139**	**74**	**395**	0
7:30 AM	**0**	**19**	**0**	**1**	**0**	**0**	**0**	**48**	**0**	**0**	**149**	**13**	**0**	**0**	**145**	**102**	**477**	0
7:45 AM	**0**	**20**	**0**	**1**	**0**	**0**	**0**	**47**	**0**	**0**	**168**	**33**	**0**	**0**	**165**	**101**	**535**	1,742
8:00 AM	**0**	**24**	**0**	**1**	**0**	**0**	**0**	**36**	**0**	**0**	**160**	**5**	**0**	**0**	**189**	**109**	**524**	**1,931**
8:15 AM	0	27	0	1	0	0	0	21	0	0	117	3	0	0	128	66	363	1,899
8:30 AM	0	33	0	0	0	0	0	33	0	0	131	2	0	0	120	35	354	1,776
8:45 AM	0	34	0	1	0	0	0	24	0	0	88	3	0	0	126	55	331	1,572
Count Total	0	181	0	5	0	0	0	273	0	0	1,020	62	0	0	1,137	636	3,314	0
Peak Hour All	**0**	**73**	**0**	**3**	**0**	**0**	**0**	**170**	**0**	**0**	**608**	**53**	**0**	**0**	**638**	**386**	**1,931**	**0**
Peak Hour HV	**0**	**7**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**0**	**0**	**0**	**4**	**10**	**26**	**0**
Peak Hour HV%	**-**	**10%**	**-**	**0%**	**-**	**-**	**-**	**0%**	**-**	**-**	**1%**	**0%**	**-**	**-**	**1%**	**3%**	**1%**	**0**

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

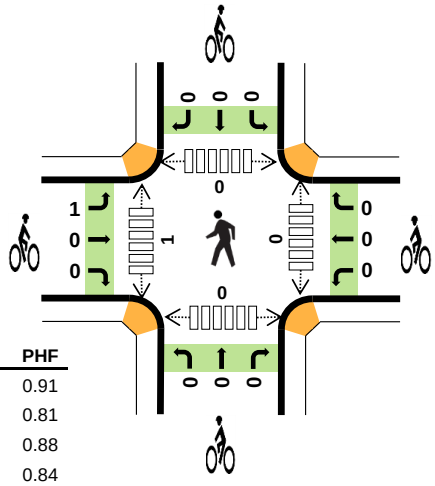
Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	2	0	1	3	*6*	0	0	0	0	*0*	0	0	0	0	*0*
7:15 AM	**2**	**0**	**1**	**1**	***4***	**0**	**0**	**1**	**0**	***1***	**0**	**0**	**0**	**0**	*0*
7:30 AM	**1**	**0**	**0**	**2**	***3***	**0**	**0**	**1**	**0**	***1***	**0**	**0**	**0**	**0**	*0*
7:45 AM	**1**	**0**	**2**	**3**	***6***	**0**	**0**	**0**	**0**	***0***	**1**	**0**	**0**	**0**	*1*
8:00 AM	**3**	**0**	**2**	**8**	***13***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***
8:15 AM	7	0	0	3	*10*	0	0	0	0	*0*	0	0	0	0	*0*
8:30 AM	3	0	0	3	*6*	0	0	0	1	*1*	1	0	1	0	*2*
8:45 AM	3	0	0	2	*5*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	22	0	6	25	*53*	0	0	2	1	*3*	2	0	1	0	*3*
Peak Hour	**7**	**0**	**5**	**14**	***26***	**0**	**0**	**2**	**0**	***2***	**1**	**0**	**0**	**0**	***1***

FREMONT BLVD
DEL MONTE BLVD

Date: 05/09/2017
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:30 PM to 5:30 PM



	HV %:	PHF
EB	0.8%	0.91
WB	1.1%	0.81
NB	0.2%	0.88
SB	0.4%	0.84
TOTAL	0.4%	0.97



Two-Hour Count Summaries

Interval Start	DEL MONTE BLVD Eastbound				MILITARY AVE Westbound				FREMONT BLVD Northbound				FREMONT 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	82	0	2	0	0	0	21	0	0	186	2	0	0	128	53	474	0
4:15 PM	0	93	0	4	0	0	0	21	0	0	176	4	0	0	141	44	483	0
4:30 PM	**0**	**83**	**0**	**5**	**0**	**0**	**0**	**26**	**0**	**0**	**191**	**1**	**0**	**0**	**144**	**42**	**492**	0
4:45 PM	**0**	**94**	**0**	**1**	**0**	**0**	**0**	**23**	**0**	**0**	**168**	**5**	**0**	**0**	**178**	**47**	**516**	1,965
5:00 PM	**0**	**100**	**0**	**4**	**0**	**0**	**0**	**16**	**0**	**0**	**207**	**3**	**0**	**0**	**145**	**28**	**503**	1,994
5:15 PM	**0**	**89**	**0**	**4**	**0**	**0**	**0**	**29**	**0**	**0**	**223**	**6**	**0**	**0**	**146**	**26**	**523**	**2,034**
5:30 PM	0	71	0	0	0	0	0	25	0	0	197	3	0	1	124	35	456	1,998
5:45 PM	0	66	0	3	0	0	0	17	0	0	201	1	0	0	138	32	458	1,940
Count Total	0	678	0	23	0	0	0	178	0	0	1,549	25	0	1	1,144	307	3,905	0
Peak Hour All	**0**	**366**	**0**	**14**	**0**	**0**	**0**	**94**	**0**	**0**	**789**	**15**	**0**	**0**	**613**	**143**	**2,034**	**0**
Peak Hour HV	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**2**	**0**	**0**	**0**	**2**	**1**	**9**	**0**
Peak Hour HV%	**-**	**1%**	**-**	**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	2	0	2	1	*5*	0	0	0	0	*0*	1	0	0	0	*1*
4:15 PM	1	0	1	2	*4*	0	0	0	0	*0*	0	0	0	0	*0*
4:30 PM	**1**	**1**	**0**	**0**	***2***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
4:45 PM	**2**	**0**	**0**	**0**	***2***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
5:00 PM	**0**	**0**	**0**	**2**	***2***	**1**	**0**	**0**	**0**	***1***	**0**	**1**	**0**	**0**	*1*
5:15 PM	**0**	**0**	**2**	**1**	***3***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***
5:30 PM	1	0	1	1	*3*	0	0	0	0	*0*	0	0	0	0	*0*
5:45 PM	0	0	0	1	*1*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	7	1	6	8	*22*	1	0	0	0	*1*	1	1	0	0	*2*
Peak Hour	**3**	**1**	**2**	**3**	***9***	**1**	**0**	**0**	**0**	***1***	**0**	**1**	**0**	**0**	***1***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	DEL MONTE BLVD Eastbound				MILITARY AVE Westbound				FREMONT BLVD Northbound				FREMONT 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	2	0	0	0	0	0	0	0	0	2	0	0	0	0	1	5	0
4:15 PM	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	4	0
4:30 PM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	0
4:45 PM	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	13
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**2**	10
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**1**	**0**	**3**	**9**
5:30 PM	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	3	10
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	9
Count Total	0	7	0	0	0	0	0	1	0	0	6	0	0	0	4	4	22	0
Peak Hour	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**2**	**0**	**0**	**0**	**2**	**1**	**9**	**0**

Two-Hour Count Summaries - Bikes

Interval Start	DEL MONTE BLVD Eastbound			MILITARY AVE Westbound			FREMONT BLVD Northbound			FREMONT 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**	**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	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	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	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Count Total	1	0	0	0	0	0	0	0	0	0	0	0	1	0
Peak Hour	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**

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

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	DEL MONTE BLVD Eastbound				MILITARY AVE Westbound				FREMONT BLVD Northbound				FREMONT 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	2	0	0	0	0	0	0	0	0	1	0	0	0	1	2	6	0
7:15 AM	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**4**	0
7:30 AM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**3**	0
7:45 AM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**1**	**2**	**6**	19
8:00 AM	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**2**	**6**	**13**	**26**
8:15 AM	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	3	10	32
8:30 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3	0	6	35
8:45 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	0	2	0	5	34
Count Total	0	22	0	0	0	0	0	0	0	0	6	0	0	0	10	15	53	0
Peak Hour	**0**	**7**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**0**	**0**	**0**	**4**	**10**	**26**	**0**

Two-Hour Count Summaries - Bikes

Interval Start	DEL MONTE BLVD Eastbound			MILITARY AVE Westbound			FREMONT BLVD Northbound			FREMONT 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**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	0
7:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**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	1	0	1	1
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Count Total	0	0	0	0	0	0	0	2	0	0	1	0	3	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**2**	**0**

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

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	MONTEREY RD Eastbound				MONTEREY RD Westbound				FREMONT BLVD Northbound				FREMONT 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	2	0	0	0	0	1	0	0	1	2	1	0	0	2	2	11	0
7:15 AM	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**1**	**6**	0
7:30 AM	**0**	**1**	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**2**	**0**	**6**	0
7:45 AM	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**2**	**1**	**0**	**0**	**3**	**0**	**8**	31
8:00 AM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**0**	**0**	**0**	**3**	**2**	**11**	**31**
8:15 AM	0	1	0	1	0	0	0	0	0	0	8	1	0	0	6	0	17	42
8:30 AM	0	1	0	0	0	1	0	0	0	0	5	0	0	0	5	1	13	49
8:45 AM	0	1	0	0	0	0	0	0	0	0	6	0	0	0	3	1	11	52
Count Total	0	8	2	2	0	2	2	0	0	1	32	3	0	0	24	7	83	0
Peak Hour	**0**	**3**	**2**	**1**	**0**	**1**	**1**	**0**	**0**	**0**	**11**	**1**	**0**	**0**	**8**	**3**	**31**	**0**

Two-Hour Count Summaries - Bikes

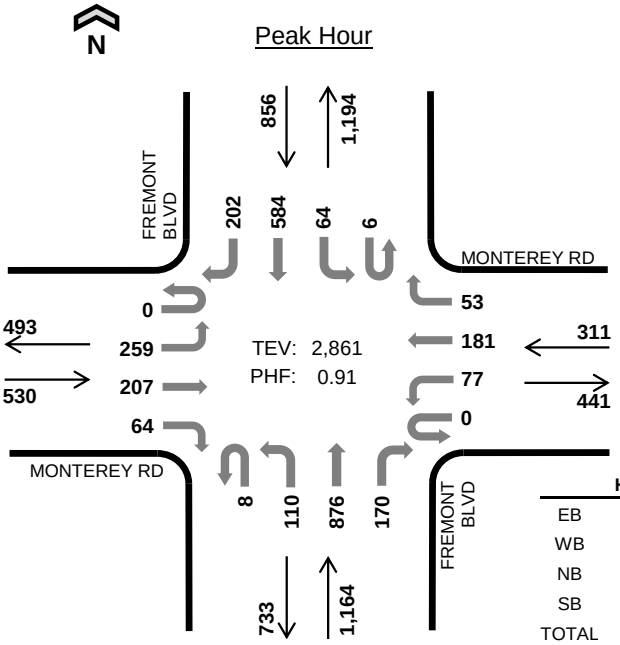
Interval Start	MONTEREY RD Eastbound			MONTEREY RD Westbound			FREMONT BLVD Northbound			FREMONT BLVD Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	1	0
7:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	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**	**1**	**0**	**1**	**0**	**0**	**0**	**1**	**1**	**4**	6
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**
8:15 AM	0	0	0	0	2	0	0	1	0	0	1	0	4	8
8:30 AM	0	2	0	0	0	0	0	0	0	1	1	0	4	12
8:45 AM	0	0	0	0	1	0	0	0	0	0	0	0	1	9
Count Total	0	2	0	0	5	0	2	1	0	1	3	1	15	0
Peak Hour	**0**	**0**	**0**	**0**	**1**	**0**	**2**	**0**	**0**	**0**	**1**	**1**	**5**	**0**

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

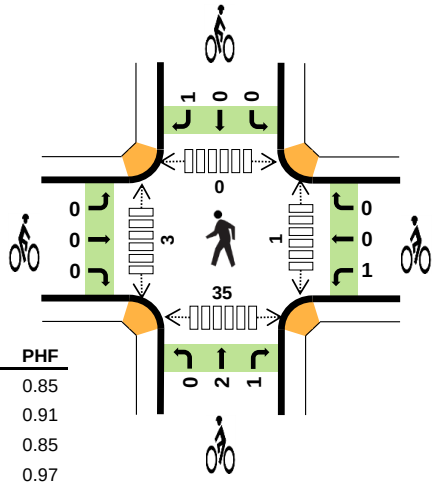
Deon Fouche: 415 - 757 - 7714 deon.fouche@idaxdata.com

FREMONT BLVD
MONTEREY RD

Date: 05/09/2017
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:30 PM to 5:30 PM



	HV %:	PHF
EB	1.3%	0.85
WB	0.3%	0.91
NB	0.6%	0.85
SB	0.5%	0.97
TOTAL	0.7%	0.91



Two-Hour Count Summaries

Interval Start	MONTEREY RD Eastbound				MONTEREY RD Westbound				FREMONT BLVD Northbound				FREMONT 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	65	64	17	0	23	39	8	0	42	211	41	0	13	160	49	732	0
4:15 PM	0	68	59	20	0	16	33	8	2	38	196	44	0	13	137	73	707	0
4:30 PM	**0**	**62**	**52**	**13**	**0**	**21**	**45**	**13**	**2**	**43**	**207**	**38**	**1**	**17**	**145**	**51**	**710**	0
4:45 PM	**0**	**59**	**49**	**14**	**0**	**27**	**41**	**17**	**1**	**29**	**187**	**35**	**2**	**13**	**159**	**46**	**679**	2,828
5:00 PM	**0**	**62**	**48**	**16**	**0**	**18**	**48**	**10**	**3**	**14**	**229**	**35**	**1**	**22**	**141**	**38**	**685**	2,781
5:15 PM	**0**	**76**	**58**	**21**	**0**	**11**	**47**	**13**	**2**	**24**	**253**	**62**	**2**	**12**	**139**	**67**	**787**	**2,861**
5:30 PM	0	75	56	14	0	18	37	10	4	35	219	46	0	15	120	43	692	2,843
5:45 PM	0	59	52	24	0	13	38	12	2	32	179	55	1	21	125	58	671	2,835
Count Total	0	526	438	139	0	147	328	91	16	257	1,681	356	7	126	1,126	425	5,663	0
Peak Hour All	**0**	**259**	**207**	**64**	**0**	**77**	**181**	**53**	**8**	**110**	**876**	**170**	**6**	**64**	**584**	**202**	**2,861**	**0**
Peak Hour HV	**0**	**4**	**3**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**6**	**0**	**0**	**0**	**3**	**1**	**19**	**0**
Peak Hour HV%	**-**	**2%**	**1%**	**0%**	**-**	**0%**	**1%**	**0%**	**0%**	**1%**	**1%**	**0%**	**0%**	**0%**	**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	2	*6*	0	0	1	1	*2*	0	0	0	1	*1*
4:15 PM	2	0	1	4	*7*	1	0	0	0	*1*	0	1	0	9	*10*
4:30 PM	**1**	**0**	**3**	**1**	***5***	**0**	**0**	**0**	**0**	***0***	**1**	**0**	**0**	**8**	*9*
4:45 PM	**2**	**1**	**3**	**1**	***7***	**0**	**0**	**0**	**0**	***0***	**0**	**2**	**0**	**13**	*15*
5:00 PM	**2**	**0**	**0**	**1**	***3***	**0**	**1**	**2**	**0**	***3***	**0**	**1**	**0**	**5**	*6*
5:15 PM	**2**	**0**	**1**	**1**	***4***	**0**	**0**	**1**	**1**	***2***	**0**	**0**	**0**	**9**	***9***
5:30 PM	4	0	2	0	*6*	0	0	0	0	*0*	0	2	0	3	*5*
5:45 PM	2	0	0	1	*3*	0	0	0	3	*3*	0	2	0	9	*11*
Count Total	15	2	13	11	*41*	1	1	4	5	*11*	1	8	0	57	*66*
Peak Hour	**7**	**1**	**7**	**4**	***19***	**0**	**1**	**3**	**1**	***5***	**1**	**3**	**0**	**35**	***39***

Deon Fouche: 415 - 757 - 7714 deon.fouche@idaxdata.com

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	MONTEREY RD Eastbound				MONTEREY RD Westbound				FREMONT BLVD Northbound				FREMONT 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	0	1	0	0	1	2	0	0	0	1	1	6	0
4:15 PM	0	2	0	0	0	0	0	0	0	0	1	0	0	0	2	2	7	0
4:30 PM	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**2**	**0**	**0**	**0**	**1**	**0**	**5**	0
4:45 PM	**0**	**2**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**1**	**0**	**7**	25
5:00 PM	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**3**	22
5:15 PM	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**4**	**19**
5:30 PM	0	2	1	1	0	0	0	0	0	0	2	0	0	0	0	0	6	20
5:45 PM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	0	3	16
Count Total	0	10	4	1	0	0	2	0	0	2	11	0	0	0	7	4	41	0
Peak Hour	**0**	**4**	**3**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**6**	**0**	**0**	**0**	**3**	**1**	**19**	**0**

Two-Hour Count Summaries - Bikes

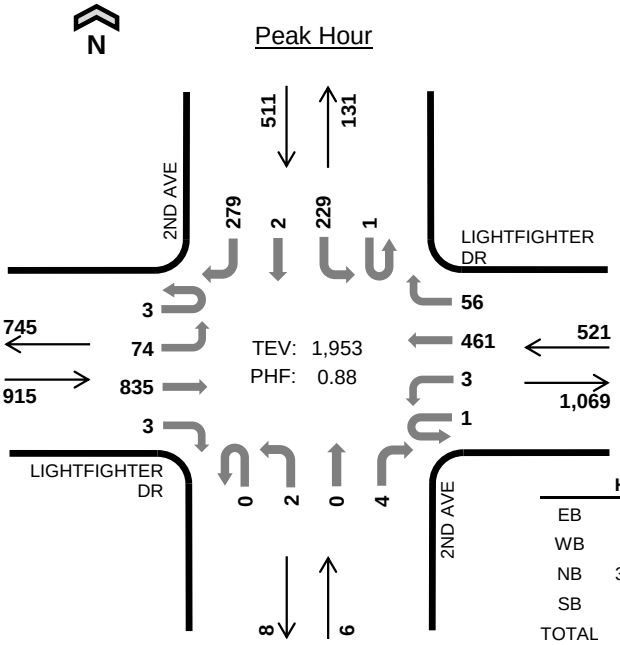
Interval Start	MONTEREY RD Eastbound			MONTEREY RD Westbound			FREMONT BLVD Northbound			FREMONT BLVD Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	1	0	0	0	1	2	0
4:15 PM	0	1	0	0	0	0	0	0	0	0	0	0	1	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	3
5:00 PM	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**3**	4
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**2**	**5**
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	5
5:45 PM	0	0	0	0	0	0	0	0	0	0	1	2	3	8
Count Total	0	1	0	1	0	0	0	3	1	0	1	4	11	0
Peak Hour	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**2**	**1**	**0**	**0**	**1**	**5**	**0**

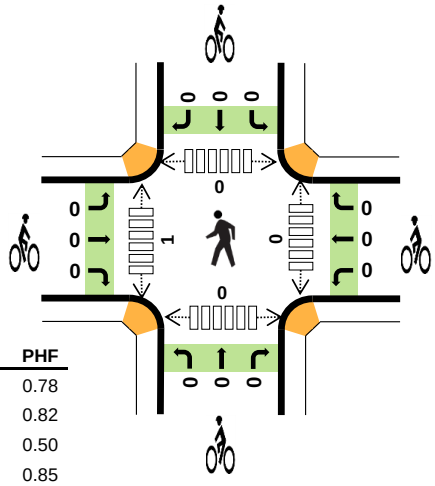
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Deon Fouche: 415 - 757 - 7714 deon.fouche@idaxdata.com

2ND AVE
LIGHTFIGHTER DR

Date: 05/09/2017
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:15 AM to 8:15 AM





	HV %:	PHF
EB	0.8%	0.78
WB	1.0%	0.82
NB	33.3%	0.50
SB	0.4%	0.85
TOTAL	0.8%	0.88

Two-Hour Count Summaries

Interval Start		LIGHTFIGHTER DR Eastbound				LIGHTFIGHTER DR Westbound				2ND AVE Northbound				2ND 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	9	124	1	0	0	102	6	0	0	0	0	0	19	1	22	285	0
7:15 AM		**1**	**13**	**191**	**1**	**0**	**0**	**123**	**8**	**0**	**0**	**0**	**1**	**1**	**67**	**1**	**82**	**489**	0
7:30 AM		**0**	**14**	**218**	**0**	**0**	**1**	**148**	**10**	**0**	**1**	**0**	**2**	**0**	**66**	**0**	**83**	**543**	0
7:45 AM		**1**	**28**	**264**	**1**	**0**	**1**	**95**	**20**	**0**	**0**	**0**	**0**	**0**	**63**	**1**	**78**	**552**	1,869
8:00 AM		**1**	**19**	**162**	**1**	**1**	**1**	**95**	**18**	**0**	**1**	**0**	**1**	**0**	**33**	**0**	**36**	**369**	**1,953**
8:15 AM		0	16	148	1	0	0	67	12	0	0	0	0	0	31	0	23	298	1,762
8:30 AM		2	11	145	0	0	0	54	7	0	1	0	1	0	21	3	17	262	1,481
8:45 AM		0	17	131	1	0	0	68	11	0	1	0	0	0	13	2	16	260	1,189
Count Total		6	127	1,383	6	1	3	752	92	0	4	0	5	1	313	8	357	3,058	0
Peak Hour	**All**	**3**	**74**	**835**	**3**	**1**	**3**	**461**	**56**	**0**	**2**	**0**	**4**	**1**	**229**	**2**	**279**	**1,953**	**0**
	HV	**0**	**2**	**5**	**0**	**0**	**0**	**4**	**1**	**0**	**2**	**0**	**0**	**0**	**1**	**0**	**1**	**16**	**0**
	HV%	**0%**	**3%**	**1%**	**0%**	**0%**	**0%**	**1%**	**2%**	**-**	**100%**	**-**	**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
7:00 AM	1	2	0	0	*3*	0	0	0	0	*0*	0	0	0	0	*0*
7:15 AM	**1**	**3**	**0**	**0**	***4***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
7:30 AM	**0**	**1**	**1**	**1**	***3***	**0**	**0**	**0**	**0**	***0***	**0**	**1**	**0**	**0**	*1*
7:45 AM	**5**	**0**	**0**	**0**	***5***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
8:00 AM	**1**	**1**	**1**	**1**	***4***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***
8:15 AM	4	1	0	0	*5*	0	0	0	0	*0*	0	1	0	0	*1*
8:30 AM	1	0	0	0	*1*	0	0	0	0	*0*	0	0	0	0	*0*
8:45 AM	3	0	0	0	*3*	1	0	0	0	*1*	0	0	0	0	*0*
Count Total	16	8	2	2	*28*	1	0	0	0	*1*	0	2	0	0	*2*
Peak Hour	**7**	**5**	**2**	**2**	***16***	**0**	**0**	**0**	**0**	***0***	**0**	**1**	**0**	**0**	***1***

Deon Fouche: 415 - 757 - 7714 deon.fouche@idaxdata.com

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	LIGHTFIGHTER DR Eastbound				LIGHTFIGHTER DR Westbound				2ND AVE Northbound				2ND 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	1	0	0	0	2	0	0	0	0	0	0	0	0	0	3	0
7:15 AM	**0**	**1**	**0**	**0**	**0**	**0**	**2**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	0
7:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**3**	0
7:45 AM	**0**	**1**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	15
8:00 AM	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**4**	**16**
8:15 AM	0	1	3	0	0	0	1	0	0	0	0	0	0	0	0	0	5	17
8:30 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	15
8:45 AM	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3	13
Count Total	0	4	12	0	0	0	7	1	0	2	0	0	0	1	0	1	28	0
Peak Hour	**0**	**2**	**5**	**0**	**0**	**0**	**4**	**1**	**0**	**2**	**0**	**0**	**0**	**1**	**0**	**1**	**16**	**0**

Two-Hour Count Summaries - Bikes

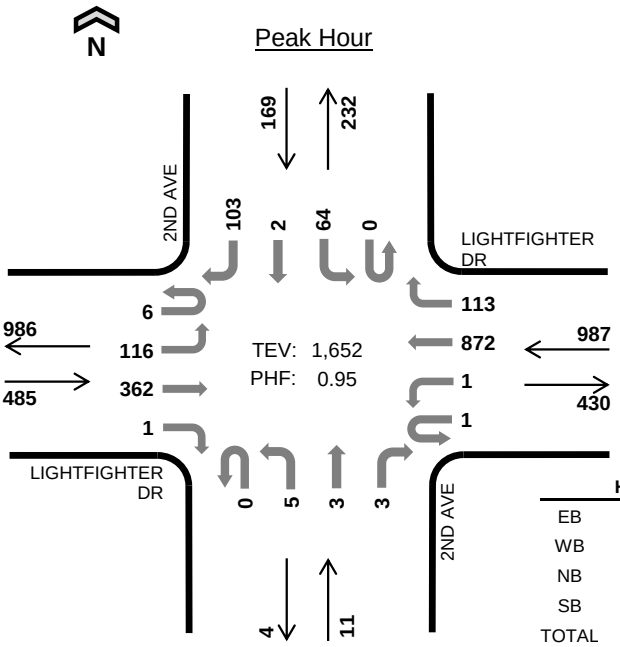
Interval Start	LIGHTFIGHTER DR Eastbound			LIGHTFIGHTER DR Westbound			2ND AVE Northbound			2ND AVE Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	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	1	0	0	0	0	0	0	0	0	0	0	1	1
Count Total	0	1	0	0	0	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.

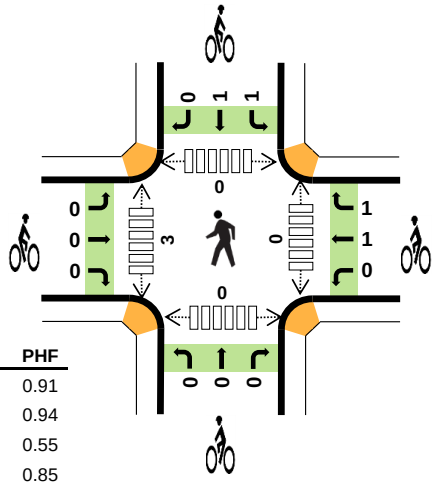
Deon Fouche: 415 - 757 - 7714 deon.fouche@idaxdata.com

2ND AVE
LIGHTFIGHTER DR

Date: 05/09/2017
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:30 PM to 5:30 PM



	HV %:	PHF
EB	1.6%	0.91
WB	0.2%	0.94
NB	0.0%	0.55
SB	1.2%	0.85
TOTAL	0.7%	0.95



Two-Hour Count Summaries

Interval Start		LIGHTFIGHTER DR Eastbound				LIGHTFIGHTER DR Westbound				2ND AVE Northbound				2ND 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		2	13	100	0	1	1	180	20	0	1	0	2	2	20	1	17	360	0
4:15 PM		2	18	84	0	0	0	155	26	0	2	0	2	0	17	2	15	323	0
4:30 PM		**2**	**27**	**104**	**0**	**0**	**0**	**201**	**21**	**0**	**3**	**1**	**1**	**0**	**14**	**1**	**16**	**391**	0
4:45 PM		**1**	**29**	**76**	**0**	**0**	**1**	**221**	**35**	**0**	**0**	**0**	**0**	**0**	**13**	**0**	**27**	**403**	1,477
5:00 PM		**0**	**32**	**96**	**0**	**1**	**0**	**221**	**23**	**0**	**1**	**1**	**1**	**0**	**15**	**1**	**32**	**424**	1,541
5:15 PM		**3**	**28**	**86**	**1**	**0**	**0**	**229**	**34**	**0**	**1**	**1**	**1**	**0**	**22**	**0**	**28**	**434**	**1,652**
5:30 PM		2	29	114	0	0	0	166	33	0	0	0	0	0	14	0	22	380	1,641
5:45 PM		2	29	110	1	0	0	173	21	0	0	0	0	1	29	0	32	398	1,636
Count Total		14	205	770	2	2	2	1,546	213	0	8	3	7	3	144	5	189	3,113	0
Peak Hour	**All**	**6**	**116**	**362**	**1**	**1**	**1**	**872**	**113**	**0**	**5**	**3**	**3**	**0**	**64**	**2**	**103**	**1,652**	**0**
	HV	**0**	**0**	**8**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**12**	**0**
	HV%	**0%**	**0%**	**2%**	**0%**	**0%**	**0%**	**0%**	**0%**	**-**	**0%**	**0%**	**0%**	**-**	**2%**	**0%**	**1%**	**1%**	**0**

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

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	0	2	0	0	*2*	0	0	0	0	*0*	0	0	0	0	*0*
4:15 PM	2	1	0	0	*3*	0	1	0	0	*1*	0	0	0	0	*0*
4:30 PM	**6**	**0**	**0**	**1**	***7***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
4:45 PM	**1**	**1**	**0**	**1**	***3***	**0**	**0**	**0**	**0**	***0***	**0**	**1**	**0**	**0**	*1*
5:00 PM	**0**	**1**	**0**	**0**	***1***	**0**	**1**	**0**	**2**	***3***	**0**	**1**	**0**	**0**	*1*
5:15 PM	**1**	**0**	**0**	**0**	***1***	**0**	**1**	**0**	**0**	***1***	**0**	**1**	**0**	**0**	***1***
5:30 PM	1	0	0	0	*1*	0	0	0	1	*1*	0	0	0	0	*0*
5:45 PM	2	0	0	0	*2*	0	0	0	0	*0*	0	0	1	0	*1*
Count Total	13	5	0	2	*20*	0	3	0	3	*6*	0	3	1	0	*4*
Peak Hour	**8**	**2**	**0**	**2**	***12***	**0**	**2**	**0**	**2**	***4***	**0**	**3**	**0**	**0**	***3***

Deon Fouche: 415 - 757 - 7714 deon.fouche@idaxdata.com

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	LIGHTFIGHTER DR Eastbound				LIGHTFIGHTER DR Westbound				2ND AVE Northbound				2ND 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	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2	0
4:15 PM	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	3	0
4:30 PM	**0**	**0**	**6**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**7**	0
4:45 PM	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**3**	15
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	14
5:15 PM	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**12**
5:30 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	6
5:45 PM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	5
Count Total	0	1	12	0	0	0	5	0	0	0	0	0	0	1	0	1	20	0
Peak Hour	**0**	**0**	**8**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**12**	**0**

Two-Hour Count Summaries - Bikes

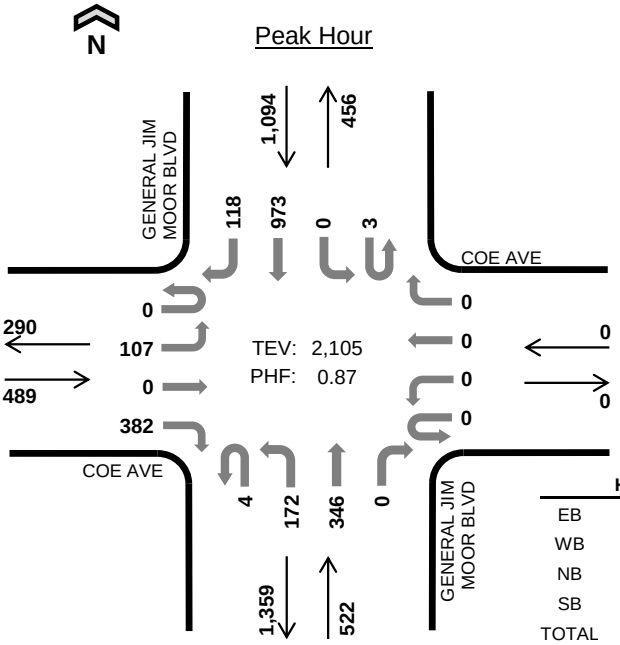
Interval Start	LIGHTFIGHTER DR Eastbound			LIGHTFIGHTER DR Westbound			2ND AVE Northbound			2ND AVE Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	1	0	0	0	0	0	0	1	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	1
5:00 PM	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**1**	**0**	**3**	4
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	1	0	0	1	5
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	5
Count Total	0	0	0	0	1	2	0	0	0	2	1	0	6	0
Peak Hour	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**1**	**1**	**0**	**4**	**0**

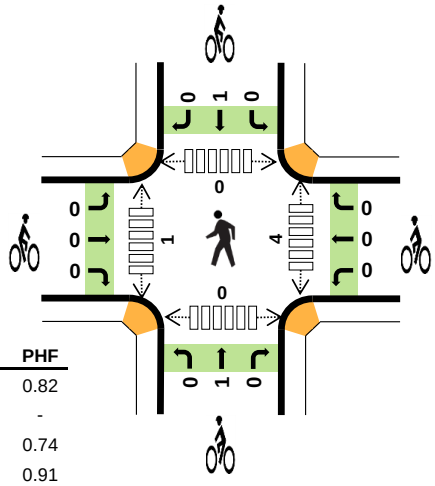
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Deon Fouche: 415 - 757 - 7714 deon.fouche@idaxdata.com

GENERAL JIM MOOR BLVD
COE AVE

Date: 05/09/2017
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:15 AM to 8:15 AM





	HV %:	PHF
EB	0.4%	0.82
WB	-	-
NB	0.4%	0.74
SB	0.3%	0.91
TOTAL	0.3%	0.87

Two-Hour Count Summaries

Interval Start		COE AVE Eastbound				COE AVE Westbound				GENERAL JIM MOOR BLVD Northbound				GENERAL JIM MOOR 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	7	1	18	0	0	0	0	0	16	38	0	0	0	143	9	232	0
7:15 AM		**0**	**17**	**0**	**60**	**0**	**0**	**0**	**0**	**0**	**24**	**52**	**0**	**0**	**0**	**258**	**13**	**424**	0
7:30 AM		**0**	**26**	**0**	**95**	**0**	**0**	**0**	**0**	**0**	**20**	**102**	**0**	**0**	**0**	**279**	**21**	**543**	0
7:45 AM		**0**	**35**	**0**	**115**	**0**	**0**	**0**	**0**	**2**	**53**	**121**	**0**	**3**	**0**	**226**	**49**	**604**	1,803
8:00 AM		**0**	**29**	**0**	**112**	**0**	**0**	**0**	**0**	**2**	**75**	**71**	**0**	**0**	**0**	**210**	**35**	**534**	**2,105**
8:15 AM		0	21	0	105	0	1	0	0	0	68	53	2	0	0	136	33	419	2,100
8:30 AM		0	13	0	31	0	0	0	0	0	12	57	0	0	0	104	14	231	1,788
8:45 AM		0	13	0	25	0	1	0	0	0	12	49	0	0	0	79	8	187	1,371
Count Total		0	161	1	561	0	2	0	0	4	280	543	2	3	0	1,435	182	3,174	0
Peak Hour	**All**	**0**	**107**	**0**	**382**	**0**	**0**	**0**	**0**	**4**	**172**	**346**	**0**	**3**	**0**	**973**	**118**	**2,105**	**0**
	HV	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**3**	**0**	**7**	**0**
	HV%	**-**	**0%**	**-**	**1%**	**-**	**-**	**-**	**-**	**0%**	**1%**	**0%**	**-**	**0%**	**-**	**0%**	**0%**	**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
7:00 AM	0	0	1	2	*3*	0	0	0	0	*0*	1	0	0	0	*1*
7:15 AM	**0**	**0**	**0**	**1**	***1***	**0**	**0**	**0**	**1**	***1***	**1**	**0**	**0**	**0**	*1*
7:30 AM	**1**	**0**	**0**	**1**	***2***	**0**	**0**	**0**	**0**	***0***	**0**	**1**	**0**	**0**	*1*
7:45 AM	**0**	**0**	**1**	**0**	***1***	**0**	**0**	**1**	**0**	***1***	**3**	**0**	**0**	**0**	*3*
8:00 AM	**1**	**0**	**1**	**1**	***3***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***
8:15 AM	1	0	1	0	*2*	0	0	0	1	*1*	1	0	0	0	*1*
8:30 AM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	1	0	*1*
8:45 AM	1	0	1	0	*2*	0	0	0	1	*1*	1	0	0	0	*1*
Count Total	4	0	5	5	*14*	0	0	1	3	*4*	7	1	1	0	*9*
Peak Hour	**2**	**0**	**2**	**3**	***7***	**0**	**0**	**1**	**1**	***2***	**4**	**1**	**0**	**0**	***5***

Deon Fouche: 415 - 757 - 7714 deon.fouche@idaxdata.com

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	COE AVE Eastbound				COE AVE Westbound				GENERAL JIM MOOR BLVD Northbound				GENERAL JIM MOOR 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	0	0	0	0	1	0	0	0	0	1	1	3	0
7:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	0
7:30 AM	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**2**	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	7
8:00 AM	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**0**	**3**	**7**
8:15 AM	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	2	8
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
8:45 AM	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	7
Count Total	0	1	0	3	0	0	0	0	0	3	2	0	0	0	4	1	14	0
Peak Hour	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**3**	**0**	**7**	**0**

Two-Hour Count Summaries - Bikes

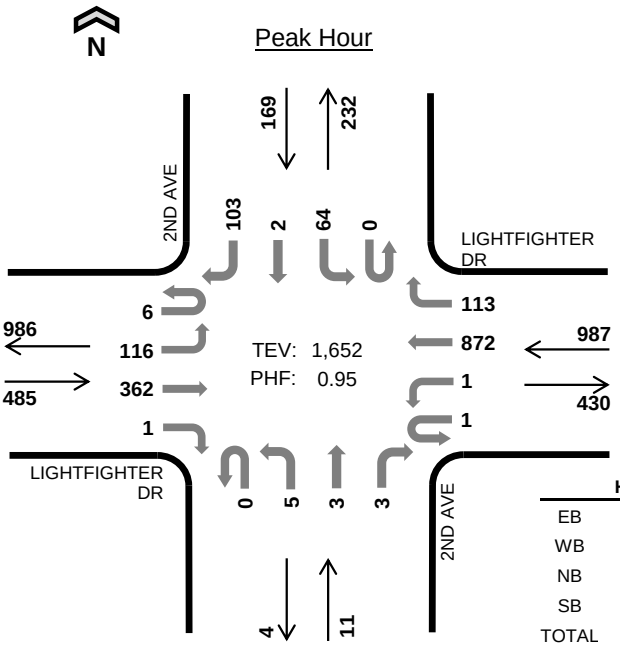
Interval Start	COE AVE Eastbound			COE AVE Westbound			GENERAL JIM MOOR BLVD Northbound			GENERAL JIM MOOR BLVD Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**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**	**1**	**0**	**0**	**0**	**0**	**1**	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	1	1	2
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2
8:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	1	2
Count Total	0	0	0	0	0	0	0	1	0	0	2	1	4	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**0**	**2**	**0**

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

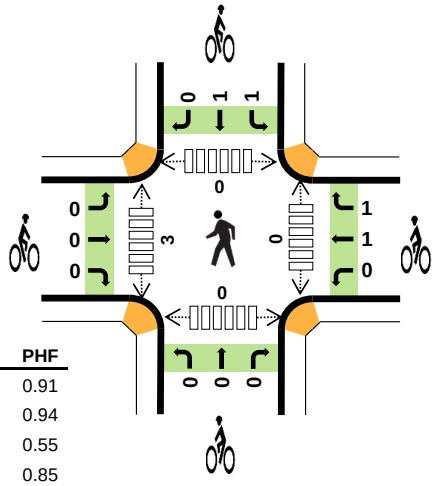
Deon Fouche: 415 - 757 - 7714 deon.fouche@idaxdata.com

2ND AVE
LIGHTFIGHTER DR

Date: 05/09/2017
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:30 PM to 5:30 PM



	HV %:	PHF
EB	1.6%	0.91
WB	0.2%	0.94
NB	0.0%	0.55
SB	1.2%	0.85
TOTAL	0.7%	0.95



Two-Hour Count Summaries

Interval Start		LIGHTFIGHTER DR Eastbound				LIGHTFIGHTER DR Westbound				2ND AVE Northbound				2ND 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		2	13	100	0	1	1	180	20	0	1	0	2	2	20	1	17	360	0
4:15 PM		2	18	84	0	0	0	155	26	0	2	0	2	0	17	2	15	323	0
4:30 PM		**2**	**27**	**104**	**0**	**0**	**0**	**201**	**21**	**0**	**3**	**1**	**1**	**0**	**14**	**1**	**16**	**391**	0
4:45 PM		**1**	**29**	**76**	**0**	**0**	**1**	**221**	**35**	**0**	**0**	**0**	**0**	**0**	**13**	**0**	**27**	**403**	1,477
5:00 PM		**0**	**32**	**96**	**0**	**1**	**0**	**221**	**23**	**0**	**1**	**1**	**1**	**0**	**15**	**1**	**32**	**424**	1,541
5:15 PM		**3**	**28**	**86**	**1**	**0**	**0**	**229**	**34**	**0**	**1**	**1**	**1**	**0**	**22**	**0**	**28**	**434**	**1,652**
5:30 PM		2	29	114	0	0	0	166	33	0	0	0	0	0	14	0	22	380	1,641
5:45 PM		2	29	110	1	0	0	173	21	0	0	0	0	1	29	0	32	398	1,636
Count Total		14	205	770	2	2	2	1,546	213	0	8	3	7	3	144	5	189	3,113	0
Peak Hour	**All**	**6**	**116**	**362**	**1**	**1**	**1**	**872**	**113**	**0**	**5**	**3**	**3**	**0**	**64**	**2**	**103**	**1,652**	**0**
	HV	**0**	**0**	**8**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**12**	**0**
	HV%	**0%**	**0%**	**2%**	**0%**	**0%**	**0%**	**0%**	**0%**	**-**	**0%**	**0%**	**0%**	**-**	**2%**	**0%**	**1%**	**1%**	**0**

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

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	0	2	0	0	*2*	0	0	0	0	*0*	0	0	0	0	*0*
4:15 PM	2	1	0	0	*3*	0	1	0	0	*1*	0	0	0	0	*0*
4:30 PM	**6**	**0**	**0**	**1**	***7***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
4:45 PM	**1**	**1**	**0**	**1**	***3***	**0**	**0**	**0**	**0**	***0***	**0**	**1**	**0**	**0**	*1*
5:00 PM	**0**	**1**	**0**	**0**	***1***	**0**	**1**	**0**	**2**	***3***	**0**	**1**	**0**	**0**	*1*
5:15 PM	**1**	**0**	**0**	**0**	***1***	**0**	**1**	**0**	**0**	***1***	**0**	**1**	**0**	**0**	***1***
5:30 PM	1	0	0	0	*1*	0	0	0	1	*1*	0	0	0	0	*0*
5:45 PM	2	0	0	0	*2*	0	0	0	0	*0*	0	0	1	0	*1*
Count Total	13	5	0	2	*20*	0	3	0	3	*6*	0	3	1	0	*4*
Peak Hour	**8**	**2**	**0**	**2**	***12***	**0**	**2**	**0**	**2**	***4***	**0**	**3**	**0**	**0**	***3***

Deon Fouche: 415 - 757 - 7714 deon.fouche@idaxdata.com

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	LIGHTFIGHTER DR Eastbound				LIGHTFIGHTER DR Westbound				2ND AVE Northbound				2ND 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	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2	0
4:15 PM	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	3	0
4:30 PM	**0**	**0**	**6**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**7**	0
4:45 PM	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**3**	15
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	14
5:15 PM	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**12**
5:30 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	6
5:45 PM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	5
Count Total	0	1	12	0	0	0	5	0	0	0	0	0	0	1	0	1	20	0
Peak Hour	**0**	**0**	**8**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**12**	**0**

Two-Hour Count Summaries - Bikes

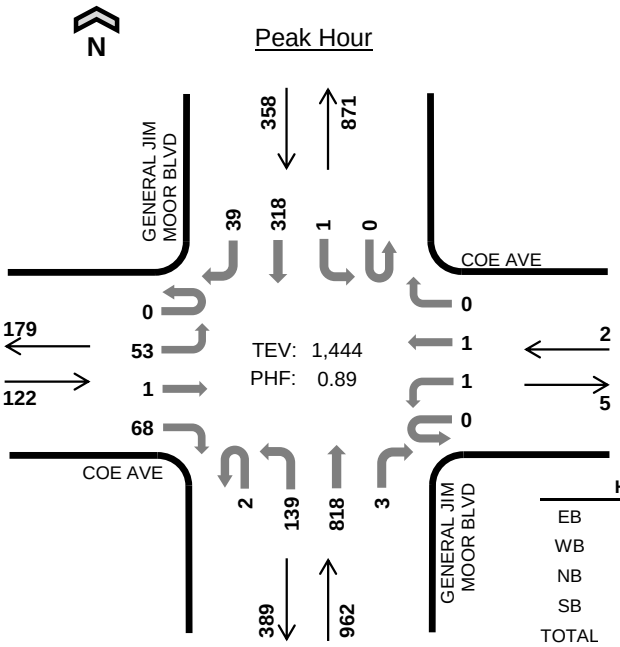
Interval Start	LIGHTFIGHTER DR Eastbound			LIGHTFIGHTER DR Westbound			2ND AVE Northbound			2ND AVE Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	1	0	0	0	0	0	0	1	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	1
5:00 PM	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**1**	**0**	**3**	4
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	1	0	0	1	5
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	5
Count Total	0	0	0	0	1	2	0	0	0	2	1	0	6	0
Peak Hour	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**1**	**1**	**0**	**4**	**0**

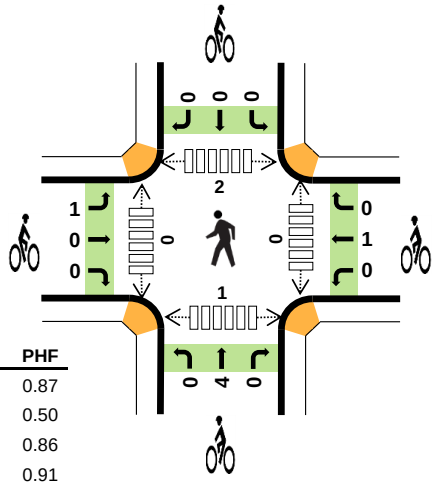
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Deon Fouche: 415 - 757 - 7714 deon.fouche@idaxdata.com

GENERAL JIM MOOR BLVD
COE AVE

Date: 05/09/2017
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:30 PM to 5:30 PM





	HV %:	PHF
EB	0.0%	0.87
WB	0.0%	0.50
NB	0.1%	0.86
SB	0.6%	0.91
TOTAL	0.2%	0.89

Two-Hour Count Summaries

Interval Start	COE AVE Eastbound				COE AVE Westbound				GENERAL JIM MOOR BLVD Northbound				GENERAL JIM MOOR 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	20	0	32	0	1	0	0	3	28	123	0	0	0	72	22	301	0
4:15 PM	0	6	0	23	0	0	0	0	1	28	147	0	0	0	68	16	289	0
4:30 PM	**0**	**9**	**0**	**17**	**0**	**1**	**0**	**0**	**0**	**31**	**193**	**1**	**0**	**0**	**73**	**8**	**333**	0
4:45 PM	**0**	**16**	**1**	**12**	**0**	**0**	**0**	**0**	**0**	**36**	**183**	**1**	**0**	**0**	**88**	**10**	**347**	1,270
5:00 PM	**0**	**14**	**0**	**18**	**0**	**0**	**0**	**0**	**2**	**47**	**188**	**0**	**0**	**1**	**78**	**11**	**359**	1,328
5:15 PM	**0**	**14**	**0**	**21**	**0**	**0**	**1**	**0**	**0**	**25**	**254**	**1**	**0**	**0**	**79**	**10**	**405**	**1,444**
5:30 PM	0	7	0	12	0	0	0	0	0	27	160	0	0	0	79	14	299	1,410
5:45 PM	0	16	1	19	0	0	1	0	0	19	159	0	0	0	55	19	289	1,352
Count Total	0	102	2	154	0	2	2	0	6	241	1,407	3	0	1	592	110	2,622	0
Peak Hour All	**0**	**53**	**1**	**68**	**0**	**1**	**1**	**0**	**2**	**139**	**818**	**3**	**0**	**1**	**318**	**39**	**1,444**	**0**
Peak Hour HV	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**1**	**3**	**0**
Peak Hour HV%	**-**	**0%**	**0%**	**0%**	**-**	**0%**	**0%**	**-**	**0%**	**0%**	**0%**	**0%**	**-**	**0%**	**0%**	**3%**	**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	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
4:15 PM	0	0	1	0	*1*	0	0	1	2	*3*	0	0	0	2	*2*
4:30 PM	**0**	**0**	**1**	**0**	***1***	**1**	**0**	**0**	**0**	***1***	**0**	**0**	**0**	**0**	*0*
4:45 PM	**0**	**0**	**0**	**1**	***1***	**0**	**0**	**2**	**0**	***2***	**0**	**0**	**0**	**0**	*0*
5:00 PM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**2**	**0**	*2*
5:15 PM	**0**	**0**	**0**	**1**	***1***	**0**	**1**	**2**	**0**	***3***	**0**	**0**	**0**	**1**	***1***
5:30 PM	2	0	1	0	*3*	0	0	3	0	*3*	0	0	0	2	*2*
5:45 PM	0	0	0	0	*0*	0	0	1	2	*3*	0	0	1	3	*4*
Count Total	2	0	3	2	*7*	1	1	9	4	*15*	0	0	3	8	*11*
Peak Hour	**0**	**0**	**1**	**2**	***3***	**1**	**1**	**4**	**0**	***6***	**0**	**0**	**2**	**1**	***3***

Deon Fouche: 415 - 757 - 7714 deon.fouche@idaxdata.com

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	COE AVE Eastbound				COE AVE Westbound				GENERAL JIM MOOR BLVD Northbound				GENERAL JIM MOOR 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	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	1	0	0	0	0	0	1	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	3
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	3
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**3**
5:30 PM	0	1	0	1	0	0	0	0	0	0	1	0	0	0	0	0	3	5
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
Count Total	0	1	0	1	0	0	0	0	0	0	3	0	0	0	1	1	7	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**1**	**3**	**0**

Two-Hour Count Summaries - Bikes

Interval Start	COE AVE Eastbound			COE AVE Westbound			GENERAL JIM MOOR BLVD Northbound			GENERAL JIM MOOR 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	1	0	1	0	1	3	0
4:30 PM	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**2**	6
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	6
5:15 PM	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**3**	**6**
5:30 PM	0	0	0	0	0	0	0	3	0	0	0	0	3	8
5:45 PM	0	0	0	0	0	0	0	1	0	0	1	1	3	9
Count Total	1	0	0	0	1	0	0	9	0	1	1	2	15	0
Peak Hour	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**6**	**0**

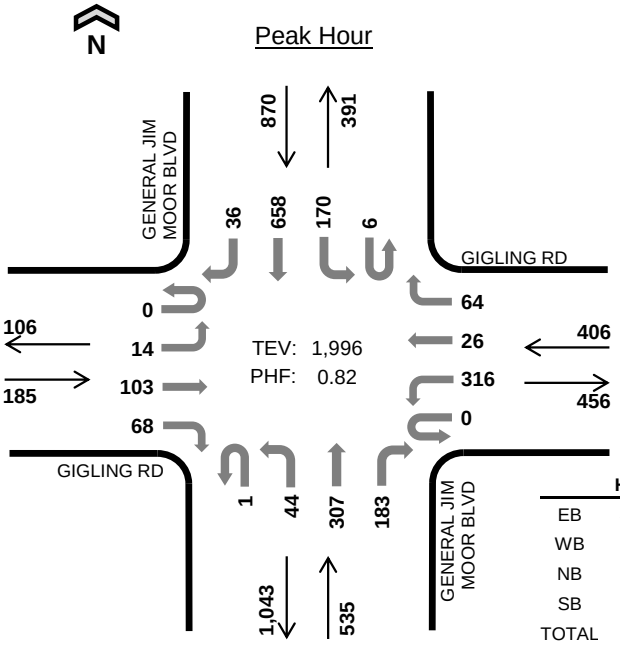
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

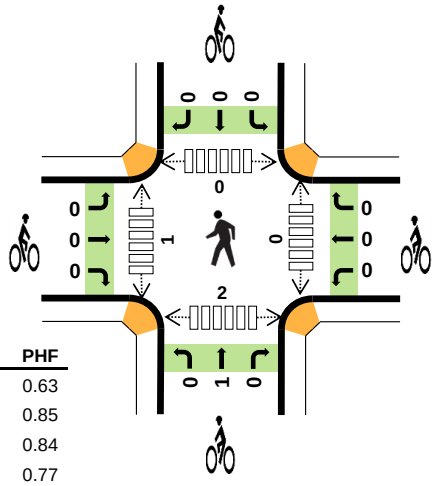
Deon Fouche: 415 - 757 - 7714 deon.fouche@idaxdata.com

GENERAL JIM MOOR BLVD
GIGLING RD

Peak Hour

Date: 05/09/2017
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:15 AM to 8:15 AM





	HV %:	PHF
EB	4.3%	0.63
WB	1.5%	0.85
NB	0.7%	0.84
SB	2.1%	0.77
TOTAL	1.8%	0.82

Two-Hour Count Summaries

Interval Start	GIGLING RD Eastbound				GIGLING RD Westbound				GENERAL JIM MOOR BLVD Northbound				GENERAL JIM MOOR 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	2	4	2	0	76	3	25	0	1	36	22	0	34	76	4	285	0
7:15 AM	**0**	**1**	**11**	**15**	**0**	**102**	**3**	**11**	**0**	**2**	**51**	**34**	**1**	**37**	**162**	**7**	**437**	0
7:30 AM	**0**	**3**	**33**	**25**	**0**	**97**	**7**	**15**	**1**	**13**	**84**	**44**	**3**	**55**	**216**	**9**	**605**	0
7:45 AM	**0**	**8**	**44**	**22**	**0**	**73**	**12**	**14**	**0**	**16**	**92**	**52**	**0**	**45**	**178**	**10**	**566**	1,893
8:00 AM	**0**	**2**	**15**	**6**	**0**	**44**	**4**	**24**	**0**	**13**	**80**	**53**	**2**	**33**	**102**	**10**	**388**	**1,996**
8:15 AM	0	0	16	9	0	53	7	10	0	7	53	22	3	34	79	9	302	1,861
8:30 AM	0	3	12	3	0	44	2	9	0	9	43	26	4	34	67	14	270	1,526
8:45 AM	0	4	14	2	0	35	3	16	0	7	62	24	5	37	54	6	269	1,229
Count Total	0	23	149	84	0	524	41	124	1	68	501	277	18	309	934	69	3,122	0
Peak Hour All	**0**	**14**	**103**	**68**	**0**	**316**	**26**	**64**	**1**	**44**	**307**	**183**	**6**	**170**	**658**	**36**	**1,996**	**0**
Peak Hour HV	**0**	**0**	**8**	**0**	**0**	**4**	**1**	**1**	**0**	**0**	**1**	**3**	**0**	**5**	**11**	**2**	**36**	**0**
Peak Hour HV%	**-**	**0%**	**8%**	**0%**	**-**	**1%**	**4%**	**2%**	**0%**	**0%**	**0%**	**2%**	**0%**	**3%**	**2%**	**6%**	**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	4	0	1	*6*	0	0	0	0	*0*	0	0	0	0	*0*
7:15 AM	**3**	**2**	**0**	**5**	***10***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**1**	*1*
7:30 AM	**3**	**0**	**0**	**3**	***6***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
7:45 AM	**2**	**4**	**0**	**5**	***11***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
8:00 AM	**0**	**0**	**4**	**5**	***9***	**0**	**0**	**1**	**0**	***1***	**0**	**1**	**0**	**1**	***2***
8:15 AM	5	2	2	4	*13*	0	0	0	0	*0*	1	0	0	0	*1*
8:30 AM	1	2	3	1	*7*	0	0	1	1	*2*	0	0	0	0	*0*
8:45 AM	0	2	2	4	*8*	0	0	0	0	*0*	1	0	1	0	*2*
Count Total	15	16	11	28	*70*	0	0	2	1	*3*	2	1	1	2	*6*
Peak Hour	**8**	**6**	**4**	**18**	***36***	**0**	**0**	**1**	**0**	***1***	**0**	**1**	**0**	**2**	***3***

Deon Fouche: 415 - 757 - 7714 deon.fouche@idaxdata.com

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	GIGLING RD Eastbound				GIGLING RD Westbound				GENERAL JIM MOOR BLVD Northbound				GENERAL JIM MOOR 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	1	0	0	0	3	0	1	0	0	0	0	0	0	1	0	6	0
7:15 AM	**0**	**0**	**3**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**2**	**2**	**10**	0
7:30 AM	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**2**	**0**	**6**	0
7:45 AM	**0**	**0**	**2**	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**4**	**0**	**11**	33
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**3**	**0**	**2**	**3**	**0**	**9**	**36**
8:15 AM	0	0	3	2	0	1	0	1	0	0	1	1	0	2	0	2	13	39
8:30 AM	0	0	1	0	0	2	0	0	0	0	2	1	0	0	1	0	7	40
8:45 AM	0	0	0	0	0	1	1	0	0	0	2	0	0	1	3	0	8	37
Count Total	0	1	12	2	0	11	2	3	0	0	6	5	0	8	16	4	70	0
Peak Hour	**0**	**0**	**8**	**0**	**0**	**4**	**1**	**1**	**0**	**0**	**1**	**3**	**0**	**5**	**11**	**2**	**36**	**0**

Two-Hour Count Summaries - Bikes

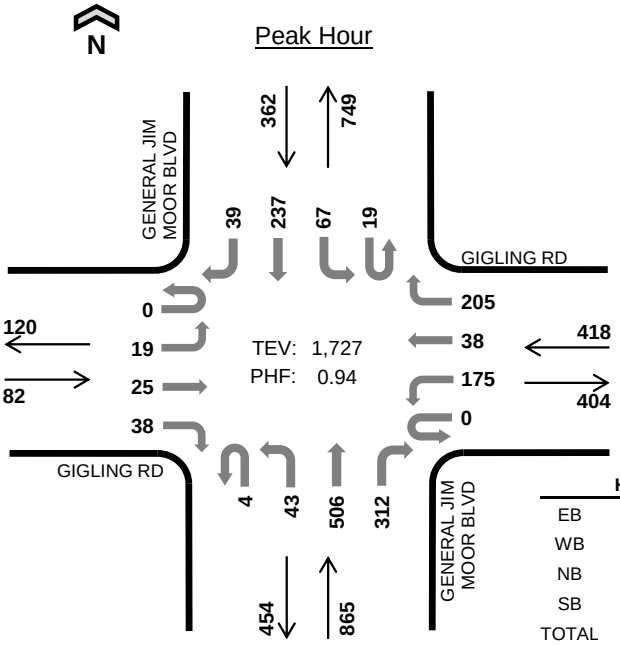
Interval Start	GIGLING RD Eastbound			GIGLING RD Westbound			GENERAL JIM MOOR BLVD Northbound			GENERAL JIM MOOR BLVD Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**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**	**1**	**0**	**0**	**0**	**0**	**1**	**1**
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	1	0	0	1	0	2	3
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Count Total	0	0	0	0	0	0	0	2	0	0	1	0	3	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**0**

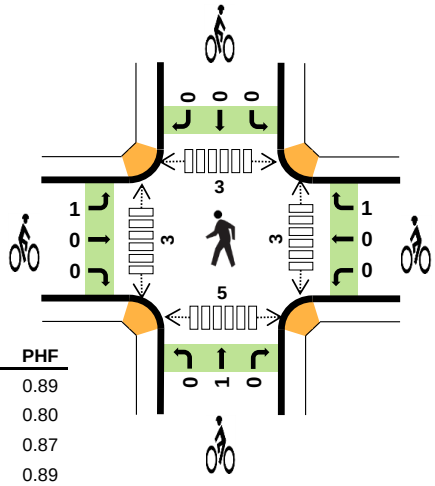
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Deon Fouche: 415 - 757 - 7714 deon.fouche@idaxdata.com

GENERAL JIM MOOR BLVD
GIGLING RD

Date: 05/09/2017
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:30 PM to 5:30 PM





	HV %:	PHF
EB	2.4%	0.89
WB	1.2%	0.80
NB	0.9%	0.87
SB	2.5%	0.89
TOTAL	1.4%	0.94

Two-Hour Count Summaries

Interval Start		GIGLING RD Eastbound				GIGLING RD Westbound				GENERAL JIM MOOR BLVD Northbound				GENERAL JIM MOOR 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	4	2	8	0	22	13	63	0	8	99	40	7	14	65	11	356	0
4:15 PM		0	7	2	8	0	26	12	40	0	8	112	41	6	11	46	15	334	0
4:30 PM		**0**	**4**	**9**	**7**	**0**	**36**	**13**	**59**	**0**	**8**	**121**	**53**	**6**	**12**	**60**	**11**	**399**	0
4:45 PM		**0**	**3**	**6**	**12**	**0**	**63**	**12**	**56**	**3**	**13**	**123**	**86**	**6**	**17**	**52**	**7**	**459**	1,548
5:00 PM		**0**	**6**	**8**	**9**	**0**	**36**	**5**	**45**	**1**	**12**	**121**	**75**	**1**	**22**	**68**	**11**	**420**	1,612
5:15 PM		**0**	**6**	**2**	**10**	**0**	**40**	**8**	**45**	**0**	**10**	**141**	**98**	**6**	**16**	**57**	**10**	**449**	**1,727**
5:30 PM		0	6	8	7	0	30	5	17	0	10	106	62	8	15	73	11	358	1,686
5:45 PM		0	2	9	7	0	20	6	32	0	6	112	37	5	16	63	6	321	1,548
Count Total		0	38	46	68	0	273	74	357	4	75	935	492	45	123	484	82	3,096	0
Peak Hour	**All**	**0**	**19**	**25**	**38**	**0**	**175**	**38**	**205**	**4**	**43**	**506**	**312**	**19**	**67**	**237**	**39**	**1,727**	**0**
	HV	**0**	**1**	**0**	**1**	**0**	**2**	**2**	**1**	**0**	**0**	**4**	**4**	**0**	**3**	**5**	**1**	**24**	**0**
	HV%	**-**	**5%**	**0%**	**3%**	**-**	**1%**	**5%**	**0%**	**0%**	**0%**	**1%**	**1%**	**0%**	**4%**	**2%**	**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	0	2	2	0	*4*	0	0	0	1	*1*	0	0	0	0	*0*
4:15 PM	1	0	2	2	*5*	0	1	0	0	*1*	1	0	2	2	*5*
4:30 PM	**0**	**2**	**2**	**4**	***8***	**0**	**0**	**0**	**0**	***0***	**1**	**2**	**1**	**1**	*5*
4:45 PM	**0**	**1**	**3**	**1**	***5***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
5:00 PM	**1**	**2**	**1**	**1**	***5***	**0**	**1**	**0**	**0**	***1***	**1**	**1**	**2**	**2**	*6*
5:15 PM	**1**	**0**	**2**	**3**	***6***	**1**	**0**	**1**	**0**	***2***	**1**	**0**	**0**	**2**	***3***
5:30 PM	0	0	2	2	*4*	1	0	0	1	*2*	0	0	0	0	*0*
5:45 PM	1	0	2	3	*6*	0	0	0	0	*0*	0	1	0	0	*1*
Count Total	4	7	16	16	*43*	2	2	1	2	*7*	4	4	5	7	*20*
Peak Hour	**2**	**5**	**8**	**9**	***24***	**1**	**1**	**1**	**0**	***3***	**3**	**3**	**3**	**5**	***14***

Deon Fouche: 415 - 757 - 7714 deon.fouche@idaxdata.com

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	GIGLING RD Eastbound				GIGLING RD Westbound				GENERAL JIM MOOR BLVD Northbound				GENERAL JIM MOOR 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	0	0	2	0	0	0	2	0	0	0	0	4	0
4:15 PM	0	1	0	0	0	0	0	0	0	0	1	1	0	1	0	1	5	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**1**	**1**	**0**	**2**	**2**	**0**	**8**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**2**	**0**	**0**	**1**	**0**	**5**	22
5:00 PM	**0**	**0**	**0**	**1**	**0**	**1**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**5**	23
5:15 PM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**1**	**1**	**1**	**6**	**24**
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	2	0	1	1	0	4	20
5:45 PM	0	0	1	0	0	0	0	0	0	0	1	1	0	3	0	0	6	21
Count Total	0	2	1	1	0	2	2	3	0	0	6	10	0	8	6	2	43	0
Peak Hour	**0**	**1**	**0**	**1**	**0**	**2**	**2**	**1**	**0**	**0**	**4**	**4**	**0**	**3**	**5**	**1**	**24**	**0**

Two-Hour Count Summaries - Bikes

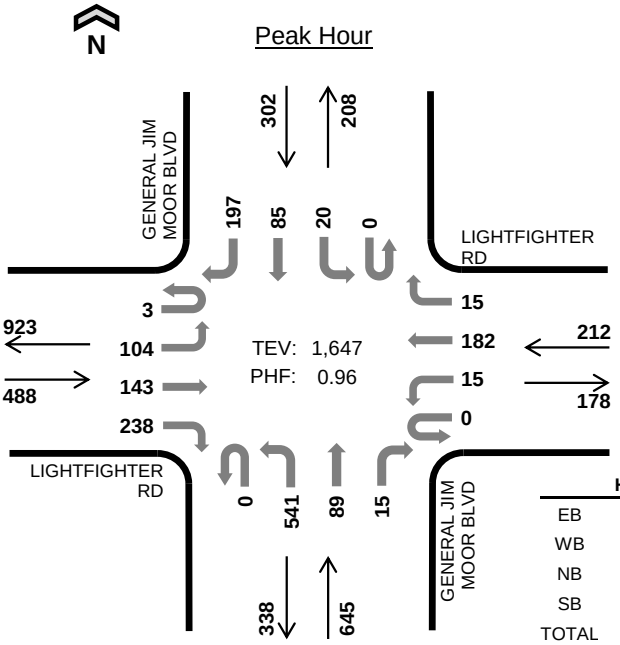
Interval Start	GIGLING RD Eastbound			GIGLING RD Westbound			GENERAL JIM MOOR BLVD Northbound			GENERAL JIM MOOR BLVD Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	1	0
4:15 PM	0	0	0	0	1	0	0	0	0	0	0	0	1	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	2
5:00 PM	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	2
5:15 PM	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**2**	**3**
5:30 PM	0	0	1	0	0	0	0	0	0	0	1	0	2	5
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	5
Count Total	1	0	1	0	1	1	0	1	0	0	2	0	7	0
Peak Hour	**1**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**3**	**0**

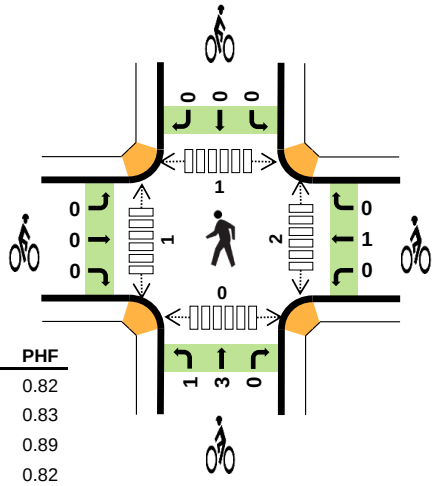
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Deon Fouche: 415 - 757 - 7714 deon.fouche@idaxdata.com

GENERAL JIM MOOR BLVD
LIGHTFIGHTER RD

Date: 05/09/2017
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 5:00 PM to 6:00 PM





	HV %:	PHF
EB	0.0%	0.82
WB	0.0%	0.83
NB	0.2%	0.89
SB	0.3%	0.82
TOTAL	0.1%	0.96

Two-Hour Count Summaries

Interval Start		LIGHTFIGHTER RD Eastbound				LIGHTFIGHTER RD Westbound				GENERAL JIM MOOR BLVD Northbound				GENERAL JIM MOOR 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		1	30	33	62	0	1	39	1	0	131	21	4	0	3	23	36	385	0
4:15 PM		0	30	27	45	0	2	30	4	0	123	20	0	1	5	12	25	324	0
4:30 PM		0	16	36	63	0	4	35	4	0	146	21	5	0	2	16	40	388	0
4:45 PM		0	14	32	45	0	3	48	2	0	164	20	2	0	6	16	28	380	1,477
5:00 PM		**1**	**20**	**37**	**56**	**0**	**4**	**58**	**2**	**0**	**143**	**15**	**2**	**0**	**5**	**26**	**60**	**429**	1,521
5:15 PM		**1**	**13**	**30**	**59**	**0**	**4**	**54**	**6**	**0**	**149**	**27**	**6**	**0**	**3**	**14**	**47**	**413**	1,610
5:30 PM		**0**	**28**	**33**	**62**	**0**	**5**	**40**	**4**	**0**	**138**	**22**	**1**	**0**	**6**	**19**	**30**	**388**	1,610
5:45 PM		**1**	**43**	**43**	**61**	**0**	**2**	**30**	**3**	**0**	**111**	**25**	**6**	**0**	**6**	**26**	**60**	**417**	**1,647**
Count Total		4	194	271	453	0	25	334	26	0	1,105	171	26	1	36	152	326	3,124	0
Peak Hour	**All**	**3**	**104**	**143**	**238**	**0**	**15**	**182**	**15**	**0**	**541**	**89**	**15**	**0**	**20**	**85**	**197**	**1,647**	**0**
	HV	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**2**	**0**
	HV%	**0%**	**0%**	**0%**	**0%**	**-**	**0%**	**0%**	**0%**	**-**	**0%**	**1%**	**0%**	**-**	**0%**	**1%**	**0%**	**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	2	0	*2*	0	0	0	1	*1*	0	0	0	0	*0*
4:15 PM	1	0	1	2	*4*	0	0	1	0	*1*	0	0	0	0	*0*
4:30 PM	3	0	0	0	*3*	0	0	0	0	*0*	0	1	0	0	*1*
4:45 PM	0	0	2	0	*2*	0	0	0	1	*1*	0	0	0	0	*0*
5:00 PM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**1**	**0**	***1***	**0**	**0**	**0**	**0**	*0*
5:15 PM	**0**	**0**	**0**	**1**	***1***	**0**	**1**	**2**	**0**	***3***	**1**	**0**	**1**	**0**	*2*
5:30 PM	**0**	**0**	**1**	**0**	***1***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
5:45 PM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**1**	**0**	***1***	**1**	**1**	**0**	**0**	***2***
Count Total	4	0	6	3	*13*	0	1	5	2	*8*	2	2	1	0	*5*
Peak Hour	**0**	**0**	**1**	**1**	***2***	**0**	**1**	**4**	**0**	***5***	**2**	**1**	**1**	**0**	***4***

Deon Fouche: 415 - 757 - 7714 deon.fouche@idaxdata.com

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	LIGHTFIGHTER RD				LIGHTFIGHTER RD				GENERAL JIM MOOR BLVD				GENERAL JIM MOOR 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	2	0	0	0	0	0	0	2	0
4:15 PM	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	4	0
4:30 PM	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0
4:45 PM	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	2	11
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	9
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	6
5:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	4
5:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**
Count Total	0	2	2	0	0	0	0	0	0	3	3	0	0	0	2	1	13	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**2**	**0**

Two-Hour Count Summaries - Bikes

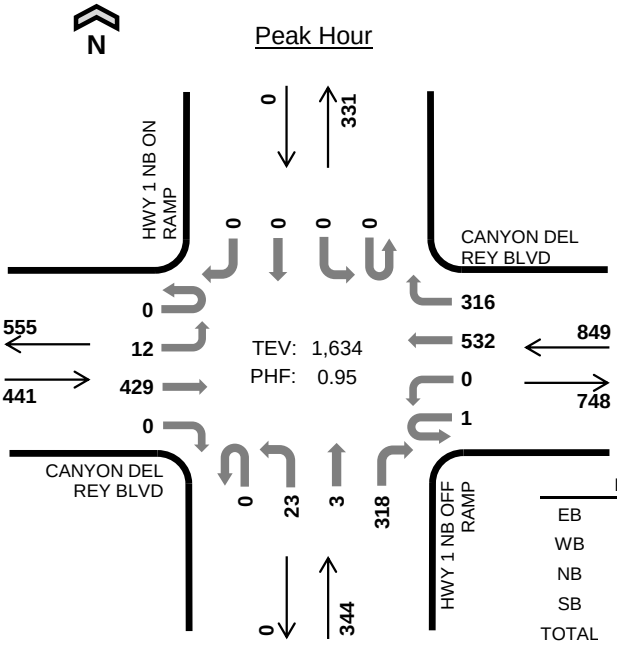
Interval Start	LIGHTFIGHTER RD			LIGHTFIGHTER RD			GENERAL JIM MOOR BLVD			GENERAL JIM MOOR BLVD			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	1	0
4:15 PM	0	0	0	0	0	0	1	0	0	0	0	0	1	0
4:30 PM	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	1	0	1	3
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	3
5:15 PM	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**3**	5
5:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	5
5:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**5**
Count Total	0	0	0	0	1	0	2	3	0	0	2	0	8	0
Peak Hour	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**3**	**0**	**0**	**0**	**0**	**5**	**0**

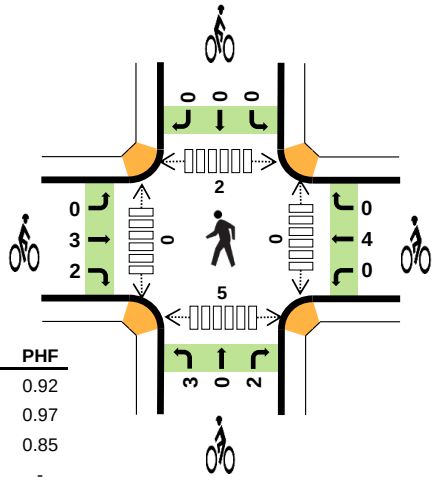
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Deon Fouche: 415 - 757 - 7714 deon.fouche@idaxdata.com

HWY 1 NB OFF RAMP
CANYON DEL REY BLVD

Date: 05/09/2017
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:45 AM to 8:45 AM





	HV %:	PHF
EB	1.6%	0.92
WB	0.9%	0.97
NB	0.3%	0.85
SB	-	-
TOTAL	1.0%	0.95

Two-Hour Count Summaries

Interval Start		CANYON DEL REY BLVD Eastbound				CANYON DEL REY BLVD Westbound				HWY 1 NB OFF RAMP Northbound				HWY 1 NB ON RAMP 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	134	0	0	0	95	53	0	1	0	25	0	0	0	0	309	0
7:15 AM		0	2	87	0	0	0	135	78	0	4	0	56	0	0	0	0	362	0
7:30 AM		0	0	91	0	0	0	158	71	0	4	0	62	0	0	0	0	386	0
7:45 AM		**0**	**3**	**106**	**0**	**0**	**0**	**149**	**70**	**0**	**6**	**0**	**82**	**0**	**0**	**0**	**0**	**416**	1,473
8:00 AM		**0**	**4**	**113**	**0**	**0**	**0**	**122**	**88**	**0**	**5**	**2**	**94**	**0**	**0**	**0**	**0**	**428**	1,592
8:15 AM		**0**	**3**	**117**	**0**	**1**	**0**	**126**	**76**	**0**	**8**	**0**	**64**	**0**	**0**	**0**	**0**	**395**	1,625
8:30 AM		**0**	**2**	**93**	**0**	**0**	**0**	**135**	**82**	**0**	**4**	**1**	**78**	**0**	**0**	**0**	**0**	**395**	**1,634**
8:45 AM		0	3	119	0	1	0	126	75	0	4	0	70	0	0	0	0	398	1,616
Count Total		0	18	860	0	2	0	1,046	593	0	36	3	531	0	0	0	0	3,089	0
Peak Hour	**All**	**0**	**12**	**429**	**0**	**1**	**0**	**532**	**316**	**0**	**23**	**3**	**318**	**0**	**0**	**0**	**0**	**1,634**	**0**
	HV	**0**	**0**	**7**	**0**	**0**	**0**	**2**	**6**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**16**	**0**
	HV%	**-**	**0%**	**2%**	**-**	**0%**	**-**	**0%**	**2%**	**-**	**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
7:00 AM	2	2	0	0	*4*	2	2	1	0	*5*	0	0	0	3	*3*
7:15 AM	1	1	0	0	*2*	3	1	0	0	*4*	0	0	0	4	*4*
7:30 AM	0	2	1	0	*3*	1	3	0	0	*4*	0	0	1	6	*7*
7:45 AM	**2**	**1**	**1**	**0**	***4***	**1**	**1**	**2**	**0**	***4***	**0**	**0**	**0**	**0**	*0*
8:00 AM	**2**	**5**	**0**	**0**	***7***	**2**	**0**	**1**	**0**	***3***	**0**	**0**	**0**	**2**	*2*
8:15 AM	**2**	**0**	**0**	**0**	***2***	**1**	**2**	**1**	**0**	***4***	**0**	**0**	**1**	**3**	*4*
8:30 AM	**1**	**2**	**0**	**0**	***3***	**1**	**1**	**1**	**0**	***3***	**0**	**0**	**1**	**0**	***1***
8:45 AM	2	3	0	0	*5*	0	0	0	0	*0*	0	0	5	5	*10*
Count Total	12	16	2	0	*30*	11	10	6	0	*27*	0	0	8	23	*31*
Peak Hour	**7**	**8**	**1**	**0**	***16***	**5**	**4**	**5**	**0**	***14***	**0**	**0**	**2**	**5**	***7***

Deon Fouche: 415 - 757 - 7714 deon.fouche@idaxdata.com

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	CANYON DEL REY BLVD				CANYON DEL REY BLVD				HWY 1 NB OFF RAMP				HWY 1 NB ON RAMP				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	2	0	0	0	1	1	0	0	0	0	0	0	0	0	4	0
7:15 AM	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	2	0
7:30 AM	0	0	0	0	0	0	0	2	0	0	0	1	0	0	0	0	3	0
7:45 AM	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**4**	13
8:00 AM	**0**	**0**	**2**	**0**	**0**	**0**	**1**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**7**	16
8:15 AM	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	16
8:30 AM	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**16**
8:45 AM	0	0	2	0	0	0	1	2	0	0	0	0	0	0	0	0	5	17
Count Total	0	0	12	0	0	0	4	12	0	0	0	2	0	0	0	0	30	0
Peak Hour	**0**	**0**	**7**	**0**	**0**	**0**	**2**	**6**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**16**	**0**

Two-Hour Count Summaries - Bikes

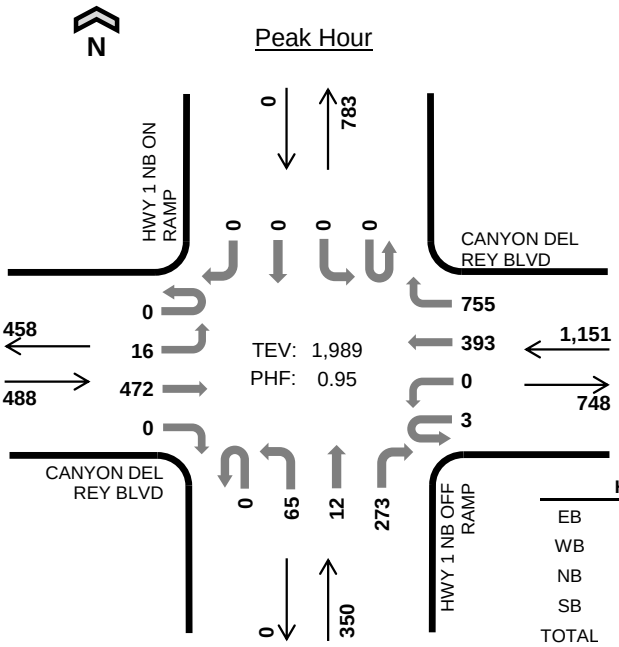
Interval Start	CANYON DEL REY BLVD			CANYON DEL REY BLVD			HWY 1 NB OFF RAMP			HWY 1 NB ON RAMP			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	1	1	0	2	0	1	0	0	0	0	0	5	0
7:15 AM	0	1	2	0	1	0	0	0	0	0	0	0	4	0
7:30 AM	0	1	0	0	3	0	0	0	0	0	0	0	4	0
7:45 AM	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**4**	17
8:00 AM	**0**	**0**	**2**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**3**	15
8:15 AM	**0**	**1**	**0**	**0**	**2**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**4**	15
8:30 AM	**0**	**1**	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**3**	**14**
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	10
Count Total	0	6	5	0	10	0	4	0	2	0	0	0	27	0
Peak Hour	**0**	**3**	**2**	**0**	**4**	**0**	**3**	**0**	**2**	**0**	**0**	**0**	**14**	**0**

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

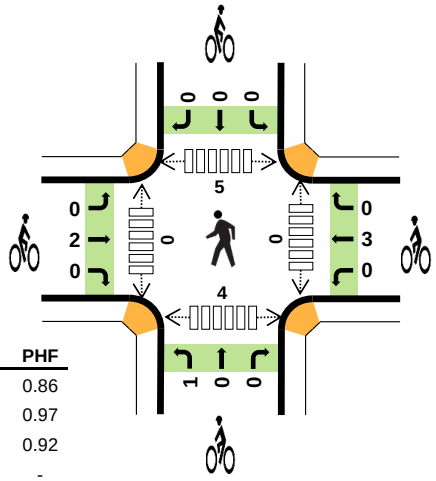
Deon Fouche: 415 - 757 - 7714 deon.fouche@idaxdata.com

HWY 1 NB OFF RAMP
CANYON DEL REY BLVD

Date: 05/09/2017
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:30 PM to 5:30 PM



	HV %:	PHF
EB	0.4%	0.86
WB	0.5%	0.97
NB	0.9%	0.92
SB	-	-
TOTAL	0.6%	0.95



Two-Hour Count Summaries

Interval Start	CANYON DEL REY BLVD Eastbound				CANYON DEL REY BLVD Westbound				HWY 1 NB OFF RAMP Northbound				HWY 1 NB ON RAMP Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	6	106	0	1	0	97	153	0	23	4	109	0	0	0	0	499	0
4:15 PM	0	9	109	0	1	0	104	151	0	11	7	63	0	0	0	0	455	0
4:30 PM	**0**	**1**	**96**	**0**	**0**	**0**	**90**	**181**	**0**	**15**	**4**	**65**	**0**	**0**	**0**	**0**	**452**	0
4:45 PM	**0**	**3**	**129**	**0**	**0**	**0**	**123**	**167**	**0**	**14**	**4**	**67**	**0**	**0**	**0**	**0**	**507**	1,913
5:00 PM	**0**	**6**	**111**	**0**	**2**	**0**	**86**	**204**	**0**	**22**	**0**	**73**	**0**	**0**	**0**	**0**	**504**	1,918
5:15 PM	**0**	**6**	**136**	**0**	**1**	**0**	**94**	**203**	**0**	**14**	**4**	**68**	**0**	**0**	**0**	**0**	**526**	**1,989**
5:30 PM	0	6	115	0	0	0	86	166	0	13	6	58	0	0	0	0	450	1,987
5:45 PM	0	7	96	0	0	0	91	140	0	12	2	89	0	0	0	0	437	1,917
Count Total	0	44	898	0	5	0	771	1,365	0	124	31	592	0	0	0	0	3,830	0
Peak Hour All	**0**	**16**	**472**	**0**	**3**	**0**	**393**	**755**	**0**	**65**	**12**	**273**	**0**	**0**	**0**	**0**	**1,989**	**0**
Peak Hour HV	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**6**	**0**	**2**	**0**	**1**	**0**	**0**	**0**	**0**	**11**	**0**
Peak Hour HV%	**-**	**0%**	**0%**	**-**	**0%**	**-**	**0%**	**1%**	**-**	**3%**	**0%**	**0%**	**-**	**-**	**-**	**-**	**1%**	**0**

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

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	0	3	2	0	*5*	0	1	0	0	*1*	0	0	0	3	*3*
4:15 PM	0	1	0	0	*1*	2	2	1	0	*5*	0	0	0	6	*6*
4:30 PM	**1**	**0**	**0**	**0**	***1***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**4**	**2**	*6*
4:45 PM	**0**	**2**	**1**	**0**	***3***	**0**	**1**	**0**	**0**	***1***	**0**	**0**	**0**	**1**	*1*
5:00 PM	**0**	**0**	**1**	**0**	***1***	**0**	**0**	**1**	**0**	***1***	**0**	**0**	**0**	**1**	*1*
5:15 PM	**1**	**4**	**1**	**0**	***6***	**2**	**2**	**0**	**0**	***4***	**0**	**0**	**1**	**0**	***1***
5:30 PM	1	0	0	0	*1*	0	0	1	0	*1*	0	0	0	4	*4*
5:45 PM	0	1	0	0	*1*	1	0	0	0	*1*	0	0	2	0	*2*
Count Total	3	11	5	0	*19*	5	6	3	0	*14*	0	0	7	17	*24*
Peak Hour	**2**	**6**	**3**	**0**	***11***	**2**	**3**	**1**	**0**	***6***	**0**	**0**	**5**	**4**	***9***

Deon Fouche: 415 - 757 - 7714 deon.fouche@idaxdata.com

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	CANYON DEL REY BLVD				CANYON DEL REY BLVD				HWY 1 NB OFF RAMP				HWY 1 NB ON RAMP				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	3	0	1	0	1	0	0	0	0	5	0
4:15 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0
4:30 PM	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	10
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	6
5:15 PM	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**4**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**6**	**11**
5:30 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	11
5:45 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	9
Count Total	0	0	3	0	0	0	0	11	0	3	0	2	0	0	0	0	19	0
Peak Hour	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**6**	**0**	**2**	**0**	**1**	**0**	**0**	**0**	**0**	**11**	**0**

Two-Hour Count Summaries - Bikes

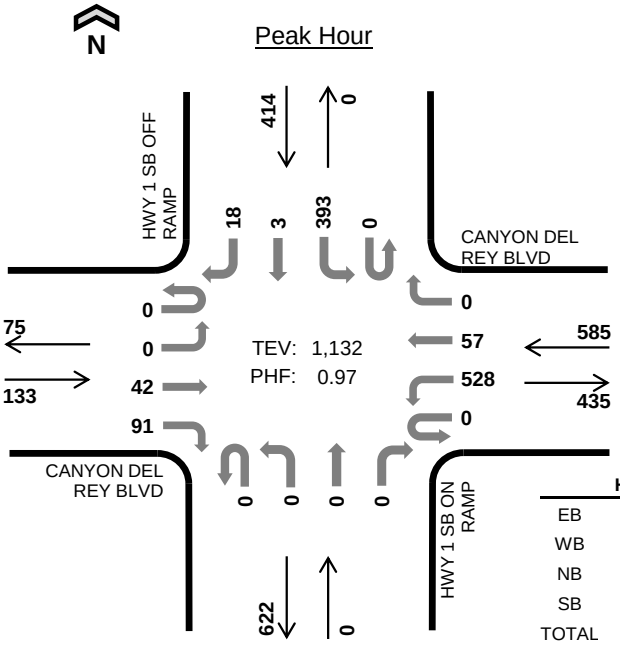
Interval Start	CANYON DEL REY BLVD			CANYON DEL REY BLVD			HWY 1 NB OFF RAMP			HWY 1 NB ON RAMP			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	1	0	0	0	0	0	0	0	1	0
4:15 PM	0	2	0	0	2	0	1	0	0	0	0	0	5	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:45 PM	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	7
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	7
5:15 PM	**0**	**2**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**6**
5:30 PM	0	0	0	0	0	0	1	0	0	0	0	0	1	7
5:45 PM	0	1	0	0	0	0	0	0	0	0	0	0	1	7
Count Total	0	5	0	0	6	0	3	0	0	0	0	0	14	0
Peak Hour	**0**	**2**	**0**	**0**	**3**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**6**	**0**

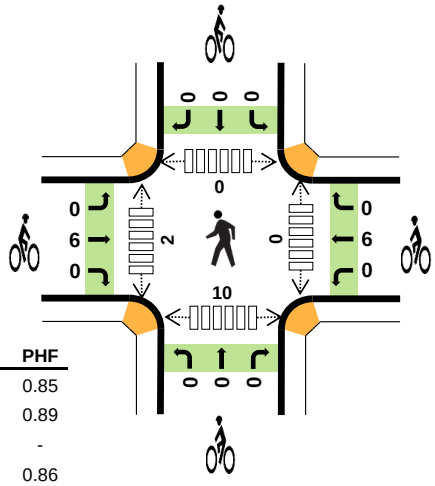
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Deon Fouche: 415 - 757 - 7714 deon.fouche@idaxdata.com

HWY 1 SB ON RAMP
CANYON DEL REY BLVD

Date: 05/09/2017
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:30 AM to 8:30 AM





	HV %:	PHF
EB	3.0%	0.85
WB	0.2%	0.89
NB	-	-
SB	3.1%	0.86
TOTAL	1.6%	0.97

Two-Hour Count Summaries

Interval Start		CANYON DEL REY BLVD Eastbound				CANYON DEL REY BLVD Westbound				HWY 1 SB ON RAMP Northbound				HWY 1 SB OFF RAMP 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	11	11	0	89	8	0	0	0	0	0	0	126	2	7	254	0
7:15 AM		0	0	9	21	0	124	16	0	0	0	0	0	0	76	0	2	248	0
7:30 AM		**0**	**0**	**12**	**27**	**0**	**158**	**7**	**0**	**0**	**0**	**0**	**0**	**0**	**78**	**0**	**3**	**285**	0
7:45 AM		**0**	**0**	**12**	**27**	**0**	**141**	**12**	**0**	**0**	**0**	**0**	**0**	**0**	**95**	**2**	**4**	**293**	1,080
8:00 AM		**0**	**0**	**10**	**19**	**0**	**123**	**14**	**0**	**0**	**0**	**0**	**0**	**0**	**114**	**1**	**5**	**286**	1,112
8:15 AM		**0**	**0**	**8**	**18**	**0**	**106**	**24**	**0**	**0**	**0**	**0**	**0**	**0**	**106**	**0**	**6**	**268**	**1,132**
8:30 AM		0	0	11	16	0	117	20	0	0	0	0	0	0	88	3	2	257	1,104
8:45 AM		0	0	11	21	0	117	13	0	0	0	0	0	0	105	1	8	276	1,087
Count Total		0	0	84	160	0	975	114	0	0	0	0	0	0	788	9	37	2,167	0
Peak Hour	**All**	**0**	**0**	**42**	**91**	**0**	**528**	**57**	**0**	**0**	**0**	**0**	**0**	**0**	**393**	**3**	**18**	**1,132**	**0**
	HV	**0**	**0**	**0**	**4**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**12**	**1**	**0**	**18**	**0**
	HV%	**-**	**-**	**0%**	**4%**	**-**	**0%**	**0%**	**-**	**-**	**-**	**-**	**-**	**-**	**3%**	**33%**	**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	0	2	0	3	*5*	0	3	0	0	*3*	0	4	0	3	*7*
7:15 AM	1	0	0	1	*2*	1	2	1	0	*4*	0	0	0	3	*3*
7:30 AM	**1**	**0**	**0**	**0**	***1***	**1**	**2**	**0**	**0**	***3***	**0**	**2**	**0**	**4**	*6*
7:45 AM	**1**	**0**	**0**	**5**	***6***	**1**	**1**	**0**	**0**	***2***	**0**	**0**	**0**	**0**	*0*
8:00 AM	**1**	**1**	**0**	**4**	***6***	**2**	**0**	**0**	**0**	***2***	**0**	**0**	**0**	**3**	*3*
8:15 AM	**1**	**0**	**0**	**4**	***5***	**2**	**3**	**0**	**0**	***5***	**0**	**0**	**0**	**3**	***3***
8:30 AM	2	1	0	2	*5*	1	1	0	0	*2*	0	1	0	4	*5*
8:45 AM	3	2	0	3	*8*	1	0	0	0	*1*	0	4	0	4	*8*
Count Total	10	6	0	22	*38*	9	12	1	0	*22*	0	11	0	24	*35*
Peak Hour	**4**	**1**	**0**	**13**	***18***	**6**	**6**	**0**	**0**	***12***	**0**	**2**	**0**	**10**	***12***

Deon Fouche: 415 - 757 - 7714 deon.fouche@idaxdata.com

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	CANYON DEL REY BLVD				CANYON DEL REY BLVD				HWY 1 SB ON RAMP				HWY 1 SB OFF RAMP				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	1	1	0	0	0	0	0	0	2	0	1	5	0
7:15 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	2	0
7:30 AM	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	0
7:45 AM	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**1**	**0**	**6**	14
8:00 AM	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**0**	**0**	**6**	15
8:15 AM	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**0**	**0**	**5**	**18**
8:30 AM	0	0	0	2	0	0	1	0	0	0	0	0	0	2	0	0	5	22
8:45 AM	0	0	1	2	0	1	1	0	0	0	0	0	0	3	0	0	8	24
Count Total	0	0	1	9	0	3	3	0	0	0	0	0	0	20	1	1	38	0
Peak Hour	**0**	**0**	**0**	**4**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**12**	**1**	**0**	**18**	**0**

Two-Hour Count Summaries - Bikes

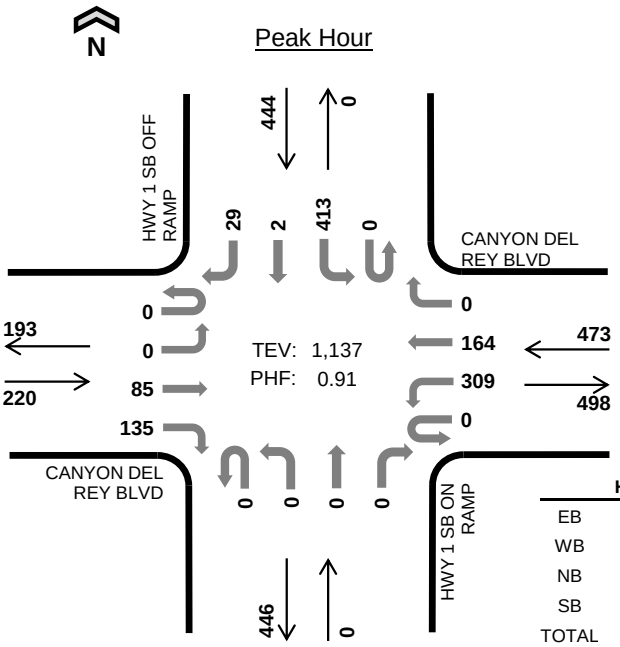
Interval Start	CANYON DEL REY BLVD			CANYON DEL REY BLVD			HWY 1 SB ON RAMP			HWY 1 SB OFF RAMP			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	0	0	3	0	0	0	0	0	0	0	3	0
7:15 AM	0	1	0	1	1	0	0	0	1	0	0	0	4	0
7:30 AM	**0**	**1**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	0
7:45 AM	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	12
8:00 AM	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	11
8:15 AM	**0**	**2**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**12**
8:30 AM	0	1	0	0	1	0	0	0	0	0	0	0	2	11
8:45 AM	0	1	0	0	0	0	0	0	0	0	0	0	1	10
Count Total	0	9	0	1	11	0	0	0	1	0	0	0	22	0
Peak Hour	**0**	**6**	**0**	**0**	**6**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**12**	**0**

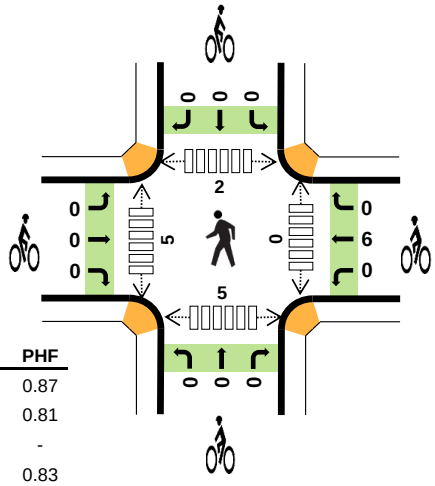
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Deon Fouche: 415 - 757 - 7714 deon.fouche@idaxdata.com

HWY 1 SB ON RAMP
CANYON DEL REY BLVD

Date: 05/09/2017
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:45 PM to 5:45 PM





	HV %:	PHF
EB	0.0%	0.87
WB	0.4%	0.81
NB	-	-
SB	0.7%	0.83
TOTAL	0.4%	0.91

Two-Hour Count Summaries

Interval Start		CANYON DEL REY BLVD Eastbound				CANYON DEL REY BLVD Westbound				HWY 1 SB ON RAMP Northbound				HWY 1 SB OFF RAMP 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	19	41	0	79	38	0	0	0	0	0	0	93	0	3	273	0
4:15 PM		0	0	19	42	0	90	30	0	0	0	0	0	0	91	2	9	283	0
4:30 PM		0	0	13	29	0	56	40	0	0	0	0	0	0	86	0	5	229	0
4:45 PM		**0**	**0**	**21**	**29**	**0**	**99**	**47**	**0**	**0**	**0**	**0**	**0**	**0**	**100**	**0**	**9**	**305**	1,090
5:00 PM		**0**	**0**	**18**	**42**	**0**	**67**	**44**	**0**	**0**	**0**	**0**	**0**	**0**	**95**	**0**	**5**	**271**	1,088
5:15 PM		**0**	**0**	**27**	**36**	**0**	**71**	**43**	**0**	**0**	**0**	**0**	**0**	**0**	**122**	**1**	**11**	**311**	1,116
5:30 PM		**0**	**0**	**19**	**28**	**0**	**72**	**30**	**0**	**0**	**0**	**0**	**0**	**0**	**96**	**1**	**4**	**250**	**1,137**
5:45 PM		0	0	16	24	0	78	30	0	0	0	0	0	0	86	0	5	239	1,071
Count Total		0	0	152	271	0	612	302	0	0	0	0	0	0	769	4	51	2,161	0
Peak Hour	**All**	**0**	**0**	**85**	**135**	**0**	**309**	**164**	**0**	**0**	**0**	**0**	**0**	**0**	**413**	**2**	**29**	**1,137**	**0**
	HV	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**5**	**0**
	HV%	**-**	**-**	**0%**	**0%**	**-**	**0%**	**1%**	**-**	**-**	**-**	**-**	**-**	**-**	**1%**	**0%**	**0%**	**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	1	0	0	*1*	0	1	0	0	*1*	0	0	0	3	*3*
4:15 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	1	0	7	*8*
4:30 PM	0	0	0	1	*1*	0	1	0	0	*1*	0	4	0	2	*6*
4:45 PM	**0**	**1**	**0**	**0**	***1***	**0**	**1**	**0**	**0**	***1***	**0**	**2**	**0**	**0**	*2*
5:00 PM	**0**	**0**	**0**	**0**	***0***	**0**	**1**	**0**	**0**	***1***	**0**	**1**	**0**	**1**	*2*
5:15 PM	**0**	**1**	**0**	**2**	***3***	**0**	**3**	**0**	**0**	***3***	**0**	**2**	**1**	**0**	*3*
5:30 PM	**0**	**0**	**0**	**1**	***1***	**0**	**1**	**0**	**0**	***1***	**0**	**0**	**1**	**4**	***5***
5:45 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	2	0	0	*2*
Count Total	0	3	0	4	*7*	0	8	0	0	*8*	0	12	2	17	*31*
Peak Hour	**0**	**2**	**0**	**3**	***5***	**0**	**6**	**0**	**0**	***6***	**0**	**5**	**2**	**5**	***12***

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Two-Hour Count Summaries - Heavy Vehicles

Interval Start	CANYON DEL REY BLVD				CANYON DEL REY BLVD				HWY 1 SB ON RAMP				HWY 1 SB OFF RAMP				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	1	0	0	0	0	0	0	0	0	0	1	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	3
5:00 PM	**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**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**3**	5
5:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**5**
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
Count Total	0	0	0	0	0	0	3	0	0	0	0	0	0	4	0	0	7	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**5**	**0**

Two-Hour Count Summaries - Bikes

Interval Start	CANYON DEL REY BLVD			CANYON DEL REY BLVD			HWY 1 SB ON RAMP			HWY 1 SB OFF RAMP			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	1	0	0	0	0	0	0	0	1	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	1	0	0	0	0	0	0	0	1	0
4:45 PM	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	3
5:00 PM	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	3
5:15 PM	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	6
5:30 PM	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**6**
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	5
Count Total	0	0	0	0	8	0	0	0	0	0	0	0	8	0
Peak Hour	**0**	**0**	**0**	**0**	**6**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**6**	**0**

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

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Existing Conditions – Level of Service Calculations

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (veh/h)	137	442	206	73	970	277	202	345	98	202	528	86
Future Volume (veh/h)	137	442	206	73	970	277	202	345	98	202	528	86
Number	7	4	14	3	8	18	1	6	16	5	2	12
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		0.96	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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	159	514	240	83	1102	315	227	388	110	227	593	97
Adj No. of Lanes	1	2	1	1	2	1	2	2	0	2	2	1
Peak Hour Factor	0.86	0.86	0.86	0.88	0.88	0.88	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	192	1451	627	107	1281	554	297	691	193	298	906	387
Arrive On Green	0.11	0.41	0.41	0.06	0.36	0.36	0.09	0.26	0.26	0.09	0.26	0.26
Sat Flow, veh/h	1774	3539	1530	1774	3539	1532	3442	2703	755	3442	3539	1514
Grp Volume(v), veh/h	159	514	240	83	1102	315	227	252	246	227	593	97
Grp Sat Flow(s),veh/h/ln	1774	1770	1530	1774	1770	1532	1721	1770	1689	1721	1770	1514
Q Serve(g_s), s	8.0	9.1	10.0	4.2	26.2	15.0	5.9	11.2	11.5	5.9	13.6	4.6
Cycle Q Clear(g_c), s	8.0	9.1	10.0	4.2	26.2	15.0	5.9	11.2	11.5	5.9	13.6	4.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.45	1.00		1.00
Lane Grp Cap(c), veh/h	192	1451	627	107	1281	554	297	453	432	298	906	387
V/C Ratio(X)	0.83	0.35	0.38	0.78	0.86	0.57	0.76	0.56	0.57	0.76	0.65	0.25
Avail Cap(c_a), veh/h	215	1451	627	215	1384	599	303	556	530	303	1111	475
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.6	18.5	18.7	42.0	26.8	23.3	40.5	29.3	29.4	40.5	30.2	26.8
Incr Delay (d2), s/veh	21.0	0.1	0.4	11.3	5.4	1.1	10.7	1.1	1.2	10.6	1.0	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	5.0	4.5	4.2	2.4	13.7	6.5	3.2	5.6	5.5	3.2	6.8	2.0
LnGrp Delay(d),s/veh	60.6	18.6	19.1	53.3	32.2	24.3	51.3	30.4	30.6	51.1	31.2	27.2
LnGrp LOS	E	B	B	D	C	C	D	C	C	D	C	C
Approach Vol, veh/h		913			1500			725			917	
Approach Delay, s/veh		26.1			31.7			37.0			35.7	
Approach LOS		C			C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.8	27.7	9.5	41.7	11.9	27.7	13.8	37.4
Change Period (Y+Rc), s	4.0	4.5	4.0	4.5	4.0	4.5	4.0	4.5
Max Green Setting (Gmax), s	8.0	28.5	11.0	35.5	8.0	28.5	11.0	35.5
Max Q Clear Time (g_c+I1), s	7.9	15.6	6.2	12.0	7.9	13.5	10.0	28.2
Green Ext Time (p_c), s	0.0	3.3	0.1	4.2	0.0	2.5	0.0	4.7

Intersection Summary	
HCM 2010 Ctrl Delay	32.3
HCM 2010 LOS	C

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	81	259	108	288	252	50	86	276	171	156	848	92
Future Volume (veh/h)	81	259	108	288	252	50	86	276	171	156	848	92
Number	1	6	16	5	2	12	7	4	14	3	8	18
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		0.99	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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	87	278	116	306	268	53	104	333	206	170	922	100
Adj No. of Lanes	1	2	0	1	2	0	1	2	1	1	2	1
Peak Hour Factor	0.93	0.93	0.93	0.94	0.94	0.94	0.83	0.83	0.83	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	112	395	160	381	925	180	131	781	348	430	1376	606
Arrive On Green	0.06	0.16	0.16	0.22	0.31	0.31	0.07	0.22	0.22	0.24	0.39	0.39
Sat Flow, veh/h	1774	2436	987	1774	2947	573	1774	3539	1575	1774	3539	1558
Grp Volume(v), veh/h	87	200	194	306	159	162	104	333	206	170	922	100
Grp Sat Flow(s),veh/h/ln	1774	1770	1654	1774	1770	1751	1774	1770	1575	1774	1770	1558
Q Serve(g_s), s	4.8	10.7	11.2	16.4	6.8	7.0	5.8	8.1	11.7	8.0	21.5	4.2
Cycle Q Clear(g_c), s	4.8	10.7	11.2	16.4	6.8	7.0	5.8	8.1	11.7	8.0	21.5	4.2
Prop In Lane	1.00		0.60	1.00		0.33	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	112	287	268	381	556	550	131	781	348	430	1376	606
V/C Ratio(X)	0.78	0.70	0.72	0.80	0.29	0.29	0.79	0.43	0.59	0.40	0.67	0.17
Avail Cap(c_a), veh/h	293	451	422	381	556	550	204	903	402	430	1376	606
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.1	39.6	39.8	37.2	25.9	25.9	45.5	33.5	34.9	31.8	25.3	20.0
Incr Delay (d2), s/veh	10.8	3.0	3.7	16.2	0.3	0.3	10.8	0.4	1.8	0.6	2.6	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	2.7	5.5	5.4	9.7	3.4	3.4	3.2	4.0	5.3	4.0	11.0	1.9
LnGrp Delay(d),s/veh	57.0	42.6	43.5	53.4	26.1	26.2	56.4	33.9	36.7	32.4	27.9	20.5
LnGrp LOS	E	D	D	D	C	C	E	C	D	C	C	C
Approach Vol, veh/h		481			627			643			1192	
Approach Delay, s/veh		45.6			39.5			38.4			27.9	
Approach LOS		D			D			D			C	

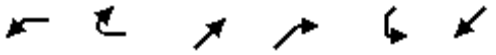
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.8	35.9	27.7	26.6	25.0	20.7	10.9	43.4
Change Period (Y+Rc), s	3.5	4.5	3.5	4.5	3.5	4.5	3.5	4.5
Max Green Setting (Gmax), s	16.5	30.5	11.5	25.5	21.5	25.5	11.5	25.5
Max Q Clear Time (g_c+I1), s	6.8	9.0	10.0	13.7	18.4	13.2	7.8	23.5
Green Ext Time (p_c), s	0.1	1.7	0.1	2.2	0.3	1.7	0.1	1.2

Intersection Summary	
HCM 2010 Ctrl Delay	35.5
HCM 2010 LOS	D

Movement	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations						
Traffic Volume (veh/h)	342	102	158	509	612	244
Future Volume (veh/h)	342	102	158	509	612	244
Number	2	12	1	6	3	18
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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	450	134	172	553	680	271
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.76	0.76	0.92	0.92	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	531	439	219	858	748	862
Arrive On Green	0.28	0.28	0.12	0.46	0.42	0.42
Sat Flow, veh/h	1863	1541	1774	1863	1774	1583
Grp Volume(v), veh/h	450	134	172	553	680	271
Grp Sat Flow(s),veh/h/ln	1863	1541	1774	1863	1774	1583
Q Serve(g_s), s	17.4	5.2	7.2	17.4	27.4	7.2
Cycle Q Clear(g_c), s	17.4	5.2	7.2	17.4	27.4	7.2
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	531	439	219	858	748	862
V/C Ratio(X)	0.85	0.31	0.79	0.64	0.91	0.31
Avail Cap(c_a), veh/h	745	616	372	1233	942	1036
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	25.7	21.4	32.5	15.8	20.7	9.5
Incr Delay (d2), s/veh	6.6	0.4	6.1	0.8	10.8	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.8	2.2	3.9	9.1	15.7	3.1
LnGrp Delay(d),s/veh	32.3	21.8	38.6	16.6	31.5	9.7
LnGrp LOS	C	C	D	B	C	A
Approach Vol, veh/h	584			725	951	
Approach Delay, s/veh	29.9			21.8	25.3	
Approach LOS	C			C	C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	13.4	26.2				39.6		36.6
Change Period (Y+Rc), s	4.0	4.5				4.5		4.5
Max Green Setting (Gmax), s	16.0	30.5				50.5		40.5
Max Q Clear Time (g_c+I1), s	9.2	19.4				19.4		29.4
Green Ext Time (p_c), s	0.2	2.4				3.6		2.7

Intersection Summary	
HCM 2010 Ctrl Delay	25.4
HCM 2010 LOS	C



Movement	WBL	WBR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Volume (veh/h)	520	81	500	304	63	734
Future Volume (veh/h)	520	81	500	304	63	734
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		0.97	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1676	1676	1676	1710	1676	1676
Adj Flow Rate, veh/h	642	100	602	366	76	884
Adj No. of Lanes	2	1	2	0	1	2
Peak Hour Factor	0.81	0.81	0.83	0.83	0.83	0.83
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	869	400	779	474	93	1765
Arrive On Green	0.28	0.28	0.41	0.41	0.06	0.55
Sat Flow, veh/h	3097	1425	1970	1146	1597	3269
Grp Volume(v), veh/h	642	100	508	460	76	884
Grp Sat Flow(s),veh/h/ln	1549	1425	1593	1439	1597	1593
Q Serve(g_s), s	9.1	2.6	13.3	13.3	2.3	8.3
Cycle Q Clear(g_c), s	9.1	2.6	13.3	13.3	2.3	8.3
Prop In Lane	1.00	1.00		0.80	1.00	
Lane Grp Cap(c), veh/h	869	400	658	595	93	1765
V/C Ratio(X)	0.74	0.25	0.77	0.77	0.82	0.50
Avail Cap(c_a), veh/h	1665	766	856	774	528	1765
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.8	13.5	12.2	12.2	22.5	6.7
Incr Delay (d2), s/veh	1.3	0.3	3.3	3.6	16.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	1.1	6.4	5.8	1.4	3.6
LnGrp Delay(d),s/veh	17.0	13.8	15.5	15.8	38.6	6.9
LnGrp LOS	B	B	B	B	D	A
Approach Vol, veh/h	742		968			960
Approach Delay, s/veh	16.6		15.7			9.4
Approach LOS	B		B			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	6.8	24.0				30.8		17.6
Change Period (Y+Rc), s	4.0	4.0				4.0		4.0
Max Green Setting (Gmax), s	16.0	26.0				26.0		26.0
Max Q Clear Time (g_c+I1), s	4.3	15.3				10.3		11.1
Green Ext Time (p_c), s	0.1	4.6				5.4		2.5

Intersection Summary	
HCM 2010 Ctrl Delay	13.7
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	71	231	40	197	437	62	68	342	68	64	439	105
Future Volume (veh/h)	71	231	40	197	437	62	68	342	68	64	439	105
Number	7	4	14	3	8	18	5	2	12	1	6	16
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		0.98	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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	88	285	49	224	497	70	78	393	78	70	477	114
Adj No. of Lanes	1	2	0	1	2	0	1	2	1	1	2	1
Peak Hour Factor	0.81	0.81	0.81	0.88	0.88	0.88	0.87	0.87	0.87	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	113	652	111	279	961	135	100	1020	446	89	998	436
Arrive On Green	0.06	0.22	0.22	0.16	0.31	0.31	0.06	0.29	0.29	0.05	0.28	0.28
Sat Flow, veh/h	1774	3023	513	1774	3108	436	1774	3539	1549	1774	3539	1547
Grp Volume(v), veh/h	88	165	169	224	282	285	78	393	78	70	477	114
Grp Sat Flow(s),veh/h/ln	1774	1770	1766	1774	1770	1775	1774	1770	1549	1774	1770	1547
Q Serve(g_s), s	2.6	4.3	4.4	6.5	7.0	7.0	2.3	4.7	2.0	2.1	6.0	3.0
Cycle Q Clear(g_c), s	2.6	4.3	4.4	6.5	7.0	7.0	2.3	4.7	2.0	2.1	6.0	3.0
Prop In Lane	1.00		0.29	1.00		0.25	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	113	382	381	279	547	549	100	1020	446	89	998	436
V/C Ratio(X)	0.78	0.43	0.44	0.80	0.52	0.52	0.78	0.39	0.17	0.79	0.48	0.26
Avail Cap(c_a), veh/h	549	857	855	549	857	859	549	1713	750	549	1713	749
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.6	18.1	18.1	21.7	15.1	15.2	24.8	15.2	14.2	25.0	15.9	14.8
Incr Delay (d2), s/veh	4.3	1.3	1.4	2.1	1.3	1.3	5.0	0.5	0.4	5.7	0.8	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	1.4	2.3	2.3	3.3	3.6	3.6	1.3	2.4	0.9	1.2	3.0	1.4
LnGrp Delay(d),s/veh	28.8	19.4	19.5	23.7	16.4	16.5	29.8	15.7	14.6	30.8	16.6	15.5
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		422			791			549			661	
Approach Delay, s/veh		21.4			18.5			17.6			17.9	
Approach LOS		C			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.2	19.6	11.9	15.7	6.5	19.2	6.9	20.7
Change Period (Y+Rc), s	3.5	* 4.2	3.5	* 4.2	3.5	* 4.2	3.5	* 4.2
Max Green Setting (Gmax), s	16.5	* 26	16.5	* 26	16.5	* 26	16.5	* 26
Max Q Clear Time (g_c+I1), s	4.1	6.7	8.5	6.4	4.3	8.0	4.6	9.0
Green Ext Time (p_c), s	0.0	4.7	0.2	2.9	0.1	5.8	0.1	4.8

Intersection Summary	
HCM 2010 Ctrl Delay	18.6
HCM 2010 LOS	B

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	310	34	72	547	91	42	157	65	72	162	92
Future Volume (veh/h)	35	310	34	72	547	91	42	157	65	72	162	92
Number	7	4	14	3	8	18	5	2	12	1	6	16
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	0.99		0.99	0.99		0.99	0.99		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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	46	408	45	89	675	112	50	187	77	83	186	106
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	0	1	0
Peak Hour Factor	0.76	0.76	0.76	0.81	0.81	0.81	0.84	0.84	0.84	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	305	1392	153	446	1314	218	140	475	177	183	390	197
Arrive On Green	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
Sat Flow, veh/h	684	3213	352	929	3033	503	162	1096	409	254	900	455
Grp Volume(v), veh/h	46	224	229	89	393	394	314	0	0	375	0	0
Grp Sat Flow(s),veh/h/ln	684	1770	1795	929	1770	1766	1667	0	0	1609	0	0
Q Serve(g_s), s	3.2	4.9	5.0	4.1	9.7	9.7	0.0	0.0	0.0	2.2	0.0	0.0
Cycle Q Clear(g_c), s	12.9	4.9	5.0	9.1	9.7	9.7	7.3	0.0	0.0	9.5	0.0	0.0
Prop In Lane	1.00		0.20	1.00		0.28	0.16		0.25	0.22		0.28
Lane Grp Cap(c), veh/h	305	767	778	446	767	765	792	0	0	771	0	0
V/C Ratio(X)	0.15	0.29	0.29	0.20	0.51	0.51	0.40	0.00	0.00	0.49	0.00	0.00
Avail Cap(c_a), veh/h	305	767	778	446	767	765	792	0	0	771	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	17.1	11.0	11.0	14.0	12.4	12.4	11.7	0.0	0.0	12.2	0.0	0.0
Incr Delay (d2), s/veh	1.0	1.0	1.0	1.0	2.4	2.5	1.5	0.0	0.0	2.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	2.6	2.6	1.2	5.2	5.2	3.9	0.0	0.0	4.9	0.0	0.0
LnGrp Delay(d),s/veh	18.1	12.0	12.0	15.0	14.8	14.9	13.2	0.0	0.0	14.4	0.0	0.0
LnGrp LOS	B	B	B	B	B	B	B			B		
Approach Vol, veh/h		499			876			314			375	
Approach Delay, s/veh		12.6			14.9			13.2			14.4	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		30.0		30.0		30.0		30.0
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0
Max Green Setting (Gmax), s		26.0		26.0		26.0		26.0
Max Q Clear Time (g_c+I1), s		9.3		14.9		11.5		11.7
Green Ext Time (p_c), s		1.8		2.2		2.1		4.6

Intersection Summary	
HCM 2010 Ctrl Delay	14.0
HCM 2010 LOS	B

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	182	187	61	221	1034	287
Future Volume (veh/h)	182	187	61	221	1034	287
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	219	225	91	330	1162	322
Adj No. of Lanes	2	1	1	2	2	1
Peak Hour Factor	0.83	0.83	0.67	0.67	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	658	303	253	2305	1565	684
Arrive On Green	0.19	0.19	0.14	0.65	0.44	0.44
Sat Flow, veh/h	3442	1583	1774	3632	3632	1547
Grp Volume(v), veh/h	219	225	91	330	1162	322
Grp Sat Flow(s),veh/h/ln	1721	1583	1774	1770	1770	1547
Q Serve(g_s), s	3.3	8.1	2.8	2.2	16.4	8.8
Cycle Q Clear(g_c), s	3.3	8.1	2.8	2.2	16.4	8.8
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	658	303	253	2305	1565	684
V/C Ratio(X)	0.33	0.74	0.36	0.14	0.74	0.47
Avail Cap(c_a), veh/h	1758	809	618	2305	2037	890
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	21.1	23.0	23.4	4.0	14.0	11.8
Incr Delay (d2), s/veh	0.3	3.6	0.9	0.0	1.1	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	1.6	7.1	1.4	1.1	8.1	3.9
LnGrp Delay(d),s/veh	21.3	26.6	24.2	4.1	15.0	12.4
LnGrp LOS	C	C	C	A	B	B
Approach Vol, veh/h	444			421	1484	
Approach Delay, s/veh	24.0			8.4	14.5	
Approach LOS	C			A	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		44.6		15.7	12.6	32.0		
Change Period (Y+Rc), s		5.3		* 4.2	4.0	5.3		
Max Green Setting (Gmax), s		34.7		* 31	21.0	34.7		
Max Q Clear Time (g_c+I1), s		4.2		10.1	4.8	18.4		
Green Ext Time (p_c), s		2.0		1.5	0.2	8.1		

Intersection Summary	
HCM 2010 Ctrl Delay	15.2
HCM 2010 LOS	B

Notes

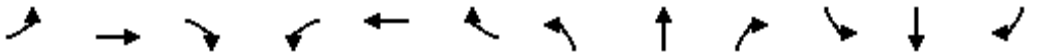
Intersection	
Int Delay, s/veh	8.4

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	0	608	53	0	638	350	73	0	3	0	0	170
Future Vol, veh/h	0	608	53	0	638	350	73	0	3	0	0	170
Conflicting Peds, #/hr	0	0	1	1	0	0	0	0	1	1	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	Free	-	-	Yield	-	-	None
Storage Length	-	-	-	-	-	250	0	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	82	82	82	84	84	84	76	76	76	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	741	65	0	760	417	96	0	4	0	0	191

Major/Minor	Major1			Major2			Minor2		Minor1			
Conflicting Flow All	-	0	0	-	-	0	1131	-	381	-	-	404
Stage 1	-	-	-	-	-	-	760	-	-	-	-	-
Stage 2	-	-	-	-	-	-	371	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	7.54	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	3.52	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	0	-	0	158	0	617	0	0	596
Stage 1	0	-	-	0	-	0	364	0	-	0	0	-
Stage 2	0	-	-	0	-	0	622	0	-	0	0	-
Platoon blocked, %		-	-		-							
Mov Cap-1 Maneuver	-	-	-	-	-	-	107	-	616	-	-	595
Mov Cap-2 Maneuver	-	-	-	-	-	-	107	-	-	-	-	-
Stage 1	-	-	-	-	-	-	364	-	-	-	-	-
Stage 2	-	-	-	-	-	-	422	-	-	-	-	-

Approach	NB	SB	NE	SW
HCM Control Delay, s	0	0	129.6	13.9
HCM LOS			F	B

Minor Lane/Major Mvmt	NELn1	NELn2	NBT	NBR	SBT	SWLn1
Capacity (veh/h)	107	616	-	-	-	595
HCM Lane V/C Ratio	0.898	0.006	-	-	-	0.321
HCM Control Delay (s)	134.5	10.9	-	-	-	13.9
HCM Lane LOS	F	B	-	-	-	B
HCM 95th %tile Q(veh)	5.4	0	-	-	-	1.4



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	83	152	86	100	252	27	171	522	105	82	799	220
Future Volume (vph)	83	152	86	100	252	27	171	522	105	82	799	220
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0		4.0	4.5		4.0	4.5	4.5
Lane Util. Factor	0.95	0.95	1.00		1.00		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.96		1.00		1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85		0.99		1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00		0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1681	1765	1516		1819		1770	3437		1770	3539	1556
Flt Permitted	0.95	1.00	1.00		0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1681	1765	1516		1819		1770	3437		1770	3539	1556
Peak-hour factor, PHF	0.76	0.76	0.76	0.90	0.90	0.90	0.92	0.92	0.92	0.93	0.93	0.93
Adj. Flow (vph)	109	200	113	111	280	30	186	567	114	88	859	237
RTOR Reduction (vph)	0	0	90	0	2	0	0	16	0	0	0	169
Lane Group Flow (vph)	98	211	23	0	419	0	186	665	0	88	859	68
Confl. Peds. (#/hr)			30	30								3
Confl. Bikes (#/hr)						1			2			2
Turn Type	Split	NA	Perm	Split	NA		Prot	NA		Prot	NA	Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4									6
Actuated Green, G (s)	20.2	20.2	20.2		23.5		11.0	31.6		8.2	28.8	28.8
Effective Green, g (s)	20.2	20.2	20.2		23.5		11.0	31.6		8.2	28.8	28.8
Actuated g/C Ratio	0.20	0.20	0.20		0.24		0.11	0.32		0.08	0.29	0.29
Clearance Time (s)	4.0	4.0	4.0		4.0		4.0	4.5		4.0	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0		3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	339	356	306		427		194	1086		145	1019	448
v/s Ratio Prot	0.06	c0.12			c0.23		c0.11	c0.19		0.05	c0.24	
v/s Ratio Perm			0.02									0.04
v/c Ratio	0.29	0.59	0.07		0.98		0.96	0.61		0.61	0.84	0.15
Uniform Delay, d1	33.8	36.2	32.3		38.0		44.3	29.0		44.3	33.5	26.5
Progression Factor	1.00	1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.5	2.6	0.1		38.3		52.1	1.0		7.0	8.5	0.7
Delay (s)	34.3	38.8	32.4		76.3		96.4	30.0		51.3	41.9	27.2
Level of Service	C	D	C		E		F	C		D	D	C
Approach Delay (s)		36.1			76.3			44.3			39.7	
Approach LOS		D			E			D			D	

Intersection Summary			
HCM 2000 Control Delay	45.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	84.0%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	77	835	3	4	461	56	2	0	4	230	2	279
Future Volume (veh/h)	77	835	3	4	461	56	2	0	4	230	2	279
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	99	1071	4	5	562	68	4	0	8	271	2	328
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	1	1	1
Peak Hour Factor	0.78	0.78	0.82	0.82	0.82	0.82	0.50	0.50	0.50	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	127	1808	7	9	1378	166	175	35	264	510	518	439
Arrive On Green	0.07	0.50	0.50	0.01	0.43	0.43	0.28	0.00	0.28	0.28	0.28	0.28
Sat Flow, veh/h	1774	3616	14	1774	3181	384	347	127	949	1402	1863	1582
Grp Volume(v), veh/h	99	524	551	5	312	318	12	0	0	271	2	328
Grp Sat Flow(s),veh/h/ln	1774	1770	1860	1774	1770	1795	1424	0	0	1402	1863	1582
Q Serve(g_s), s	3.3	12.8	12.8	0.2	7.4	7.4	0.0	0.0	0.0	10.1	0.0	11.5
Cycle Q Clear(g_c), s	3.3	12.8	12.8	0.2	7.4	7.4	0.3	0.0	0.0	10.4	0.0	11.5
Prop In Lane	1.00		0.01	1.00		0.21	0.33		0.67	1.00		1.00
Lane Grp Cap(c), veh/h	127	884	930	9	767	778	474	0	0	510	518	439
V/C Ratio(X)	0.78	0.59	0.59	0.53	0.41	0.41	0.03	0.00	0.00	0.53	0.00	0.75
Avail Cap(c_a), veh/h	467	884	930	467	884	897	997	0	0	1065	1256	1066
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.7	10.8	10.8	30.2	11.9	11.9	16.0	0.0	0.0	19.6	15.9	20.0
Incr Delay (d2), s/veh	3.8	2.9	2.8	15.9	0.5	0.5	0.0	0.0	0.0	1.2	0.0	3.6
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	1.8	6.8	7.1	0.1	3.7	3.7	0.2	0.0	0.0	4.2	0.0	5.4
LnGrp Delay(d),s/veh	31.5	13.7	13.6	46.1	12.4	12.4	16.0	0.0	0.0	20.8	15.9	23.6
LnGrp LOS	C	B	B	D	B	B	B			C	B	C
Approach Vol, veh/h		1174			635			12			601	
Approach Delay, s/veh		15.2			12.6			16.0			22.3	
Approach LOS		B			B			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.4	31.0		21.5	4.3	35.0		21.5
Change Period (Y+Rc), s	4.0	4.6		4.6	4.0	4.6		* 4.6
Max Green Setting (Gmax), s	16.0	30.4		40.4	16.0	30.4		* 41
Max Q Clear Time (g_c+I1), s	5.3	9.4		2.3	2.2	14.8		13.5
Green Ext Time (p_c), s	0.0	4.9		0.0	0.0	7.8		3.4

Intersection Summary			
HCM 2010 Ctrl Delay		16.3	
HCM 2010 LOS		B	

Notes

Intersection	
Intersection Delay, s/veh	119.5
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	107	0	382	0	0	0	176	346	0	0	973	118
Future Vol, veh/h	107	0	382	0	0	0	176	346	0	0	973	118
Peak Hour Factor	0.82	0.82	0.82	1.00	1.00	1.00	0.74	0.74	0.74	0.91	0.91	0.91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	130	0	466	0	0	0	238	468	0	0	1069	130
Number of Lanes	1	0	1	0	0	0	1	2	0	0	2	1

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	3	3
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	3	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	3	0	2
HCM Control Delay	119.5	27	173.9
HCM LOS	F	D	F

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	100%	0%	0%	0%	0%
Vol Thru, %	0%	100%	100%	0%	0%	100%	100%	0%
Vol Right, %	0%	0%	0%	0%	100%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	176	173	173	107	382	487	487	118
LT Vol	176	0	0	107	0	0	0	0
Through Vol	0	173	173	0	0	487	487	0
RT Vol	0	0	0	0	382	0	0	118
Lane Flow Rate	238	234	234	130	466	535	535	130
Geometry Grp	8	8	8	8	8	8	8	8
Degree of Util (X)	0.651	0.607	0.495	0.381	1.207	1.332	1.332	0.236
Departure Headway (Hd)	11.16	10.637	8.821	11.37	10.151	9.597	9.597	7.047
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	326	341	411	318	363	385	385	512
Service Time	8.86	8.337	6.521	9.07	7.851	7.297	7.297	4.747
HCM Lane V/C Ratio	0.73	0.686	0.569	0.409	1.284	1.39	1.39	0.254
HCM Control Delay	32.5	28.5	19.9	20.9	147.1	193.5	193.5	11.9
HCM Lane LOS	D	D	C	C	F	F	F	B
HCM 95th-tile Q	4.3	3.8	2.7	1.7	18.1	23.5	23.5	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	103	68	316	26	64	45	307	183	176	658	36
Future Volume (veh/h)	14	103	68	316	26	64	45	307	183	176	658	36
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	22	163	108	372	31	0	54	365	0	229	855	0
Adj No. of Lanes	1	1	0	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.63	0.63	0.63	0.85	0.85	0.85	0.84	0.84	0.84	0.77	0.77	0.77
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	720	487	323	499	867	737	79	740	331	269	1119	501
Arrive On Green	0.47	0.47	0.47	0.47	0.47	0.00	0.04	0.21	0.00	0.15	0.32	0.00
Sat Flow, veh/h	1371	1046	693	1103	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	22	0	271	372	31	0	54	365	0	229	855	0
Grp Sat Flow(s),veh/h/ln	1371	0	1739	1103	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	0.7	0.0	7.5	24.5	0.7	0.0	2.3	6.9	0.0	9.6	16.6	0.0
Cycle Q Clear(g_c), s	1.4	0.0	7.5	32.0	0.7	0.0	2.3	6.9	0.0	9.6	16.6	0.0
Prop In Lane	1.00		0.40	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	720	0	809	499	867	737	79	740	331	269	1119	501
V/C Ratio(X)	0.03	0.00	0.33	0.75	0.04	0.00	0.68	0.49	0.00	0.85	0.76	0.00
Avail Cap(c_a), veh/h	811	0	925	572	990	842	374	1416	633	374	1416	633
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	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	11.4	0.0	12.9	23.0	11.0	0.0	35.8	26.5	0.0	31.4	23.4	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.3	5.2	0.0	0.0	3.8	0.7	0.0	9.5	2.3	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	0.3	0.0	3.7	8.2	0.4	0.0	1.2	3.5	0.0	5.4	8.4	0.0
LnGrp Delay(d),s/veh	11.4	0.0	13.2	28.2	11.1	0.0	39.5	27.2	0.0	40.9	25.7	0.0
LnGrp LOS	B		B	C	B		D	C		D	C	
Approach Vol, veh/h		293			403			419			1084	
Approach Delay, s/veh		13.1			26.9			28.8			28.9	
Approach LOS		B			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	15.5	20.5		40.0	7.4	28.6		40.0
Change Period (Y+Rc), s	4.0	4.6		4.6	4.0	4.6		4.6
Max Green Setting (Gmax), s	16.0	30.4		40.4	16.0	30.4		40.4
Max Q Clear Time (g_c+I1), s	11.6	8.9		9.5	4.3	18.6		34.0
Green Ext Time (p_c), s	0.1	2.9		2.4	0.0	5.5		1.4

Intersection Summary	
HCM 2010 Ctrl Delay	26.4
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	164	160	651	21	227	22	249	92	5	3	140	46
Future Volume (veh/h)	164	160	651	21	227	22	249	92	5	3	140	46
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	191	186	0	24	261	25	286	106	6	5	237	78
Adj No. of Lanes	1	1	1	1	1	0	2	1	0	0	2	1
Peak Hour Factor	0.86	0.86	0.86	0.87	0.87	0.87	0.87	0.87	0.87	0.59	0.59	0.59
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	244	608	517	40	353	34	610	714	40	0	535	237
Arrive On Green	0.14	0.33	0.00	0.02	0.21	0.21	0.18	0.41	0.41	0.00	0.15	0.15
Sat Flow, veh/h	1774	1863	1583	1774	1673	160	3442	1745	99	0	3539	1568
Grp Volume(v), veh/h	191	186	0	24	0	286	286	0	112	0	237	78
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	0	1833	1721	0	1843	0	1770	1568
Q Serve(g_s), s	5.8	4.2	0.0	0.7	0.0	8.1	4.2	0.0	2.1	0.0	3.4	2.5
Cycle Q Clear(g_c), s	5.8	4.2	0.0	0.7	0.0	8.1	4.2	0.0	2.1	0.0	3.4	2.5
Prop In Lane	1.00		1.00	1.00		0.09	1.00		0.05	0.00		1.00
Lane Grp Cap(c), veh/h	244	608	517	40	0	387	610	0	754	0	535	237
V/C Ratio(X)	0.78	0.31	0.00	0.61	0.00	0.74	0.47	0.00	0.15	0.00	0.44	0.33
Avail Cap(c_a), veh/h	493	1019	866	334	0	839	957	0	843	0	1619	717
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	0.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	23.2	14.0	0.0	27.0	0.0	20.6	20.6	0.0	10.4	0.0	21.5	21.1
Incr Delay (d2), s/veh	5.4	0.3	0.0	5.5	0.0	3.3	0.4	0.0	0.2	0.0	0.7	1.0
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	3.2	2.2	0.0	0.4	0.0	4.4	2.0	0.0	1.1	0.0	1.7	1.1
LnGrp Delay(d),s/veh	28.7	14.4	0.0	32.5	0.0	23.9	21.0	0.0	10.5	0.0	22.2	22.1
LnGrp LOS	C	B		C		C	C		B		C	C
Approach Vol, veh/h		377			310			398			315	
Approach Delay, s/veh		21.6			24.6			18.1			22.2	
Approach LOS		C			C			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.4	12.9	5.7	22.7	0.0	27.3	12.2	16.3
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	15.5	25.5	10.5	30.5	15.5	25.5	15.5	25.5
Max Q Clear Time (g_c+I1), s	6.2	5.4	2.7	6.2	0.0	4.1	7.8	10.1
Green Ext Time (p_c), s	0.5	1.9	0.0	1.1	0.0	0.9	0.3	1.6

Intersection Summary	
HCM 2010 Ctrl Delay	21.4
HCM 2010 LOS	C

Intersection	
Int Delay, s/veh	4.9

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↑	↱		↰			↰	↱			
Traffic Vol, veh/h	0	533	316	12	429	0	23	3	318	0	0	0
Future Vol, veh/h	0	533	316	12	429	0	23	3	318	0	0	0
Conflicting Peds, #/hr	0	0	2	0	0	5	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	92	92	92	85	85	85	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	549	326	13	466	0	27	4	374	0	0	0

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	-	0	0	877	0	0	1204	1369	466
Stage 1	-	-	-	-	-	-	492	492	-
Stage 2	-	-	-	-	-	-	712	877	-
Critical Hdwy	-	-	-	4.12	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	-	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	-	770	-	0	203	146	597
Stage 1	0	-	-	-	-	0	615	548	-
Stage 2	0	-	-	-	-	0	486	366	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	770	-	-	198	0	597
Mov Cap-2 Maneuver	-	-	-	-	-	-	198	0	-
Stage 1	-	-	-	-	-	-	601	0	-
Stage 2	-	-	-	-	-	-	486	0	-

Approach	NB	SB	NE
HCM Control Delay, s	0	0.3	21
HCM LOS			C

Minor Lane/Major Mvmt	NELn1	NELn2	NBT	NBR	SBL	SBT
Capacity (veh/h)	198	597	-	-	770	-
HCM Lane V/C Ratio	0.154	0.627	-	-	0.017	-
HCM Control Delay (s)	26.5	20.6	-	-	9.8	0
HCM Lane LOS	D	C	-	-	A	A
HCM 95th %tile Q(veh)	0.5	4.4	-	-	0.1	-

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	528	57	0	0	42	91	0	0	0	393	3	18
Future Volume (veh/h)	528	57	0	0	42	91	0	0	0	393	3	18
Number	5	2	12	1	6	16				3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	0	0	1863	1900				1900	1863	1863
Adj Flow Rate, veh/h	593	64	0	0	49	106				462	4	21
Adj No. of Lanes	0	1	0	0	1	0				0	1	1
Peak Hour Factor	0.89	0.89	0.89	0.86	0.86	0.86				0.85	0.85	0.85
Percent Heavy Veh, %	2	2	0	0	2	2				2	2	2
Cap, veh/h	667	72	0	0	62	134				530	5	477
Arrive On Green	0.41	0.41	0.00	0.00	0.12	0.12				0.30	0.30	0.30
Sat Flow, veh/h	1609	174	0	0	525	1137				1760	15	1583
Grp Volume(v), veh/h	657	0	0	0	0	155				466	0	21
Grp Sat Flow(s),veh/h/ln	1782	0	0	0	0	1662				1775	0	1583
Q Serve(g_s), s	25.9	0.0	0.0	0.0	0.0	6.9				18.9	0.0	0.7
Cycle Q Clear(g_c), s	25.9	0.0	0.0	0.0	0.0	6.9				18.9	0.0	0.7
Prop In Lane	0.90		0.00	0.00		0.68				0.99		1.00
Lane Grp Cap(c), veh/h	739	0	0	0	0	196				535	0	477
V/C Ratio(X)	0.89	0.00	0.00	0.00	0.00	0.79				0.87	0.00	0.04
Avail Cap(c_a), veh/h	963	0	0	0	0	350				711	0	634
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	0.00	0.00	1.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	20.6	0.0	0.0	0.0	0.0	32.6				25.1	0.0	18.8
Incr Delay (d2), s/veh	8.4	0.0	0.0	0.0	0.0	7.0				9.1	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
%ile BackOfQ(50%),veh/ln	14.3	0.0	0.0	0.0	0.0	3.5				10.5	0.0	0.3
LnGrp Delay(d),s/veh	29.0	0.0	0.0	0.0	0.0	39.5				34.2	0.0	18.8
LnGrp LOS	C					D				C		B
Approach Vol, veh/h		657			155						487	
Approach Delay, s/veh		29.0			39.5						33.5	
Approach LOS		C			D						C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		35.5				13.0		27.5
Change Period (Y+Rc), s		4.0				4.0		4.6
Max Green Setting (Gmax), s		41.0				16.0		30.4
Max Q Clear Time (g_c+I1), s		27.9				8.9		20.9
Green Ext Time (p_c), s		3.5				0.4		2.0

Intersection Summary		
HCM 2010 Ctrl Delay		31.9
HCM 2010 LOS		C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (veh/h)	281	1080	547	122	493	280	257	383	106	241	546	151
Future Volume (veh/h)	281	1080	547	122	493	280	257	383	106	241	546	151
Number	7	4	14	3	8	18	1	6	16	5	2	12
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		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	299	1149	582	131	530	301	282	421	116	262	593	164
Adj No. of Lanes	1	2	1	1	2	1	2	2	0	2	2	1
Peak Hour Factor	0.94	0.94	0.94	0.93	0.93	0.93	0.91	0.91	0.91	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	302	1394	601	151	1092	471	293	664	181	330	903	385
Arrive On Green	0.17	0.39	0.39	0.09	0.31	0.31	0.09	0.24	0.24	0.10	0.26	0.26
Sat Flow, veh/h	1774	3539	1527	1774	3539	1526	3442	2717	739	3442	3539	1509
Grp Volume(v), veh/h	299	1149	582	131	530	301	282	272	265	262	593	164
Grp Sat Flow(s),veh/h/ln	1774	1770	1527	1774	1770	1526	1721	1770	1686	1721	1770	1509
Q Serve(g_s), s	15.8	27.4	35.1	6.9	11.4	16.0	7.7	12.9	13.2	7.0	14.1	8.5
Cycle Q Clear(g_c), s	15.8	27.4	35.1	6.9	11.4	16.0	7.7	12.9	13.2	7.0	14.1	8.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.44	1.00		1.00
Lane Grp Cap(c), veh/h	302	1394	601	151	1092	471	293	432	412	330	903	385
V/C Ratio(X)	0.99	0.82	0.97	0.87	0.49	0.64	0.96	0.63	0.64	0.79	0.66	0.43
Avail Cap(c_a), veh/h	302	1394	601	151	1092	471	293	546	520	330	1130	482
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.9	25.6	27.9	42.5	26.4	28.0	42.8	31.7	31.8	41.6	31.3	29.3
Incr Delay (d2), s/veh	48.9	4.2	28.8	37.8	0.3	2.9	42.3	1.5	1.8	12.6	1.0	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	11.8	14.1	19.5	4.9	5.6	7.1	5.4	6.5	6.4	3.9	7.0	3.6
LnGrp Delay(d),s/veh	87.8	29.7	56.7	80.2	26.7	30.9	85.1	33.2	33.6	54.2	32.3	30.0
LnGrp LOS	F	C	E	F	C	C	F	C	C	D	C	C
Approach Vol, veh/h		2030			962			819			1019	
Approach Delay, s/veh		46.0			35.3			51.2			37.6	
Approach LOS		D			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	28.5	12.0	41.5	13.0	27.5	20.0	33.5
Change Period (Y+Rc), s	4.0	4.5	4.0	4.5	4.0	4.5	4.0	4.5
Max Green Setting (Gmax), s	8.0	30.0	8.0	37.0	9.0	29.0	16.0	28.0
Max Q Clear Time (g_c+I1), s	9.7	16.1	8.9	37.1	9.0	15.2	17.8	18.0
Green Ext Time (p_c), s	0.0	3.7	0.0	0.0	0.0	2.6	0.0	3.3

Intersection Summary	
HCM 2010 Ctrl Delay	43.0
HCM 2010 LOS	D

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	160	274	161	220	327	211	152	617	142	148	520	63
Future Volume (veh/h)	160	274	161	220	327	211	152	617	142	148	520	63
Number	1	6	16	5	2	12	7	4	14	3	8	18
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		0.98
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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	174	298	175	234	348	224	163	663	153	164	578	70
Adj No. of Lanes	1	2	0	1	2	0	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.94	0.94	0.94	0.93	0.93	0.93	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	208	457	260	227	460	290	449	1305	575	201	809	355
Arrive On Green	0.12	0.21	0.21	0.13	0.22	0.22	0.25	0.37	0.37	0.11	0.23	0.23
Sat Flow, veh/h	1774	2150	1224	1774	2060	1298	1774	3539	1558	1774	3539	1552
Grp Volume(v), veh/h	174	244	229	234	298	274	163	663	153	164	578	70
Grp Sat Flow(s),veh/h/ln	1774	1770	1604	1774	1770	1589	1774	1770	1558	1774	1770	1552
Q Serve(g_s), s	8.6	11.3	11.8	11.5	14.1	14.6	6.8	13.1	6.2	8.1	13.6	3.3
Cycle Q Clear(g_c), s	8.6	11.3	11.8	11.5	14.1	14.6	6.8	13.1	6.2	8.1	13.6	3.3
Prop In Lane	1.00		0.76	1.00		0.82	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	208	376	341	227	395	355	449	1305	575	201	809	355
V/C Ratio(X)	0.84	0.65	0.67	1.03	0.75	0.77	0.36	0.51	0.27	0.82	0.71	0.20
Avail Cap(c_a), veh/h	227	501	455	227	501	450	449	1305	575	227	1003	440
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.9	32.4	32.6	39.3	32.6	32.8	27.6	22.1	19.9	39.0	32.0	28.0
Incr Delay (d2), s/veh	21.8	1.9	2.4	68.4	4.9	6.3	0.5	1.4	1.1	18.5	1.8	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.5	5.7	5.4	9.9	7.4	7.0	3.4	6.6	2.9	5.0	6.8	1.4
LnGrp Delay(d),s/veh	60.7	34.2	34.9	107.7	37.5	39.1	28.1	23.5	21.0	57.5	33.8	28.3
LnGrp LOS	E	C	C	F	D	D	C	C	C	E	C	C
Approach Vol, veh/h		647			806			979			812	
Approach Delay, s/veh		41.6			58.4			23.9			38.1	
Approach LOS		D			E			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	24.6	13.7	37.7	15.0	23.6	26.3	25.1
Change Period (Y+Rc), s	3.5	4.5	3.5	4.5	3.5	4.5	3.5	4.5
Max Green Setting (Gmax), s	11.5	25.5	11.5	25.5	11.5	25.5	11.5	25.5
Max Q Clear Time (g_c+I1), s	10.6	16.6	10.1	15.1	13.5	13.8	8.8	15.6
Green Ext Time (p_c), s	0.0	2.2	0.1	3.6	0.0	2.1	0.1	2.8

Intersection Summary	
HCM 2010 Ctrl Delay	39.6
HCM 2010 LOS	D

Movement	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations						
Traffic Volume (veh/h)	686	578	170	229	194	126
Future Volume (veh/h)	686	578	170	229	194	126
Number	2	12	1	6	3	18
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.98	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	738	622	189	254	213	138
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.93	0.93	0.90	0.90	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	870	724	252	1264	295	488
Arrive On Green	0.47	0.47	0.14	0.68	0.17	0.17
Sat Flow, veh/h	1863	1550	1774	1863	1774	1583
Grp Volume(v), veh/h	738	622	189	254	213	138
Grp Sat Flow(s),veh/h/ln	1863	1550	1774	1863	1774	1583
Q Serve(g_s), s	20.2	20.6	5.9	2.9	6.6	3.8
Cycle Q Clear(g_c), s	20.2	20.6	5.9	2.9	6.6	3.8
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	870	724	252	1264	295	488
V/C Ratio(X)	0.85	0.86	0.75	0.20	0.72	0.28
Avail Cap(c_a), veh/h	983	818	491	1627	1243	1334
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	13.6	13.7	23.8	3.5	22.9	15.2
Incr Delay (d2), s/veh	6.4	8.3	4.5	0.1	3.4	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.8	10.3	3.2	1.5	3.5	1.7
LnGrp Delay(d),s/veh	20.0	22.0	28.3	3.5	26.2	15.5
LnGrp LOS	C	C	C	A	C	B
Approach Vol, veh/h	1360			443	351	
Approach Delay, s/veh	20.9			14.1	22.0	
Approach LOS	C			B	C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	12.2	31.5				43.7		14.1
Change Period (Y+Rc), s	4.0	4.5				4.5		4.5
Max Green Setting (Gmax), s	16.0	30.5				50.5		40.5
Max Q Clear Time (g_c+I1), s	7.9	22.6				4.9		8.6
Green Ext Time (p_c), s	0.3	4.4				1.5		1.1

Intersection Summary	
HCM 2010 Ctrl Delay	19.7
HCM 2010 LOS	B

Movement	WBL	WBR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Volume (veh/h)	286	75	846	453	102	616
Future Volume (veh/h)	286	75	846	453	102	616
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		0.98	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1676	1676	1676	1710	1676	1676
Adj Flow Rate, veh/h	321	84	910	487	115	692
Adj No. of Lanes	2	1	2	0	1	2
Peak Hour Factor	0.89	0.89	0.93	0.93	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	503	232	1015	533	145	2159
Arrive On Green	0.16	0.16	0.51	0.51	0.09	0.68
Sat Flow, veh/h	3097	1425	2087	1051	1597	3269
Grp Volume(v), veh/h	321	84	720	677	115	692
Grp Sat Flow(s),veh/h/ln	1549	1425	1593	1462	1597	1593
Q Serve(g_s), s	4.8	2.6	20.4	21.3	3.5	4.5
Cycle Q Clear(g_c), s	4.8	2.6	20.4	21.3	3.5	4.5
Prop In Lane	1.00	1.00		0.72	1.00	
Lane Grp Cap(c), veh/h	503	232	807	741	145	2159
V/C Ratio(X)	0.64	0.36	0.89	0.91	0.79	0.32
Avail Cap(c_a), veh/h	1609	740	827	759	510	2159
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	19.6	18.7	11.1	11.3	22.3	3.3
Incr Delay (d2), s/veh	1.3	1.0	11.8	15.4	9.2	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	2.1	1.1	11.4	11.6	1.9	1.9
LnGrp Delay(d),s/veh	20.9	19.6	22.9	26.7	31.5	3.4
LnGrp LOS	C	B	C	C	C	A
Approach Vol, veh/h	405		1397			807
Approach Delay, s/veh	20.7		24.8			7.4
Approach LOS	C		C			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	8.6	29.4				37.9		12.1
Change Period (Y+Rc), s	4.0	4.0				4.0		4.0
Max Green Setting (Gmax), s	16.0	26.0				26.0		26.0
Max Q Clear Time (g_c+I1), s	5.5	23.3				6.5		6.8
Green Ext Time (p_c), s	0.2	2.1				4.5		1.3

Intersection Summary	
HCM 2010 Ctrl Delay	18.8
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	169	402	85	156	220	95	61	627	151	101	439	77
Future Volume (veh/h)	169	402	85	156	220	95	61	627	151	101	439	77
Number	7	4	14	3	8	18	5	2	12	1	6	16
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		0.95	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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	201	479	101	171	242	104	68	697	168	107	467	82
Adj No. of Lanes	1	2	0	1	2	0	1	2	1	1	2	1
Peak Hour Factor	0.84	0.84	0.84	0.91	0.91	0.91	0.90	0.90	0.90	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	235	710	149	205	551	228	88	1383	603	136	1478	645
Arrive On Green	0.13	0.25	0.25	0.12	0.23	0.23	0.05	0.39	0.39	0.08	0.42	0.42
Sat Flow, veh/h	1774	2886	604	1774	2405	994	1774	3539	1544	1774	3539	1544
Grp Volume(v), veh/h	201	292	288	171	176	170	68	697	168	107	467	82
Grp Sat Flow(s),veh/h/ln	1774	1770	1720	1774	1770	1629	1774	1770	1544	1774	1770	1544
Q Serve(g_s), s	10.0	13.4	13.6	8.5	7.6	8.1	3.4	13.4	6.7	5.3	8.0	2.9
Cycle Q Clear(g_c), s	10.0	13.4	13.6	8.5	7.6	8.1	3.4	13.4	6.7	5.3	8.0	2.9
Prop In Lane	1.00		0.35	1.00		0.61	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	235	436	423	205	405	373	88	1383	603	136	1478	645
V/C Ratio(X)	0.85	0.67	0.68	0.83	0.43	0.46	0.78	0.50	0.28	0.79	0.32	0.13
Avail Cap(c_a), veh/h	266	507	493	266	507	467	246	1383	603	246	1478	645
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.90	0.90	0.90	0.99	0.99	0.99	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.2	30.6	30.7	38.9	29.7	29.9	42.3	20.8	18.7	40.9	17.6	16.1
Incr Delay (d2), s/veh	17.5	3.5	3.8	12.7	1.2	1.5	5.4	1.3	1.1	3.8	0.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.0	7.0	6.9	4.9	3.8	3.8	1.8	6.8	3.0	2.8	3.9	1.3
LnGrp Delay(d),s/veh	55.6	34.1	34.5	51.6	30.9	31.3	47.7	22.1	19.9	44.7	17.8	16.3
LnGrp LOS	E	C	C	D	C	C	D	C	B	D	B	B
Approach Vol, veh/h		781			517			933			656	
Approach Delay, s/veh		39.8			37.9			23.6			22.0	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.4	39.4	13.9	26.4	7.9	41.8	15.4	24.8
Change Period (Y+Rc), s	3.5	* 4.2	3.5	* 4.2	3.5	* 4.2	3.5	* 4.2
Max Green Setting (Gmax), s	12.5	* 23	13.5	* 26	12.5	* 23	13.5	* 26
Max Q Clear Time (g_c+I1), s	7.3	15.4	10.5	15.6	5.4	10.0	12.0	10.1
Green Ext Time (p_c), s	0.0	4.5	0.1	3.7	0.0	4.5	0.0	2.7

Intersection Summary	
HCM 2010 Ctrl Delay	30.2
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	85	394	60	58	270	70	30	164	66	57	144	71
Future Volume (veh/h)	85	394	60	58	270	70	30	164	66	57	144	71
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.96	0.99		0.96	0.99		0.97	0.99		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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	89	415	63	65	303	79	36	195	79	66	166	82
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	0	1	0
Peak Hour Factor	0.95	0.95	0.95	0.89	0.89	0.89	0.84	0.84	0.84	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	640	1686	254	586	1521	389	116	330	123	160	282	124
Arrive On Green	0.55	0.55	0.55	0.55	0.55	0.55	0.28	0.28	0.28	0.28	0.28	0.28
Sat Flow, veh/h	989	3068	462	906	2768	707	111	1171	438	240	1003	439
Grp Volume(v), veh/h	89	238	240	65	191	191	310	0	0	314	0	0
Grp Sat Flow(s),veh/h/ln	989	1770	1760	906	1770	1706	1720	0	0	1683	0	0
Q Serve(g_s), s	2.4	3.3	3.4	1.9	2.6	2.7	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	5.1	3.3	3.4	5.3	2.6	2.7	7.2	0.0	0.0	7.2	0.0	0.0
Prop In Lane	1.00		0.26	1.00		0.41	0.12		0.25	0.21		0.26
Lane Grp Cap(c), veh/h	640	972	967	586	972	938	569	0	0	566	0	0
V/C Ratio(X)	0.14	0.24	0.25	0.11	0.20	0.20	0.54	0.00	0.00	0.56	0.00	0.00
Avail Cap(c_a), veh/h	640	972	967	586	972	938	1010	0	0	981	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	6.7	5.5	5.6	6.9	5.4	5.4	14.8	0.0	0.0	14.8	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.1	0.1	0.4	0.5	0.5	0.8	0.0	0.0	0.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	1.6	1.6	0.5	1.3	1.3	3.6	0.0	0.0	3.6	0.0	0.0
LnGrp Delay(d),s/veh	6.8	5.7	5.7	7.3	5.8	5.9	15.6	0.0	0.0	15.7	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	B			B		
Approach Vol, veh/h		567			447			310			314	
Approach Delay, s/veh		5.9			6.1			15.6			15.7	
Approach LOS		A			A			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		17.3		30.0		17.3		30.0
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0
Max Green Setting (Gmax), s		26.0		26.0		26.0		26.0
Max Q Clear Time (g_c+I1), s		9.2		7.1		9.2		7.3
Green Ext Time (p_c), s		1.7		3.1		1.8		2.4

Intersection Summary	
HCM 2010 Ctrl Delay	9.6
HCM 2010 LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	165	60	160	814	235	124
Future Volume (veh/h)	165	60	160	814	235	124
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	181	66	180	915	253	133
Adj No. of Lanes	2	1	1	2	2	1
Peak Hour Factor	0.91	0.91	0.89	0.89	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	794	365	417	1896	717	314
Arrive On Green	0.23	0.23	0.23	0.54	0.20	0.20
Sat Flow, veh/h	3442	1583	1774	3632	3632	1549
Grp Volume(v), veh/h	181	66	180	915	253	133
Grp Sat Flow(s),veh/h/ln	1721	1583	1774	1770	1770	1549
Q Serve(g_s), s	1.7	1.4	3.5	6.6	2.5	3.0
Cycle Q Clear(g_c), s	1.7	1.4	3.5	6.6	2.5	3.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	794	365	417	1896	717	314
V/C Ratio(X)	0.23	0.18	0.43	0.48	0.35	0.42
Avail Cap(c_a), veh/h	2605	1199	916	3018	3018	1321
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	12.6	13.3	5.9	13.9	14.2
Incr Delay (d2), s/veh	0.1	0.2	0.7	0.2	0.3	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	0.8	1.3	1.8	3.2	1.2	1.4
LnGrp Delay(d),s/veh	12.9	12.8	14.0	6.1	14.2	15.1
LnGrp LOS	B	B	B	A	B	B
Approach Vol, veh/h	247			1095	386	
Approach Delay, s/veh	12.8			7.4	14.5	
Approach LOS	B			A	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		27.1		13.6	13.6	13.5		
Change Period (Y+Rc), s		5.3		* 4.2	4.0	5.3		
Max Green Setting (Gmax), s		34.7		* 31	21.0	34.7		
Max Q Clear Time (g_c+I1), s		8.6		3.7	5.5	5.0		
Green Ext Time (p_c), s		6.4		0.8	0.4	1.9		

Intersection Summary	
HCM 2010 Ctrl Delay	9.8
HCM 2010 LOS	A

Notes

Intersection	
Int Delay, s/veh	208.9

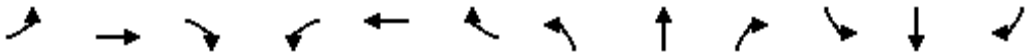
Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	0	789	15	0	613	112	366	0	94	0	0	94
Future Vol, veh/h	0	789	15	0	613	112	366	0	94	0	0	94
Conflicting Peds, #/hr	0	0	0	1	0	0	0	0	0	1	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	Free	-	-	Yield	-	-	None
Storage Length	-	-	-	-	-	250	0	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	86	86	86	91	91	91	81	81	81
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	897	17	0	713	130	402	0	103	0	0	116

Major/Minor	Major1			Major2			Minor2			Minor1		
Conflicting Flow All	-	0	0	-	-	0	1162	-	357	-	-	457
Stage 1	-	-	-	-	-	-	713	-	-	-	-	-
Stage 2	-	-	-	-	-	-	449	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	7.54	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	3.52	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	0	-	0	~ 150	0	639	0	0	551
Stage 1	0	-	-	0	-	0	~ 389	0	-	0	0	-
Stage 2	0	-	-	0	-	0	559	0	-	0	0	-
Platoon blocked, %		-	-		-							
Mov Cap-1 Maneuver	-	-	-	-	-	-	~ 118	-	639	-	-	551
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 118	-	-	-	-	-
Stage 1	-	-	-	-	-	-	~ 389	-	-	-	-	-
Stage 2	-	-	-	-	-	-	441	-	-	-	-	-

Approach	NB	SB	NE	SW
HCM Control Delay, s	0	0	$ 926.1	13.3
HCM LOS			F	B

Minor Lane/Major Mvmt	NELn1	NELn2	NBT	NBR	SBT	SWLn1
Capacity (veh/h)	118	639	-	-	-	551
HCM Lane V/C Ratio	3.408	0.162	-	-	-	0.211
HCM Control Delay (s)	$ 1160.9	11.7	-	-	-	13.3
HCM Lane LOS	F	B	-	-	-	B
HCM 95th %tile Q(veh)	39.4	0.6	-	-	-	0.8

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	259	207	64	77	181	53	178	876	170	70	584	202
Future Volume (vph)	259	207	64	77	181	53	178	876	170	70	584	202
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0		4.0	4.5		4.0	4.5	4.5
Lane Util. Factor	0.95	0.95	1.00		1.00		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.96		1.00		1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85		0.98		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	0.99	1.00		0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1681	1758	1516		1793		1770	3440		1770	3539	1556
Flt Permitted	0.95	0.99	1.00		0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1681	1758	1516		1793		1770	3440		1770	3539	1556
Peak-hour factor, PHF	0.76	0.76	0.76	0.90	0.90	0.90	0.92	0.92	0.92	0.93	0.93	0.93
Adj. Flow (vph)	341	272	84	86	201	59	193	952	185	75	628	217
RTOR Reduction (vph)	0	0	64	0	7	0	0	15	0	0	0	151
Lane Group Flow (vph)	300	313	20	0	339	0	193	1122	0	75	628	66
Confl. Peds. (#/hr)			30	30								3
Confl. Bikes (#/hr)						1			2			2
Turn Type	Split	NA	Perm	Split	NA		Prot	NA		Prot	NA	Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4									6
Actuated Green, G (s)	23.4	23.4	23.4		18.6		11.0	33.6		7.9	30.5	30.5
Effective Green, g (s)	23.4	23.4	23.4		18.6		11.0	33.6		7.9	30.5	30.5
Actuated g/C Ratio	0.23	0.23	0.23		0.19		0.11	0.34		0.08	0.30	0.30
Clearance Time (s)	4.0	4.0	4.0		4.0		4.0	4.5		4.0	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0		3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	393	411	354		333		194	1155		139	1079	474
v/s Ratio Prot	c0.18	0.18			c0.19		c0.11	c0.33		0.04	0.18	
v/s Ratio Perm			0.01									0.04
v/c Ratio	0.76	0.76	0.06		1.02		0.99	0.97		0.54	0.58	0.14
Uniform Delay, d1	35.7	35.7	29.7		40.7		44.5	32.7		44.3	29.4	25.2
Progression Factor	1.00	1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	8.5	8.1	0.1		53.7		63.3	20.4		4.0	0.8	0.1
Delay (s)	44.3	43.8	29.8		94.4		107.8	53.1		48.3	30.2	25.4
Level of Service	D	D	C		F		F	D		D	C	C
Approach Delay (s)		42.3			94.4			61.1			30.5	
Approach LOS		D			F			E			C	

Intersection Summary			
HCM 2000 Control Delay	52.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	84.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	116	362	1	2	872	113	2	0	4	103	2	64
Future Volume (veh/h)	116	362	1	2	872	113	2	0	4	103	2	64
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	0.99		1.00	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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	127	398	1	2	928	120	4	0	8	121	2	75
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	1	1	1
Peak Hour Factor	0.91	0.91	0.91	0.94	0.94	0.94	0.50	0.50	0.50	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	156	2716	7	4	2090	270	87	20	119	237	216	179
Arrive On Green	0.09	0.75	0.75	0.00	0.66	0.66	0.12	0.00	0.12	0.12	0.12	0.12
Sat Flow, veh/h	1774	3622	9	1774	3147	407	339	173	1025	1402	1863	1546
Grp Volume(v), veh/h	127	194	205	2	522	526	12	0	0	121	2	75
Grp Sat Flow(s),veh/h/ln	1774	1770	1861	1774	1770	1785	1538	0	0	1402	1863	1546
Q Serve(g_s), s	7.0	3.1	3.1	0.1	14.0	14.1	0.0	0.0	0.0	7.5	0.1	4.5
Cycle Q Clear(g_c), s	7.0	3.1	3.1	0.1	14.0	14.1	0.6	0.0	0.0	8.2	0.1	4.5
Prop In Lane	1.00		0.00	1.00		0.23	0.33		0.67	1.00		1.00
Lane Grp Cap(c), veh/h	156	1327	1396	4	1175	1185	226	0	0	237	216	179
V/C Ratio(X)	0.81	0.15	0.15	0.52	0.44	0.44	0.05	0.00	0.00	0.51	0.01	0.42
Avail Cap(c_a), veh/h	284	1327	1396	284	1175	1185	652	0	0	649	764	634
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.8	3.5	3.5	49.8	8.0	8.0	39.4	0.0	0.0	42.6	39.1	41.1
Incr Delay (d2), s/veh	3.8	0.2	0.2	35.2	1.2	1.2	0.1	0.0	0.0	2.4	0.0	2.2
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	3.6	1.6	1.7	0.1	7.2	7.3	0.3	0.0	0.0	3.4	0.1	2.0
LnGrp Delay(d),s/veh	48.6	3.7	3.7	85.0	9.2	9.2	39.5	0.0	0.0	45.0	39.1	43.3
LnGrp LOS	D	A	A	F	A	A	D			D	D	D
Approach Vol, veh/h		526			1050			12			198	
Approach Delay, s/veh		14.6			9.4			39.5			44.3	
Approach LOS		B			A			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	12.8	71.0		16.2	4.2	79.6		16.2
Change Period (Y+Rc), s	4.0	4.6		4.6	4.0	4.6		* 4.6
Max Green Setting (Gmax), s	16.0	30.4		40.4	16.0	30.4		* 41
Max Q Clear Time (g_c+I1), s	9.0	16.1		2.6	2.1	5.1		10.2
Green Ext Time (p_c), s	0.0	7.2		0.0	0.0	3.0		1.0

Intersection Summary	
HCM 2010 Ctrl Delay	15.0
HCM 2010 LOS	B

Notes

Intersection	
Intersection Delay, s/veh	43.1
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	53	1	68	0	0	0	141	818	3	1	318	39
Future Vol, veh/h	53	1	68	0	0	0	141	818	3	1	318	39
Peak Hour Factor	0.87	0.87	0.87	1.00	1.00	1.00	0.86	0.86	0.86	0.91	0.91	0.91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	61	1	78	0	0	0	164	951	3	1	349	43
Number of Lanes	1	0	1	0	0	0	1	2	0	0	2	1

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	3	3
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	3	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	3	0	2
HCM Control Delay	12.4	57	14.6
HCM LOS	B	F	B

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	100%	0%	1%	0%	0%
Vol Thru, %	0%	100%	99%	0%	1%	99%	100%	0%
Vol Right, %	0%	0%	1%	0%	99%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	141	545	276	53	69	107	212	39
LT Vol	141	0	0	53	0	1	0	0
Through Vol	0	545	273	0	1	106	212	0
RT Vol	0	0	3	0	68	0	0	39
Lane Flow Rate	164	634	321	61	79	118	233	43
Geometry Grp	8	8	8	8	8	8	8	8
Degree of Util (X)	0.306	1.093	0.552	0.147	0.165	0.236	0.468	0.078
Departure Headway (Hd)	6.712	6.207	6.199	8.887	7.687	7.433	7.429	6.72
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	536	583	580	406	470	486	489	537
Service Time	4.454	3.949	3.941	6.587	5.387	5.133	5.129	4.42
HCM Lane V/C Ratio	0.306	1.087	0.553	0.15	0.168	0.243	0.476	0.08
HCM Control Delay	12.4	89.1	16.4	13.1	11.9	12.4	16.5	10
HCM Lane LOS	B	F	C	B	B	B	C	A
HCM 95th-tile Q	1.3	19.1	3.3	0.5	0.6	0.9	2.5	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	19	25	38	175	38	205	47	506	312	86	237	39
Future Volume (veh/h)	19	25	38	175	38	205	47	506	312	86	237	39
Number	7	4	14	3	8	18	5	2	12	1	6	16
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		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	21	28	43	219	48	0	54	582	0	97	266	0
Adj No. of Lanes	1	1	0	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.89	0.89	0.89	0.80	0.80	0.80	0.87	0.87	0.87	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	532	185	285	507	527	448	100	1103	493	145	1193	534
Arrive On Green	0.28	0.28	0.28	0.28	0.28	0.00	0.06	0.31	0.00	0.08	0.34	0.00
Sat Flow, veh/h	1345	656	1007	1318	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	21	0	71	219	48	0	54	582	0	97	266	0
Grp Sat Flow(s),veh/h/ln	1345	0	1663	1318	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	0.5	0.0	1.3	6.1	0.8	0.0	1.2	5.5	0.0	2.2	2.2	0.0
Cycle Q Clear(g_c), s	1.2	0.0	1.3	7.4	0.8	0.0	1.2	5.5	0.0	2.2	2.2	0.0
Prop In Lane	1.00		0.61	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	532	0	470	507	527	448	100	1103	493	145	1193	534
V/C Ratio(X)	0.04	0.00	0.15	0.43	0.09	0.00	0.54	0.53	0.00	0.67	0.22	0.00
Avail Cap(c_a), veh/h	1485	0	1649	1441	1847	1570	697	2640	1181	697	2640	1181
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	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	11.2	0.0	10.9	13.7	10.8	0.0	18.7	11.6	0.0	18.2	9.7	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.2	0.8	0.1	0.0	1.7	0.6	0.0	2.0	0.1	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	0.0	0.6	2.3	0.4	0.0	0.6	2.8	0.0	1.1	1.1	0.0
LnGrp Delay(d),s/veh	11.3	0.0	11.2	14.5	10.9	0.0	20.4	12.1	0.0	20.1	9.8	0.0
LnGrp LOS	B		B	B	B		C	B		C	A	
Approach Vol, veh/h		92			267			636			363	
Approach Delay, s/veh		11.2			13.9			12.8			12.6	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.3	17.3		16.1	6.3	18.3		16.1
Change Period (Y+Rc), s	4.0	4.6		4.6	4.0	4.6		4.6
Max Green Setting (Gmax), s	16.0	30.4		40.4	16.0	30.4		40.4
Max Q Clear Time (g_c+I1), s	4.2	7.5		3.3	3.2	4.2		9.4
Green Ext Time (p_c), s	0.0	5.1		0.6	0.0	2.2		1.5

Intersection Summary	
HCM 2010 Ctrl Delay	12.9
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	164	143	238	15	182	15	541	89	15	20	85	197
Future Volume (veh/h)	164	143	238	15	182	15	541	89	15	20	85	197
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	200	174	0	18	219	18	608	100	17	24	104	240
Adj No. of Lanes	1	1	1	1	1	0	2	1	0	0	2	1
Peak Hour Factor	0.82	0.82	0.82	0.83	0.83	0.83	0.89	0.89	0.89	0.82	0.82	0.82
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	249	552	470	30	294	24	718	741	126	0	709	317
Arrive On Green	0.14	0.30	0.00	0.02	0.17	0.17	0.21	0.48	0.48	0.00	0.20	0.20
Sat Flow, veh/h	1774	1863	1583	1774	1696	139	3442	1548	263	0	3539	1581
Grp Volume(v), veh/h	200	174	0	18	0	237	608	0	117	0	104	240
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	0	1836	1721	0	1812	0	1770	1581
Q Serve(g_s), s	7.1	4.7	0.0	0.7	0.0	8.0	11.0	0.0	2.3	0.0	1.6	9.3
Cycle Q Clear(g_c), s	7.1	4.7	0.0	0.7	0.0	8.0	11.0	0.0	2.3	0.0	1.6	9.3
Prop In Lane	1.00		1.00	1.00		0.08	1.00		0.15	0.00		1.00
Lane Grp Cap(c), veh/h	249	552	470	30	0	318	718	0	867	0	709	317
V/C Ratio(X)	0.80	0.31	0.00	0.59	0.00	0.74	0.85	0.00	0.14	0.00	0.15	0.76
Avail Cap(c_a), veh/h	424	875	744	287	0	721	822	0	867	0	1391	621
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	0.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	27.0	17.7	0.0	31.7	0.0	25.5	24.7	0.0	9.4	0.0	21.4	24.5
Incr Delay (d2), s/veh	6.0	0.4	0.0	6.7	0.0	4.2	7.1	0.0	0.1	0.0	0.1	4.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	2.5	0.0	0.4	0.0	4.4	5.9	0.0	1.2	0.0	0.8	4.5
LnGrp Delay(d),s/veh	33.0	18.1	0.0	38.4	0.0	29.6	31.8	0.0	9.6	0.0	21.5	28.9
LnGrp LOS	C	B		D		C	C		A		C	C
Approach Vol, veh/h		374			255			725			344	
Approach Delay, s/veh		26.1			30.2			28.2			26.7	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.0	17.5	5.6	23.8	0.0	35.5	13.6	15.8
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	15.5	25.5	10.5	30.5	15.5	25.5	15.5	25.5
Max Q Clear Time (g_c+I1), s	13.0	11.3	2.7	6.7	0.0	4.3	9.1	10.0
Green Ext Time (p_c), s	0.5	1.5	0.0	1.0	0.0	0.9	0.3	1.3

Intersection Summary	
HCM 2010 Ctrl Delay	27.7
HCM 2010 LOS	C

Intersection	
Int Delay, s/veh	5

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↑	↱		↰			↰	↱			
Traffic Vol, veh/h	0	396	755	16	472	0	65	12	273	0	0	0
Future Vol, veh/h	0	396	755	16	472	0	65	12	273	0	0	0
Conflicting Peds, #/hr	0	0	5	5	0	4	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	86	86	86	92	92	92	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	408	778	19	549	0	71	13	297	0	0	0

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	-	0	0	1191	0	0	1384	1778	549
Stage 1	-	-	-	-	-	-	587	587	-
Stage 2	-	-	-	-	-	-	797	1191	-
Critical Hdwy	-	-	-	4.12	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	-	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	-	586	-	0	158	82	535
Stage 1	0	-	-	-	-	0	556	497	-
Stage 2	0	-	-	-	-	0	444	261	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	586	-	-	151	0	535
Mov Cap-2 Maneuver	-	-	-	-	-	-	151	0	-
Stage 1	-	-	-	-	-	-	530	0	-
Stage 2	-	-	-	-	-	-	444	0	-

Approach	NB	SB	NE
HCM Control Delay, s	0	0.4	27.6
HCM LOS			D

Minor Lane/Major Mvmt	NELn1	NELn2	NBT	NBR	SBL	SBT
Capacity (veh/h)	151	535	-	-	586	-
HCM Lane V/C Ratio	0.554	0.555	-	-	0.032	-
HCM Control Delay (s)	55.1	19.8	-	-	11.3	0
HCM Lane LOS	F	C	-	-	B	A
HCM 95th %tile Q(veh)	2.8	3.4	-	-	0.1	-

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	528	57	0	0	42	91	0	0	0	393	3	18
Future Volume (veh/h)	528	57	0	0	42	91	0	0	0	393	3	18
Number	5	2	12	1	6	16				3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	0	0	1863	1900				1900	1863	1863
Adj Flow Rate, veh/h	593	64	0	0	49	106				462	4	21
Adj No. of Lanes	0	1	0	0	1	0				0	1	1
Peak Hour Factor	0.89	0.89	0.89	0.86	0.86	0.86				0.85	0.85	0.85
Percent Heavy Veh, %	2	2	0	0	2	2				2	2	2
Cap, veh/h	667	72	0	0	62	134				530	5	477
Arrive On Green	0.41	0.41	0.00	0.00	0.12	0.12				0.30	0.30	0.30
Sat Flow, veh/h	1609	174	0	0	525	1137				1760	15	1583
Grp Volume(v), veh/h	657	0	0	0	0	155				466	0	21
Grp Sat Flow(s),veh/h/ln	1782	0	0	0	0	1662				1775	0	1583
Q Serve(g_s), s	25.9	0.0	0.0	0.0	0.0	6.9				18.9	0.0	0.7
Cycle Q Clear(g_c), s	25.9	0.0	0.0	0.0	0.0	6.9				18.9	0.0	0.7
Prop In Lane	0.90		0.00	0.00		0.68				0.99		1.00
Lane Grp Cap(c), veh/h	739	0	0	0	0	196				535	0	477
V/C Ratio(X)	0.89	0.00	0.00	0.00	0.00	0.79				0.87	0.00	0.04
Avail Cap(c_a), veh/h	963	0	0	0	0	350				711	0	634
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	0.00	0.00	1.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	20.6	0.0	0.0	0.0	0.0	32.6				25.1	0.0	18.8
Incr Delay (d2), s/veh	8.4	0.0	0.0	0.0	0.0	7.0				9.1	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
%ile BackOfQ(50%),veh/ln	14.3	0.0	0.0	0.0	0.0	3.5				10.5	0.0	0.3
LnGrp Delay(d),s/veh	29.0	0.0	0.0	0.0	0.0	39.5				34.2	0.0	18.8
LnGrp LOS	C					D				C		B
Approach Vol, veh/h		657			155						487	
Approach Delay, s/veh		29.0			39.5						33.5	
Approach LOS		C			D						C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		35.5				13.0		27.5
Change Period (Y+Rc), s		4.0				4.0		4.6
Max Green Setting (Gmax), s		41.0				16.0		30.4
Max Q Clear Time (g_c+I1), s		27.9				8.9		20.9
Green Ext Time (p_c), s		3.5				0.4		2.0

Intersection Summary		
HCM 2010 Ctrl Delay		31.9
HCM 2010 LOS		C

2040 Baseline Conditions without the Proposed Plan – Level of Service Calculations

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (veh/h)	137	502	206	73	1421	277	202	345	98	222	581	105
Future Volume (veh/h)	137	502	206	73	1421	277	202	345	98	222	581	105
Number	7	4	14	3	8	18	1	6	16	5	2	12
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		0.96	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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	137	502	206	73	1421	277	283	483	137	222	581	105
Adj No. of Lanes	1	2	1	1	2	1	2	2	0	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	169	1498	648	94	1350	585	296	692	195	292	903	386
Arrive On Green	0.10	0.42	0.42	0.05	0.38	0.38	0.09	0.26	0.26	0.08	0.26	0.26
Sat Flow, veh/h	1774	3539	1531	1774	3539	1533	3442	2698	759	3442	3539	1513
Grp Volume(v), veh/h	137	502	206	73	1421	277	283	315	305	222	581	105
Grp Sat Flow(s),veh/h/ln	1774	1770	1531	1774	1770	1533	1721	1770	1688	1721	1770	1513
Q Serve(g_s), s	7.1	8.9	8.3	3.8	35.5	12.7	7.6	15.0	15.2	5.9	13.6	5.2
Cycle Q Clear(g_c), s	7.1	8.9	8.3	3.8	35.5	12.7	7.6	15.0	15.2	5.9	13.6	5.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.45	1.00		1.00
Lane Grp Cap(c), veh/h	169	1498	648	94	1350	585	296	454	433	292	903	386
V/C Ratio(X)	0.81	0.34	0.32	0.77	1.05	0.47	0.96	0.70	0.70	0.76	0.64	0.27
Avail Cap(c_a), veh/h	210	1498	648	210	1350	585	296	542	517	296	1084	463
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.3	18.0	17.9	43.5	28.8	21.7	42.4	31.3	31.4	41.7	30.9	27.8
Incr Delay (d2), s/veh	17.5	0.1	0.3	12.5	39.7	0.6	40.7	3.1	3.4	10.9	1.0	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	4.3	4.4	3.6	2.2	24.7	5.5	5.3	7.7	7.5	3.2	6.7	2.2
LnGrp Delay(d),s/veh	58.8	18.2	18.2	56.1	68.5	22.3	83.0	34.4	34.8	52.6	31.9	28.1
LnGrp LOS	E	B	B	E	F	C	F	C	C	D	C	C
Approach Vol, veh/h		845			1771			903			908	
Approach Delay, s/veh		24.8			60.8			49.8			36.5	
Approach LOS		C			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	28.2	9.0	43.9	11.9	28.4	12.8	40.0
Change Period (Y+Rc), s	4.0	4.5	4.0	4.5	4.0	4.5	4.0	4.5
Max Green Setting (Gmax), s	8.0	28.5	11.0	35.5	8.0	28.5	11.0	35.5
Max Q Clear Time (g_c+I1), s	9.6	15.6	5.8	10.9	7.9	17.2	9.1	37.5
Green Ext Time (p_c), s	0.0	3.3	0.1	4.0	0.0	2.8	0.1	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	46.7
HCM 2010 LOS	D

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	81	213	108	481	351	63	86	296	207	156	947	92
Future Volume (veh/h)	81	213	108	481	351	63	86	296	207	156	947	92
Number	1	6	16	5	2	12	7	4	14	3	8	18
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		0.99	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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	81	213	108	481	351	63	86	296	207	156	947	129
Adj No. of Lanes	1	2	0	1	2	0	1	2	1	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	104	327	159	435	988	175	99	812	361	395	1401	617
Arrive On Green	0.06	0.14	0.14	0.25	0.33	0.33	0.06	0.23	0.23	0.22	0.40	0.40
Sat Flow, veh/h	1774	2287	1108	1774	2997	532	1774	3539	1575	1774	3539	1558
Grp Volume(v), veh/h	81	163	158	481	206	208	86	296	207	156	947	129
Grp Sat Flow(s),veh/h/ln	1774	1770	1626	1774	1770	1759	1774	1770	1575	1774	1770	1558
Q Serve(g_s), s	4.5	8.7	9.3	24.5	8.8	9.0	4.8	7.0	11.7	7.5	22.1	5.5
Cycle Q Clear(g_c), s	4.5	8.7	9.3	24.5	8.8	9.0	4.8	7.0	11.7	7.5	22.1	5.5
Prop In Lane	1.00		0.68	1.00		0.30	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	104	253	233	435	583	580	99	812	361	395	1401	617
V/C Ratio(X)	0.78	0.64	0.68	1.11	0.35	0.36	0.87	0.36	0.57	0.40	0.68	0.21
Avail Cap(c_a), veh/h	181	442	406	435	695	691	99	885	394	395	1401	617
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.4	40.4	40.7	37.7	25.4	25.5	46.8	32.4	34.2	33.1	24.9	19.9
Incr Delay (d2), s/veh	11.8	2.7	3.5	75.4	0.4	0.4	50.3	0.3	1.7	0.6	2.6	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	4.4	4.4	21.1	4.3	4.4	3.8	3.5	5.2	3.8	11.3	2.5
LnGrp Delay(d),s/veh	58.2	43.1	44.2	113.1	25.8	25.9	97.1	32.7	35.9	33.8	27.5	20.7
LnGrp LOS	E	D	D	F	C	C	F	C	D	C	C	C
Approach Vol, veh/h		402			895			589			1232	
Approach Delay, s/veh		46.6			72.7			43.2			27.6	
Approach LOS		D			E			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.4	37.5	25.7	27.4	28.0	18.8	9.1	44.1
Change Period (Y+Rc), s	3.5	4.5	3.5	4.5	3.5	4.5	3.5	4.5
Max Green Setting (Gmax), s	10.2	39.3	9.5	25.0	24.5	25.0	5.6	28.9
Max Q Clear Time (g_c+I1), s	6.5	11.0	9.5	13.7	26.5	11.3	6.8	24.1
Green Ext Time (p_c), s	0.0	2.4	0.0	2.0	0.0	1.4	0.0	2.8

Intersection Summary	
HCM 2010 Ctrl Delay	46.0
HCM 2010 LOS	D

Movement	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations						
Traffic Volume (veh/h)	405	184	216	509	727	315
Future Volume (veh/h)	405	184	216	509	727	315
Number	2	12	1	6	3	18
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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	418	190	223	525	749	325
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	478	395	260	835	800	946
Arrive On Green	0.26	0.26	0.15	0.45	0.45	0.45
Sat Flow, veh/h	1863	1540	1774	1863	1774	1583
Grp Volume(v), veh/h	418	190	223	525	749	325
Grp Sat Flow(s),veh/h/ln	1863	1540	1774	1863	1774	1583
Q Serve(g_s), s	19.1	9.3	10.9	19.3	35.7	9.3
Cycle Q Clear(g_c), s	19.1	9.3	10.9	19.3	35.7	9.3
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	478	395	260	835	800	946
V/C Ratio(X)	0.87	0.48	0.86	0.63	0.94	0.34
Avail Cap(c_a), veh/h	576	476	299	973	887	1024
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.7	28.1	37.1	18.9	23.2	9.1
Incr Delay (d2), s/veh	12.3	0.9	19.2	1.0	16.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.5	4.1	6.7	10.2	20.8	4.0
LnGrp Delay(d),s/veh	44.0	29.0	56.3	19.9	39.3	9.3
LnGrp LOS	D	C	E	B	D	A
Approach Vol, veh/h	608			748	1074	
Approach Delay, s/veh	39.3			30.7	30.2	
Approach LOS	D			C	C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	17.0	27.3				44.4		44.6
Change Period (Y+Rc), s	4.0	4.5				4.5		4.5
Max Green Setting (Gmax), s	15.0	27.5				46.5		44.5
Max Q Clear Time (g_c+I1), s	12.9	21.1				21.3		37.7
Green Ext Time (p_c), s	0.1	1.7				3.3		2.4

Intersection Summary	
HCM 2010 Ctrl Delay	32.7
HCM 2010 LOS	C

Movement	WBL	WBR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Volume (veh/h)	784	81	546	344	63	931
Future Volume (veh/h)	784	81	546	344	63	931
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		0.97	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1676	1676	1676	1676	1676	1676
Adj Flow Rate, veh/h	784	81	546	344	63	931
Adj No. of Lanes	1	1	1	1	1	2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	765	746	575	1158	71	1376
Arrive On Green	0.48	0.48	0.34	0.34	0.04	0.43
Sat Flow, veh/h	1597	1425	1676	1388	1597	3269
Grp Volume(v), veh/h	784	81	546	344	63	931
Grp Sat Flow(s),veh/h/ln	1597	1425	1676	1388	1597	1593
Q Serve(g_s), s	43.0	2.6	28.5	5.3	3.5	21.1
Cycle Q Clear(g_c), s	43.0	2.6	28.5	5.3	3.5	21.1
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	765	746	575	1158	71	1376
V/C Ratio(X)	1.03	0.11	0.95	0.30	0.89	0.68
Avail Cap(c_a), veh/h	765	746	579	1162	71	1384
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.4	10.8	28.8	1.9	42.7	20.5
Incr Delay (d2), s/veh	39.1	0.1	25.5	0.1	68.8	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	27.0	1.0	17.3	7.5	2.9	9.4
LnGrp Delay(d),s/veh	62.4	10.9	54.3	2.0	111.4	21.8
LnGrp LOS	F	B	D	A	F	C
Approach Vol, veh/h	865		890			994
Approach Delay, s/veh	57.6		34.1			27.5
Approach LOS	E		C			C

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	8.0	34.8				42.8		47.0
Change Period (Y+Rc), s	4.0	4.0				4.0		4.0
Max Green Setting (Gmax), s	4.0	31.0				39.0		43.0
Max Q Clear Time (g_c+I1), s	5.5	30.5				23.1		45.0
Green Ext Time (p_c), s	0.0	0.3				5.8		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	39.1
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	92	290	60	228	602	81	64	342	115	67	459	109
Future Volume (veh/h)	92	290	60	228	602	81	64	342	115	67	459	109
Number	7	4	14	3	8	18	5	2	12	1	6	16
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		0.98	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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	99	312	65	245	647	87	69	368	124	72	494	117
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
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	127	632	534	291	805	671	88	817	357	92	826	354
Arrive On Green	0.07	0.34	0.34	0.16	0.43	0.43	0.05	0.23	0.23	0.05	0.23	0.23
Sat Flow, veh/h	1774	1863	1574	1774	1863	1554	1774	3539	1545	1774	3539	1518
Grp Volume(v), veh/h	99	312	65	245	647	87	69	368	124	72	494	117
Grp Sat Flow(s),veh/h/ln	1774	1863	1574	1774	1863	1554	1774	1770	1545	1774	1770	1518
Q Serve(g_s), s	4.0	9.6	2.1	9.7	21.8	2.4	2.8	6.4	4.8	2.9	9.0	4.6
Cycle Q Clear(g_c), s	4.0	9.6	2.1	9.7	21.8	2.4	2.8	6.4	4.8	2.9	9.0	4.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	127	632	534	291	805	671	88	817	357	92	826	354
V/C Ratio(X)	0.78	0.49	0.12	0.84	0.80	0.13	0.78	0.45	0.35	0.78	0.60	0.33
Avail Cap(c_a), veh/h	234	774	654	573	1131	943	184	1064	465	236	1167	501
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.9	18.9	16.4	29.2	17.8	12.3	33.9	23.8	23.2	33.8	24.6	23.0
Incr Delay (d2), s/veh	3.9	1.0	0.2	2.5	4.1	0.1	5.6	0.8	1.2	5.3	1.5	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	5.1	0.9	4.9	12.0	1.1	1.5	3.2	2.2	1.6	4.6	2.0
LnGrp Delay(d),s/veh	36.8	19.9	16.6	31.8	21.9	12.5	39.5	24.6	24.4	39.0	26.1	24.1
LnGrp LOS	D	B	B	C	C	B	D	C	C	D	C	C
Approach Vol, veh/h		476			979			561			683	
Approach Delay, s/veh		23.0			23.5			26.4			27.2	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.3	20.9	15.3	28.7	7.1	21.0	8.7	35.4
Change Period (Y+Rc), s	3.5	* 4.2	3.5	* 4.2	3.5	* 4.2	3.5	* 4.2
Max Green Setting (Gmax), s	9.6	* 22	23.3	* 30	7.5	* 24	9.5	* 44
Max Q Clear Time (g_c+I1), s	4.9	8.4	11.7	11.6	4.8	11.0	6.0	23.8
Green Ext Time (p_c), s	0.0	3.9	0.3	3.1	0.0	4.9	0.0	7.4

Intersection Summary	
HCM 2010 Ctrl Delay	25.0
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	432	34	72	796	91	42	157	65	72	162	92
Future Volume (veh/h)	35	432	34	72	796	91	42	157	65	72	162	92
Number	7	4	14	3	8	18	5	2	12	1	6	16
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	0.99		0.99	0.99		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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	36	445	35	74	821	94	52	194	80	83	186	106
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	0	1	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.81	0.81	0.81	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	264	1440	113	433	1385	159	140	474	177	183	389	197
Arrive On Green	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
Sat Flow, veh/h	607	3322	260	907	3196	366	163	1094	409	254	899	454
Grp Volume(v), veh/h	36	236	244	74	455	460	326	0	0	375	0	0
Grp Sat Flow(s),veh/h/ln	607	1770	1813	907	1770	1793	1666	0	0	1607	0	0
Q Serve(g_s), s	2.9	5.2	5.3	3.5	11.8	11.8	0.0	0.0	0.0	1.8	0.0	0.0
Cycle Q Clear(g_c), s	14.6	5.2	5.3	8.8	11.8	11.8	7.6	0.0	0.0	9.4	0.0	0.0
Prop In Lane	1.00		0.14	1.00		0.20	0.16		0.25	0.22		0.28
Lane Grp Cap(c), veh/h	264	767	786	433	767	777	791	0	0	770	0	0
V/C Ratio(X)	0.14	0.31	0.31	0.17	0.59	0.59	0.41	0.00	0.00	0.49	0.00	0.00
Avail Cap(c_a), veh/h	264	767	786	433	767	777	791	0	0	770	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	18.5	11.1	11.1	14.0	13.0	13.0	11.8	0.0	0.0	12.2	0.0	0.0
Incr Delay (d2), s/veh	1.1	1.0	1.0	0.9	3.4	3.3	1.6	0.0	0.0	2.2	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	0.6	2.8	2.9	1.0	6.4	6.5	4.1	0.0	0.0	4.9	0.0	0.0
LnGrp Delay(d),s/veh	19.6	12.2	12.2	14.9	16.3	16.3	13.4	0.0	0.0	14.4	0.0	0.0
LnGrp LOS	B	B	B	B	B	B	B			B		
Approach Vol, veh/h		516			989			326			375	
Approach Delay, s/veh		12.7			16.2			13.4			14.4	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		30.0		30.0		30.0		30.0
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0
Max Green Setting (Gmax), s		26.0		26.0		26.0		26.0
Max Q Clear Time (g_c+I1), s		9.6		16.6		11.4		13.8
Green Ext Time (p_c), s		1.9		2.1		2.1		4.9

Intersection Summary	
HCM 2010 Ctrl Delay	14.7
HCM 2010 LOS	B

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	371	187	125	286	1359	609
Future Volume (veh/h)	371	187	125	286	1359	609
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	382	193	129	295	1401	628
Adj No. of Lanes	2	1	1	2	2	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	596	274	262	2432	1701	744
Arrive On Green	0.17	0.17	0.15	0.69	0.48	0.48
Sat Flow, veh/h	3442	1583	1774	3632	3632	1547
Grp Volume(v), veh/h	382	193	129	295	1401	628
Grp Sat Flow(s),veh/h/ln	1721	1583	1774	1770	1770	1547
Q Serve(g_s), s	7.0	7.8	4.5	1.9	23.1	24.1
Cycle Q Clear(g_c), s	7.0	7.8	4.5	1.9	23.1	24.1
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	596	274	262	2432	1701	744
V/C Ratio(X)	0.64	0.70	0.49	0.12	0.82	0.84
Avail Cap(c_a), veh/h	1560	718	548	2432	1807	790
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	26.1	26.5	26.6	3.6	15.2	15.4
Incr Delay (d2), s/veh	1.2	3.3	1.4	0.0	3.1	8.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	6.9	2.3	0.9	11.8	11.8
LnGrp Delay(d),s/veh	27.3	29.8	28.1	3.7	18.3	23.4
LnGrp LOS	C	C	C	A	B	C
Approach Vol, veh/h	575			424	2029	
Approach Delay, s/veh	28.1			11.1	19.9	
Approach LOS	C			B	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		52.0		16.0	14.0	38.0		
Change Period (Y+Rc), s		5.3		* 4.2	4.0	5.3		
Max Green Setting (Gmax), s		34.7		* 31	21.0	34.7		
Max Q Clear Time (g_c+I1), s		3.9		9.8	6.5	26.1		
Green Ext Time (p_c), s		1.8		2.0	0.2	6.5		

Intersection Summary	
HCM 2010 Ctrl Delay	20.2
HCM 2010 LOS	C

Notes

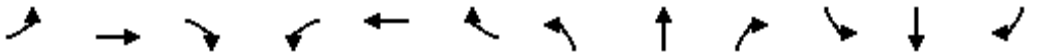
Intersection	
Int Delay, s/veh	9.8

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	0	608	53	0	747	650	93	0	3	0	0	170
Future Vol, veh/h	0	608	53	0	747	650	93	0	3	0	0	170
Conflicting Peds, #/hr	0	0	1	1	0	0	0	0	1	1	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	Free	-	-	Yield	-	-	None
Storage Length	-	-	-	-	-	250	0	-	200	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	94	94	94	88	88	88	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	668	58	0	795	691	106	0	3	0	0	191

Major/Minor	Major1			Major2			Minor2		Minor1			
Conflicting Flow All	-	0	0	-	-	0	1129	-	399	-	-	364
Stage 1	-	-	-	-	-	-	795	-	-	-	-	-
Stage 2	-	-	-	-	-	-	334	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	7.54	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	3.52	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	0	-	0	159	0	601	0	0	633
Stage 1	0	-	-	0	-	0	347	0	-	0	0	-
Stage 2	0	-	-	0	-	0	653	0	-	0	0	-
Platoon blocked, %		-	-		-							
Mov Cap-1 Maneuver	-	-	-	-	-	-	111	-	600	-	-	632
Mov Cap-2 Maneuver	-	-	-	-	-	-	111	-	-	-	-	-
Stage 1	-	-	-	-	-	-	347	-	-	-	-	-
Stage 2	-	-	-	-	-	-	456	-	-	-	-	-

Approach	NB	SB	NE	SW
HCM Control Delay, s	0	0	140.8	13.1
HCM LOS			F	B

Minor Lane/Major Mvmt	NELn1	NELn2	NBT	NBR	SBT	SWLn1
Capacity (veh/h)	111	600	-	-	-	632
HCM Lane V/C Ratio	0.952	0.006	-	-	-	0.302
HCM Control Delay (s)	145	11	-	-	-	13.1
HCM Lane LOS	F	B	-	-	-	B
HCM 95th %tile Q(veh)	6	0	-	-	-	1.3



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	83	152	122	100	252	27	171	670	105	82	1136	220
Future Volume (vph)	83	152	122	100	252	27	171	670	105	82	1136	220
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0		4.0	4.5		4.0	4.5	4.5
Lane Util. Factor	0.95	0.95	1.00		1.00		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.96		1.00		1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85		0.99		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00		0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1681	1765	1516		1819		1770	3457		1770	3539	1556
Flt Permitted	0.95	1.00	1.00		0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1681	1765	1516		1819		1770	3457		1770	3539	1556
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Growth Factor (vph)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Adj. Flow (vph)	83	152	122	100	252	27	171	670	105	82	1136	220
RTOR Reduction (vph)	0	0	99	0	2	0	0	12	0	0	0	153
Lane Group Flow (vph)	75	160	23	0	377	0	171	763	0	82	1136	67
Confl. Peds. (#/hr)			30	30								3
Confl. Bikes (#/hr)						1			2			2
Turn Type	Split	NA	Perm	Split	NA		Prot	NA		Prot	NA	Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4									6
Actuated Green, G (s)	18.7	18.7	18.7		23.3		11.0	33.4		8.1	30.5	30.5
Effective Green, g (s)	18.7	18.7	18.7		23.3		11.0	33.4		8.1	30.5	30.5
Actuated g/C Ratio	0.19	0.19	0.19		0.23		0.11	0.33		0.08	0.30	0.30
Clearance Time (s)	4.0	4.0	4.0		4.0		4.0	4.5		4.0	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0		3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	314	330	283		423		194	1154		143	1079	474
v/s Ratio Prot	0.04	c0.09			c0.21		c0.10	c0.22		0.05	c0.32	
v/s Ratio Perm			0.02									0.04
v/c Ratio	0.24	0.48	0.08		0.89		0.88	0.66		0.57	1.05	0.14
Uniform Delay, d1	34.6	36.3	33.6		37.1		43.9	28.5		44.3	34.8	25.2
Progression Factor	1.00	1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.4	1.1	0.1		20.2		34.0	1.4		5.5	42.4	0.6
Delay (s)	35.0	37.5	33.7		57.3		77.9	29.9		49.7	77.2	25.9
Level of Service	C	D	C		E		E	C		D	E	C
Approach Delay (s)		35.7			57.3			38.6			67.7	
Approach LOS		D			E			D			E	

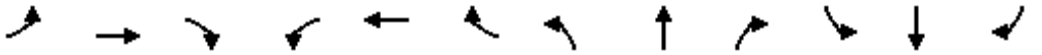
Intersection Summary			
HCM 2000 Control Delay	54.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	93.3%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	458	1172	8	4	461	181	3	1	4	285	7	279
Future Volume (veh/h)	458	1172	8	4	461	181	3	1	4	285	7	279
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	458	1172	8	4	461	181	3	1	4	285	7	279
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	447	1877	13	8	681	265	189	81	192	490	497	422
Arrive On Green	0.25	0.52	0.52	0.00	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27
Sat Flow, veh/h	1774	3603	25	1774	2491	970	416	304	720	1405	1863	1582
Grp Volume(v), veh/h	458	576	604	4	327	315	8	0	0	285	7	279
Grp Sat Flow(s),veh/h/ln	1774	1770	1858	1774	1770	1691	1439	0	0	1405	1863	1582
Q Serve(g_s), s	16.0	14.7	14.7	0.1	10.4	10.6	0.0	0.0	0.0	11.6	0.2	10.0
Cycle Q Clear(g_c), s	16.0	14.7	14.7	0.1	10.4	10.6	0.2	0.0	0.0	11.8	0.2	10.0
Prop In Lane	1.00		0.01	1.00		0.57	0.37		0.50	1.00		1.00
Lane Grp Cap(c), veh/h	447	922	968	8	484	462	462	0	0	490	497	422
V/C Ratio(X)	1.03	0.62	0.62	0.53	0.67	0.68	0.02	0.00	0.00	0.58	0.01	0.66
Avail Cap(c_a), veh/h	447	922	968	447	847	809	969	0	0	1022	1202	1021
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.8	10.8	10.8	31.6	20.6	20.6	17.1	0.0	0.0	21.4	17.1	20.7
Incr Delay (d2), s/veh	49.1	3.2	3.0	19.2	2.3	2.5	0.0	0.0	0.0	1.6	0.0	2.5
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	13.8	7.8	8.2	0.1	5.4	5.2	0.1	0.0	0.0	4.8	0.1	4.6
LnGrp Delay(d),s/veh	72.9	14.0	13.8	50.8	22.9	23.1	17.2	0.0	0.0	22.9	17.1	23.2
LnGrp LOS	F	B	B	D	C	C	B			C	B	C
Approach Vol, veh/h		1638			646			8			571	
Approach Delay, s/veh		30.4			23.2			17.2			23.0	
Approach LOS		C			C			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	20.0	22.0		21.6	4.3	37.7		21.6
Change Period (Y+Rc), s	4.0	4.6		4.6	4.0	4.6		* 4.6
Max Green Setting (Gmax), s	16.0	30.4		40.4	16.0	30.4		* 41
Max Q Clear Time (g_c+I1), s	18.0	12.6		2.2	2.1	16.7		13.8
Green Ext Time (p_c), s	0.0	4.8		0.0	0.0	7.9		3.1

Intersection Summary	
HCM 2010 Ctrl Delay	27.3
HCM 2010 LOS	C

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	107	19	382	325	30	5	176	346	128	11	973	133
Future Volume (veh/h)	107	19	382	325	30	5	176	346	128	11	973	133
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.97	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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	107	19	382	325	30	5	176	346	128	11	973	133
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	136	440	546	581	590	501	193	1428	871	19	1081	470
Arrive On Green	0.08	0.24	0.24	0.16	0.32	0.32	0.11	0.40	0.40	0.01	0.31	0.31
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1543	1774	3539	1540
Grp Volume(v), veh/h	107	19	382	325	30	5	176	346	128	11	973	133
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1543	1774	1770	1540
Q Serve(g_s), s	5.4	0.7	19.1	12.1	1.0	0.2	9.0	5.9	3.7	0.6	24.2	6.0
Cycle Q Clear(g_c), s	5.4	0.7	19.1	12.1	1.0	0.2	9.0	5.9	3.7	0.6	24.2	6.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	136	440	546	581	590	501	193	1428	871	19	1081	470
V/C Ratio(X)	0.79	0.04	0.70	0.56	0.05	0.01	0.91	0.24	0.15	0.58	0.90	0.28
Avail Cap(c_a), veh/h	232	507	603	649	628	534	193	1428	871	77	1128	491
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.7	27.1	26.0	19.3	21.8	21.5	40.5	18.1	9.7	45.3	30.6	24.3
Incr Delay (d2), s/veh	9.6	0.0	3.2	0.9	0.0	0.0	40.9	0.1	0.1	25.2	9.7	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	3.0	0.4	8.8	6.0	0.5	0.1	6.6	2.9	1.6	0.4	13.2	2.6
LnGrp Delay(d),s/veh	51.3	27.1	29.2	20.2	21.8	21.5	81.4	18.2	9.8	70.5	40.3	24.6
LnGrp LOS	D	C	C	C	C	C	F	B	A	E	D	C
Approach Vol, veh/h		508			360			650			1117	
Approach Delay, s/veh		33.8			20.3			33.7			38.7	
Approach LOS		C			C			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.0	42.3	18.4	26.2	14.0	33.3	11.0	33.6
Change Period (Y+Rc), s	4.0	5.2	4.0	4.5	4.0	5.2	4.0	4.5
Max Green Setting (Gmax), s	4.0	35.3	18.0	25.0	10.0	29.3	12.0	31.0
Max Q Clear Time (g_c+I1), s	2.6	7.9	14.1	21.1	11.0	26.2	7.4	3.0
Green Ext Time (p_c), s	0.0	2.5	0.4	0.6	0.0	1.9	0.1	0.1

Intersection Summary	
HCM 2010 Ctrl Delay	34.0
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	103	68	316	26	64	45	307	183	176	658	36
Future Volume (veh/h)	14	103	68	316	26	64	45	307	183	176	658	36
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	22	163	108	372	31	0	51	349	0	229	855	0
Adj No. of Lanes	1	1	0	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.63	0.63	0.63	0.85	0.85	0.85	0.88	0.88	0.88	0.77	0.77	0.77
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	721	487	323	500	867	737	77	737	330	270	1121	501
Arrive On Green	0.47	0.47	0.47	0.47	0.47	0.00	0.04	0.21	0.00	0.15	0.32	0.00
Sat Flow, veh/h	1371	1046	693	1103	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	22	0	271	372	31	0	51	349	0	229	855	0
Grp Sat Flow(s),veh/h/ln	1371	0	1739	1103	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	0.7	0.0	7.5	24.4	0.7	0.0	2.1	6.6	0.0	9.5	16.5	0.0
Cycle Q Clear(g_c), s	1.4	0.0	7.5	31.9	0.7	0.0	2.1	6.6	0.0	9.5	16.5	0.0
Prop In Lane	1.00		0.40	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	721	0	810	500	867	737	77	737	330	270	1121	501
V/C Ratio(X)	0.03	0.00	0.33	0.74	0.04	0.00	0.66	0.47	0.00	0.85	0.76	0.00
Avail Cap(c_a), veh/h	814	0	928	575	994	845	375	1421	636	375	1421	636
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	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	11.4	0.0	12.8	22.9	11.0	0.0	35.7	26.3	0.0	31.3	23.3	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.3	5.1	0.0	0.0	3.6	0.7	0.0	9.4	2.3	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	0.3	0.0	3.6	8.0	0.4	0.0	1.1	3.3	0.0	5.3	8.3	0.0
LnGrp Delay(d),s/veh	11.4	0.0	13.2	28.0	11.0	0.0	39.2	27.0	0.0	40.7	25.6	0.0
LnGrp LOS	B		B	C	B		D	C		D	C	
Approach Vol, veh/h		293			403			400			1084	
Approach Delay, s/veh		13.0			26.7			28.6			28.8	
Approach LOS		B			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	15.5	20.4		39.9	7.3	28.6		39.9
Change Period (Y+Rc), s	4.0	4.6		4.6	4.0	4.6		4.6
Max Green Setting (Gmax), s	16.0	30.4		40.4	16.0	30.4		40.4
Max Q Clear Time (g_c+I1), s	11.5	8.6		9.5	4.1	18.5		33.9
Green Ext Time (p_c), s	0.1	2.8		2.4	0.0	5.5		1.4

Intersection Summary	
HCM 2010 Ctrl Delay	26.2
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	214	336	911	31	277	61	296	132	35	33	561	73
Future Volume (veh/h)	214	336	911	31	277	61	296	132	35	33	561	73
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	214	336	0	31	277	61	296	132	35	33	561	73
Adj No. of Lanes	1	1	1	1	1	0	2	1	0	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	260	619	527	46	313	69	483	511	136	48	878	390
Arrive On Green	0.15	0.33	0.00	0.03	0.21	0.21	0.14	0.36	0.36	0.03	0.25	0.25
Sat Flow, veh/h	1774	1863	1583	1774	1477	325	3442	1414	375	1774	3539	1574
Grp Volume(v), veh/h	214	336	0	31	0	338	296	0	167	33	561	73
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	0	1803	1721	0	1789	1774	1770	1574
Q Serve(g_s), s	8.3	10.4	0.0	1.2	0.0	12.9	5.7	0.0	4.7	1.3	10.1	2.6
Cycle Q Clear(g_c), s	8.3	10.4	0.0	1.2	0.0	12.9	5.7	0.0	4.7	1.3	10.1	2.6
Prop In Lane	1.00		1.00	1.00		0.18	1.00		0.21	1.00		1.00
Lane Grp Cap(c), veh/h	260	619	527	46	0	382	483	0	647	48	878	390
V/C Ratio(X)	0.82	0.54	0.00	0.68	0.00	0.88	0.61	0.00	0.26	0.69	0.64	0.19
Avail Cap(c_a), veh/h	375	655	557	137	0	393	484	0	1196	100	2067	919
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	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.4	19.3	0.0	34.3	0.0	27.2	28.7	0.0	16.0	34.3	23.9	21.1
Incr Delay (d2), s/veh	9.5	1.0	0.0	6.4	0.0	20.5	2.0	0.0	0.4	6.4	0.9	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	4.7	5.5	0.0	0.7	0.0	8.6	2.8	0.0	2.4	0.7	5.0	1.2
LnGrp Delay(d),s/veh	38.9	20.3	0.0	40.7	0.0	47.7	30.7	0.0	16.4	40.7	24.8	21.3
LnGrp LOS	D	C		D		D	C		B	D	C	C
Approach Vol, veh/h		550			369			463			667	
Approach Delay, s/veh		27.5			47.1			25.6			25.2	
Approach LOS		C			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.5	22.1	6.3	28.1	6.4	30.2	14.9	19.6
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	10.0	41.5	5.5	25.0	4.0	47.5	15.0	15.5
Max Q Clear Time (g_c+I1), s	7.7	12.1	3.2	12.4	3.3	6.7	10.3	14.9
Green Ext Time (p_c), s	0.2	5.1	0.0	1.7	0.0	1.8	0.2	0.1

Intersection Summary	
HCM 2010 Ctrl Delay	29.9
HCM 2010 LOS	C

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	0	566	373	13	506	0	38	1	366	0	0	0
Future Volume (veh/h)	0	566	373	13	506	0	38	1	366	0	0	0
Number	5	2	12	1	6	16	7	4	14			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	0	1863	1863	1900	1863	0	1900	1863	1863			
Adj Flow Rate, veh/h	0	566	373	13	506	0	38	1	366			
Adj No. of Lanes	0	1	1	0	1	0	0	1	1			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Percent Heavy Veh, %	0	2	2	2	2	0	2	2	2			
Cap, veh/h	0	804	666	118	784	0	512	13	468			
Arrive On Green	0.00	0.43	0.43	0.43	0.43	0.00	0.30	0.30	0.30			
Sat Flow, veh/h	0	1863	1543	15	1815	0	1731	46	1583			
Grp Volume(v), veh/h	0	566	373	519	0	0	39	0	366			
Grp Sat Flow(s),veh/h/ln	0	1863	1543	1830	0	0	1776	0	1583			
Q Serve(g_s), s	0.0	8.2	6.0	0.0	0.0	0.0	0.5	0.0	7.0			
Cycle Q Clear(g_c), s	0.0	8.2	6.0	7.2	0.0	0.0	0.5	0.0	7.0			
Prop In Lane	0.00		1.00	0.03		0.00	0.97		1.00			
Lane Grp Cap(c), veh/h	0	804	666	902	0	0	525	0	468			
V/C Ratio(X)	0.00	0.70	0.56	0.58	0.00	0.00	0.07	0.00	0.78			
Avail Cap(c_a), veh/h	0	1297	1074	1370	0	0	968	0	863			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	7.7	7.0	7.4	0.0	0.0	8.4	0.0	10.7			
Incr Delay (d2), s/veh	0.0	1.1	0.7	0.6	0.0	0.0	0.1	0.0	2.9			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	4.3	2.6	3.8	0.0	0.0	0.3	0.0	3.4			
LnGrp Delay(d),s/veh	0.0	8.8	7.8	8.0	0.0	0.0	8.4	0.0	13.5			
LnGrp LOS		A	A	A			A		B			
Approach Vol, veh/h		939			519			405				
Approach Delay, s/veh		8.4			8.0			13.0				
Approach LOS		A			A			B				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		18.8		14.3		18.8		
Change Period (Y+Rc), s		4.5		4.5		4.5		
Max Green Setting (Gmax), s		23.0		18.0		23.0		
Max Q Clear Time (g_c+I1), s		10.2		9.0		9.2		
Green Ext Time (p_c), s		4.0		1.0		2.7		

Intersection Summary	
HCM 2010 Ctrl Delay	9.3
HCM 2010 LOS	A

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	491	109	0	0	67	91	0	0	0	505	1	28
Future Volume (veh/h)	491	109	0	0	67	91	0	0	0	505	1	28
Number	5	2	12	1	6	16				3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	0	0	1863	1900				1900	1863	1863
Adj Flow Rate, veh/h	491	109	0	0	67	91				505	1	28
Adj No. of Lanes	0	1	0	0	1	0				0	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Percent Heavy Veh, %	2	2	0	0	2	2				2	2	2
Cap, veh/h	570	126	0	0	84	114				570	1	510
Arrive On Green	0.39	0.39	0.00	0.00	0.12	0.12				0.32	0.32	0.32
Sat Flow, veh/h	1464	325	0	0	717	974				1771	4	1583
Grp Volume(v), veh/h	600	0	0	0	0	158				506	0	28
Grp Sat Flow(s),veh/h/ln	1790	0	0	0	0	1691				1774	0	1583
Q Serve(g_s), s	22.5	0.0	0.0	0.0	0.0	6.7				19.8	0.0	0.9
Cycle Q Clear(g_c), s	22.5	0.0	0.0	0.0	0.0	6.7				19.8	0.0	0.9
Prop In Lane	0.82		0.00	0.00		0.58				1.00		1.00
Lane Grp Cap(c), veh/h	696	0	0	0	0	197				571	0	510
V/C Ratio(X)	0.86	0.00	0.00	0.00	0.00	0.80				0.89	0.00	0.05
Avail Cap(c_a), veh/h	1151	0	0	0	0	278				690	0	615
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	0.00	0.00	1.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	20.5	0.0	0.0	0.0	0.0	31.4				23.5	0.0	17.1
Incr Delay (d2), s/veh	3.8	0.0	0.0	0.0	0.0	10.6				11.6	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
%ile BackOfQ(50%),veh/ln	11.7	0.0	0.0	0.0	0.0	3.7				11.4	0.0	0.4
LnGrp Delay(d),s/veh	24.3	0.0	0.0	0.0	0.0	42.1				35.1	0.0	17.1
LnGrp LOS	C					D				D		B
Approach Vol, veh/h		600			158						534	
Approach Delay, s/veh		24.3			42.1						34.2	
Approach LOS		C			D						C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		32.4				12.5		28.1
Change Period (Y+Rc), s		4.0				4.0		4.6
Max Green Setting (Gmax), s		47.0				12.0		28.4
Max Q Clear Time (g_c+I1), s		24.5				8.7		21.8
Green Ext Time (p_c), s		3.9				0.2		1.7

Intersection Summary	
HCM 2010 Ctrl Delay	30.6
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (veh/h)	395	1463	780	122	799	300	257	470	106	241	584	151
Future Volume (veh/h)	395	1463	780	122	799	300	257	470	106	241	584	151
Number	7	4	14	3	8	18	1	6	16	5	2	12
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		0.96	1.00		0.95	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	395	1463	780	122	799	300	257	470	106	241	584	151
Adj No. of Lanes	1	2	1	1	2	1	2	2	0	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	374	1530	661	131	1045	450	218	715	160	218	889	379
Arrive On Green	0.21	0.43	0.43	0.07	0.30	0.30	0.06	0.25	0.25	0.06	0.25	0.25
Sat Flow, veh/h	1774	3539	1530	1774	3539	1524	3442	2845	636	3442	3539	1508
Grp Volume(v), veh/h	395	1463	780	122	799	300	257	291	285	241	584	151
Grp Sat Flow(s),veh/h/ln	1774	1770	1530	1774	1770	1524	1721	1770	1712	1721	1770	1508
Q Serve(g_s), s	20.0	37.9	41.0	6.5	19.5	16.4	6.0	14.0	14.2	6.0	14.0	7.9
Cycle Q Clear(g_c), s	20.0	37.9	41.0	6.5	19.5	16.4	6.0	14.0	14.2	6.0	14.0	7.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.37	1.00		1.00
Lane Grp Cap(c), veh/h	374	1530	661	131	1045	450	218	445	430	218	889	379
V/C Ratio(X)	1.06	0.96	1.18	0.93	0.76	0.67	1.18	0.65	0.66	1.11	0.66	0.40
Avail Cap(c_a), veh/h	374	1530	661	131	1045	450	218	541	523	218	1082	461
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.4	26.0	26.9	43.7	30.4	29.3	44.4	31.8	31.9	44.4	31.8	29.5
Incr Delay (d2), s/veh	62.0	14.0	95.7	58.0	3.4	3.7	118.2	2.1	2.3	92.5	1.1	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	16.1	21.5	34.8	5.3	10.0	7.4	6.4	7.0	6.9	5.6	6.9	3.3
LnGrp Delay(d),s/veh	99.4	40.0	122.6	101.7	33.8	33.0	162.7	33.9	34.2	137.0	32.9	30.2
LnGrp LOS	F	D	F	F	C	C	F	C	C	F	C	C
Approach Vol, veh/h		2638			1221			833			976	
Approach Delay, s/veh		73.3			40.4			73.7			58.2	
Approach LOS		E			D			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	28.3	11.0	45.5	10.0	28.3	24.0	32.5
Change Period (Y+Rc), s	4.0	4.5	4.0	4.5	4.0	4.5	4.0	4.5
Max Green Setting (Gmax), s	6.0	29.0	7.0	41.0	6.0	29.0	20.0	28.0
Max Q Clear Time (g_c+I1), s	8.0	16.0	8.5	43.0	8.0	16.2	22.0	21.5
Green Ext Time (p_c), s	0.0	3.5	0.0	0.0	0.0	2.7	0.0	3.4

Intersection Summary	
HCM 2010 Ctrl Delay	63.7
HCM 2010 LOS	E

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	160	293	232	220	380	211	199	617	340	148	623	63
Future Volume (veh/h)	160	293	232	220	380	211	199	617	340	148	623	63
Number	1	6	16	5	2	12	7	4	14	3	8	18
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		0.98
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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	160	293	232	220	380	211	199	654	340	148	623	63
Adj No. of Lanes	1	2	0	1	2	0	1	2	1	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	194	403	308	227	508	277	452	1332	586	185	799	350
Arrive On Green	0.11	0.21	0.21	0.13	0.23	0.23	0.26	0.38	0.38	0.10	0.23	0.23
Sat Flow, veh/h	1774	1884	1444	1774	2187	1194	1774	3539	1558	1774	3539	1551
Grp Volume(v), veh/h	160	275	250	220	306	285	199	654	340	148	623	63
Grp Sat Flow(s),veh/h/ln	1774	1770	1558	1774	1770	1611	1774	1770	1558	1774	1770	1551
Q Serve(g_s), s	7.9	13.0	13.6	11.1	14.5	14.8	8.5	12.7	15.7	7.3	14.9	2.9
Cycle Q Clear(g_c), s	7.9	13.0	13.6	11.1	14.5	14.8	8.5	12.7	15.7	7.3	14.9	2.9
Prop In Lane	1.00		0.93	1.00		0.74	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	194	378	333	227	411	374	452	1332	586	185	799	350
V/C Ratio(X)	0.83	0.73	0.75	0.97	0.75	0.76	0.44	0.49	0.58	0.80	0.78	0.18
Avail Cap(c_a), veh/h	227	501	442	227	501	457	452	1332	586	227	1003	440
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.3	32.9	33.2	39.1	32.1	32.2	28.1	21.5	22.4	39.4	32.7	28.1
Incr Delay (d2), s/veh	19.1	3.6	5.1	52.6	4.8	5.9	0.7	1.3	4.1	15.0	3.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.9	6.7	6.3	8.8	7.6	7.2	4.2	6.4	7.4	4.3	7.6	1.3
LnGrp Delay(d),s/veh	58.4	36.5	38.2	91.7	36.9	38.2	28.8	22.8	26.5	54.4	35.9	28.4
LnGrp LOS	E	D	D	F	D	D	C	C	C	D	D	C
Approach Vol, veh/h		685			811			1193			834	
Approach Delay, s/veh		42.2			52.2			24.9			38.6	
Approach LOS		D			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.3	25.4	12.9	38.4	15.0	23.7	26.5	24.8
Change Period (Y+Rc), s	3.5	4.5	3.5	4.5	3.5	4.5	3.5	4.5
Max Green Setting (Gmax), s	11.5	25.5	11.5	25.5	11.5	25.5	11.5	25.5
Max Q Clear Time (g_c+I1), s	9.9	16.8	9.3	17.7	13.1	15.6	10.5	16.9
Green Ext Time (p_c), s	0.1	2.3	0.1	3.4	0.0	2.2	0.1	2.8

Intersection Summary	
HCM 2010 Ctrl Delay	37.8
HCM 2010 LOS	D

Movement	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations						
Traffic Volume (veh/h)	720	671	262	379	249	168
Future Volume (veh/h)	720	671	262	379	249	168
Number	2	12	1	6	3	18
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.98	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	720	671	262	379	249	168
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	936	779	275	1321	309	522
Arrive On Green	0.50	0.50	0.16	0.71	0.17	0.17
Sat Flow, veh/h	1863	1550	1774	1863	1774	1583
Grp Volume(v), veh/h	720	671	262	379	249	168
Grp Sat Flow(s),veh/h/ln	1863	1550	1774	1863	1774	1583
Q Serve(g_s), s	24.2	29.4	11.3	5.7	10.4	6.2
Cycle Q Clear(g_c), s	24.2	29.4	11.3	5.7	10.4	6.2
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	936	779	275	1321	309	522
V/C Ratio(X)	0.77	0.86	0.95	0.29	0.81	0.32
Avail Cap(c_a), veh/h	1205	1003	275	1590	574	758
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.6	16.9	32.4	4.1	30.7	19.4
Incr Delay (d2), s/veh	2.3	6.3	41.1	0.1	4.9	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	13.0	13.8	8.7	2.9	5.5	2.8
LnGrp Delay(d),s/veh	17.9	23.2	73.5	4.2	35.6	19.8
LnGrp LOS	B	C	E	A	D	B
Approach Vol, veh/h	1391			641	417	
Approach Delay, s/veh	20.4			32.5	29.2	
Approach LOS	C			C	C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	16.0	43.3				59.3		18.0
Change Period (Y+Rc), s	4.0	4.5				4.5		4.5
Max Green Setting (Gmax), s	12.0	50.0				66.0		25.0
Max Q Clear Time (g_c+I1), s	13.3	31.4				7.7		12.4
Green Ext Time (p_c), s	0.0	7.5				2.3		1.1

Intersection Summary	
HCM 2010 Ctrl Delay	25.1
HCM 2010 LOS	C

Movement	WBL	WBR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Volume (veh/h)	437	75	846	860	122	708
Future Volume (veh/h)	437	75	846	860	122	708
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		0.98	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	437	75	846	860	122	708
Adj No. of Lanes	1	1	1	1	1	2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	509	454	789	1109	160	2024
Arrive On Green	0.29	0.29	0.42	0.42	0.09	0.57
Sat Flow, veh/h	1774	1583	1863	1546	1774	3632
Grp Volume(v), veh/h	437	75	846	860	122	708
Grp Sat Flow(s),veh/h/ln	1774	1583	1863	1546	1774	1770
Q Serve(g_s), s	14.0	2.1	25.5	21.9	4.0	6.4
Cycle Q Clear(g_c), s	14.0	2.1	25.5	21.9	4.0	6.4
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	509	454	789	1109	160	2024
V/C Ratio(X)	0.86	0.17	1.07	0.78	0.76	0.35
Avail Cap(c_a), veh/h	766	684	789	1109	486	2675
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	20.3	16.1	17.3	5.7	26.8	6.9
Incr Delay (d2), s/veh	6.4	0.2	53.2	3.5	7.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.7	1.0	24.6	15.2	2.3	3.2
LnGrp Delay(d),s/veh	26.7	16.2	70.5	9.2	34.1	7.0
LnGrp LOS	C	B	F	A	C	A
Approach Vol, veh/h	512		1706			830
Approach Delay, s/veh	25.2		39.6			11.0
Approach LOS	C		D			B

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	8.9	30.0				38.9		21.3
Change Period (Y+Rc), s	3.5	4.5				4.5		4.0
Max Green Setting (Gmax), s	16.5	25.5				45.5		26.0
Max Q Clear Time (g_c+I1), s	6.0	27.5				8.4		16.0
Green Ext Time (p_c), s	0.2	0.0				5.4		1.2

Intersection Summary	
HCM 2010 Ctrl Delay	29.4
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	106	459	102	88	325	110	241	667	156	125	673	212
Future Volume (veh/h)	106	459	102	88	325	110	241	667	156	125	673	212
Number	7	4	14	3	8	18	5	2	12	1	6	16
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		0.96	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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	106	459	102	88	325	110	241	667	156	125	673	212
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	136	501	406	113	478	388	233	1459	637	155	1265	540
Arrive On Green	0.08	0.27	0.27	0.06	0.26	0.26	0.13	0.41	0.41	0.09	0.36	0.36
Sat Flow, veh/h	1774	1863	1511	1774	1863	1514	1774	3539	1545	1774	3539	1512
Grp Volume(v), veh/h	106	459	102	88	325	110	241	667	156	125	673	212
Grp Sat Flow(s),veh/h/ln	1774	1863	1511	1774	1863	1514	1774	1770	1545	1774	1770	1512
Q Serve(g_s), s	5.4	22.0	4.9	4.5	14.5	5.4	12.1	12.6	6.1	6.4	13.9	9.6
Cycle Q Clear(g_c), s	5.4	22.0	4.9	4.5	14.5	5.4	12.1	12.6	6.1	6.4	13.9	9.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	136	501	406	113	478	388	233	1459	637	155	1265	540
V/C Ratio(X)	0.78	0.92	0.25	0.78	0.68	0.28	1.03	0.46	0.24	0.81	0.53	0.39
Avail Cap(c_a), veh/h	310	506	411	251	478	388	233	1459	637	201	1265	540
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.71	0.71	0.71	0.98	0.98	0.98	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.7	32.6	26.4	42.4	30.8	27.4	40.0	19.6	17.7	41.2	23.5	22.1
Incr Delay (d2), s/veh	6.8	17.0	0.4	10.5	4.5	0.7	67.7	1.0	0.9	12.9	0.8	1.0
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	2.9	13.6	2.1	2.5	8.0	2.3	10.3	6.3	2.7	3.7	6.9	4.2
LnGrp Delay(d),s/veh	48.5	49.6	26.8	52.9	35.4	28.1	107.7	20.6	18.6	54.1	24.3	23.1
LnGrp LOS	D	D	C	D	D	C	F	C	B	D	C	C
Approach Vol, veh/h		667			523			1064			1010	
Approach Delay, s/veh		45.9			36.8			40.0			27.7	
Approach LOS		D			D			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.5	42.1	9.4	28.9	16.6	37.1	10.5	27.8
Change Period (Y+Rc), s	3.5	* 4.2	3.5	* 4.2	4.5	* 4.2	3.5	* 4.2
Max Green Setting (Gmax), s	10.4	* 26	13.0	* 25	12.1	* 25	16.1	* 22
Max Q Clear Time (g_c+I1), s	8.4	14.6	6.5	24.0	14.1	15.9	7.4	16.5
Green Ext Time (p_c), s	0.0	6.1	0.1	0.5	0.0	5.4	0.1	1.6

Intersection Summary	
HCM 2010 Ctrl Delay	36.9
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	75	587	60	64	393	70	30	164	90	57	144	71
Future Volume (veh/h)	75	587	60	64	393	70	30	164	90	57	144	71
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.96	0.99		0.96	0.99		0.97	0.99		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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	75	587	60	64	393	70	30	164	90	80	203	100
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	0	1	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	557	1685	172	467	1559	275	109	343	173	165	310	137
Arrive On Green	0.52	0.52	0.52	0.52	0.52	0.52	0.32	0.32	0.32	0.32	0.32	0.32
Sat Flow, veh/h	919	3229	329	777	2988	527	92	1079	543	244	975	431
Grp Volume(v), veh/h	75	321	326	64	231	232	284	0	0	383	0	0
Grp Sat Flow(s),veh/h/ln	919	1770	1789	777	1770	1746	1714	0	0	1649	0	0
Q Serve(g_s), s	2.4	5.3	5.3	2.6	3.6	3.7	0.0	0.0	0.0	3.2	0.0	0.0
Cycle Q Clear(g_c), s	6.1	5.3	5.3	7.9	3.6	3.7	6.6	0.0	0.0	9.8	0.0	0.0
Prop In Lane	1.00		0.18	1.00		0.30	0.11		0.32	0.21		0.26
Lane Grp Cap(c), veh/h	557	923	933	467	923	911	624	0	0	611	0	0
V/C Ratio(X)	0.13	0.35	0.35	0.14	0.25	0.25	0.45	0.00	0.00	0.63	0.00	0.00
Avail Cap(c_a), veh/h	557	923	933	467	923	911	956	0	0	928	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	8.2	7.0	7.0	9.3	6.6	6.6	13.9	0.0	0.0	14.8	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.2	0.2	0.6	0.6	0.7	0.5	0.0	0.0	1.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	2.6	2.7	0.6	1.9	1.9	3.2	0.0	0.0	4.8	0.0	0.0
LnGrp Delay(d),s/veh	8.4	7.2	7.2	9.9	7.2	7.2	14.4	0.0	0.0	15.9	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	B			B		
Approach Vol, veh/h		722			527			284			383	
Approach Delay, s/veh		7.3			7.5			14.4			15.9	
Approach LOS		A			A			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		19.8		30.0		19.8		30.0
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0
Max Green Setting (Gmax), s		26.0		26.0		26.0		26.0
Max Q Clear Time (g_c+I1), s		8.6		8.1		11.8		9.9
Green Ext Time (p_c), s		1.6		4.1		2.2		2.8

Intersection Summary	
HCM 2010 Ctrl Delay	10.1
HCM 2010 LOS	B

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	312	60	160	1014	435	124
Future Volume (veh/h)	312	60	160	1014	435	124
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	312	60	160	1014	435	124
Adj No. of Lanes	2	1	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	797	367	389	1931	824	360
Arrive On Green	0.23	0.23	0.22	0.55	0.23	0.23
Sat Flow, veh/h	3442	1583	1774	3632	3632	1549
Grp Volume(v), veh/h	312	60	160	1014	435	124
Grp Sat Flow(s),veh/h/ln	1721	1583	1774	1770	1770	1549
Q Serve(g_s), s	3.3	1.3	3.3	7.8	4.6	2.8
Cycle Q Clear(g_c), s	3.3	1.3	3.3	7.8	4.6	2.8
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	797	367	389	1931	824	360
V/C Ratio(X)	0.39	0.16	0.41	0.53	0.53	0.34
Avail Cap(c_a), veh/h	2647	1218	790	4788	2879	1260
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	13.1	14.3	6.2	14.3	13.6
Incr Delay (d2), s/veh	0.3	0.2	0.7	0.2	0.5	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	1.6	1.3	1.7	3.7	2.3	1.3
LnGrp Delay(d),s/veh	14.2	13.3	15.0	6.4	14.8	14.2
LnGrp LOS	B	B	B	A	B	B
Approach Vol, veh/h	372			1174	559	
Approach Delay, s/veh	14.0			7.6	14.7	
Approach LOS	B			A	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		28.6		14.1	13.3	15.2		
Change Period (Y+Rc), s		5.3		* 4.2	4.0	5.3		
Max Green Setting (Gmax), s		57.7		* 33	19.0	34.7		
Max Q Clear Time (g_c+I1), s		9.8		5.3	5.3	6.6		
Green Ext Time (p_c), s		8.2		1.3	0.3	3.1		

Intersection Summary	
HCM 2010 Ctrl Delay	10.6
HCM 2010 LOS	B

Notes

Intersection	
Int Delay, s/veh	208.2

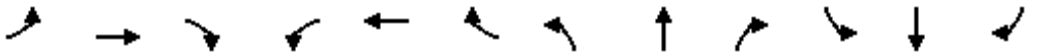
Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	0	838	15	0	613	338	465	0	94	0	0	94
Future Vol, veh/h	0	838	15	0	613	338	465	0	94	0	0	94
Conflicting Peds, #/hr	0	0	0	1	0	0	0	0	0	1	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	Free	-	-	Yield	-	-	None
Storage Length	-	-	-	-	-	250	0	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	838	15	0	613	338	465	0	94	0	0	94

Major/Minor	Major1			Major2			Minor2		Minor1			
Conflicting Flow All	-	0	0	-	-	0	1032	-	307	-	-	427
Stage 1	-	-	-	-	-	-	613	-	-	-	-	-
Stage 2	-	-	-	-	-	-	419	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	7.54	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	3.52	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	0	-	0	~ 187	0	689	0	0	576
Stage 1	0	-	-	0	-	0	~ 446	0	-	0	0	-
Stage 2	0	-	-	0	-	0	582	0	-	0	0	-
Platoon blocked, %		-	-		-							
Mov Cap-1 Maneuver	-	-	-	-	-	-	~ 157	-	689	-	-	576
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 157	-	-	-	-	-
Stage 1	-	-	-	-	-	-	~ 446	-	-	-	-	-
Stage 2	-	-	-	-	-	-	487	-	-	-	-	-

Approach	NB	SB	NE	SW
HCM Control Delay, s	0	0	$ 787.2	12.5
HCM LOS			F	B

Minor Lane/Major Mvmt	NELn1	NELn2	NBT	NBR	SBT	SWLn1
Capacity (veh/h)	157	689	-	-	-	576
HCM Lane V/C Ratio	2.962	0.136	-	-	-	0.163
HCM Control Delay (s)	$ 944.1	11	-	-	-	12.5
HCM Lane LOS	F	B	-	-	-	B
HCM 95th %tile Q(veh)	42.6	0.5	-	-	-	0.6

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	259	207	64	77	181	53	178	993	170	70	584	202
Future Volume (vph)	259	207	64	77	181	53	178	993	170	70	584	202
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0		4.0	4.5		4.0	4.5	4.5
Lane Util. Factor	0.95	0.95	1.00		1.00		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.96		1.00		1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85		0.98		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	0.99	1.00		0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1681	1758	1516		1794		1770	3450		1770	3539	1556
Flt Permitted	0.95	0.99	1.00		0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1681	1758	1516		1794		1770	3450		1770	3539	1556
Peak-hour factor, PHF	0.85	0.85	0.85	0.91	0.91	0.91	0.85	0.85	0.85	1.00	1.00	1.00
Growth Factor (vph)	109%	109%	108%	108%	109%	109%	100%	100%	100%	108%	108%	108%
Adj. Flow (vph)	332	265	81	91	217	63	209	1168	200	76	631	218
RTOR Reduction (vph)	0	0	62	0	7	0	0	14	0	0	0	152
Lane Group Flow (vph)	292	305	19	0	364	0	209	1354	0	76	631	66
Confl. Peds. (#/hr)			30	30								3
Confl. Bikes (#/hr)						1			2			2
Turn Type	Split	NA	Perm	Split	NA		Prot	NA		Prot	NA	Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4									6
Actuated Green, G (s)	23.2	23.2	23.2		20.8		9.0	35.5		4.0	30.5	30.5
Effective Green, g (s)	23.2	23.2	23.2		20.8		9.0	35.5		4.0	30.5	30.5
Actuated g/C Ratio	0.23	0.23	0.23		0.21		0.09	0.36		0.04	0.30	0.30
Clearance Time (s)	4.0	4.0	4.0		4.0		4.0	4.5		4.0	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0		3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	389	407	351		373		159	1224		70	1079	474
v/s Ratio Prot	c0.17	0.17			c0.20		c0.12	c0.39		0.04	0.18	
v/s Ratio Perm			0.01									0.04
v/c Ratio	0.75	0.75	0.05		0.98		1.31	1.11		1.09	0.58	0.14
Uniform Delay, d1	35.7	35.7	29.9		39.3		45.5	32.2		48.0	29.4	25.2
Progression Factor	1.00	1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	7.9	7.4	0.1		39.7		178.9	60.1		133.0	0.8	0.1
Delay (s)	43.6	43.1	29.9		79.1		224.4	92.4		181.0	30.2	25.4
Level of Service	D	D	C		E		F	F		F	C	C
Approach Delay (s)		41.8			79.1			109.9			41.5	
Approach LOS		D			E			F			D	

Intersection Summary			
HCM 2000 Control Delay	75.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	89.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	339	489	2	2	1005	394	2	2	3	163	7	404
Future Volume (veh/h)	339	489	2	2	1005	394	2	2	3	163	7	404
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	339	489	2	2	1005	394	4	4	5	163	7	404
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.55	0.55	0.55	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	355	3014	12	4	1581	612	128	129	131	405	440	367
Arrive On Green	0.20	0.83	0.83	0.00	0.64	0.64	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	1774	3615	15	1774	2486	962	344	546	557	1400	1863	1555
Grp Volume(v), veh/h	339	239	252	2	711	688	13	0	0	163	7	404
Grp Sat Flow(s),veh/h/ln	1774	1770	1860	1774	1770	1678	1447	0	0	1400	1863	1555
Q Serve(g_s), s	18.9	2.6	2.6	0.1	24.5	25.3	0.0	0.0	0.0	9.3	0.3	23.6
Cycle Q Clear(g_c), s	18.9	2.6	2.6	0.1	24.5	25.3	0.6	0.0	0.0	9.9	0.3	23.6
Prop In Lane	1.00		0.01	1.00		0.57	0.31		0.38	1.00		1.00
Lane Grp Cap(c), veh/h	355	1476	1551	4	1125	1068	389	0	0	405	440	367
V/C Ratio(X)	0.96	0.16	0.16	0.52	0.63	0.64	0.03	0.00	0.00	0.40	0.02	1.10
Avail Cap(c_a), veh/h	355	1476	1551	71	1125	1068	389	0	0	405	440	367
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.6	1.6	1.6	49.8	11.1	11.2	29.4	0.0	0.0	32.9	29.3	38.2
Incr Delay (d2), s/veh	35.8	0.2	0.2	35.2	2.7	3.0	0.0	0.0	0.0	0.9	0.0	76.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.8	1.4	1.4	0.1	12.7	12.5	0.3	0.0	0.0	4.0	0.2	18.0
LnGrp Delay(d),s/veh	75.4	1.8	1.8	85.0	13.8	14.2	29.5	0.0	0.0	33.8	29.3	115.1
LnGrp LOS	E	A	A	F	B	B	C			C	C	F
Approach Vol, veh/h		830			1401			13			574	
Approach Delay, s/veh		31.9			14.1			29.5			90.9	
Approach LOS		C			B			C			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	24.0	68.8		28.2	4.2	88.6		28.2
Change Period (Y+Rc), s	4.0	4.6		4.6	4.0	4.6		* 4.6
Max Green Setting (Gmax), s	20.0	43.8		23.0	4.0	59.8		* 24
Max Q Clear Time (g_c+I1), s	20.9	27.3		2.6	2.1	4.6		25.6
Green Ext Time (p_c), s	0.0	10.8		0.0	0.0	4.3		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	35.1
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	53	134	68	359	26	181	160	881	448	4	318	55
Future Volume (veh/h)	53	134	68	359	26	181	160	881	448	4	318	55
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.97	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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	53	134	68	359	26	181	160	881	448	4	318	55
Adj No. of Lanes	1	1	0	1	1	1	1	2	1	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	587	492	250	511	785	667	203	1335	582	8	971	422
Arrive On Green	0.42	0.42	0.42	0.42	0.42	0.42	0.11	0.38	0.38	0.00	0.27	0.27
Sat Flow, veh/h	1170	1166	592	1175	1863	1583	1774	3539	1542	1774	3539	1538
Grp Volume(v), veh/h	53	0	202	359	26	181	160	881	448	4	318	55
Grp Sat Flow(s),veh/h/ln	1170	0	1758	1175	1863	1583	1774	1770	1542	1774	1770	1538
Q Serve(g_s), s	1.9	0.0	5.2	20.0	0.6	5.2	6.1	14.4	17.7	0.2	5.0	1.9
Cycle Q Clear(g_c), s	2.5	0.0	5.2	25.2	0.6	5.2	6.1	14.4	17.7	0.2	5.0	1.9
Prop In Lane	1.00		0.34	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	587	0	741	511	785	667	203	1335	582	8	971	422
V/C Ratio(X)	0.09	0.00	0.27	0.70	0.03	0.27	0.79	0.66	0.77	0.53	0.33	0.13
Avail Cap(c_a), veh/h	893	0	1200	818	1272	1081	423	1770	771	102	1155	502
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	12.5	0.0	13.2	21.4	11.8	13.1	30.0	18.0	19.0	34.6	20.1	19.0
Incr Delay (d2), s/veh	0.1	0.0	0.2	1.8	0.0	0.2	6.6	0.6	3.4	46.8	0.2	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	0.0	2.6	6.7	0.3	2.3	3.4	7.1	8.0	0.2	2.5	0.8
LnGrp Delay(d),s/veh	12.6	0.0	13.3	23.2	11.8	13.4	36.6	18.5	22.5	81.4	20.3	19.1
LnGrp LOS	B		B	C	B	B	D	B	C	F	C	B
Approach Vol, veh/h		255			566			1489			377	
Approach Delay, s/veh		13.2			19.5			21.7			20.8	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	4.3	31.5		33.8	11.5	24.3		33.8
Change Period (Y+Rc), s	4.0	5.2		4.5	3.5	5.2		4.5
Max Green Setting (Gmax), s	4.0	34.8		47.5	16.6	22.7		47.5
Max Q Clear Time (g_c+I1), s	2.2	19.7		7.2	8.1	7.0		27.2
Green Ext Time (p_c), s	0.0	6.5		1.4	0.2	1.7		2.1

Intersection Summary		
HCM 2010 Ctrl Delay		20.3
HCM 2010 LOS		C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	19	35	54	247	54	205	47	636	432	121	334	55
Future Volume (veh/h)	19	35	54	247	54	205	47	636	432	121	334	55
Number	7	4	14	3	8	18	5	2	12	1	6	16
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		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	19	35	54	247	54	0	47	636	0	121	334	0
Adj No. of Lanes	1	1	0	1	1	1	1	2	1	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	542	201	311	506	573	487	87	1116	499	156	1252	560
Arrive On Green	0.31	0.31	0.31	0.31	0.31	0.00	0.05	0.32	0.00	0.09	0.35	0.00
Sat Flow, veh/h	1339	654	1009	1297	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	19	0	89	247	54	0	47	636	0	121	334	0
Grp Sat Flow(s),veh/h/ln	1339	0	1663	1297	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	0.5	0.0	1.8	7.8	0.9	0.0	1.2	6.8	0.0	3.0	3.1	0.0
Cycle Q Clear(g_c), s	1.4	0.0	1.8	9.6	0.9	0.0	1.2	6.8	0.0	3.0	3.1	0.0
Prop In Lane	1.00		0.61	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	542	0	512	506	573	487	87	1116	499	156	1252	560
V/C Ratio(X)	0.04	0.00	0.17	0.49	0.09	0.00	0.54	0.57	0.00	0.78	0.27	0.00
Avail Cap(c_a), veh/h	1316	0	1473	1256	1650	1402	622	2358	1055	622	2358	1055
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	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	11.8	0.0	11.6	15.1	11.3	0.0	21.2	13.0	0.0	20.4	10.5	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.2	1.0	0.1	0.0	1.9	0.7	0.0	3.1	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	0.2	0.0	0.8	3.0	0.5	0.0	0.6	3.4	0.0	1.6	1.5	0.0
LnGrp Delay(d),s/veh	11.8	0.0	11.8	16.1	11.4	0.0	23.1	13.7	0.0	23.5	10.7	0.0
LnGrp LOS	B		B	B	B		C	B		C	B	
Approach Vol, veh/h		108			301			683			455	
Approach Delay, s/veh		11.8			15.3			14.3			14.1	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.0	19.0		18.6	6.2	20.7		18.6
Change Period (Y+Rc), s	4.0	4.6		4.6	4.0	4.6		4.6
Max Green Setting (Gmax), s	16.0	30.4		40.4	16.0	30.4		40.4
Max Q Clear Time (g_c+I1), s	5.0	8.8		3.8	3.2	5.1		11.6
Green Ext Time (p_c), s	0.1	5.5		0.8	0.0	2.8		1.7

Intersection Summary	
HCM 2010 Ctrl Delay	14.3
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	135	205	315	15	382	15	609	230	21	60	180	410
Future Volume (veh/h)	135	205	315	15	382	15	609	230	21	60	180	410
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	135	205	0	15	382	15	609	230	21	60	180	410
Adj No. of Lanes	1	1	1	1	1	0	2	1	0	0	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	169	591	502	25	420	16	685	853	78	0	905	555
Arrive On Green	0.10	0.32	0.00	0.01	0.24	0.24	0.20	0.51	0.51	0.00	0.26	0.26
Sat Flow, veh/h	1774	1863	1583	1774	1779	70	3442	1680	153	0	3539	1581
Grp Volume(v), veh/h	135	205	0	15	0	397	609	0	251	0	180	410
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	0	1849	1721	0	1833	0	1770	1581
Q Serve(g_s), s	6.3	7.1	0.0	0.7	0.0	17.5	14.5	0.0	6.6	0.0	3.3	19.1
Cycle Q Clear(g_c), s	6.3	7.1	0.0	0.7	0.0	17.5	14.5	0.0	6.6	0.0	3.3	19.1
Prop In Lane	1.00		1.00	1.00		0.04	1.00		0.08	0.00		1.00
Lane Grp Cap(c), veh/h	169	591	502	25	0	436	685	0	931	0	905	555
V/C Ratio(X)	0.80	0.35	0.00	0.60	0.00	0.91	0.89	0.00	0.27	0.00	0.20	0.74
Avail Cap(c_a), veh/h	251	630	536	85	0	451	717	0	931	0	932	567
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	0.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	37.2	22.0	0.0	41.2	0.0	31.2	32.7	0.0	11.8	0.0	24.5	23.9
Incr Delay (d2), s/veh	10.4	0.4	0.0	8.3	0.0	22.2	12.6	0.0	0.3	0.0	0.1	5.2
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	3.6	3.7	0.0	0.4	0.0	11.6	8.1	0.0	3.4	0.0	1.6	9.1
LnGrp Delay(d),s/veh	47.6	22.4	0.0	49.5	0.0	53.4	45.3	0.0	12.1	0.0	24.6	29.1
LnGrp LOS	D	C		D		D	D		B		C	C
Approach Vol, veh/h		340			412			860			590	
Approach Delay, s/veh		32.4			53.2			35.6			27.7	
Approach LOS		C			D			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.2	26.0	5.7	31.1	0.0	47.2	12.5	24.3
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	17.5	22.1	4.0	28.4	4.0	35.6	11.9	20.5
Max Q Clear Time (g_c+I1), s	16.5	21.1	2.7	9.1	0.0	8.6	8.3	19.5
Green Ext Time (p_c), s	0.2	0.4	0.0	1.1	0.0	2.6	0.1	0.3

Intersection Summary	
HCM 2010 Ctrl Delay	36.3
HCM 2010 LOS	D

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	0	482	882	16	513	0	99	12	383	0	0	0
Future Volume (veh/h)	0	482	882	16	513	0	99	12	383	0	0	0
Number	5	2	12	1	6	16	7	4	14			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	0	1863	1863	1900	1863	0	1900	1863	1863			
Adj Flow Rate, veh/h	0	482	882	16	513	0	99	12	383			
Adj No. of Lanes	0	1	1	0	1	0	0	1	1			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Percent Heavy Veh, %	0	2	2	2	2	0	2	2	2			
Cap, veh/h	0	1061	878	75	1011	0	438	53	436			
Arrive On Green	0.00	0.57	0.57	0.57	0.57	0.00	0.28	0.28	0.28			
Sat Flow, veh/h	0	1863	1542	19	1775	0	1590	193	1583			
Grp Volume(v), veh/h	0	482	882	529	0	0	111	0	383			
Grp Sat Flow(s),veh/h/ln	0	1863	1542	1794	0	0	1783	0	1583			
Q Serve(g_s), s	0.0	8.7	33.0	0.0	0.0	0.0	2.8	0.0	13.4			
Cycle Q Clear(g_c), s	0.0	8.7	33.0	9.9	0.0	0.0	2.8	0.0	13.4			
Prop In Lane	0.00		1.00	0.03		0.00	0.89		1.00			
Lane Grp Cap(c), veh/h	0	1061	878	1086	0	0	491	0	436			
V/C Ratio(X)	0.00	0.45	1.00	0.49	0.00	0.00	0.23	0.00	0.88			
Avail Cap(c_a), veh/h	0	1061	878	1086	0	0	554	0	492			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	7.2	12.5	7.5	0.0	0.0	16.2	0.0	20.1			
Incr Delay (d2), s/veh	0.0	0.3	31.5	1.6	0.0	0.0	0.2	0.0	15.3			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	4.5	21.3	5.5	0.0	0.0	1.4	0.0	7.7			
LnGrp Delay(d),s/veh	0.0	7.6	44.0	9.1	0.0	0.0	16.5	0.0	35.4			
LnGrp LOS		A	F	A			B		D			
Approach Vol, veh/h		1364			529			494				
Approach Delay, s/veh		31.1			9.1			31.1				
Approach LOS		C			A			C				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		37.5		20.5		37.5		
Change Period (Y+Rc), s		4.5		4.5		4.5		
Max Green Setting (Gmax), s		33.0		18.0		33.0		
Max Q Clear Time (g_c+I1), s		35.0		15.4		11.9		
Green Ext Time (p_c), s		0.0		0.6		3.4		

Intersection Summary	
HCM 2010 Ctrl Delay	26.2
HCM 2010 LOS	C

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	415	164	0	0	85	135	0	0	0	462	2	29
Future Volume (veh/h)	415	164	0	0	85	135	0	0	0	462	2	29
Number	5	2	12	1	6	16				3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	0	0	1863	1900				1900	1863	1863
Adj Flow Rate, veh/h	456	180	0	0	93	148				508	2	32
Adj No. of Lanes	0	1	0	0	1	0				0	1	1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91				0.91	0.91	0.91
Percent Heavy Veh, %	2	2	0	0	2	2				2	2	2
Cap, veh/h	500	197	0	0	94	150				555	2	497
Arrive On Green	0.39	0.39	0.00	0.00	0.15	0.15				0.31	0.31	0.31
Sat Flow, veh/h	1289	509	0	0	649	1032				1767	7	1583
Grp Volume(v), veh/h	636	0	0	0	0	241				510	0	32
Grp Sat Flow(s),veh/h/ln	1798	0	0	0	0	1681				1774	0	1583
Q Serve(g_s), s	27.7	0.0	0.0	0.0	0.0	11.8				22.8	0.0	1.2
Cycle Q Clear(g_c), s	27.7	0.0	0.0	0.0	0.0	11.8				22.8	0.0	1.2
Prop In Lane	0.72		0.00	0.00		0.61				1.00		1.00
Lane Grp Cap(c), veh/h	698	0	0	0	0	244				557	0	497
V/C Ratio(X)	0.91	0.00	0.00	0.00	0.00	0.99				0.92	0.00	0.06
Avail Cap(c_a), veh/h	806	0	0	0	0	244				610	0	545
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	0.00	0.00	1.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	23.9	0.0	0.0	0.0	0.0	35.2				27.3	0.0	19.8
Incr Delay (d2), s/veh	13.3	0.0	0.0	0.0	0.0	53.7				17.7	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
%ile BackOfQ(50%),veh/ln	16.2	0.0	0.0	0.0	0.0	9.1				13.9	0.0	0.5
LnGrp Delay(d),s/veh	37.3	0.0	0.0	0.0	0.0	88.9				44.9	0.0	19.9
LnGrp LOS	D					F				D		B
Approach Vol, veh/h		636			241						542	
Approach Delay, s/veh		37.3			88.9						43.4	
Approach LOS		D			F						D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		36.0				16.0		30.5
Change Period (Y+Rc), s		4.0				4.0		4.6
Max Green Setting (Gmax), s		37.0				12.0		28.4
Max Q Clear Time (g_c+I1), s		29.7				13.8		24.8
Green Ext Time (p_c), s		2.4				0.0		1.1

Intersection Summary	
HCM 2010 Ctrl Delay	48.4
HCM 2010 LOS	D

2040 with Project Conditions (with Proposed General Plan) – Level of Service Calculations

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (veh/h)	137	540	206	73	1445	277	202	345	98	222	575	105
Future Volume (veh/h)	137	540	206	73	1445	277	202	345	98	222	575	105
Number	7	4	14	3	8	18	1	6	16	5	2	12
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		0.96	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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	137	540	206	73	1445	277	283	483	137	222	575	105
Adj No. of Lanes	1	2	1	1	2	1	2	2	0	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	169	1498	648	94	1350	585	296	692	195	292	903	386
Arrive On Green	0.10	0.42	0.42	0.05	0.38	0.38	0.09	0.26	0.26	0.08	0.26	0.26
Sat Flow, veh/h	1774	3539	1531	1774	3539	1533	3442	2698	759	3442	3539	1513
Grp Volume(v), veh/h	137	540	206	73	1445	277	283	315	305	222	575	105
Grp Sat Flow(s),veh/h/ln	1774	1770	1531	1774	1770	1533	1721	1770	1688	1721	1770	1513
Q Serve(g_s), s	7.1	9.7	8.3	3.8	35.5	12.7	7.6	15.0	15.2	5.9	13.5	5.2
Cycle Q Clear(g_c), s	7.1	9.7	8.3	3.8	35.5	12.7	7.6	15.0	15.2	5.9	13.5	5.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.45	1.00		1.00
Lane Grp Cap(c), veh/h	169	1498	648	94	1350	585	296	454	433	292	903	386
V/C Ratio(X)	0.81	0.36	0.32	0.77	1.07	0.47	0.96	0.70	0.70	0.76	0.64	0.27
Avail Cap(c_a), veh/h	210	1498	648	210	1350	585	296	542	517	296	1084	463
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.3	18.3	17.9	43.5	28.8	21.7	42.4	31.3	31.4	41.7	30.8	27.8
Incr Delay (d2), s/veh	17.5	0.1	0.3	12.5	45.8	0.6	40.7	3.1	3.4	10.9	0.9	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	4.3	4.8	3.6	2.2	25.8	5.5	5.3	7.7	7.5	3.2	6.7	2.2
LnGrp Delay(d),s/veh	58.8	18.4	18.2	56.1	74.6	22.3	83.0	34.4	34.8	52.6	31.8	28.1
LnGrp LOS	E	B	B	E	F	C	F	C	C	D	C	C
Approach Vol, veh/h		883			1795			903			902	
Approach Delay, s/veh		24.6			65.8			49.8			36.5	
Approach LOS		C			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	28.2	9.0	43.9	11.9	28.4	12.8	40.0
Change Period (Y+Rc), s	4.0	4.5	4.0	4.5	4.0	4.5	4.0	4.5
Max Green Setting (Gmax), s	8.0	28.5	11.0	35.5	8.0	28.5	11.0	35.5
Max Q Clear Time (g_c+I1), s	9.6	15.5	5.8	11.7	7.9	17.2	9.1	37.5
Green Ext Time (p_c), s	0.0	3.3	0.1	4.2	0.0	2.8	0.1	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	48.6
HCM 2010 LOS	D

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	81	204	108	481	351	74	86	301	207	156	947	131
Future Volume (veh/h)	81	204	108	481	351	74	86	301	207	156	947	131
Number	1	6	16	5	2	12	7	4	14	3	8	18
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		0.99	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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	81	204	108	481	351	74	86	301	207	156	947	183
Adj No. of Lanes	1	2	0	1	2	0	1	2	1	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	104	317	160	435	952	198	99	813	362	398	1409	620
Arrive On Green	0.06	0.14	0.14	0.25	0.33	0.33	0.06	0.23	0.23	0.22	0.40	0.40
Sat Flow, veh/h	1774	2253	1136	1774	2909	606	1774	3539	1575	1774	3539	1558
Grp Volume(v), veh/h	81	158	154	481	212	213	86	301	207	156	947	183
Grp Sat Flow(s),veh/h/ln	1774	1770	1619	1774	1770	1745	1774	1770	1575	1774	1770	1558
Q Serve(g_s), s	4.5	8.4	9.0	24.5	9.1	9.4	4.8	7.2	11.7	7.5	22.0	8.0
Cycle Q Clear(g_c), s	4.5	8.4	9.0	24.5	9.1	9.4	4.8	7.2	11.7	7.5	22.0	8.0
Prop In Lane	1.00		0.70	1.00		0.35	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	104	249	228	435	579	571	99	813	362	398	1409	620
V/C Ratio(X)	0.78	0.63	0.67	1.11	0.37	0.37	0.87	0.37	0.57	0.39	0.67	0.30
Avail Cap(c_a), veh/h	181	442	405	435	695	686	99	885	394	398	1409	620
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.4	40.5	40.8	37.7	25.7	25.8	46.8	32.4	34.1	33.0	24.7	20.5
Incr Delay (d2), s/veh	11.8	2.7	3.5	75.4	0.4	0.4	50.3	0.3	1.7	0.6	2.6	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	4.3	4.2	21.1	4.5	4.6	3.8	3.5	5.2	3.7	11.2	3.6
LnGrp Delay(d),s/veh	58.2	43.2	44.2	113.1	26.1	26.2	97.1	32.7	35.8	33.6	27.3	21.7
LnGrp LOS	E	D	D	F	C	C	F	C	D	C	C	C
Approach Vol, veh/h		393			906			594			1286	
Approach Delay, s/veh		46.7			72.3			43.1			27.3	
Approach LOS		D			E			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.4	37.2	25.9	27.5	28.0	18.6	9.1	44.3
Change Period (Y+Rc), s	3.5	4.5	3.5	4.5	3.5	4.5	3.5	4.5
Max Green Setting (Gmax), s	10.2	39.3	9.5	25.0	24.5	25.0	5.6	28.9
Max Q Clear Time (g_c+I1), s	6.5	11.4	9.5	13.7	26.5	11.0	6.8	24.0
Green Ext Time (p_c), s	0.0	2.4	0.0	2.0	0.0	1.4	0.0	2.9

Intersection Summary	
HCM 2010 Ctrl Delay	45.5
HCM 2010 LOS	D

Movement	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations						
Traffic Volume (veh/h)	409	209	216	498	747	330
Future Volume (veh/h)	409	209	216	498	747	330
Number	2	12	1	6	3	18
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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	422	215	223	513	770	340
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	478	395	258	830	811	954
Arrive On Green	0.26	0.26	0.15	0.45	0.46	0.46
Sat Flow, veh/h	1863	1540	1774	1863	1774	1583
Grp Volume(v), veh/h	422	215	223	513	770	340
Grp Sat Flow(s),veh/h/ln	1863	1540	1774	1863	1774	1583
Q Serve(g_s), s	20.1	11.1	11.3	19.4	38.4	10.0
Cycle Q Clear(g_c), s	20.1	11.1	11.3	19.4	38.4	10.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	478	395	258	830	811	954
V/C Ratio(X)	0.88	0.54	0.86	0.62	0.95	0.36
Avail Cap(c_a), veh/h	555	459	288	939	856	994
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.0	29.6	38.5	19.6	24.0	9.3
Incr Delay (d2), s/veh	14.1	1.2	21.1	1.0	19.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.2	4.8	7.1	10.2	22.9	4.4
LnGrp Delay(d),s/veh	47.0	30.8	59.6	20.6	43.2	9.5
LnGrp LOS	D	C	E	C	D	A
Approach Vol, veh/h	637			736	1110	
Approach Delay, s/veh	41.6			32.4	32.9	
Approach LOS	D			C	C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	17.4	28.2				45.6		46.7
Change Period (Y+Rc), s	4.0	4.5				4.5		4.5
Max Green Setting (Gmax), s	15.0	27.5				46.5		44.5
Max Q Clear Time (g_c+I1), s	13.3	22.1				21.4		40.4
Green Ext Time (p_c), s	0.1	1.6				3.2		1.7

Intersection Summary	
HCM 2010 Ctrl Delay	35.0
HCM 2010 LOS	C

Movement	WBL	WBR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Volume (veh/h)	820	81	546	398	82	923
Future Volume (veh/h)	820	81	546	398	82	923
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		0.97	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1676	1676	1676	1676	1676	1676
Adj Flow Rate, veh/h	820	81	546	398	82	923
Adj No. of Lanes	1	1	1	1	1	2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	798	784	553	1170	80	1338
Arrive On Green	0.50	0.50	0.33	0.33	0.05	0.42
Sat Flow, veh/h	1597	1425	1676	1387	1597	3269
Grp Volume(v), veh/h	820	81	546	398	82	923
Grp Sat Flow(s),veh/h/ln	1597	1425	1676	1387	1597	1593
Q Serve(g_s), s	50.0	2.7	32.4	6.8	5.0	23.7
Cycle Q Clear(g_c), s	50.0	2.7	32.4	6.8	5.0	23.7
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	798	784	553	1170	80	1338
V/C Ratio(X)	1.03	0.10	0.99	0.34	1.03	0.69
Avail Cap(c_a), veh/h	798	784	553	1170	80	1338
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	25.0	10.7	33.3	2.0	47.5	23.7
Incr Delay (d2), s/veh	39.0	0.1	34.8	0.2	108.4	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.4	0.0
%ile BackOfQ(50%),veh/ln	30.4	1.1	20.2	10.3	4.6	10.7
LnGrp Delay(d),s/veh	64.0	10.8	68.1	2.2	156.3	25.2
LnGrp LOS	F	B	E	A	F	C
Approach Vol, veh/h	901		944			1005
Approach Delay, s/veh	59.2		40.3			35.9
Approach LOS	E		D			D

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	9.0	37.0				46.0		54.0
Change Period (Y+Rc), s	4.0	4.0				4.0		4.0
Max Green Setting (Gmax), s	5.0	33.0				42.0		50.0
Max Q Clear Time (g_c+I1), s	7.0	34.4				25.7		52.0
Green Ext Time (p_c), s	0.0	0.0				5.8		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	44.7
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	92	351	62	228	650	107	64	342	115	67	459	109
Future Volume (veh/h)	92	351	62	228	650	107	64	342	115	67	459	109
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.97	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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	99	377	67	245	699	115	69	368	124	72	494	117
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	1	1
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	238	897	759	453	897	748	243	1321	572	394	695	571
Arrive On Green	0.48	0.48	0.48	0.48	0.48	0.48	0.37	0.37	0.37	0.37	0.37	0.37
Sat Flow, veh/h	668	1863	1576	940	1863	1555	805	3539	1532	897	1863	1530
Grp Volume(v), veh/h	99	377	67	245	699	115	69	368	124	72	494	117
Grp Sat Flow(s),veh/h/ln	668	1863	1576	940	1863	1555	805	1770	1532	897	1863	1530
Q Serve(g_s), s	8.3	7.6	1.3	13.2	18.0	2.4	4.6	4.2	3.2	3.5	13.1	3.0
Cycle Q Clear(g_c), s	26.3	7.6	1.3	20.8	18.0	2.4	17.7	4.2	3.2	7.7	13.1	3.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	238	897	759	453	897	748	243	1321	572	394	695	571
V/C Ratio(X)	0.42	0.42	0.09	0.54	0.78	0.15	0.28	0.28	0.22	0.18	0.71	0.20
Avail Cap(c_a), veh/h	238	897	759	453	897	748	274	1458	631	429	768	631
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.4	9.7	8.1	16.5	12.4	8.4	23.0	12.7	12.3	15.4	15.4	12.3
Incr Delay (d2), s/veh	2.0	0.5	0.1	1.9	4.9	0.2	1.4	0.2	0.4	0.5	3.8	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	1.7	4.0	0.6	3.6	10.3	1.1	1.1	2.1	1.4	0.9	7.3	1.3
LnGrp Delay(d),s/veh	25.3	10.3	8.2	18.5	17.3	8.6	24.3	12.9	12.7	15.8	19.2	12.7
LnGrp LOS	C	B	A	B	B	A	C	B	B	B	B	B
Approach Vol, veh/h		543			1059			561			683	
Approach Delay, s/veh		12.8			16.6			14.3			17.8	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		25.8		32.0		25.8		32.0
Change Period (Y+Rc), s		* 4.2		* 4.2		* 4.2		* 4.2
Max Green Setting (Gmax), s		* 24		* 28		* 24		* 28
Max Q Clear Time (g_c+I1), s		19.7		28.3		15.1		22.8
Green Ext Time (p_c), s		1.9		0.0		4.2		3.5

Intersection Summary	
HCM 2010 Ctrl Delay	15.7
HCM 2010 LOS	B

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	432	34	72	796	91	42	157	65	72	162	92
Future Volume (veh/h)	35	432	34	72	796	91	42	157	65	72	162	92
Number	7	4	14	3	8	18	5	2	12	1	6	16
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	0.99		0.99	0.99		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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	36	445	35	74	821	94	52	194	80	83	186	106
Adj No. of Lanes	1	1	1	1	1	1	0	1	0	0	1	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.81	0.81	0.81	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	247	1006	847	499	1006	847	133	344	129	167	283	144
Arrive On Green	0.54	0.54	0.54	0.54	0.54	0.54	0.31	0.31	0.31	0.31	0.31	0.31
Sat Flow, veh/h	608	1863	1567	908	1863	1567	172	1127	422	269	925	470
Grp Volume(v), veh/h	36	445	35	74	821	94	326	0	0	375	0	0
Grp Sat Flow(s),veh/h/ln	608	1863	1567	908	1863	1567	1722	0	0	1664	0	0
Q Serve(g_s), s	2.7	7.5	0.5	2.8	18.8	1.5	0.0	0.0	0.0	1.9	0.0	0.0
Cycle Q Clear(g_c), s	21.5	7.5	0.5	10.3	18.8	1.5	8.0	0.0	0.0	9.9	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.16		0.25	0.22		0.28
Lane Grp Cap(c), veh/h	247	1006	847	499	1006	847	606	0	0	593	0	0
V/C Ratio(X)	0.15	0.44	0.04	0.15	0.82	0.11	0.54	0.00	0.00	0.63	0.00	0.00
Avail Cap(c_a), veh/h	247	1006	847	499	1006	847	858	0	0	835	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	18.6	7.2	5.6	10.3	9.8	5.8	15.3	0.0	0.0	15.9	0.0	0.0
Incr Delay (d2), s/veh	1.2	1.4	0.1	0.6	7.3	0.3	0.7	0.0	0.0	1.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	4.2	0.3	0.8	11.4	0.7	4.0	0.0	0.0	4.9	0.0	0.0
LnGrp Delay(d),s/veh	19.9	8.6	5.7	10.9	17.1	6.1	16.0	0.0	0.0	17.0	0.0	0.0
LnGrp LOS	B	A	A	B	B	A	B			B		
Approach Vol, veh/h		516			989			326			375	
Approach Delay, s/veh		9.2			15.6			16.0			17.0	
Approach LOS		A			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		19.8		32.0		19.8		32.0
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0
Max Green Setting (Gmax), s		24.0		28.0		24.0		28.0
Max Q Clear Time (g_c+I1), s		10.0		23.5		11.9		20.8
Green Ext Time (p_c), s		1.7		1.3		1.9		3.6

Intersection Summary	
HCM 2010 Ctrl Delay	14.4
HCM 2010 LOS	B

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	455	187	125	316	1424	652
Future Volume (veh/h)	455	187	125	316	1424	652
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	469	193	129	326	1468	672
Adj No. of Lanes	2	1	1	2	2	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	648	298	253	2400	1696	741
Arrive On Green	0.19	0.19	0.14	0.68	0.48	0.48
Sat Flow, veh/h	3442	1583	1774	3632	3632	1547
Grp Volume(v), veh/h	469	193	129	326	1468	672
Grp Sat Flow(s),veh/h/ln	1721	1583	1774	1770	1770	1547
Q Serve(g_s), s	9.1	8.0	4.8	2.3	26.2	28.4
Cycle Q Clear(g_c), s	9.1	8.0	4.8	2.3	26.2	28.4
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	648	298	253	2400	1696	741
V/C Ratio(X)	0.72	0.65	0.51	0.14	0.87	0.91
Avail Cap(c_a), veh/h	1491	686	524	2972	1728	755
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	27.1	26.7	28.2	4.1	16.5	17.0
Incr Delay (d2), s/veh	1.6	2.4	1.6	0.0	4.8	14.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.4	7.1	2.4	1.1	13.8	14.9
LnGrp Delay(d),s/veh	28.7	29.0	29.8	4.1	21.3	31.5
LnGrp LOS	C	C	C	A	C	C
Approach Vol, veh/h	662			455	2140	
Approach Delay, s/veh	28.8			11.4	24.5	
Approach LOS	C			B	C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		53.5		17.6	14.1	39.4		
Change Period (Y+Rc), s		5.3		* 4.2	4.0	5.3		
Max Green Setting (Gmax), s		59.7		* 31	21.0	34.7		
Max Q Clear Time (g_c+I1), s		4.3		11.1	6.8	30.4		
Green Ext Time (p_c), s		2.1		2.3	0.2	3.6		

Intersection Summary	
HCM 2010 Ctrl Delay	23.6
HCM 2010 LOS	C

Notes

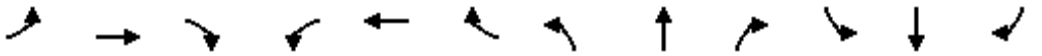
Intersection	
Int Delay, s/veh	2.6

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	0	663	53	0	747	685	33	0	3	0	0	170
Future Vol, veh/h	0	663	53	0	747	685	33	0	3	0	0	170
Conflicting Peds, #/hr	0	0	1	1	0	0	0	0	1	1	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	Free	-	-	Yield	-	-	None
Storage Length	-	-	-	-	-	250	0	-	200	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	94	94	94	88	88	88	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	729	58	0	795	729	38	0	3	0	0	191

Major/Minor	Major1			Major2			Minor2			Minor1		
Conflicting Flow All	-	0	0	-	-	0	1160	-	796	-	-	395
Stage 1	-	-	-	-	-	-	795	-	-	-	-	-
Stage 2	-	-	-	-	-	-	365	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	7.33	-	6.23	-	-	6.93
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.53	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	3.519	-	3.319	-	-	3.319
Pot Cap-1 Maneuver	0	-	-	0	-	0	161	0	386	0	0	605
Stage 1	0	-	-	0	-	0	380	0	-	0	0	-
Stage 2	0	-	-	0	-	0	627	0	-	0	0	-
Platoon blocked, %		-	-		-							
Mov Cap-1 Maneuver	-	-	-	-	-	-	110	-	386	-	-	604
Mov Cap-2 Maneuver	-	-	-	-	-	-	110	-	-	-	-	-
Stage 1	-	-	-	-	-	-	380	-	-	-	-	-
Stage 2	-	-	-	-	-	-	429	-	-	-	-	-

Approach	NB	SB	NE	SW
HCM Control Delay, s	0	0	50.5	13.7
HCM LOS			F	B

Minor Lane/Major Mvmt	NELn1	NELn2	NBT	NBR	SBT	SWLn1
Capacity (veh/h)	110	386	-	-	-	604
HCM Lane V/C Ratio	0.341	0.009	-	-	-	0.316
HCM Control Delay (s)	53.8	14.4	-	-	-	13.7
HCM Lane LOS	F	B	-	-	-	B
HCM 95th %tile Q(veh)	1.4	0	-	-	-	1.4



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	83	152	122	100	252	27	171	665	105	82	1171	220
Future Volume (vph)	83	152	122	100	252	27	171	665	105	82	1171	220
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0		4.0	4.5		4.0	4.5	4.5
Lane Util. Factor	0.95	0.95	1.00		1.00		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.93		1.00		1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85		0.99		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00		0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1681	1765	1471		1819		1770	3456		1770	3539	1556
Flt Permitted	0.95	1.00	1.00		0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1681	1765	1471		1819		1770	3456		1770	3539	1556
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Growth Factor (vph)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Adj. Flow (vph)	83	152	122	100	252	27	171	665	105	82	1171	220
RTOR Reduction (vph)	0	0	99	0	2	0	0	12	0	0	0	153
Lane Group Flow (vph)	75	160	23	0	377	0	171	758	0	82	1171	67
Confl. Peds. (#/hr)			30	30								3
Confl. Bikes (#/hr)						1			2			2
Turn Type	Split	NA	Perm	Split	NA		Prot	NA		Prot	NA	Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4									6
Actuated Green, G (s)	18.7	18.7	18.7		23.3		11.0	33.4		8.1	30.5	30.5
Effective Green, g (s)	18.7	18.7	18.7		23.3		11.0	33.4		8.1	30.5	30.5
Actuated g/C Ratio	0.19	0.19	0.19		0.23		0.11	0.33		0.08	0.30	0.30
Clearance Time (s)	4.0	4.0	4.0		4.0		4.0	4.5		4.0	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0		3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	314	330	275		423		194	1154		143	1079	474
v/s Ratio Prot	0.04	c0.09			c0.21		c0.10	c0.22		0.05	c0.33	
v/s Ratio Perm			0.02									0.04
v/c Ratio	0.24	0.48	0.08		0.89		0.88	0.66		0.57	1.09	0.14
Uniform Delay, d1	34.6	36.3	33.6		37.1		43.9	28.4		44.3	34.8	25.2
Progression Factor	1.00	1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.4	1.1	0.1		20.2		34.0	1.4		5.5	53.6	0.6
Delay (s)	35.0	37.5	33.7		57.3		77.9	29.8		49.7	88.3	25.9
Level of Service	C	D	C		E		E	C		D	F	C
Approach Delay (s)		35.7			57.3			38.5			76.8	
Approach LOS		D			E			D			E	

Intersection Summary			
HCM 2000 Control Delay	58.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	94.2%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	458	1219	8	4	485	181	3	1	4	285	7	279
Future Volume (veh/h)	458	1219	8	4	485	181	3	1	4	285	7	279
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	458	1219	8	4	485	181	3	1	4	285	7	279
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	441	1890	12	8	708	262	188	81	191	487	496	421
Arrive On Green	0.25	0.52	0.52	0.00	0.28	0.28	0.27	0.27	0.27	0.27	0.27	0.27
Sat Flow, veh/h	1774	3605	24	1774	2529	938	417	303	719	1405	1863	1582
Grp Volume(v), veh/h	458	598	629	4	338	328	8	0	0	285	7	279
Grp Sat Flow(s),veh/h/ln	1774	1770	1859	1774	1770	1697	1439	0	0	1405	1863	1582
Q Serve(g_s), s	16.0	15.6	15.6	0.1	11.0	11.1	0.0	0.0	0.0	11.7	0.2	10.1
Cycle Q Clear(g_c), s	16.0	15.6	15.6	0.1	11.0	11.1	0.2	0.0	0.0	11.9	0.2	10.1
Prop In Lane	1.00		0.01	1.00		0.55	0.37		0.50	1.00		1.00
Lane Grp Cap(c), veh/h	441	928	974	8	495	475	460	0	0	487	496	421
V/C Ratio(X)	1.04	0.64	0.65	0.53	0.68	0.69	0.02	0.00	0.00	0.58	0.01	0.66
Avail Cap(c_a), veh/h	441	928	974	441	837	802	958	0	0	1009	1188	1008
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.2	11.0	11.0	32.0	20.6	20.7	17.4	0.0	0.0	21.7	17.4	21.0
Incr Delay (d2), s/veh	52.9	3.4	3.3	19.2	2.4	2.5	0.0	0.0	0.0	1.6	0.0	2.5
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	14.2	8.4	8.7	0.1	5.7	5.5	0.1	0.0	0.0	4.8	0.1	4.7
LnGrp Delay(d),s/veh	77.1	14.4	14.3	51.2	23.0	23.2	17.4	0.0	0.0	23.3	17.4	23.6
LnGrp LOS	F	B	B	D	C	C	B			C	B	C
Approach Vol, veh/h		1685			670			8			571	
Approach Delay, s/veh		31.4			23.3			17.4			23.3	
Approach LOS		C			C			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	20.0	22.6		21.7	4.3	38.3		21.7
Change Period (Y+Rc), s	4.0	4.6		4.6	4.0	4.6		* 4.6
Max Green Setting (Gmax), s	16.0	30.4		40.4	16.0	30.4		* 41
Max Q Clear Time (g_c+I1), s	18.0	13.1		2.2	2.1	17.6		13.9
Green Ext Time (p_c), s	0.0	4.9		0.0	0.0	7.8		3.1

Intersection Summary	
HCM 2010 Ctrl Delay	27.9
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	107	19	382	325	30	142	176	346	178	11	1011	133
Future Volume (veh/h)	107	19	382	325	30	142	176	346	178	11	1011	133
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.97	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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	107	19	382	325	30	142	176	346	178	11	1011	133
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	136	440	544	579	589	501	191	1437	875	19	1094	476
Arrive On Green	0.08	0.24	0.24	0.16	0.32	0.32	0.11	0.41	0.41	0.01	0.31	0.31
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1543	1774	3539	1540
Grp Volume(v), veh/h	107	19	382	325	30	142	176	346	178	11	1011	133
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1543	1774	1770	1540
Q Serve(g_s), s	5.5	0.7	19.4	12.2	1.0	6.3	9.1	6.0	5.3	0.6	25.7	6.1
Cycle Q Clear(g_c), s	5.5	0.7	19.4	12.2	1.0	6.3	9.1	6.0	5.3	0.6	25.7	6.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	136	440	544	579	589	501	191	1437	875	19	1094	476
V/C Ratio(X)	0.79	0.04	0.70	0.56	0.05	0.28	0.92	0.24	0.20	0.58	0.92	0.28
Avail Cap(c_a), veh/h	229	501	596	645	621	528	191	1437	875	76	1116	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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.2	27.4	26.4	19.6	22.1	23.9	41.1	18.2	10.0	45.8	31.1	24.3
Incr Delay (d2), s/veh	9.7	0.0	3.3	0.9	0.0	0.3	43.7	0.1	0.1	25.4	12.5	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	3.1	0.4	9.0	6.0	0.5	2.8	6.8	2.9	2.3	0.4	14.4	2.6
LnGrp Delay(d),s/veh	51.8	27.4	29.7	20.5	22.1	24.2	84.8	18.3	10.1	71.1	43.5	24.6
LnGrp LOS	D	C	C	C	C	C	F	B	B	E	D	C
Approach Vol, veh/h		508			497			700			1155	
Approach Delay, s/veh		34.3			21.6			32.9			41.6	
Approach LOS		C			C			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.0	42.9	18.6	26.4	14.0	33.9	11.1	33.9
Change Period (Y+Rc), s	4.0	5.2	4.0	4.5	4.0	5.2	4.0	4.5
Max Green Setting (Gmax), s	4.0	35.3	18.0	25.0	10.0	29.3	12.0	31.0
Max Q Clear Time (g_c+I1), s	2.6	8.0	14.2	21.4	11.1	27.7	7.5	8.3
Green Ext Time (p_c), s	0.0	2.7	0.4	0.5	0.0	1.1	0.1	0.6

Intersection Summary	
HCM 2010 Ctrl Delay	34.7
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	103	68	316	26	70	45	815	188	198	839	40
Future Volume (veh/h)	25	103	68	316	26	70	45	815	188	198	839	40
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	35	144	95	316	26	0	45	815	0	198	839	0
Adj No. of Lanes	1	1	0	1	1	1	1	2	1	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	634	423	279	441	752	640	70	1057	473	236	1388	621
Arrive On Green	0.40	0.40	0.40	0.40	0.40	0.00	0.04	0.30	0.00	0.13	0.39	0.00
Sat Flow, veh/h	1377	1048	691	1136	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	35	0	239	316	26	0	45	815	0	198	839	0
Grp Sat Flow(s),veh/h/ln	1377	0	1740	1136	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	1.3	0.0	7.6	21.4	0.7	0.0	2.0	16.9	0.0	8.7	15.2	0.0
Cycle Q Clear(g_c), s	1.9	0.0	7.6	29.0	0.7	0.0	2.0	16.9	0.0	8.7	15.2	0.0
Prop In Lane	1.00		0.40	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	634	0	703	441	752	640	70	1057	473	236	1388	621
V/C Ratio(X)	0.06	0.00	0.34	0.72	0.03	0.00	0.64	0.77	0.00	0.84	0.60	0.00
Avail Cap(c_a), veh/h	771	0	875	553	937	796	353	1340	599	353	1388	621
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	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	15.1	0.0	16.5	26.6	14.5	0.0	38.0	25.7	0.0	34.0	19.4	0.0
Incr Delay (d2), s/veh	0.1	0.0	0.4	4.1	0.0	0.0	3.6	2.6	0.0	6.9	0.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	3.7	7.2	0.4	0.0	1.1	8.5	0.0	4.7	7.5	0.0
LnGrp Delay(d),s/veh	15.1	0.0	16.9	30.7	14.5	0.0	41.6	28.2	0.0	40.9	20.3	0.0
LnGrp LOS	B		B	C	B		D	C		D	C	
Approach Vol, veh/h		274			342			860			1037	
Approach Delay, s/veh		16.7			29.4			28.9			24.3	
Approach LOS		B			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	14.7	28.6		37.0	7.2	36.1		37.0
Change Period (Y+Rc), s	4.0	4.6		4.6	4.0	4.6		4.6
Max Green Setting (Gmax), s	16.0	30.4		40.4	16.0	30.4		40.4
Max Q Clear Time (g_c+I1), s	10.7	18.9		9.6	4.0	17.2		31.0
Green Ext Time (p_c), s	0.1	5.1		2.1	0.0	5.8		1.4

Intersection Summary	
HCM 2010 Ctrl Delay	25.7
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	214	336	958	31	277	61	320	224	35	33	723	73
Future Volume (veh/h)	214	336	958	31	277	61	320	224	35	33	723	73
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	214	336	0	31	277	61	320	224	35	33	723	73
Adj No. of Lanes	1	1	1	1	1	0	2	1	0	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	256	596	507	45	297	65	445	620	97	47	1034	460
Arrive On Green	0.14	0.32	0.00	0.03	0.20	0.20	0.13	0.40	0.40	0.03	0.29	0.29
Sat Flow, veh/h	1774	1863	1583	1774	1477	325	3442	1569	245	1774	3539	1575
Grp Volume(v), veh/h	214	336	0	31	0	338	320	0	259	33	723	73
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	0	1802	1721	0	1815	1774	1770	1575
Q Serve(g_s), s	9.1	11.5	0.0	1.3	0.0	14.2	6.9	0.0	7.8	1.4	14.0	2.7
Cycle Q Clear(g_c), s	9.1	11.5	0.0	1.3	0.0	14.2	6.9	0.0	7.8	1.4	14.0	2.7
Prop In Lane	1.00		1.00	1.00		0.18	1.00		0.14	1.00		1.00
Lane Grp Cap(c), veh/h	256	596	507	45	0	362	445	0	717	47	1034	460
V/C Ratio(X)	0.84	0.56	0.00	0.69	0.00	0.93	0.72	0.00	0.36	0.71	0.70	0.16
Avail Cap(c_a), veh/h	345	603	513	126	0	362	446	0	1117	92	1903	847
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.1	21.8	0.0	37.3	0.0	30.3	32.2	0.0	16.5	37.3	24.3	20.3
Incr Delay (d2), s/veh	12.4	1.3	0.0	7.0	0.0	31.0	5.2	0.0	0.7	7.1	1.0	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	5.3	6.1	0.0	0.7	0.0	10.2	3.6	0.0	4.0	0.8	7.0	1.2
LnGrp Delay(d),s/veh	44.5	23.1	0.0	44.3	0.0	61.3	37.4	0.0	17.1	44.4	25.4	20.5
LnGrp LOS	D	C		D		E	D		B	D	C	C
Approach Vol, veh/h		550			369			579			829	
Approach Delay, s/veh		31.4			59.9			28.4			25.7	
Approach LOS		C			E			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.5	27.0	6.4	29.2	6.5	35.0	15.6	20.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	10.0	41.5	5.5	25.0	4.0	47.5	15.0	15.5
Max Q Clear Time (g_c+I1), s	8.9	16.0	3.3	13.5	3.4	9.8	11.1	16.2
Green Ext Time (p_c), s	0.1	6.5	0.0	1.6	0.0	3.0	0.2	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	33.1
HCM 2010 LOS	C

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	0	558	365	13	523	0	38	1	380	0	0	0
Future Volume (veh/h)	0	558	365	13	523	0	38	1	380	0	0	0
Number	5	2	12	1	6	16	7	4	14			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	0	1863	1863	1900	1863	0	1900	1863	1863			
Adj Flow Rate, veh/h	0	558	365	13	523	0	38	1	380			
Adj No. of Lanes	0	1	1	0	1	0	0	1	1			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Percent Heavy Veh, %	0	2	2	2	2	0	2	2	2			
Cap, veh/h	0	793	656	117	773	0	527	14	482			
Arrive On Green	0.00	0.43	0.43	0.43	0.43	0.00	0.30	0.30	0.30			
Sat Flow, veh/h	0	1863	1543	15	1817	0	1731	46	1583			
Grp Volume(v), veh/h	0	558	365	536	0	0	39	0	380			
Grp Sat Flow(s),veh/h/ln	0	1863	1543	1832	0	0	1776	0	1583			
Q Serve(g_s), s	0.0	8.2	5.9	0.0	0.0	0.0	0.5	0.0	7.3			
Cycle Q Clear(g_c), s	0.0	8.2	5.9	7.7	0.0	0.0	0.5	0.0	7.3			
Prop In Lane	0.00		1.00	0.02		0.00	0.97		1.00			
Lane Grp Cap(c), veh/h	0	793	656	890	0	0	541	0	482			
V/C Ratio(X)	0.00	0.70	0.56	0.60	0.00	0.00	0.07	0.00	0.79			
Avail Cap(c_a), veh/h	0	1286	1065	1359	0	0	959	0	855			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	7.9	7.2	7.7	0.0	0.0	8.2	0.0	10.6			
Incr Delay (d2), s/veh	0.0	1.2	0.7	0.7	0.0	0.0	0.1	0.0	2.9			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	4.3	2.6	4.0	0.0	0.0	0.3	0.0	3.6			
LnGrp Delay(d),s/veh	0.0	9.0	7.9	8.4	0.0	0.0	8.3	0.0	13.5			
LnGrp LOS		A	A	A			A		B			
Approach Vol, veh/h		923			536			419				
Approach Delay, s/veh		8.6			8.4			13.0				
Approach LOS		A			A			B				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		18.7		14.6		18.7		
Change Period (Y+Rc), s		4.5		4.5		4.5		
Max Green Setting (Gmax), s		23.0		18.0		23.0		
Max Q Clear Time (g_c+I1), s		10.2		9.3		9.7		
Green Ext Time (p_c), s		4.0		1.0		2.7		

Intersection Summary	
HCM 2010 Ctrl Delay	9.5
HCM 2010 LOS	A

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	483	109	0	0	67	91	0	0	0	522	1	28
Future Volume (veh/h)	483	109	0	0	67	91	0	0	0	522	1	28
Number	5	2	12	1	6	16				3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	0	0	1863	1900				1900	1863	1863
Adj Flow Rate, veh/h	483	109	0	0	67	91				522	1	28
Adj No. of Lanes	0	1	0	0	1	0				0	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Percent Heavy Veh, %	2	2	0	0	2	2				2	2	2
Cap, veh/h	560	126	0	0	84	113				583	1	522
Arrive On Green	0.38	0.38	0.00	0.00	0.12	0.12				0.33	0.33	0.33
Sat Flow, veh/h	1460	330	0	0	717	974				1771	3	1583
Grp Volume(v), veh/h	592	0	0	0	0	158				523	0	28
Grp Sat Flow(s),veh/h/ln	1790	0	0	0	0	1691				1774	0	1583
Q Serve(g_s), s	22.5	0.0	0.0	0.0	0.0	6.7				20.7	0.0	0.9
Cycle Q Clear(g_c), s	22.5	0.0	0.0	0.0	0.0	6.7				20.7	0.0	0.9
Prop In Lane	0.82		0.00	0.00		0.58				1.00		1.00
Lane Grp Cap(c), veh/h	687	0	0	0	0	197				584	0	522
V/C Ratio(X)	0.86	0.00	0.00	0.00	0.00	0.80				0.89	0.00	0.05
Avail Cap(c_a), veh/h	1138	0	0	0	0	275				682	0	609
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	0.00	0.00	1.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	21.0	0.0	0.0	0.0	0.0	31.8				23.6	0.0	16.9
Incr Delay (d2), s/veh	3.8	0.0	0.0	0.0	0.0	11.0				13.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.7	0.0	0.0	0.0	0.0	3.7				12.1	0.0	0.4
LnGrp Delay(d),s/veh	24.8	0.0	0.0	0.0	0.0	42.8				36.6	0.0	17.0
LnGrp LOS	C					D				D		B
Approach Vol, veh/h		592			158						551	
Approach Delay, s/veh		24.8			42.8						35.6	
Approach LOS		C			D						D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		32.3				12.6		28.9
Change Period (Y+Rc), s		4.0				4.0		4.6
Max Green Setting (Gmax), s		47.0				12.0		28.4
Max Q Clear Time (g_c+I1), s		24.5				8.7		22.7
Green Ext Time (p_c), s		3.8				0.2		1.6

Intersection Summary	
HCM 2010 Ctrl Delay	31.6
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (veh/h)	395	1501	780	122	830	293	257	501	106	241	575	154
Future Volume (veh/h)	395	1501	780	122	830	293	257	501	106	241	575	154
Number	7	4	14	3	8	18	1	6	16	5	2	12
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		0.96	1.00		0.95	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	395	1501	780	122	830	293	257	501	106	241	575	154
Adj No. of Lanes	1	2	1	1	2	1	2	2	0	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	374	1528	660	131	1043	449	217	728	153	217	894	381
Arrive On Green	0.21	0.43	0.43	0.07	0.29	0.29	0.06	0.25	0.25	0.06	0.25	0.25
Sat Flow, veh/h	1774	3539	1530	1774	3539	1524	3442	2883	606	3442	3539	1508
Grp Volume(v), veh/h	395	1501	780	122	830	293	257	306	301	241	575	154
Grp Sat Flow(s),veh/h/ln	1774	1770	1530	1774	1770	1524	1721	1770	1719	1721	1770	1508
Q Serve(g_s), s	20.0	39.8	41.0	6.5	20.5	15.9	6.0	14.9	15.1	6.0	13.8	8.1
Cycle Q Clear(g_c), s	20.0	39.8	41.0	6.5	20.5	15.9	6.0	14.9	15.1	6.0	13.8	8.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.35	1.00		1.00
Lane Grp Cap(c), veh/h	374	1528	660	131	1043	449	217	447	434	217	894	381
V/C Ratio(X)	1.06	0.98	1.18	0.93	0.80	0.65	1.18	0.69	0.69	1.11	0.64	0.40
Avail Cap(c_a), veh/h	374	1528	660	131	1043	449	217	540	525	217	1081	460
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.5	26.6	27.0	43.8	30.9	29.2	44.5	32.1	32.2	44.5	31.7	29.6
Incr Delay (d2), s/veh	62.5	18.9	96.5	58.5	4.4	3.3	119.0	2.8	3.0	93.2	1.0	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	16.2	23.4	34.9	5.3	10.7	7.1	6.4	7.6	7.5	5.7	6.8	3.4
LnGrp Delay(d),s/veh	100.0	45.6	123.5	102.2	35.2	32.6	163.5	34.8	35.2	137.7	32.6	30.2
LnGrp LOS	F	D	F	F	D	C	F	C	D	F	C	C
Approach Vol, veh/h		2676			1245			864			970	
Approach Delay, s/veh		76.3			41.2			73.2			58.4	
Approach LOS		E			D			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	28.5	11.0	45.5	10.0	28.5	24.0	32.5
Change Period (Y+Rc), s	4.0	4.5	4.0	4.5	4.0	4.5	4.0	4.5
Max Green Setting (Gmax), s	6.0	29.0	7.0	41.0	6.0	29.0	20.0	28.0
Max Q Clear Time (g_c+I1), s	8.0	15.8	8.5	43.0	8.0	17.1	22.0	22.5
Green Ext Time (p_c), s	0.0	3.5	0.0	0.0	0.0	2.8	0.0	3.0

Intersection Summary	
HCM 2010 Ctrl Delay	65.2
HCM 2010 LOS	E

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	160	284	232	220	380	222	199	628	334	149	623	64
Future Volume (veh/h)	160	284	232	220	380	222	199	628	334	149	623	64
Number	1	6	16	5	2	12	7	4	14	3	8	18
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		0.98
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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	160	284	232	220	380	222	199	666	334	149	623	64
Adj No. of Lanes	1	2	0	1	2	0	1	2	1	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	194	393	310	227	493	283	458	1337	589	186	795	348
Arrive On Green	0.11	0.21	0.21	0.13	0.23	0.23	0.26	0.38	0.38	0.11	0.22	0.22
Sat Flow, veh/h	1774	1858	1465	1774	2142	1231	1774	3539	1558	1774	3539	1551
Grp Volume(v), veh/h	160	270	246	220	313	289	199	666	334	149	623	64
Grp Sat Flow(s),veh/h/ln	1774	1770	1553	1774	1770	1604	1774	1770	1558	1774	1770	1551
Q Serve(g_s), s	7.9	12.8	13.3	11.1	14.9	15.2	8.4	13.0	15.3	7.4	14.9	3.0
Cycle Q Clear(g_c), s	7.9	12.8	13.3	11.1	14.9	15.2	8.4	13.0	15.3	7.4	14.9	3.0
Prop In Lane	1.00		0.94	1.00		0.77	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	194	375	329	227	408	369	458	1337	589	186	795	348
V/C Ratio(X)	0.83	0.72	0.75	0.97	0.77	0.78	0.43	0.50	0.57	0.80	0.78	0.18
Avail Cap(c_a), veh/h	227	501	440	227	501	454	458	1337	589	227	1003	440
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.3	33.0	33.2	39.1	32.4	32.5	27.9	21.5	22.2	39.3	32.8	28.2
Incr Delay (d2), s/veh	19.1	3.3	4.8	52.6	5.7	7.1	0.7	1.3	3.9	15.2	3.2	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.9	6.6	6.2	8.8	7.9	7.5	4.2	6.5	7.2	4.4	7.6	1.3
LnGrp Delay(d),s/veh	58.4	36.3	38.0	91.7	38.0	39.6	28.5	22.8	26.1	54.6	36.1	28.5
LnGrp LOS	E	D	D	F	D	D	C	C	C	D	D	C
Approach Vol, veh/h		676			822			1199			836	
Approach Delay, s/veh		42.2			53.0			24.7			38.8	
Approach LOS		D			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.3	25.2	13.0	38.5	15.0	23.6	26.7	24.7
Change Period (Y+Rc), s	3.5	4.5	3.5	4.5	3.5	4.5	3.5	4.5
Max Green Setting (Gmax), s	11.5	25.5	11.5	25.5	11.5	25.5	11.5	25.5
Max Q Clear Time (g_c+I1), s	9.9	17.2	9.4	17.3	13.1	15.3	10.4	16.9
Green Ext Time (p_c), s	0.1	2.3	0.1	3.5	0.0	2.2	0.1	2.8

Intersection Summary	
HCM 2010 Ctrl Delay	37.9
HCM 2010 LOS	D

Movement	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations						
Traffic Volume (veh/h)	720	700	261	369	268	184
Future Volume (veh/h)	720	700	261	369	268	184
Number	2	12	1	6	3	18
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.98	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	720	700	261	369	268	184
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	952	792	260	1316	325	522
Arrive On Green	0.51	0.51	0.15	0.71	0.18	0.18
Sat Flow, veh/h	1863	1551	1774	1863	1774	1583
Grp Volume(v), veh/h	720	700	261	369	268	184
Grp Sat Flow(s),veh/h/ln	1863	1551	1774	1863	1774	1583
Q Serve(g_s), s	25.2	32.9	12.0	5.9	11.9	7.2
Cycle Q Clear(g_c), s	25.2	32.9	12.0	5.9	11.9	7.2
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	952	792	260	1316	325	522
V/C Ratio(X)	0.76	0.88	1.00	0.28	0.82	0.35
Avail Cap(c_a), veh/h	1139	948	260	1503	542	716
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.9	17.8	34.9	4.4	32.1	20.8
Incr Delay (d2), s/veh	2.4	8.7	56.4	0.1	5.3	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	13.4	15.9	9.9	3.0	6.3	3.2
LnGrp Delay(d),s/veh	18.4	26.5	91.3	4.5	37.4	21.2
LnGrp LOS	B	C	F	A	D	C
Approach Vol, veh/h	1420			630	452	
Approach Delay, s/veh	22.4			40.5	30.8	
Approach LOS	C			D	C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	16.0	46.3				62.3		19.5
Change Period (Y+Rc), s	4.0	4.5				4.5		4.5
Max Green Setting (Gmax), s	12.0	50.0				66.0		25.0
Max Q Clear Time (g_c+I1), s	14.0	34.9				7.9		13.9
Green Ext Time (p_c), s	0.0	6.9				2.3		1.1

Intersection Summary	
HCM 2010 Ctrl Delay	28.5
HCM 2010 LOS	C

Movement	WBL	WBR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Volume (veh/h)	455	115	816	890	122	738
Future Volume (veh/h)	455	115	816	890	122	738
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		0.98	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	455	115	816	890	122	738
Adj No. of Lanes	1	1	1	1	1	2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	527	471	776	1115	160	1996
Arrive On Green	0.30	0.30	0.42	0.42	0.09	0.56
Sat Flow, veh/h	1774	1583	1863	1546	1774	3632
Grp Volume(v), veh/h	455	115	816	890	122	738
Grp Sat Flow(s),veh/h/ln	1774	1583	1863	1546	1774	1770
Q Serve(g_s), s	14.8	3.4	25.5	23.8	4.1	7.0
Cycle Q Clear(g_c), s	14.8	3.4	25.5	23.8	4.1	7.0
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	527	471	776	1115	160	1996
V/C Ratio(X)	0.86	0.24	1.05	0.80	0.76	0.37
Avail Cap(c_a), veh/h	754	673	776	1115	478	2631
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	20.3	16.3	17.9	5.9	27.2	7.4
Incr Delay (d2), s/veh	7.3	0.3	46.7	4.2	7.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.3	1.5	23.0	16.1	2.3	3.4
LnGrp Delay(d),s/veh	27.6	16.6	64.5	10.1	34.6	7.5
LnGrp LOS	C	B	F	B	C	A
Approach Vol, veh/h	570		1706			860
Approach Delay, s/veh	25.4		36.1			11.3
Approach LOS	C		D			B

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	9.0	30.0				39.0		22.2
Change Period (Y+Rc), s	3.5	4.5				4.5		4.0
Max Green Setting (Gmax), s	16.5	25.5				45.5		26.0
Max Q Clear Time (g_c+I1), s	6.1	27.5				9.0		16.8
Green Ext Time (p_c), s	0.2	0.0				5.7		1.4

Intersection Summary	
HCM 2010 Ctrl Delay	27.4
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	106	483	122	88	372	130	241	670	176	125	672	212
Future Volume (veh/h)	106	483	122	88	372	130	241	670	176	125	672	212
Number	7	4	14	3	8	18	5	2	12	1	6	16
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		0.95	1.00		0.96	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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	106	483	122	88	372	130	241	670	176	125	672	212
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	125	482	391	101	458	372	247	1565	673	154	707	575
Arrive On Green	0.07	0.26	0.26	0.06	0.25	0.25	0.14	0.44	0.44	0.09	0.38	0.38
Sat Flow, veh/h	1774	1863	1509	1774	1863	1512	1774	3539	1522	1774	1863	1514
Grp Volume(v), veh/h	106	483	122	88	372	130	241	670	176	125	672	212
Grp Sat Flow(s),veh/h/ln	1774	1863	1509	1774	1863	1512	1774	1770	1522	1774	1863	1514
Q Serve(g_s), s	5.9	25.8	6.5	4.9	18.7	7.1	13.5	13.0	7.3	6.9	34.9	10.1
Cycle Q Clear(g_c), s	5.9	25.8	6.5	4.9	18.7	7.1	13.5	13.0	7.3	6.9	34.9	10.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	125	482	391	101	458	372	247	1565	673	154	707	575
V/C Ratio(X)	0.85	1.00	0.31	0.87	0.81	0.35	0.97	0.43	0.26	0.81	0.95	0.37
Avail Cap(c_a), veh/h	125	482	391	101	458	372	247	1565	673	242	714	581
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.8	36.9	29.8	46.6	35.4	31.0	42.7	19.1	17.5	44.7	30.0	22.3
Incr Delay (d2), s/veh	39.6	41.3	0.8	49.9	11.4	1.0	49.7	0.4	0.4	5.1	22.6	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	18.7	2.8	3.8	11.1	3.0	10.0	6.4	3.1	3.6	22.4	4.3
LnGrp Delay(d),s/veh	85.4	78.2	30.5	96.5	46.8	32.0	92.4	19.5	18.0	49.8	52.6	23.1
LnGrp LOS	F	F	C	F	D	C	F	B	B	D	D	C
Approach Vol, veh/h		711			590			1087			1009	
Approach Delay, s/veh		71.1			51.0			35.4			46.1	
Approach LOS		E			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.2	48.3	9.2	30.0	18.4	42.0	10.5	28.7
Change Period (Y+Rc), s	3.5	* 4.2	3.5	* 4.2	4.5	* 4.2	3.5	* 4.2
Max Green Setting (Gmax), s	13.6	* 40	5.7	* 26	13.9	* 38	7.0	* 25
Max Q Clear Time (g_c+I1), s	8.9	15.0	6.9	27.8	15.5	36.9	7.9	20.7
Green Ext Time (p_c), s	0.1	9.9	0.0	0.0	0.0	1.0	0.0	1.4

Intersection Summary	
HCM 2010 Ctrl Delay	48.7
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	75	643	60	64	454	70	30	164	90	57	144	71
Future Volume (veh/h)	75	643	60	64	454	70	30	164	90	57	144	71
Number	7	4	14	3	8	18	5	2	12	1	6	16
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	0.99		0.95	0.99		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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	75	643	60	64	454	70	30	164	90	80	203	100
Adj No. of Lanes	1	1	1	1	1	1	0	1	0	0	1	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	475	1000	817	354	1000	818	105	333	168	160	302	134
Arrive On Green	0.54	0.54	0.54	0.54	0.54	0.54	0.31	0.31	0.31	0.31	0.31	0.31
Sat Flow, veh/h	871	1863	1522	740	1863	1525	93	1074	542	248	974	432
Grp Volume(v), veh/h	75	643	60	64	454	70	284	0	0	383	0	0
Grp Sat Flow(s),veh/h/ln	871	1863	1522	740	1863	1525	1709	0	0	1653	0	0
Q Serve(g_s), s	3.0	12.7	1.0	3.5	7.8	1.2	0.0	0.0	0.0	3.3	0.0	0.0
Cycle Q Clear(g_c), s	10.8	12.7	1.0	16.2	7.8	1.2	7.1	0.0	0.0	10.4	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.11		0.32	0.21		0.26
Lane Grp Cap(c), veh/h	475	1000	817	354	1000	818	606	0	0	596	0	0
V/C Ratio(X)	0.16	0.64	0.07	0.18	0.45	0.09	0.47	0.00	0.00	0.64	0.00	0.00
Avail Cap(c_a), veh/h	475	1000	817	354	1000	818	848	0	0	828	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	10.7	8.6	5.8	14.3	7.4	5.9	14.9	0.0	0.0	15.9	0.0	0.0
Incr Delay (d2), s/veh	0.2	1.4	0.0	1.1	1.5	0.2	0.6	0.0	0.0	1.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	6.8	0.4	0.8	4.3	0.5	3.4	0.0	0.0	5.1	0.0	0.0
LnGrp Delay(d),s/veh	10.9	10.0	5.9	15.4	8.9	6.1	15.4	0.0	0.0	17.0	0.0	0.0
LnGrp LOS	B	A	A	B	A	A	B			B		
Approach Vol, veh/h		778			588			284			383	
Approach Delay, s/veh		9.7			9.3			15.4			17.0	
Approach LOS		A			A			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		20.2		32.0		20.2		32.0
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0
Max Green Setting (Gmax), s		24.0		28.0		24.0		28.0
Max Q Clear Time (g_c+I1), s		9.1		14.7		12.4		18.2
Green Ext Time (p_c), s		1.5		4.1		1.9		2.5

Intersection Summary	
HCM 2010 Ctrl Delay	11.8
HCM 2010 LOS	B

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	312	60	160	1014	435	124
Future Volume (veh/h)	312	60	160	1014	435	124
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	312	60	160	1014	435	124
Adj No. of Lanes	2	1	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	653	300	395	1966	837	367
Arrive On Green	0.19	0.19	0.22	0.56	0.24	0.24
Sat Flow, veh/h	3442	1583	1774	3632	3632	1549
Grp Volume(v), veh/h	312	60	160	1014	435	124
Grp Sat Flow(s),veh/h/ln	1721	1583	1774	1770	1770	1549
Q Serve(g_s), s	3.4	1.3	3.2	7.4	4.5	2.8
Cycle Q Clear(g_c), s	3.4	1.3	3.2	7.4	4.5	2.8
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	653	300	395	1966	837	367
V/C Ratio(X)	0.48	0.20	0.40	0.52	0.52	0.34
Avail Cap(c_a), veh/h	1878	864	1023	5674	3292	1441
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.0	14.2	13.8	5.8	13.8	13.2
Incr Delay (d2), s/veh	0.5	0.3	0.7	0.2	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	1.3	1.6	3.6	2.2	1.2
LnGrp Delay(d),s/veh	15.6	14.5	14.5	6.0	14.3	13.7
LnGrp LOS	B	B	B	A	B	B
Approach Vol, veh/h	372			1174	559	
Approach Delay, s/veh	15.4			7.1	14.2	
Approach LOS	B			A	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		28.4		13.2	13.3	15.1		
Change Period (Y+Rc), s		5.3		5.3	4.0	5.3		
Max Green Setting (Gmax), s		66.7		22.7	24.0	38.7		
Max Q Clear Time (g_c+I1), s		9.4		5.4	5.2	6.5		
Green Ext Time (p_c), s		8.3		1.2	0.4	3.2		

Intersection Summary	
HCM 2010 Ctrl Delay	10.5
HCM 2010 LOS	B

Intersection	
Int Delay, s/veh	192.7

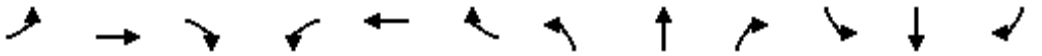
Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	0	854	15	0	617	331	462	0	94	0	0	94
Future Vol, veh/h	0	854	15	0	617	331	462	0	94	0	0	94
Conflicting Peds, #/hr	0	0	0	1	0	0	0	0	0	1	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	Free	-	-	Yield	-	-	None
Storage Length	-	-	-	-	-	250	0	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	854	15	0	617	331	462	0	94	0	0	94

Major/Minor	Major1			Major2			Minor2			Minor1		
Conflicting Flow All	-	0	0	-	-	0	1044	-	617	-	-	435
Stage 1	-	-	-	-	-	-	617	-	-	-	-	-
Stage 2	-	-	-	-	-	-	427	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	7.33	-	6.23	-	-	6.93
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.53	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	3.519	-	3.319	-	-	3.319
Pot Cap-1 Maneuver	0	-	-	0	-	0	~ 195	0	489	0	0	570
Stage 1	0	-	-	0	-	0	476	0	-	0	0	-
Stage 2	0	-	-	0	-	0	577	0	-	0	0	-
Platoon blocked, %		-	-		-							
Mov Cap-1 Maneuver	-	-	-	-	-	-	~ 163	-	489	-	-	570
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 163	-	-	-	-	-
Stage 1	-	-	-	-	-	-	476	-	-	-	-	-
Stage 2	-	-	-	-	-	-	482	-	-	-	-	-

Approach	NB	SB	NE	SW
HCM Control Delay, s	0	0	$ 738.1	12.6
HCM LOS			F	B

Minor Lane/Major Mvmt	NELn1	NELn2	NBT	NBR	SBT	SWLn1
Capacity (veh/h)	163	489	-	-	-	570
HCM Lane V/C Ratio	2.834	0.192	-	-	-	0.165
HCM Control Delay (s)	$ 885.4	14.1	-	-	-	12.6
HCM Lane LOS	F	B	-	-	-	B
HCM 95th %tile Q(veh)	41.5	0.7	-	-	-	0.6

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	259	207	64	77	181	53	178	1008	170	70	581	202
Future Volume (vph)	259	207	64	77	181	53	178	1008	170	70	581	202
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0		4.0	4.5		4.0	4.5	4.5
Lane Util. Factor	0.95	0.95	1.00		1.00		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.93		1.00		1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85		0.98		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	0.99	1.00		0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1681	1758	1471		1794		1770	3451		1770	3539	1556
Flt Permitted	0.95	0.99	1.00		0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1681	1758	1471		1794		1770	3451		1770	3539	1556
Peak-hour factor, PHF	0.85	0.85	0.85	0.91	0.91	0.91	0.93	0.93	0.93	0.97	0.97	0.97
Growth Factor (vph)	109%	109%	108%	108%	109%	109%	100%	100%	100%	100%	100%	100%
Adj. Flow (vph)	332	265	81	91	217	63	191	1084	183	72	599	208
RTOR Reduction (vph)	0	0	62	0	7	0	0	14	0	0	0	145
Lane Group Flow (vph)	292	305	19	0	364	0	191	1253	0	72	599	63
Confl. Peds. (#/hr)			30	30								3
Confl. Bikes (#/hr)						1			2			2
Turn Type	Split	NA	Perm	Split	NA		Prot	NA		Prot	NA	Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4									6
Actuated Green, G (s)	23.2	23.2	23.2		20.8		9.0	35.5		4.0	30.5	30.5
Effective Green, g (s)	23.2	23.2	23.2		20.8		9.0	35.5		4.0	30.5	30.5
Actuated g/C Ratio	0.23	0.23	0.23		0.21		0.09	0.36		0.04	0.30	0.30
Clearance Time (s)	4.0	4.0	4.0		4.0		4.0	4.5		4.0	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0		3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	389	407	341		373		159	1225		70	1079	474
v/s Ratio Prot	c0.17	0.17			c0.20		c0.11	c0.36		0.04	0.17	
v/s Ratio Perm			0.01									0.04
v/c Ratio	0.75	0.75	0.06		0.98		1.20	1.02		1.03	0.56	0.13
Uniform Delay, d1	35.7	35.7	29.9		39.3		45.5	32.2		48.0	29.1	25.2
Progression Factor	1.00	1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	7.9	7.4	0.1		39.7		135.7	31.8		115.7	0.6	0.1
Delay (s)	43.6	43.1	29.9		79.1		181.2	64.0		163.7	29.7	25.3
Level of Service	D	D	C		E		F	E		F	C	C
Approach Delay (s)		41.8			79.1			79.4			39.6	
Approach LOS		D			E			E			D	

Intersection Summary			
HCM 2000 Control Delay	61.5	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	89.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	339	537	2	2	1001	393	2	2	3	163	7	404
Future Volume (veh/h)	339	537	2	2	1001	393	2	2	3	163	7	404
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	339	537	2	2	1001	393	4	4	5	163	7	404
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.55	0.55	0.55	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	355	3016	11	4	1581	612	128	129	131	405	440	367
Arrive On Green	0.20	0.83	0.83	0.00	0.64	0.64	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	1774	3617	13	1774	2485	963	344	546	557	1400	1863	1555
Grp Volume(v), veh/h	339	263	276	2	709	685	13	0	0	163	7	404
Grp Sat Flow(s),veh/h/ln	1774	1770	1860	1774	1770	1678	1447	0	0	1400	1863	1555
Q Serve(g_s), s	18.9	2.9	2.9	0.1	24.3	25.1	0.0	0.0	0.0	9.3	0.3	23.6
Cycle Q Clear(g_c), s	18.9	2.9	2.9	0.1	24.3	25.1	0.6	0.0	0.0	9.9	0.3	23.6
Prop In Lane	1.00		0.01	1.00		0.57	0.31		0.38	1.00		1.00
Lane Grp Cap(c), veh/h	355	1476	1551	4	1125	1067	389	0	0	405	440	367
V/C Ratio(X)	0.96	0.18	0.18	0.52	0.63	0.64	0.03	0.00	0.00	0.40	0.02	1.10
Avail Cap(c_a), veh/h	355	1476	1551	71	1125	1067	389	0	0	405	440	367
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.6	1.6	1.6	49.8	11.1	11.2	29.4	0.0	0.0	32.9	29.3	38.2
Incr Delay (d2), s/veh	35.8	0.3	0.3	35.2	2.7	3.0	0.0	0.0	0.0	0.9	0.0	76.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.8	1.5	1.6	0.1	12.7	12.3	0.3	0.0	0.0	4.0	0.2	18.0
LnGrp Delay(d),s/veh	75.4	1.9	1.9	85.0	13.7	14.2	29.5	0.0	0.0	33.8	29.3	115.1
LnGrp LOS	E	A	A	F	B	B	C			C	C	F
Approach Vol, veh/h		878			1396			13			574	
Approach Delay, s/veh		30.3			14.0			29.5			90.9	
Approach LOS		C			B			C			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	24.0	68.8		28.2	4.2	88.6		28.2
Change Period (Y+Rc), s	4.0	4.6		4.6	4.0	4.6		* 4.6
Max Green Setting (Gmax), s	20.0	43.8		23.0	4.0	59.8		* 24
Max Q Clear Time (g_c+I1), s	20.9	27.1		2.6	2.1	4.9		25.6
Green Ext Time (p_c), s	0.0	10.9		0.0	0.0	4.8		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	34.5
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	53	134	68	364	26	242	160	991	522	11	438	55
Future Volume (veh/h)	53	134	68	364	26	242	160	991	522	11	438	55
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.97	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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	53	134	68	364	26	242	160	991	522	11	438	55
Adj No. of Lanes	1	1	0	1	1	1	1	2	1	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	548	492	249	497	785	667	200	1402	611	19	1064	463
Arrive On Green	0.42	0.42	0.42	0.42	0.42	0.42	0.11	0.40	0.40	0.01	0.30	0.30
Sat Flow, veh/h	1107	1166	592	1175	1863	1583	1774	3539	1542	1774	3539	1539
Grp Volume(v), veh/h	53	0	202	364	26	242	160	991	522	11	438	55
Grp Sat Flow(s),veh/h/ln	1107	0	1758	1175	1863	1583	1774	1770	1542	1774	1770	1539
Q Serve(g_s), s	2.4	0.0	6.0	23.4	0.7	8.3	7.0	18.7	24.7	0.5	7.9	2.1
Cycle Q Clear(g_c), s	3.0	0.0	6.0	29.4	0.7	8.3	7.0	18.7	24.7	0.5	7.9	2.1
Prop In Lane	1.00		0.34	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	548	0	741	497	785	667	200	1402	611	19	1064	463
V/C Ratio(X)	0.10	0.00	0.27	0.73	0.03	0.36	0.80	0.71	0.85	0.57	0.41	0.12
Avail Cap(c_a), veh/h	740	0	1047	702	1109	943	369	1544	673	89	1064	463
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.4	0.0	15.1	24.7	13.5	15.8	34.5	20.2	22.0	39.3	22.3	20.2
Incr Delay (d2), s/veh	0.1	0.0	0.2	2.4	0.0	0.3	7.3	1.3	9.8	24.0	0.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	3.0	7.9	0.3	3.7	3.8	9.3	12.1	0.4	3.9	0.9
LnGrp Delay(d),s/veh	14.5	0.0	15.3	27.1	13.6	16.1	41.8	21.6	31.8	63.3	22.5	20.3
LnGrp LOS	B		B	C	B	B	D	C	C	E	C	C
Approach Vol, veh/h		255			632			1673			504	
Approach Delay, s/veh		15.1			22.3			26.7			23.2	
Approach LOS		B			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	4.9	36.8		38.1	12.5	29.2		38.1
Change Period (Y+Rc), s	4.0	5.2		4.5	3.5	5.2		4.5
Max Green Setting (Gmax), s	4.0	34.8		47.5	16.6	22.7		47.5
Max Q Clear Time (g_c+I1), s	2.5	26.7		8.0	9.0	9.9		31.4
Green Ext Time (p_c), s	0.0	4.9		1.5	0.2	2.2		2.2

Intersection Summary		
HCM 2010 Ctrl Delay		24.2
HCM 2010 LOS		C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	19	35	81	304	54	235	47	775	464	121	374	55
Future Volume (veh/h)	19	35	81	304	54	235	47	775	464	121	374	55
Number	7	4	14	3	8	18	5	2	12	1	6	16
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		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	19	35	81	304	54	0	47	775	0	121	374	0
Adj No. of Lanes	1	1	0	1	1	1	1	2	1	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	562	171	397	500	646	549	81	1201	537	155	1349	604
Arrive On Green	0.35	0.35	0.35	0.35	0.35	0.00	0.05	0.34	0.00	0.09	0.38	0.00
Sat Flow, veh/h	1339	494	1144	1267	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	19	0	116	304	54	0	47	775	0	121	374	0
Grp Sat Flow(s),veh/h/ln	1339	0	1638	1267	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	0.6	0.0	2.9	13.0	1.1	0.0	1.5	10.8	0.0	3.9	4.3	0.0
Cycle Q Clear(g_c), s	1.7	0.0	2.9	15.9	1.1	0.0	1.5	10.8	0.0	3.9	4.3	0.0
Prop In Lane	1.00		0.70	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	562	0	568	500	646	549	81	1201	537	155	1349	604
V/C Ratio(X)	0.03	0.00	0.20	0.61	0.08	0.00	0.58	0.65	0.00	0.78	0.28	0.00
Avail Cap(c_a), veh/h	978	0	1077	894	1225	1042	213	2146	960	395	2510	1123
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	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	13.4	0.0	13.4	19.0	12.8	0.0	27.3	16.3	0.0	26.1	12.5	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.2	1.7	0.1	0.0	2.4	0.8	0.0	3.2	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	0.2	0.0	1.4	4.7	0.6	0.0	0.8	5.4	0.0	2.1	2.1	0.0
LnGrp Delay(d),s/veh	13.4	0.0	13.6	20.7	12.9	0.0	29.7	17.1	0.0	29.3	12.7	0.0
LnGrp LOS	B		B	C	B		C	B		C	B	
Approach Vol, veh/h		135			358			822			495	
Approach Delay, s/veh		13.6			19.5			17.9			16.7	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.1	24.4		24.9	6.7	26.9		24.9
Change Period (Y+Rc), s	4.0	4.6		4.6	4.0	4.6		4.6
Max Green Setting (Gmax), s	13.0	35.4		38.4	7.0	41.4		38.4
Max Q Clear Time (g_c+I1), s	5.9	12.8		4.9	3.5	6.3		17.9
Green Ext Time (p_c), s	0.0	7.0		1.0	0.0	3.4		2.0

Intersection Summary	
HCM 2010 Ctrl Delay	17.6
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	135	205	363	15	382	15	609	230	152	134	180	405
Future Volume (veh/h)	135	205	363	15	382	15	609	230	152	134	180	405
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	135	205	0	15	382	15	609	230	152	134	180	405
Adj No. of Lanes	1	1	1	1	1	0	2	1	0	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	169	591	503	25	420	17	685	422	279	85	899	553
Arrive On Green	0.10	0.32	0.00	0.01	0.24	0.24	0.20	0.41	0.41	0.05	0.25	0.25
Sat Flow, veh/h	1774	1863	1583	1774	1779	70	3442	1041	688	1774	3539	1581
Grp Volume(v), veh/h	135	205	0	15	0	397	609	0	382	134	180	405
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	0	1849	1721	0	1729	1774	1770	1581
Q Serve(g_s), s	6.2	7.1	0.0	0.7	0.0	17.5	14.4	0.0	14.1	4.0	3.3	18.7
Cycle Q Clear(g_c), s	6.2	7.1	0.0	0.7	0.0	17.5	14.4	0.0	14.1	4.0	3.3	18.7
Prop In Lane	1.00		1.00	1.00		0.04	1.00		0.40	1.00		1.00
Lane Grp Cap(c), veh/h	169	591	503	25	0	437	685	0	701	85	899	553
V/C Ratio(X)	0.80	0.35	0.00	0.60	0.00	0.91	0.89	0.00	0.55	1.58	0.20	0.73
Avail Cap(c_a), veh/h	253	633	538	85	0	454	721	0	736	85	936	569
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	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.0	21.9	0.0	41.0	0.0	31.0	32.6	0.0	19.0	39.8	24.5	23.8
Incr Delay (d2), s/veh	10.3	0.4	0.0	8.3	0.0	21.9	12.4	0.0	1.5	309.0	0.1	4.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	3.7	0.0	0.4	0.0	11.6	8.0	0.0	7.0	9.2	1.6	8.9
LnGrp Delay(d),s/veh	47.3	22.3	0.0	49.3	0.0	52.9	45.0	0.0	20.5	348.8	24.6	28.7
LnGrp LOS	D	C		D		D	D		C	F	C	C
Approach Vol, veh/h		340			412			991			719	
Approach Delay, s/veh		32.2			52.8			35.5			87.3	
Approach LOS		C			D			D			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.1	25.7	5.7	31.0	8.5	38.4	12.5	24.2
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	17.5	22.1	4.0	28.4	4.0	35.6	11.9	20.5
Max Q Clear Time (g_c+I1), s	16.4	20.7	2.7	9.1	6.0	16.1	8.2	19.5
Green Ext Time (p_c), s	0.3	0.5	0.0	1.1	0.0	3.9	0.1	0.3

Intersection Summary	
HCM 2010 Ctrl Delay	53.1
HCM 2010 LOS	D

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	0	480	878	16	513	0	99	12	393	0	0	0
Future Volume (veh/h)	0	480	878	16	513	0	99	12	393	0	0	0
Number	5	2	12	1	6	16	7	4	14			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	0	1863	1863	1900	1863	0	1900	1863	1863			
Adj Flow Rate, veh/h	0	480	878	16	513	0	99	12	393			
Adj No. of Lanes	0	1	1	0	1	0	0	1	1			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Percent Heavy Veh, %	0	2	2	2	2	0	2	2	2			
Cap, veh/h	0	1054	872	74	1004	0	445	54	444			
Arrive On Green	0.00	0.57	0.57	0.57	0.57	0.00	0.28	0.28	0.28			
Sat Flow, veh/h	0	1863	1542	19	1776	0	1590	193	1583			
Grp Volume(v), veh/h	0	480	878	529	0	0	111	0	393			
Grp Sat Flow(s),veh/h/ln	0	1863	1542	1794	0	0	1783	0	1583			
Q Serve(g_s), s	0.0	8.8	33.0	0.0	0.0	0.0	2.8	0.0	13.9			
Cycle Q Clear(g_c), s	0.0	8.8	33.0	10.1	0.0	0.0	2.8	0.0	13.9			
Prop In Lane	0.00		1.00	0.03		0.00	0.89		1.00			
Lane Grp Cap(c), veh/h	0	1054	872	1078	0	0	499	0	444			
V/C Ratio(X)	0.00	0.46	1.01	0.49	0.00	0.00	0.22	0.00	0.89			
Avail Cap(c_a), veh/h	0	1054	872	1078	0	0	550	0	488			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	7.4	12.7	7.7	0.0	0.0	16.1	0.0	20.1			
Incr Delay (d2), s/veh	0.0	0.3	32.2	1.6	0.0	0.0	0.2	0.0	16.6			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	4.5	21.6	5.6	0.0	0.0	1.4	0.0	8.0			
LnGrp Delay(d),s/veh	0.0	7.7	44.8	9.3	0.0	0.0	16.3	0.0	36.7			
LnGrp LOS		A	F	A			B		D			
Approach Vol, veh/h		1358			529			504				
Approach Delay, s/veh		31.7			9.3			32.2				
Approach LOS		C			A			C				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		37.5		20.8		37.5		
Change Period (Y+Rc), s		4.5		4.5		4.5		
Max Green Setting (Gmax), s		33.0		18.0		33.0		
Max Q Clear Time (g_c+I1), s		35.0		15.9		12.1		
Green Ext Time (p_c), s		0.0		0.5		3.4		

Intersection Summary	
HCM 2010 Ctrl Delay	26.9
HCM 2010 LOS	C

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	413	164	0	0	85	135	0	0	0	483	2	29
Future Volume (veh/h)	413	164	0	0	85	135	0	0	0	483	2	29
Number	5	2	12	1	6	16				3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	0	0	1863	1900				1900	1863	1863
Adj Flow Rate, veh/h	454	180	0	0	93	148				531	2	32
Adj No. of Lanes	0	1	0	0	1	0				0	1	1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91				0.91	0.91	0.91
Percent Heavy Veh, %	2	2	0	0	2	2				2	2	2
Cap, veh/h	496	197	0	0	92	147				570	2	511
Arrive On Green	0.39	0.39	0.00	0.00	0.14	0.14				0.32	0.32	0.32
Sat Flow, veh/h	1288	511	0	0	649	1032				1768	7	1583
Grp Volume(v), veh/h	634	0	0	0	0	241				533	0	32
Grp Sat Flow(s),veh/h/ln	1798	0	0	0	0	1681				1774	0	1583
Q Serve(g_s), s	28.2	0.0	0.0	0.0	0.0	12.0				24.5	0.0	1.2
Cycle Q Clear(g_c), s	28.2	0.0	0.0	0.0	0.0	12.0				24.5	0.0	1.2
Prop In Lane	0.72		0.00	0.00		0.61				1.00		1.00
Lane Grp Cap(c), veh/h	693	0	0	0	0	240				572	0	511
V/C Ratio(X)	0.92	0.00	0.00	0.00	0.00	1.01				0.93	0.00	0.06
Avail Cap(c_a), veh/h	790	0	0	0	0	240				599	0	534
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	0.00	0.00	1.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	24.6	0.0	0.0	0.0	0.0	36.1				27.6	0.0	19.7
Incr Delay (d2), s/veh	14.1	0.0	0.0	0.0	0.0	59.7				21.0	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
%ile BackOfQ(50%),veh/ln	16.6	0.0	0.0	0.0	0.0	9.5				15.3	0.0	0.5
LnGrp Delay(d),s/veh	38.7	0.0	0.0	0.0	0.0	95.8				48.6	0.0	19.8
LnGrp LOS	D					F				D		B
Approach Vol, veh/h		634			241						565	
Approach Delay, s/veh		38.7			95.8						47.0	
Approach LOS		D			F						D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		36.4				16.0		31.8
Change Period (Y+Rc), s		4.0				4.0		4.6
Max Green Setting (Gmax), s		37.0				12.0		28.4
Max Q Clear Time (g_c+I1), s		30.2				14.0		26.5
Green Ext Time (p_c), s		2.3				0.0		0.7

Intersection Summary	
HCM 2010 Ctrl Delay	51.5
HCM 2010 LOS	D

Hexagon Transportation Consultants, Inc.

Memorandum

Date: December 7, 2022

To: Mr. Andrew Myrick, City of Seaside

From: Ollie Zhou

Subject: City of Seaside Proposed General Plan VMT Analysis

Hexagon Transportation Consultants, Inc. has completed a Vehicle Miles Traveled (VMT) analysis for the proposed Seaside General Plan Update. The proposed General Plan would increase total residential buildout potential from the 13,168 units allowed under the current General Plan to 14,142 units, an increase of 974 units. The proposed General Plan would also increase total employment potential from 10,501 jobs allowed under the current General Plan to 12,329 jobs, an increase of 1,828 jobs. Table 1 shows the land use comparisons.

Table 1
Land Use Comparison

	City of Seaside Land Use		
	Households	Population	Jobs
Year 2015 [1]	10,127	28,725	9,430
Current General Plan Buildout [2]	13,168	44,492	10,501
Year 2040 Proposed General Plan Buildout [2]	14,142	46,281	12,329

Notes:
1. Year 2015 land use data referenced the latest AMBAG travel demand model.
2. Current and proposed General Plan buildout numbers supplied by Raimi & Associates, Inc.

Vehicle Miles Traveled

Historically, transportation analysis has utilized delay and congestion on the roadway system as the primary metric for the identification of traffic impacts and potential roadway improvements to relieve traffic congestion that may result due to proposed/planned growth. However, the State of California has recognized the limitations of measuring and mitigating only vehicle delay at intersections and in 2013 passed Senate Bill (SB) 743, which requires jurisdictions to stop using congestion and delay metrics, such as Level of Service (LOS), as the measurement for CEQA transportation analysis. With the adoption of SB 743 legislation, public agencies are now required to base the determination of transportation impacts on Vehicle Miles Traveled (VMT) rather than level of service. The intent of this change is to shift the focus of transportation analysis under CEQA from vehicle delay and roadway auto capacity to a reduction in vehicle emissions, and the creation of robust multimodal networks that support integrated land uses.

VMT is generally defined as the total miles of travel by personal motorized vehicles a project is expected to generate in a day. VMT is calculated for residential, and employment-generating projects using the Origin-Destination VMT method, which measures the full distance of personal motorized vehicle-trips with one end within the project. When assessing a residential project, the project's home-based VMT is divided by the number of residents expected to occupy the project to determine the VMT per capita. For employment-generating projects, the project's home-to-work VMT is divided by the numbers of jobs to determine the VMT per job.

AMBAG Travel Demand Model

The latest travel demand forecast model that represents travel within the City of Seaside is the Association of Monterey Bay Area Governments (AMBAG) Tri-County transportation model. This model serves as the primary forecasting tool for the City and is currently the best available analytical tool for VMT evaluations. The model is a mathematical representation of travel within the three counties in the Monterey Bay Region and is mainly composed of four main components: 1) trip generation, 2) trip distribution, 3) mode choice, and 4) trip assignment. The model uses socioeconomic inputs (i.e. households, number of jobs, hotel rooms) to estimate travel within Monterey County, Santa Cruz County, and San Benito County. Socioeconomic inputs are aggregated into geographic areas (transportation analysis zones). There are 1,839 traffic analysis zones (TAZs) within the model to represent the three counties. City of Seaside is represented by 46 TAZs.

VMT Analysis Methodology

Pursuant to SB 743, the Office of Planning and Research (OPR) published the finalized *Updates to the CEQA Guidelines* in November 2017. The guidelines stated that Level of Service will no longer be considered an environmental impact under CEQA and considers vehicle-miles-travelled (VMT) the most appropriate measure of transportation impact. The City of Seaside has not formally adopted its own City specific VMT policies. This study utilizes OPR's *Technical Advisory on Evaluating Transportation Impacts in CEQA*, published in December 2018, for the VMT analysis methodology and impact thresholds.

Metrics and Impact Criteria

Per OPR's technical advisory, for general plan-level VMT analysis, only the proposed new (compared to existing conditions) land uses will be analyzed. Residential (home-based) VMT per capita is the recommended metric to evaluate CEQA-related transportation impacts for residential land uses. Employment (home-to-work) VMT is the recommended metric for employment-generating land uses. As stated in the technical advisory, OPR recommends an impact threshold of 15% below the existing VMT levels for residential and employment-generating developments. OPR allows the existing VMT to be defined as the regional average VMT per capita or the county average VMT per capita. For the purpose of this study, the VMT threshold is defined as 15% below the existing county average for the different land use categories.

The AMBAG model has an existing scenario only for year 2015. Therefore, existing VMT references AMBAG's year 2015 results. Based on the AMBAG model, the existing (year 2015) county average daily residential VMT per capita is 11.4 miles. The VMT threshold (shown in Table 2) for the proposed General Plan's residential developments will thus be set at 15% below the average, or 9.7 daily miles travelled (11.4 x 85%).

The AMBAG model estimates the existing (year 2015) county average daily employment VMT per job is 7.9 miles. The VMT threshold (shown in Table 2) for the proposed General Plan's employment-generating developments will thus be set at 6.7 daily miles travelled (15% below the average).

Table 2
VMT Thresholds per OPR's Technical Advisory

	Residential VMT per Capita [1]	Employment VMT per Job [2]
Monterey County Average	11.4	7.9
Impact Threshold [3]	9.7	6.7

Notes:
Data referenced AMABG travel demand model year 2015 conditions.
1. Residential VMT per capita accounts only for home-based VMT.
2. Employment VMT per job accounts only for home-to-work VMT.
3. Neither the City of Seaside or County of Monterey has adopted VMT thresholds. This impact threshold is calculated using OPR's technical advisory, which suggested 15% below regional average.

VMT Analysis

As shown in Table 1 above, compared to existing (year 2015) conditions, the proposed General Plan at buildout would add 4,015 households and 2,899 jobs. These land uses are coded into the year 2040 AMBAG model to represent the buildout of the proposed General Plan. The proposed General Plan would also include several roadway improvements that were also coded into the model:

- Removal of one southbound motor vehicle lane on Fremont Boulevard between Del Monte Avenue and Canyon Del Rey Boulevard, and removal of one northbound lane on Del Monte Avenue between Broadway Avenue and Fremont Boulevard, to allow for a reallocation of roadway space for bicyclists and pedestrians.
- Removal of one through lane in each direction on Broadway Avenue east of Fremont Boulevard, and provision of left-turn pockets at key intersection, and bicycle lanes in both direction, as was recently implemented on the segments of Broadway Avenue to the west of Fremont Boulevard.

Residential Land Uses

The AMBAG model was run under year 2040 conditions. As shown in Table 3 below, the new (compared to year 2015 conditions) households would in aggregate generate home-based VMT at 8.5 VMT per capita, which would be below the residential threshold of 9.7 VMT per capita. Therefore, the residential land uses in the proposed General Plan would generate a ***less than significant VMT impact***.

Employment-Generating Land Uses

For employment-generating land uses, the VMT results were derived from the AMBAG model's year 2040 scenario, and adjusted to better reflect Seaside's travel characteristics. Table 3 shows that the new (compared to year 2015 conditions) employment-generating land uses would in aggregate generate home-to-work VMT at 5.3 VMT per job, which would be below the employment VMT threshold of 6.7 VMT per capita. Therefore, the employment-generating land uses in the proposed General Plan would generate a ***less than significant VMT impact***.

Table 3
Seaside proposed General Plan Buildout

	Residential VMT per Capita [1]	Employment VMT per Job [2]
New land uses under Seaside proposed GP buildout [3]	8.5	5.3
Impact Threshold [4]	9.7	6.7
VMT Impact?	No	No

Notes:
Data computed using the AMBAG travel demand model
1. Residential VMT per capita accounts only for home-based VMT.
2. Employment VMT per job accounts only for home-to-work VMT.
3. Seaside VMT data accounted only the new land uses (compared to AMBAG year 2015 conditions) under the proposed GP buildout.
4. Neither the City of Seaside or County of Monterey has adopted VMT thresholds. This impact threshold is calculated using OPR's technical advisory, which suggested 15% below regional average.

Citywide VMT Analysis

For information purpose, the proposed General Plan buildout VMT is compared to the current General Plan buildout VMT to determine whether the proposed General Plan would reduce the per-capita VMT generation for residential land uses, employment-generating land uses. Total VMT per service population (population + jobs) is also compared to determine whether the total VMT generated by the City's land uses would be reduced at a per-service-population scale.

As shown in Table 4, compared to the current General Plan buildout, the proposed General Plan buildout would slightly reduce both residential VMT per capita, employment VMT per job, and total VMT per service population.

Table 4
Citywide VMT Comparison

	Residential VMT [1]			Employment VMT [2]			Total VMT [3]		
City of Seaside	VMT	Population	VMT per capita	VMT	Jobs	VMT per job	VMT	Service Population	VMT per service population
Current GP Buildout	351,472	44,492	7.9	66,638	10,501	6.3	1,272,632	54,993	23.1
Proposed GP Buildout	362,234	46,281	7.8	67,401	12,329	5.5	1,330,489	58,610	22.7

Notes:
Data computed using the AMBAG travel demand model
1. Residential VMT per capita accounts only for home-based VMT.
2. Employment VMT per job accounts only for home-to-work VMT.
3. Total VMT includes all trips generated by Seaside land uses, including visitors.

Appendix D

Biological Resources Assessment

Seaside General Plan, "Seaside 2040"

Biological Resources Assessment

prepared by

Rincon Consultants, Inc.
437 Figueroa Avenue, Suite 203
Monterey, California 93940

prepared for

City of Seaside
Community and Economic Development Department
440 Harcourt Avenue
Seaside, California 93955
Contact: Sharon Mikesell, Administrative Analyst

November 2017

Rincon Consultants, Inc.
Environmental Scientists Planners Engineers
www.rinconconsultants.com

Seaside General Plan, "Seaside 2040"

Biological Resources Assessment

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Figures

Appendices

1 Introduction

Rincon Consultants, Inc. (Rincon) has prepared this Biological Resources Assessment (BRA) to document the existing conditions within the City of Seaside (City) General Plan area, in support of the preparation of the City of Seaside 2040 General Plan Update, and associated Environmental Impact Report (EIR).

This report documents the existing biological conditions, known occurrences of special status species and sensitive natural communities, as well as the regulatory setting and environmental constraints.

2 Project Description

The City last updated its General Plan in 2004. Since then, changes have taken place in the City's economic and housing markets, demographics, land use, transportation system, community character, and infrastructure demands. The 2040 General Plan Update incorporates these new conditions, the community's consensus for the future and new State requirements regarding climate change and transportation with a time horizon of 2040.

"The General Plan Update brings the General Plan up-to-date by:

- Engaging community members to express their collective values to create a common vision for the City's future.
- Refining the land use and community character vision for potential growth areas of the City.
- Incorporating recently created plans, such as the West Broadway Specific Plan.
- Creating updated policies for land use, community design, transportation, infrastructure, and other topics.
- Ensuring that the General Plan is consistent with the Fort Ord Base Reuse Plan.
- Maintaining the City's stock of housing, especially housing for those with low- and moderate-incomes.
- Addressing recent State requirements regarding climate change and transportation."

To accomplish these goals the 2040 General Plan outlines 16 major strategies, some of which occur on previously developed land within the City proper, and some of which occur on undeveloped former Fort Ord lands, or within the Laguna Grande Lake Roberts complex. Projects associated with these strategies have potential to result in impacts to biological resources. Specifically, strategies 9-13 have increased potential to result in impacts to biological resources based on their design in relation to the City's natural and recreation assets and the former Fort Ord lands. The 2040 General Plan update, and major strategies are described in full in the Seaside General Plan Update EIR.

Strategy nine: Create entryways to the City's key amenities and destinations. Under this strategy, amenities would be created to encourage use of the City's natural and recreational assets to encourage use. This would include construction of restaurants, cafes, and retail services.

Strategy ten: Develop Seaside East with sustainable neighborhoods and the preservation of natural areas. This strategy includes the development of former Fort Ord lands for residential and mixed-use retail areas, designed to preserve significant natural resources.

Strategy eleven: Construct new and enhance existing parks. This stagey includes development of new parks and recreational facilities on former Fort Ord lands.

Strategy twelve: Create an active trail network. Strategy twelve will create a network of open space trails and bicycle facilities to connect the Fort Ord National Monument, Laguna Grande/Lake Roberts, Dunes State Park, Seaside beach, open space, and other neighborhood and community parks; Including links to the Fort Ord Rec Trail and Greenway (FORTAG).

Strategy thirteen: Preserve habitat. The purpose of this strategy is to protect sensitive habitats and preserve the extensive natural resources during new development, particularly on former Fort Ord lands. This will be accomplished through open space corridors and trails that support natural

vegetation communities, sensitive habitats, and connections to the National Monument and FORTAG trail. A buffer will be established between new development and the National Monument; and Oak woodlands and oak linkages will be protected during development and preserved.

2.1 Relevant 2040 General Plan Goals and Policies

The goals and policies incorporated into the 2040 General Plan that are relevant to biological resources and sensitive species include:

Land Use and Urban Design Goals and Policies

Goal LUD-9: A City with beautiful and vibrant architecture and building design that reflects the culture and character of Seaside. To beautify the City, enhance the image of the community, and encourage integrated urban design.

> **Policy: Natural areas.** Design sites and buildings adjacent to natural areas with transparent design elements. Employ bird-safe design practices near habitat areas or migratory routes.

Goal LUD-17: Abundant and high-quality natural open space on former Fort Ord lands. To leverage the undeveloped Fort Ord lands to provide new active and passive open space for the Seaside community. To create connected open space and habitat corridors that maximize ecological quality.

> **Policy: Sensitive habitat.** Protect and maintain sensitive habitat areas as feasible.
>
> **Policy: Open space corridors.** Balance the need to create more housing, employment, retail, and entertainment uses on former Fort Ord lands with open space corridors that support natural vegetation communities, scenic vistas, and sensitive habitats within new growth areas. Open space corridors should connect to formal and informal trailheads in the National Monument, where possible.
>
> **Policy: Open space buffer.** Provide an open space buffer consistent with the Base Reuse Plan (BRP).
>
> **Policy: Regional efforts.** Participate in regional programs and in partnerships with land trusts to seek funding to preserve, maintain, and acquire open space as opportunities allow.

Goal LUD-20: New development supports the preservation or enhancement of the City's natural resources. To protect the most valuable natural areas and species in former Fort Ord lands.

> **Policy: Clustered development.** Cluster new development on former Fort Ord lands, as feasible, to minimize impacts on sensitive habitat.
>
> **Policy: Development adjacent to habitat.** Require new construction adjacent to habitat management areas to minimize new impervious surface, minimize light pollution, and emphasize native landscaping.
>
> **Policy: Low-impact development.** Require new construction to use low-impact development techniques to improve stormwater quality and reduce run-off quantity.
>
> **Policy: Steep slopes.** Preserve areas with steep slopes greater than 40 percent by prohibiting commercial and residential development. Open space and trails may be allowed in these areas.

Policy: Native species. Encourage new development to support a diversity of native species and manage invasive species.

Policy: Green Streets. Explore opportunities for Green Streets, when feasible. When Green Street demonstration areas are identified, include unobtrusive educational signage.

Goal LUD-22: Balanced, diverse, and sustainable growth. To guide development towards a diverse community that balances habitat and wilderness with new low-impact residential development clustered around neighborhood centers, supporting public use, and employment districts.

Policy: Habitat preservation. Support the preservation of open space and sensitive habitat including:

- Oak woodlands and linkages.
- An open space buffer between future development and the National Monument.
- Open space corridors that support natural vegetation communities, scenic vistas, and sensitive habitats

Parks, Open Space, and Conservation Goals and Policies

Goal POC-2: Natural open space on former Fort Ord lands. As former Fort Ord lands redevelop, this goal aims to create a high-quality and well-connected series of natural open spaces that support expanded recreational opportunities. Open space corridors include trails connecting to the Fort Ord National Monument, parks, and other destinations. It also includes passive corridors to preserve habitat, consistent with the Base Reuse Plan.

Policy: Active open space corridors. In partnership with regional and local agencies, develop active open space corridors that support natural vegetation communities, scenic vistas, and sensitive habitats within former Fort Ord lands. Open space corridors should connect to formal and informal trailheads in the National Monument where possible.

Policy: Open space buffer. Provide an open space buffer consistent with the BRP between future development in Seaside East and the National Monument.

Policy: Partner with outside agencies. Participate in regional and federal programs and partner with land trusts or other nonprofits to seek funding to preserve, maintain, and manage natural open space

Policy: Educational opportunities. Promote educational opportunities to emphasize the need to maintain and manage biological resources to maintain the uniqueness and biodiversity of the former Fort Ord

Goal POC-7: Environmental sustainability and awareness at new and existing park and recreational facilities. Reducing energy and water use, diverting solid waste from the landfill, and capturing stormwater onsite can improve the environmental sustainability of Seaside's parks and open spaces. This goal seeks to increase the City's sustainability efforts in parks, using these actions as an opportunity to educate the community about sustainability.

Policy: Education. Increase awareness of environmental sustainability practices by highlighting conservation practices at park and recreational facilities.

Policy: Environmental literacy. Promote environmental literacy classes or urban ecology programs for youth.

Goal POC-8: Sensitive species and habitat protected on former Fort Ord lands. The Fort Ord HMP and HCP provide frameworks to conserve and manage special status species, animal communities, and habitat areas on former Fort Ord lands. This goal aims to implement those plans locally, identifying and managing habitat areas and species.

Policy: Inland water resources. Strive to protect and enhance creeks, lakes, and adjacent wetlands by eradicating non-native vegetation and restoring native vegetation.

Policy: Habitat Management Plan and Habitat Conservation Plan. Continue to partner with local, regional, and federal agencies to implement the programs outlined by the HCP and HMP.

Policy: Loss of sensitive species. Strive to minimize the loss of sensitive species and critical habitat areas in areas planned for future development.

Policy: Habitat management areas. Continue to protect habitat management areas on former Fort Ord land, identifying habitat areas, planning carefully to avoid significant impacts, and implementing more restrictive development standards adjacent to these areas.

Policy: Oak woodlands. Continue to partner with regional and local agencies to designate oak woodlands and linkages, encourage the preservation and management, of oak woodland and linkages, and connect them to other parks, open spaces, and active open space corridors.

Policy: Habitat restoration. Restore habitat areas where habitat has been disturbed by activities on the former Fort Ord lands, if economically feasible, in development of Specific Plans.

Policy: Zoning. During development of Specific Plans on former Fort Ord lands, map and designate habitat management areas to be protected from future development, where appropriate.

Goal POC-9: New development supports the preservation or enhancement of the City's natural resources. Former Fort Ord lands contain higher-quality, contiguous habitats and special status species. As future development occurs on former Fort Ord lands, this goal fosters sustainable development practices that provide to sensitive habitats and species.

Policy: Clustered development. Cluster new development on former Fort Ord lands to minimize impacts to oak woodlands and linkages, preserve habitat management areas, and protect steep slopes, wetlands, and waterways.

Policy: Integrating oak woodland. Work with developers to promote an understanding of existing oak trees and previously-identified oak woodland linkages as they design new developments.

Policy: Development review. When projects are adjacent to or contain sensitive habitat, require projects to submit analysis showing the existing habitat, proposed plan.

Policy: Development near habitat management areas. Require new development adjacent to habitat management areas to minimize new impervious surface, minimize light pollution, and emphasize native landscaping.

Policy: Hillside protection. When grading is necessary, encourage grading for new development that complements the surrounding natural features.

Policy: Dark sky lighting standards. Require new construction or modifications to existing development and public facilities to adhere to: dark sky lighting standards or the control of outdoor lighting sources by shielding light in the downward direction and limiting bright white lighting and glare.

Policy: Dark sky education. Promote dark sky education in the community in order to excel at efforts to promote responsible lighting and dark sky stewardship.

Policy: Native species. Encourage new development to support a diversity of native species and manage invasive species.

Policy: Invasive species. Discourage the use of plant species on the California Invasive Plant Inventory.

Policy: Low-impact development. Use low-impact development techniques to improve stormwater quality and reduce run-off quantity.

Policy: Stormwater area and wetlands. Incorporate wetland features into stormwater control facilities to the extent practicable.

Policy: Water quality. Incorporate water quality and habitat enhancement in new flood management facilities.

Goal POC-10: A City that protects, conserves, and enhances the natural beauty and resources within the coastal zone. Seaside's coastal zone provides important habitat for special status species. Habitat areas and wildlife can be negatively affected by certain types of development and human activity. This goal aims to preserve and protect natural resources in the coastal zone through careful management, including eradication of non-native vegetation, and restoration of native vegetation.

Policy: Partnerships. Promote local and regional cooperation and partnership, including the Fort Ord Reuse Authority and California State Parks, to help protect and manage Seaside's natural resources in the coastal zone.

Policy: Protect critical habitats. Preserve, protect, and improve open space areas to the greatest extent possible to improve on existing limited habitats outlined by the Local Coastal Plan.

Policy: Beach habitat. Work with local and regional agencies to ensure beaches can function as a quality habitat for permanent and migratory species.

Policy: Coastal zone. Protect the coastal zone west of SR 1 from habitat degradation due to increased access.

Goal POC-11: Pollutant discharge managed to minimize adverse impacts on water quality in the Monterey Bay, Robert's Lake, Laguna Grande and other bodies of water. To reduce the negative environmental impacts of storm water runoff on the Monterey Bay, Robert's Lake, Laguna Grande, and other bodies of water improves local habitat.

Policy: Low-impact development practices. Use and encourage the use of low-impact development techniques that may include improving soil health, providing soil cover and water-wise planting and irrigation, installing permeable pavements, building bio-retention areas to reduce runoff quantity, and improving storm water quality for new development and redevelopment projects.

Policy: Storm water runoff. Enforce the reduction of storm water runoff consistent with local storm water permits.

Policy: Storm water facilities. Incorporate storm water facilities into the design of parks and open spaces, using natural processes to capture, treat, and infiltrate storm water to the extent feasible.

Policy: Retrofit existing street. Explore the retrofit of streets with storm water treatment areas as existing streets are redesigned.

Goal POC-12: An abundant, robust urban forest that contributes to Seaside's quality of life as it combats the effects of climate change. Urban forestry and is essential to the City's path towards greater sustainability. Seaside urban forest enhances its environmental quality and the mental and physical health of its residents, while bringing significant economic benefits through increased property values. Urban forestry will make the City more resilient to the likely impacts of climate change.

Policy: Maintenance. Encourage the maintenance of trees on public and private property.

Policy: New plantings. Require new development to include the planting and maintenance of trees (on both sides of the street when applicable) as well as on private properties.

Policy: Protected tree species. Preserve protected tree species, (e.g. native oaks) whenever possible during site redevelopment.

Policy: Select planting. Encourage the planting of native, non-invasive, and drought-tolerant landscaping and trees. Encourage landscape plantings to use tree species native to an area when adjacent to natural plant communities and habitat management areas.

2.2 Project Location

The Plan Area and Sphere of Influence for the 2040 General Plan Update are defined by the City limits. The City encompasses 7.94 square miles on the Monterey Peninsula, approximately 115 miles south of San Francisco. The City borders the City of Monterey and Del Rey Oaks to the south, Sand City to the west, and Marina to the north. The Fort Ord National Monument lies to the east of the City. Land use is primarily urban within the boundaries of the City, while open space and former military lands exist to the north and east of the City. Figure 1 and 2 show the regional location and Plan Area.

Figure 1 Regional Location

Figure 2 General Plan Area

3 Methods

3.1 Literature Review

Rincon reviewed literature for baseline information on biological resources potentially occurring In the Plan Area and vicinity. The purpose of this review was to identify biological resources that could be affected by implementation of the 2040 General 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; Rodewald, 2017; 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, 2017a) and Biogeographic Information and Observation System (CDFW, 2017b); the U.S. Fish and Wildlife Service (USFWS) Critical Habitat Portal (USFWS, 2017a), National Wetlands Inventory Wetlands Mapper (USFWS, 2017b), and Information for Planning and Consultation (IPaC) System (USFWS, 2017c); the United States Department of Agriculture, Natural Resources Conservation Service (USDA, NRCS) Web Soil Survey (USDA, NRCS, 2017); and the California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants of California (CNPS, 2017). Other sources of information about the site included aerial photographs, topographic maps, geologic maps, climatic data, and project plans. Previous biological studies for projects occurring in the region, including the *Seaside General Plan Update Existing Conditions Report* (Raimi + Associates et al., 2017), *Seaside Local Coastal Program* (City of Seaside, 2013), *City of Seaside Local Coastal Program Biological Inventory Report* (PCM, 2009), *Flora and Fauna Baseline Study of Fort Ord, California* (USACE, 1992), *Installation-wide Multispecies Habitat Management Plan for former Fort Ord, California* (HMP) (USACE, 1997), and *Fort Ord Reuse Plan; Final Environmental Impact Report* (FORA, 1997) were reviewed for pertinent information of special status biological resources and existing conditions occurring in the region.

Queries of the CDFW CNDDB and the CNPS Inventory of Rare and Endangered Plants of California included the *Seaside* and *Marina*, California USGS 7.5-minute topographic quadrangles, and surrounding eight quadrangles; *Monterey*, *Soberanes Point, Mt. Carmel, Carmel Valley, Spreckels, Salinas, Prunedale,* 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. Note that for CNDDB mapping purposes a five-mile search radius was used.

3.2 Regulatory Overview

Regulated or sensitive resources studied and analyzed herein include special status plant and wildlife species, nesting birds and raptors, sensitive plant communities, jurisdictional waters and wetlands, wildlife movement, and locally protected resources, such as protected trees.

3.2.1 Environmental Statutes

Federal, state, and local authorities under a variety of statutes and guidelines share regulatory authority over biological resources. The CDFW is a trustee agency for biological resources throughout the state under the California Environmental Quality Act (CEQA) and also has direct jurisdiction under the California Fish and Game Code, which includes, but is not limited to, resources protected by the State of California under the California Endangered Species Act (CESA). The USFWS and National Marine fisheries Service (NMFS) share responsibility for implementing the federal Endangered Species Act (ESA). The U.S. Army Corps of Engineers (USACE) has authority to regulate activities that result in discharge of dredged or fill material into wetlands or other "waters of the United States." "Waters of the State" fall under the jurisdiction of the California Department of Fish and Wildlife and the State Water Resources Control Board (SWRCB)(including each of nine local Regional Water Quality Control Boards [RWQCBs]). Under the California Coastal Act (CCA), the City is responsible for the development and implementation of a Local Coastal Program (LCP) through review and approval of Coastal Development Permit applications.

For the purpose of this report, potential impacts to biological resources were analyzed based on the following laws, ordinances, regulations, and statutes:

- California Environmental Quality Act (CEQA)
- Federal Endangered Species Act (FESA)
- 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 (Porter-Cologne)
- City of Seaside General Plan Update (2040)
- City of Seaside Municipal Code (Chapter 8.54, Trees)
- City of Seaside Local Coastal Program (LCP) (2013)
- Fort Ord Habitat Management Plan (HMP) (1997)
- Fort Ord Habitat Conservation Plan (HCP) (in progress)
- FORA Base Reuse Plan (1997)

3.2.2 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:

> *1) 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.*
>
> *2) 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.*

3) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.

4) 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.

5) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

6) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional or state habitat conservation plan.

4 Existing Conditions

4.1 Environmental Setting

The Plan Area 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 40.7°F, a maximum average temperature of 67.4°F, and an annual precipitation of 14.7 inches (NOAA, 2016). Elevation within the City ranges from mean sea level (msl) at the Pacific Ocean, to 552 feet above msl along the City's eastern border.

Six soil types are mapped within the Plan Area: Arnold-Santa Ynez complex; Baywood sand, 2 to 15 percent slopes; Coastal beaches; Dune land; Oceano loamy sand, 2 to 15 percent slopes; and Rindge muck, 0 to 2 percent slopes, MLRA 14 drained (USDA, NRCS 2017). The two dominant soil types in the Plan Area are Baywood sands and Oceano loamy sand, covering approximately 65 percent and 31 percent, respectively. Both of these are deep, well-drained soils found in rolling coastal dunes.

The Plan Area can be divided into two general areas based on existing conditions, the City of Seaside proper, and the former Fort Ord. The City to the west is primarily developed, and generally lacks natural habitats with the exception of the Laguna Grande/Roberts Lake complex and a small section of marine habitat at Seaside Beach. Former Fort Ord lands, occurring in the eastern side of the Plan Area, are primarily undeveloped and contain the majority of native vegetation communities and open space in the Plan Area.

4.2 Vegetation Communities and Land Cover Types

Vegetation communities and land cover types occurring within the Plan Area were developed based on aerial imagery and data from the City of Seaside, the former Fort Ord, California State University Monterey Bay, USGS, and NOAA, as described in the existing conditions report (City of Seaside, 2017). Sixteen vegetation communities and land cover types were identified; ranging from developed areas to native chaparral and woodlands. The sixteen vegetation communities are described below. One nonvegetated land cover type was mapped within the plan area; Urban/Developed. This type includes patches of bare ground and developed areas, primarily within the City proper.

Annual grasses and forbs. 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. Rapid land use change during the mid- to late-1800s, along with other interacting factors, accelerated the invasion of California's native grassland by species of European origin. The intensification of livestock grazing both brought in new species for livestock forage, and prompted the spread of invasive species in California grasslands (Caziarc 2012). Non-native species are dominant, including annual grasses such as wild oats (*Avena fatua*), ripgut brome (*Bromus diandrus*), red brome (*Bromus madritensis* ssp. *rubens*), rattail fescue (*Festuca myuros*), Italian rye

(*Festuca perennis*), and foxtail barley (*Hordeum murinum* var. *leporinum*). Some native plant species are also present and include common yarrow (*Achillea millefolium*), blow wives (*Achyrachaena mollis*), mountain dandelion (*Agoseris grandiflora*), golden stars (*Bloomeria crocea*), golden Brodiaea (*Triteleia ixioides*), soap plant (*Chlorogalum pomeridianum*), purple clarkia (*Clarkia purpurea*), narrow leaved owl's clover (*Castilleja attenuata*), and Jeffrey's shooting star (*Primula jeffreyi*). Occasional patches of native perennial grasses are intermixed at low cover, and include blue wildrye (*Elymus glaucus*), valley wild rye (*Leymus triticoides*), California fescue (*Festuca californica*), California melicgrass (*Melica californica*), and pine bluegrass (*Poa secunda*).

Chamise chaparral. This community is considered chaparral, and consists of a shrub layer with few trees and an open canopy. Chamise is dominant, with Eastwood manzanita (*Arctostaphylos glandulosa*), whiteleaf manzanita (*Arctostaphylos manzanita*), California lilac (*Ceanothus* spp.), sticky monkey flower (*Mimulus aurantiacus*), California buckwheat, oaks (*Quercus* spp.), toyon (*Heteromeles arbutifolia*), sage (*Salvia* spp.), and poison oak intermixed occasionally. This community is differentiated from other chaparral communities in the plan area due to the high percentage of chamise and low cover of other species.

Coast Live Oak Woodland. Holland (1986) and Sawyer et al. (2009) describe this community as singularly dominated by coast live oak (*Quercus agrifolia*) with an open underdeveloped understory, consisting of poison oak, grassland, or chaparral species such as black sage, chamise, coyote brush, and California sagebrush. Oak woodlands and savannas support the greatest species richness of any vegetation type in the state and are considered important habitats (Barbour et al., 2007).

Dune/Beach. This land cover type consists of unvegetated sand, between the vegetated portion of the foredunes and the ocean.

Vegetated Dune. Partially stabilized dunes occur northwest of Highway 1, near Roberts Lake. Some sparse vegetation occurs on the foredune, including sea rocket (*Cakile maritima*) and saltscales (*Atriplex* spp., *Extriplex* spp.). Native dune species in this community also include coast buckwheat (*Eriogonum parvifolium*), bush lupine (*Lupinus chamissonis*), deerweed (*Acmispon glaber*), beach primrose (*Camissoniopsis cheiranthifolia*), and coastal sagewort (*Artemisia pycnocephala*). Ice plant (*Carpobrotus chilensis*, and *C. edulis*) is also present in low quantities, but not dominant.

Ice Plant. Ice plants are non-native invasive species, originally planted in the 1940s and 50s 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. Within this community some native species, ornamental plantings, and bare patches may occur.

Maritime Chaparral. Maritime chaparral occurs on sandy soils within the coastal fog zone. This community is primarily found the eastern side of Seaside, on former Fort Ord lands. Maritime chaparral is a fairly open fire dependent community, dominated by woollyleaf manzanita (*Arctostaphylos tomentosa*), with black sage, coyote brush, Toro manzanita (*Arctostaphylos montereyensis*), sand mat manzanita (*Arctostaphylos pumila*), Hooker's manzanita (*Arctostaphylos hookeri*), toyon, and ceanothus (*Ceanothus* spp.). This chaparral community is distinguished from the chamise chaparral community by its more diverse species composition.

Non-Native/Ornamental Grass. This land cover type consists of managed fields and lawns. Species are typically turf grasses and nonnative species such as kikuyu grass (*Pennisetum clandestinum*), hairy crabgrass (*Digitaria sanguinalis*), and English daisy (*Bellis perennis*).

Non-Native/Ornamental Hardwood. This community consists of primarily non-native species in ornamental plantings. Tree species found in this community are highly variable, and typically non-native or not occurring as a natural community woodland, and include Monterey cypress (*Hesperocyparis macrocarpa*), eucalyptus (*Eucalyptus* spp.), Monterey pine (*Pinus radiata*), eastern redbud (*Cercis canadensis*), California sycamore (*Platanus racemosa*), and American sweetgum (*Liquidambar styraciflua*). Bushes and shrubs in this community are variable by occurrence and may include oleander (*Nerium oleander*), lantanas (*Lantana* spp.), juniper (*Juniperus* spp.), and California lilac. Although Monterey pine and cypress are native to California, there are no naturally occurring stands of these species in Seaside, and the individuals present are ornamental plantings and offspring established from ornamental plantings.

Pacific Coast Scrub. This community is comprised of coastal scrub dominated by evergreen, microphyllous-leaved or hemi-sclerophyllous shrub taxa; drought-deciduous species are unimportant or absent in this system due to proximity to the coast and supplemental moisture from fog. Dense shrublands typically include a well-developed woody and herbaceous understory. Characteristic species of Pacific coast scrub include coyote brush, yellow bush lupine (*Lupinus arboreus*), blueblossom (*Ceanothus thyrsiflorus*), seaside golden yarrow (*Eriophyllum staechadifolium*), sticky monkeyflower, poison oak, California blackberry (*Rubus ursinus*), thimbleberry (*Rubus parviflorus*), salmon berry (*Rubus spectabilis*), California coffeeberry (*Frangula californica*), ocean spray (*Holodiscus discolor*), salal (*Gaultheria shallon*), common cow parsnip (*Heracleum maximum*), and sword fern (*Polystichum munitum*). In some areas, this community is dominated by California Sagebrush (*Artemisia californica*) or coyote brush (*Baccharis pilularis*),

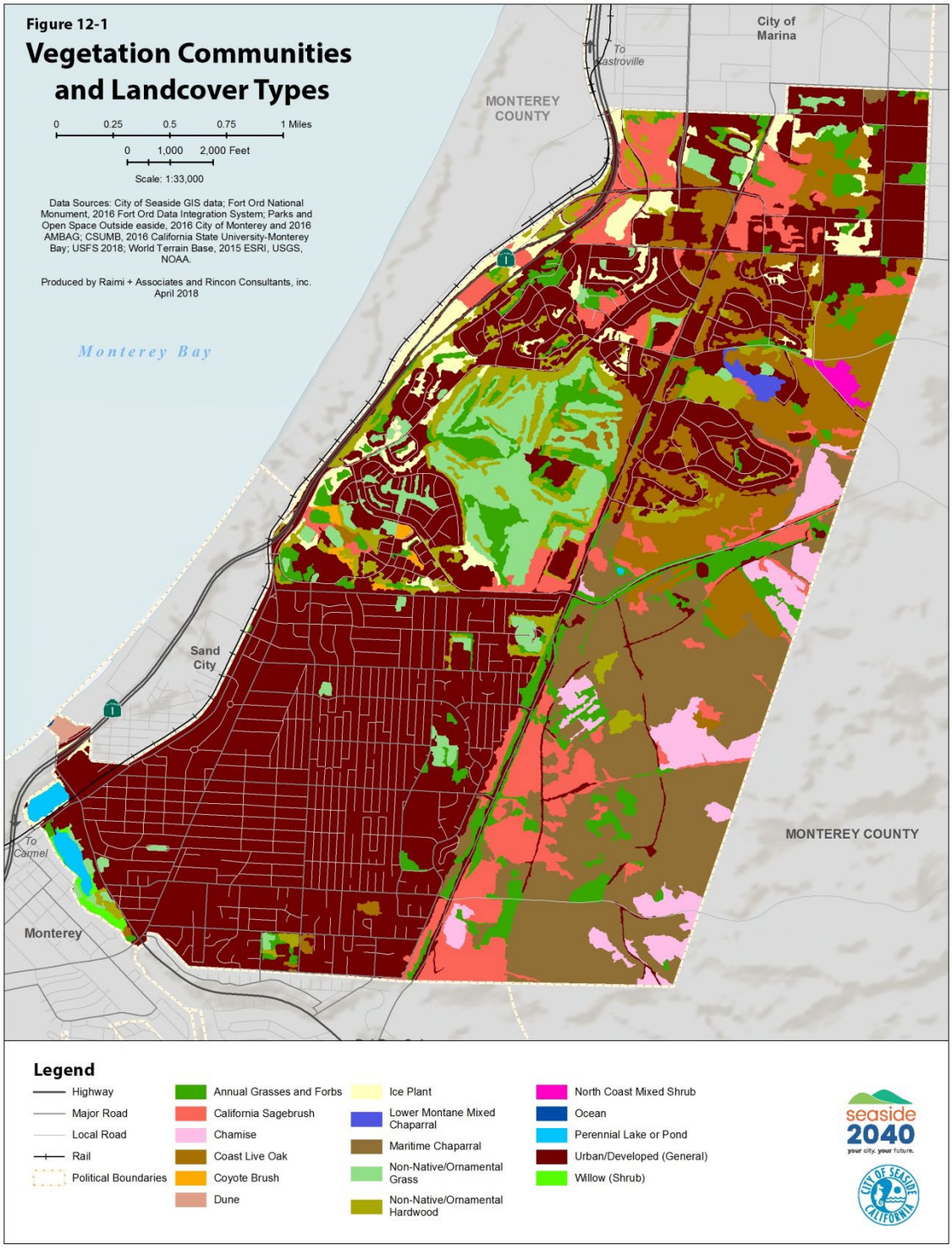
Ocean. This land cover type consists of open waters of the Pacific Ocean, on the south western edge of the City of Seaside.

Perennial Lake or Pond. Freshwater habitats occur at Roberts Lake and Laguna Grande. Originally a seasonal estuarine body of water, the Laguna Grande and Roberts Lake complex is now a freshwater marsh and two lakes. It is a portion of the Canyon Del Rey Creek that drains the 13.5 square mile Canyon Del Rey Creek watershed to the southeast. The creek flows through Laguna Grande, then into Roberts Lake, and finally into Monterey Bay. Despite the past disturbance to these lakes, wetlands, and associated communities, these habitats continue to support a variety of vegetation and wildlife. Because of this unusual setting, these coastal zone habitats are biologically and physically significant as a whole in that they represent a unique example of coastal zone plant and wildlife communities. Both coastal water bodies are frequent foraging and resting sites for resident and migrating water fowl. The freshwater marshes in this area consist of large emergent herbaceous wetland species, including tule (*Schoenoplectus californicus*) and cattails (*Typha* spp.), which grow in a discontinuous band along the margins of both lakes in shallow waters. Soils are saturated or inundated for many weeks each year. This community also includes patches of other emergent herbaceous wetland vegetation, in which other, smaller emergent species such as rushes (*Juncus* spp.), pennywort (*Hydrocotyle ranunculoides*), spikerush (*Eleocharis macrostachya*), loosestrife (*Lythrum hyssopifolia*), rabbitsfoot grass (*Polypogon monspeliensis*), and brass buttons (*Cotula coronopifolia*) are intermixed in saturated soils at the edges of the lakes and stream.

Urban/Developed. This community consists of areas that have been modified such that most or all vegetation has been removed or only small areas of landscape vegetation are present. Parking lots, roads, sidewalks, structures, paved and unpaved pathways are included within this community. In some cases vegetation from adjacent areas may overhang. Playgrounds, picnic areas, gravel areas, roadside pullouts, and areas of urban-related bare soil are included in this land cover type.

Willow. This community occurs primarily along the margins of Canyon Del Rey Creek, portions of Laguna Grande, and portions of Roberts Lake, dominated by arroyo willow (*Salix lasiolepis*) in tree form. Other trees in this community include blackwood acacia (*Acacia melanoxylon*) and occasional coast live oak trees. The understory is mixed. In some areas close to the lake edge where soils remain moist year round, native emergent wetland species including horsetails (*Equisetum* spp.), tule, cattails, and rushes are present; these areas are sometimes called forested wetlands. In drier areas, poison oak and California blackberry are present in the riparian community. Infestations of Himalayan blackberry (*Rubus armeniacus*), English ivy, German ivy (*Delairea odorata*) and garden nasturtium (*Tropaeolum majus*) are also present.

Figure 3 Vegetation Communities and Land Cover Types



4.3 Jurisdictional Waters and Wetlands

The Plan Area crosses the Carmel and Alisal-Elkhorn Sloughs watersheds (Hydrologic Unit Codes 18060012 and 18060011, respectively).

According to the National Wetland Inventory (NWI) (USFWS, 2017b), known jurisdictional wetlands and waters within the City of Seaside include: estuarine and marine wetlands, estuarine and marine deepwater, freshwater emergent wetlands, freshwater forested/shrub wetlands, riverine, lake, and freshwater ponds (Figure 4). Primarily located within the former Fort Ord and adjacent to Laguna Grande, these wetlands and non-wetland waters are typically subject to USACE jurisdiction under the Clean Water Act (CWA), RWQCB jurisdiction under the CWA and Porter-Cologne, and CDFW jurisdiction under the CFGC. Additional wetlands or waters, if discovered within the Plan Area would require evaluation as potentially subject to CDFW, RWQCB, and/or USACE jurisdiction(s).

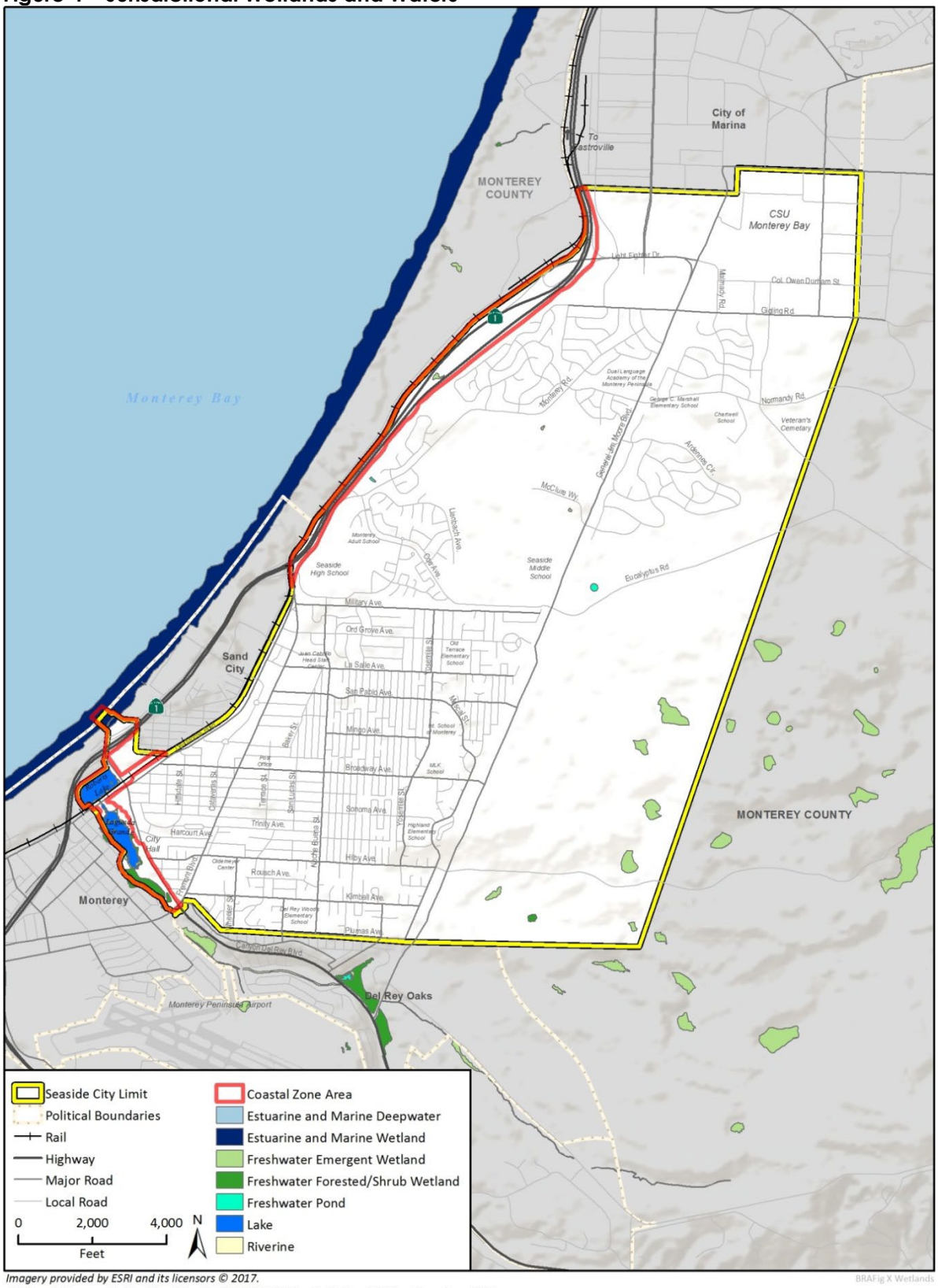
Canyon Del Rey Creek, an ephemeral stream, is the only stream in the Plan Area. The Canyon Del Rey Creek watershed flows into the Pacific Ocean and drains an area of 16.8 square miles (Balance Hydrologics, Inc. and Whitson Engineers, 2014). The creek flows into Laguna Grande and Roberts Lake, before discharging into the ocean west of Roberts Lake through concrete box culverts under Roberts Avenue and State Route (SR) 1 (Balance Hydrologics, Inc. and Whitson Engineers, 2014). This watershed has been highly developed within the Plan Area.

Within the former Fort Ord, vernal pools have been documented outside the Plan Area on land designated for conservation. If vernal pools exist within the Plan Area they may be considered jurisdictional, and may support special status species.

4.4 Coastal Zone

The Coastal Zone crosses the Plan Area twice, and includes the Laguna Grande/Roberts Lake complex and a narrow band that runs along SR 1 between the northern boundary of Seaside and Sand City (Figure 4).

Figure 4 Jurisdictional Wetlands and Waters



Imagery provided by ESRI and its licensors © 2017.
Additonal data provided by City of Seaside GIS, 2016; Wetlands, National Wetland Inventory, 2016.

5 Sensitive Biological Resources

Sensitive biological resources are known to occur or have the potential to occur within or adjacent to the Plan Area. These resources include; special status plants and animals, sensitive natural communities, wetlands, streams and associated riparian corridors, nesting birds, roosting bats, and corridors for wildlife movement.

5.1 Special Status Species

Special status species are defined as those plants and wildlife that, because of their recognized rarity or vulnerability to various causes of habitat loss or population decline, are recognized by federal, state, and/or local agencies as under threat from human-associated developments. Some of these species receive specific protection that is defined by federal or state endangered species legislation. Others have been designated as special status on the basis of adopted policies and expertise of state resource agencies or organizations with acknowledged expertise, or policies adopted by local governmental agencies such as counties, cities, and special districts to meet local conservation objectives. Special status species include:

- Species listed or proposed for listing as rare, threatened or endangered, or are candidates for possible future listing as threatened or endangered, under the Federal Endangered Species Act (FESA) or the California Endangered Species Act (CESA);
- Species that meet the definitions of rare or endangered under California Environmental Quality Act (CEQA) Guidelines Section 15380;
- All of the plants constituting California Rare Plant Rank (CRPR) 1B and 2 meet the definitions of Section 1901, Chapter 10 (Native Plant Protection Act) or Sections 2062 and 2067 CFGC (CESA), and are eligible for state listing;
- Species covered under an adopted Natural Community Conservation Plan (NCCP)/Habitat Conservation Plan (HCP);
- Wildlife designated by the CDFW as "species of special concern" or "special animals";
- Wildlife designated as "fully protected" by the CDFW (CFGC Sections 3511, 4700, and 5050); and
- Wildlife species protected as "fur-bearing mammals" (CFGC Section 4000 et seq.).

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 the vicinity of the Plan Area, and previous reports for the City and the former Fort Ord. This assessment is programmatic and includes the entire Plan Area; therefore, project-specific analysis should be conducted prior to project implementation under the 2040 General Plan Update. The potential for each special status species to occur in the Plan Area was evaluated according to the following criteria:

Not Expected. Habitat on and adjacent to the Plan Area is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).

Low Potential. Suitable or marginal habitat may occur in the Plan Area, but: no CNDDB records of the species have been recorded within twenty-five years; records of the species within 5 miles of the Project are suspected to be now extirpated or potentially misidentified with other species. For bird and bat species, this category may be used for species that are documented, but likely to be only transient through the area during foraging or migratory movements, no suitable nesting or roosting habitat is present.

Moderate Potential. CNDDB or other documented occurrences have been recorded within 5 miles of the Plan Area and suitable habitat is present (suitable nesting or roosting habitat or high quality foraging areas for bird and bat species).

High Potential. All of the habitat components meeting the species requirements are present and/or most of the habitat on or adjacent to the Plan Area is highly suitable. The species has a high probability of being found in the Plan Area.

Presumed Present. CNDDB or other documented occurrences have been recorded within the Plan Area and suitable habitat is present (suitable nesting or roosting habitat for bird and bat species). The species was documented from the Plan Area during previous surveys and is presumed extant.

5.1.1 Special Status Plants

Based on the database and literature review, 44 special status plant species are known to occur, or have at least a moderate potential to occur within the vicinity of the Plan Area (Appendix A). Federal and/or State listed plant species with at least a moderate potential to occur in the City of Seaside include: Seaside bird's-beak (*Cordylanthus rigidus* ssp. *littoralis*), Monterey gilia (*Gilia tenuiflora* ssp. *arenaria*), Menzies' wallflower (*Erysimum menziesii*), Gowen cypress (*Hesperocyparis goveniana*), Contra Costa goldfields (*Lasthenia conjugens*), Tidestrom's lupine (*Lupinus tidestromii*), Yadon's rein orchid (*Piperia yadonii*), Hickman's cinquefoil (*Potentilla hickmanii*), Monterey clover (*Trifolium trichocalyx*), beach layia (*Layia carnosa*), and Monterey spineflower (*Chorizanthe pungens* var. *pungens*).

Twelve special status plant species are presumed to be present based on the potential presence of suitable habitat and/or recorded occurrences.

- Pajaro manzanita (*Arctostaphylos pajaroensis*) – CRPR 1B.1
- Monterey spineflower – Federally Threatened, CRPR 1B.2
- Jolon clarkia (*Clarkia jolonensis*) – CRPR 1B.2
- seaside bird's-beak – State Endangered, CRPR 1B.1
- Eastwood's goldenbush (*Ericameria fasciculata*) – CRPR 1B.1
- sand-loving wallflower (*Erysimum ammophilum*) – CRPR 1B.2
- Monterey gilia – Federally Endangered, State Threatened, CRPR 1B.2
- Monterey cypress (*Hesperocyparis macrocarpa*) – CRPR 1B.2
- Kellogg's horkelia (*Horkelia cuneata* var. *sericea*) – CRPR 1B.1
- northern curly-leaved monardella (*Monardella sinuata* ssp. *nigrescens*) – CRPR 1B.2
- Monterey Pine (*Pinus radiata*) – CRPR 1B.1
- pine rose (*Rosa pinetorum*) – CRPR 1B.2

The majority of these plant species are associated with coastal dune and maritime chaparral habitats. Therefore, special status plants are most likely to occur along the west side of the Plan Area near the ocean, or on former Fort Ord land to the east. A comparison of special status plant

species and their potential to occur in vegetation communities and land cover types mapped within the Plan Area is provided in Table 1 below.

Table 1 Special Status Plant Species and Vegetation Communities

Species	Vegetation Communities and Potential to Occur												
	Annual Grasses and Forbs	Chamise Chaparral	Coast Live Oak	Dune/Beach	Vegetated Dune	Ice Plant	Maritime Chaparral	Non-Native/Ornamental Grass	Non-Native/Ornamental Hardwood	Pacific Coast Scrub	Perennial Lake or Pond	Urban/Development	Willow
Pajaro manzanita		X					X			X			
Monterey spineflower	X	X			X		X			X		X	
Jolon clarkia	X	X					X			X		X	
seaside bird's-beak		X	X				X		X	X	X	X	X
Eastwood's goldenbush							X			X			
sand-loving wallflower		X					X			X		X	
Monterey gilia	X	X	X		X	X	X			X		X	
Menzies' wallflower					X	X				X		X	
Gowen cypress	X						X		X				
Contra Costa goldfields	X						X	X					
Tidestrom's lupine					X	X				X		X	
Yadon's rein orchid							X		X	X			
Hickman's cinquefoil										X	X		X
Monterey clover	X						X		X			X	
beach layia					X					X		X	
Monterey cypress							X		X				
Kellogg's horkelia		X			X	X	X			X		X	
northern curly-leaved monardella		X			X	X	X			X		X	
Monterey Pine							X		X			X	
pine rose			X						X				

5.1.2 Special Status Wildlife

Based on the database and literature review, 21 special status wildlife species are known, or have at least a moderate potential to occur within the Plan Area (Appendix A). Federal and/or state listed species with at least a moderate potential to occur in the City of Seaside include: tricolored blackbird (*Agelaius tricolor*), western snowy plover (*Charadrius alexandrinus nivosus*), bank swallow (*Riparia riparia*), California tiger salamander (*Ambystoma californiense*), and Smith's blue butterfly (*Euphilotes enoptes smithi*).

Fifteen species have a high potential to occur, or are presumed to be present based on the potential presence of suitable habitat and known occurrences.

- Monterey dusky-footed woodrat (*Neotoma macrotis luciana*) – State Species of Special Concern (SSC)
- American Badger (*Taxidea taxus*), – SSC
- burrowing owl (*Athene cunicularia*) – SSC
- western snowy plover – Federally Threatened, SSC
- California horned lark (*Eremophila alpestris actia*) – Watch list (WL)
- prairie falcon (*Falco mexicanus*) – WL
- American peregrine falcon(*Falco peregrinus anatum*) – State Fully protected (FP)
- California brown pelican (*Pelecanus occidentalis californicus*), foraging only – FP
- bank swallow – State Threatened
- California tiger salamander – State Threatened, Federally Threatened, WL
- northern California legless lizard (*Anniella pulchra*) – SSC
- western pond turtle (*Emys marmorata*) – SSC
- coast horned lizard (*Phrynosoma blainvillii*) – SSC
- two-striped gartersnake (*Thamnophis hammondii*) – SSC
- monarch butterfly (*Danaus plexippus*), California overwintering population – Federal Candidate
- Smith's blue butterfly – Federally Endangered

Generally, special status species are most likely to occur in undeveloped areas on former Fort Ord lands. There is also potential for some species to occur on the west edge of the Plan Area near the ocean, and on non-developed and developed parcels/areas within developed portions of the City. The dunes along the west side of the Plan Area may provide habitat for northern California legless lizard, Smith's blue butterfly, and western snowy plover. The proximity of the Plan Area to western snowy plover designated critical habitat also increases the likelihood of this species occurring. Within developed areas, buildings provide suitable nesting and foraging sites for American peregrine falcon, particularly near Laguna Grande and Roberts Lake. Laguna Grande and Roberts Lake also provide foraging habitat for California brown pelican and bank swallow, and suitable habitat for western pond turtle. There are also large eucalyptus trees in the developed area, which may provide suitable overwintering habitat for monarch butterflies.

California red-legged frog (*Rana draytonii*) has a low potential to occur in the Laguna Grande/Roberts Lake complex due to known occurrences within five miles; however, repeated surveys of this area and nearby Frog Pond Wetland Preserve were negative (Anderson, 2016).

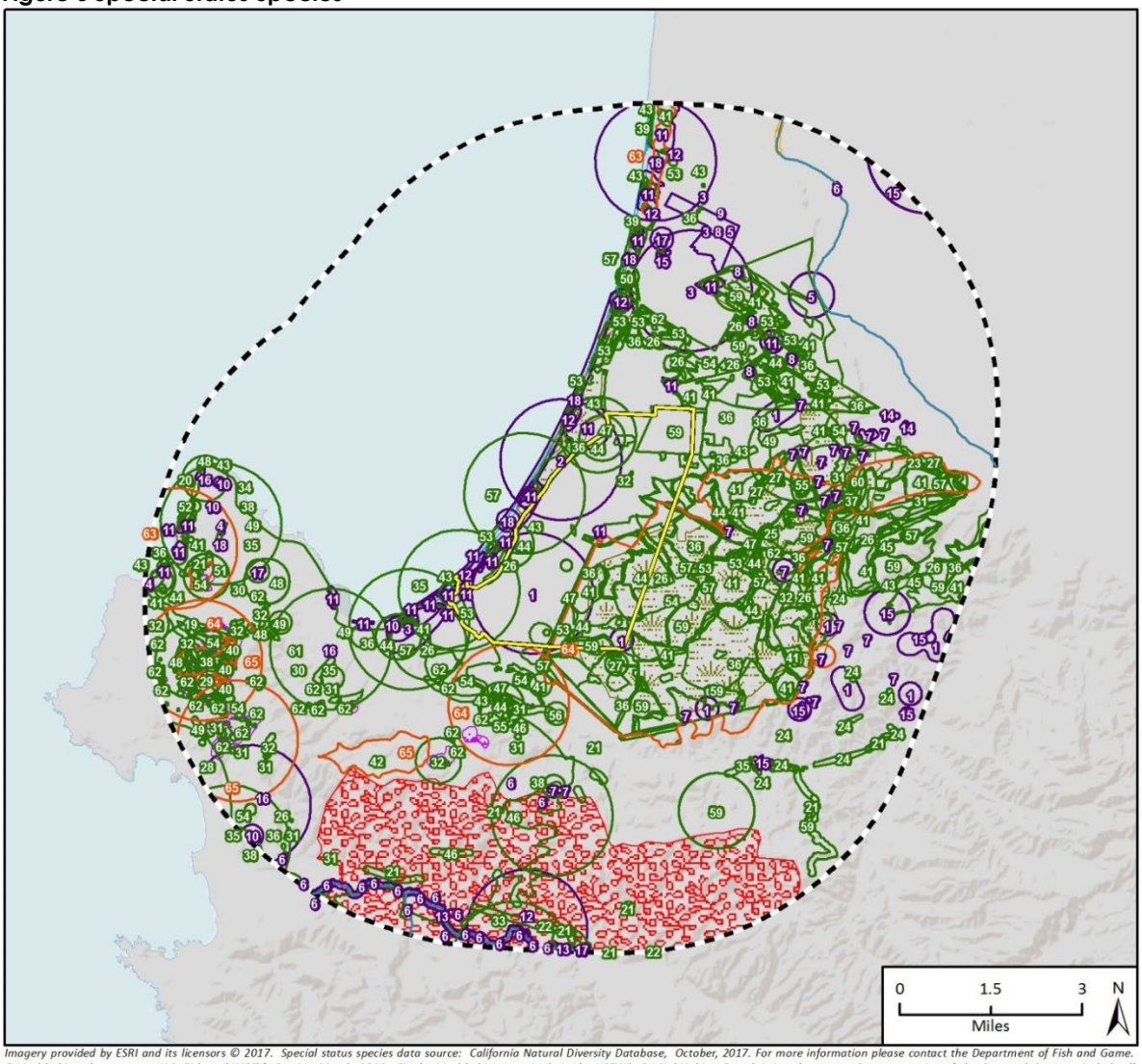
On the former Fort Ord, coast live oak woodland and savanna provide habitat for California tiger salamander, burrowing owl, American badger, California horned lark, and prairie falcon. Maritime

chaparral communities may also support coast horned lizard and Monterey dusky-footed woodrat. A comparison of special status animal species and their potential to occur in vegetation communities and land cover types mapped within the Plan Area is provided in Table 2 below.

Table 2 Special Status Animal Species and Vegetation Communities

	Vegetation Communities and Potential to Occur												
Species	**Annual Grasses and Forbs**	**Chamise Chaparral**	**Coast Live Oak**	**Dune/Beach**	**Vegetated Dune**	**Ice Plant**	**Maritime Chaparral**	**Non-Native/Ornamental Grass**	**Non-Native/Ornamental Hardwood**	**pacific Coast Scrub**	**Perennial Lake or Pond**	**Urban/Development**	**Willow**
Monterey dusky-footed woodrat			X						X	X			X
American Badger	X		X				X			X			
Burrowing owl	X	X	X				X	X	X	X		X	
Western snowy plover					X								
California horned lark	X	X	X				X			X	X		
prairie falcon	X	X	X				X			X	X		
American peregrine falcon	X	X	X				X	X	X	X	X	X	X
California brown pelican											X		
Bank swallow											X		X
California tiger salamander	X		X				X			X	X		
northern California legless lizard	X	X	X		X	X	X	X	X	X	X	X	
western pond turtle			X								X	X	X
coast horned lizard	X	X	X		X	X	X	X	X	X	X	X	
two-striped gartersnake											X	X	X
monarch butterfly									X				
Smith's blue butterfly	X	X			X	X	X			X			
tricolored blackbird	X							X			X		X

Figure 5 Special Status Species



Imagery provided by ESRI and its licensors © 2017. Special status species data source: California Natural Diversity Database, October, 2017. For more information please contact the Department of Fish and Game. Critical habitat data source: U.S. Fish and Wildlife Service, March, 2016. Final critical habitat acquired via the USFWS Critical Habitat Portal. It is only a general representation of the data and does not include all designated critical habitat. Contact USFWS for more specific data.

City of Seaside
5-Mile Buffer

CNDDB

Animals
Plants
Natural Communities

Critical Habitat

California red-legged frog
Monterey spineflower
Tidewater goby
Western snowy plover
Yadon's piperia
Steelhead

1 - American badger
2 - bank swallow
3 - burrowing owl
4 - California black rail
5 - California horned lark
6 - California red-legged frog
7 - California tiger salamander
8 - coast horned lizard
9 - ferruginous hawk
10 - monarch - California overwintering population
11 - northern California legless lizard
12 - Smith's blue butterfly
13 - steelhead - south-central California coast DPS
14 - Townsend's big-eared bat
15 - tricolored blackbird
16 - western bumble bee
17 - western pond turtle
18 - western snowy plover
19 - angel's hair lichen
20 - beach layia
21 - Carmel Valley bush-mallow
22 - Carmel Valley malacothrix
23 - Choris' popcornflower
24 - Congdon's tarplant
25 - Contra Costa goldfields
26 - Eastwood's goldenbush
27 - Fort Ord spineflower
28 - fragrant fritillary
29 - Gowen cypress
30 - Hickman's cinquefoil
31 - Hickman's onion
32 - Hooker's manzanita
33 - Hospital Canyon larkspur
34 - Hutchinson's larkspur
35 - Jolon clarkia
36 - Kellogg's horkelia
37 - legenere
38 - marsh microseris
39 - Menzies' wallflower
40 - Monterey clover
41 - Monterey gilia
42 - Monterey pine
43 - Monterey spineflower
44 - northern curly-leaved monardella
45 - Oregon meconella
46 - Pacific Grove clover
47 - Pajaro manzanita
48 - pine rose
49 - pink Johnny-nip
50 - Point Reyes horkelia
51 - saline clover
52 - San Francisco collinsia
53 - sand-loving wallflower
54 - sandmat manzanita
55 - Santa Cruz clover
56 - Santa Cruz microseris
57 - seaside bird's-beak
58 - Tidestrom's lupine
59 - Toro manzanita
60 - vernal pool bent grass
61 - woodland woollythreads
62 - Yadon's rein orchid
63 - Central Dune Scrub
64 - Central Maritime Chaparral
65 - Monterey Pine Forest
66 - Monterey Pygmy Cypress Forest
67 - Northern Bishop Pine Forest
68 - Valley Needlegrass Grassland

BRAFig X CNDDB

5.2 Sensitive Natural Communities

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. Although most sensitive natural communities are not afforded legal protection unless they support special status species, potential impacts on them may increase concerns and trigger mitigation suggestions by resource/regulatory agencies for those habitats considered sensitive by federal, State, and local agencies due to their rarity or value in providing habitat for vegetation, fish, and 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 often considered in the CEQA environmental review process with corresponding compensatory mitigation prescribed for impacts.

Sensitive natural communities present or with at least a moderate potential to occur within the Plan Area include: central dune scrub, central maritime chaparral, coastal and valley freshwater marsh, coastal brackish marsh, Monterey cypress forest, Monterey pine forest, Monterey pygmy cypress forest, northern bishop pine forest, and valley needlegrass grassland.

Central Dune Scrub. This community, described by Holland (1986) and Sawyer et al. (2009), is dominated in the shrub canopy by California goldenbush and dune lupine. Other species associated with this community include; California sagebrush, beach sagewort (*Artemisia pycnocephala*), Menzies' goldenbush (*Isocoma menziesii*), coastal bush lupine (*Lupinus arboreus*), and poison oak. Within the Plan Area, Central Dune Scrub is most likely to occur near the ocean, in undisturbed areas.

Central Maritime Chaparral. Maritime chaparral is known to occur in the Plan Area, and has been characterized as the dominant vegetation type on the former Fort Ord (USACE, 1992). Species likely to occur in this community are; Toro manzanita, chamise, sandmat manzanita, Monterey spineflower, seaside bird's-beak, and sand gilia. This community is fire dependent.

Coastal and Valley Freshwater Marsh. Freshwater mashes occur where wetlands are regularly to permanently flooded, and are typically dominated by hydrophytic species such as cattails (*Typha* spp.) and bulrushes (S*choenoplectus* spp.). These communities may occur as small isolated wetlands on former Fort Ord land, or in association with the Laguna Grande/Roberts Lake complex.

Coastal Brackish Marsh. Brackish marsh occurs where saline water mix with freshwater, resulting in defined tidal zones. Species typically found in brackish marsh include; pickleweeds, bulrushes, and cordgrasses. Because the mouth of Canyon Del Ray Creek has been diverted into a box culvert and inlet weir, saline waters are unlikely to enter Roberts Lake except during storm events.

Monterey Cypress Forest. Stands of Monterey cypress may be dominant or codominant with Monterey pine. Only two native stands are known to exist in Monterey; Cypress Point at Pebble Beach and Point Lobos State Reserve. Monterey cypress has been widely planted as an ornamental tree or wind break, in some cases becoming invasive (Sawyer et al., 2009).

Monterey Pine Forest. This plant community is characterized by a Monterey pine overstory and a dominant native shrub understory. Shrubs commonly found in this community included manzanita species (*Arctostaphylos* spp.), California huckleberry (*Vaccinium ovatum*), bush or sticky

monkeyflower, poison oak, and California coffeeberry. Forb species may include Douglas' iris (*Iris douglasiana*), Monterey sedge (*Carex harfordii*), and Pacific peavine (*Lathyrus vestitu*s).

Monterey Pygmy Cypress Forest. The dominant species found in Monterey pygmy cypress forest is Gowen cypress. Bishop pine and Monterey pine may also occur in the tree canopy, with Hooker's manzanita (*Arctostaphylos hookeri*), woolly leaf manzanita (*Arctostaphylos tomentosa*), coast rhododendron (*Rhododendron macrophyllum*), and California huckleberry in the understory. Monterey pygmy cypress forest occurs on shallow acidic soils, which cause Gowen cypress to grow significantly shorter than on deep fertile soils. Typically 164 feet at mature height, dwarfed Gowen cypress may only grow to 16 feet (Sawyer et al., 2009).

Northern Bishop Pine Forest. This plant community is characterized by a Bishop pine (*Pinus muricata*) overstory, with grand fir (*Abies grandis*), Pacific madrone (*Arbutus menziesii*), pygmy cypress (*Hesperocyparis pigmaea*), tanoak (*Notholithocarpus densiflorus*), Bolander pine (*Pinus contorta* ssp. *bolanderi*), Monterey pine, Douglas fir (*Pseudotsuga menziesii*), coast live oak, California redwood, and California bay laurel.

Valley Needlegrass Grassland. This community is characterized by purple needlegrass (*Nassella pulchra*) in the herbaceous layer, with other perennial grasses and herbs such as; slender oats, wild oats, soft chess brome, foxtail brome (*Bromus madritensis* ssp. *rubens*), native lilies (*Calochortus* spp.), bindweed (*Convolvulus arvensis*), turkey-mullein (*Croton setiger*), blue wildrye, stork's-bill (*Erodium* spp.), and California fescue.

Monterey Spineflower Designated Critical Habitat. Critical habitat for the Monterey spineflower occurs on the east side of the Plan Area (Unit 8, former Fort Ord). This unit includes maritime chaparral and oak woodland habitats which can support tens of thousands of individuals in some years (USFWS, 2008). Within the Plan Area this unit is limited to the Fort Ord National Monument, which is not proposed for development.

Western Snowy Plover Designated Critical Habitat. Critical habitat for the western snowy plover occurs in the small strip of beach within City limits below Roberts Lake (Unit CA 22 Monterey to Moss Landing). This beach is heavily used for recreation and therefore, disturbance may be high. However, it does contain primary constituent elements such as; sandy beach above and below the high-tide line, tidal debris supporting invertebrate prey, and barren to sparsely vegetated terrain.

5.3 Wetlands and Riparian Communities

As described in section 4.3, wetlands within the City include; estuarine and marine wetlands, estuarine and marine deepwater, freshwater emergent wetlands, freshwater forested/shrub wetlands, riverine, lake, and freshwater ponds. Additionally, the Laguna Grande/Lake Roberts complex includes the riparian corridor extending from Canyon Del Ray Creek.

5.4 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. 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. Typically 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). The Plan Area is located west of two natural landscape blocks, near Jacks Peak, and Pilarcitos Canyon on the east side of the former Fort Ord. An essential connectivity area linking these blocks overlaps the south east corner of the Plan Area, by approximately 422 acres. Essential connectivity areas are rated based on the permeability of the landscape to wildlife movements, and the section within the Plan Area is rated as the least permeable. It is likely wildlife use natural habitats in this area as a corridor. This connectivity area is largely part of the Fort Ord National Monument. Only approximately 33 acres fall within the area planned for development.

Additionally, the riparian area along Canyon Del Ray Creek and the Laguna Grand/ Lake Roberts complex provides a corridor for wildlife movement. However, this corridor is highly disturbed by recreational use and homeless encampments within the Plan Area.

6 Impact Analysis and Mitigation Measures

The following impact analysis is programmatic in nature, and designed to evaluate the potential for impacts to biological resources throughout the Plan Area. This analysis does not address any project-specific impacts. This section discusses the possible adverse impacts to biological resources that may occur from implementation of the 2040 General Plan and suggests appropriate avoidance, minimization, and mitigation measures that would reduce those impacts to less than significant levels. Future projects developed under the 2040 General Plan should be evaluated for impacts at a project-specific level. Additional measures not identified at this programmatic-level, but which could be identified at the project-level, may be required if special status species or sensitive biological resources are documented during project-level analyses, and it is determined that those resources may be impacted by individual project implementation.

6.1 Special Status Species and Sensitive Natural Communities

Thresholds 1 and 2: Have a substantial adverse effect (i.e. significantly reduce species population, reduce species habitat, restrict reproductive capacity), either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, regulations, or by CDFW or USFWS; or have a substantial adverse effect (i.e. direct/indirect reduction) on any riparian habitat or other sensitive natural community identified in local or regional plans, policies regulations, or by the CDFW or USFWS.

Impacts BIO-1 & BIO-2 With implementation of the goals and policies in the 2040 General Plan and measures outlined herein, impacts to special status species and sensitive habitats would be avoided, minimized, and, if necessary, mitigated.

State and/or federally listed animal species with the potential to occur in the Plan Area include tricolored blackbird, western snowy plover, bank swallow, California red-legged frog, California tiger salamander, and Smith's blue butterfly (Figure 5). State and/or federally listed plant species with the potential to occur in the Plan Area include seaside bird's-beak, Monterey gilia, Menzies' wallflower, Gowen cypress, Contra Costa goldfields, Tidestrom's lupine, Yadon's rein orchid, Hickman's cinquefoil, Monterey clover, beach layia, and Monterey spineflower (Figure 5). Sensitive plant communities documented within the Plan Area include central maritime chaparral; however, central dune scrub, coastal and valley freshwater marsh, coastal brackish marsh, Monterey cypress forest, Monterey pine forest, Monterey pygmy cypress forest, northern bishop pine forest, and valley needlegrass grassland also have the potential to occur.

The goals and policies of the 2040 General Plan support growth and redevelopment within the City proper, including within the jurisdiction of the City's LCP; as well as on undeveloped former Fort Ord lands. The 2040 General Plan is designed to be consistent with the LCP and Fort Ord Base Reuse Plan. New development on former Fort Ord lands would incorporate open space corridors with trails that support natural vegetation communities, sensitive habitats, and connections to the Fort Ord National Monument and FORTAG. Major strategies of the 2040 General Plan include the development of Seaside east with sustainable neighborhoods and the preservation of natural areas,

including sensitive habitats such as oak woodlands. In addition, all development under the 2040 General Plan would be subject to the provisions of the various federal and State natural resources regulations (discussed in subsection 3.2, *Regulatory Overview*) and their respective permitting processes. Further, the 2040 General Plan goals and policies presented in section 2 would encourage the conservation and protection of open space and natural resources within the Plan Area, thus protecting special status species to the greatest extent possible.

Land Use and Urban Design Goals 17, 20, and 22, aim to balance habitat preservation and development on former Fort Ord lands, which would minimize the loss of sensitive habitats and habitat linkages. Parks, Open Space, and Conservation Goals two, eight, and nine would also address habitat preservation on former Fort Ord lands. Goal two aims to maintain high-quality, well-connected habitats and open space corridors. Special status species protection is addressed in goal eight, which includes a policy for the continued partnership with local, regional, and federal agencies, and continued implementation of the Fort Ord HMP and HCP. Goal nine addresses clustering of development, limiting of impervious surfaces, future project impact analysis, and limiting the use of invasive plants in landscaping. Additionally, Parks, Open Space, and Conservation Goal 10 provides protection for habitat in the coastal zone, including critical habitat and habitat for permanent and migratory species. It also would provide protection from habitat degradation in the coastal zone due to increased access. Parks, Open Space, and Conservation Goal 12 includes policies to protect native trees (particularly oaks), and encourages the planting of native, non-invasive species as landscaping.

These goals to limit habitat loss, maintain habitat integrity and connectivity, and protect special status species would minimize, and sometimes avoid, impacts from potential direct and indirect effects to special status species and sensitive habitats, but implementation of the 2040 General Plan would result in impacts to such resources. Therefore, impacts would occur but would be less than significant with measures incorporated.

Land Use and Urban Design Goal nine's policy to incorporate bird-safe design practices near natural habitats and migratory routes would limit direct impacts to adult migratory birds. With implementation of additional measures, direct and indirect impacts to nesting birds would be less than significant.

Avoidance, Minimization, and Mitigation (AMM) Measures

AMM-1 New development supports the preservation or enhancement of the City's natural resources. The Development Review Policy of the 2040 General Plan Parks, Open Space, and Conservation Goal POC-9 should be updated to read:

Policy: Development Review. When projects are adjacent to or contain ~~sensitive~~ natural habitat and/or non-developed areas, require projects to submit analysis of potential impacts to sensitive biological resources. The analysis shall: 1) show~~ing~~ the existing habitat; 2) outline the proposed plan; 3) identify potential impacts to special status species, sensitive communities, and jurisdictional waters; and 4) identify measures to avoid, minimize, and/or mitigate impacts, as necessary.

AMM-2 Riparian Corridors. The 2040 General Plan Parks, Open Space, and Conservation Goal POC-10 should include the following policy:

Policy: Riparian Corridors. Encourage the restoration and protection of riparian corridors at Laguna Grange and Roberts Lake.

Significance After Mitigation

Impacts to special status species and sensitive habitats would be less than significant with implementation of AMM-1 and AMM-2, and other measures as identified in the EIR.

6.2 Wetlands

Threshold 3: Have a substantial adverse effect (i.e. direct/indirect reduction) on federally protected wetlands as defined by Section 404 of the Clean Water Act (including but not limited to, marsh vernal pool, coastal, etc.) through direct removal, filling, or hydrological interruption, or other means.

Impact BIO-3 While the 2040 General Plan would not facilitate development that would directly impact riparian and wetland habits, there would be potential for adverse indirect impacts from such development on wetlands and areas under the jurisdiction(s) of the CDFW, RWQCB and/or USACE, as well as under the jurisdiction of the LCP and therefore subject to the CCA. However, compliance with existing regulations and implementation of 2040 General Plan policies would avoid, minimize, and mitigate (if necessary) potential impacts to less than significant levels.

Wetlands in the Plan Area include estuarine and marine wetlands, estuarine and marine deepwater, freshwater emergent wetlands, freshwater forested/shrub wetlands, riverine, lake, and freshwater ponds. The Laguna Grande Lake Roberts are two freshwater lakes, fed by Canyon Del Ray Creek. The Pacific Ocean (marine habitat) occurs at the far south west edge of the Plan Area. The remaining freshwater ponds and marshes occur primarily on former Fort Ord lands. All known wetlands mapped on former Fort Ord lands occur within areas designated for conservation. No surveys were conducted for this analysis however, and additional wetlands may be discovered during site specific surveys. Additionally, some wetland features, such as freshwater seeps and springs, are generally not identified as part of the NWI because of the general scale of the mapping effort. Detailed wetland delineations would be needed to determine the extent of any jurisdictional wetlands and other waters at specific locations and each agency is responsible for making a final determination on the extent of jurisdictional waters for a particular site.

Wetlands and waterways may be subject to USACE, RWQCB and/or CDFW jurisdiction(s), as well as subject to the CCA. Compliance with the requirements of the CWA, Porter-Cologne, and CFGC, and CCA would be required for any project proposed under the 2040 General Plan. In addition, the following goals and policies from the Parks, Open Space, and Conservation Goals and Policies presented in section 2 would reduce impacts to federally protected wetlands and riparian habitat through preservation and enhancement of wetland and riparian habitats.

The policies contained within Parks, Open Space, and Conservation Goals 8, 9, and 11 would require detailed inventory of sensitive habitats prior to new development and protection of sensitive habitats that have been inventoried. Additionally, 2040 General Plan goals and policies would require preservation of wetland and riparian habitat, compliance with the LCP, the HMP, State and federal wetland regulations, and protection of water quality. Impacts to riparian and wetland habitats would be less than significant with implementation of measures.

AMM Measures

AMM-3 New development supports the preservation or enhancement of the City's natural resources. A policy specific to wetlands and riparian habitats should be included (in addition to the recommended AMM Measure 2; Riparian Corridors). The 2040 General

Plan Parks, Open Space, and Conservation Goal POC-9 should be updated to include the following policy:

Policy: Wetlands. The City shall encourage the preservation, enhancement and protection of wetland areas, and the evaluation of areas proposed for new development during the site planning process for wetland features. Where present, the City shall require that wetlands be avoided or replaced so that there is no net loss to wetland resources.

Significance After Mitigation

Impacts would be less than significant after mitigation.

6.3 Wildlife Movement

Threshold 4: Interfere substantially (i.e. direct/indirect reduction) 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.

Impact BIO-4 Development carried out under the 2040 General Plan would largely avoid impacts to wildlife movement corridors by conservation of natural areas and linkages contained in policies of the 2040 General Plan.

The Plan Area is located west of Fort Ord National Monument, and natural habitat in the Santa Lucia mountain range. An essential connectivity area was mapped in the south east corner of the Plan Area on former Fort Ord lands. It is likely wildlife use natural habitats in this area as a corridor. This connectivity area is largely part of the Fort Ord National Monument. Only approximately 33 acers fall within the area planned for development.

Additionally, the riparian area along Canyon Del Ray Creek and the Laguna Grande Lake Roberts complex provides a corridor for wildlife movement. This corridor is highly disturbed however, by recreational use and homeless encampments.

One of the goals of the 2040 General Plan is to preserve sensitive habitats and habitat linkages, particularly oak woodlands.

Implementation of the 2040 General Plan would preserve open space within the Plan Area and protect sensitive habitats, thus preserving existing corridors used by wildlife through the Goals LUD-22, and POC-8 and 9. Although the 2040 General Plan policies would preserve open space and protect sensitive habitats resulting in the protection of wildlife movement corridors, wildlife movement corridor protection is not specifically stated in the 2040 General Plan.

Mitigation Measures

MM-4 Wildlife Movement Corridors Protection Policy. The 2040 General Plan Parks, Open Space, and Conservation Goal POC-9 should be updated to read:

Policy: Clustered development. Cluster new development on former Fort Ord lands to minimize impacts to oak woodlands and linkages, preserve habitat management areas and important wildlife movement corridors, and protect steep slopes, wetlands, and waterways.

Significance after mitigation

Impacts would be less than significant with implementation of 2040 General Plan policies and Mitigation Measure MM-4 to specify preservation of wildlife movement corridors in Goal 9.

6.4 Local Policies and Ordinance

Threshold 5: Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

Impact BIO-5 Development proposed by the 2040 General Plan would conform with applicable local policies protecting biological resources and underscore their importance with strengthened policy statements. Impacts would be less than significant.

Implementation of the 2040 General Plan would be subject to all applicable local policies and regulations related to the protection of important biological resources. Specifically, development under the 2040 General Plan would be required to comply with the City of Seaside Municipal Code City of Seaside Local Coastal Program, and FORA base reuse plan. The City of Seaside Municipal Code Chapter 8.54 Trees provides standards for the removal, protection and preservation of trees. The ordinance requires a tree removal permit and replacement plantings for any tree to be removed during project construction. In addition to requiring tree removal permits, the ordinance also requires measures to protect existing trees during project construction. The following 2040 General Plan policies from the Parks, Open Space, and Conservation Goal 12 provides protection for protected tree and encourages the use of native species for landscaping. Goal 8 also provides protections for oak woodlands.

Therefore, the 2040 General Plan would comply with applicable local regulations and impacts would be less than significant.

Mitigation Measures

No mitigation required.

Significance After Mitigation

Impacts to biological resources would be less than significant without mitigation.

6.5 Habitat Conservation Plans

Threshold 6: Conflict with the provisions of an adopted Habitat Preservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

Impact BIO-6 The Plan Area is includes lands governed by the Fort Ord Installation-wide HMP, and will include lands governed by the Fort Ord HCP once it is finalized. Impacts to areas identified in the HMP and HCP would be protected by conservation strategies contained in goals and policies of the 2040 General Plan. Impacts would be less than significant.

Development under the 2040 General Plan would be required to comply with Fort Ord HMP and Fort Ord HCP. The 2040 General Plan Parks, Open Space, and Conservation Goal 8 requires the Continued partnership with local, regional, and federal agencies to implement the programs outlined by the HCP and HMP. Therefore, conflicts with the Fort Ord HCP and Fort Ord HMP would be less than significant.

Mitigation Measures

No mitigation required.

Significance After Mitigation

Impacts to biological resources would be less than significant without mitigation.

7 References

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Appendix A

Special Status Species Evaluation

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur in Project Area	Habitat Suitability/ Observations
Plants				
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.	**Moderate Potential**	Vernal pools may be present on former Fort Ord land, and there is a known occurrence within 5 miles of the Plan Area.
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.	**Moderate Potential**	Chaparral, coastal scrub, coastal prairie, and cismontane woodlands are present, and there is a known occurrence within 5 miles of the Plan Area.
Arctostaphylos edmundsii Little Sur manzanita	None/None G2 / S2 1B.2	Coastal bluff scrub, chaparral. Forming mounds on sandy terraces on ocean bluffs. 30-95 m.	**Low Potential**	Coastal bluff scrub and chaparral are present; however there are no known occurrences within 5 miles.
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.	**Moderate Potential**	Chaparral, coastal scrub, and cismontane woodlands are present, and there is a known occurrence within 5 miles of the Plan Area.

Arctostaphylos montereyensis Toro manzanita	None/None G2G3 / S2S3 1B.2	Chaparral, cismontane woodland, coastal scrub. Sandy soil, usually with chaparral associates. 75-735 m.	**Moderate Potential**	Chaparral, coastal scrub, and cismontane woodlands are present, and there is a known occurrence within 5 miles of the Plan Area.
Arctostaphylos pajaroensis Pajaro manzanita	None/None G1 / S1 1B.1	Chaparral. Sandy soils. 30-155 m.	**Presumed Present**	Chaparral habitat is present, and there is a known occurrence within the Plan Area.
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.	**Moderate Potential**	Chaparral, coastal scrub, and cismontane woodlands are present, and there is a known occurrence within 5 miles of the Plan Area.
Arenaria paludicola Marsh sandwort	Endangered/Endangered G1 / S1 1B.1	Marshes and swamps. Growing up through dense mats of Typha, Juncus, Scirpus, etc. in freshwater marsh. Sandy soil. 3-170 m.	**Low Potential**	Marshes with dense mats of Typa, Juncus, and Scirpus are present; however there are no known occurrences within 5 miles.
Astragalus tener var. tener alkali milk-vetch	None/None G2T2 / S2 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.	**Low Potential**	Vernal pools are present; however 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	**Low Potential**	Coastal bluff scrub, coastal dunes, and coastal prairies are present; however there are no known occurrences within 5 miles.

		clay terrace. 1-45 m.		
Bryoria spiralifera twisted horsehair lichen	None/None G3 / S1S2 1B.1	North coast coniferous forest. Usually on conifers. 0-30 m.	**Low Potential**	North coast coniferous forests are present; however 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.	**Moderate Potential**	Coastal bluff scrub and coastal prairie are present, and there are known occurrences within 5 miles of the Plan Area
Centromadia parryi ssp. congdonii Congdon's tarplant	None/None G3T2 / S2 1B.1	Valley and foothill grassland. Alkaline soils, sometimes described as heavy white clay. 0-230 m.	**Moderate Potential**	Valley and foothill grasslands are present, and there are known occurrences within 5 miles.
Chorizanthe minutiflora Fort Ord spineflower	None/None G1 / S1 1B.2	Coastal scrub, chaparral (maritime). Sandy, openings. 55-150 m.	**Moderate Potential**	Coastal scrub and maritime chaparral are present, and there are 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	**Presumed Present**	There are known occurrences and federally designated critical habitat within the Plan Area.

		habitats. 0-170 m.		
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.	**Low Potential**	Coastal dunes and chaparral habitat 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.	**Presumed Present**	Coastal scrub and chaparral habitat are present, and there is a known occurrence within the Plan Area.
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.	**Low Potential**	Coastal scrub is present, and there is a known occurrence within 5 miles of the Plan Area; however this occurrence was observed in 1903.
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.	**Presumed Present**	Coastal scrub and chaparral habitat are present, and there is a known occurrence within the Plan Area.

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.	**Moderate Potential**	Chaparral and coastal scrub with wetlands are present, and there is a known occurrence within 5 miles of the Plan Area.
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.	**Moderate Potential**	Chaparral, coastal prairie, and coastal scrub are present, and there is a known occurrence within 5 miles of the Plan Area.
Delphinium umbraculorum umbrella larkspur	None/None G3 / S3 1B.3	Cismontane woodland, chaparral. Mesic sites. 215-2075 m.	**Low Potential**	Cismontane woodland and chaparral are present; however 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.	**Presumed Present**	Coniferous forest and maritime chaparral are present, and there are known occurrences within the Plan Area.
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.	**Low Potential**	Cismontane woodland and chaparral are present; however 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.	**Presumed Present**	Maritime chaparral and coastal dunes are present, and there are known occurrences within the Plan Area.

Erysimum menziesii Menzies' wallflower	Endangered/Endangered G1 / S1 1B.1	Coastal dunes. Localized on dunes and coastal strand. 1-25 m.	**Moderate Potential**	Coastal scrub and chaparral habitat are present, and there is a known occurrence within 5 miles of the Plan Area.
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.	**Moderate Potential**	Coastal scrub, valley and foothill grassland, coastal prairie, and cismontane woodland are present, and there is a known occurrence within 5 miles of the Plan Area.
Galium clementis Santa Lucia bedstraw	None/None G3 / S3 1B.3	Lower montane coniferous forest, upper montane coniferous forest. Forming soft mats in shady rocky patches; on granite or serpentine; mostly on exposed peaks. 990-1645 m.	**Not Expected**	Montane coniferous forests are not present, and the Plan Area elevation is out of this species range.
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.	**Presumed Present**	Coastal dunes, scrub, and chaparral habitat are present, and there is a known occurrence within the Plan Area.
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.	**Moderate Potential**	Coniferous forest and coastal chaparral are present, and there is a known occurrence within 5 miles of the Plan Area.

Hesperocyparis macrocarpa Monterey cypress	None/None G1 / S1 1B.2	Closed-cone coniferous forest. Granitic soils. 10-20 m.	**Presumed Present**	Coniferous forests are present, and Monterey cypress are commonly used in ornamental plantings. However there are no known natural occurrences within 5 miles.
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.	**Low Potential**	Coastal prairie, coastal scrub, and grasslands are present; however 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 sand hills; openings. Sandy or gravelly soils. 5-430 m.	**Presumed Present**	Coastal dunes, scrub, and chaparral habitat are present, and there is a known occurrence within the Plan Area.
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.	**Moderate Potential**	Coastal dunes, scrub, and chaparral habitat are present, and there is a known occurrence within 5 miles of the Plan Area.
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.	**Moderate Potential**	Grasslands and cismontane woodlands are present, and there is a known occurrence within 5 miles of the Plan Area.

Layia carnosa beach layia	Endangered/Endangered G2 / S2 1B.1	Coastal dunes, coastal scrub. On sparsely vegetated, semi-stabilized dunes, usually behind fore dunes. 0-30 m.	**Moderate Potential**	Coastal dunes and coastal scrub are present, and there is a known occurrence within 5 miles of the Plan Area.
Legenere limosa legenere	None/None G2 / S2 1B.1	Vernal pools. In beds of vernal pools. 1-880 m.	**Moderate Potential**	Vernal pools may be present, and there is a known occurrence within 5 miles of the Plan Area.
Lupinus tidestromii Tidestrom's lupine	Endangered/Endangered G1 / S1 1B.1	Coastal dunes. Partially stabilized dunes, immediately near the ocean. 4-25 m.	**Moderate Potential**	Coastal dunes are present, and there is a known occurrence within 5 miles of the Plan Area.
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.	**Moderate Potential**	Cismontane woodlands, chaparral, and coastal scrub are present, and there is a known occurrence within 5 miles of the Plan Area.
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. 60-360 m.	**Moderate Potential**	Chaparral is present, and there is a known occurrence within 5 miles of the Plan Area.
Malacothrix saxatilis var. arachnoidea Carmel Valley malacothrix	None/None G5T2 / S2 1B.2	Chaparral, coastal scrub. Rock outcrops or steep rocky roadcuts. 25-1220 m.	**Moderate Potential**	Chaparral is present, and there is a known occurrence within 5 miles of the Plan Area.

Meconella oregana Oregon meconella	None/None G2G3 / S2 1B.1	Coastal prairie, coastal scrub. Open, moist places. 60-640 m.	**Low Potential**	Coastal prairie and coastal scrub are present; however there are no known occurrences within 5 miles.
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.	**Moderate Potential**	Coniferous forest, cismontane woodland, coastal scrub, and grasslands are present, and there is a known occurrence within 5 miles of the Plan Area.
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.	**Presumed Present**	Coastal dunes, scrub, and chaparral habitat are present, and there is a known occurrence within the Plan Area.
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.	**Moderate Potential**	Chaparral, grasslands, coniferous forest, and cismontane woodlands are present, and there is a known occurrence within 5 miles of the Plan Area.
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.	**Presumed Present**	Coniferous forests are present, and Monterey pines are commonly used in ornamental plantings. There are known occurrences within 5 miles of the Plan

				Area.
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.	**Moderate Potential**	Chaparral, coniferous forest, and coastal scrub are present, and there is a known occurrence within 5 miles of the Plan Area.
Plagiobothrys chorisianus var. chorisianus Choris' popcornflower	None/None G3T2Q / S2 1B.2	Chaparral, coastal scrub, coastal prairie. Mesic sites. 15-160 m.	**Moderate Potential**	Coastal prairie, chaparral, and coastal scrub are present, and there is a known occurrence within 5 miles of the Plan Area.
Plagiobothrys uncinatus hooked popcornflower	None/None G2 / S2 1B.2	Chaparral, cismontane woodland, valley and foothill grassland. Sandstone outcrops and canyon sides; often in burned or disturbed areas. 210-855 m.	**Low Potential**	Chaparral, cismontane woodland, and grasslands are present; however there are no known occurrences within 5 miles.
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.	**Moderate Potential**	Coniferous forest, coastal scrub, and freshwater wetlands are present, and there is a known occurrence within 5 miles of the Plan Area.

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.	**Moderate Potential**	Coniferous forests are present, and there is a known occurrence within 5 miles of the Plan Area.
Rosa pinetorum pine rose	None/None G2 / S2 1B.2	Closed-cone coniferous forest, cismontane woodland. 5-1090 m.	**Presumed Present**	Coniferous forest and cismontane woodlands are present, and there is a known occurrence within the Plan Area.
Stebbinsoseris decipiens Santa Cruz microseris	None/None G2 / S2 1B.2	Broadleaf 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.	**Moderate Potential**	Coniferous forests, chaparral, coastal prairie, and coastal scrub are present, and there is a known occurrence within 5 miles of the Plan Area.
Tortula californica California screw moss	None/None G2G3 / S2S3 1B.2	Chenopod scrub, valley and foothill grassland. Moss growing on sandy soil. 10-1460 m.	**Low Potential**	Scrub and grasslands are present; however there are no known occurrences 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.	**Moderate Potential**	Coastal prairie, cismontane woodland, and grasslands are present, and there is a known occurrence within 5 miles of the Plan Area.

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.	**Moderate Potential**	Grasslands and wetlands are present, and there is a known occurrence within 5 miles of the Plan Area.
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.	**Moderate Potential**	Coniferous forest, grasslands, and wetlands are present, and there is a known occurrence within 5 miles of the Plan Area.
Trifolium trichocalyx Monterey clover	Endangered/Endangered G1 / S1 1B.1	Closed-cone coniferous forest. Openings, burned areas, and roadsides. Sandy soils. 60-210 m.	**Moderate Potential**	Coniferous forests are present, and there is a known occurrence within 5 miles of the Plan Area.
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.	**Moderate Potential**	Suitable forest habitat is present, and there is a known occurrence within 5 miles of the Plan Area.
Enhydra lutris nereis Southern sea otter	Threatened/None G4T2 / S2 FP	Nearshore marine environments from about Año Nuevo, San Mateo Co. to Point Sal, Santa Barbara Co. Needs canopies of giant kelp & bull kelp for rafting & feeding. Prefers rocky substrates with abundant	**Low Potential**	Occurs off shore, rocky substrates are not present in marine habitats within the Plan Area.

		invertebrates.		
Neotoma macrotis luciana Monterey dusky-footed woodrat	None/None G5 T3/ S3 SSC	Forest habitats of moderate canopy and moderate to dense understory. Also in chaparral habitats. Nests constructed of grass, leaves, sticks, feathers, etc. Population may be limited by availability of nest materials.	**High Potential**	known to occur on former Fort Ord lands.
Sorex ornatus salarius Monterey shrew	None/None G5 T1T2/ 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**	Potentially occurring on former Fort Ord lands near the Salinas River.
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.	**Presumed Present**	Suitable shrub and forest habitats are present, and there is a known occurrence within the Plan Area.
Birds				

Agelaius tricolor tricolored blackbird	None/Candidate Endangered 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**	Suitable nesting and foraging habitat is present, and there is a known occurrence within 5 miles of the Plan 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.	**Low Potential**	Swamps and irrigated fields are not present, and there are no known occurrences 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.	**High Potential**	Suitable nesting and foraging habitat is present, and there is a known occurrence within 5 miles of the Plan Area.
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.	**Moderate Potential**	Suitable foraging habitat is present, and there is a known occurrence within 5 miles of the Plan Area.

Charadrius alexandrinus nivosus western snowy plover	Threatened/None G3T3 / S2S3 SSC	Sandy beaches, salt pond levees & shores of large alkali lakes. Needs sandy, gravelly or friable soils for nesting.	**High Potential**	Suitable nesting and foraging habitat is present, and there is a known occurrence within 5 miles of the Plan Area.
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.	**Low Potential**	Cliffs and sea bluffs are not present, and there are no known occurrences within 5 miles.
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.	**Moderate Potential**	Suitable nesting and foraging habitat is present, there are no known occurrences within 5 miles.
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.	**High Potential**	Suitable nesting and foraging habitat is present, and there is a known occurrence within 5 miles of the Plan Area.

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.	**High Potential**	Suitable nesting and foraging habitat is present. CNDDB occurrence locations have been suppressed for this species. Recent sightings have been reported on the former Fort Ord on eBird.
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.	**Presumed Present**	Buildings and prey (pigeons) are present. Occurrences have been reported from the Laguna Grande complex on eBird.
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.	**Low Potential**	Freshwater marshes in the Plan Area are limited to the Laguna Grande complex, and there are no known occurrences within 5 miles.
Oceanodroma homochroa ashy storm-petrel	None/None G2 / S2 SSC	Colonial nester on off-shore islands. Usually nests on driest part of islands. Forages over open ocean. Nest sites on islands are in crevices beneath loosely piled rocks or driftwood, or in caves.	**Low Potential (foraging only)**	No nest colonies occur in the Plan Area, and there are no known occurrences within 5 miles.

Pelecanus occidentalis californicus California brown pelican	Delisted/Delisted G4T3 / 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.	**Presumed Present (foraging only)**	No nest colonies occur in the Plan Area; however many occurrences have been reported on eBird.
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.	**Low Potential**	Freshwater marshes in the Plan Area are limited to the Laguna Grande complex, and there are no known occurrences within 5 miles.
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.	**Presumed Present**	Suitable nesting and foraging habitat are present, and there is a known occurrence within the Plan Area.
Sterna antillarum browni California least tern	Endangered/Endangered G4T2T3Q / S2 FP	Nests along the coast from San Francisco Bay south to northern Baja California. Colonial breeder on bare or sparsely vegetated, flat substrates: sand beaches, alkali flats, landfills, or paved areas.	**Low Potential**	No nest colonies occur in the Plan Area, and there are no known occurrences 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.	**High Potential**	Suitable upland and aquatic habitat is present, and there are known occurrences within 5 miles of the Plan Area.
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.	**Low Potential**	Wetlands occur in the Plan Area; however there are no known occurrences 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.	**Low Potential**	Wetlands occur in the Plan Area; however there are no known occurrences 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	**Low Potential**	Wetlands occur in the Plan Area, and there is a known occurrence within 5 miles of the Plan Area; however surveys of

		habitat.		
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.	**Low Potential**	Wetlands occur in the Plan Area; however there are no known occurrences 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**	Sandy loose soils are present, and there is a known occurrence within 5 miles of the 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.	**High Potential**	Suitable aquatic habitat is present, and there are known occurrences within 5 miles of the Plan Area.

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**	Suitable habitats with loose sandy soils are present, and there are known occurrences within 5 miles of the Plan Area. Known to occur on former Fort Ord lands.
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.	**Moderate Potential**	Suitable aquatic habitat is present, and there are known occurrences within 5 miles of the Plan Area.
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.	**Low Potential**	The only brackish water habitat in the Plan Area is the Laguna Grande Complex, which is connected to the Pacific Ocean via a culvert under Hwy 1. There are also no known occurrences within 5 miles.
Oncorhynchus mykiss irideus 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.	**Low Potential**	The creek that feeds the Laguna Grande Complex is connected to the Pacific Ocean via a culvert under Hwy 1, a significant barrier for anadromous fish. There are also no known

				occurrences 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.	**Low Potential**	The only brackish water habitat in the Plan Area is the Laguna Grande Complex, which is connected to the Pacific Ocean via a culvert under Hwy 1. There are also no known occurrences within 5 miles.
Insects				
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.	**High Potential**	Suitable winter roost sites are present, and there are known occurrences within 5 miles of the Plan Area.
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 foodplants.	**High Potential**	Coastal dunes and coastal sage scrub are present, and there are known occurrences within 5 miles of the Plan Area.
Crustaceans				

Branchinecta lynchi Vernal pool fairy shrimp	Threatened/None G3 / S3	Endemic to the grasslands of the Central Valley, Central Coast mountains, and South Coast mountains, in astatic rain-filled pools. Inhabit small, clear-water sandstone-depression pools and grassed swale, earth slump, or basalt-flow depression pools.	**Not expected**	Vernal pools may be present on former Fort Ord lands; however there are no known occurrences within 5 miles.
Sensitive Natural Communities				
Central Dune Scrub Central Dune Scrub	None/None G2 / S2.2		**High Potential**	Documented in previous surveys of the former Fort Ord, and known occurrences within 5 miles of the Plan Area.
Central Maritime Chaparral Central Maritime Chaparral	None/None G2 / S2.2		**Presumed Present**	Documented in previous surveys of the former Fort Ord, and known occurrence mapped within the Plan Area
Coastal and Valley Freshwater Marsh Coastal and Valley Freshwater Marsh	None/None G3 / S2.1		**High Potential**	Known occurrences within 5 miles of the Plan Area.
Coastal Brackish Marsh Coastal Brackish Marsh	None/None G2 / S2.1		**Moderate Potential**	Known occurrences within 5 miles of the Plan Area.

Monterey Cypress Forest Monterey Cypress Forest	None/None G1 / S1.2	**Moderate Potential**	Not documented in previous surveys of the former Fort Ord. Known occurrences within 5 miles of the Plan Area.
Monterey Pine Forest Monterey Pine Forest	None/None G1 / S1.1	**Moderate Potential**	Not documented in previous surveys of the former Fort Ord. Known occurrences within 5 miles of the Plan Area.
Monterey Pygmy Cypress Forest Monterey Pygmy Cypress Forest	None/None G1 / S1.1	**Moderate Potential**	Not documented in previous surveys of the former Fort Ord. Known occurrences within 5 miles of the Plan Area.
Northern Bishop Pine Forest Northern Bishop Pine Forest	None/None G2 / S2.2	**Moderate Potential**	Not documented in previous surveys of the former Fort Ord. Known occurrences within 5 miles of the Plan Area.
Northern Coastal Salt Marsh Northern Coastal Salt Marsh	None/None G3 / S3.2	**Low Potential**	Known occurrences within 5 miles of the Plan Area at the mouth of the Salinas River.
Valley Needlegrass Grassland Valley Needlegrass Grassland	None/None G3 / S3.1	**High Potential**	Documented in previous surveys of the former Fort Ord, and known occurrences within 5 miles of the Plan Area.

Appendix E

Cultural Resources Assessment

Seaside 2040 General Plan EIR

Cultural Resources Assessment Report

prepared for
City of Seaside
Community and Economic Development Department
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November 2017

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Assessment Summary

Rincon Consultants, Inc. (Rincon) was retained by Raimi and Associates on behalf of the City of Seaside to prepare a programmatic cultural resources assessment in support of the City of Seaside's General Plan Update. This assessment was conducted in accordance with the California Environmental Quality Act (CEQA) and presents the results of a cultural resources records search, Native American consultation under Senate Bill 18 (2005) and Assembly Bill 52 (2014), and historical research, and includes mitigation measures to reduce potential impacts to cultural resources including archaeological, historical and tribal cultural resources within the jurisdiction of the General Plan. Included as an attachment to this assessment are the results of a paleontological resources assessment which includes the results of a paleontological resources review for the City of Seaside and mitigation measures to reduce potential impacts to these resources that may occur as a result of General Plan buildout.

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1 Introduction

Rincon Consultants, Inc. (Rincon) was retained by Raimi and Associates on behalf of the City of Seaside to prepare a programmatic cultural resources assessment in support of the City of Seaside's General Plan Update. This assessment was conducted in accordance with the California Environmental Quality Act (CEQA) and presents the results of a cultural resources records search, Native American consultation under Senate Bill 18 (2005) and Assembly Bill 52 (2014), and historical research, and includes mitigation measures to reduce potential impacts to cultural resources including archaeological, historical, and tribal cultural resources within the jurisdiction of the General Plan. Included as an attachment to this assessment are the results of a paleontological resources assessment which includes the results of a paleontological resources review for the City of Seaside and mitigation measures to reduce potential impacts to these resources that may occur as a result of General Plan buildout.

1.1 Project Description

The City of Seaside 2040 Plan (the proposed project) is a comprehensive update of the City's General Plan, and provides a vision for the future of Seaside over the next 20 to 30 years.

The General Plan functions as a guide to the type of community that Seaside citizens envision, and provides the means by which that desired future can be achieved. The General Plan addresses a range of immediate, mid-, and long-term issues with which the community is concerned. The General Plan is intended to allow land use and policy determinations to be made within a comprehensive framework that incorporates public health, safety, and "quality of life" considerations in a manner that recognizes resource limitations and the sensitive habitats of the community's natural environment. Under State law, the General Plan must serve as the foundation upon which all land use decisions are to be based, and must also be comprehensive, internally consistent, and have a long-term perspective. State law further mandates that the General Plan:

- Identify land use, circulation, environmental, economic, and social goals and policies for the City and its surrounding planning area as they relate to future growth and development;
- Provide a basis for local government decision-making, including decisions on development approvals and exactions/dedications;
- Provide citizens the opportunity to participate in the planning and decision-making process of their community/neighborhoods;
- Inform citizens, developers, decision-makers, and other cities and counties of the ground rules/thresholds that guide development within a particular community.

1.2 Regulatory Setting

Cultural resources, including archaeological, historical, and tribal cultural resources, may be designated as historic by National, State or local authorities. In order for a resource to qualify for listing in the National Register of Historic Places (NRHP), the California Register of Historical Resources (CRHR) or as a locally significant resource in the City of Seaside, the resource must meet one or more identified criteria of significance. The resource must also retain sufficient historic

integrity, defined in *National Register Bulletin 15* as the "ability of a property to convey its significance" (National Park Service [NPS] 1990). An explanation of these designations follows.

1.2.1 Federal

Cultural resources are considered during federal undertakings chiefly under Section 106 of the National Historic Preservation Act (NHPA) through one of its implementing regulations, 36 Code of Federal Regulations 800 (Protection of Historic Properties), as well as the National Environmental Policy Act (NEPA). Other relevant federal laws include the Archaeological Data Preservation Act of 1974, American Indian Religious Freedom Act of 1978, Archaeological Resources Protection Act of 1979, and Native American Graves Protection and Repatriation Act of 1989.

1.2.1.1 National Register Historic Places

The NRHP was established by the National Historic Preservation Act of 1966 as "an authoritative guide to be used by Federal, State, and local governments, private groups and citizens to identify the Nation's cultural resources and to indicate what properties should be considered for protection from destruction or impairment" (CFR 36 CFR 60.2). The NRHP recognizes properties that are significant at the national, state, and local levels. To be eligible for listing in the NRHP, a resource must be significant in American history, architecture, archaeology, engineering, or culture. Districts, sites, buildings, structures, and objects of potential significance must also possess integrity of location, design, setting, materials, workmanship, feeling, and association. A property is eligible for the NRHP if it is significant under one or more of the following criteria:

Criterion A: It is associated with events that have made a significant contribution to the broad patterns of our history;

Criterion B: It is associated with the lives of persons who are significant in our past;

Criterion C: It embodies the distinctive characteristics of a type, period, or method of construction, or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components may lack individual distinction; and/or

Criterion D: It has yielded, or may be likely to yield, information important in prehistory or history.

1.2.2 State

1.2.2.1 California Register of Historic Resources

CEQA (Section 21084.1) requires that a lead agency determine whether a project could have a significant effect on historical resources. A historical resource is one listed in or determined to be eligible for listing in the California Register of Historical Resources (CRHR) (Section 21084.1), a resource included in a local register of historical resources (Section 15064.5[a][2]), or any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant (Section 15064.5[a][3]).

PRC Section 5024.1, Section 15064.5 of the CEQA Guidelines, and PRC Sections 21083.2 and 21084.1 were used as the basic guidelines for this cultural resources study. PRC Section 5024.1 requires an evaluation of historical resources to determine their eligibility for listing in the CRHR. The purpose of the register is to maintain listings of the state's historical resources and to indicate which properties

are to be protected from substantial adverse change. The criteria for listing resources in the CRHR were expressly developed to be in accordance with previously established criteria developed for listing in the NRHP, enumerated below.

According to PRC Section 5024.1(c)(1–4), a resource is considered historically significant if it: 1) retains substantial integrity, and 2) meets at least one of the following California Register criteria:

Criterion 1: It is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.

Criterion 2: It is associated with the lives of persons important in our past.

Criterion 3: It embodies the distinctive characteristics of a type, period, region or method of installation, or represents the work of an important creative individual, or possesses high artistic values.

Criterion 4: It has yielded or may be likely to yield information important in prehistory or history.

Impacts to significant cultural resources that affect the characteristics of any resource that qualify it for the NRHP or adversely alter the significance of a resource listed in or eligible for listing in the CRHR are considered a significant impact. These impacts could result from 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 (CEQA Guidelines, Section 15064.5 [b][1]). Material impairment is defined as demolition or alteration in an adverse manner [of] those characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for inclusion in, the California Register (CEQA Guidelines, Section 15064.5[b][2][A]).

1.2.2.2 Codes Governing Human Remains

Section 15064.5 of the CEQA Guidelines also assigns special importance to human remains and specifies procedures to be used when Native American remains are discovered. The disposition of human remains is governed by Health and Safety Code Section 7050.5 and PRC Sections 5097.94 and 5097.98, and falls within the jurisdiction of the NAHC. If human remains are discovered, the County Coroner must be notified within 48 hours and there should be no further disturbance to the site where the remains were found. If the remains are determined by the coroner to be Native American, the coroner is responsible for contacting the NAHC within 24 hours. The NAHC, pursuant to PRC Section 5097.98, will immediately notify those persons it believes to be most likely descended from the deceased Native Americans so they can inspect the burial site and make recommendations for treatment or disposal.

1.2.2.3 Senate Bill 18

Enacted on March 1, 2005, Senate Bill 18 (SB 18) (California Government Code Sections 65352.3 and 65352.4) requires cities and counties to notify and consult with California Native American tribal groups and individuals regarding proposed local land use planning decisions for the purpose of protecting traditional tribal cultural places (sacred sites), prior to adopting or amending a General Plan or designating land as open space. Tribal groups or individuals have 90 days to request consultation following the initial contact.

1.2.2.4 Assembly Bill 52

California Assembly Bill 52 (AB 52), enacted on July 1, 2015, expands CEQA by establishing a formal consultation process for California tribes within the CEQA process. The bill specifies that any project that may affect or cause a substantial adverse change in the significance of a tribal cultural resource would require a lead agency to "begin consultation with a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project." According to the legislative intent for AB 52, "tribes may have knowledge about land and cultural resources that should be included in the environmental analysis for projects that may have a significant impact on those resources." Section 21074 of AB 52 also defines a new category of resources under CEQA called "tribal cultural resources." Tribal cultural resources are defined as "sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe" and is either listed on or eligible for the California Register of Historical Resources or a local historic register, or if the lead agency chooses to treat the resource as a tribal cultural resource. See also PRC Section 21074(a)(1)(A)-(B).

1.2.3 Local

Seaside's Municipal Code addresses Historic and Cultural Resource Preservation in the Zoning Ordinance – Chapter 17.58. The ordinance's purpose is to protect sites and structures identified by the community as culturally and/or historically significant, that contribute to the City's character and identity, and that should be preserved and/or restored, this includes Stilwell Hall and 35 other structures in the East Garrison of Fort Ord. The ordinance delineates the procedure for designating historic landmarks and districts as well as the removal of the designation and the procedure for managing alterations and demolitions.

The City of Seaside's Municipal Code defines the duties of their Art and History Commission in Chapter 2.16. One of the Art and History Commission's duties is to make recommendations to the City Council and advise the Council to designate, protect, preserve, enhance and perpetuate structures and areas of historical, architectural and engineering significance.

1.3 Personnel

Rincon Program Operations Manager and Principal Investigator Christopher Duran, M.A., Registered Professional Archaeologist (RPA), served as principal investigator for this study. Mr. Duran meets the Secretary of the Interior's *Professional Qualification Standards* for prehistoric and historic archaeology (NPS 1983). Rincon Archaeologist Breana Campbell, M.A., RPA, served as the primary author of this report. Rincon Archaeologist Hannah Haas, M.A., RPA coauthored this report. Rincon GIS Analyst Doug Carreiro prepared the figures found in the report. Rincon Vice President Duane Vander Pluym, D. Env., reviewed this report for quality control.

2 Natural and Cultural Setting

2.1 Natural Setting

Seaside is located on the coast of the Pacific Ocean, 2.25 miles east-northeast of Monterey at an elevation of roughly 30 feet (Figure 1). This area experiences a cool Mediterranean climate with warm, dry summers and cool winters. This climate is influenced heavily by the prevailing winds which blow over the Pacific Coast.

The natural habitat in the City consists of a small natural coastal habitat near the boundary of the City and Pacific Ocean, large expanses of contiguous habitats within the former Fort Ord lands, and urban development within Seaside proper. Vegetation communities within the City include California mixed evergreen forests, chaparral, native and introduced grasslands, and coastal marshes.

Six soil types are mapped within the Plan Area; Arnold-Santa Ynez complex, Baywood sand, 2 to 15 percent slopes, Coastal beaches, Dune land, Oceano loamy sand, 2 to 15 percent slopes, and Rindge muck, 0 to 2 percent slopes, MLRA 14 drained (USDA, NRCS 2017). The two dominant soil types in the Plan Area are Baywood sands and Oceano loamy sand, covering approximately 65 percent and 31 percent respectively. Both of these are deep well drained soils found in rolling coastal dunes.

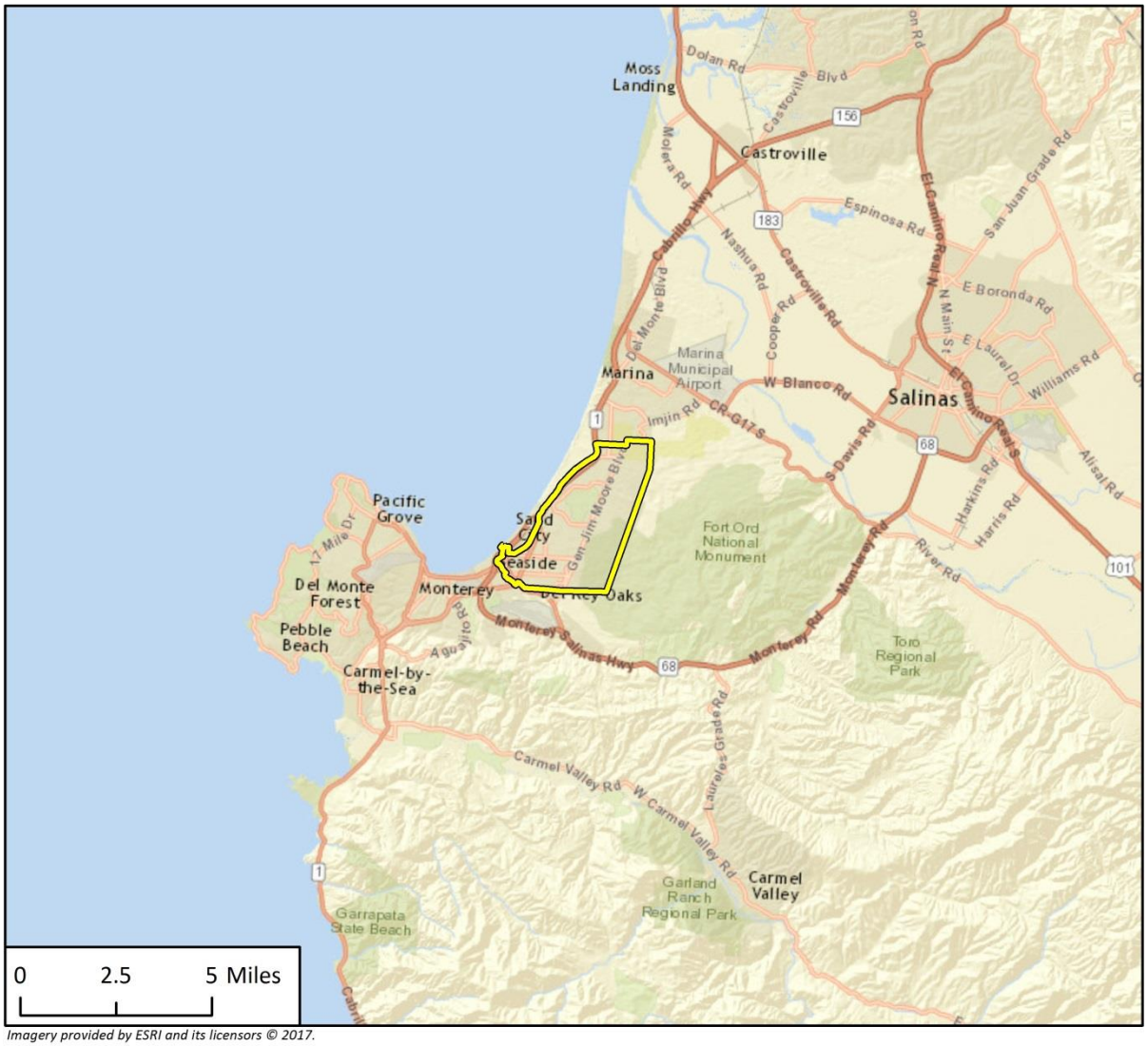
2.2 Cultural Setting

2.2.1 Prehistoric Context

The City of Seaside lies in what is generally described as the Central Coast Archaeological Region, one of eight organizational divisions of the state (Moratto 1984:Fig. 1). This region extends from Monterey Bay to Morro Bay, and includes all of Monterey County.

Several chronological sequences have been devised to understand cultural changes within the Central Coast Region from the Milling Stone period to contact. Jones (1993) and Jones and Waugh (1995) presented a Central Coast sequence that integrated the data results of cultural resource management since the 1980s. Three periods are presented in their prehistoric sequence subsequent to the Milling Stone period: Early, Middle, and Late periods. More recently, Jones and Ferneau (2002:213) updated the sequence following the Milling Stone period as follows: Early, Early-Middle Transition, Middle, Middle-Late Transition, and Late periods. The archaeology of the Central Coast Region subsequent to the Milling Stone period is distinct from that of the Bay Area and Central Valley, although the region has more in common with the Santa Barbara Channel area during the Middle and Middle-Late Transition periods, but few similarities during the Late period (Jones & Ferneau 2002:213).

Figure 1 Project Location Map



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Seaside General Plan Area

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WSA 4 Regional Location

2.2.1.1 Paleo-Indian Period (ca. 10,000 to 6000 BCE)

When Wallace developed the Early Man horizon in the 1950s, little evidence of human presence was known for the southern California coast prior to 6000 BCE (before common era). Archaeological work in the intervening years has identified numerous sites older than this date, including coastal and Channel Islands sites (e.g., Erlandson 1991; Johnson et al. 2002; Moratto 1984). The earliest accepted dates for occupation are from two of the Northern Channel Islands, located off the coast from Santa Barbara. On San Miguel Island, Daisy Cave clearly establishes the presence of people in this area approximately 10,000 years ago (Erlandson 1991:105). On Santa Rosa Island, human remains have been dated from the Arlington Springs site to approximately 13,000 years ago (Johnson et al. 2002).

Only a few archaeological sites within the Central Coast Region are documented prior to 6,000 years ago. It is likely that most earlier coastal sites are presently under water because it is estimated that 10,000 years ago sea levels were 50-65 feet lower than today (Bickel 1978:7). Estimates place the early Holocene shore in central and southern California at approximately 6 miles farther west than today's coastline (Breschini and Haversat 1991:126)

Recent data from Paleo-Indian sites in southern California indicate that the economy was a diverse mixture of hunting and gathering, with a major emphasis on aquatic resources in many coastal areas (e.g., Jones et al. 2002) and on Pleistocene lake shores in eastern California (Moratto 1984:90–92).

2.2.1.2 Milling Stone Period (6000 to 3000 BCE)

The Milling Stone horizon of Wallace (1955, 1978) is characterized by an ecological adaptation to collecting, and by the dominance of the principal ground stone implements generally associated with the horizontal motion of grinding small seeds; namely, milling stones (metates, slabs) and hand stones (manos, mullers), which are typically shaped (Wallace 1955, 1978; Warren 1968). Milling stones occur in large numbers for the first time in the region's archaeological record during this period, and are even more numerous near the end of this period. As testified by their toolkits and shell middens in coastal sites, people during this period practiced a mixed food procurement strategy. Subsistence patterns varied somewhat as groups became better adapted to their regional and local environments.

2.2.1.3 Early Period and Early-Middle Transition Period (3000 to 600 BCE)

Although Jones and Ferneau (2002:213) have distinguished an Early-Middle Transition period, it is not well defined and is difficult to observe. Thus the transition phase is included in the following discussion of the sites and characteristics recognized for the Early Period in the Central Coast Region.

An extensive series of shoreline midden deposits are within the Central Coast Region that date to the Early period, signifying an increase in occupation of the open coast (Jones 1995; Jones and Waugh 1995, 1997). These include estuarine sites such as CA-SLO-165 in Estero Bay and open-coast sites in Monterey Bay area, including CA-MNT-73, CA-MNT-108, and CA-MNT-1228. Lithic artifact assemblages from these sites include Central Coast Stemmed Series and side-notched projectile points. Square-stemmed and side-notched points have also been found in deposits at Willow Creek in Big Sur (CA-MNT-282), and Little Pico II on the San Luis Obispo coast (CA-SLO-175) (Jones and Ferneau 2002).

The material culture recovered from Early period sites within the Central Coast Region provides evidence for continued exploitation of inland plant and coastal marine resources. Artifacts include milling slabs and handstones, as well as mortars and pestles, which were used for processing a variety of plant resources. Bipointed bone gorge hooks were used for fishing. Assemblages also include a suite of *Olivella* beads, bone tools, and pendants made from talc schist. Square abalone shell (*Haliotis* spp.) beads have been found in Monterey Bay, but not yet in the Big Sur or San Luis Obispo areas (Jones and Waugh 1997:122).

Shell beads and obsidian are hallmarks of the trade and exchange networks of the central and southern California coasts. The archaeological record indicates that there was a substantial increase in the abundance of obsidian at Early period sites in the Monterey Bay and San Luis Obispo areas (Jones and Waugh 1997:124–126). Obsidian trade continued to increase during the following Middle period.

2.2.1.4 Middle Period (600 BCE to 1000 CE)

A pronounced trend toward greater adaptation to regional or local resources occurred during the Middle period. For example, the remains of fish, land mammals, and sea mammals are increasingly abundant and diverse in archaeological deposits along the coast. Chipped stone tools used for hunting were more abundant and diversified, and shell fishhooks became part of the toolkit during this period. Large knives, a variety of flake scrapers, and drill-like implements are common during this period. Projectile points include large side-notched, stemmed, and lanceolate or leaf-shaped forms. Bone tools, including awls, are more numerous than in the preceding period, and the use of asphaltum adhesive became common.

Complex maritime technology also proliferated during this period. Notable introductions included circular shell fishhooks between 1000 and 500 BCE. (Jones and Klar 2005:466), and the appearance of compound bone fishhooks between 300 and 900 CE (Arnold 1995; Jones and Klar 2005:466; Kennett 1998:357; King 1990:87–88; Rick et al. 2002). The introduction of shell fishhooks and plank canoes in the southern portion of the region and tule reed or balsa rafts in the north, their subsequent modifications, and the increased use of other capture devices such as nets appear to have led to a substantial focus on fishing in most coastal areas. A seasonal round settlement pattern was still followed; however, large, permanently occupied settlements, particularly in coastal areas, appear to have been the norm by the end of the period (Kennett 1998).

2.2.1.5 Middle to Late Transition Period (1000 to 1250 CE)

The Middle-Late Transition period is marked by relative instability and change, with major changes in diet, settlement patterns, and interregional exchange. The Middle period shell midden sites found along the Central Coast were abandoned by the end of the Middle-Late Transition period, so most Transition period and Late period sites were first occupied during those periods (Jones and Ferneau 2002:213, 219).

During the Middle to Late Transition period, projectile points diagnostic of both the Middle and Late periods are found within the Central Coast Region (Jones and Ferneau 2002:217). These points include large, contracting-stemmed types typical of the Middle period, as well as Late period small, leaf-shaped points, which likely reflect the introduction of the bow and arrow.

2.2.1.6 Late Period (1250 CE to European Contact)

As noted above, Late period sites are marked by small, finely worked projectile points, as well as temporally diagnostic shell beads. The small projectile points are associated with bow and arrow technology. Although shell beads were typical of coastal sites, trade brought many of these maritime artifacts to inland locations, especially during the latter part of the Late period.

Unlike the large Middle period shell middens, Late period sites are more frequently single-component deposits. More inland sites are known, with fewer and less visible sites along the Pacific shore during the Late period. The settlement pattern and dietary reconstructions indicate a lesser reliance on marine resources than observed for the Middle and Middle-Late Transition periods, as well as an increased preference for deer and rabbit (Jones 1995). An increase in sites with bedrock mortars during the Late period further suggests that nuts and seeds began to take on a more significant dietary role.

2.2.2 Ethnographic Context

The City of Seaside is located in a region historically occupied by the Ohlone (named Costanoan, for "coast," by the Spanish) (Kroeber 1925). The term Costanoan is a modern linguistic designation for populations that spoke one of eight related languages in the Bay Area region. These languages are part of the hypothesized Penutian language family. Linguistic research has grouped the Ohlone languages into four branches: 1) Karkin (far northern, located in the Carquinez Strait area); 2) Chochenyo, Ramaytush, Tamyen, and Awaswas (the northern branch); 3) Chalon (far southern branch); and 4) Rumsen and Mutsun (the southern branch) (Mithun 2001:535).

The pre-contact Ohlone were semi-sedentary, with a settlement system characterized by base camps of tule reed houses and seasonal specialized camps (Skowronek 1998). Villages were divided into small polities, each of which was governed by a chief responsible for settling disputes, acting as a war leader (general) during times of conflict, and supervising economic and ceremonial activities (Skowronek 1998, Kroeber 1925:468). Social organization appeared flexible to ethnographers and any sort of social hierarchy was not apparent to mission priests (Skowronek 1998).

The Ohlone were organized into numerous tribelets. Each tribelet's territory contained a main village and smaller satellite villages. The villages were typically situated along a river or stream for easy access to water (Levy 1978:487). The tribelet's functioned as political units that were structured by similarities in language and ethnicity, each holding claim to a designated portion of territory. Milliken (1995:229) was able to conduct a detailed examination of mission records, marriage patterns, and dialect variation seen in personal names and delineated 43 separate political entities (tribelets) in the San Francisco Bay, Santa Cruz, and inland area, with another six or so tribelets in the south Monterey Bay and Carmel Valley region. In general, Ohlone territory extended between the Carquinez Strait and San Pablo Bay on the north, southward along the coast beyond Monterey Bay to Carmel Valley, and inland to the coast range (Levy 1978:485). Neighboring groups included the Coast Miwok to the north, the Miwok and Northern Valley Yokuts to the east, and the Salinan and Esselen to the south.

Ohlone subsistence was based on hunting, gathering, and fishing (Kroeber 1925:467, Skowronek 1998). Mussels were a particularly important food resource (Kroeber 1925:467). Sea mammals were also important; sea lions and seals were hunted and beached whales were exploited (Kroeber 1925:467). Like the rest of California, the acorn was an important staple and was prepared by leaching acorn meal both in openwork baskets and in holes dug into the sand (Kroeber 1925:467).

The Ohlone also practiced controlled burning to facilitate plant growth (Kroeber 1925:467; Skowronek 1998).

Ohlone groups came into contact with European culture at the beginning of Spain's land exploration and settlement of Alta California in 1769. During the late 1700's and early 1800's, traditional lifeways were drastically altered when the Spanish placed their capital at Monterey, built forts at Monterey and San Francisco, and established seven Franciscan missions to convert native peoples to Christianity and the European way of life. During this time, large-scale epidemics swept through the mission population and remaining Ohlone villages (Milliken 1995). It is estimated that the combined Ohlone population decreased from a pre-contact total of 10,000 down to 2,000 by the end of the mission period in 1834 (Levy 1978:486). During the mission period, the dwindling Ohlone population also intermarried with other interior tribes at the missions, mixing their cultural identities.

During the late 1800s, several multi-ethnic Native American communities began to appear in Ohlone territory. The best known of these were located in Pleasanton, Monterey, and San Juan Bautista. However, even these groups continued to shrink as young people married into other groups and moved away. Estimates of the total remaining population of people with recognizable Ohlone descent were fewer than 300 in 1973 (Levy 1978:487).

Descendants of the Ohlone united in 1971 to form a corporate entity known as the Ohlone Indian Tribe. This entity was successful in obtaining title to the Ohlone Indian Cemetery where their ancestors who died at Mission San José are buried (Levy 1978:487). Since that time, other descendants of Ohlone tribelets, notably the Rumsen and Mutsun groups, have organized political and cultural heritage organizations that are active locally and statewide. All are concerned with revitalizing aspects of their culture, learning the language through notes collected by anthropologist John Harrington, and preserving the natural resources that played a vital role in traditional culture.

In addition, some Ohlone groups (namely the Amah-Mutsun Band of Mission Indians, Costanoan Band of Carmel Mission Indians, Costanoan Rumsen Carmel Tribe, the Indian Canyon Mutsun Band of Costanoan, and the Muwekma Ohlone Tribe) are seeking federal recognition of their tribe, petitioning the Bureau of Indian Affairs with reconstructed tribal histories and genealogies.

2.2.3 Historic Context

The Monterey County coast was first visited by Europeans in 1542 with the expedition of Juan Rodriguez Cabrillo and later in 1602 by Sebastian Vizcaino (Hoover et al. 2002:225; Gudde 1998: 246). The Spanish presidio and mission were established in Monterey in 1770, and served as the capital of the California missions until 1803 (Johnson 1979:83). In 1791, Comandante General Pedro de Nava authorized the establishment of presidial pueblos (civilian lands around military forts) with detailed regulations for their organization (Crane 1991). The Pueblo of Monterey, whose lands included the future city of Seaside, grew in population as Spanish soldiers married and raised families, or retired to this location.

In 1822 California received word of Mexico's independence from Spain. At this time, the Pueblo of Monterey had a population of several hundred and the newly established Mexican government decreed the California ports open to increased trade with foreigners under the constitution of 1824 (Bean 1968; Crane 1991). Hallmarks of the Mexican Period in California are the secularization of mission lands, which was fully accomplished by 1836, and the issuance of large and numerous land grants to soldiers and prominent citizens. During the Mexican Period the present city of Seaside was within the Pueblo Lands of Monterey.

The Treaty of Guadalupe Hidalgo was signed in 1848, ending the Mexican-American War and officially making California a territory of the United States. U.S. jurisdiction over California had really begun two years earlier, when on July 7, 1846, Commodore John D. Sloat raised the U.S. flag after the "Battle of Monterey," where 50 U.S. Marines and 100 Navy sailors landed unopposed and captured the city without firing a shot (Crane 1991). The Gold Rush brought a multitude of new settlers to California in 1848 and the construction of the transcontinental railroad in 1869 contributed further to California's population boom.

Since that time, California has experienced tremendous growth to become one of the dominant economies in the world. Monterey County is a popular tourist destination, famous for its golf courses, resorts, the Monterey Bay Aquarium, and Cannery Row. Monterey County has remained largely agricultural and the Salinas Valley has been called the "Salad Bowl of the World."

2.2.3.1 City of Seaside

Dr. John L.D. Roberts planned the Seaside subdivision in 1888 following the purchase of 160-acres of land where Seaside and Sand City are currently located. The subdivision was marketed as a shoreline resort and tourist destination due to its proximity to the Hotel Del Monte, now known as Hermann Hall, a resort that largely served as a catalyst for tourism for the Monterey peninsula. While the small subdivision was initially referred to as East Monterey, the subdivision quickly grew to take the name Seaside and by 1891 had established a post office. The City of Seaside was officially incorporated in 1954.

In 1917, the United States Army acquired land, known initially as Camp Gigling, to use as training ground for artillery and cavalry training for troops stationed at Monterey presidio. Permanent improvements to the facility did not begin until the 1930s with the construction of administrative buildings, barracks, mess halls, tent pads, and a sewage treatment plant (Rughe 2016). In 1938 the facility was expanded after the purchase of additional lands and a land donation for the development of the Main Garrison. The facility was officially designated as Camp Ord in 1939 and in 1940 the camp was designated as Fort Ord (Rughe 2016). Following the end of World War II the Fort was used as a basic training center until 1975, after which the 7th Infantry (light) Division became the main occupants of the Fort.

The expansion of Fort Ord led to an increased demand for housing during the 1960s and 1970s spurring growth in Seaside. During this period State Highway 1 was constructed as well as a high school, and a new city hall designed by Edward Durell Stone. Within the city, existing infrastructure that was considered to be substandard was demolished and new buildings were constructed to meet the needs of the growing city.

The U.S. government began the process of shutting down Fort Ord as an active-duty military base in 1991 and it was officially closed in 1994. Following the closure, the land was transferred to the City of Seaside. California State University Monterey Bay opened on former Fort lands and the Fort Ord National Monument was established. The land transfer also opened up new areas for community growth and development.

3 Background Research

3.1 California Historic Resources Information System

Rincon requested a search of the cultural resource records housed at the California Historical Resources Information System (CHRIS), Northwestern Information Center (NWIC) located at Sonoma State University, Rohnert Park on August 8, 2017. The NWIC provided Rincon with records search data on August 29, 2017. The search was conducted to identify all previous cultural resources work and previously recorded cultural resources within the City of Seaside. The CHRIS search included a review of the CRHR, the NRHP, the California Points of Historical Interest list, the California Historical Landmarks list, the Archaeological Determinations of Eligibility list, and the California State Historic Resources Inventory list. The records search also included a review of all available historic USGS 7.5- and 15-minute quadrangle maps.

3.1.1 Previous Cultural Resource Studies

The records search identified 65 previous studies within the City of Seaside. These studies are listed in Table 1 below. Approximately 20% of the City of Seaside has been the subject of a cultural resources study, though not all studies included surveys.

Table 1 Table Previously Conducted Studies within the City of Seaside

Report Number	Author	Year	Title
S-003345	Tony F. Weber and Ann S. Peak	1976	Monterey Peninsula Regional Wastewater Treatment System Expansion Project
S-003345	Ann S. 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)
S-003418	Ann S. Peak & Associates	1978	Cultural Resource Assessment of the Proposed Effluent Disposal System, Fort Ord, Monterey County, California
S-003420	Ann S. Peak	1978	Archeological Test Excavation of JS-MP-1, Seaside, Monterey County, California
S-003441	Unknown	1975	Archeological Survey, Fort Ord, Monterey County
S-005210	Michael Swernoff	1982	A Reconnaissance Cultural Resources Survey of Fort Ord, California.
S-005210	Michael Swernoff	1981	A Reconnaissance Cultural Resources Survey of Fort Ord, California, Draft Report

Report Number	Author	Year	Title
S-005439	Ann S. Peak and Melinda A. Peak	1978	Cultural Resource Assessment of the Selected Alternative of the Monterey Regional Wastewater Treatment System, Monterey County, California.
S-005491	Gary S. Breschini	1979	Preliminary Archaeological Surface Reconnaissance of the Laguna Grande Regional Park, Adjacent to the Seaside City Hall, Seaside, Monterey County, California
S-005572	Dennis L. Wardell	1979	Cultural Resource Impact Evaluation Report for the Laguna Grande Neighborhood Improvement Project
S-007606	R. Paul Hampson and Gary S. Breschini	1985	Preliminary Cultural Resources Reconnaissance of a Portion of the Southern Pacific Right-of-Way, Monterey, Monterey County, California.
S-010066	Stephen A. Dietz	1988	Seaside Laguna Grande Office Building (letter report)
S-011151	Robert Cartier	1989	Cultural Resource Evaluation for 1711 Del Monte Boulevard in the City of Seaside, County of Monterey
S-011462	Allen G. Pastron	1988	An archaeological surface reconnaissance of the Roberts Lake area of the Laguna Grande/Roberts Lake Restoration project, City of Seaside, Monterey County, California (letter report)
S-011462	Allen G. Pastron	1988	Archaeological monitoring and evaluation in connection with the Laguna Grande/Roberts Lake Restoration project, City of Seaside, Monterey County, California (letter report)
S-012618	Gary S. Breschini	1991	Preliminary Cultural Resources Reconnaissance for the Del Monte Avenue Widening, Monterey, Monterey County, California
S-018372	Philip R. Waite	1995	A Cultural Resources Survey of 783 Hectares, Fort Ord, Monterey County, California
S-019963	Anna Runnings	1997	Historic Property Clearance Report for Proposed Bicycle Path Along Sand Dunes Drive and Highway 1, Sand City, Monterey County, California
S-020570	Barry A. Price	1998	Cultural Resources Assessment, Pacific Bell Mobile Services Facility SF-711-21, Seaside, Monterey County, California (letter report)
S-020577	Barry A. Price	1998	Cultural Resources Assessment, Pacific Bell Mobile Services Facility SF-743-03, Seaside, Monterey County, California (letter report)
S-020720	Sunshine Psota	1998	Review of Historic Resources for Site SF754-01, New Monopole at 6th Army Avenue, Fort Ord, Monterey County, CA (letter report)

Report Number	Author	Year	Title
S-022329	Terry L. Joslin and Kelda Wilson	1999	Negative Archaeological Survey Report, proposed fence replacement, 05-MON-01, PM R78.4-R81.2 CU 05-168 EA 05-0C4001
S-022405	Archaeological Consulting	1999	Prehistoric Property Survey Report, 05-MNT-1, PM 78.48-79.00, Building of New Ocean Side Retaining Walls
S-022405	Mary Doane	1999	Historic Property Clearance Report for the Proposed Monterey Bay Coastal Trail Improvements Project Including Lighting and Traffic Signal Modification Along Del Monte Avenue and Erosion Control Along Presidio Curve, Monterey, Monterey County, California (Amended)
S-022405	Mary Doane	1999	Historic Property Clearance Report for Proposed Monterey Bay Coastal Trail Lighting & Del Monte Avenue Traffic Signal Modification Project Along Del Monte Avenue, Monterey, Monterey County, California
S-022537	Kelda Wilson	2000	Negative Archaeological Survey Report, 05-MON-1 PM R80.7-R85.3 CU 05-168 EA 05-0A3301, Proposal to Place an Asphalt Concrete Overlay on the Class 1 Bike Path on State Route 1 in Seaside and Marina, Monterey County
S-022657	Izaak Sawyer, Laurie Pfeiffer, Karen Rasmussen, and Judy Berryman	2000	Phase 1 Archaeological Survey Along Onshore Portions of the Global West Fiber Optic Cable Project
S-023023	Mary Doane and Trudy Haversat	2000	Preliminary Archaeological Reconnaissance of the 2nd Avenue/12th Street Project, in the Former Fort Ord, Monterey County, California
S-023331	Mary Doane and Trudy Haversat	2000	Preliminary Archaeological Reconnaissance of the Seaside Resort Project on the Former Fort Ord Golf Courses, Seaside, Monterey County, California
S-024030	Lorna Billat	2001	Proposed Telecommunications Facility; Nextel Site CA-1025A "Fort Ord" (letter report)
S-025416	Mary Doane and Trudy Haversat	2002	Preliminary Archaeological Reconnaissance for the First Tee Project and Two Separate Recreational Facility Sites in the Former Fort Ord, Monterey County, California
S-029432	Scott Billat	2004	Replacement of Flagpole for a 54 foot Flagpole and New Equipment Shelter, Seaside HS/SF-1038 (resubmittal), 2200 Noche Buena Street, Seaside, CA.

Report Number	Author	Year	Title
S-029473	Michael Newland	2000	Review of Historic Resources for Site SF-754-04, Pole Mount on Corregidor Road Behind Unit #156, Fort Ord, Monterey County, CA (Vertex Project #2513, PO# 1131, ASC #50001 77/00) (letter report)
S-033677	Mary Doane and Trudy Haversat	1999	Preliminary Archaeological Reconnaissance of the Marina Coast Water District Recycled Water Pipeline Project, Monterey County, California
S-033677	Mary Doane and Trudy 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
S-033677	Mary Doane and Gary S. 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)
S-033677	Mary Doane and Gary S. Breschini	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
S-033677	Mary Doane and Gary S. Breschini	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
S-033677	Mary Doane and Gary S. Breschini	2007	Preliminary Archaeological Reconnaissance for the Marina Coast Water District Well 34 Project, In Marina, Monterey County, California
S-034216	Colin I. Busby	2005	Cultural Resources Assessment: Technical Report for Proponent's Environmental Assessment (PEA), California American Water, Monterey County, Coastal Water Project
S-034216	Kari Jones and John Holson	2009	Archaeological Survey for the Cal-Am Coastal Water Project, Monterey County, California
S-034302	James Keasling	2008	Cultural Resource Records Search and Site Visit Results for Sprint Nextel Candidate MO45XCO18 (Fort Ord), 4251 General Jim Moore Boulevard, Seaside, Monterey County, California
S-034406	Scott Billat	2007	New Tower ("NT") Submission Packet FCC Form 620, Fort Ord Seaside, SF-18350A

Report Number	Author	Year	Title
S-034730	Mary Doane and Gary S. Breschini	2008	Preliminary Archaeological Reconnaissance for the Resort at Del Rey Oaks in the Former Fort Ord, Monterey County, California
S-034826	Andrew Pulcheon	2008	A Cultural and Paleontological Resources Study for the Del Monte Boulevard Hotel Project
S-035060	Mary Doane and Gary Breschini	2008	Preliminary Archaeological Reconnaissance for the Projects at Main Gate in the Former Fort Ord, Seaside, Monterey County, California
S-035766	Carolyn Losee	2008	Cultural Resources Investigation for AT&T Project CN3229 "Broadway Ave", 1915 Ord Grove Avenue, Seaside, Monterey County, California 93955: Revision II (letter report)
S-036108	Mary Doane and Gary S. Breschini	2009	Preliminary Archaeological Reconnaissance for the California-American Water Company Improvement Project 1, PRV Stations in the Coastal Zone, In Monterey and Seaside, Monterey County, California.
S-036109	Mary Doane and Gary S. Breschini	2008	Preliminary Archaeological Reconnaissance for the California-American Water Company Improvement Project 3: A 24-Inch Transmission Main, Carlton Drive, Plumas Avenue and Mescal Street, in Seaside, Monterey County, California
S-036432	Lorna Billat	2009	New Tower ("NT") Submission Packet; FCC Form 620; Project Name: Sprint Seaside; Project Number: SF-18350B
S-036814	Carolyn Losee	2009	Cultural Resources Investigation for AT&T Wireless Site CN3532-A "Plumas Co-Location" Southwest Corner of Plumas Avenue & Highland Avenue, Monterey City and County, California (letter report)
S-037693	Mary Doane and Gary S. Breschini	2010	Phase I Archaeological Survey for the Central Coast California Veterans Cemetery and Eastside Road Infrastructure Projects, Seaside, Monterey County, California
S-037725	Allika Ruby	2010	Archaeological Survey Report for the Monterey Light Rail Transit Project
S-038158	Michael A. Way	2010	Cultural Resources Analysis, Noche Buena & Plumas/CN3532, 1344 Plumas Avenue, Seaside, Monterey County, California 93940, EBI Project No. 61106603
S-039072	Basin Research Associates	2009	Cultural Resources Review, Gigling Road and South Boundary Road Improvements, Within Former Fort Ord, Monterey County, California
S-044195	Lawrence Moore	2010	Cultural Resource Inventory, ASR Wells Location, Ord Military Community, Monterey County, CA

Report Number	Author	Year	Title
S-044247	Dana E Supernowicz	2011	Architectural Evaluation Report of the Fremont Boulevard and Canyon Del Rey Boulevard Project, AT&T Mobility Site No. CC3668, 833 Portola Drive, Del Rey Oaks, Monterey County, California, 93940
S-045823	Mary Doane and Gary S. Breschini	2014	Phase I Archaeology Survey for the Proposed Monterey Peninsula Groundwater Replenishment Project, Northern Monterey County, California
S-045829	Mary Doane and Gary S. Breschini	2014	Phase I Archaeological Survey for the North Fremont Boulevard Pedestrian, Bicycle, and Transit Project, Monterey and Seaside, Monterey County, California
S-045868	Mary Doane and Gary S. Breschini	2015	Preliminary Archaeological Reconnaissance for the Seaside Senior Living Project, APN 031-141-004, in Seaside, Monterey County, California
S-046996	Alexis Green	2015	Submission Packet, FCC Form 620, for proposed New Tower Project, 1949 Waring Street, Seaside, Monterey County, CA 93955, La Salle Ave / EnSite #23460 (283647), EBI Project Number: 6114009712
S-046996	John Etheridge and MacKensie Cornelius	2015	Archaeological Survey Report, La Salle Ave/Ensite #23460 (283647), 1949 Waring Street, Seaside, Monterey County, California 93955, Unsectioned
S-048445	Dana E. Supernowitz	2013	Archaeological Survey Study of the PG&E Ardennes Project, AT&T Mobility Site No. CNU6074, 207 Ardennes Circle, Seaside, Monterey County, California 93955
S-048445a	Milford Wayne Donaldson	2013	Collocation Submission Packet; PG&E ARDENNES; AT&T-CNU6074.
S-048445b	Carol Roland-Navi	2014	FCC_2013_1218_001: CNU6074 (PG&E ARDENNES) 207 ARDENNES CIIRCLE, SEASIDE, Collocation

Source: NWIC August 2017

3.1.2 Previously Recorded Cultural Resources

The NWIC records search identified 6 previously recorded cultural resources within the City of Seaside. These resources are listed in Table 2 below. Although the City of Seaside's Historic and Cultural Resource Preservation in the Zoning Ordinance – Chapter 17.58 identifies 35 structures within Fort Ord that are historic, they are not recorded with the CHRIS system.

Table 2 Previously Recorded Cultural Resources within the City of Seaside

Primary Number	Trinomial	Resource Type	Description	Recorder(s) and Year(s)	NRHP/CRHR Status
P-27-000385	CA-MNT-000280	Prehistoric	Habitation debris	A.R. Pilling, UCAS, 1950	Unknown
P-27-000777	CA-MNT-000699	Prehistoric	Lithic scatter, habitation debris	T. Weber, A. Peak, Ann S. Peak & Associates, 1976	Unknown
P-27-002717	-	Historic	Water Tank	Lorna Billat, Earth Touch, Inc., 2001	Unknown
P-27-002923	CA-MNT-002295H	Historic	Southern Pacific Railroad	Stephan Wee, JRP Historical Consulting Services, 1990; K. Jones, F. Arellano, Pacific Legacy, Inc., 2008; M. Millett, J.P. Glover, PAR Environmental Services, Inc., 2010	Unknown
P-27-003383	-	Historic	PG&E Sal-Del Transmission Tower No. 4/62	Dana E. Supernowicz, Historic Resources Associates, 2013	Unknown
P-27-003433	-	Historic	Seaside First Baptist Church	Holly Robinson, EBI Consulting, 2015	Unknown

3.2 Additional Sources Consulted

Rincon reviewed historic aerials and topographic maps and consulted several databases to obtain information regarding cultural resources within the City of Seaside. Table 3 provides a list of the resources consulted and the results of those inquiries.

Table 3 Additional Sources Consulted

Source	Results
National Register of Historic Places	Negative
California Inventory of Historic Places (1972)	Monterey Bay and Southern Pacific Railroad
California Inventory of Historic Resources	Negative
California Historical Landmarks	Negative
California Points of Interest	Negative
Local Historical Register Listings	Fort Ord Structures
Historic Properties Directory	Shell Oil Site Seaside Branch Library Fort Ord Water Tank/ Structure #4

3.2.1 Historic Aerials and Topographic Maps

Rincon reviewed United States Geological Survey (USGS) quadrangle maps housed at the NWIC and online sources as part of the records search for this project. The USGS Seaside quadrangle maps from 1913, 1918, 1923, 1926, 1929, 1932, 1941, 1946, 1948, 1956, 1963, 1965, 1969, 1970, and 1985 depict the City (Historic Aerials n.d.). Aerial imagery for Seaside was available for the following years: 1968, 1998, 2005, 2009, 2010, 2012 (Historic Aerials n.d.). These resources should also be consulted on a project by project basis as part of the General Plan buildout.

3.2.2 Existing Conditions Report

The Existing Conditions Report and the existing General Plan states the following areas have been identified by the General Plan as archaeologically sensitive:

- the drainage area along the southern border of Seaside,
- the area of active sand dunes along the coast, and
- lands east of General Jim Moore Boulevard, within the former Fort Ord.
- Stilwell Hall and 35 additional structures in the East Garrison of Fort Ord are the only properties considered eligible for the NRHP in Seaside.

4 Native American Consultation and Tribal Cultural Resources

The City of Seaside as the lead agency conducted Native American government-to-government consultation in accordance with California Government Code 65352 (Senate Bill 18 of 2004; SB 18) and Assembly Bill 52 of 2014 (AB 52). Rincon contacted the Native American Heritage Commission (NAHC) on August 8, 2017 and requested a review of the Sacred Lands Files (SLF), a list of Native American individuals and tribal organizations for tribal consultation per SB 18, and a list of Native American individuals and tribal organizations for tribal consultation per AB52. Rincon received a response via email on September 8, 2017 stating that the search of the SLF came back with negative results. The NAHC additionally provided a contact list of six Native American individuals and tribal organizations that may have knowledge of cultural resources in or near the City. On behalf of the City of Seaside Rincon drafted letters to each of the NAHC individuals and tribal organizations for the City to send in accordance with SB 18 and AB 52. Rincon also provided guidance to the City regarding Native American Consultation and draft tables for tracking consultation. The results of the NAHC requests, draft letters, guidance, and tables are provided in Appendix C.

5 Proposed General Plan Goals, Policies, and Implementation Programs

5.1 Goals and Policies

As it is currently written, the proposed 2040 General Plan includes the following goal and associated policies related to cultural resources:

Goal POC-14: A strong sense of cultural resources and historical places. Intent: to help preserve, conserve, enhance, and educate the public about Seaside's cultural and historical assets, including archaeological and tribal cultural resources. To achieve this, the City will promote educational resources and integrate cultural and historical resources as part of coordinating land use and community design decisions.

Policies:

- *Identify and conserve resources.* Identify, protect, preserve and restore significant cultural resources in the City and former Fort Ord lands in the City. Establish a known list of cultural and historic resources in the City.
- *Protect Native American cultural resources.* Provide for the protection and/or support of tribal cultural resources in the city and at the former Fort Ord.
- *Historic preservation.* Work with State and Federal agencies, such as California Historical Resources, to help guide and fund future restoration efforts. Support efforts to memorialize significant people, places, and events in the history of Seaside through public art and plaques.
- *Wayfinding signage.* Increase historical and cultural facility visibility through signage and wayfinding.
- *Historical resource development.* Work with local organizations to continue to document and educate the public about the history of Seaside.

5.2 Implementation Program

Implementation programs required under the proposed 2040 General Plan include the following:

POS 5. Cultural Resource Sensitivity Map. Develop a Cultural Resource Sensitivity Map based upon field and literature surveys identifying the locations of known cultural resources and areas of archaeological sensitivity within the City and its Sphere of Influence.

POS 6. Cultural/Historic Database. Establish and maintain an archaeological and historic resources database.

6 Recommendations and Conclusions

6.1 Historical and Archaeological Resources

Based on the review of the existing conditions report, the cultural resource records search, and a review of the available historical databases for the City of Seaside has indicated that the City does contain cultural resources including archaeological, historical, and tribal cultural resources. While portions of the Plan area have been previously studied, future development or improvements related to changes in land use have the potential to impact cultural resources. The 2040 General Plan includes goals, policies, and implementation programs that address potential impacts to cultural resources, however mitigation is required to reduce impacts to a less than significant level.

Under CEQA, any project that may cause a substantial adverse change in the significance of a historical resource would also have a significant effect on the environment. Substantial adverse change to the significance of a historical resource is defined as physical demolition, destruction, alteration, or relocation of the resource or immediate surroundings such that its significance would be materially impaired. CEQA states that when a project will cause damage to a historical resource, reasonable efforts must be made to preserve the resource in place or left in an undisturbed state. Mitigation measures are required to the extent that the resource could be damaged or destroyed by a project. Projects that follow the Secretary of the Interior's Standards for the Treatments of Historic Properties (Standards) are typically mitigated below the level of significance.

Multiple buildings in the General Plan area that are over 45 years old have not been evaluated, and in the future additional buildings will become over 45 years of age during the 20 to 30 year period of the General Plan buildout. Future development or improvements related to changes in land use could potentially impact historic buildings and structures and cause significant adverse impacts to historical resources. Therefore, impacts to these buildings must be considered for future projects within the General Plan area.

Under CEQA, archaeological resources may meet the definition of a historical resource or unique archaeological resource. Any project that may cause a substantial adverse change in the significance of a historical resource would also have a significant effect on the environment. Substantial adverse change to the significance of a historical resource is defined as physical demolition, destruction, alteration, or relocation of the resource or immediate surroundings such that its significance would be materially impaired. CEQA states that when a project would cause damage to a unique archaeological resource, reasonable efforts must be made to preserve the resource in place or leave it in an undisturbed state.

The records search results indicate that the General Plan area contains archaeological resources. Additionally, the existing conditions report and the 2004 General Plan identified archaeologically sensitive areas including the drainage area along the southern border of Seaside, the area of active sand dunes along the coast, and the lands east of General Jim Moore Boulevard on the former Fort Ord lands. Archaeological sensitive areas are depicted on Figure 2. While portions of the Plan area have been previously studied, much of the Plan area remains uninvestigated and future development or improvements related to changes in land use could potentially impact archaeological resources.

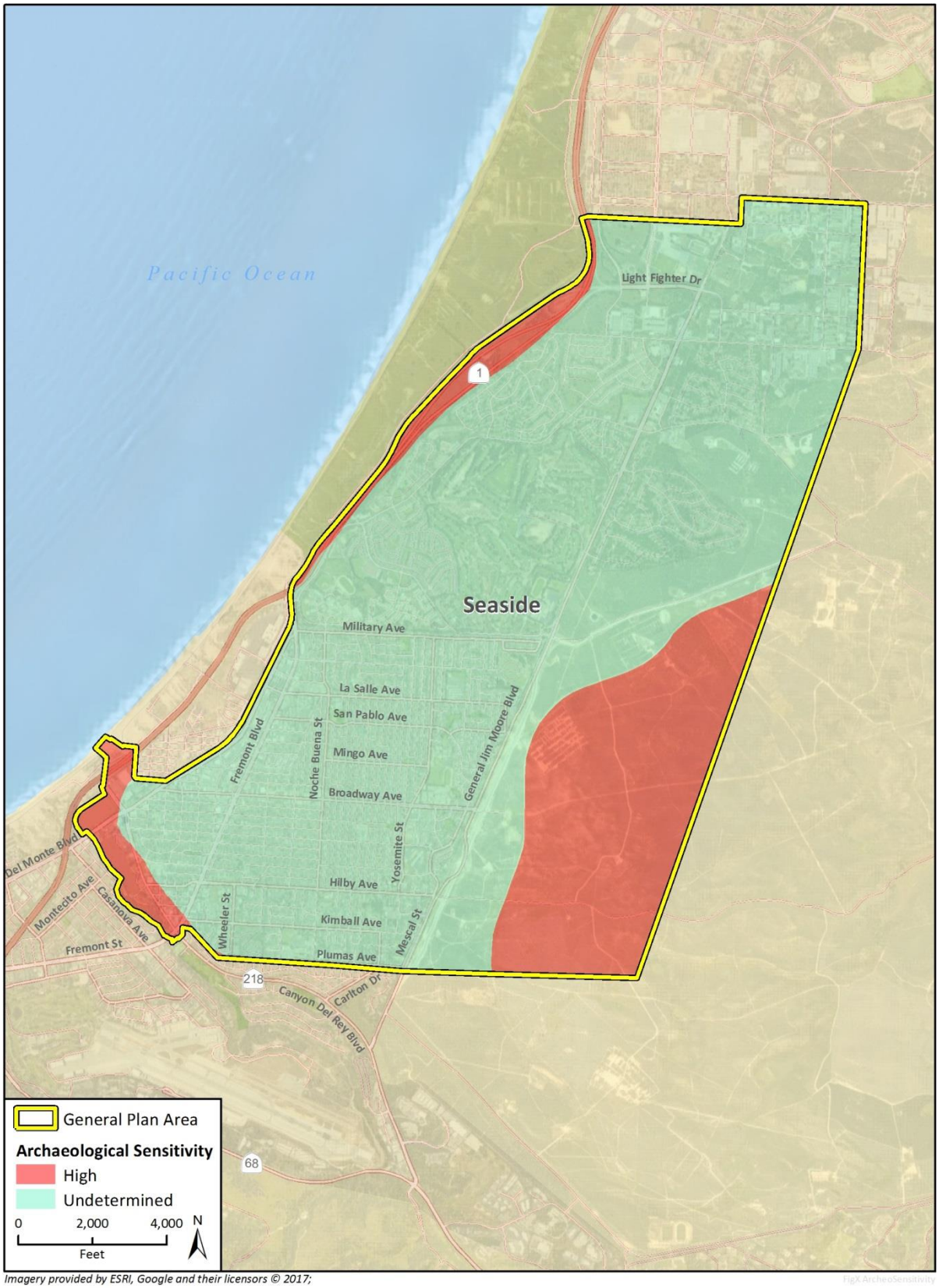

Figure 2. Archaeological Sensitivity

The following mitigation measure is recommended to reduce impacts to historical and archaeological resources to less than significant:

The following Implementation Program shall be added to the 2040 General Plan:

> Require all discretionary proposals to consider the potential to disturb archaeological and historic resources. If preliminary reconnaissance suggests that cultural or tribal cultural resources may exist, a Phase I cultural resources study shall be performed by a qualified professional meeting the Secretary of the Interior's (SOI) Professional Qualification Standard (PQS) for archaeology and/or architectural history, as appropriate (NPS 1983). A Phase I cultural resources study shall include a pedestrian survey of the project site and sufficient background research and field sampling to determine whether subsurface prehistoric or historic remains may be present. Archival research should include a records search at the Northwest Information Center (NWIC) and a Sacred Lands File (SLF) search with the Native American Heritage Commission (NAHC). Where identified or potential resources are of Native American origin, the appropriate Native American tribe(s) will participate with the qualified professional. The technical report documenting the study shall include recommendations to avoid or reduce impacts to cultural resources.

The following provides baselines for the execution of the recommended implementation program.

6.1.1 Historical Resources

Rincon recommends that cultural resource studies, with regards to historical resources, be conducted under the following baseline conditions:

- Prior to any construction activities that may affect buildings over 45 years of age or previously identified historic district a historical resources assessment shall be performed by an architectural historian or historian who meets the National Parks Service Professional Qualification Standards in architectural history or history. This shall include a records search at the NWIC to determine if any resources that may be potentially affected by the project have been previously recorded, evaluated, and/or designated on the NRHP or CRHR. Following the records search, the qualified architectural historian or historian will conduct a reconnaissance-level and/or intensive-level survey in accordance with the California Office of Historic Preservation guidelines to identify any previously unrecorded potential historical resources within the project site or vicinity that may be potentially affected by the proposed project. California of Department of Parks and Recreation 523 forms (DPRs) shall be prepared for all surveyed properties. Pursuant to the definition of a historical resource under CEQA, potential historical resources shall be evaluated under a developed historic context.

If a project has the potential to impact a historic resource, the following mitigation measures may be required and would be determined on a project-by-project basis:

- To ensure that projects requiring the relocation, rehabilitation, or alteration of a historical resource not impair its significance, the Standards shall be used to the maximum extent possible. The application of the Standards shall be overseen by a qualified architectural historian or historic architect meeting the PQS. Prior to any construction activities that may affect the historical resource, a report identifying and specifying the treatment of character-defining features and construction activities shall be provided to the City of Seaside.

- If a proposed project would result in the demolition or significant alteration of a historical resource, it cannot be mitigated to a less than significant level. However, recordation of the resource prior to construction activities will assist in reducing adverse impacts to the resource to the greatest extent possible. Recordation shall take the form of Historic American Buildings Survey (HABS), Historic American Engineering Record (HAER), or Historic American Landscape Survey (HALS) documentation, and shall be performed by an architectural historian or historian who meets the PQS. Documentation shall include an architectural and historical narrative; medium- or large-format black and white photographs, negatives, and prints; and supplementary information such as building plans and elevations, and/or historic photographs. Documentation shall be reproduced on archival paper and placed in appropriated in appropriate local, state, or federal institutions. The specific scope and details of documentation would be developed at the project level.

6.1.2 Archaeological Resources

Rincon recommends that cultural resources studies, with regards to archaeological resources, be conducted under the following baseline conditions:

- Cultural Resources studies shall be performed under the supervision of an archaeologist that meets the Secretary of the Interior's Professional Qualifications Standards (PQS) in either prehistoric or historic archaeology. Assessments shall include a CHRIS records search at the NWIC and of the SLF maintained by the NAHC. The standard records search radius is 0.5-mile, but may require a larger or smaller radius dependent on the nature of the project (e.g., a single home upgrade may only need a 0.25-mile records search radius). The records searches will determine if the proposed project area has been previously surveyed for cultural resources, identify and characterize the results of previous cultural resource surveys, and disclose any cultural resources that have been recorded and/or evaluated. A Phase I pedestrian survey shall be undertaken in proposed project areas, where surveys have not previously been carried out within a 5-year period prior to the project execution, or in areas where previously identified cultural resources exists to locate any surface cultural materials. For each survey that is conducted, a cultural resource technical report should be prepared that incorporates the results of the survey, any additional recommendations, and any CRHR/NRHP-eligibility evaluations. A memorandum style report may be acceptable for studies with negative results. Each report shall describe the methods of the cultural resources survey and provide any additional recommendations for the management of cultural resources within and adjacent to the project. Each report should include maps depicting the area surveyed for cultural resources, the locations of cultural resources identified during the survey, and site records or updates for cultural resources encountered during the survey. Full technical reports should be prepared in accordance with the Office of Historic Preservation's Archaeological Resource Management Reports (ARMR) guidelines.

If a project has the potential to impact an archaeological resource, the following mitigation measures may be required and would be determined on a project-by-project basis by the cultural resource study:

- If potentially significant cultural resources are identified through a Phase I study and impacts to these resources cannot be avoided, a Phase II Testing and Evaluation investigation shall be performed by an archaeologist who meets the PQS (hereafter qualified archaeologist) prior to any construction-related ground-disturbing activities to

determine significance. If the resource is Native American in origin, all testing shall be observed by a Native American monitor. A Phase II study includes the systematic testing of a cultural resource to determine the resource's eligibility for listing in the CRHR and NRHP. A Phase II program shall include the development of a Phase II testing plan to be prepared by the qualified archeologist and approved by the City of Seaside prior to execution. The Phase II testing should comprise subsurface testing designed to identify the extent of a subsurface deposit within the project area and to evaluate the site(s) in question for listing in the CRHR and/or NRHP. Testing should include the use of shovel test pits and test units to establish the vertical and horizontal limits of the resource(s). The evaluation should determine if impacts/effects caused by the project would be significant/ adverse and include any recommendations for additional work at the site(s). If resources determined significant or unique through Phase II testing, and site avoidance is not possible, appropriate site-specific mitigation measures shall be established and undertaken. Mitigation measures might include a Phase III data recovery program that would be implemented by a qualified archaeologist and should be performed in accordance with the Office of Historic Preservation's Archaeological Resource Management Reports (ARMR): Recommended Contents and Format (1990) and Guidelines for Archaeological Research Designs (1991).

- If engineering or safety considerations are such that a significant or unique cultural resource is identified within a project area and cannot be avoided by project ground disturbance and if additional research on the site does not indicate that its data potential has been exhausted by past excavation, a Phase III data recovery excavation should be conducted. A Phase III data recovery excavation should include extensive subsurface testing and a full analysis of excavated materials to exhaust the data potential of the site. Prior to the Phase III effort, a treatment plan must be developed by the qualified archaeologist describing the methods to be used during the recovery and identify a target recovery percentage of the overall site by estimated volume of the cultural resources bearing deposits within the site(s). The recovery percentage of a site will be determined on a case by case basis by the qualified archaeologist in consultation with the lead agency. The treatment plan must be approved by the lead agency prior to execution. A third party consultant may be used to peer review the treatment plan to ensure that the Phase III effort meets industry standards and properly mitigates the impacts of the resource(s) under CEQA and/or the NHPA. These studies should include an analysis of the cultural material recovered, faunal and floral analysis, additional radiocarbon dating where appropriate, and protein residue analysis of stone tools and groundstone. Additionally, research should be conducted for any existing artifact collections from previous investigations, if available, as well as new collections recovered during Phase III fieldwork. If resources are Native American in origin, all excavation shall be observed by a Native American monitor. Following the analysis, a Phase III data recovery report should be completed and included the methods used for excavation, a history of the cultural resource, and the results of the analysis.
- If the cultural resources assessment did not identify potentially significant cultural resources within the proposed project area but indicated the area to be highly sensitive for archaeological resources, a qualified archaeological monitor shall monitor all ground-disturbing construction and pre-construction activities in areas with previously undisturbed soil. Native American monitoring may also be required. The archaeologist shall inform all construction personnel prior to construction activities of the proper procedures in the event of an archaeological discovery. The training shall be held in conjunction with the project's initial on-site safety meeting, and shall explain the importance and legal basis for the

protection of significant archaeological resources. In the event that archaeological resources (artifacts or features) are exposed during ground-disturbing activities, construction activities in the immediate vicinity of the discovery shall be halted while the resources are evaluated for significance by a qualified archaeologist who meets the PQS. If the discovery proves to be significant, it shall be curated with a recognized scientific or educational repository.

- If the cultural resources assessment did not identify potentially significant archaeological resources within the proposed project area, but indicates the area to be of medium sensitivity for archaeological resources, an archaeologist who meets the PQS shall be retained on an on-call basis. The archaeologist shall inform all construction personnel prior to construction activities about the proper procedures in the event of an archaeological discovery. The training shall be held in conjunction with the project's initial on-site safety meeting, and shall explain the importance and legal basis for the protection of significant archaeological resources. In the event that archaeological resources (artifacts or features) are exposed during ground-disturbing activities, construction activities in the immediate vicinity of the discovery shall be halted while the on-call archaeologist is contacted to evaluate the find and recommend additional work if necessary. After a cultural resource discovery, an archaeological monitor and, if the resource was Native American in origin, a Native American monitor shall be retained for the duration of project-related ground disturbance.

6.2 Tribal Cultural Resources

Potential impacts on tribal cultural resources (TCRs) are analyzed based on the potential for a project to impact any tribal cultural resources during construction or operation. The significance of a TCR and subsequent significance of any impact is determined by, among other things, consideration of whether or not that resource has heritage value to California Native Americans.

Because no specific projects have been identified with the preparation of this programmatic assessment, analysis of the potential impacts to TCRs is discussed here at a programmatic level. Any specific impacts may be addressed in the future as various projects are planned and executed over the life of the General Plan Update. The General Plan requires that the City provide for the protection of tribal cultural resources. However, the General Plan does not include an implementation program related to tribal cultural resources. The following mitigation measure is recommended to reduce impacts to historical and archaeological resources to less than significant:

The following Implementation Program shall be added to the 2040 General Plan:

> The City shall comply with AB 52, which may require formal tribal consultation on a project-by-project basis. If the City determines that a project may cause a substantial adverse change to a tribal cultural resource, they shall implement mitigation measures identified in the consultation process required under PRC Section 21080.3.2, or shall implement the following measures where feasible to avoid or minimize the project-specific significant adverse impacts:
>
> Avoidance and preservation of the resources in place, including, but not limited to: planning and construction to avoid the resources and protect the cultural and natural context, or planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.

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

- Protecting the cultural character and integrity of the resource
- Protecting the traditional use of the resource
- Protecting the confidentiality of the resource

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

Native American monitoring by the appropriate tribe for all projects in areas identified as sensitive for potential tribal cultural resources and/or in the vicinity (within 100 feet) of known tribal cultural resources

If potential tribal cultural resources are encountered during ground-disturbing activities; work in the immediate area must halt and the appropriate tribal representative(s), the implementing agency, and an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for archaeology (National Park Service [NPS] 1983) must be contacted immediately to evaluate the find and determine the proper course of action

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Confidential Appendix A

Confidential Record Search Results

Appendix B

Native American Consultation

NATIVE AMERICAN HERITAGE COMMISSION
Environmental and Cultural Department
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691
(916) 373-3710

August 22, 2017

Breana Campbell
Rincon Consultants

Sent via e-mail: bcampbell@rinconconsultants.com

RE: Seaside General Plan Update, Monterey County

Dear Ms. Campbell:

Attached is a consultation list of tribes with traditional lands or cultural places located within the boundaries of the above referenced project. The NAHC recommends contacting all the tribes on the list as a "best practice" for consultation.

Government Code §65352.3 requires 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 in creating or amending general plans, including specific plans, and open space.

In accordance with Public Resources Code Section 21080.3.1(d), formal notification must include 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. As of July 1, 2015, Public Resources Code Sections 21080.3.1 and 21080.3.2 require public agencies to consult with California Native American tribes identified by the NAHC for the purpose mitigating impacts to tribal cultural resources:

> 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. (Public Resources Code Section 21080.3.1(d))

The law **does not preclude** agencies from initiating consultation with the tribes that are culturally and traditionally affiliated with their jurisdictions. The NAHC believes that in fact that this is the best practice to ensure that tribes are consulted commensurate with the intent of the law.

The NAHC requests that lead agencies include in their notifications information regarding any cultural resources assessment that has been completed on a potential "area of project 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;
   - 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;

- If the probability is low, moderate, or high that cultural resources are located in the APE.
- Whether the records search indicates a low, moderate or high probability that unrecorded cultural resources are located in the potential 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 measurers.

     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 pubic disclosure in accordance with Government Code Section 6254.10.

3. The results of any Sacred Lands File (SFL) check conducted through Native American Heritage Commission. A search of the SFL was completed for the USGS quadrangle information provided with negative results however the area is sensitive for cultural resources.

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 cultural place. 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 case that they do, having the information beforehand well help to facilitate the consultation process. It will also provide documentation of your compliance with state statutes in preparing your environmental documents.

Lead agencies or agencies potentially undertaking a project are encouraged to send more than one written notice to tribes that are traditionally and culturally affiliated to a potential APE during the 30-day notification period to ensure that the information has been received.

If you receive notification of change of addresses and phone numbers from tribes, please notify me. With your assistance we are able to assure that our consultation list contains current information.

If you have any questions, please contact me at my email address: frank.lienert@nahc.ca.gov.

Sincerely,

Frank Lienert
Associate Governmental Program Analyst

Native American Heritage Commission
Native American Contacts
8/22/2017

Esselen Tribe of Monterey County
Tom Little Bear Nason
38655 Tassajara Road — Esselen
Carmel Valley , CA 93924 — Ohlone
(408) 659-2153

Indian Canyon Mutsun Band of Costanoan
Ann Marie Sayers, Chairperson
P.O. Box 28 — Ohlone/Costanoan
Hollister , CA 95024
ams@indiancanyon.org
(831) 637-4238

Coastanoan Rumsen Carmel Tribe
Tony Cerda, Chairperson
244 E. 1st Street — Ohlone/Costanoan
Pomona , CA 91766
rumsen@aol.com
(909) 524-8041 Cell
(909) 629-6081

Ohlone/Coastanoan-Esselen Nation
Louise Miranda-Ramirez, Chairperson
P.O. Box 1301 — Esselen
Monterey , CA 93942 — Ohlone/Costanoan
ramirez.louise@yahoo.com
(408) 629-5189
408-661-2486 Cell

Amah MutsunTribal Band
Valentin Lopez, Chairperson
P.O. Box 5272 — Ohlone/Costanoan
Galt , CA 95632 — Northern Valley Yokuts
vlopez@amahmutsun.org
(916) 743-5833

Amah MutsunTribal Band of Mission San Juan Bautista
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789 Canada Road — Ohlone/Costanoan
Woodside , CA 94062
amahmutsuntribal@gmail.com
(650) 851-7489 Cell
(650) 851-7747 Office
(650) 332-1526 Fax

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 Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessments for the proposed Seaside General Plan Update, Monterey County

Appendix C

Paleontological Resources Assessment

Rincon Consultants, Inc.
437 Figueroa Street, Suite 203
Monterey, California 93940

831 333 0310 OFFICE AND FAX

info@rinconconsultants.com
www.rinconconsultants.com

October 25, 2017
Rincon Project No: 15-01741

Sharon Mikesell, Administrative Analyst
City of Seaside
Community and Economic Development Department
440 Harcourt Avenue
Seaside, California 93955
Via email: smikesell@ci.seaside.ca.us

Subject: **Paleontological Resources Assessment for the Seaside General Plan Update, City of Seaside, Monterey County, California**

Dear Ms. Mikesell:

Rincon Consultants, Inc. (Rincon) was retained by the City of Seaside to conduct a paleontological resources assessment for the Seaside General Plan Update in Monterey County, California. The goal of the assessment is to identify geologic units that may be impacted by development within the City of Seaside, California and determine the paleontological sensitivity of those geologic units, assess potential for impacts to paleontological resources from development associated with General Plan build out, and recommend mitigation measures to avoid or mitigate impacts to scientifically significant paleontological resources as necessary.

This paleontological resources assessment consisted of a fossil locality record search from the Natural History Museum of Los Angeles County (LACM) as well as a search of the online collections of the University of California Museum of Paleontology (UCMP), a review of existing geologic maps and primary literature regarding fossiliferous geologic units within the City of Seaside and vicinity, assessment of the paleontological sensitivity of the geologic units within the General Plan area and potential for impacts to significant paleontological resources, and proposed mitigation measures to reduce impacts to less than significant. Figures are included in Attachment A.

This paleontological assessment has been prepared to support environmental review under the California Environmental Quality Act (CEQA), as well as other federal and state regulations.

Project Description

The City of Seaside is preparing an update to the City's General Plan with a corresponding Program-level EIR. The City's goals for this update include creating a state-of-the-art, interactive General Plan providing a clear, useful and strategic guide for City decision-making. The City of Seaside is an ocean-side community overlooking the Monterey Bay on the Central Coast of California (Figure 1). Seaside is approximately 115 miles south of San Francisco and is bordered by the cities of Monterey and Del Rey Oaks to the south, Sand City to the west, and the former Fort Ord Military Base to the north and east.

The City encompasses a total area of approximately nine (9) square miles, approximately six (6) of which lies within the former Fort Ord military base. The 2013 US Census Bureau data indicates that Seaside is home to 34,095 residents and is projected to grow to 39,100 per the 2004 General Plan build out. The city is mapped on the United States Geological Survey (USGS) *Seaside* and *Marina* 7.5-minute topographic quadrangles.

Regulatory Setting

Federal Laws and Regulations

A variety of federal statutes specifically address paleontological resources. They are applicable to all projects occurring on federal lands, and may be applicable to specific projects if the project involves a federal agency license, permit, approval, or funding.

National Environmental Policy Act (NEPA) of 1969

NEPA (United States Code, section 4321 et seq.; 40 Code of Federal Regulations, section 1502.25), as amended, directs Federal agencies to "Preserve important historic, cultural, and natural aspects of our national heritage (Section 101(b) (4))." The current interpretation of this language has included scientifically important paleontological resources among those resources that may require preservation.

Paleontological Resources Preservation Act of 2009

The Paleontological Resources Preservation Act (PRPA) is part of the Omnibus Public Land Management Act of 2009 (Public Law 111-011 Subtitle D). This act directs the Secretary of the Interior or the Secretary of Agriculture to manage and protect paleontological resources on federal land, and develop plans for inventorying, monitoring, and deriving the scientific and educational use of such resources. It prohibits the removal of paleontological resources from federal land without a permit issued under this Act, establishes penalties for violation of this act and establishes a program to increase public awareness about such resources.

While specific to activity that occurs on federal lands, some federal agencies may require adherence to the directives outlined in the PRPA for projects on non-federal lands if federal funding is involved, or if the project includes federal oversight.

State Laws and Regulations

The following are California state regulations with respect to paleontological resources.

California Environmental Quality Act

CEQA requires that public agencies and private interests identify the potential environmental consequences of their proposed projects on any object or site considered to be a historical resource of California (California Public Resources Code §21084.1, California Code of Regulations Title 14 §15064.5). Appendix G of the *State CEQA Guidelines* (California Code of Regulations Title 14, Chapter 3) provides an Environmental Checklist of questions including a single question related to paleontological resources

(Section V.c) as follows: “Would the project directly or indirectly destroy a unique paleontological resource or site…?”

CEQA does not define “a unique paleontological resource or site.” However, the Society of Vertebrate Paleontology (SVP) has defined a “significant paleontological resource” in the context of environmental review. The SVP defines a Significant Paleontological Resources as:

> …fossils and fossiliferous deposits, here defined as consisting of identifiable vertebrate fossils, large or small, uncommon invertebrate, plant, and trace fossils, and other data that provide taphonomic, taxonomic, phylogenetic, paleoecologic, stratigraphic, and/or biochronologic information. Paleontological resources are considered to be older than recorded human history and/or older than middle Holocene (i. e., older than about 5,000 radiocarbon years).

The loss of paleontological resources that meet the criteria outlined above (i.e. considered a significant paleontological resource) would be considered a significant impact under CEQA, and the CEQA lead agency is responsible for ensuring that paleontological resources are protected in compliance with CEQA and other applicable statutes.

Public Resources Code Section 5097.5

Section 5097.5 of the California Public Resources Code (PRC) states:

> *No person shall knowingly and willfully excavate upon, or remove, destroy, injure or deface any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological site, including fossilized footprints, inscriptions made by human agency, or any other archaeological, paleontological or historical feature, situated on public lands, except with the express permission of the public agency having jurisdiction over such lands. Violation of this section is a misdemeanor.*

As used in this PRC section, “public lands” means lands owned by, or under the jurisdiction of, the state or any city, county, district, authority, or public corporation, or any agency thereof. Consequently, local agencies are required to comply with PRC 5097.5 for their own activities, including construction and maintenance, as well as for permit actions (e.g., encroachment permits) undertaken by others.

Government Code Title 7, Article 5. Authority for and Scope of General Plans

Section 65302(d)(1) of the California Government Code states in part:

> *A conservation element for the conservation, development, and utilization of natural resources including water and its hydraulic force, forests, soils, rivers and other waters, harbors, fisheries, wildlife, minerals, and other natural resources. The conservation element shall consider the effect of development within the jurisdiction, as described in the land use element, on natural resources located on public lands, including military installations.*

While not explicitly required, cities and counties can consider paleontological resources within the conservation element of the General Plan as “other natural resources” and develop plans and policies to aid in the conservation of such resources.

Methods

Rincon evaluated the paleontological sensitivity of the geologic units present in the City of Seaside based on the results of the paleontological locality search and review of existing information in the primary literature on known fossils within those geologic units. Rincon submitted a request to the LACM for a list of known fossil localities from the City of Seaside and immediate vicinity (i.e. localities recorded on the USGS, *Seaside* and *Marina* 7.5-minute topographic quadrangles), compiled a list of known fossils from the geologic units known to occur in the project area as recorded by online databases maintained by the UCMP, and reviewed geologic maps and primary literature including: Axelrod, 1983; Boessenecker 2013; Bramlette 1946; DePaolo and Finger 1991; Dibblee and Minch 2007a, b; Fisher 1967; Hannibal 1922; Hoppe et al. 2003; Jefferson 1991 a,b; McLeod 2017; Norris and Webb 1990; Pisciottio and Garrison 1981; Pyenson and Haasl 2007; UCMP 2017; Warheit 1992.

Rincon assigned paleontological sensitivity to each geologic unit within the Plan area. The potential for impacts to significant paleontological resources is based on the potential for ground disturbance to directly impact paleontologically sensitive geologic units. Paleontological sensitivity has been defined by the Society of Vertebrate Paleontology (SVP) (SVP 1995, 2010). Rincon has used these guidelines to assign paleontological sensitivity to each geologic unit, as discussed below.

Paleontological Sensitivity

The SVP broadly defines significant paleontological resources as follows (SVP 2010:11):

> *"Fossils and fossiliferous deposits consisting of identifiable vertebrate fossils, large or small, uncommon invertebrate, plant, and trace fossils, and other data that provide taphonomic, taxonomic, phylogenetic, paleoecologic, stratigraphic, and/or biochronologic information. Paleontological resources are considered to be older than recorded human history and/or older than middle Holocene (i.e., older than about 5,000 radiocarbon years)."*

Significant paleontological resources are determined to be fossils or assemblages of fossils that are unique, unusual, rare, diagnostically important, or are common but have the potential to provide valuable scientific information for evaluating evolutionary patterns and processes, or which could improve our understanding of paleochronology, paleoecology, paleophylogeography, or depositional histories. New or unique specimens can provide new insights into evolutionary history; however, additional specimens of even well represented lineages can be equally important for studying evolutionary pattern and process, evolutionary rates, and paleophylogeography. Even unidentifiable material can provide useful data for dating geologic units if radiocarbon dating is possible. As such, common fossils (especially vertebrates) may be scientifically important, and therefore considered highly significant.

SVP Paleontology Sensitivities

The SVP (2010) describes sedimentary rock units as having high, low, undetermined, or no potential for containing 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. While these standards were specifically written to protect vertebrate paleontological resources, all fields of paleontology have adopted these guidelines:

I. **High Potential (sensitivity) -** Rock units from which significant vertebrate or significant invertebrate fossils or significant suites of plant fossils have been recovered are considered to have a high potential for containing significant non-renewable fossiliferous resources. These units include but are not limited to, sedimentary formations and some volcanic formations which contain significant nonrenewable paleontological resources anywhere within their geographical extent, and sedimentary rock units temporally or lithologically suitable for the preservation of fossils. Sensitivity comprises both (a) the potential for yielding abundant or significant vertebrate fossils or for yielding a few significant fossils, large or small, vertebrate, invertebrate, or botanical and (b) the importance of recovered evidence for new and significant taxonomic, phylogenetic, ecologic, or stratigraphic data. Areas which contain potentially datable organic remains older than Recent, including deposits associated with nests or middens, and areas which may contain new vertebrate deposits, traces, or trackways are also classified as significant.

II. **Low Potential (sensitivity)** – Sedimentary rock units that are potentially fossiliferous, but have not yielded fossils in the past or contain common and/or widespread invertebrate fossils of well documented and understood taphonomic, phylogenetic species and habitat ecology. Reports in the paleontological literature or field surveys by a qualified vertebrate paleontologist may allow determination that some areas or units have low potentials for yielding significant fossils prior to the start of construction. Generally, these units will be poorly represented by specimens in institutional collections and will not require protection or salvage operations. However, as excavation for construction gets underway it is possible that significant and unanticipated paleontological resources might be encountered and require a change of classification from Low to High Potential and, thus, require monitoring and mitigation if the resources are found to be significant.

III. **Undetermined Potential (sensitivity)** - Specific areas underlain by sedimentary rock units for which little information is available are considered to have undetermined fossiliferous potentials. Field surveys by a qualified vertebrate paleontologist to specifically determine the potentials of the rock units are required before programs of impact mitigation for such areas may be developed.

IV. **No Potential** – Rock units of metamorphic or igneous origin are commonly classified as having no potential for containing significant paleontological resources.

Results

Locality Search

A search of the paleontological locality records at the LACM paleontological collection resulted in no previously recorded fossil localities within the project boundaries (McLeod 2017). However, fossil localities are recorded from near Seaside in similar geologic units to some of those within the City. These, as well as fossil localities recorded in the UCMP online database, are discussed below.

Aromas Sands (Qar). The LACM has one record of a fossil locality north-northeast of the City of Seaside in the San Benito Valley, where fossil specimens of horse (*Equus*), pronghorn antelope (Antilocapridae), and deer (Cervidae) were recovered from fine-grained sands similar to the Aromas Sands. While the UCMP does not list any fossils from the Aromas Sands specifically, they have records of Pleistocene-aged fossils from throughout Monterey County, some of which are from similar sediments to the deeper layers of the Aroma Sands (see Qoa, below).

Older Quaternary Alluvium (Qoa). While the LACM does not have any records of fossils from Pleistocene-aged alluvium in or around Seaside; elsewhere in Monterey County and throughout California, Ice Age fossils from similar geologic sediments are common. The UCMP has records of seventeen fossils 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 Seaside (UCMP 2017). Other Pleistocene-aged fossils recovered from Monterey County are horses (*Equus*), ground sloth (*Glossotherium*), and bison (*Bison*), among others (Hoppe et al. 2003; UCMP 2017).

Monterey Formation (Tm). The LACM did not report any records of fossils from the Miocene-aged Monterey Formation in or around Seaside, but elsewhere in Monterey County and throughout California marine fossils are commonly found in this unit. The UCMP has records of 140 specimens of plant, invertebrate, and vertebrate fossils from the Monterey Formation in Monterey County, and an additional 15 specimens that are from indeterminate Miocene-aged sediments in Monterey County. Most of these specimens (133) are invertebrates such as crabs, gastropods, and bivalves that were found at two localities along Rancho Fiesta Road, southeast of Seaside and just outside of Rancho Tierro Grande. Two other Monterey Fossil localities are somewhat further to the southeast, outside of Carmel Valley where several invertebrate fossils and a fossil seal were recovered. Just to the northeast of Seaside, in Salinas Valley, the UCMP has a fossil locality where a number of sea snails were recovered from indeterminate Miocene-aged beds. Additional undetermined Miocene-aged localities include two in Monterey where fish fossils were recovered and two in Carmel where a shark and an unidentified mammal were collected (UCMP 2017).

Regional Geologic Setting

The General Plan area is located in the Coastal Ranges Geomorphic Province, one of 11 major provinces in the state (California Geological Survey [CGS] 2002). 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. It is divided into two subprovinces—the ranges south of San Francisco Bay to Santa Barbara County and the ranges north of the bay. This subdivision coincides with the northern ranges located east of the San Andreas Fault zone and the southern ranges mostly to the west (Norris and Webb 1990). The southern Coast Ranges, where the General Plan area is located, are lower in elevation with less rainfall than the northern Coast Ranges, and consequently have less vegetation. The General Plan area is located on the southern half of Monterey Bay, and has hilly terrain.

The General Plan area includes four (4) geologic units mapped at the surface (Figure 2): Beach sand (Qs), Loose dune sand (Qd), older stabilized dune sand (Qos), and Aromas Sand (Qar) (Dibblee and Minch 2007a, b). Each of these units is discussed in more detail below.

Beach Sand (Qs). Beach sand is found on the shores of Monterey Bay, and is only present in a small portion of the southwestern-most City limits (Dibblee and Minch 2007 a,b). These sediments are recent in age and therefore are unlikely to preserve fossil resources. However, they increase in age with depth and may overlie older, paleontologically sensitive units at unknown depths.

Loose Dune Sand (Qd). Loose dune sand is composed of loose beach sands that drift back from the shoreline and forms dunes, and is present east of the beach sand (Qs) deposits in the southwestern-most City limits (Dibblee and Minch 2007 a,b). Like beach sands, dune sands are recent in age and therefore are unlikely to preserve fossil resources. However, they may overlie older, paleontologically sensitive units at unknown depths.

Older Stabilized Dune Sand (Qos). Older stabilized dune sands comprise the majority of the surficial geology of the City of Seaside (Dibblee and Minch 2007 a,b). These sediments date to the late Holocene or early Pleistocene, and consist of dune sand that has been stabilized through erosional action and soil formation. Because of the age of these sediments, it is possible they can preserve fossil resources, particularly at depth (McLeod 2017). Some of the Pleistocene fossils at the UCMP (discussed above) are from sediments similar to these. Furthermore, these sediments overlie older units that may contain fossil resources, discussed below.

Aromas Sand (Qar). The Aromas Sand is present primarily in the eastern-most portion of the City limits, with a small outcrop along the southern City limit boundary. The Aromas Sand dates to the Pleistocene and consists of wind-deposited, yellowish-brown to reddish-brown fine sands that are weakly indurated in some places (Dibblee and Minch 2007 a,b). These sediments are of an age and lithology to preserve fossil resources, particularly at depth (McLeod 2017). Some of the Pleistocene fossils at the UCMP (discussed above) are from sediments similar to these. Furthermore, these sediments may overlie other units that may contain fossil resources.

In addition to these surficial units, two other units crop out just to the south of the City limits and may, therefore, be present at an undetermined depth in the City, beneath the surficial units discussed above.

Dissected Older Alluvium (Qoa). Dissected older alluvium dates to the late Holocene or early Pleistocene and crops out just to the south of the City limits, around the Monterey Regional Airport (Dibblee and Minch 2007a). Dissected older alluvium consists of alluvial sediments of silt, sand, and, gravel deposited by streams from the erosion of highlands to the south and east that has been eroded in recent times by streams cutting across the deposits. Older alluvium is well-known throughout California and the Monterey Bay area for preserving classic Ice Age fossils, such as mammoths, ground sloths, horses, and camels (e.g., Axelrod 1983; Jefferson 1991 a,b; Hoppe et al. 2003; UCMP 2017).

Monterey Formation (Tm). The Monterey Formation dates to the Miocene and has large outcrops to the south of the City limits, the closest of which is at Work Memorial Park (Dibblee and Minch 2007a). The Monterey Formation records the filling of a deep marine basin formed by tectonism along the California margin (Pisciotto and Garrison 1981), constitutes one of the major elements of California geology, and can range up to several thousands of feet thick (DePaolo and Finger 1991). The Monterey Formation found near Seaside consists of a white-weathering, siliceous shale assigned to the Aquajito Shale Member that dates to the Mohnian stage of the upper Miocene (Dibblee and Minch 2007a). In addition to the fossils in the collection of the UCMP from the region (see above), the scientific literature reveals that the Monterey Formation has yielded a diverse fauna consisting of mollusks (Bramlette 1946) and common fish skeletons (Bramlette 1946), and the remains of larger marine macrofauna such

as whales (Pyenson and Haasl 2007) and the giant extinct *Desmostylus* (Hannibal 1922), as well as birds (Fisher 1967; Warheit 1992), crocodiles (Barboza et al. 2017; Boessenecker 2013) and rare land organisms such as horse and land plants (Bramlette 1946).

Paleontological Sensitivity

Geological units mapped at the surface or likely present in the subsurface in the City of Seaside range in paleontological sensitivity from low to high. As detailed in the records search of the LACM, the online databases of the UCMP, and the review of scientific literature presented above, some of these units are well-known for the preservation of scientifically significant fossil resources ranging from invertebrates to vertebrate macrofauna. Table 1 presents the SVP paleontological sensitivities for each formation.

Table 1. Geologic Units within the Plan Area and Their Paleontological Sensitivity

Geologic Unit*	Map symbol	Age	Paleontological Sensitivity (SVP)
Beach sand	Qs	Recent (Holocene)	Low-to-High, increasing with depth
Loose Dune Sand	Qd	Recent (Holocene)	Low-to-High, increasing with depth
Older Stabilized Dune Sand	Qos	Late Holocene or early Pleistocene,	High
Aromas Sand	Qar	Pleistocene	High
Dissected Older Alluvium	Qoa	Late Holocene or early Pleistocene	High
Monterey Formation	Tm	Miocene	High

*Source: Dibblee, T. and J. Minch. 2007a. Geologic map of the Monterey and Seaside quadrangles, Monterey County. Dibblee Foundation Map DF-346. 1:24,000.

Dibblee, T. and J. Minch. 2007b. Geologic map of the Marina and Salinas quadrangles, Monterey County. Dibblee Foundation Map DF-353. 1:24,000.

For those units with Low-to-High sensitivity (Qs, Qd), the sediments are too young at the surface to preserve fossil resources. However, they increase in age with depth, and may overlie high sensitivity units at unknown depths. For the geologic units with high sensitivity (Qos, Qar, Qoa, Tm), preservation of significant fossils is documented in and around the Plan area (see above), but occurrence can be sporadic, particularly given the wide geographic occurrence of the formations in central California.

Impacts Analysis

Sediments mapped at the surface in the Plan area range from recent to Miocene in age, and those sediments that are late Holocene in age or older have an established fossil record that includes an abundance or diversity of fossils that are considered scientifically important. As such, these formations have been assigned a paleontological sensitivity of High (SVP 2010). Any ground disturbing activities that impact these units may result in significant impacts (under CEQA) to paleontological resources. Furthermore, the units that are too young to preserve fossil resources may overlie older, paleontologically sensitive units. The 2040 General Plan does not currently contain any goals, policies, or implementation programs related to paleontological resources. Thus, Rincon recommends a mitigation measure requiring the inclusion of an implementation program to address impacts to paleontological resources on a project-by-project basis. The recommended measure is provided below.

Recommended Mitigation

The following implementation program shall be added to the 2040 General Plan:

Require avoidance and/or mitigation for potential impacts to paleontological resources for any development in Seaside that occurs within high sensitivity geologic units, whether they are mapped at the surface or hypothesized to occur at the subsurface. The City shall require the following specific requirements for projects that could disturb geologic units with high paleontological sensitivity:

Retain a Principal Paleontologist. Prior to initial ground disturbance, the applicant shall retain a qualified professional paleontologist to direct all mitigation measures related to paleontological resources and design a Paleontological Mitigation and Monitoring Program (PMMP) for the project. A qualified professional paleontologist (Principal 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).

Paleontological Worker Environmental Awareness Program (WEAP). Prior to the start of construction, the Principal Paleontologist or his or her designee shall conduct training for construction personnel regarding the appearance of fossils and the procedures for notifying paleontological staff should fossils be discovered by construction staff. The WEAP shall be fulfilled at the time of a preconstruction meeting at which a Principal Paleontologist shall attend.

Paleontological Monitoring. Paleontological monitoring should be conducted as follows for ground disturbing construction activities (including grading, trenching, foundation work, and other excavations) in previously undisturbed sediments according to their paleontological sensitivities:

High Sensitivity Sediments. High sensitivity sediments may be impacted by ground-disturbing activities when they are present at the surface or at depth within a proposed project site. Therefore, full-time monitoring is recommended for construction activities in High sensitivity sediments (Older Stabilized Dune Sand, Qos; Aromas Sand; Qar; Dissected Older Alluvium, Qoa; Monterey Formation, Tm).

Low-to-High Sensitivity Sediments. Low-to-High sensitivity sediments have low paleontological sensitivity in the surficial and shallow layers, but overlie high sensitivity sediments at depth. Therefore, monitoring is only recommended for projects that extend beneath the low sensitivity surficial sediments and into the deeper sediments. The depth at which this occurs should be determined on a project-specific basis by the Principal Paleontologist, and may be informed by local geotechnical analyses.

If paleontological monitoring is recommended by the Principal Paleontologist, it should be conducted by a qualified paleontological monitor, who is defined as an individual who has experience with collection and salvage of paleontological resources and meets the minimum standards of the SVP (2010) for a Paleontological Resources Monitor. The duration and timing of the monitoring will be determined by the Principal Paleontologist and the location and extent of proposed ground disturbance. If the Principal 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.

Fossil Discoveries
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. A Principal 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 Principal Paleontologist shall complete the following conditions to mitigate impacts to significant fossil resources:

1) **Salvage of Fossils.** If fossils are discovered, all work in the immediate vicinity should be halted to allow the paleontological monitor, and/or lead paleontologist to evaluate the discovery and determine if the fossil may be considered significant. If the fossils are determined to be potentially significant, the qualified paleontologist (or paleontological monitor) should recover them following standard field procedures for collecting paleontological as outlined in the PMMP prepared for the project. Typically, fossils can be safely salvaged quickly by a single paleontologist and not disrupt construction activity. In some cases, larger fossils (such as complete skeletons or large mammal fossils) require more extensive excavation and longer salvage periods. In this case the paleontologist should have the authority to temporarily direct, divert or halt construction activity to ensure that the fossil(s) can be removed in a safe and timely manner. If fossils are discovered, the Principal Paleontologist (or Paleontological Monitor) shall recover them as specified in the project's PMMP.
2) **Preparation and Curation of Recovered Fossils**. Once salvaged, significant fossils should be identified to the lowest possible taxonomic level, prepared to a curation-ready condition, and curated in a scientific institution with a permanent paleontological collection (such as the UCMP or LACM), along with all pertinent field notes, photos, data, and maps. Fossils of undetermined significance at the time of collection may also warrant curation at the discretion of the Principal Paleontologist.

Final Paleontological Mitigation Report. Upon completion of ground disturbing activity (and curation of fossils if necessary) the Principal Paleontologist should prepare a final mitigation and monitoring report outlining the results of the mitigation and monitoring program. The report should include discussion of the location, duration and methods of the monitoring, stratigraphic sections, any recovered fossils, and the scientific significance of those fossils, and where fossils were curated.

It has been a pleasure assisting you with this project. If you have any questions regarding this Paleontological Resources Assessment, please contact us.

Sincerely,
Rincon Consultants, Inc.

Alyssa Bell, Ph.D.
Senior Paleontologist

Jessica DeBusk
Principal Investigator/Program Manager

Duane Vander Pluym, D.Env.
Sr. Principal

Attachments: *Attachment A: Figures*

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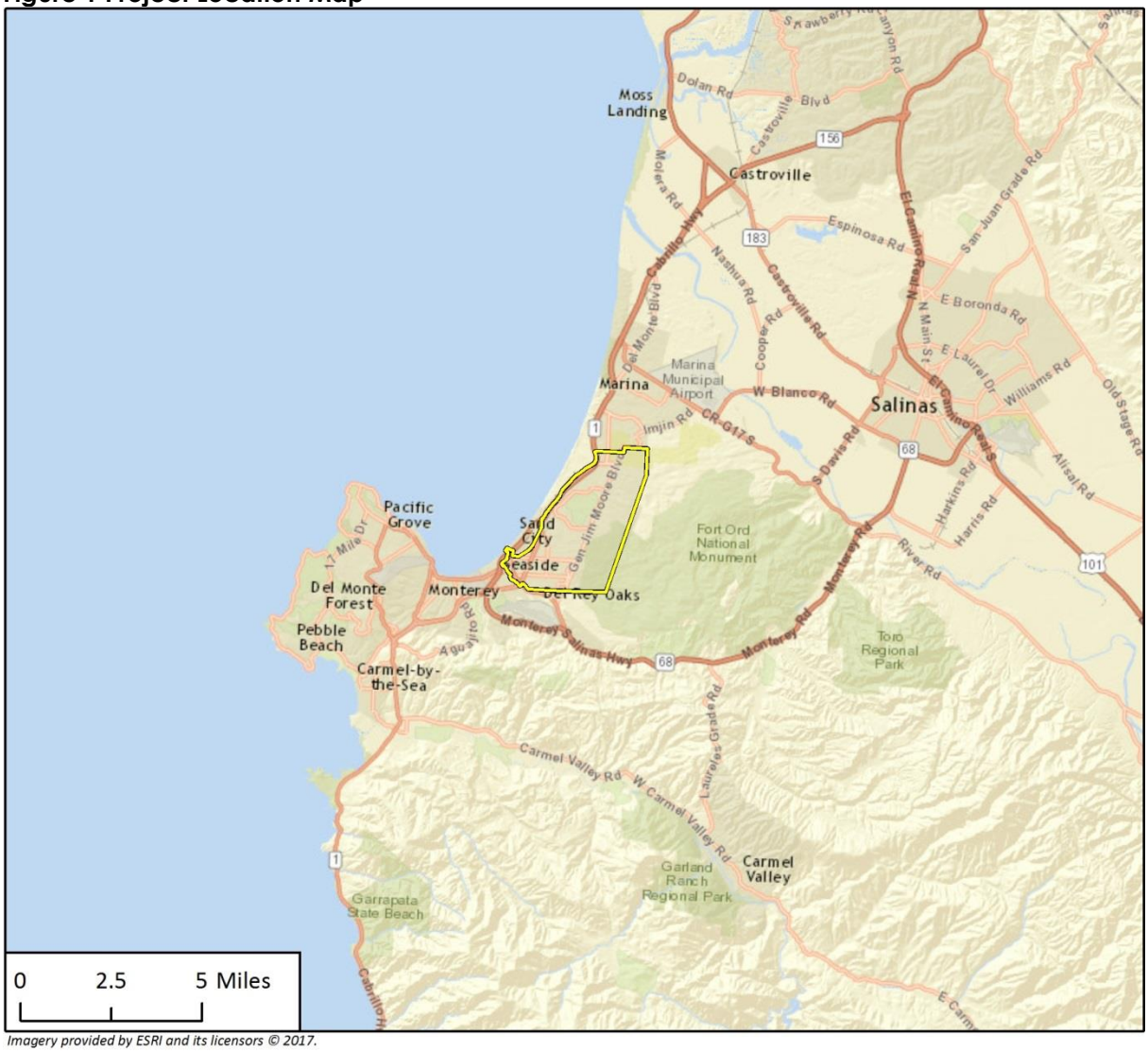
Attachment A

Figures

Figure 1 Project Location Map



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Project Location

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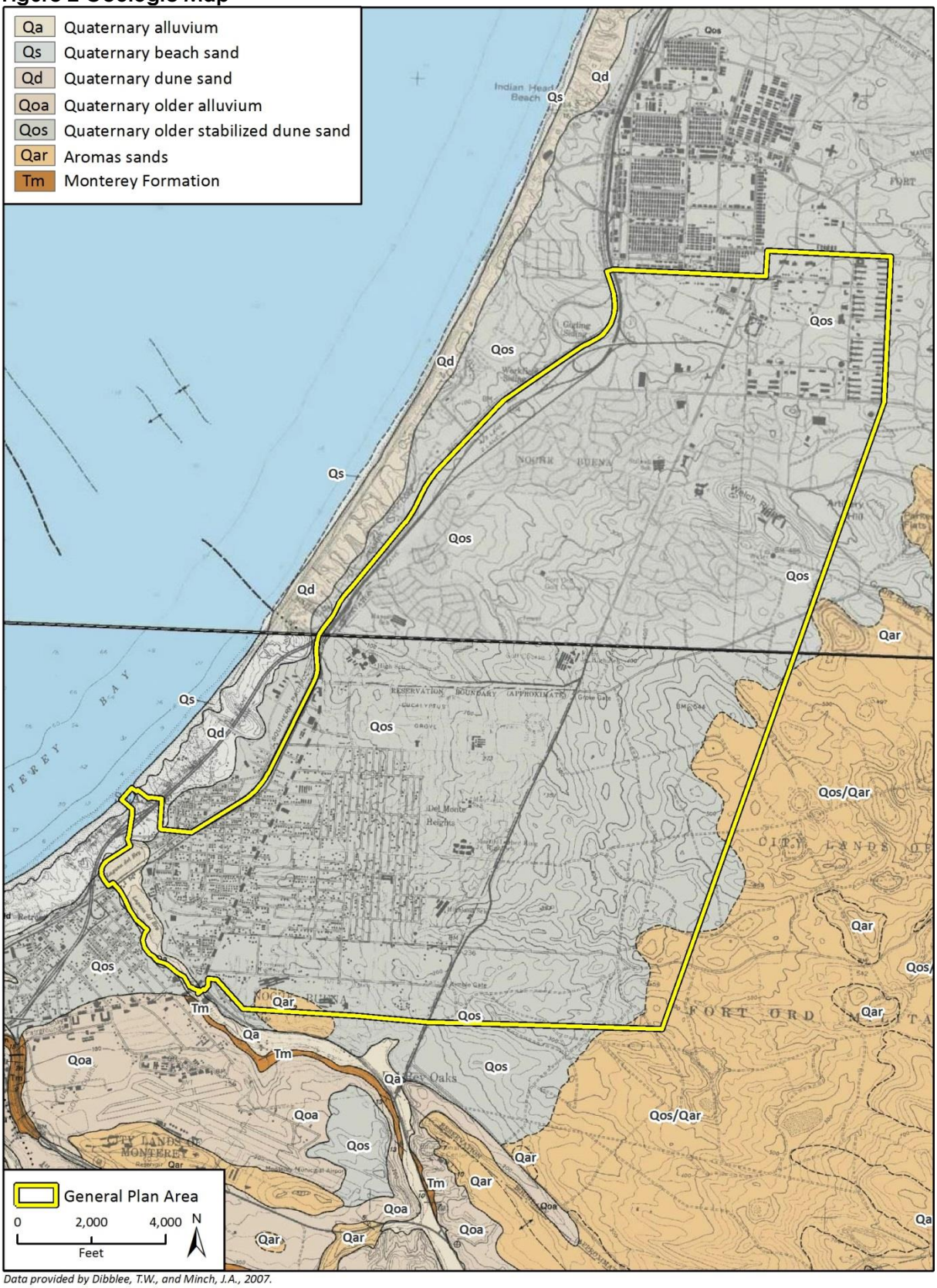
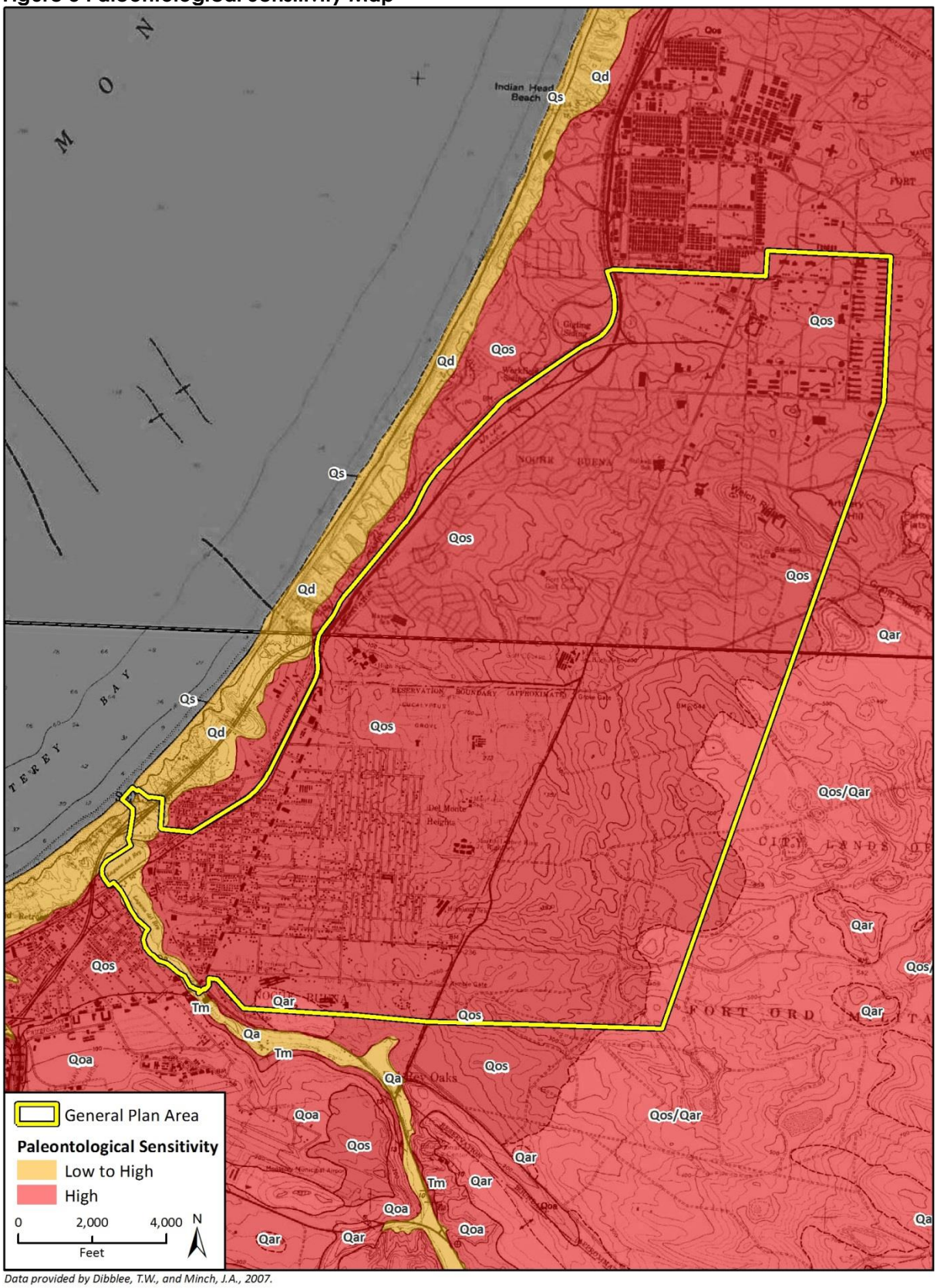
Figure 2 Geologic Map



Data provided by Dibblee, T.W., and Minch, J.A., 2007.

Figure 3 Paleontological Sensitivity Map



Data provided by Dibblee, T.W., and Minch, J.A., 2007.

Appendix F

Water Supply Assessment

Seaside General Plan Update

Water Supply Assessment

prepared for

City of Seaside
Community and Economic Development Department
440 Harcourt Avenue
Seaside, California 93955
Contact: Sharon Mikesell, Administrative Analyst

prepared by

Rincon Consultants, Inc.
2511 Garden Road, Suite C-250
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February 2023

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Environmental Scientists | Planners | Engineers
rinconconsultants.com

Seaside General Plan Update

Water Supply Assessment

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Appendices

1 Introduction

In 2001, California adopted Senate Bill (SB) 610 and SB 221, thereby amending California Water Code. Under these new laws, certain types of development projects are now required to provide detailed water supply assessments to planning agencies. More specifically, "projects" defined under Water Code 10912(a), which are also subject to the California Environmental Quality Act, are required to prepare a Water Supply Assessment (WSA). (Water Code Section 10910.) Projects under the Water Code include but are not limited to: "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 proposed commercial office building employing more than 1,000 persons or having more than 250,000 square feet of floor space." (See also Water Code 10912(a)(4) through (a)(7).)

The Seaside 2040 General Plan Update ("proposed project") will serve as a guiding document for population growth and development in the City of Seaside. As outlined in greater detail below in Section 3, it is not clear that a WSA is required for a General Plan Update. Nevertheless, to avoid such uncertainties in the law, this WSA has been prepared for the proposed project.

This WSA assesses the availability of identified water supplies under normal year, single-dry year, and multiple-dry year conditions, accounting for the projected water demand of the proposed project in addition to other existing and planned future uses of the identified water supply. This WSA examines the projected short-term and long-term water demand of the project (Section 2.2, *Water Demands*), the regional water providers and their supplies (Section 4, *Impact Analysis*), and the reliability of these sources (Section 5, *Water Supply Reliability*).

2 Project Description

The City of Seaside last updated its General Plan in 2004. Since then, changes have taken place across the City's economic and housing markets, demographics, land use, transportation system, community character, and infrastructure demands. Seaside 2040 incorporates these new conditions, the community's consensus for the future, and new State requirements regarding climate change and transportation with a time horizon of 2040.

The proposed project brings the General Plan up-to-date by:

- Engaging community members to express their collective values to create a common vision for the City's future.
- Refining the land use and community character vision for potential growth areas of the City.
- Incorporating recently created plans, such as the West Broadway Specific Plan.
- Creating updated policies for land use, community design, transportation, infrastructure, and other topics.
- Maintaining the City's stock of housing, especially housing for those with low- and moderate incomes.
- Addressing recent State requirements regarding climate change and transportation.

Among other updates, the proposed project adopts new anticipated growth projections for the City of Seaside, based upon regional growth projections by the Association of Monterey Bay Area Governments (AMBAG). Seaside's population is estimated to be approximately 46,297 people in the year 2040. This represents an increase of approximately 11,996 (35 percent) from the 2020 AMBAG population estimate. The proposed project is described further in the Seaside 2040 Environmental Impact Report (EIR).

2.1 Project Location

The regional location of the City of Seaside is shown in Figure 1 and the General Plan Area ("project area") is shown in Figure 2. The City of Seaside encompasses 7.94 square miles on the Monterey Peninsula, located approximately 115 miles south of the City of San Francisco. The City of Seaside borders the City of Monterey and Del Rey Oaks to the south, Sand City to the west, and Marina to the north. Fort Ord National Monument lies to the east. Within the boundaries of the City of Seaside, land use is primarily urban; open space and former military lands exist to the north and east.

Seaside residents and businesses acquire water from three different water service providers: the City of Seaside Municipal Water System (SMWS), California American Water (CalAm), and the Marina Coast Water District (MCWD). Their service area boundaries are mapped in Figure 3. The undeveloped areas of the former Fort Ord are not currently within the service area of any provider, but it is assumed that MCWD will annex the developable former Fort Ord lands within Seaside.

The City of Seaside overlies two groundwater subbasins of the Salinas Valley Groundwater Basin: the Seaside Area Subbasin, and the Monterey Subbasin. These basins are mapped in Figure 4. These boundaries were redefined in 2016 as a result of the adjudication of the Seaside Area Subbasin. The adjudicated boundary (for the Seaside Area Subbasin) is shown in Figure 5, and the adjudication process is described in detail in Section 4.1.2, *Salinas Valley Groundwater Basin*

Figure 1 Regional Location

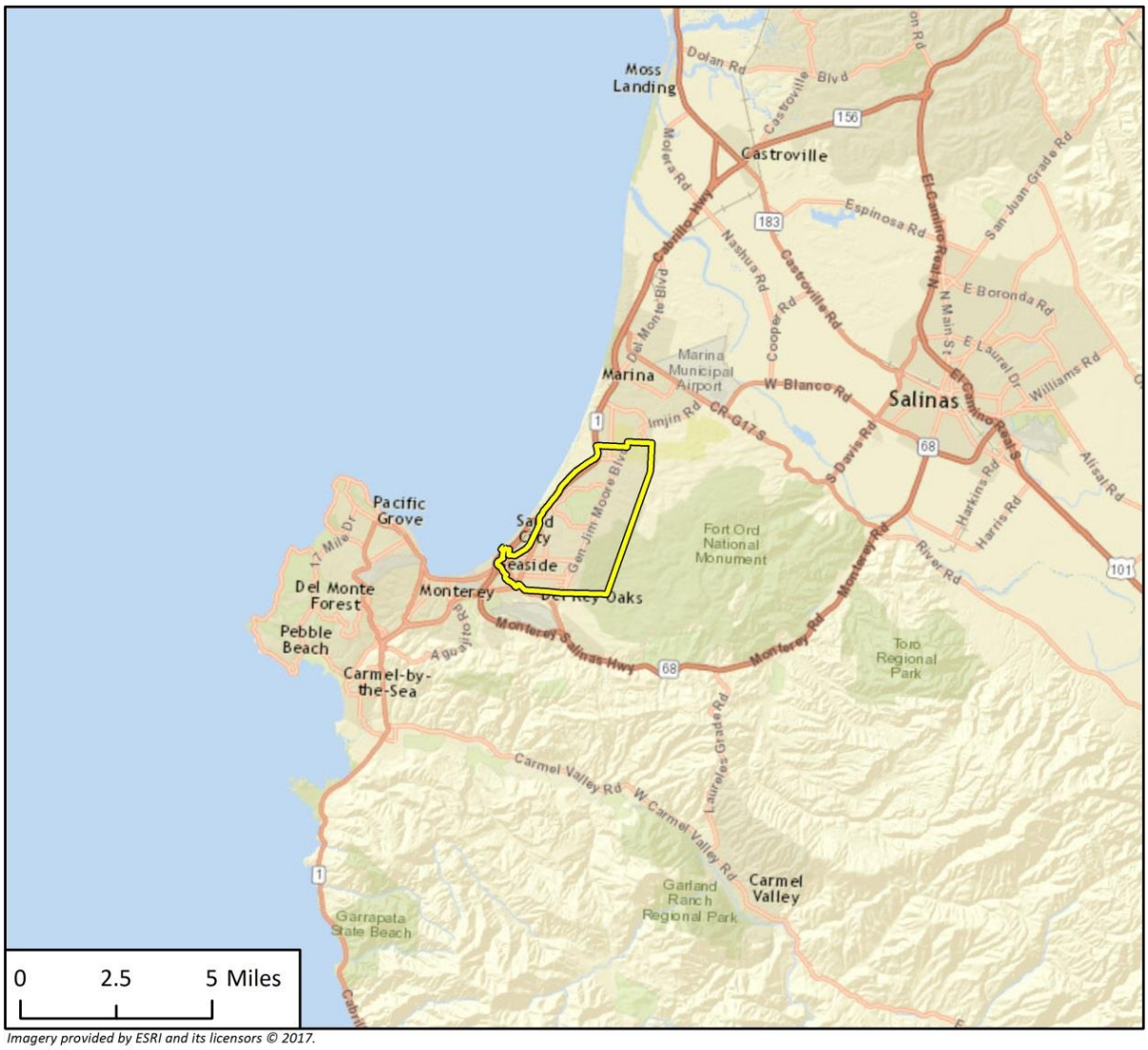
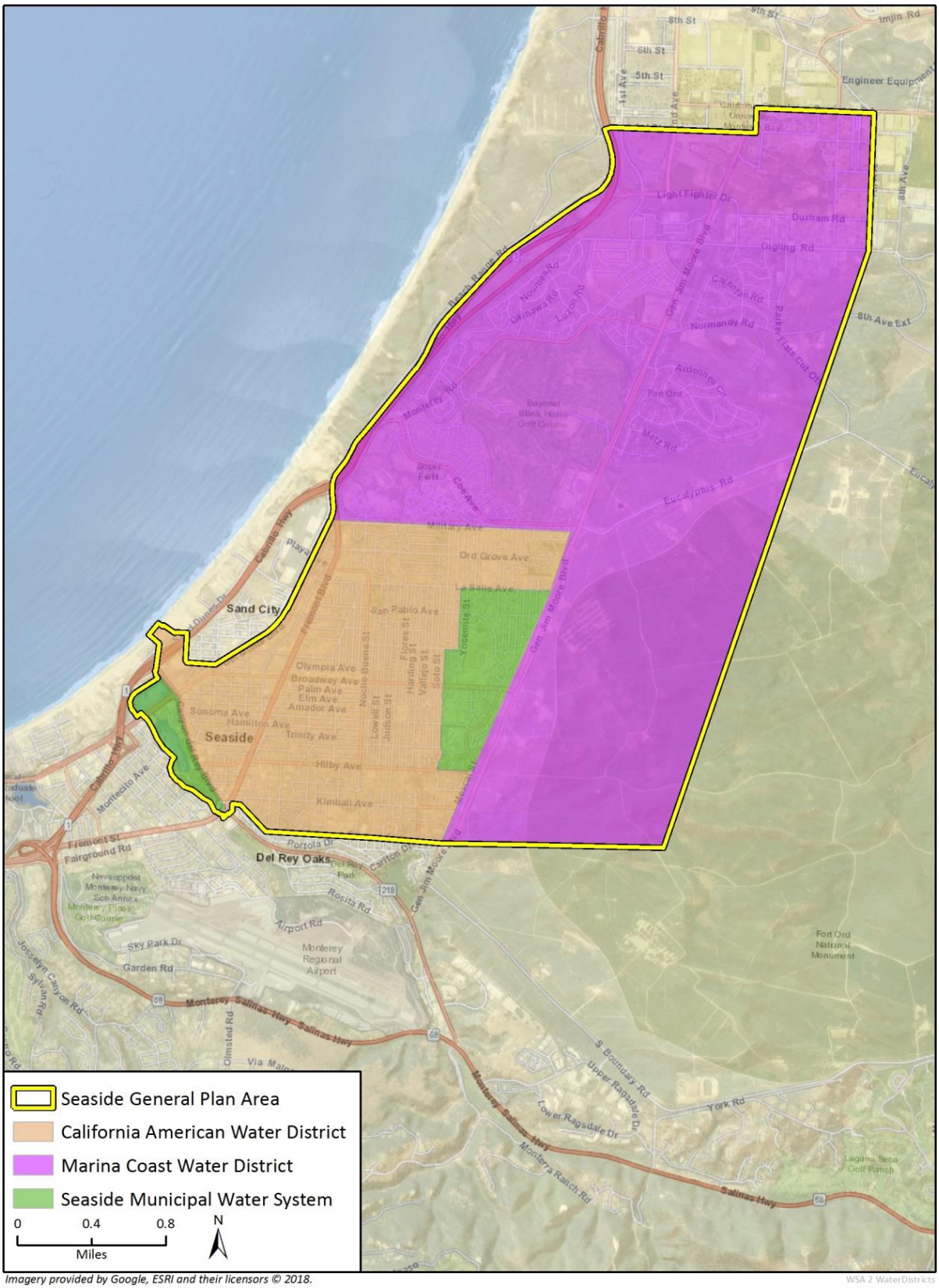


Figure 2 General Plan Area

Figure 3 Water Districts



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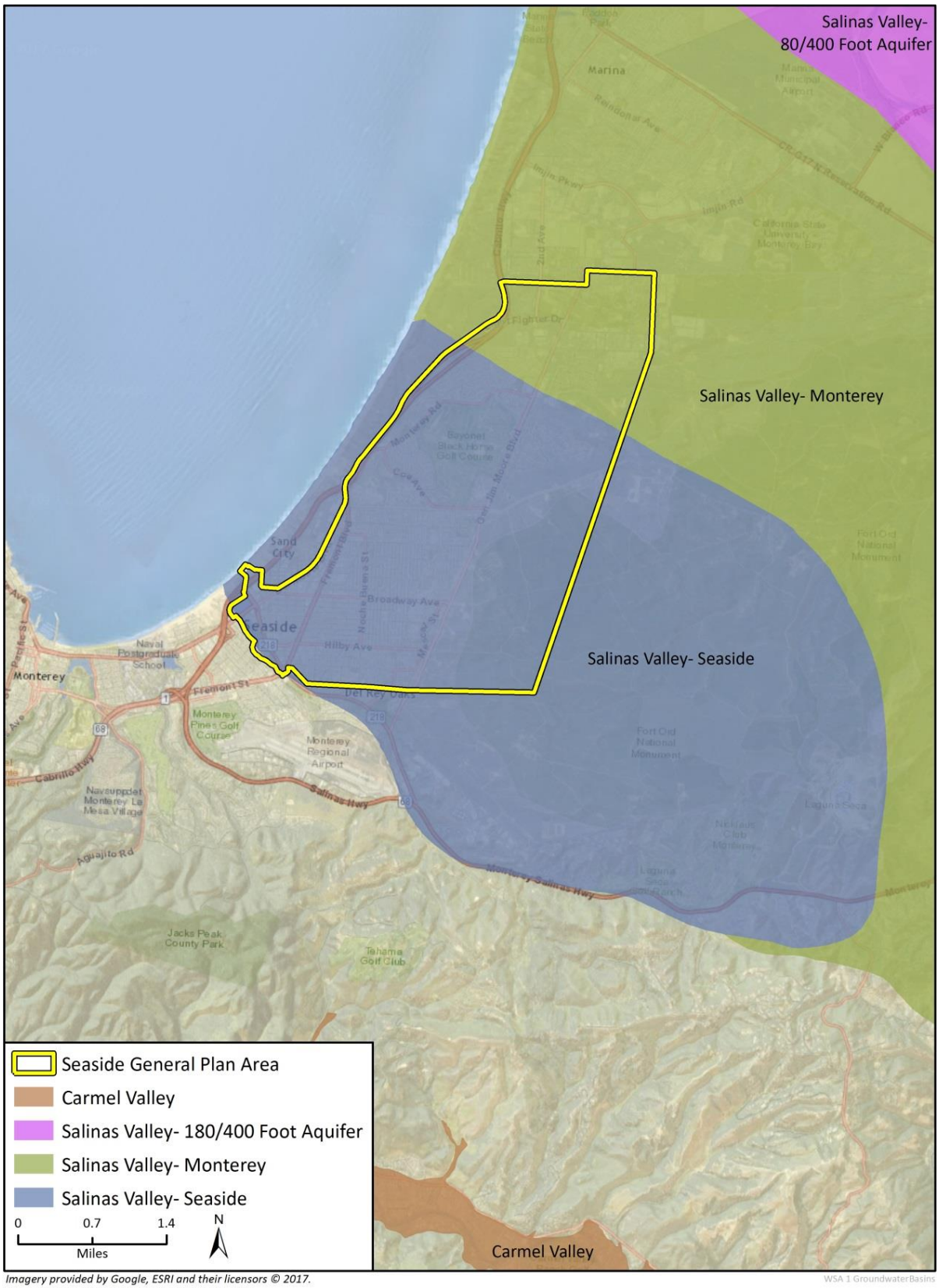
Water District data from the City of Seaside, 2017 and Marina Coast Water District, 2015.

Figure 4 Groundwater Basins and Subbasins



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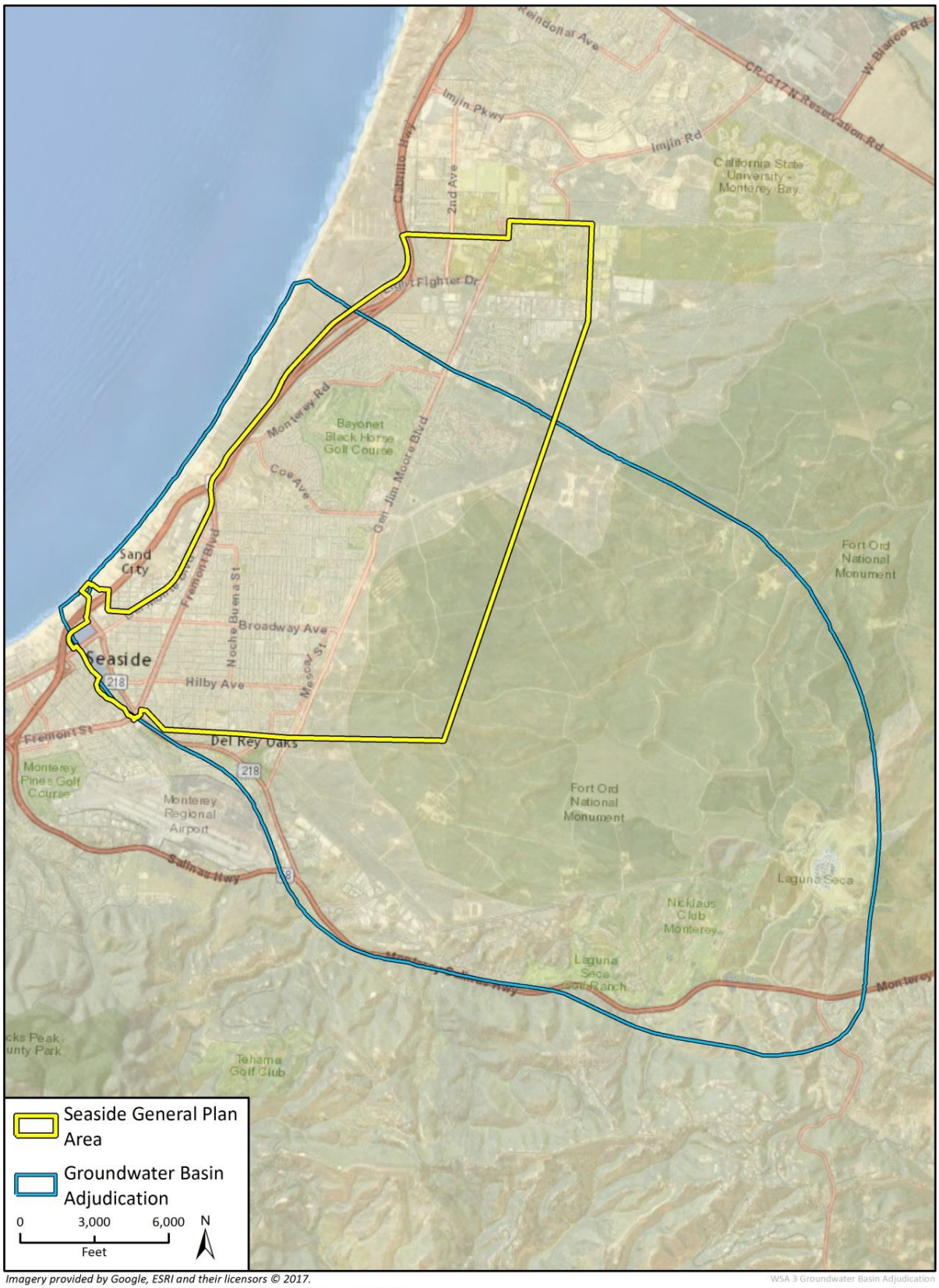
Groundwater Basins from DWR Bulletin 118, 2016.

Figure 5 Seaside Basin Adjudication Area



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Additional data provided by Monterey Peninsula Water Management District, 2017.

2.2 Water Demands

Seaside 2040 (proposed project) projects a buildout scenario that is the maximum level of development that would occur across the project area through the year 2040. This WSA develops water demand projections associated with anticipated development. It is projected that population in the City of Seaside will be approximately 46,297 people in 2040, an increase of 12,132 people from 2017.

Implementation of the General Plan Update is expected to involve the following new development through 2040:

- 4,050 residential units
- 790,851 square feet of retail area
- 1,018,490 square feet of service area (commercial office)
- 657,964 square feet of industrial area
- 213,575 square feet of public area
- 1,670 additional hotel rooms

The water demand calculations in this WSA rely on water demand factors developed by MCWD. These factors are general in nature and actual water use rates can vary substantially, especially among the broad categories of commercial and industrial uses (MCWD 2021). Table 1 shows the proposed project's total projected water demand by customer account type.

Table 1 Projected Total Water Demand by Customer Account Type

Account Type	Seaside 2040 Growth Forecast	Water Demand Factor	Projected Water Demand (AFY)
Single Family Residential	1,665 units	0.33 AFY/unit	549
Multi-Family Residential	2,385 units	0.25 AFY/unit	596
Retail	790,851 sq. ft	0.21 AFY/1,000 sq. ft	166
Service	1,018,490 sq. ft	0.135 AFY/1,000 sq. ft	137
Industrial	657,964 sq. ft	0.15 AFY/1,000 sq. ft	99
Public	213,575 sq. ft	0.3 AFY/1,000 sq. ft	64
Hotel Rooms	1,670 units	0.17 AFY/unit	284
Total			**1,896**

AFY = acre-feet per year; sq. ft = square feet
Note: For calculation purposes, it was assumed that "Single Family Residential (SFR)" usage was equivalent to the median SFR density (5-8 units/acre). "Service" was assumed to be equivalent to "Office/R&D." "Public" was assumed to be equivalent to "Governmental," "Institutional," and "Schools."
Source for water demand factors used in calculations: MCWD, 2021

This analysis assumes that the development rate will be constant over the buildout period, which is anticipated to extend until 2040 and, therefore, assumes that the associated water demand would increase steadily through the buildout period. This analysis also assumes that the increase in water demand associated with the proposed project would be introduced in full upon initiation of construction for the General Plan Update; this is a conservative approach because realistically the full water demand would be introduced gradually, coinciding with buildout of the General Plan area.

The City of Seaside is served by multiple water supply providers. The service areas do not align with the boundaries of the General Plan Area, such that data included in the respective planning documents is not directly transferrable to the General Plan Area. As a result, consistent data for water usage throughout the General Plan Area is not available and it is therefore not possible to quantify existing conditions with respect to the contributions of individual water providers to land uses within the General Plan Area. To characterize existing conditions using the best available data for water supply and usage, this WSA provides a thorough discussion of each of the three respective water providers that serve the General Plan Area. Further, this analysis assumes that the buildout identified in Seaside 2040 would increase water use above existing conditions; this is a conservative assumption, because in reality some of the buildout envisioned in Seaside 2040 would redevelop existing uses and would therefore replace existing water demand rather than adding to it.

Table 2 shows the anticipated incremental water demand associated with buildout over the lifespan of the proposed project, as added to existing conditions.

Table 2 Buildout Water Demand (AFY)

Account Type[1]	2020	2025	2030	2035	2040
Single Family Residential	48	128	209	289	369
Multi-Family Residential	46	123	199	276	353
Retail	10	27	44	61	78
Service	13	35	57	79	100
Industrial	8	23	37	51	65
Public	5	14	22	31	39
Hotel Rooms	35	93	151	209	268
Total	**166**	**442**	**719**	**996**	**1,272**

[1]"Single Family Residential (SFR)" is assumed equivalent to the median SFR density (5-8 units/acre). "Service" is equivalent to "Office/R&D." "Public" is equivalent to "Governmental," "Institutional," and "Schools."
Source: MCWD 2021

3 Senate Bill 610 Applicability

SB 610 was passed by the California Senate on January 1, 2002, amending California Water Code to require detailed analysis of water supply availability for certain types of development projects. The primary purpose of SB 610 is to improve the linkage between water and land use planning by ensuring greater communication between water providers and local planning agencies, and ensuring that land use decisions for certain large development projects are fully informed as to whether sufficient water supplies are available to meet project demands. SB 610 requires the preparation of a WSA for a project that is subject to the California Environmental Quality Act (CEQA) and that meets certain requirements.

Water requirements associated with the project are described in Section 2.2, *Water Demands*. The applicability of SB 610 is discussed in the following sections.

This WSA addresses the following questions:

- Is there a public water system that will service the proposed project? (see Section 3.3)
- Is there a current Urban Water Management Plan (UWMP) that accounts for the project demand? (see Section 3.4)
- Is groundwater a component of the supplies for the project? (see Section 3.5)
- Are there sufficient supplies to serve the project over the next twenty years? (see Section 3.6)

The primary question to be answered in a WSA is:

Will the total projected water supplies available during normal, single dry, and multiple dry water years during a 20-year projection meet the projected water demand of the proposed project, in addition to existing and planned future uses of the identified water supplies, including agricultural and manufacturing uses?

The following sections address the SB 610 WSA questions as they relate to the proposed project.

3.1 Is the Proposed Project Subject to CEQA?

California Water Code Section 10910(a) states that any city or county that determines that a project (as defined in Section 10912) which is subject to CEQA shall comply with Section 10910 of the California Water Code. General Plan amendments are identified as discretionary actions subject to CEQA (CEQA Guidelines Sections 15378(a)(1)); therefore, the proposed Seaside 2040 General Plan Update is subject to CEQA.

3.2 Is the Proposed Project a "Project" Under SB 610?

California Water Code §10912(a) provides definition of what constitutes a "Project" that would require preparation of a WSA. The Water Code definitions of "Project" are listed below and addressed individually in the following Sections 3.2.1 through 3.2.5:

1. A proposed residential development of more than 500 dwelling units;
2. A proposed shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet of floor space;

3. A proposed commercial office building employing more than 1,000 persons or having more than 250,000 square feet of floor space;
4. A proposed hotel or motel, or both, having more than 500 rooms;
5. A proposed industrial, manufacturing, or processing plant, or industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet of floor area;
6. A mixed-use project that includes one or more of the projects specified in this subdivision;
7. 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.

If a project is subject to CEQA and also meets any of the criteria listed above, California Water Code requires that a WSA is prepared for the project. As discussed in Chapter 1, Introduction, the California Water Code requirements for a WSA may not be applicable to a General Plan Update such as the proposed project, and this WSA is being prepared in an abundance of caution (the preparation of which does not negate the argument that a WSA is not required for a General Plan Update). A WSA is considered to not be required for the proposed project for the following reasons:

1. "General Plan" or "General Plan Update" is not expressly identified as a project which is subject to a Water Supply Assessment under Water Code §10912 (listed above);
2. General Plan law sets forth an alternative process for local governments to consult with water supply agencies during General Plan preparation (see Government Code §65352.5); and
3. California requires that long-range water supply planning is conducted through implementation of UWMPs (discussed in Section 3.4 of this WSA), and that these Plans serve as the first tier of land use and water supply planning coordination, prior to consideration of individual development projects.

As noted above, a General Plan is not specifically defined as a "Project" per Water Code §10912(a). SB 610 further specifies, "Nothing in this part [SB 610] is intended to modify to otherwise change existing law with respect to projects that are not subject to this part." (Water Code §10914(c).)

In addition, Government Code §65352.5 directs local government agencies to consider water supply and demand conditions when preparing General Plans. As stated in §65352(c), "Upon receiving, pursuant to Section 65352, notification of a city's or a county's proposed action to adopt or substantially amend a general plan, a public water system, as defined in Section 116275 of the Health and Safety Code, with 3,000 or more service connections, shall provide the planning agency with the following information, as is appropriate and relevant: […]" Among the materials required to be submitted by a water provider to the approving local government agency, those relevant to the proposed project include the applicable UWMP, Capital Improvement Plan, and existing and anticipated water uses and water sources. For this proposed project, the City of Seaside is the project proponent, the local government agency, and one of the three water service providers for the General Plan Area. The City of Seaside is in compliance with the requirements of Government Code §65352.5.

Further, the California State Legislature envisioned General Plan and water supply planning coordination being accomplished not through SB 610, but rather through the Urban Water Management Planning Act (Water Code §§ 10610 et seq.), which requires urban water suppliers to consider their entire service area, and is intended to "provide assistance to water agencies in carrying out their long-term resource management responsibilities…" (Water Code §10610.2(a)).

Accordingly, water suppliers must prepare UWMPs that analyze water supply and demand, and water supply reliability, over a 20-year planning horizon, and update their UWMPs every five years. When individual development projects require the preparation of a WSA, the individual WSAs are entitled to rely on information contained in the applicable UWMP(s) (Water Code §10910(c)(2)). As such, under the Legislature's approach portrayed by the legal requirements summarized herein, UWMPs based on General Plans function as the first tier of coordinating land use and water supply planning. WSAs for individual development projects then function as the second tier of coordination for water supply planning.

Finally, at least one Superior Court decision has expressly ruled that a Water Supply Assessment was not required for a General Plan Update. This case is *Citizens for Responsible Equitable Environmental Development v. City of Chino* (County of San Bernardino Superior Court Case No. CIVRS1008458) 8-12-2011 Minute Order ["THE COURT DENIES THE WRIT AS TO THE CONTENTION THAT THE CITY FAILED TO HAVE A WATER SUPPLY ASSESSMENT (WSA) DONE FOR THE PROJECT UNDER WATER CODE 10910 AND INCLUDED IN THE EIR SINCE A PROPOSED GENERAL PLAN IS NOT THE TYPE OF ACTUAL DEVELOPMENT PROJECT IDENTIFIED IN WATER CODE 10912 TRIGGERING THE WSA REQUIREMENT."] As stated in the Supreme Court's decision on this case, a General Plan does not meet the definition of "Project" provided in California Water Code §10912, such that a WSA would be required.

Nevertheless, in an abundance of caution, this WSA has been prepared for the proposed project, in order to thoroughly characterize water demands and supplies associated with buildout of the General Plan Update. Preparation of this WSA does not constitute a waiver of the argument that a WSA is not required for the Seaside 2040 General Plan Update or for future General Plan amendments. Future developments within the General Plan Area which individually require preparation of a WSA shall do so on a project-specific basis, as discussed in Section 3.16, *Utilities and Service Systems*, of the EIR. Per Mitigation Measure UTIL-1, Water Verification Report, future individual developments proposed under the Seaside 2040 General Plan Update are required to provide verification of water supply availability to the City as a contingency of project approval. For projects which meet the definition of "Project" per SB 610, the required WSA will serve as this verification. For future projects which do not require a WSA per SB 610, Mitigation Measure UTIL-1 requires that a Water Verification Report from the local water supplier is provided for the individual project. These requirements are further discussed in Section 3.16 of the EIR.

Each definition of a "Project" requiring a WSA per California Water Code §10912(a) is addressed in Sections 3.2.1 through 3.2.5 below, with respect to the proposed project.

3.2.1 Residential Development

A proposed residential development of more than 500 dwelling units, or a project that would demand an amount of water equivalent to or greater than the amount of water required by a 500-unit project, is defined as a "Project" under SB 610. The General Plan Update does not involve any specific development proposals, but it is forecast to allow applications for future development of up to 4,050 new residential dwelling units.

3.2.2 Shopping Center or Business Establishment

A proposed shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet of floor space is defined as a "Project" under SB 610. The

Seaside 2040 General Plan Update is forecast to allow applications for future development up to approximately 790,851 square feet of retail area.

3.2.3 Commercial Office Building

A proposed commercial office building employing more than 1,000 persons or having more than 250,000 square feet of floor space is defined as a "Project" under SB 610. The Seaside 2040 General Plan Update is forecast to allow applications for future development up to approximately 1,018,490 square feet of service area, which is considered the same as "commercial."

3.2.4 Hotel or Motel

A proposed hotel or motel, or both, having more than 500 rooms is defined as a "Project" under SB 610. The Seaside 2040 General Plan Update is forecast to allow applications for future development up to 1,670 hotel rooms within the City of Seaside.

3.2.5 Industrial, Manufacturing, or Processing Plant or Industrial Park

A proposed industrial, manufacturing, or processing plant, or industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet of floor area is defined as a "Project" under SB 610. The Seaside 2040 General Plan Update is forecast to allow applications for future development up to approximately 657,964 square feet of industrial floor area.

3.3 Is There a Public Water System that Will Serve the Proposed Project?

California Water Code Section 10912 defines a "public water system" as a system that has 3,000 or more service connections and provides piped water to the public for human consumption. The City of Seaside is served by three water providers: the SMWS, CalAm, and the MCWD. Since the SMWS has fewer than 3,000 service connections, it does not constitute a public water system. CalAm and the MCWD are both public water systems.

3.4 Is There a Current UWMP that Accounts for the Project Demand?

UWMPs are prepared by California's urban water suppliers to support long-term resource planning and ensure adequate water supplies. Every urban water supplier, either publicly or privately owned, that either delivers more than 3,000 AFY of water annually or serves more than 3,000 connections is required to prepare a UWMP. UWMPs serve as long-range water planning documents that assess, among other metrics, the reliability of the supplier's water sources over a 20-year period under normal-, single-dry, and multiple-dry year scenarios. These are the same requirements of a WSA, as specified by SB 610. UWMPs must be updated and submitted to DWR every five years for review and approval. The CalAm Central Division – Monterey County District UWMP and the MCWD UWMP analyze the project area and are utilized for the purposes of this WSA. The CalAm and MCWD UWMPs are incorporated by reference and discussed in detail in Section 4.3, *Supply Management*, with direct weblinks to in-text citations provided in Section 7, *References*.

SB 610 requires a WSA to characterize water supply availability over a 20-year projection. The water supply availability projections utilized in this WSA are drawn from two local UWMPs and one Adjudication Judgment, accounting for the three water suppliers in the project area. The Adjudication Judgment is a permanent management plan and covers the lifetime of the proposed project. The current UWMPs, which were updated in 2020, provide water supply availability projections that reflect population growth rates identified in the General Plan Update.

According to Water Code Section 10910 (c)(2), if the projected water demand associated with the proposed project was accounted for in the most recently adopted UWMP, the water supplier may use the demand projections from the UWMP in preparing the WSA. The availability of data from UWMPs is complex for the proposed project because the City of Seaside is served by multiple water supply providers, and the respective UWMP boundaries do not align with the boundaries of the General Plan Area. In addition, each of the three separate water suppliers have used different types of assumptions to make water demand estimates for their service territories. Therefore, an "apples to apples" comparison of water use and forecasted water demand in each service territory is not possible based on available published data.

To characterize water supply availability using the most reliable available information, this WSA relies upon data provided in the 2020 CalAm UWMP and the 2020 MCWD UWMP.

3.4.1 CalAm

While CalAm's current (2020) UWMP is used to inform this WSA, the previous (2016) is referenced for comparison and to characterize growth and water demand trends. The previous UWMP estimated the 2015 population served by the CalAm Monterey County District to be 95,191 (CalAm 2016), while the 2020 UWMP identified the 2020 population in the same area as 91,717 (CalAm 2021). This represents a service area population increase of 7.8 percent (7,526 people) between 2010 and 2020 (CalAm 2016); meanwhile, the actual water demand between 2010 and 2020 decreased by approximately 25.5 percent, from 12,270 AFY to 9,138 AFY (CalAm 2021). This comparison indicates that while the total population increased the total water demands decreased, suggesting greater efficiency and successful conservation. In both the previous and the current UWMP, the population projections were informed by DWR's Population Tool and Transportation Analysis Zones (TAZ) growth rates from the Association of Monterey Bay Area Governments (AMBAG)'s population projections, as well as General Plan projections.

3.4.2 MCWD

MCWD's 2020 UWMP found that the total Ord Community groundwater supply of 6,600 AFY is sufficient to meet the projected year 2040 water demand of 6,610 AFY. However, the total demand of 6,610 AFY is distributed across multiple jurisdictions within the Ord Community, and some of these jurisdictions have projected shortfalls while others have surplus; while the sum of all jurisdictions' shortfalls is projected as 1,398 AFY in 2040, the jurisdiction-specific shortfalls include City of Monterey (65 AFY), U.C. Monterey Bay Educational, Science and Technology Center (178 AFY), Ord Portion of the City of Seaside (686 AFY), and Ord Portion of City of Marina (469 AFY) (MCWD 2021). To address projected shortfalls, MCWD is pursuing water supply projects, which are further discussed in Section 5.1, *Additional Future Supply*.

3.5 Is Groundwater a Component of the Supplies for the Project?

Groundwater is a component of the supplies for the development identified in the proposed project. The City of Seaside overlies the Seaside Area Subbasin and the Monterey Subbasin, which are subbasins of the Salinas Valley Groundwater Basin. Additional groundwater sources include other subbasins in the Salinas Valley Groundwater Basin and the Carmel Valley Alluvial Aquifer. Groundwater supplies are discussed in detail in Section 4.1, *Water Supply*.

3.6 Are There Sufficient Supplies to Serve the Project Over the Next Twenty Years?

The sufficiency of water supplies identified as potential sources to serve the growth proposed by the General Plan Update is assessed in the following sections, which address existing and potential future supplies. Water resources in the project area are described in Section 4.1, *Water Supply*. Water supply reliability is discussed in Section 5, *Water Supply Reliability*.

Based on the information provided in this WSA, there are not sufficient projected total water supplies available during normal, single dry, and multiple dry water years over a 20-year projection which will meet the projected water demand associated with full buildout of the General Plan Area, in addition to the public water systems' existing and planned future uses, including agricultural and manufacturing uses. It is reasonably assumed that the UWMPs and General Plan Update account for manufacturing uses under the land use category of "Industrial." Further, it is also reasonably assumed that agricultural developments are not likely to occur outside of the adjudicated areas within the City of Seaside. Conclusions associated with the sufficiency of available water supplies are discussed in Section 6, *Conclusions*.

4 Impact Analysis

The City relies on local groundwater and surface water supplies to meet the needs of its residents. The following sections examine the water providers serving customers in the City as well as the water sources they rely on. The region's water supplies are well managed, and there are numerous water resources available for the growth identified in the General Plan Update.

4.1 Water Supply

The City of Seaside currently relies entirely on local water supplies to meet its demands. The City and its water providers acquire and distribute groundwater from the underlying Salinas Valley Groundwater Basin. The Carmel River, located approximately 4.5 miles south of the City, can be considered either a groundwater or surface supply source (discussed in detail in Section 4.2.2, *Carmel River and the Carmel Valley Alluvial Aquifer*). Other existing water supply sources include desalinated water and groundwater recharge projects.

4.1.1 Water Providers

Seaside residents and businesses acquire water from three different water service providers: the SMWS, CalAm, and the MCWD. The service area boundaries for the three water purveyors are shown above in Figure 3.

Seaside Municipal Water System

The City of Seaside owns and operates its own water utility, the SMWS. The SMWS is the smallest of the three water providers in the General Plan Area. It has approximately 790 connections. Of the 790 connections, 758 connections are to single family residences. The City of Seaside also serves water to two golf courses within its jurisdiction: Blackhorse and Bayonet (City of Seaside 2009).

The SMWS owns and operates two groundwater wells that produce water from the Seaside Area Subbasin. Only one of the two wells is currently in service. In addition to the groundwater well, the system also includes two 500,000 gallon water tanks (City of Seaside 2009). According to the City's annual water quality report released in 2016, the concentrations of water quality constituents in potable water delivered by the SMWS were within U.S. EPA thresholds for drinking water quality standards (City of Seaside 2016).

Groundwater production is limited by the Seaside Basin Adjudication Judgement, which is discussed in detail in Section 4.1.2, *Salinas Valley Groundwater Basin.* The amount of water allocated to SMWS is ramped down by slightly more than ten percent every three years. In 2018, the SMWS (municipal) was allocated approximately 185 AFY by the Watermaster. In 2021, the ramp down will be complete and the expected water allocation will be approximately 120 AFY (City of Seaside 2018). In Water Year (WY) 2018, the SMWS pumped 184 acre-feet of water from the Seaside Area Subbasin for municipal uses, and another 512 acre-feet of water for golf course irrigation, for a total of 697 acre-feet, as shown in Table 3 (Seaside Basin Watermaster 2018).

Table 3 SMWS Historical Groundwater Volume Pumped (AFY)[1]

Seaside Groundwater Basin Production	2014	2015	2016	2017	2018
Municipal	224	185	195	188	184
Golf Courses	< 1	312	458	439	512
Total	**224**	**497**	**654**	**628**	**697**

[1] Years shown are Water Years (WY), which span from October through September. Numbers may not add correctly due to rounding.
Sources: Seaside Basin Watermaster 2018

The golf courses use approximately 450 to 500 AFY from the basin pursuant to the City's Alternative Production Allocation (MPWMD 2008). Municipal uses, which include residential demand and other miscellaneous customer account types, are supplied with water pumped from the basin pursuant to the City's Standard Production Allocation under the Adjudication Judgment. In addition, water from Monterey One Water's (M1W) Pure Water Monterey (PWM) recycled water project began injecting water into the Seaside Groundwater Basin in February 2020 (Seaside Basin Watermaster 2022). In the time period of October 1, 2021 through August 31, 2022 a total of 3,318 acre-feet of water had been injected (Seaside Basin Watermaster 2022).

California American Water

CalAm is an investor-owned regulated utility that provides service to approximately 95 percent of residents and businesses in the Monterey Peninsula region (MPWMD 2019). The City of Seaside is located in CalAm's Monterey Main service area in the Central Division. CalAm is a wholly-owned subsidiary of the American Water Works Company (American Water), headquartered in Voorhees, New Jersey (CalAm 2021).

CalAm owns and operates a series of production wells along the Carmel River and in the Seaside Area Subbasin. Groundwater produced from the Seaside Area Subbasin is delivered to customers both within and outside the basin area through a network of delivery pipelines, all in Monterey County. CalAm also operates separate water treatment facilities to treat the raw groundwater before it is delivered (MPWMD 2019; Langridge et al 2016).

Table 4 shows CalAm's groundwater pumping history from 2011 through 2015.

Table 4 CalAm Historical Groundwater Volume Pumped[1]

Groundwater Basins	2011	2012	2013	2014	2015
Seaside Groundwater Basin	3,415	3,972	3,076	2,908	2,695
Salinas Valley Groundwater Basin	551	539	562	496	446
Upper Carmel Valley Aquifer	329	535	236	170	878
Lower Carmel Valley Aquifer	8,213	7,120	7,912	7,598	6,167
Garrapata	26	33	34	35	31
Total Groundwater Pumped	**12,534**	**12,199**	**11,820**	**11,207**	**10,217**

Units in acre-feet per year (AFY)
Source: CalAm, 2016

CalAm relies on AMBAG regional growth projections to calculate population growth and associated water demand within its service area. Table 5 shows current and projected water supplies for CalAm's entire Monterey District service area from 2025 to 2045.

Table 5 CalAm Water Supplies – Current and Projected[1]

Water Supply Sources	2025	2030	2035	2040	2045
Groundwater[2]					
Carmel River Aquifer[3]	3,376	3,376	3,376	3,376	3,376
Seaside Area Subbasin[4]	1,474	774	774	774	774
Aquifer Storage and Recovery (ASR)					
ASR Project[5]	920	920	920	920	920
Desalination					
Sand City Desalination[5]	94	94	94	94	94
Recycled Water					
Pure Water Monterey (PWM)	3,500	3,500	3,500	3,500	3,500
PWM Expansion[6]	528	2,250	2,250	2,250	2,250
Total	**9,892**	**10,914**	**10,914**	**10,914**	**10,914**
Future Projects					
MPWSP Desalination	n/a	6,252	6,252	6,252	6,252
Total with Future Projects	**9,892**	**16,057**	**16,057**	**16,057**	**16,057**

[1] Units in acre-feet per year (AFY)

[2] Groundwater pumping rates for years 2025 through 2045 indicate projected values (CalAm 2021: Table 6-2, *Projected Groundwater Volume*). Groundwater pumping is projected to reduce as other supply projects become operational.

[3] In October 2013, the SWRCB authorized the additional diversion and use of water from the Carmel River by issuing a permit number 21330 to the Monterey County District. The water appropriated from the permit is limited to the quantity which can be beneficially used and can exceed 4.1 cubic feet per second from December 1 of each to May 31 of the succeeding year. (CalAm 2021: Section 6.1, *Carmel River Aquifer*)

[4] The CalAm Monterey Main System has a total entitled right of 1,474 AFY from the Seaside Area Subbasin of the adjudicated Salinas Valley Groundwater Basin (see Section 4.1.2, *Salinas Valley Groundwater Basin*); however, CalAm has an agreement in place to refrain from pumping 700 AFY of this right for 25 years after a new supply source is operational. As such, the amount of groundwater that CalAm will pump from the Seaside Area Subbasin will decrease from 1,474 AFY (CalAm's full rights to the subbasin) to 774 AFY (CalAm's full rights minus 700 AFY) once non-groundwater supplies are available, and maintain this reduced pumping rate for 25 years. CalAm's current (2020) UWMP assumes the reduced pumping will begin in 2030 and continue through 2055. (CalAm 2021)

[5] CalAm 2021: Table E-1, *Projected Water Supplies*

[6] The PWM Expansion is projected to occur in 2025 during a normal hydrologic year; however, due to source water limitations, the additional supply associated with the PWM Expansion would be limited to 528 AFY until the Monterey Peninsula Water Supply Project (MPWSP) is operational, because the MPWSP Desalination Plant will provide a drought-proof water supply which will allow water demands to increase, which in turn will increase wastewater flows to the PWM Expansion Plant, thereby facilitating increased supply production by the PWM Expansion from the 528 AFY projected for 2025, before the MPWSP is operational, to 2,250 AFY in 2030, once the MPWSP is operational. (CalAm 2021: Table E-1, *Projected Water Supplies*)

Additional discussion of future water supply including the anticipated Monterey Peninsula Water Supply Project (MPWSP) Desalination Plant is provided in Section 5.1, *Additional Future Supply.*

Marina Coast Water District

MCWD was formed in 1960 to serve the community of Marina, located directly north of the City of Seaside. The service area has since expanded to include communities included in the Seaside

General Plan Update. The service area has since expanded to include the former Fort Ord area, which is also known as the Ord Community service area (MCWD 2021). Much of the Ord Community occurs within the General Plan Area. The MCWD provides potable water delivery and wastewater conveyance services to the Ord Community, which it will continue to serve as the Fort Ord area is further developed (MCWD 2021).

The MCWD provides water service to the Ord Community from three groundwater wells located in the lower 180-foot and 400-foot aquifers of the Salinas Valley Groundwater Basin, north of the General Plan Area. This groundwater basin is adjudicated; the City of Seaside has been allocated 1,012.5 AFY, and the MCWD has 6,600 AFY. The MCWD also has wells in the Salinas Valley Groundwater Basin that supply water to its customers in Marina and other locations beyond the General Plan Area. Table 6 shows MCWD's groundwater pumping history from 2011 through 2020.

Table 6 MCWD Per Capita Water Demand and Total Groundwater Pumped, 2011-2020

Year	Population	Average gpcd[1]	Groundwater Pumped (AFY)[1]
2011	31,326	115.3	4,047
2012	31,742	117.4	4,174
2013	31,984	123.7	4,431
2014	32,313	111.2	4,026
2015	33,394	86.3	3,228
2016	34,297	78.7	3,025
2017	34,957	82.7	3,239
2018	35,673	85.2	3,405
2019	36,661	77.7	3,190
2020	36,646	80.2	3,291

[1] gpcd = gallons per capita per day; AFY = acre-feet per year
Source: MCWD 2021

Table 6 indicates that between 2011 and 2022, the population within MCWD's service area increased from 31,326 to 36,646, while per capita water demand decreased from 115.3 gpcd to 80.2 gpcd and the total volume of water pumped from the Salinas Valley Groundwater Basin decreased from 4,047 AFY to 3,291 AFY. This represents a population increase of approximately 17 percent with a corresponding decrease in water demand of approximately 18.7 percent over the same period. This trending decrease in water demand is likely attributable to the success of regional water conservation measures and improved efficiencies in buildings and utilities.

Locally developed recycled water and desalinated water are also planned to contribute to available supplies. Table 7, below, provides an overview of the projected quantities of recycled water and desalinated water that are anticipated to be available through 2040, in addition to local groundwater. It is anticipated that as recycled water and desalinated water become available, demand for these sources will be equal to the available supply. This diversification of water supply sources is necessary to reduce groundwater reliance while population increases.

Table 7 MCWD Projected Supply by Source[1]

Water Supply Source	2020	2025	2030	2035	2040
Salinas Valley Groundwater Basin	3,367[2]	5,391	6,540	7,335	7,821
Recycled Water	0	600	953	1,140	1,270
Desalinated Water	0	0	299	394	483
Total	**3,367**	**5,991**	**7,792**	**8,869**	**9,574**

[1] Units in acre-feet per year (AFY)
[2] The actual volume of groundwater pumped in 2020 was 3,291 acre-feet, or approximately 76 acre-feet (2.3 percent) less than projected; see Table 6, *MCWD Per Capita Water Demand and Total Groundwater Pumped, 2011-2020*.
Source: MCWD 2016; MCWD 2021

Table 7 also shows that recycled and desalinated water sources are expected to become contributing sources of supply in years 2025 and 2030, respectively (MCWD 2021). A number of former Fort Ord development projects, including Seaside Resort Golf Courses, Seaside Highlands, and East Garrison, are already equipped with recycled water pipeline infrastructure to deliver recycled water for landscaping when it becomes available. Comparison of the projections in Table 7 to the actual pumping rates in Table 6 indicate that for the years measured (through 2020), the actual rate of pumping was less than the projected demand for groundwater. While actual groundwater pumping rates for years 2025 and beyond are not yet available, reduced per capita water demands continued over years 2011 through 2020, and actual groundwater pumping rates may likewise continue to be less than projected.

4.1.2 Salinas Valley Groundwater Basin

The Salinas Valley Groundwater Basin is located in the Central Coast region of California, stretching from Monterey Bay on the coast to the City of Santa Margarita in the south (approximately 14 miles east of the Pacific Ocean). The Salinas Valley Groundwater Basin consists of the following subbasins:

- 180/400 Foot Aquifer
- Langley Area
- East Side Aquifer
- Forebay Aquifer
- Upper Valley Aquifer
- Paso Robles Area
- Atascadero Area
- Seaside
- Monterey

The proposed project area overlies two of these subbasins: the Seaside Area Subbasin and the Monterey Subbasin.

Seaside Area Subbasin

The Seaside Area Subbasin of the Salinas Valley Groundwater Basin is located in Monterey County at the northwest corner of the Salinas Valley, adjacent to Monterey Bay. The location of the groundwater basin is shown in Figure 4. The subbasin underlies a hilly coastal plain that includes the

coastal communities of Seaside and Marina, as well as the western portion of the former Fort Ord (Langridge et al 2016).

The Seaside Area Subbasin is the primary source of water for the City. Groundwater from the basin is produced by 16 well owners through 35 wells. CalAm owns 12 of these wells and pumps approximately 80 percent of the water produced from the basin. SMWS is the second largest producer, with two wells and only one of which is operational; this well is used to pump approximately 17 percent of the water produced from the basin (MPWMD 2019).

In 2006, an Adjudication Judgment established a physical solution for the basin, defining water rights and setting pumping limits for producers in the area. The following sections describe the adjudication process and the basin's characteristics.

Groundwater Adjudication

In the 1970s, improved monitoring and data collection in the Seaside Area Subbasin showed declines in the water table and overdrafting in many areas across the basin. In 1995, the State Water Resources Control Board (SWRCB) issued Order No. WR 95-10, which found that CalAm was diverting more water from the Carmel River than it was allowed (MPWMD 2019). CalAm was ordered to reduce surface water intake from the Carmel River. As a result, the utility increased coastal groundwater extraction from the Seaside Area Subbasin to supplement its water supplies.

In the early 2000s, the MPWMD considered implementing groundwater protection ordinances, and began preparing the Seaside Basin Groundwater Management Plan (GMP). Concerned that MPWMD might be taking steps to curtail its groundwater pumping, in August 2003 CalAm requested an adjudication of the Seaside Area Subbasin in *California American Water v. City of Seaside et al.,* Case No. M66343. The utility sought a declaration of rights among parties interested in groundwater production and storage in the basin, and named a number of defendants, including local cities, developers, and landowners that historically extracted groundwater from the basin.

In October 2003, CalAm and a number of defendants executed a stipulated agreement. MCRWA and MPWMD, who had intervened in the adjudication against CalAm and the other parties, did not join in the stipulation. In 2006, the Monterey County Superior Court accepted parts of the stipulation and set forth its findings regarding the Seaside Area Subbasin, including a determination of safe yield, an operating plan, and a determination of water rights.

The court determined that the Seaside Area Subbasin was in overdraft, and that recent groundwater production exceeded the natural safe yield (NSY) of the basin (which was defined as approximately 2,581 to 2,913 AFY) and potentially contributed to seawater intrusion. The court found that total groundwater production in each of the preceding five years was between 5,100 and 6,100 AFY. A physical solution was adopted in order to set pumping limits and establish monitoring and reporting requirements within the basin. The adjudication created a Watermaster, a court-created body with representation of the parties to the adjudication, that was tasked with managing the physical solution of the basin. The Seaside Basin Watermaster Board consists of a nine-member board, representing municipal water suppliers, cities, individual pumpers, and water management agencies. A copy of the Seaside Basin Adjudication is available online.[1]

[1] The original Seaside Basin Adjudication is available as Appendix G to the 2020 CalAm UWMP, which is available online at: https://wuedata.water.ca.gov/public/uwmp_attachments/3596173942/Final_Monterey_UWMP_compiled.pdf. The Adjudication was amended in 2007 and those amendments are available online at: http://www.seasidebasinwatermaster.org/Other/Amended Decision0207.pdf.

The court defined an operation safe yield (OSY) as the maximum amount of groundwater that should be allowed to be produced from the basin in a given year. An initial OSY was set at 5,600 AFY; however, due to overdraft conditions in the basin, it was mandated that groundwater pumping be reduced by 2,600 AFY by 2021, in order to achieve the aforementioned OSY. The court determined each party's water right based on their historical production from the basin. Water rights were established as a percentage of the OSY. The physical solution imposed a deliberate and gradual ramp-down of allowed groundwater pumping over time, so as to bring the basin into balance and reduce the risk of seawater intrusion. Cutbacks to the OSY were to be implemented until the OSY was equal to the NSY. The physical solution required a triennial reduction (a reduction every three years) of the OSY. By 2021, after implementation of the full reduction, SMWS' annual groundwater allocation will be 120 AFY (City of Seaside 2018). CalAm's annual groundwater allocation will be 794 AFY (CalAm 2016).

In addition to the required reduction in groundwater extractions, the court order also allowed the use of water transfers, recycled water, and/or artificial means in order to afford optimal groundwater management. Standard production allocations were designed to be transferrable, and were modeled after appropriative rights. Some parties elected to participate in the agreement as "alternative producers" with alternative production allocations, which were modeled after overlying rights under the common law. Alternative rights holders held a prior and paramount right to the standard producers, but their rights were limited to use on their property. Alternative producers were only required to reduce production if the NSY was not already met by reductions by standard rights holders (Langridge et al 2016). Alternate producers may also opt to convert part or all of their allocation to standard production allocation, thereby rendering the rights transferable, but also subject to the physical solution's rampdown requirements on standard production allocation.

As discussed in Section 4.1, in addition to the wells that CalAm operates within the Seaside Area Subbasin, it also owns and operates a series of production wells along the Carmel River. As discussed in Section 4.2.2, the Carmel River is connected to the Carmel Valley Groundwater Basin, which underlies and runs parallel to the river itself, and there is an inherent conflict between DWR and SWRCB classifications as to how this water supply is defined as "surface water" or "groundwater" (please see Section 4.2.2 for details). As a result of CalAm's pumping of water from production wells along the Carmel River, and the aforementioned conflict in how this water supply is defined (and therefore managed), since 1995 the State Water Resources Control Board (SWRCB) has ordered CalAm to reduce water intake from the river. Subsequently in 2009, the SWRCB issued a Cease and Desist Order (SWRCB 2009-0060) requiring CalAm to reduce its Carmel River diversions and secure replacement water supplies, in order to relieve the flows of surface waters in the river and increase groundwater recharge to the alluvial basin. As of 2014, CalAm estimated it needed an additional 9,752 AFY of replacement water to supplement the surface and groundwater production limitations imposed by SWRCB and the court (MPWMD 2019). CalAm is pursuing recycled water and desalination as part of its Monterey Peninsula Water Supply Project to supplement existing water supplies. These additional sources of replacement water will be in addition to an ongoing aquifer storage and recovery project that diverts and stores surplus winter water from the Carmel River Valley within the Seaside Subbasin for subsequent recovery and use.

Basin Characteristics

The boundaries of the Seaside Area Subbasin are shown in Figure 5. Land surface elevations range from sea level at the western boundary with the Pacific Ocean to approximately 900 feet in the hills near the eastern boundary (MPWMD 2008).

WATER BEARING FORMATIONS

From oldest to youngest, the water-bearing formations of the Seaside Area Subbasin are the Miocene/Pliocene Santa Margarita Formation, the Pliocene Paso Robles Formation, the Pleistocene Aromas Formation, and Pleistocene and Holocene age alluvial deposits. These formations have an aggregate maximum thickness of more than 1,000 feet (DWR 2004).

The basin consists of a sequence of three aquifers overlying the relatively impermeable Monterey Formation: the Santa Margarita, the Paso Robles, and the Dune Sands. The Paso Robles and Santa Margarita aquifers are the primary water-producing aquifers in the basin. The Dunes aquifer is the uppermost and shallowest of the three (MPWMD 2008).

RESTRICTIVE STRUCTURES

The western boundary of the basin is composed of Quaternary sand dunes, which form the shoreline of Monterey Bay. The aquifers also extend offshore under the seafloor, with the southern boundary following the Chupines fault and the eastern boundary coinciding with the surface drainage between the Arroyo del Rey and El Toro Creek watersheds. The northeastern boundary consists of a groundwater flow divide that separates groundwater flowing towards the Seaside Area Subbasin from groundwater flowing towards the rest of the Salinas Valley Groundwater Basin (DWR 2004; MPWMD 2008; MPWMD 2016b).

RECHARGE AND CONNECTIVITY

The basin is recharged via deep percolation of local precipitation, subsurface inflow from the east, and minor seepage from local creeks. Differences between horizontal and vertical conductivity are believed to result in partial confinement within the basin. Very few streams exit the Seaside Area Subbasin area, and surface drainage is mostly internal to small depressions between sand dunes (DWR 2004).

GROUNDWATER LEVEL TRENDS

Groundwater levels have declined across the basin since the 1960s, with a brief respite in the 1980s (Langridge et al 2016). Water level data from a CalAm-owned well show a decline of approximately 40 feet between 1960 and 2002. Between 1995 and 2008, water levels in the Santa Margarita aquifer declined approximately 20 feet (MPWMD 2008).

Long-term water level hydrographs for coastal wells reveal that, between 1988 and 2016, groundwater levels declined in the deeper wells but remained relatively stable in the shallower Paso Robles aquifer (Seaside Groundwater Basin Watermaster 2018).

SAFE YIELD/BUDGET

The “safe yield” of a groundwater basin is the maximum quantity of water that can be continuously withdrawn from a groundwater basin without adverse effect. The groundwater “budget” is an accounting of all inflows into a basin compared to all outflows from the basin. The budget is often used to determine a basin’s safe production yields. The groundwater adjudication process defined both the NSY and OSY within the Seaside Area Subbasin.

The adjudication determined the basin’s NSY based on natural percolation from precipitation and surface water bodies overlying the basin. The NSY estimation utilized a 2005 study that examined the complete groundwater balance and percentage of recharge that could be extracted through existing production wells (MPWMD 2016b).

WATER QUALITY AND DRAINAGE CONSIDERATIONS

Groundwater in the basin is divided into two distinct types: sodium-bicarbonate type water in the Northern Coastal subarea, and sodium-chloride type waters in the Southern Coastal and Laguna Seca subareas. Groundwater quality monitoring efforts have tracked salts (TDS and chloride) and nutrients (nitrate) throughout the basin. Table 8 shows the existing water quality and water quality objectives for salts and nutrients in the Seaside Area Subbasin (MPWMD 2014).

Table 8 Seaside Area Subbasin Water Quality

Constituent	Existing Water Quality	Water Quality Objective
TDS, mg/L	540	500
Chloride, mg/L	140	250
Nitrate-N, mg/L	0.7	10

Source: MPWMD 2014

Data and groundwater models suggest that there is a net removal of salts and a net loading of nutrients in the basin. The removal of salts is mainly driven by groundwater pumping, as native groundwater that is high in salts is removed from the basin and surface water is injected in its place. Nitrates from sewer system losses and fertilization, on the other hand, accumulate in the basin (MPWMD 2014).

Seawater intrusion from the Pacific Ocean is another water quality consideration in the basin. In accordance with the Adjudication Judgement for the Seaside Area Subbasin, the Seaside Basin Watermaster prepares a comprehensive Annual Report each year, documenting the monitoring activities and conditions throughout the basin. The 2022 Annual Report provides detailed discussion of the Seawater Intrusion Analysis Report (SIAR) prepared for the basin, which states that based on an evaluation of geochemical indictors in prior years, seawater intrusion has not historically been observed in existing monitoring and production wells in the basin (Seaside Basin Watermaster 2022). The Annual Report also explains that ongoing conditions in the basin indicate a potential threat of seawater intrusion, including groundwater levels below sea level, pumping in excess of recharge and inflows, and the presence of seawater intrusion in the nearby Salinas Valley; however, despite these conditions, no data collected in Water Year 2022 indicate that seawater intrusion is occurring within the Seaside Groundwater Basin (Seaside Basin Watermaster 2022).

SUSTAINABLE GROUNDWATER MANAGEMENT ACT

In September 2014, California Governor Jerry Brown signed a three-bill package known as the Sustainable Groundwater Management Act (SGMA) into law. SGMA establishes a framework for local groundwater management and requires local agencies to bring overdrafted basins into balanced levels of pumping and recharge.

DWR designates groundwater basins as Very Low, Low, Medium, or High priority. The Seaside Area Subbasin is ranked as a Very Low priority basin (DWR 2018b).

In unmanaged groundwater basins, SGMA requires the formation of locally-controlled Groundwater Sustainability Agencies (GSAs). GSAs are responsible for developing and implementing Groundwater Sustainability Plans (GSPs) to guide groundwater management decisions and ensure long-term sustainability in their basins. In adjudicated basins, however, the court-identified Watermaster serves the purpose of the GSA, and the Adjudication Judgment serves as the GSP. The Seaside Basin

Watermaster serves as the GSA for this subbasin, and the Seaside Basin Adjudication Judgment serves as the GSP for this subbasin, for compliance with the SGMA.

Monterey Subbasin and Greater Salinas Valley Groundwater Basin

The Monterey Subbasin was defined as a result of the Seaside Area Subbasin redefinition process. At the time of preparation of this WSA, comprehensive studies have not yet been completed in order to define official boundaries of the Monterey Subbasin; as a result, the same level of detail as presented above for the Seaside Area Subbasin is not available for this area. Therefore, for the purposes of this analysis, information available from the MCWD and CalAm is provided as applicable to the non-adjudicated portions of the General Plan Update area. Applicable information is available through these agencies because MCWD supplies the City of Seaside (with groundwater from elsewhere in the Salinas Valley Groundwater Basin) and CalAm produces groundwater from the Salinas Valley Groundwater Basin, which it serves to customers throughout its Monterey District (in which the City of Seaside is located).

Sustainable Groundwater Management Act

The remaining portion of the General Plan Area overlaps the Monterey Subbasin. The Salinas Valley Basin GSA and the MCWD GSA jointly prepared a GSP for the Monterey Subbasin, which was submitted to DWR in January 2022; the current status of this GSP (as of February 16, 2023), is "Review in Progress," meaning that DWR is currently reviewing the joint GSP for SGMA compliance (DWR 2023). Due to hydraulic connection between the Monterey Subbasin as well as the 180/400-Foot Aquifer Subbasin and the Seaside Subbasin, the Monterey Subbasin GSP outlines coordinated projects, management actions, and implementation actions to provide the regional and cross-basin coordination necessary to achieve sustainable conditions for SGMA compliance. As detailed in the GSP, these include three main types of projects: Multi-subbasin Projects; Marina-Ord Area Local Projects and Management Actions; and Corral de Tierra Area Local Projects and Management Actions (Salinas Valley Basin and MCWD GSA 2022).

Table 9 shows the GSAs that have been formed to develop GSPs in the Monterey County portion of the Salinas Valley Groundwater Basin, as of the time of preparation of this WSA.

Table 9 Salinas Valley Groundwater Basin GSAs in Monterey County

Salinas Valley Groundwater Subbasin	Groundwater Sustainability Agency (GSA)
180/400 Foot Aquifer	Salinas Valley Basin GSA; MCWD GSA; City of Marina GSA
Langley Area	Salinas Valley Basin GSA
East Side Aquifer	Salinas Valley Basin GSA
Forebay Aquifer	Salinas Valley Basin GSA; Arroyo Seco GSA
Upper Valley Aquifer	Salinas Valley Basin GSA
Paso Robles Area	Salinas Valley Basin GSA
Monterey	Salinas Valley Basin GSA; MCWD GSA

Source: DWR 2018a

Per the MCWRA's enabling act, no party can export groundwater from the Salinas Valley Groundwater Basin, except export to Fort Ord. In addition to county regulatory decisions, any groundwater pumping and usage will be subject to the regulations drafted by the region's GSAs.

4.1.3 Carmel River and the Carmel Valley Alluvial Aquifer

The Carmel River is located approximately 4.5 miles south of the City. The Carmel Valley Alluvial Aquifer (Carmel Valley Aquifer), otherwise known as the Carmel Valley Groundwater Basin, underlies and runs parallel to the Carmel River.

According to MPWMD, there is an inherent conflict between DWR and SWRCB classifications of the Carmel Valley Aquifer. The Carmel Valley Groundwater Basin is an identified groundwater basin in DWR's Bulletin 118, with a Basin Prioritization ranking of "Medium" (DWR 2018a). However, MPWMD asserts that the water stored in the Carmel Valley Aquifer should not be considered "groundwater" as the term is defined by the California Water Code.

California Water Code Section 10721 defines groundwater as "water beneath the surface of the earth within the zone below the water table in which the soil is completely saturated with water, but does not include water that flows in known and definite channels." In 1995, the SWRCB determined that the Carmel Valley Aquifer's subsurface flow travels through a known and definite channel. Since this determination, the aquifer has been managed as a surface water source under the jurisdiction of SWRCB (MPWMD 2016a).

If the Carmel Valley Aquifer is classified as a surface water source, it is not subject to SGMA and will not require a GSP. In 2016, MPWMD submitted an inquiry to DWR and SWRCB to clarify the status of the aquifer (MPWMD 2016a). At the time of preparation of this WSA, DWR had yet to confirm whether the Carmel Valley Aquifer would be exempt from SGMA.

Natural Hydrology

Surface water in the Carmel River is recharged via four main sources: precipitation, releases from upstream dams, groundwater seepage, and return flow from urban uses. During winter months, heightened precipitation provides enough water for the river to reach the Pacific Ocean (CRWC 2016). The average annual discharge from the Carmel River at the U.S. Geological Survey gage near Carmel, 3.56 River Miles upstream of the Pacific Ocean, was 73,080 acre-feet for the period of record Water Year 1962-2018 (MPWMD 2019). It is estimated that approximately 85 percent of the water entering the underlying Carmel Valley Aquifer percolates through the bed of the Carmel River. Additional recharge of the aquifer comes from tributary drainages, infiltration of precipitation, subsurface inflow, and return flow from irrigation and septic systems (CRWC 2016).

Water Quality

The main stem of the Carmel River, from which water is diverted to supply CalAm customers within the City of Seaside, is not listed as an impaired water body on the U.S. Environmental Protection Agency's Clean Water Act (303d) listings, as updated in 2016 (CalEPA 2016). In early 1989, MPWMD installed a series of monitoring wells that collect baseline water quality data. Since 1991, MPWMD has collected surface water quality data at three sampling stations along the Carmel River on a semi-monthly basis. The surface water quality and groundwater quality are acceptable, as determined by the agency (CRWC 2016).

Water Production

The Carmel River and the Carmel Valley Aquifer serve jointly as a primary water supply source for CalAm. CalAm produces water from these sources via surface water diversions and well pumping. Of the 326 production wells in the Carmel Valley Aquifer, 18 are owned and operated by CalAm. CalAm

has unrestricted rights to 3,376 AFY. MPWMD and CalAm share another 6,790 AFY in water rights that are subject to instream flow requirement (MPWMD 2017).

In 1995, SWRCB issued Order No. WR 95-10, which found that CalAm was diverting more water from the Carmel River than it was allowed. In 2009, SWRCB issued a Cease and Desist Order (SWRCB 2009-0060) requiring CalAm to reduce its Carmel River diversions and secure replacement water supplies. CalAm production decreased from approximately 11,000 AFY in 1995 to approximately 7,000 AFY in 2015 (MPWMD 2017).

4.1.4 Additional Supply

Other water supply sources used to serve customers in the Seaside General Plan area include groundwater recharge and desalination facilities.

Aquifer Storage and Recovery (ASR) Project

The Aquifer Storage and Recovery (ASR) Project is a groundwater recharge project implemented by MPWMD and CalAm. MPWMD and CalAm jointly own and operate two injection/extraction sites in the coastal area of the Seaside Area Subbasin. Excess winter flows from the Carmel River are collected via the CalAm distribution system and used to artificially recharge the Seaside Area Subbasin. The average annual yield of this system varies depending on rainfall and river flows, but it is estimated to be approximately 2,000 AFY (MPWMD 2019).

Desalinated Water

The Sand City Desalination Facility is owned and operated by CalAm. The facility includes a reverse osmosis desalination plant, a delivery pipeline connecting the facility to the Sand City distribution system, two water storage tanks, and a connection to CalAm's greater regional distribution system. The facility produces 94 AFY (CalAm 2021). Please refer to Section 5.1, *Additional Future Supply*, for more information pertaining to desalinated water.

4.2 Supply Sufficiency Determination

SB 610 requires a WSA to characterize water supply availability over a 20-year projection. This WSA assesses water supply sufficiency for the Seaside General Plan Update through 2045, which is the furthest projection available in the current (2020) UWMPs for the area. As discussed in Section 3.4, the City of Seaside is served by multiple water supply providers, and the associated UWMP boundaries do not align with the boundaries of the General Plan Area. In addition, each of the three separate water suppliers have used different types of assumptions to make water demand estimates. Therefore, an "apples to apples" comparison of forecasted water demand associated with growth projections is not possible based on available published data.

To characterize water supply availability for the purposes of this WSA, the most reliable data available is identified as that provided in the current (2020) UWMPs for CalAm and MCWD, respectively (CalAm 2021; MCWD 2021). Table 10 identifies the projected water demand and supply balance for CalAm and MCWD, including with consideration to future supply development.

Table 10 Water Demand and Supply Projections (AFY) for CalAm and MCWD

	2020[1, 2]	2025	2030	2035	2040	2045[1, 2]
CalAm[1]						
Demand	n/a	10,443	11,883	12,474	13,065	13,656
Supply (existing only)	n/a	9,892	10,914	10,914	10,914	10,914
Balance (existing only)	n/a	-551	-969	-1,560	-2,151	-2,742
Supply (with future projects)	n/a	9,892	16,057	16,057	16,057	16,057
Balance (with future projects)	n/a	-551	+4,174	+3,583	+2,992	+2,401
MCWD[2]						
Demand	3,367	5,991	7,792	8,869	9,574	n/a
Supply (existing only)	3,367	5,391	6,540	7,335	7,821	n/a
Balance (existing only)	0	-600	-1,252	-1,534	-1,753	n/a
Supply (with future projects)	3,367	5,991	7,792	8,869	9,574	n/a
Balance (with future projects)	0	0	0	0	0	n/a

[1] See Table 5*, CalAm Water Supplies – Current and Projected.* CalAm's current (2020) UWMP provides projected demands for years 2025 through 2045 (CalAm 2021: Table E-2, *Normal Year Supply and Demand Comparison*).

[2] See Table 7, *MCWD Projected Supply by Source.* MCWD's current (2020) UWMP provides projected demands for years 2020 through 2040 (MCWD 2021: Table 4.6, *Water Demand by Sector*); for the purposes of this table, it is assumed that demands in 2045 are the same as 2040.

Sources: CalAm 2021; MCWD 2021

The table above does not include projections for the SMWS system, because SMWS' water supply source is the adjudicated Salinas Valley Groundwater Basin, and its groundwater production is limited by the Seaside Groundwater Basin Adjudication. See Section 4.1.2, *Salinas Valley Groundwater Basin*, for further discussion.

As shown in Table 10, water demands in the General Plan Area are expected to steadily increase through 2045. The total projected increase is approximately 9,355 acre-feet over 25 years (2020 through 2045), which equates to an increase of approximately 67 percent compared to 2020 demands. The comparisons of existing supply and supply with future projects to projected demands show that CalAm anticipates a surplus water supply, should all future supplies be fully developed as detailed in Table 5, *CalAm Water Supplies – Current and Projected*, while MCWD anticipates a balanced supply scenario, including all future supplies as detailed in Table 7, *MCWD Projected Supply by Source.* The reliability of future water supplies and potential supplemental sources are discussed in detail in Section 5, *Water Supply Reliability*.

4.3 Supply Management

This WSA utilizes water supply, demand, and quality data from a number of regional water supply management plans. As described below, these plans characterize water supplies within the project area and the greater Monterey region.

Plans and Programs

CalAm Monterey County District 2020 UWMP

The California Water Code requires any municipal water supplier serving over 3,000 connections or 3,000 AFY to prepare an UWMP. CalAm's Monterey County District serves approximately 95,200 people living on the Monterey Peninsula. The UWMP evaluates the demographics, water infrastructure, historical and projected demands, water quality, and future water planning across CalAm's service area on the Monterey Peninsula.

Integrated Regional Water Management Plan (IRWMP) for Greater Monterey County

In 2002, California voters passed Proposition 50, approving the Integrated Regional Water Management (IRWM) Program. In 2009, several agencies, organizations, academic groups, and other local water stakeholders formed a Regional Water Management Group (RWMG) in Monterey County to develop a new IRWMP for the Greater Monterey County region. The region includes the entire Salinas River watershed north of the San Luis Obispo County line and all of Monterey County except the Pajaro River Watershed IRWM region and the Monterey Peninsula, Carmel Bay, and South Monterey Bay IRWM region. The City of Seaside is situated on the boundary between the Greater Monterey County region and the Monterey Peninsula, Carmel Bay, and South Monterey Bay region. The IRWMP for Greater Monterey County outlines the region's priorities in terms of water resource management, discusses water demand and supply management alternatives, identifies water quality issues, and evaluates the regional water system's capacity to adapt to climate change (2018 IRWMP 21 Section R). The IRWMP was adopted in April 2013, updated in September 2018, and is incorporated by reference.[2]

The Climate Change chapter of the IRWMP evaluates projected changes in climate variables and considers the impacts of climate change on the Greater Monterey County region. The IRWMP summarizes key climate models and identifies the following top priority climate risks for the region:

- Decreased water supply due to changes in precipitation, more frequent and severe droughts, increased surface and groundwater consumption, and increased seawater intrusion. Climate hazards such as sea level rise and storm impacts may also jeopardize critical wastewater and recycled water facilities.
- Increased flooding and erosion of creeks and rivers due to intensifying storm events and overburdening of conveyance systems, levees, and culverts.
- Coastal inundation of urban development and impacts to river and wetland ecosystems due to changes in rainfall patterns, storm intensity, storm surges, and sea level rise (Monterey County RWMG 2018).

Marina Coast Water District 2020 UWMP

The UWMP for the MCWD examines historical and projected water use, existing and anticipated water resources, and long-term reliability planning across the MCWD service area. The UWMP discusses potential future projects including recycled water augmentation for the Ord Community.

[2] The 2018 Greater Monterey County IRWMP is available online at: http://www.greatermontereyirwmp.org/documents/plan/

Monterey Peninsula, Carmel Bay, and South Monterey Bay Integrated Regional Water Management Plan (IRWMP)

The Monterey Peninsula, Carmel Bay, and South Monterey Bay IRWMP serves as a joint planning effort between the seven local agencies and organizations included in the Monterey Peninsula RWMG. The IRWMP planning process brings these stakeholders together to collaboratively plan for the region's water supply reliability, improved water quality, flood management, and ecosystem health. The IRWMP is the resulting long-term planning document. The City of Seaside lies primarily within this IRWM region. The Monterey Peninsula, Carmel Bay, and South Monterey IRWMP was originally adopted in 2007 and updated in 2014. The IRWMP was adopted in May 2014 and is incorporated by reference to this WSA (MPWMD 2019).[3]

Seaside Groundwater Basin Salt & Nutrient Management Plan (SNMP)

The State Water Resources Control Board Recycled Water Policy requires local water management agencies and entities to develop SNMPs for each groundwater basin by 2014. The Seaside Groundwater Basin SNMP, released in 2014, assesses salts and nutrients in surface water and groundwater within the Seaside Basin. The purpose of the SNMP is to facilitate management of salts and nutrients in a manner consistent with the statewide Recycled Water Policy, while ensuring protection of groundwater supply and beneficial uses, agricultural beneficial uses, and human health (MPWMD 2014).

[3] The 2014 Monterey Peninsula, Carmel Bay, and South Monterey Bay IRWMP is available online at: http://www.mpwmd.net/mbay_irwm/IRWM-Plan-Update/Draft_MP_IRWM_Plan_19May2014.pdf

5 Water Supply Reliability

Water supply reliability in the context of fluctuating hydrological conditions is an important component of long-range planning. Regulatory orders and management agencies ensure the sustainability and reliability of water supplies currently used in the City of Seaside. The Seaside Basin Judgment limits production from the Seaside Area Subbasin to ensure the long-term reliability of the basin. The SWRCB sets and enforces allocation limits from the Carmel River and its underlying basin. As mentioned in the SGMA discussion in Section 4.1.2, regional GSAs soon will manage groundwater sustainability in the Salinas Valley Groundwater Basin.

Additionally, local water suppliers identify potential future supply sources to augment water supplies and further insulate the region from hydrological uncertainty. Section 5.1, Additional Future Supply, discusses these sources.

This section also discusses the reliability of water resources provided by the three water suppliers in the area: CalAm, MCWD, and SMWS.

5.1 Additional Future Supply

CalAm, MCWD, the Monterey Regional Water Pollution Control Agency (MRWPCA), and MPWMD are developing several new water supply options, which currently are at various stages of completion. These include desalination and recycled water projects.

Desalinated Water

On September 13, 2018, the California Public Utilities Commission (CPUC) approved the Monterey Peninsula Water Supply Project (MPWSP), a CalAm water supply project consisting of a 9.6-million-gallons-per-day desalination plant and facility improvements to the existing Seaside Groundwater Basin aquifer storage and recovery (ASR) system (CalAm 2022). The desalination project will include a system of slant wells constructed north of the City of Marina. CalAm will pump ocean water from the slant wells via pipelines to a desalination plant to be constructed on vacant, disturbed land adjacent to the MRWPCA's Regional Treatment Plant. Desalinated water will be conveyed directly to the Monterey Peninsula for municipal uses within CalAm's Monterey service area or recharged into the Seaside Groundwater Basin for future use (CalAm 2022).

The MPWSP is intended to develop water supplies to:

- Replace CalAm's existing Carmel River diversions in excess of CalAm's legal entitlement of 3,376 AFY, in accordance with SWRCB Orders 95-10 and 2009-0060;
- Enable CalAm to reduce pumping from the Seaside Groundwater Basin from approximately 4,000 AFY to 1,474 AFY, consistent with the Adjudication Judgment; and
- Allow CalAm to meet its obligation to pay back the Seaside Groundwater Basin by approximately 700 AFY over 25 years, as established by the Seaside Groundwater Basin Watermaster (CPUC 2018).

The MPWSP will produce approximately 10,750 AFY of desalinated water (CalAm 2018).

There are a number of other desalination projects proposed in the region. In 1996, MCWD constructed a 300-AFY seawater desalination facility between Dunes Drive and the Monterey Bay.

Since the Monterey Bay is a national marine sanctuary, open ocean intakes and discharges are not permitted. MCWD's desalination facility was designed and constructed to test whether adequate seawater supply could be produced from shallow beach wells, and also to test the use of beach injection wells for brine discharge. The facility is currently idle; however, it could be restored to function (MCWD 2021).

The DeepWater Desal LLC's Monterey Bay Regional Water Project, a 25,000-AFY reverse osmosis desalination facility proposed in Moss Landing, is another proposed desalination project in the area, but is not likely to serve the Seaside area given the implementation of the MPWSP (MCWD 2021).

Recycled Water

MCWD is currently implementing the Regional Urban Water Augmentation Project (RUWAP), which consists of new recycled water distribution pipelines to provide recycled water from the Monterey One Water's (M1W) Advanced Water Treatment Plant (AWTP) north of Marina to urban users in the MCWD service area and former Fort Ord, including the cities of Marina, Seaside, Del Rey Oaks, the County of Monterey, and California State University Monterey Bay (MCWD 2020). The RUWAP was made possible through the award of a $10.5 million Proposition 1 low-interest loan and grant to MCWD in 2018, allowing it to proceed with construction (ACWA [Association of California Water Agencies] 2018). The MCWD endorsed the RUWAP "Hybrid Alternative" to provide 1,427 AFY of tertiary treated recycled water to the former Ord Community and 300 AFY to the Monterey Peninsula, for a total of 1,727 AFY (MCWD 2021).

The remaining water augmentation needs of 973 AFY (for a total of 2,400 AFY) would be provided through expansion of the Pure Water Monterey Advanced Water Purification Plant and injection into the Deep or 400-foot aquifers (MCWD 2021). The Pure Water Monterey Project is an advanced water recycling project jointly developed by the MPWMD and the MRWPCA, with cooperation from the MCWD, MCWRA, and the City of Salinas, and will use advanced treated water to augment water supply and artificially recharge the Seaside Area Subbasin. MCWD is currently constructing the recycled water distribution system through Marina, the Ord Community, and the City of Seaside, including a pipeline that was constructed in 2019 during road reconstruction by the Fort Ord Reuse Authority, and was operational in 2020 (MCWD 2021). The Pure Water Monterey Project is expected to offset approximately 4,300 AFY of groundwater pumping for irrigation in the 180/400 Foot Aquifer; the groundwater replenishment component of the Pure Water Monterey Project replaces the M1W's previously planned urban recycled water delivers to the Monterey Peninsula under RUWAP (MCWD 2021).

In accordance with a 2020 agreement between the Seaside Basin Watermaster and the City of Seaside, SMWS currently uses approximately 450 to 500 AFY of groundwater pumped from the Seaside Groundwater Basin for irrigation of the Bayonet/Blackhorse Golf Course, while domestic supply for the golf course facilities is provided by MCWD (Seaside Basin Watermaster and City of Seaside 2020). The City is exploring additional opportunities with MCWD to use recycled water from the Pure Water Monterey Project for golf course irrigation. SMWS could substitute recycled water in lieu of potable groundwater use, and pursuant to an agreement with the Seaside Groundwater Basin Watermaster, establish a stored water credit (City of Seaside 2018).

5.2 Seaside Municipal Water System

The Seaside Area Subbasin of the adjudicated Salinas Valley Groundwater Basin is the sole source of water for the SMWS; as such, the Seaside Basin Adjudication Judgment protects and governs the

water provider's long-term supply sustainability. The adjudication sets limits to the amount of groundwater that can be pumped from the basin, ensuring the reliability of its groundwater supplies. The SMWS has standard production allocation for municipal production and alternative production allocation for golf course irrigation (Seaside Basin Watermaster 2022).

5.3 Marina Coast Water District

Because the majority of MCWD's water supply comes from the Salinas Valley Groundwater Basin, and potential future supplies will be recycled and desalinated water, short- and medium-term drought events will not reduce the reliability of supplies. Table 11 shows MCWD's anticipated water demands over the planning horizon in average, single dry, and multiple dry year conditions. This analysis considers the water supply as reliable in all years (MCWD 2021).

Table 11 MCWD Water Demands in Single and Multiple Dry Years (AFY)

Year-Type	2020	2025	2030	2035	2040
Average Year	3,367	5,991	7,792	8,869	9,574
Single Dry Year	3,434	6,111	7,948	9,046	9,765
Multiple Dry 1st Year	3,434	6,111	7,948	9,046	9,765
Multiple Dry 2nd Year	3,030	5,392	7,013	7,982	8,616
Multiple Dry 3rd Year	2,660	4,733	6,156	7,006	7,563

Source: MCWD 2021: Table 6.2, *Water Demands in Single and Multiple Dry Years*

As discussed in Section 3.4, the growth assumptions used by MCWD accounted for the types of development and redevelopment of Fort Ord that are proposed under Seaside 2040. Therefore, the water demands projected in Table 11 include water demand associated with the implementation of projects proposed under Seaside 2040.

5.4 California American Water

CalAm calculates water supply reliability scenarios slightly differently than MCWD, by assuming that annual water demand will remain the same throughout various hydrological scenarios, although supplies may fluctuate. Table 12 shows a supply and demand comparison across normal, single dry, and multiple dry year scenarios through 2045[4].

[4] The current (2020) CalAm UWMP also projects supply reliability for years 2025 through 2045, versus the MCWD 2020 UWMP, which projects supply reliability for years 2020 through 2040; for the purposes of this WSA, both timeframes are presented herein and compared to each other where applicable.

Table 12 CalAm Water Demand and Supplies in Single and Multiple Dry Years (AFY)

Year-Type	2025	2030	2035	2040	2045
Normal Year	10,443	11,883	12,474	13,065	13,656
Single Dry Year	10,443	11,883	12,474	13,065	13,656
Multiple Dry 1st Year	10,443	11,883	12,474	13,065	13,656
Multiple Dry 2nd Year	10,443	11,883	12,474	13,065	13,656
Multiple Dry 3rd Year	10,443	11,883	12,474	13,065	13,656

Source: CalAm 2021: Table 7-4, *DWR 7-2R Normal Year Supply and Demand Comparison;* Table 7-5, *DWR 7-3R Single-Dry Year Supply and Demand Comparison*; Table 7-6, *DWR 7-4R Multiple Dry Years Supply and Demand (Average Annual, AFY)*

CalAm anticipates that the Carmel Valley Aquifer, the Seaside Area Subbasin, the Salinas Valley Groundwater Basin, and the Sand City Desalination Facility will be 100 percent reliable through even a multiple dry three-year demand. Water availability from the ASR Project is more dependent on hydrological conditions. Overall, CalAm does not anticipate that demand will exceed supply, even in the third multiple dry year (CalAm 2021). In addition, if additional desalinated and recycled water supplies (MPWSP and Pure Water Monterey Project) are secured, however, they would be considered 100 percent reliable in drought conditions.

6 Conclusions

Seaside 2040 would facilitate future development within the City's General Plan Area. Future developments within the General Plan Area would be proposed to the City on an individual basis. The EIR and this WSA assess potential development in the General Plan Area assuming full buildout of Seaside 2040.

This WSA considers data and information for water supplies and demands in the General Plan Area to determine whether sufficient water supplies are available for development facilitated by Seaside 2040. The City of Seaside is served by three different water supply providers: CalAm, MCWD, and the SMWS. As public water suppliers, CalAm and MCWD operate under UWMPs with published growth assumptions and future water supply and demand projections; this data was assessed and analyzed for the purposes of this WSA. SMWS is not a public water supplier, and as such is not required to publish UWMPs pursuant to the Urban Water Management Planning Act; therefore, this WSA assessed other forms of publicly available data on water use and supply within the city, in order to evaluate water supply reliability for the proposed project.

Development that may occur under Seaside 2040 may increase water demand in the General Plan Area. Although this analysis assumes that the buildout identified in Seaside 2040 would increase water use above existing conditions, this is a conservative assumption because in reality, some of the buildout envisioned in Seaside 2040 would redevelop existing uses and would therefore replace existing water demand rather than adding to it. Further, some areas of redevelopment would decrease water demands by replacing existing land uses with land uses with lower water demands. The amount of potential increase in water demand associated with Seaside 2040 has not been quantified for the purposes of this WSA, because doing so would be highly speculative. Rather, this WSA provides a thorough characterization of water supplies in the project area, in comparison to potential demands associated with full buildout of Seaside 2040.

In summary, the City (along with the entire Monterey Peninsula) relies entirely on local water supplies. Historic supplies, which include the Carmel River, the Seaside Groundwater Basin, and the Salinas Aquifer, are subject to production limitations, which are on a reducing schedule. Based on existing and foreseeable water supplies in the project area, the City of Seaside does not presently have sufficient water supplies to achieve the complete buildout proposed by Seaside 2040. Based on the water demand projections presented herein, projected total water supplies available during normal, single dry, and multiple dry water years over a 20-year projection are not presently sufficient to meet the water demands of the proposed project in addition to the public water systems' existing and planned future uses, including agricultural and manufacturing uses.

A portfolio of new water sources is under development by CalAm, MCWD, Monterey One Water, and MPWMD. These include CalAm's Pure Water Monterey and MPWSP and MCWD's RUWAP recycled water use and desalination plant projects. Until these projects are implemented, water supply availability will limit the potential for both new development and redevelopment within the General Plan Area. However, the developing portfolio of new water supplies in the General Plan Area will provide future supplies that will support development under Seaside 2040. To ensure that development or redevelopment under Seaside 2040 does not occur without confirmation that the associated water supply for each project is available, Mitigation Measure UTIL-1, *Water Verification Report*, presented in Section 4.16 of the EIR for the proposed project, requires that long-term water supply availability for every future project proposed under Seaside 2040 provides proof of water

supply availability to the City as a contingency of project approval. For those individual projects that are subject to SB 610, the required WSA is sufficient to provide that proof to the City. For those individual projects that are not subject to SB 610, the project proponent must provide a Water Verification Report from the local water supplier to the City.

This WSA has been prepared consistent with the requirements of California Water Code as amended by SB 610. As described herein, SB 610 is not considered applicable to this General Plan Update, and this WSA has been prepared in order to be highly conservative. This WSA concludes that sufficient water supplies are not currently available in the project area to support full buildout of the General Plan Update; however, with consideration to the developing water supply portfolio in the project area, and the project's mitigation requirements that prohibit new development within the General Plan Area unless and until sufficient water supply is documented for individual projects, this WSA determines that sufficient water supplies will be available for the phased buildout of Seaside 2040.

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Appendix A

Seaside Basin Judgment – *Cal Am v. City of Seaside*

IN THE SUPERIOR COURT OF THE STATE OF CALIFORNIA

IN AND FOR THE COUNTY OF MONTEREY

CALIFORNIA AMERICAN WATER,

Plaintiff,

vs.

CITY OF SEASIDE; CITY OF MONTEREY; CITY OF SAND CITY; CITY OF DEL REY OAKS; SECURITY NATIONAL GUARANTY, INC.; GRANITE ROCK COMPANY, INC.; D.B.O. DEVELOPMENT COMPANY NO. 27, INC.; MURIEL E. CALABRESE 1987 TRUST; ALDERWOODS GROUP (CALIFORNIA), INC.; PASADERA COUNTRY CLUB, LLC; LAGUNA SECA RESORT, INC; BISHOP MC INTOSH & MC INTOSH, a general partnership; THE YORK SCHOOL, INC.; COUNTY OF MONTEREY; and DOES 1 through 1,000, Inclusive,

Defendants.

MONTEREY PENINSULA WATER MANAGEMENT DISTRICT,

Intervenor.

MONTEREY COUNTY WATER RESOURCES AGENCY,

Intervenor.

AND RELATED CROSS-ACTIONS

Case No. M66343

AMENDED DECISION

Action Filed: August 14, 2003
Trial Date: December 13, 2005
Dept.: 21

I. INTRODUCTION

This Decision sets forth the adjudicated rights of the parties to this lawsuit (with certain exceptions noted in section I.D. below), including Plaintiff California American Water, and Defendants the City of Seaside, the City of Monterey, the City of Sand City, the City of Del Rey Oaks, Security National Guaranty, Inc., Granite Rock Company, D.B.O. Development Company No. 27, Muriel E. Calabrese 1987 Trust, Alderwoods Group (California), Inc., Pasadera Country Club, LLC, Laguna Seca Resort, Inc., Bishop, McIntosh & McIntosh, and The York School, Inc. (hereinafter "Water User Defendants") to use the water resources of the Seaside Groundwater Basin ("Seaside Basin" or "Basin") and provides for a physical solution for the perpetual management of the Basin, which long-term management will provide a means to augment the water supply for the Monterey Peninsula.

A. Seaside Groundwater Basin.

The Seaside Basin is located in Monterey County and underlies the Cities of Seaside, Sand City, Del Rey Oaks, Monterey, and portions of unincorporated county areas, including the southern portions of Fort Ord, and the Laguna Seca Area. The boundaries of the Basin are depicted in Exhibit B of this Decision. Generally, the Seaside Basin is bounded by the Pacific Ocean on the west, the Salinas Valley on the north, the Toro Park area on the east, and Highways 68 and 218 on the south. The Seaside Basin consists of subareas, including the Coastal subarea and the Laguna Seca subarea in which geologic features form partial hydrogeologic barriers between the subareas.

B. The Parties.

1. Plaintiff California American Water ("Plaintiff" or "California American") is an investor-owned public utility incorporated under the laws of the State of California. *(See* Pub. Utilities Code, §§ 1001 et seq. and 2701 et seq.) California American produces groundwater from the Seaside Basin and delivers it for use on land within its certificated service area that both overlies portions of the Seaside Basin, and is located outside of the Seaside Basin Area, all within the County of Monterey.

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2. Defendant City of Seaside ("Seaside") is a general law city situated in the County of Monterey. Seaside produces groundwater from the Seaside Basin (1) for use on two city-owned golf courses that overly the Basin, and (2) for municipal water service to its residents. *(See* Call. Const., Art. XI, § 9; Gov. Code, § 38730.)

3. Defendant City of Sand City ("Sand City") is a charter city situated in the County of Monterey. Sand City produces groundwater from the Seaside Basin and delivers it for use on private and publicly owned lands within its incorporated boundaries, all of which overlie the Seaside Basin. *(See* Cal. Const., Art. XI, § 9; Gov. Code, § 38730.)

4. Defendant City of Del Rey Oaks ("Del Rey Oaks") is a general law city situated in the County of Monterey. Land within Del Rey Oaks' incorporated boundaries overlies the Seaside Basin. The two wells Del Rey Oaks presently operates for irrigation of public lands are located outside the Seaside Basin area and are, therefore, excluded from this Stipulation. *(See* Cal. Const., Art. XI, § 9; Gov. Code, § 38730.)

5. Defendant City of Monterey ("Monterey") is a charter city situated in the County of Monterey. Monterey owns and controls land that overlies the Seaside Basin area.

6. Defendant Security National Guaranty, Inc. ("SNG") is a California corporation with its principal place of business in the City and County of San Francisco. SNG's primary business activity is real estate development. As part of its operation, SNG and/or its predecessors-in-interest have produced groundwater from the Seaside Basin. SNG also owns land overlying the Seaside Basin.

7. Defendant Granite Rock Company ("Granite") is a California corporation with its principal place of business in the County of Santa Cruz. Granite's primary business activity is the production and sale of concrete aggregate and building materials. As part of its Seaside concrete and building materials plant, Granite has produced groundwater from the Seaside Basin. Granite also owns land overlying the Seaside Basin.

8. Defendant D.B.O. Development No. 27 ("D.B.O."), erroneously sued herein as D.B.O. Development Company, is a California limited liability company with its principal place of business in the County of Monterey. D.B.O.'s primary business activity is the ownership and

development of real property for commercial, industrial, residential, and public uses. As part of their ownership and development of land overlying the Seaside Basin, D.B.O. and/or its predecessor in interest have produced groundwater from the Basin. D.B.O. also owns and controls land overlying the Seaside Basin.

9. Defendant Muriel E. Calabrese 1987 Trust ("Calabrese") is an irrevocable trust that holds property in the County of Monterey. Calabrese and/or its predecessor in interest have produced groundwater from the Seaside Basin in relation to the operation of its paving, grading and construction business and operation of a concrete batch plant in Sand City. Calabrese also owns and controls land overlying the Seaside Basin.

10. Defendant Alderwoods Group (California), Inc. ("Alderwoods Group"), DBA Mission Memorial Park ("Mission Memorial") is a California corporation with its principal place of business in the County of Monterey. Mission Memorial's primary business activity is the operation of a cemetery in the City of Seaside. As part of maintenance of the cemetery, Mission Memorial has produced groundwater from the Seaside Basin. Mission Memorial also owns land overlying the Seaside Basin.

11. Defendant Pasadera Country Club, LLC ("Pasadera") is a California limited liability company with its principal place of business in the County of Monterey. Pasadera's primary business activity is the operation of a private golf course. As part of its golf course operations, Pasadera has produced groundwater from the Seaside Basin. Pasadera also owns land overlying the Seaside Basin.

12. Defendant Bishop, McIntosh & McIntosh ("Bishop") is a general partnership, with its principal place of business in the County of Monterey. Bishop owns land overlying the Laguna Seca Subarea of the Seaside Basin. Defendant Laguna Seca Resort, Inc.("Laguna Seca") is a California corporation with its principal place of business in the County of Monterey. Laguna Seca's primary business activity is the operation of a public golf course on land owned in fee by Bishop. Laguna Seca operates the golf course pursuant to a lease with Bishop. As part of the golf course's operations, groundwater is produced from the Laguna Seca Subarea of the Seaside Basin for irrigation purposes. Laguna Seca filed a cross-complaint against California

American, and Bishop filed a cross-complaint against California American and all defendants other than Laguna Seca Defendants Laguna Seca Resort, Inc. and Bishop, McIntosh & McIntosh shall collectively be referred to as "Laguna Seca/Bishop." However, the pumping allocation established in Section III.B., below, is held only by Bishop, as the overlying property owner. Laguna Seca is a Water User Defendant now exercising Bishop's pumping allocation and operating the golf course facilities. The damages provided for in Section III.G. shall be based on the Average Gross Annual Income of the entity operating thee golf course facilities, which is now Laguna Seca (Bishop's lessee).

13. Defendant County of Monterey owns land on which is operates the Laguna Seca Park. County of Monterey has produced groundwater from the Seaside Basin for use at Laguna Seca Park. County of Monterey owns land overlying the Seaside Basin.

14. Intervenor Monterey Peninsula Water Management District ("MPWMD") is a district formed pursuant to Water Code Appendix sections 118-1 et seq. MPWMD intervened as a party defendant as against California American, cross-complained against the other parties as a plaintiff, and is a defendant in a cross-complaint filed by Seaside and joined in by City defendants.

15. Intervenor Monterey County Water Resources Agency ("MCWRA") is a duly constituted Water Resources Agency created pursuant to California Water Code Appendix section 52-3 et seq. MCWRA intervened inn this action as a plaintiff as against all parties.

16. Defendant The York School, Inc. ("York" or "York School"), is a nonprofit corporation, founded in 1959 as an independent day school providing college preparatory education. Its primary activity is the operation of a school. York leases approximately 31.4 acres of property from the United States, Department of the Army, on the former Fort Ord. This property is located immediately north of the main campus, across York Road, and is a portion of a larger parcel, approximately 107 acres in size, that is scheduled to be transferred as a public benefit conveyance to York from the federal government. This parcel overlies the Seaside Basin and is subject to this Decision. York has produced groundwater from the Seaside Basin. York is not an agent of the United States, nor can York bind the United States to this Decision.

C. The Complaint.

On or about August 14, 2003, Plaintiff filed a complaint against Defendants and Does 1 through 1,000 requesting a declaration of Plaintiff's and Defendants' individual and collective rights to groundwater and a mandatory and prohibitory injunction requiring the reasonable use and coordinated management of groundwater within the Seaside Basin pursuant to Article X, Section 2 of the California Constitution. The pleadings further allege that Plaintiff and Defendants collectively claim substantially all rights of groundwater use, replenishment and storage within the Seaside Basin area, that the Natural Safe Yield (as defined in Section III.A.) is being exceeded, and that absent a physical solution and coordinated groundwater management strategy, the Seaside Basin is in imminent risk of continued lowering of water levels, increased pump-lifts, diminution of water supply and quality, seawater intrusion, and possible land subsidence. Accordingly, Plaintiff requested: (1) a determination of the Seaside Basin's safe yield; (2) an operating plan for the management of the Basin; (3) a declaration of the rights of the parties named in this Complaint; (4) a declaration and quantification, as part of a physical solution, of the parties' respective rights to make use of the Seaside Basin's available storage space; and (5) the appointment of a Watermaster to administer the Court's Decision. Subsequently, Plaintiff has twice amended its complaint and the operative complaint is now the Second Amended Complaint, which sets forth the same general allegations as the original complaint.

D. Defendants' Responses.

Water User Defendants in this action have all responded to the Complaint pursuant to Answers. In addition, they have all joined in a motion seeking Court approval of a Stipulated Judgment. The Monterey Peninsula Water Management District and the County of Monterey, including the Monterey County Water Resources Agency, did not join in the Stipulation.

On or about September 24, 2003, Intervenor MPWMD filed a complaint in intervention against the defendants named in the Complaint. Defendants to that complaint responded to the cross-complaint pursuant to an Answer, containing a general denial and affirmative defenses.

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Seaside, on or about January 9, 2004, filed a cross-complaint against MPWMD. MPWMD responded to the cross-complaint by filing an Answer, containing a general denial and affirmative defenses.

Laguna Seca, on or about April 23, 2004, filed a cross-complaint against California American. California American responded to the cross-complaint pursuant to an Answer, containing a general denial and affirmative defenses.

Bishop, on or about September 23, 2004, filed a cross-complaint against California American and against all defendants other than Laguna Seca. California American, Granite, Sand city, Alderwoods Group, York School, D.B.O., Monterey, MPWMD, Seaside, and Pasadera responded to the cross-complaint pursuant to Answers containing general denials and affirmative defenses.

SNG, on or about July 26, 2005, filed a cross-complaint against MPWMD. MPWMD responded to the cross-complaint by filing an Answer, containing a general denial and affirmative defenses.

At the conclusion of argument on December 22, 2005, the various defendant cross-complainants agreed that the relief they had sought via their cross-complaints had been subsumed in the litigation of the complaint and complaints in intervention, the answers thereto, and the Settlement Agreement and General Mutual Release executed by all parties save the intervenors and the County of Monterey.

E. Joint Motion for Entry of Judgment.

Plaintiff and Water User Defendants filed a Motion for the Entry of Judgment along with a Stipulation for Entry of Judgment, which was opposed by both intervenors. The Motion for Entry of Judgment requested that the Court approve the Stipulation and enter the Judgment. The motion was heard by this Court on December 12, 2005. At the request of the moving parties, it deferred its ruling until it had taken evidence in the trial of this matter.

Having now received the evidence, and having considered written and oral argument from the various parties, the Court denies the Motion for Entry of Judgment. The Court accepts the stipulation of certain of the parties entitled "Settlement Agreement and General Mutual Release"

filed with the Court during trial insofar as the stipulation does not conflict with the ruling set forth herein.

F. Jurisdiction. This Court has jurisdiction to enter a Judgment declaring and adjudicating Plaintiff's and Water User Defendants' rights to the reasonable and beneficial use of groundwater in the Seaside Basin Area, including the imposition of a physical solution, pursuant to Article X, Section 2 of the California Constitution.

II. FINDINGS

A. Importance of Groundwater. Groundwater is an important water supply source for businesses, individuals and public agencies that overlie or Extract groundwater from the Seaside Basin. The overwhelming majority of the groundwater appropriated from the Seaside Basin has been and continues to be dedicated to a public use in accordance with the provisions of the California Constitution, Article X, Section 5. The Plaintiff and the Water User Defendants rely upon continued availability of groundwater to meet their demands. The intervenors, MPWMD and MCWRA, have a legislatively mandated interest in the preservation and enhancement of groundwater in the Basin.

B. Status of the Groundwater Basin.

1. Perennial Natural Safe Yield. The Perennial Natural Safe Yield (as defined in Section III.A. and hereinafter referred to as "Natural Safe Yield") of the Seaside Basin is solely the result of natural percolation from precipitation and surface water bodies overlying the Basin. The Court finds that the Natural Safe Yield of the Basin as a whole, assuming no action is taken to capture subsurface flow exiting the northern boundary of the Basin, is from 2,581 to 2,913 acre feet per year. The Natural Safe Yield for the Coastal Subarea is estimated from 1,973 to 2,305 acre feet per year, and the Natural Safe Yield for the Laguna Seca Subarea is 608 acre feet per year.

2. Groundwater Production. Production records demonstrate that the cumulative annual groundwater production of the Parties from the Seaside Basin area in each of the five (5) years immediately preceding the filing of this action has been between approximately 5,100 and 6,100 acre feet. Therefore, the Court finds that groundwater production has exceeded the Natural

Safe Yield during the preceding five (5) years throughout the Seaside Basin and in each of its subareas. While no one can predict with precision when it will occur, all parties agree continued indefinite production of the Basin Groundwater in excess of the Natural Safe Yield will ultimately result in seawater intrusion, with deleterious effects on the Basin. The evidence demonstrates that the stage is set for such an occurrence in the foreseeable future.

C. Legal Claims.

1. Groundwater Rights. Certain Parties allege that they have produced groundwater openly, notoriously, continuously, and without interruption in excess of the Natural Safe Yield of the Basin for more than five (5) years. As a result, these Parties allege that they have accrued prescriptive rights as articulated by the California Supreme Court in *City of Pasadena v. City of Alhambra* (1948) 33 Cal.2d 908. In defense of these claims, other Parties deny that the elements of prescription have been satisfied, and further allege the affirmative defense of "self help" as recognized in *Pasadena, supra,* 33 Cal.2d at pp. 932-32. Those Parties responsible for public water service also raise Civil Code section 1007 as an affirmative defense against prescription.

The Court finds that there is merit to the claim that certain prescriptive rights have accrued, but also finds that there is merit to the aforementioned affirmative defenses. Accordingly, the Court finds that the Parties collectively possess a variety of rights based in prescription and other original rights (including overlying and appropriative rights). Each Party's right to produce naturally occurring groundwater from the Seaside Basin therefore reflects the amount of their historical production from the Basin, and respects the priority of allocations under California law. The physical solution set forth by this Decision is intended to ultimately reduce the drawdown of the aquifer to the level of the Natural Safe Yield; to maximize the potential beneficial use of the Basin; and to provide a means to augment the water supply for the Monterey Peninsula.

2. Storage Rights. The Court finds that the public interest is served by augmenting the total yield of the Seaside Basin through artificial groundwater recharge, storage, and recovery. It is well established that an entity which artificially recharges a groundwater basin with the intent to later recapture that water maintains an exclusive right to recapture that quantity of water by which said recharge augments the retrievable water supply of the groundwater basin, so long as

such recharge and recapture (i.e., storage) does not materially harm the groundwater basin or any other entity's prior rights associated with the groundwater basin. *(City of Los Angeles v. City of San Fernando* (1975) 14 Ca1.3d 199, 264; *City of Los Angeles v. City of Glendale* (1943) 23 Cal.2d 68, 76-77; see also Water Code, § 7075.) The Court finds, therefore, that the right to store and recover water from the Seaside Basin shall be governed by the provisions of the Decision, and the rules and regulations promulgated by the Seaside Basin Watermaster, the basic provisions of which are described in Section III.H.

3. *De Minimis* Production. The Court finds that production of groundwater by any person or entity less than five (5) acre feet per year is not likely to significantly contribute to a Material Injury (as defined in Section III.A.) to the Seaside Basin or any interest related to the Seaside Basin. Accordingly, this Decision is not intended to govern the production of groundwater by any person or entity that produces a total quantity of groundwater that is less than five (5) acre feet peer year. However, to the extent the Court determines in the future that this exemption has contributed to or threatens to contribute to a Material Injury to the Seaside Basin or any interest related to the Seaside Basin, including any contribution caused by production subject to this exemption in combination with all other production from the Seaside Basin, the Court will modify or eliminate this exemption as it deems prudent pursuant to its reserved jurisdiction provided in Section M.O.

4. Transferability of Seaside Basin Rights. The Court finds that maximum beneficial use of the Seaside Basin's resources is encouraged by the ability to sell and lease production allocations. Such transferability will also provide necessary flexibility to satisfy future water supply needs. Accordingly, the Court finds that production allocations should be assignable, subject to the rules and regulations promulgated by the Watermaster, and subject to certain Parties' participation in the Alternative Production Allocation, described in Section III.B.3, which election will restrict their transfers of water.

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III. DECISION

IT IS HEREBY ORDERED, ADJUDGED AND DECREED:

A. Definitions.

1. "Alternative Production Allocation" is the amount of Groundwater that a Producer participating in this allocation method may Produce from a Subarea of the Seaside Basin as provided in Section III.B.3.

2. "Artificial Replenishment" means the act of the Watermaster, directly or indirectly, engaging in or contracting for Non-Native Water to be added to the Groundwater supply of the Seaside Basin through Spreading or Direct Injection to offset the cumulative Over-Production from the Seaside Basin in any particular Water Year pursuant to Section III.L.3.j.iii. It shall also include programs in which Producers agree to refrain, in whole or in part, from exercising their right to produce their full Production Allocation where the intent is to cause the replenishment of the Seaside Basin through forbearance in lieu of the injection or spreading of Non-Native Water.

3. "Base Water Right" is the percentage figure or the fixed amount assigned to each Party as provided in Section III.B.2, which is used to determine various rights and obligations of the Parties as provided in Sections III.B.2, III.B.3, III.L.3.c, and III.L.3.j.iii.

4. "Brackish Water" means water containing greater than 1,000 parts of chlorides to 1,000,000 parts of Water.

5. "Carryover" means that portion of a Party's Production Allocation that is not Extracted from the Basin during a particular Water Year. Each acre-foot of Carryover establishes an acre-foot of Carryover Credit.

6. "Carryover Credit(s)" means the quantity of Water established through Carryover, that a Party is entitled to Produce from the Basin pursuant to Section III.F.

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7. "Coastal Subarea" means those portions of the Seaside Basin that are west of North-South Road, and further as shown on the Basin map attached as Exhibit B to this Decision.

8. "Direct Injection" means a method of Groundwater recharge whereby Water is pumped into the Basin through wells or other artificial channels.

9. "Extraction," "Extractions," "Extracting," "Extracted," and other variations of the same noun or verb, mean pumping, taking, diverting or withdrawing Groundwater by any manner or means whatsoever from the Seaside Basin.

10. "Feasible" means capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, and technological factors.

11. "Fiscal Year" means the twelve (12) month period from January 1 through December 31.

12. "Groundwater" means all Water beneath the ground surface in the Seaside Basin, including Water from Natural Replenishment, Artificial Replenishment, Carryover, and Stored Water.

13. "Laguna Seca Subarea," or "Laguna Seca Area," means those portions of the Basin that are east of the Southern Coastal Subarea and south of the Northern Inland Subarea, as shown on the Seaside Basin map attached as Exhibit B to this Decision.

14. "Landowner Group" means all Producers that own or lease land overlying the Seaside Basin and Produce Groundwater solely for use on said land, except California American, Seaside (Municipal), Monterey, Del Rey Oaks, and Sand City.

15. "Material Injury" means a substantial adverse physical impact to the Seaside Basin or any particular Producer(s), including but not limited to: seawater intrusion, land subsidence, excessive pump lifts, and water quality degradation. Pursuant to a request by any Producer, or on its own initiative, Watermaster shall determine whether a Material Injury has occurred, subject to review by the Court as provided for in Section M.N.

16. "Natural Replenishment" means all processes by which Water may become a part of the Groundwater supply of the Seaside Basin without the benefit of the Physical Solution and the coordinated management it provides. Groundwater that occurs in the Seaside Basin as a result of the Physical Solution, which is not Natural Replenishment, includes, but is not limited to Storage, Carryover, and Artificial Replenishment.

17. "Natural Safe Yield" or "Perennial Natural Safe Yield" means the quantity of Groundwater existing in the Seaside Basin that occurs solely as a result of Natural Replenishment. The Natural Safe Yield of the Seaside Basin as a whole, assuming no action is taken to capture subsurface flow exiting the northern boundary of the Basin, is from 2,581 to 2,913 acre feet per year. The Natural Safe Yield for the Coastal Subareas is from 1,973 to 2,305 acre feet per year. The Natural Safe Yield for the Laguna Seca Subarea is 608 acre feet per year.

18. "Non-Native Water" means all Water that would not otherwise add to the Groundwater supply through natural means or from return flows from surface applications other than intentional Spreading.

19. "Overdraft" or "Overdrafted" refers to a condition within a Groundwater basin resulting from long-term depletions of the basin over a period of years.

20. "Operating Safe Yield" means the maximum amount of Groundwater resulting from Natural Replenishment that this Decision, based upon historical usage, allows to be produced from each Subarea for a finite period of years, unless such level of production is found to cause Material Injury. The Operating Safe Yield for the Seaside Basin, as a whole, is 5,600 acre feet. The Operating Yield is 4,611 acre feet for the Coastal Subarea and 989 acre feet for the Laguna Seca Subarea. The Operating Yield established here will be maintained for three (3) years from the date of this Decision or until a determination is made by the Watermaster, concurred in by this Court, that continued pumping at this established Operating Yield will cause Material Injury to the Seaside Basin or to the Subareas, or will cause Material Injury to a Producer due to unreasonable pump lifts. In either such event the Watermaster shall determine the modified Operating Yield in accordance with the Principles and Procedures attached hereto as Exhibit A, and through the application of criteria that it shall develop for this purpose.

21. "Over-Production" and other variations of the same term means (1) with regard to all Production from the Seaside Basin, that quantity of Production which exceeds an initially assumed Natural Safe Yield of 3,000 afy (or such adjusted calculation of Natural Safe Yield as further study of the Basin by the Watermaster shall justify); or (2) with regard to each Producer, that quantity of Water Produced in any Water Year in excess of that Producer's Base Water Right, as applied to an initially assumed Natural Safe Yield of 3,000 afy (subject to adjustment as further study shall justify). For a Party producing under the Alternative Production Allocation, the calculation shall be based upon the Base Water Right assigned to them in Table 1, infra, only to the extent that Party has elected to convert all or part of an Alternative Production Allocation into a Standard Production Allocation, pursuant to Section III.B.3.e.

22. Operating Yield Over-Production means pumping of Native Water by Producers in excess of their Standard Production Allocation or Alternative Production Allocation, as discussed in Section III.L.3.j.iii.

23. "Person" or "Persons" includes individuals, partnerships, associations, governmental agencies and corporations, and any and all types of entities.

24. "Physical Solution" means the efficient and equitable management of Groundwater resources within the Seaside Basin, as prescribed by this Decision, to maximize the reasonable and beneficial use of Water resources in a manner that is consistent with Article X, Section 2 of the California Constitution, the public interest, and the basin rights of the Parties, while working to bring the Production of Native Water to Natural Safe Yield.

25. "Produce," "Produced," or "Production" means (1) the process of Extracting Water or (2) the gross amount of Water Extracted.

26. "Producer" means a Party possessing a Base Water Rights.

27. "Production Allocation" is the amount of Groundwater that a Producer may Produce from a Subarea of the Seaside Basin based on the Parties' election to proceed under either the Standard Production Allocation or the Alternative Production Allocation set forth in Sections III.B.2 and III.B.3, respectively.

28. "Replenishment Assessment" means an assessment levied by the Watermaster per each acre-foot of Over-Production against each party Over-Producing Groundwater in the previous Water Year. The amount of the assessment shall be sufficient to cover the cost of Artificial Replenishment in an amount necessary to off-set that Producer's Over-Production, and levied as provide in Section III.L.3.j.iii. The assessment must of necessity be initially determined based upon the estimated cost of providing Non-Native water to replenish the Basin, as determined by the Watermaster.

29. "Seaside Basin" is the underground water basin or reservoir underlying the Seaside Basin Area, the exterior boundaries of which are the same as the exterior boundaries of the Seaside Basin Area.

30. "Seaside Basin Area" is the territory depicted in Exhibit B to this Decision.

31. "Spreading" means a method of introducing Non-Native Water into the Seaside Basin whereby Water is placed in permeable impoundments and allowed to percolate into the Seaside Basin.

32. "Standard Production Allocation" is the amount of Groundwater that a Producer participating in this allocation method may Produce from a Subarea of the Seaside Basin as provided in Section III.B.2, which is determined by multiplying the Base Water Right by the Operating Yield.

33. "Storage" means the existence of Stored Water in the Seaside Basin.

34. "Storage Allocation" means that quantity of Stored Water in acre feet that a Party is allowed to Store in the Coastal Subarea or the Laguna Seca Subarea at any particular time.

35. "Storage Allocation Percentage" means the percentage of Total Usable Storage Space allocated to each Producer proceeding under the Standard Production Allocation. Producers proceeding under the Alternative Production Allocation are not allocated Storage rights and, consequently, their share of the Total Usable Storage Space is apportioned to the Producers proceeding under the Standard Production Allocation. Pursuant to the terms of Section III.B.3, Parties proceeding under the Alternative Production Allocation enjoy a one-time right to change

to the Standard Production Allocation. Due to the recalculation of the Storage Allocation Percentage necessitated when a Party changes to the Standard Production Allocation, the Watermaster will maintain the up-to-date Seaside Basin Storage Allocation Percentages.

36. "Storage and Recovery Agreement" means an agreement between Watermaster and a Party for Storage pursuant to Section III.L.3.j.xx.

37. "Store" and other variations of the same verb refer to the activities establishing Stored Water in the Seaside Basin.

38. "Stored Water" means (1) Non-Native Water introduced into the Seaside Basin by a Party or any predecessors-in-interest by Spreading or Directly Injecting that Water into the Seaside Basin for Storage and subsequent Extraction by and for the benefit of that Party or their successors-in-interest; (2) Groundwater within the Seaside Basin that is accounted for as a Producer's Carryover; or (3) Non-Native water introduced into the Basin through purchases by the Watermaster, and used to reduce and ultimately reverse Over-Production.

39. "Stored Water Credit" means the quantity of Stored Water augmenting the Basin's Retrievable Groundwater Supply, which is attributable to a Party's Storage and further governed by this Decision and a Storage and Recovery Agreement.

40. "Subarea(s)" means either the Laguna Seca Subarea or the Coastal Subarea.

41. "Total Useable Storage Space" means the maximum amount of space available in the Seaside Basin that can prudently be used for Storage as shall be determined and modified by Watermaster pursuant to Section III.L.3.j.xix, less Storage space which may be reserved by the Watermaster for its use in recharging the Basin.

42. "Transfer" and other variations of the same verb refers to the temporary or permanent assignment, sale, or lease of all or part of any Producer's Production Allocation, Storage Allocation, Carryover Credits, or Stored Water Credits. Pursuant to Section III.B.3., Transfer does not include the use of Water on properties identified in Exhibit C for use under an Alternative Production Allocation.

43. "Water" includes all forms of Water.

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44. "Watermaster" means the court-appointed Watermaster pursuant to Section III.L. of this Decision for the purpose of executing the powers, duties, and responsibilities assigned therein.

45. "Watermaster Rules and Regulations" means those rules and regulations promulgated by the Watermaster consistent with the terms of this Decision.

46. "Water Year" means the twelve (12) month period from October P^{t} through September 30th.

B. Physical Solution.

1. Groundwater Rights. The Parties have Produced Groundwater from the Seaside Basin openly, notoriously, continuously, and without interruption, which Production has been determined to be in excess of the Natural Safe Yield of the Seaside Basin and each of its Subareas for more than five (5) years. Accordingly, Parties have accrued mutual prescriptive rights and/or have preserved their overlying, appropriative, and prescriptive rights against further prescription by self-help. These individual and competitive rights, whether mutually prescriptive, appropriative or overlying rights, can be most efficiently exercised and satisfied by the implementation of this Physical Solution and in the manner expressly set forth herein.

2. Standard Production Allocation. Each Producer is authorized to Produce its Production Allocation within the designated Subarea in each of the first three Water Years. Except for those certain Parties electing to proceed under the Alternative Production Allocation, as set forth in Section III.B.3., each Producer's Production Allocation for the first three Water Years shall be calculated by multiplying its Base Water Right, as set forth in Table 1 below, by that portion of the Operating Yield which is in excess of the sum of the Alternative Production Allocations. The Operating Yield for the Seaside Basin, as a whole, is set at 5,600 acre feet annually (afa). The Operating Yield for the Coastal Subarea is 4,611 afa, with 743 afa committed to Alternative Production Allocations and 3,868 afa committed to Standard Production Allocations. The Operating Yield for the Laguna Seca Subarea is 989 afa, with 644 afa committed to Alternative Production Allocations and 345 afa committed to Standard Production Allocations. The Operating Yield established here will be maintained for three (3) Water Years

from the date Judgment is granted or until a determination is made by the Watermaster, concurred in by this Court, that continued pumping at this established Operating Yield will cause Material Injury to the Seaside Basin or to the Subareas or will cause Material Injury to a Producer due to unreasonable pump lifts. In the event of such Material Injury the Watermaster shall determine the modified Operating Yield in accordance with the Principles and Procedures attached hereto as Exhibit A, and through the application of criteria that it shall develop for this purpose.' Commencing with the fourth Water Year[2], and triennially thereafter the Operating Yield for both Subareas will be decreased by ten percent (10%) until the Operating Yield is the equivalent of the Natural Safe Yield unless:

a. The Watermaster has secured and is adding an equivalent amount of Non-Native water to the Basin on an annual basis; or

b. The Watermaster has secured reclaimed water in an equivalent amount and has contracted with one or more of the Producers to utilize said water in lieu of their Production Allocation, with the Producer agreeing to forego their right to claim a Stored Water Credit for such forbearance; or

a. Any combination of a and b which results in the decrease in Production of Native Water required by this decision; or

b. The Watermaster has determined that Groundwater levels within the Santa Margarita and Paso Robles aquifers are at sufficient levels to ensure a positive offshore gradient to prevent seawater intrusion.

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[1] If the Operating Yield changes, Standard Production Allocations will be calculated by multiplying the portion of the changed Operating Yield committed to Standard Production Allocations by the Standard Producers' Base Water Rights. This calculation will result in a remaining quantity of water already committed to Standard Production Allocations (due to the Base Water Right percentages assigned to Alternative Producers but which are not used to calculate the Standard Production Allocations), which will be further allocated to the Standard Producers in proportion to their Base Water Rights until no quantity remains unallocated.

[2] As ordered by the Court at the January 12, 2007 hearing, the initial potential 10% reduction in Operating Yield will occur, if at all, on January 1, 2009. The 10% reduction would apply to 75% of the Operating Yield, because 25% of the Water Year would have already elapsed. Assuming the current Operating Yield of 5600 acre-feet, the Basin-wide Operating Yield would be reduced to 3,780 acre-feet for the remainder of the Water Year. Subsequent potential Operating Yield reductions would occur on the Water Year schedule set forth in the MMP.

TABLE 1[3]

Standard Production Allocations

Party:	Percentage of Operating Yield Coastal Subarea
California American Water	77.55%
City of Seaside (Municipal)	6.36%
City of Seaside (Golf Courses)	10.47%
City of Sand City	0.17%
Granite Rock Company	0.60%
SNG	2.89%
D.B.O. Development No. 27	1.09%
Calabrese	0.27%
Mission Memorial Park	0.60%

Producer:	Percentage of Operating Yield for Laguna Seca Sec area
California American Water Company	45.13%
Pasadera Country Club	22.65%
Bishop	28.88%
York School	2.89 %
Laguna Seca County Park	0.45%*

* Because the County of Monterey has not joined in the Settlement Agreement and General Mutual Release, its right to Produce water will be governed by the provisions made for those Producers selecting Alternative Production Allocations.

3. Alternative Production Allocation. The following Parties, which all assert overlying Groundwater rights, have chosen to participate in an Alternative Production Allocation: Seaside with regard to the Groundwater that it Produces for irrigation of its golf courses; Sand City, SNG, Calabrese, Mission Memorial, Pasadera, Bishop, York School, and Laguna Seca.

The Alternative Production Allocation provides the aforementioned Parties with a prior and paramount right over those Parties Producing under the Standard Production Allocation to Produce the amount set forth in Table 2 in perpetuity, and said Alternative Production shall not be

[3] Certain Parties including Seaside (Golf Courses), Sand City, SNG, Calabrese, Mission Memorial, Pasadera, Bishop and York School hold an Alternative Production Allocation in the fixed amount shown in Table 2. If any of these Parties subsequently elects to convert to the Standard Production Allocation, then the Base Water Right shown in Table 1 for such converting Party will be used to determine that Party's Standard Production Allocation consistent with the terms provided in Section III.B.3.e.

subject to any reductions under Section III.B.2 or at such times as the Watermaster determines to reduce the Operating Yield in accordance with Section III.L.3.j.ii., subject to the following terms:

a. The Alternative Production Allocation may not be transferred for use on any other property, but shall be limited to use on the respective properties (including subdivisions thereof) identified in Exhibit C;

b. The Party electing the Alternative Production Allocation may not establish Carryover Credits or Storage rights;

c. The Party electing the Alternative Production Allocation is obligated to adopt all reasonably Feasible Water conservation methods, including methods consistent with generally accepted irrigation practices;

d. In the event a Party electing the Alternative Production Allocation is required to utilize reclaimed Water for irrigation purposes, pursuant to the terms of sections 13550 and 13551 of the California Water Code, that Party shall have the first opportunity to obtain and substitute reclaimed Water for its irrigation demands. Should that Party not pursue such substitution with due diligence, any other Party may provide reclaimed Water for the irrigation purpose pursuant to the terms of sections 13550 and 13551 of the California Water Code. Under either circumstance, the Party providing the reclaimed Water for substitution shall obtain a credit to Produce an amount of Groundwater equal to the amount of substituted reclaimed Water in that particular Water Year, provided that such credit shall be reduced proportionately to all reductions in the Operating Yield in accordance with Section III.L.3.j.ii. The Alternative Production Allocation of the Party utilizing the reclaimed Water shall be debited in an amount equal to the reclaimed Water being substituted.

e. In the event that this Court, the Watermaster, or other competent governmental entity requires a reduction in the Extraction of Groundwater from the Seaside Basin or either of its Subareas, then Parties exercising a Standard Production Allocation in the affected subarea shall reduce their Groundwater Extractions *pro rata* to accommodate the required reduction. Only after such Parties exercising a Standard Production Allocation reduce their Extractions to zero, may Parties exercising an Alternative Production Allocation in the affected

subarea be required to reduce their Groundwater Extractions. In such case, those Parties exercising an Alternative Production Allocation shall reduce their pumping in an amount correlative to each other in accordance with the California law pertaining to allocation of rights to Overdrafted Groundwater basins between overlying landowners.

TABLE 2

Alternative Production Allocations

Party:	**Coastal Subarea**
Seaside (Golf Courses)	540 afa
S NG	149 afa
Calabrese	14 afa
Mission Memorial	31 afa
Sand City	9 afa

Producer:	**Alternative Production Allocation**
Pasadera	251 afa
Bishop	320 afa
York School	32 afa
Laguna Seca County Park	41 afa*

* The County of Monterey possesses certain water rights based upon its use of water from the aquifer for maintenance of Laguna Seca Park. Its historic Production of Groundwater has averaged 41 afy. It has not joined in the stipulation of the other Producers, but is entitled to draw up to 41 afy from the Laguna Seca Subarea as if it were a party to the Alternative Production Allocations.

At any time prior to the expiration of the initial three-year operating period of this Decision, as designated in Section III.B.2, any of the aforementioned Parties, except the County of Monterey, may choose to change all or a portion of their Alternative Production Allocation to the Standard Production Allocation method set forth in Section III.B.2 and shall be entitled to all of the privileges associated with said Production Allocation as set forth herein (e.g., transferability, Storage rights, and Carryover rights). A Party choosing to change to the Standard Production Allocation shall do so by filing a declaration with the Court, and serving said declaration on all other parties. Once a Party chooses to change to the Standard Production Allocation method set forth in Section III.B.2, that Party shall not be allowed to thereafter again choose to participate in the Alternative Production Allocation. The Parties under the Standard

Production Allocation shall not be allowed at any time to change from the Standard Production Allocation to the Alternative Production Allocation.

C. Production of Brackish Water. Sand City shall have the right to Produce Brackish Water from the brackish Groundwater aquifer portion of the Coastal Subarea of the Seaside Basin for the purpose of operating its proposed desalinization plant, said Production being limited to the Aromas Sands Formation, so long as such Production does not cause a Material Injury. Upon receiving a complaint supported by evidence from any Party to this Decision that the Production of Brackish Water by Sand City is causing a Material Injury to the Seaside Basin or to the rights of any Party to this Decision as set forth herein, the Watermaster shall hold a noticed hearing. The burden of proof at such hearing shall be on the Party making the complaint to show, based on substantial evidence, that the Production of Brackish Water by Sand City is causing a Material Injury. If the Watermaster determines, based on substantial evidence, that the Production of Brackish Water by Sand City is causing a Material Injury to the Seaside Basin or to the rights of any Party to this Decision as set forth herein, the Watermaster may impose conditions on such Production of Brackish Water that are reasonably necessary to prevent such Material Injury.

D. Injunction of Unauthorized Production. Each Producer is prohibited and enjoined from Producing Groundwater from the Seaside Basin except pursuant to a right authorized by this Decision, including Production Allocation, Carryover, Stored Water Credits, or Over-Production subject to the Replenishment Assessment. Further, all Producers are enjoined from any Over-Production beyond the Operating Yield in any Water Year in which Watermaster has declared that Artificial Replenishment is not available or possible.

E. No Abandonment. It is in the interest of reasonable beneficial use of the Seaside Basin and its Water supply, that no Producer be encouraged to take and use more Water in any Water Year than is actually required, Therefore, failure to Produce all of the Water to which a Producer is entitled hereunder for any amount of time shall, in and of itself, not be deemed to be, or constitute an abandonment of such Producer's Base Water Right or Production Allocation, in whole or in part. The Water unused by any Party (either as Production or Carryover) will

otherwise contribute to the ongoing efficient administration of the Decision and the Physical Solution.

F. Right to Carryover Unused Production Allocation; Carryover Credits. Except for those certain Parties electing to proceed under the Alternative Production Allocation, as set forth in Section III.B.3., for the first three Water Years each Producer who, during a particular Water Year, does not Extract from the Basin a total quantity equal to such Producer's Standard Production Allocation for the particular Water Year may establish Carryover Credits, up to the total amount of that Producer's Storage Allocation; provided, however, in no circumstance may the sum of a Producer's Storage Credits and Carryover Credits exceed that Producer's available Storage Allocation. Use (Extraction) of Carryover Credits shall be governed as otherwise provided in this Decision and the Watermaster Rules and Regulations. In consideration of the Seaside Basin's hydrogeologic characteristics, the Watermaster may discount the quantity of Water that may be Extracted pursuant to a Carryover Credit.

G. Damages and Prohibition on Enjoining Municipal Pumping. The Parties recognize that California American's pumping is for municipal purposes, including drinking Water supplies for most of the Monterey Peninsula, including within all of the Defendant Cities and to all of the Defendant landowners. In this context, if California American's Groundwater pumping causes an "Intrusion" upon a Water User Defendant's Production Allocation, then it shall compensate the Water User Defendant for damages caused by this Intrusion. An "Intrusion" occurs when a Water User Defendant exercising an Alternative Production Allocation is directed by the Watermaster, this Court or any other competent governmental entity to reduce its Groundwater pumping to a level below that Water User Defendant's Alternative Production Allocation, while California American continues pumping Groundwater from the same subarea. This damages provision does not alter the priority of the Alternative Production Allocation over the Standard Production Allocation pursuant to Section III.B.3, and is intended to address potential exigent circumstances that might arise regarding California American's municipal water service.

1. Damages from an Intrusion shall be calculated based upon the losses incurred by the Water User Defendant that are caused by the Intrusion. These losses may include the loss of

crop yield and associated income, measured against the average achieved over the preceding five (5) years from the date of the loss. Where an Intrusion occurs with respect to a Water User Defendant's exercise of an Alternative Production Allocation for golf course irrigation (i.e., an Intrusion to a "Golf Course Water User"), the Intrusion may cause discoloration, thinning and damage to the golf course turf and may require replacement of golf course turf and other golf course landscaping. Such conditions may, in turn, cause the loss of income from reduced golf course facilities usage and loss of good will. It may be difficult to quantify such damages to a sum certain. Accordingly, where a Golf Course Water User demonstrates that an Intrusion caused discoloration, thinning or loss of golf course turf, the following criteria shall be utilized to determine damages for an Intrusion to a Golf Course Water User.

a Lost Income.

i. The Golf Course Water User's "Average Gross Annual Income" shall be determined by summing its gross annual income from each of the five (5) years preceding the year of the Intrusion and dividing that sum by five, except where a Golf Course Water User (Pasadera) has not been in operation for seven (7) years at the time of the Intrusion, the Average Gross Annual Income shall be determined by summing the gross annual income from each of the three years preceding the year of the Intrusion and dividing that sum by three;

ii. The Golf Course Water User's gross annual income during the year of an Intrusion shall be subtracted from its Average Gross Annual Income, with the resulting difference constituting the amount of lost income damages for that year of Intrusion; and

iii. If an Intrusion occurs in two or more years within a five-year period, damages shall be calculated using an Average Gross Annual Income based on the last consecutive five-year period preceding the first year of Intrusion, or if a Golf Course Water User (i.e., Pasadera) has not been in operation for a full seven (7) years at the time of the Intrusion, damages shall be calculated using an Average Gross Annual Income based on the last consecutive three-year period proceeding the first year of Intrusion. Gross Annual Income shall not be calculated based upon a year in which an Intrusion occurred.

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iv. Water User Defendants shall make Feasible efforts to mitigate damages caused by an Intrusion (e.g., including use of evapotranspiration rates to schedule turf grass irrigation).

b. Property Damage/Out-of-Pocket Repair Costs.

i. Actual costs of repairing and/or replacing golf course turf and/or other golf course landscaping and associated labor costs shall be added to the lost income damages calculated as set forth in subparagraph (1), above.

ii. The Golf Course Water User shall make Feasible efforts to mitigate damages by employing the best irrigation practices, including use of evapotranspiration rates to schedule turf grass irrigation.

2. A damages Claim with all substantiating gross annual income data shall be provided to California American within 120 days after December 31 of the year in which the Intrusion occurred. California American shall accept or reject the Claim within 30 days thereafter. If within 35 days after receipt of a Claim, California American fails to notify the claimant of California American's acceptance or rejection of that Claim, such Claim is deemed accepted. If the Claim is affirmatively accepted, payment will be made at the time of Claim acceptance. If the Claim is deemed accepted by California American's failure to timely accept or reject the Claim, payment will be made within 30 days after the date the Claim is deemed accepted. If the Claim is rejected, all or in part, the Water User Defendant may proceed to a hearing before the Court to determine the appropriate damages, considering the above referenced criteria. The hearing shall be by motion with all supporting documentation and contest thereto submitted and supported by declaration.

H. Allowed Storage.

1. Public Resource. Underground Storage within the Seaside Basin is and shall remain a public resource. Subject to this paramount public right, the Parties hereto shall be permitted to utilize available Storage space for bona fide Groundwater Storage projects. This use shall be subject to the supervision of the Watermaster and this Court and shall be governed by the following more specific provisions.

2. In General. Except for those certain Parties electing to proceed under the Alternative Production Allocation as set forth in Section 111.B.3., each Producer is entitled to Store Water in the Basin as provided for in this Decision and Watermaster's Rules and Regulations up to the amount of their Storage Allocation. Each Producer's Allowed Storage Allocation in each Subarea shall be calculated by multiplying its Storage Allocation Percentage by the Total Useable Storage Space, less space reserved by the Watermaster as herein below set forth. The initial Storage Allocation Percentages are equal to the Base Water Rights, Table 1, less Storage reserved for the Watermaster and certain public agencies. Parties with an Alternative Production Allocation are entitled to their Storage Production Allocation when they elect to change to Standard Production Allocation

3. California American Storage Allocation. All Storage Allocation held by California American shall be held in trust by California American: (i) first for the benefit of California American's retail Water service customers within its service territory on the Monterey Peninsula and the County of Monterey and cities within its service territory which it serves; and (ii) then for other purposes as California American deems appropriate. In the event of a reduction in service from the Seaside Basin, California American will allocate service, including that which is associated with its Storage Allocation, in a manner that is consistent with and proportionate to its historic deliveries to all then current customers. Further, to the extent that California American has excess Storage Allocation available after meeting its responsibilities to its retail Water service customers within its service territory on the Monterey Peninsula and the cities which it serves, upon request by the County of Monterey, Monterey, Seaside, Sand City, or Del Rey Oaks, California American shall make available portions of its Storage Allocation within the Coastal Subarea for use by the requesting city in the Coastal Subarea as provided herein. Specifically, the city's request shall be made in writing and generally describe the public purpose and proposed use of the Storage Allocation by the requesting city. California American shall not deny the request unless making the requested portion of the Storage Allocation available to the city would unreasonably interfere with California American's ability to operate its system or to otherwise provide service to its customers. Should California American not be able to accommodate all

requests by all cities without unreasonably interfering with its operations and service responsibilities, first priority to excess Storage Allocation shall be given to each respective city requesting the use of a portion of the Storage Allocation up to an amount equal to the percentage that the total quantity of Water delivered by California American for retail service to the requesting city bears to the total quantity of Water delivered to all cities at the date the Decision is entered. Notwithstanding the paramount rights of each city described in this section, 5 percent of any Storage Allocation held in trust by California American will be reserved for *de minimis* Storage opportunities and made available for the benefit of any requesting city on the basis of first in time, first in right. Additionally, provision of Storage Allocation by California American to a requesting city shall not be construed as a waiver of California American's rights under section 1501 et seq. of the California Public Utilities Code or consent to duplication of its retail Water service. Moreover, California American shall not charge any fee for use of its Storage Allocation by Monterey, Seaside, Sand City, or Del Rey Oaks. However, the capital or other value of California American's Storage Allocation shall belong to California American. Finally, no city may request use of California American's Storage Allocation unless it has first used all of its own. Storage Allocation as provided herein.

4. Determination of Total Useable Storage Space. Watermaster shall determine and declare the Total Useable Storage Space in the Basin, and may annually adjust the Total Useable Storage Space pursuant to Section III.L.3.j.xix of this Decision,. If and when Watermaster adjusts the Total Useable Storage Space in the Basin, each Producer's Storage Allocation shall be adjusted accordingly.

Each Storage Allocation is of the same legal force and effect, and each is without priority with reference to any other Producer's Storage Allocation. Watermaster shall, however, consider each proposal to Store Water independently pursuant to Section III.L.3.j.xx.

5. Carryover. Each Producer operating under the Standard Production Allocation shall have the right to use their respective Storage Allocation to Store any Carryover Water subject to the provisions of this Decision. Unused (not Extracted) Stored Water Credits and Carryover Credits shall be carried over from year to year for the first three Water Years.

Thereafter Carryover Water withdrawal is subject to a percentage decrease consistent with percentage decreases in the Operating Yield, according to the terms of this Decision. Due to the hydrogeologic characteristics of the Seaside Basin, naturally occurring losses of stored Water may require Watermaster to discount the percentage of Stored Water that may be Extracted. Watermaster shall study the efficiencies of Storage in the Seaside Basin and set a uniform percentage for withdrawals of Stored Water.

6. Injection and/or Spreading. Each Producer operating under the Standard Production Allocation, and the Watermaster, and certain public agencies, shall have the right to Store Water by Direct Injection, Spreading, or other artificial means so long as such Storage does not cause Material Injury to any other Party. Except as provided in Section III.H.5., no Producer herein granted a Storage Allocation may Store Water in the Seaside Basin without first executing a Storage and Recovery Agreement with Watermaster, pursuant to Section III.L.3.j.xx. Each Storage and Recovery Agreement shall further define the terms and conditions by which a Producer may exercise its Storage Allocation and associated Stored Water Credits.

I. Injunction Against Unauthorized Storage. Each Producer is enjoined and restrained from Carrying Over or Storing any quantity of Water in the Seaside Basin greater than that Producer's Storage Allocation. Further, each Producer is enjoined from Storing any Water in the Seaside Basin except as provided in Section III.H.5. (establishment of Carryover Credits) or as authorized by a Storage and Recovery Agreement issued by Watermaster pursuant to Section III.L.3.j.xx.

J. Measurement of Extractions and Storage. All Producers shall install, maintain, and use adequate measuring devices on all Groundwater Production facilities as directed by Watermaster and report accurate measurements of all Groundwater Produced from the Seaside Basin in the manner required by Watermaster's Rules and Regulations. Such measuring devices shall not conflict with any monitoring devices required by MPWMD. All Producers shall comply with the provisions for measurement of any Storage of Water in the Seaside Basin, as provided in Watermaster's Rules and Regulations, and as may be further provided for in a Storage and Recovery Agreement issued by Watermaster for such Storage.

K. Order of Accounting for the Production of Groundwater. Unless otherwise requested by a Producer in writing to Watermaster, Watermaster shall account for all Production of Water form the Seaside Basin by a Producer in any Water Year as follows: Production shall first be deemed Production of that Producer's Production Allocation up to that Producer's total Production Allocation, and thereafter shall be deemed Production of that Producer's Carryover Credits, if any, and thereafter shall be deemed Production of that Producer's Stored Water Credits, if any. So long as consistent with this section, Watermaster may prescribe administrative rules within its Rules and Regulations concerning the method and manner of accounting for the Production of Groundwater.

L. Appointment of Watermaster; Watermaster Administrative Provisions.

1. Establishment of Watermaster. A Watermaster shall be established for the purposes of administering and enforcing the provisions of this Decision and any subsequent instructions or orders of the Court. The Watermaster shall consist of thirteen (13) voting positions held among nine (9) representatives. California American, Seaside, Sand City, Monterey, and Del Rey Oaks shall each appoint one (1) representative to Watermaster for each two-year term of Watermaster. The Landowner Group shall appoint two (2) representatives to Watermaster for each two-year term of Watermaster. The MPWMD shall have one (1) representative and the MCWRA shall have one (1) representative. The representatives elected to represent the Landowner Group shall include one (1) representative from the Coastal Subarea and one (1) representative from the Laguna Seca Subarea. The California American representative shall possess three (3) voting positions; the. Seaside, MPWMD, and MCWRA representatives shall each possess two (2) voting positions; and every other representatives shall posses one (1) voting position. Each representative from the Landowner Group shall carry one-half of the Landowner Representative vote. Each representative under the Landowner Group may also act as an alternate for the other.

The right to assign a representative to Watermaster and the representative's respective voting power shall only transfer upon permanent sale of 51 percent or more of the Party's Base Water Right, but not upon the lease of any portion of the member's Base Water Right.

2. Quorum and Agency Action. A minimum of six (6) representatives shall be required to constitute a quorum for the transaction of Watermaster affairs. Unless otherwise provided herein, the affirmative vote of seven (7) voting positions shall be required to constitute action by Watermaster.

3. Qualification, Nomination, Election, and Administrative Procedures.

a. Qualification. Any duly authorized agent of the entities or groups provided for in Section III.L.1. is qualified to serve as a representative on the Watermaster board.

b. Term of Office. Each new Watermaster board shall assume office at the first regular meeting in January of every second year. Each Watermaster board member shall serve for a two-year term, subject to the retained jurisdiction of the Court. Should a vacancy arise on the Watermaster board for any reason, the respective entity or group from which that vacancy arises shall appoint a replacement representative in the manner prescribed by Watermaster Rules and Regulations. Such replacement shall complete the remainder of the term of the vacated office. Within 30 days of the appointment of any new Watermaster board member, any Party may file a motion with the Court challenging the appointment. The Court, acting *sua sponte*, may reject any Watermaster board appointment within the 30-day period. Challenges shall be based on allegations that the appointed board member does not possess the requisite skills necessary to effectively serve as a member of the Watermaster board.

c. Nomination and Election of Landowner Representative. The nomination and election of the Landowner Group representatives shall occur in November of every second year in the manner designated by Watermaster Rules and Regulations. The nomination and election of the Landowner Group representatives shall be by cumulative voting with each member of the Landowner Group entitled to one (1) vote for each acre-foot of annual entitlement under the member's Alternative Production Allocation. Voting rights may only be transferred upon permanent sale of 51 percent or more of the Landowner Party's Base Water Right.

d. Organization. At he first meeting of each newly comprised Watermaster board, the Watermaster shall elect a chairman and a vice-chairman from its membership. It shall

also select a secretary, a treasurer and such assistant secretaries and assistant treasurers as may be appropriate, any of whom may, but need not, be representatives appointed to Watermaster.

e. Minutes. Minutes of all Watermaster meetings shall be kept and shall reflect a summary of all actions taken by the Watermaster. Copies thereof shall be furnished to all Parties and interested Persons as provided for inn Section III.P.2. Copies of minutes shall constitute notice of any Watermaster action therein reported.

f. Regular Meetings. The Watermaster shall hold regular meetings at places and times to be specified in the Watermaster Rules and Regulations. Its first meeting must be held within 15 days from the date Judgment is granted in this case. Notice of the scheduled or regular meetings of the Watermaster and of any changes in the time or place thereof shall be mailed to all Parties and interested Persons as provided for in Section III.P.2.

g. Special Meetings. Special meetings of the Watermaster may be called at any time by the chairman or vice chairman or by any three (3) representatives appointed to Watermaster by written notice delivered personally or mailed to all Parties and interested Persons as provided for in Section III.P.2., at least twenty-four (24) hours on a business day before the time of each such meeting in the case of personal delivery, and five (5) days' notice prior to such meeting in the case of mail if the special meeting is being called under urgent circumstances. If a special meeting is called and no urgent circumstance exists, then at least ten (10) days' notice must be provided to all Parties. The notice shall specify the time and place of the special meeting and the business to be transacted at such meeting. No other business shall be considered at such meeting.

h. Meeting Procedures. Watermaster shall designate the procedure for conducting meetings within its Rules and Regulations. Rules and regulations for conducting meetings shall conform to the procedures established for meetings of public agencies pursuant to the California Open Meetings Law ("Brown Act"), California Government Code section 54950 et seq., as it may be amended from time to time.

i. Appointment of the Initial Watermaster Board. The initial Watermaster board, which shall take office immediately from the date Judgment is granted, shall be composed

of the duly authorized representatives of California American, Seaside, Sand City, Del Rey Oaks, Monterey, MCWRA, MPWMD, and two individuals to be designated by the landowners as the initial representatives of the Landowner Group for the Coastal and Laguna Seca Subareas, respectively.

j. Duties, Powers and Responsibilities of the Watermaster. To assist the Court in the administration and enforcement of the provisions of this Decision, the Watermaster shall have and is limited to the following duties, powers, and responsibilities:

i. Preparation of Monitoring and Management Plan. Within sixty (60) days from the date Judgment is granted, Watermaster will prepare a comprehensive monitoring and management plan for the Seaside Basin ("Monitoring and Management Plan"). The Monitoring and Management Plan must be consistent with the criteria set forth in Exhibit A.

ii. Declaration of Operating Yield. Based upon the evidence at trial concerning historic Production in the Basin, the Court sets the Operating Yield for the Seaside Basin, as a whole, as 5,600 acre feet. The Operating Yield for the Coastal Subarea is 4,611 acre feet and 9889 acre feet for the Laguna Seca Subarea. The Operating Yield established here will be maintained for three (3) years from the date Judgment is granted, or until a determination is made by the Watermaster, concurred in by this Court, that continued pumping at this established Operating Yield will cause Material Injury to the Seaside Basin or to the Subareas or will cause Material Injury to a Producer due to unreasonable pump lifts. In that event, the Watermaster shall determine the modified Operating Yield in accordance with the Principles and Procedures attached hereto as Exhibit A, and through the application of criteria that it shall develop for this purpose.

iii. Artificial Replenishment and Replenishment Assessments. Each Water Year, the Watermaster will determine a Replenishment Assessment for Artificial Replenishment of the Seaside Basin necessary to offset the cumulative Basin Over-Production (as defined in Section III.A.21.), and levy a Replenishment Assessment. Said Replenishment Assessment does not apply to Production under an Alternative Production Allocation so long as such Production is within the fixed amount established for that Producer in Table 2 of

Section III.B.3. Funds so generated may be accumulated for multiple Water Years, if necessary, and shall be utilized solely for replenishment of the Basin Groundwater supply with Non-Native water.

An additional Watermaster Replenishment Assessment shall be levied after the close of each Water Year against all Producers that incurred Operating Yield Over-Production during the Water Year. Said assessment shall be in addition to the Replenishment Assessment addressed in Section III.A.21. The Replenishment Assessment based upon Operating Yield Over-Production shall be levied against the Parties participating in the Alternative Production Allocation for only such Production that exceeds the Parties' respective fixed Alternative Production Allocation identified on Table 2. In the event Watermaster cannot procure Artificial Replenishment Water to offset Operating Yield Over-Production during the ensuing Water Year, the Watermaster shall so declare in December and no Operating Yield Over-Production then in effect may occur during the ensuing Water Year. Funds generated by the Operating Yield Over-Production Assessment shall be utilized by the Watermaster to engage in or contract for Replenishment of the Operating Yield Over-Production occurring in the Preceding Water Year as expeditiously as possible.

Replenishment Assessments based on Over-Production and on Operating Yield Over-Production shall be assessed within 60 days of the end of each Water Year on a per acre-foot basis on each acre-foot, or portion of an acre-foot, of Over-Production, and payment shall be due no later than January 15th of the following year. The per acre-foot amount of the Replenishment Assessments shall be determined and declared by Watermaster in October of each Water Year in order to provide Parties with advance knowledge of the cost of Over-Production in that Water Year.

Payment of the Replenishment Assessment shall be made by each Producer incurring a Replenishment Assessment within 40 days after the mailing of a statement for the Replenishment Assessment by Watermaster. If payment by any Producer is not made on or before said date, the Watermaster shall add a penalty of 5 percent thereof to such Producer's statement. Payment required of any Producer hereunder may be enforced by execution issued outside of this Court, by order of this Court, or by other proceedings by the Watermaster or by any Producer on the

Watermaster's behalf. All proceeds of Replenishment Assessments shall be used to procure Non-Native water, including, if appropriate, substitute reclaimed water.

iv. Budget Assessments. The Watermaster budget for each Fiscal Year, and for the initial funding of the Monitoring and Management Plan, shall be funded by Budget Assessments. The Watermaster budget will be composed of three separate budgets. The first budget is solely for the funding of the Monitoring and Management Plan. The initial, onetime funding for the Monitoring and Management Plan shall not be in excess of $1,000,000. The annual budget for the Monitoring and Management Plan shall not be in excess of $200,000 for the first Fiscal Year, and thereafter as determined by the Watermaster. The Budget Assessment for the Monitoring and Management budget shall be assessed against each Producer (except *those in the Landowner Group) by multiplying the amount of the Monitoring and Management Plan budget for the ensuing Fiscal Year by the following percentages:

(1)	California American	91%
(2)	City of Seaside	7%
(3)	Granite Rock Company	1%
(4)	D.B.O. Development No. 27	1%

At such times as a Party within the Coastal Subarea chooses to change its Alternative Production to a Standard Production Allocation that Party will be assessed a proportionate share of the Budget Assessment for the Monitoring and Management Plan Budget based upon a modification of the percentages to include any new Standard Production.

The administrative budget shall be fixed at $100,000 annually for the first Fiscal Year, and thereafter as determined by the Watermaster. The Budget Assessment for the administrative budget shall be assessed against each Producer (except those inn the Landowner Group) by multiplying the amount of the budget for the ensuing Fiscal Year by the following percentages:

(1)	California American	83%
(2)	City of Seaside	14.4%
(3)	City of Sand City	2.6%

The Replenishment Budget shall be calculated based upon the anticipated cost of obtaining replenishment water, and shall be assessed as set forth in Section III.A.21, and in Section III.L.3.j.iii.

Except for the initial Budget Assessment which shall be due 30 days from the date Judgment is granted, payment of the Administrative Assessment and the Monitoring and Management Assessment, subject to any adjustment by the Court as provided in Section III.N., shall be made on or before January 15t^{h} of the Fiscal Year for which the assessments have been levied. If such payment by any Producer is not made on or before said date, the Watermaster shall add a penalty of 5 percent thereof to such Producer's statement. Payment required of any Producer hereunder may be enforced by execution issued outside of this Court, by order of this Court, or by other proceedings by the Watermaster or by any Producer on the Watermaster's behalf.

v. Reports, Information, and Records. The Watermaster will require Parties to furnish such reports, information, and records as may be reasonably necessary to determine compliance or lack of compliance by any Party with the provisions of this Decision.

vi. Requirement of Measuring Devices. The Watermaster will require all Parties owning or operating any Groundwater Extraction and/or Storage facilities to install appropriate Water measuring devices, and to maintain said Water measuring devices at all times in good working order at such Party's own expense. Such devices shall not interfere with any measuring gauges required by MPWMD.

vii. Inspections by the Watermaster. The Watermaster will make inspections of Water Production facilities and measuring devices at such times and as often as may be reasonable under the circumstances, and to calibrate or test such devices.

viii. Collection of Arrears. The Watermaster will undertake any and all actions necessary to collect the arrears of any Party with regard to any and all components of the Budget Assessment and/or the Replenishment Assessment.

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ix. Hearing Objections; Review and Approvals. The Watermaster will hear all objections and/or review and determine approval or denial of the action(s) of any Party as provided for by any other provision of this Decision.

x. Annual Report. The Watermaster will prepare, file with the Court and mail to each of the Parties on or before the 15th day of November, an annual report for the preceding Water Year, the scope of which shall include but not be limited to the following:

- Groundwater Extractions;
- Groundwater Storage;
- Amount of Artificial Replenishment, if any, performed by Watermaster;
- Leases or sales of Production Allocation;
- Use of imported, reclaimed, or desalinated Water as a source of Water for Storage or as a Water supply for lands overlying the Seaside Basin;
- Violations of the Decision and any corrective actions taken;
- Watermaster administration costs;
- Replenishment Assessments;
- All components of the Watermaster budget; and
- Recommendations.

xi. Annual Budget and Appeal Procedure in Relation Thereto. The Watermaster will annually adopt a tentative budget for each Fiscal Year stating the anticipated expense for administering the provisions of this Decision, including reasonable reserve funds. The adoption of each Fiscal Year's tentative budget shall require the affirmative vote of seven (7) voting positions. The Watermaster shall mail a copy of said tentative budget to each of the Producers hereto at least 60 days before the beginning of each Fiscal Year. The Landowner Group representative shall not participate in any vote concerning the approval of the Watermaster budget.(f If any Producer hereto has any objection to said tentative budget, it shall present the same in writing to the Watermaster within 15 days after the date of mailing of said tentative budget by the Watermaster. If no objections are received within said period, the tentative budget shall become the Final budget. If objections are received, the Watermaster shall, within 10 days

thereafter, consider such objections, prepare a Final budget, and mail a copy thereof to each Producer, together with a statement of the amount assessed to each Producer (Administrative Assessment). Any Producer may apply to the Court within 15 days after the mailing of such Final budget for a revision thereof based on specific objections thereto in the manner provided in Section III.N. The Producer challenging the budget shall make the payments otherwise required of them to the Watermaster, despite the filing of the request for revision with the Court. Upon any revision by the Court, the Watermaster shall either remit to the Producers their pro rata portions of any reduction in the budget, or credit their accounts with respect to their Administrative Assessment for the next ensuing Fiscal Year, as the Court shall direct. The amount of each Producer's Budget Assessment shall be determined as provided in Section III.L.3.j.iv.

Any money in Watermaster's budget not expended at the end of any Fiscal Year shall be applied to the budget of the succeeding Fiscal Year.

xii. Rules and Regulations. The Watermaster will adopt and amend from time to time such Rules and Regulations as may be reasonably necessary to carry out its duties, powers and responsibilities under the provisions of this Decision. The Rules and Regulations and any amendments thereto, shall be effective on such date after the mailing thereof to the Parties as is specified by the Watermaster, but not sooner than thirty (30) days after such mailing. The Watermaster shall adopt initial Watermaster Rules and Regulations within ninety (90) days from the date Judgment is granted.

xiii. Acquisition of Facilities. The Watermaster may purchase, lease, acquire and hold all necessary property and equipment as necessary to perform the duties, powers, and responsibilities provided to Watermaster by this Decision; provided, however, that Watermaster shall not acquire any interest in real property in excess of year-to-year tenancy for necessary quarters and facilities.

xiv. Employment of Staff and Consultants. The Watermaster may employ such administrative, engineering, geologic, accounting, legal, or other specialized personnel or consultants as may be deemed appropriate to the carrying out of its duties, powers,

and responsibilities and to require appropriate bonds from all officers and employees handling the Watermaster funds.

xv. Investment of Funds. The Watermaster may hold and invest any and all funds that the Watermaster may possess in investments authorized from time to time for public agencies in the State of California.

xvi. Borrowing. The Watermaster may borrow in anticipation of receipt of assessment proceeds an amount not to exceed the annual amount of assessments levied but uncollected.

xvii. Contracts. The Watermaster may enter into contracts for the performance of any administrative power herein granted.

xviii. Cooperation with Public and Private Entities. The Watermaster may act jointly or cooperate with any public or private entity to the end that the purposes of the Physical Solution may be fully and economically carried out. Where it is more economical to do so, Watermaster is directed to use such facilities of a public or private entity as are available to it to execute the duties, powers, and responsibilities provided to Watermaster under this Decision.

xix. Declaration of Total Usable Storage Space. The Watermaster will declare the Total Useable Storage Space and periodically issue adjustments to the same.

xx. Review of Storage Applications; Regulation of Storage; Issuance of Storage and Recovery Agreements. The Watermaster will review applications for Storage in the Seaside Basin, regulate the Storage of Non-Native Water in the Seaside Basin, and issue Storage and Recovery Agreements, all as provided below. All applications for Storage in the Seaside Basin shall be considered and voted on before a noticed meeting of the Watermaster. However, all such applications shall be approved absent the issuance of findings that a Material Injury to the Seaside Basin or Producers will or is likely to occur as a result of the proposed Storage program and no reasonable conditions could be imposed to eliminate such risk. If a Storage application is approved, the Watermaster shall issue a Storage and Recovery Agreement. The Storage and Recovery Agreement may include, among other possible elements and/or provisions, the following conditions to avoid Material Injury: (1) the quantity of Water authorized

to be Spread or Directly Injected into the Seaside Basin, (2) the location of the authorized Spreading or Direct Injection, (3) the location(s) where the Water may be recaptured, (4) the particular Water quality characteristics that are required pursuant to the Storage and Recovery Agreement, (5) the amount of Water that may be recaptured pursuant to the Stored Water Credits calculated by Watermaster, (6) any other terms and conditions deemed necessary to protect the Seaside Basin and those areas affected by the Seaside Basin. Such Storage and Recovery Agreements may provide for different locations for introduction and Extraction of Stored Water if deemed appropriate by the Watermaster.

xxi. Monitoring and Study of the Seaside Basin and All Seaside Basin Activities. The Watermaster will monitor and perform or obtain engineering, hydrogeologic, and scientific studies concerning all characteristics and workings of the Seaside Basin, and all natural and human-induced influences on the Seaside Basin, as they may affect the quantity and quality of Water available for Extraction, that are reasonably required for the purposes of achieving prudent management of the Seaside Basin in accord with the provisions of this Decision.

xxii. Relocation of Authorized Production Locations. The Watermaster will order relocation of the authorized quantity of Production pursuant to any Producer's Production Allocation from a specific location or from a specific aquifer within the same Subarea of the Seaside Basin, provided that it allows equivalent Production from any other location/aquifer in the Seaside Basin within the same Subarea that would not also create a reasonable potential for Material Injury. Watermaster may only order relocation of Production after issuing findings that a Material Injury has occurred or is likely to occur as a result of the then-authorized quantity and geographic distribution of Production. Watermaster may not order the relocation of Production by any Producer that is a member of the Landowner Group.

xxiii. Water Quality. The Watermaster will take any action within the Seaside Basin, including, but not limited to, capital expenditures and legal actions, which in the discretion of Watermaster is necessary or desirable to accomplish any of the following:

· Prevent contaminants from entering the Groundwater supplies of the Seaside Basin, which present a significant threat to the Groundwater quality of the Seaside Basin, whether or not the threat is immediate;

· Remove contaminants from the Groundwater supplies of the Seaside Basin presenting a significant threat to the Groundwater quality of the Seaside Basin;

· Determine the existence, extend, and location of contaminants in, or which may enter, the Groundwater supplies of the Seaside Basin;

· Determine Persons responsible for those contaminants; and

· Perform or obtain engineering, hydrologic, and scientific studies as may be reasonably required for any of the foregoing purposes.

xxiv. Other Specified Powers Pursuant to Decision Terms. The Watermaster will undertake any other powers, duties, or responsibilities provided through any other provision of this Decision.

xxv. No Power to Alter Allocation or Rights. Watermaster has no power to adjust any Producer's Base Water Right or the formula for determining Production Allocation, except to accommodate the intervention of a new Party pursuant to Section 1110.1.b. However, should an adjustment of Base Water Right and/or Production Allocation within a Subarea be required to accommodate the intervention of a new Party, no adjustment shall be made to the Base Water Right or Production Allocations possessed by any Party operating under the Alternative Production Allocation within the Landowner Group until the Production Allocations for that Subarea possessed by Parties operating underthe Standard Production Allocation have been reduced to zero.

xxvi. Effect of Non-Compliance by Watermaster With Time Provisions. Failure of the Watermaster to perform any duty, power or responsibility set forth in this Decision within the time limitation herein set forth shall not deprive the Watermaster of authority to subsequently discharge such duty, power, or responsibility, except to the extent that any such failure by the Watermaster may have rendered some otherwise required act by a Party impossible.

xxvii. Public Records. Watermaster shall conform to the procedures established under the California Public Records Act, California Government Code section 54950 et seq., as it may be amended from time to time.

M. Additional Provisions of Physical Solution.

In order to provide flexibility to the injunctive provisions set forth in Section III.D of this Decision, and to assist in a Physical Solution to meet Water requirements in the Basin, the determination of rights and responsibilities, and the injunctive provisions so set forth are subject to the following provisions:

1. California American Obligation to Augment Water Supply

a. Long-Term Supplemental Water Supplies. California American shall undertake all reasonable best efforts to promptly and diligently pursue, and if necessary collaborate with other entities, to obtain and develop sufficient long-term supplemental Water supplies to augment the Water supply available for its service territory within Monterey County.

b. Interim Supplemental Water Supplies. During the interim period, until long-term supplemental Water supplies are available, California American shall undertake all reasonable best efforts to ensure that it has sufficient Water supplies to meet all present Water supply needs, including the Water credits allocated to the various political subdivisions pursuant to the MPWMD's Water Allocation Program, in such quantities as set forth in Exhibit D, and the Water credits issued to various properties pursuant to the MPWMD's Water Allocation Program.

c. Regulatory Authorization. California American's duties under Sections III.M.1.a and III.M.1.b above will be measured and construed in the context that there are various regulatory approvals that must be obtained for California American to successfully implement the measures reasonably contemplated to secure supplemental Water. For example, it is acknowledged and understood that California American's ability to complete a supplemental Water supply project will require approvals and authorizations from the State Water Resources Control Board ("SWRCB") and the California Public Utilities

Commission ("CPUC"). Accordingly, California American will not be considered in default under this Section III.M.1 if it uses reasonable best efforts to obtain the required approvals and authorizations.

d. Credit Toward Replenishment Assessment. California American's expenditures for water supply augmentation may also provide replenishment water for the Basin. Accordingly, on an annual basis, California American will provide the Watermaster with an accounting of all expenditures it has made for water supply augmentation that it contends has or will result in replenishment of the Basin. The Watermaster shall review these expenditures and if it concurs reduce California American's Replenishment Assessment obligation, for that year, by an amount equal to the amount claimed by California American. To the extent that the Watermaster rejects any of the claimed amounts, it shall provide California American with an explanation for the rejection and allow California American an opportunity to meet and confer on the disputed amount. In the event that the Watermaster and California American cannot agree, the matter may be referred to the Court through a request filed by California American.

2. Assignment and Transfer of Production Allocation. Subject to other provisions of this Decision, and any applicable Watermaster Rules and Regulations, the Parties may assign and transfer any portion of their respective Production Allocation either on an annual Water Year basis or in perpetuity to any Person for use within the Basin.

The Parties may also assign and transfer the right to Extract any quantity of Water associated with an existing Stored Water Credit or Carryover Credit, subject to other provisions of this Decision, and any applicable Watermaster Rules and Regulations.

3. Export of Groundwater Outside of Subarea or Seaside Basin.

a. Exports Authorized from the Coastal Subarea. Producers may export Water Produced from the Coastal Subarea for reasonable and beneficial uses within another Subarea of the Seaside Basin. Only California American may export water outside the Basin, and then only to provide water to its current customers. This means that, in any Water Year, any Producer may export from the Coastal Subarea up to, but not in excess of, a quantity

equal to the sum of that Producer's Production Allocation, plus Stored Water Credits, plus Carryover Credits. Export of Groundwater in excess of a Producer's total rights (Production Allocation, plus Stored Water Credits, plus Carryover Credits), however, is prohibited.

b. Exports of Natural Replenishment Water Prohibited from the Laguna Seca Subarea. Exports from the Laguna Seca Subarea of Natural Replenishment Water and Carryover Credits not caused by Artificial Replenishment are prohibited.

c. Portability Authorized Within Subareas; Portability Prohibited Between Subareas. Any Producer may change the location of its Production facilities within its respective Subarea or join other Production facilities within its Subarea, so long as such relocation does not cause a Material Injury or threat of Material Injury to the Basin or interfere with the Production by any pre-existing Production facilities operated by another Producer(s). No Party may Produce Groundwater from the Coastal Subareas pursuant to any right recognized by this Decision in the Laguna Seca Subarea, and vice versa.

N. Watermaster Decision Review Procedures. Any action, decision, rule or procedure of the Watermaster pursuant to this Decision shall be subject to review by the Court on its own motion or on timely motion by any Party, as follows:

1. Effective Date of the Watermaster Action. Any order, decision or action of the Watermaster pursuant to this Decision on noticed specific agenda items shall be deemed to have occurred on the date of the order, decision or action.

2. Notice of Motion. Any Party may, by a regularly noticed motion, petition the Court for review of the Watermaster's action or decision pursuant to this Decision. The motion shall be deemed to be filed when a copy, conformed as filed with the Court, has been delivered to the Watermaster together with the service fee established by the Watermaster sufficient to cover the cost to photocopy and mail the motion to each Party. The Watermaster shall prepare copies and mail a copy of the motion to each Party or its designee according to the official service list which shall be maintained by the Watermaster according to Section III.P.2. A Party's obligation to serve notice of a motion upon the Parties is deemed to be satisfied by filing the motion as provided herein. Unless ordered by the Court, any such

petition shall not operate to stay the effect of any Watermaster action or decision that is challenged.

3. Time for Motion. A motion to review any Watermaster action or decision will be filed within thirty (30) days after such Watermaster action or decision, except that motions to review Budget Assessments and Replenishment Assessments hereunder shall be filed within fifteen (15) days of mailing of notice of the Assessment.

4. De Novo Nature of Proceedings. Upon filing of a petition to review a Watermaster action, the Watermaster shall notify the Parties of a date when the Court will take evidence and hear argument. The Court's review shall be de novo and the Watermaster decision or action shall have no evidentiary weight in such proceeding.

0. Reserved Jurisdiction and Other Remedies.

1. Continuing Jurisdiction.

a. Jurisdiction Reserved. Full jurisdiction, power and authority are retained by and reserved by the Court upon the application of any Party or by the Watermaster, by a noticed motion to all Parties, to make such further or supplemental orders or directions as may be necessary or appropriate for interpretation, enforcement, or implementation of this Decision. The Court may also modify, amend or amplify any of the provisions of this Decision upon noticed motion to all the Parties. The Court, through its reserved and retained jurisdiction, however, shall not have the authority to adjust any Producer's Base Water Right or Production Allocation, except to accommodate the intervention of a new Party pursuant to Section 111.0.1.b. However, should an adjustment of Base Water Right and/or Production Allocation within a Subarea be required to accommodate the intervention of a new Party, no adjustment shall be made to the Base Water Right or Production Allocations possessed by any Party operating under the Alternative Production Allocation within the Landowner Group until the Production Allocations within that Subarea possessed by Parties operating under the Standard Production Allocation have been reduced to zero.

//

b. Intervention After Decision. Any non-party who is Producing or proposes to Produce Groundwater from the Seaside Basin in an amount equal to or greater than five (5) acre feet per year, may seek to become a Party to this Decision through (1) a stipulation for intervention entered into with the Watermaster or (2) any Party or the Watermaster filing a complaint against the non-party requesting that the non-party be joined in and bound by this Decision. The Watermaster may execute said stipulation on behalf of the other Parties herein, but such stipulation shall not preclude a Party from opposing such intervention at the time of the Court hearing thereon. A stipulation for intervention must be filed with the Court, and the Court will then consider an order confirming said intervention following thirty (30) days' notice to the Parties. Thereafter, if approved by the Court, such intervenor shall be a Party bound by this Decision and entitled to the rights and privileges accorded under the Physical Solution herein.

2. Reservation of Other Remedies.

a. Claims By and Against Non-Parties. Nothing in this Decision shall expand or restrict the rights, remedies or defenses available to any Party in raising or defending against claims made by any non-party. Any Party shall have the right to initiate an action against any non-party to enforce or compel compliance with the provisions of this Decision.

b. Claims Between Parties on Matters Unrelated to the Decision. Nothing in this Decision shall either expand or restrict the rights or remedies of the Parties concerning any subject matter that is unrelated to the use of the Seaside Basin for Extraction and/or Storage of Water as allocated and equitably managed pursuant to this Decision.

P. General Provisions.

1. Decision Constitutes Inter Se Adjudication. This Decision constitutes an inter se adjudication of the respective rights of all Parties.

2. Service Upon and Delivery to Parties and Interested Persons of Various Papers. This Decision and all future notices, determinations, requests, demands, objections, reports and other papers and processes Produced from this Court shall be served on all

Parties by first class mail, postage prepaid, addressed to the designee and at the address designated for that purpose in the list attached as Exhibit E to this Decision, or in any substitute designation filed with the Court.

Each Party who has not heretofore made such a designation, within thirty (30) days from the date Judgment is granted, shall file with the Court, with proof of service of a copy upon the Watermaster, a written designation of the Person to whom, and the address at which, all future notices, determinations, requests, demands, objections, reports and other papers and processes to be served upon that Party or delivered to that Party are to be so served or delivered.

A later substitute designation filed and served in the same manner by any Party shall be effective from the date of the filing as to the then future notices, determinations, requests, demands, objections, reports and other papers and processes to be served upon or delivered to that Party.

Watermaster shall maintain at all times a current list of Parties to whom notices are to be sent and their address for purposes of service. Copies of such lists shall be available to any Person. If no designation is made, a Party's designee shall be deemed to be, in order of priority: (a) the Party's attorney of record; (b) if the Party does not have an attorney of record, the Party itself at the address on the Watermaster list.

Watermaster shall also maintain a list of interested Persons that shall include all Persons whom, by written request to Watermaster, request to be added to Watermaster's list of interested Persons. All notices, determinations, requests, demands, objections, reports and other papers and processes required to be delivered to interested Persons shall be delivered to all Parties and all Persons on Watermaster's list of interested Persons.

Delivery to or service upon any Party or interested Person by Watermaster, by any other Party, or by the Court, of any document required to be served upon or delivered to a Party under or pursuant to this Decision shall be deemed made if made by deposit thereof (or by copy thereof) in the mail, first class postage prepaid, addressed to the designee of the Party and at the address shown in the latest designation filed by that Party.

Any Party desiring to be relieved of receiving deliveries from Watermaster may file a waiver of notice on a form to be provided by Watermaster.

3. Decision Binding on Successors. All provisions contained in this Decision are applicable to and binding upon and inure to the benefit of not only the Parties to this action, but also to their respective heirs, executors, administrators, successors, assigns, lessees, licensees and to the agents, employees and attorneys in fact of any such Persons.

Q. The Complaints in Intervention

The Complaint in Intervention of MPWMD seeks declaratory relief regarding its statutory right to manage and control pumping in the Basin, to store water in and Extract water from the Basin, to store and use reclaimed water, to manage all water distribution facilities within the Basin, and "the quantification and prioritization of its water and storage rights". It also sought a Physical Solution for the management of the Basin's water resources, with MPWMD being appointed as Watermaster to administer the Court's judgment. It also sought parallel injunctive relief against the parties to the lawsuit.

The Complaint in Intervention of MCWRA sought declaratory and injunctive relief regarding its right to manage and control water resources including, inter alia, those within the boundaries of the Seaside Basin, and a permanent injunction prohibiting any party to the lawsuit from exercising control "in any fashion" of the Basin in contravention of its water management authority.

On December 12, 2005, the Court asked the parties to brief the issue of whether MPWMD should be designated as Watermaster. Briefs were submitted by MPWMD, Plaintiff, Cal Am, and the City of Seaside. The court had previously received an Amicus brief from the Sierra Club which dealt with the issue of the powers of MPWMD land the effect on those powers if the court were to appoint a Watermaster other than MPWMD. The Court has read and considered each submitted brief. It has also read the Act which created MPWMD (Water Code Appendix, Chapter 118), and has had the benefit of the arguments of the parties concerning the subject. Being so informed it has concluded that the appointment of a collaborative Watermaster does not interfere with the powers of the District.

The District has argued that appointment of a Watermaster other than itself would violate the Separation of Powers doctrine. It urges that the legislature has vested it with the power to regulate pumping, and therefore only it is qualified to serve as Watermaster. On the other hand, the District has asked the Court to adopt a Physical Solution for the Basin. In so arguing, it necessarily concedes that this Court possesses power to regulate use of the Basin beyond any power the District currently possesses. Furthermore, the undisputed evidence in this case has shown that, although the District is empowered to adopt a Groundwater management plan it has never done so. The language of Water Code Section 10753 is instructive regarding the issue of the Separation of Powers:

> "(a) Any local agency, whose service area includes a groundwater basin... that is not subject to groundwater management pursuant to... a court order, judgment, or decree, may... adopt and implement a groundwater management plan."
>
> (Emphasis added.)

Pursuant to the quoted provisions of the foregoing section, the District will not be able in the future to adopt a Groundwater management plan for the Seaside Basin. Clearly the legislature contemplated that courts had the power to develop management plans for aquifer management even if a water management district already existed in a geographical area.

The District further argues that if the Court appoints a Watermaster other than itself, the authority of the Watermaster must not conflict with the MPWMD's authority. It is certainly true that the District possesses certain authority, which it is free to exercise according to the legislative mandate which created it. However, it is apparent the legislature did not intend that all of the powers it granted to the District be held exclusively by the District, else it would not at a later time have created the Monterey County Water Resources Agency and endowed it with many of the powers granted to the MPWMD. Rather, in creating the MCWRA, the legislature mandated that the two agencies cooperate with one another (Water Code Appendix Section 52-85). Similarly, the judgment contemplated in this Decision requires the Watermaster to "... act jointly or cooperate with any public...entity to the end that the purposes of the Physical Solution may be fully... carried out." (Section III.L.3.j.xviii)

On pages 15-16 of its brief, the District lists 9 powers and asserts those powers would "encompass the duties of any appointed watermaster." The Court has compared those 9 asserted powers and has concluded that those powers, to the extent that they exist or are currently being utilized by the District, do not encompass all the duties of a Watermaster appointed by the judgment. Furthermore, to the extent the Watermaster may be given powers akin to those of the District, this Court retains jurisdiction to determine any conflict which may arise in the future. For example, the Decision directs that any metering of Production wells by the Watermaster shall be done in a way which does not conflict with the MPWMD gauging already in place on all producing wells. The MPWMD is still able to develop water resources within its boundaries and can store water for the benefit of the District in the Basin, although it has not to date done either of those things with regard to the Seaside Basin.

One asserted power deserves more precise attention: the asserted "...power and duty to manage and regulate the transferability of the water among users- (Water Code Appendix) Section 328(g)." The plain reading of the referenced section does not encompass the right asserted. Furthermore, to the extent those that section purports to grant the District the power to "...declare rights in the natural flow of any subterranean supply of water..." it is apparent that the legislature did not intent to interfere with the ultimate right of the courts to determine the water rights of parties claiming such rights. To read the section otherwise would be to create a true Separation of Powers issue.

In fairness to the District, it had, of necessity, to confine its analysis of the duties of the proposed Watermaster to those set forth in the Proposed Stipulated Judgment. The Decision, while obviously relying on the structure and format of the Stipulated Judgment, does not track all provisions of said Judgment. For example, many of the concerns of the District revolve around its statutory right to store water in subterranean reservoirs. The Decision preserves that right. Similarly, while the Decision allows the assignment of Production rights (which the District is not empowered to affect by its referenced legislation, Water Code Section 328(g)), it does not provide for the transferability of Storage rights, a matter which might be of concern to the District under certain circumstances.

The District argues that the proposed powers of the Watermaster regarding maintenance and modification of the Operating Safe Yield would conflict with the District's authority. Much of its argument is addressed to language in the Proposed Stipulated Judgment which does not appear in the Decision. The Decision grants certain rights of control to the Watermaster for the purpose of maintaining the viability of the aquifer. However, it does not purport to forbid any regulation of the Basin which may be required by a public agency possessing the power to impose such regulation. In this regard it should be noted that the complaint in this case first raised the issue of the Overdraft status of the Basin, and the initial pleadings of the District stated that it did not know if that were true or not. The Decision does not conflict with any procedure or plan currently in place by the District to establish an Operating Yield for the Basin.

Of concern to the District is the fact that the Watermaster will be empowered to augment the underground water supply. While Water Code Section 118-343 gives the District the power to levy a Groundwater charge for the purpose of augmenting underground water supplies, in fact from the time of its creation in 1977 to the present the District has established no such charge, and has not augmented the underground water supply of the Basin. The fact that the Watermaster is authorized in the contemplated judgment to assess charges for replenishment of the Basin does not prevent the District in the future from undertaking such augmentation, if it determines it is appropriate to do so.

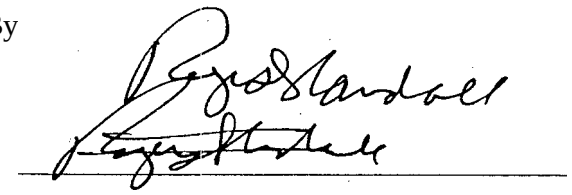
Based upon the evidence adduced at trial, which demonstrated that a collaborative Watermaster will likely provide more tangible results than any single individual or entity Watermaster, the Court has decided to appoint a collaborative board as Watermaster.

The prayer of MPWMD for injunctive relief is denied, except insofar as the court will issue injunctive relief as set forth in the Decision at the request of all parties. The prayer that the Court adopt a Physical Solution for the Seaside Basin is granted. The request for declaratory relief is granted to the extent that the court finds that the statutory rights of MPWMD are not in conflict with the Physical Solution and the appointment of a Watermaster in this proceeding.

The Complaint in Intervention of MCWRA also seeks declaratory and injunctive relief, but does not urge the appointment of itself or any other entity as Watermaster. The request for

injunctive relief is denied as moot, since the lawsuit does not challenge the statutory authority of the Agency. The request for declaratory relief is granted to the extent that the Court finds that the statutory rights of MCWRA are not in conflict with the Physical Solution adopted by the Court in this proceeding.

A statement of decision, if requested by any party, will be prepared by Plaintiff. If no party within ten days of the filing of this Decision specifies controverted issues or makes proposals not covered in the Decision this Decision shall become the Statement of Decision, and Plaintiff shall prepare a judgment thereon.

By 

Dated:

9 February 07

Honorable Roger D. Randall

Appendix G

AB 52 Outreach Letters

CITY OF SEASIDE/COMMUNITY & ECONOMIC DEVELOPMENT
440 Harcourt Avenue
Seaside, CA 93955
Telephone (831) 899-6735
FAX (831) 899-6211

Tuesday, September 12, 2017

Mr. Valentin Lopez
Chairperson
Amah Mutsun Tribal Band
P.O. Box 5272
Galt, CA 95632

7015 0640 0006 3649 7819

RE: AB 52 Consultation, City of Seaside General Plan Update Project, Seaside, Monterey County, California

Dear Mr. Lopez:

The City of Seaside is preparing a General Plan Update that includes the completion of a cultural resources records search at the Northwest Information Center and review of available cultural resources studies (including those related to the closing of Fort Ord), a review of the Sacred Lands File (SLF) by the Native American Heritage Commission (NAHC), and government-to-government consultation between the City of Seaside and the Tribal community. The proposed project is subject to the California Environmental Quality Act (CEQA).

A records search was completed for the project on August 29, 2017 at the Northwest Information Center, located at Sonoma State University. The results of the search identified six cultural resources, including two prehistoric sites, a historic water tank, the Southern Pacific Railroad Southern Pacific Coast Line rail line, the Pacific Gas & Electric Sal-Del transmission tower, and the Seaside First Baptist Church, all of which are located within City limits and five of which are situated within the project area. However, based upon the nature of the project, there is no potential for impacts to any of these resources.

A review of the SLF performed by the NAHC did not identify any Tribal cultural resources as being located within the project. However, NAHC does note the project as being sensitive for cultural resources.

The proposed project must comply with California Public Resources Code § 21080.3.1 (Assembly Bill [AB] 52 of 2014), which requires local governments to conduct meaningful consultation with California Native American tribes that have requested to be notified by lead agencies of proposed projects in the geographic area with which the tribe is traditionally and culturally affiliated.

The input of the Amah Mutsun Tribal Band is important to the City of Seaside's planning process. Under AB 52, you have 30 days from receipt of this letter to respond in writing if you wish you consult on the proposed project. If you require any additional information or have any questions,

information or have any questions, please contact me at 831-899-6734 or via e-mail at SMikesell@ci.seaside.ca.us . Thank you for your assistance.

Sincerely,

Sharon Mikesell

Sharon Mikesell
Administrative Analyst
Community & Economic Development
City of Seaside

Enclosure: Project Location Map

CITY OF SEASIDE/COMMUNITY & ECONOMIC DEVELOPMENT
440 Harcourt Avenue
Seaside, CA 93955
Telephone (831) 899-6735
FAX (831) 899-6211

Tuesday, September 12, 2017

Valentin Lopez
Chairperson
Amah Mutsun Tribal Band
P.O. Box 1301
Galt, CA 95632

Subject: SB 18 Consultation, City of Seaside General Plan Update Project, Seaside, Monterey County, California

Dear Mr. Lopez:

The City of Seaside is preparing an update to their General Plan that requires compliance with the requirements of Senate Bill 18, to perform Native American consultation. The project encompasses the entirety of the City of Seaside (see enclosed map).

The proposed project requires a General Plan Amendment and, therefore, must comply with California Public Resources Code § 65352.3 – 65352.4 (Senate Bill 18), which requires local governments to conduct meaningful consultation with California Native American tribes on the contact list maintained by the Native American Heritage Commission prior to the adoption or amendment of a city or county general plan for the purpose of protecting cultural places on lands affected by the proposal.

On August 08, 2017, a letter was sent to the Native American Heritage Commission (NAHC) requesting a Sacred Lands File Search and a current SB 18 Native American Contact List for the vicinity of the project area. The response, dated August 22, 2017, stated that while no Tribal cultural resources or areas of Native American heritage significance have been documented within the project area, the City is sensitive for cultural resources. The NAHC further recommended that we contact you to see if you have any knowledge of cultural resources within the project vicinity or if you would like to request consultation with the City of Seaside regarding the General Plan Amendment.

Input by the Amah Mutsun Tribal Band is important to the City's planning process. We request that you advise us as early as possible if you wish to consult on the proposed project. The Amah Mutsun Tribal Band, under the provisions of SB 18, has 90 days from the date of receipt of this notice to advise the City of Seaside if you are interested in further consultation

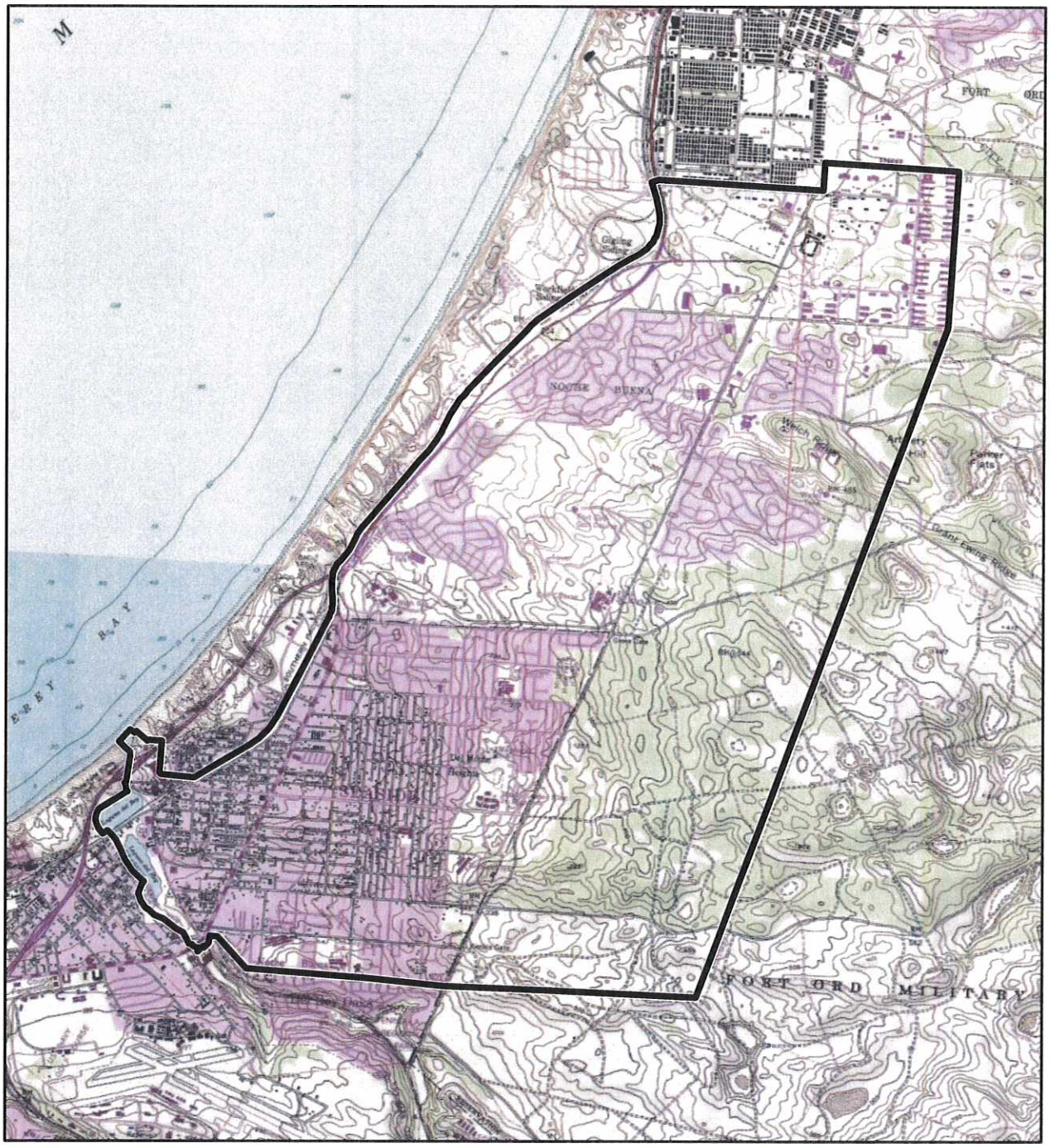
If you require any additional information or have any questions, please contact me at 831-899-6734 or via e-mail at SMikesell@ci.seaside.ca.us . Thank you for your assistance.

Sincerely,

Sharon Mikesell

Sharon Mikesell
Administrative Analyst
Community & Economic Development
City of Seaside

Enclosure: Project Location Map



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Marina and Seaside Quadrangles.T15S R01E S01,02,10,11,12,13,14,15,21,22,23,24,25,26,27,28; T15S 2E S06,07,18
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City Limits

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Outreach Map

CITY OF SEASIDE/COMMUNITY & ECONOMIC DEVELOPMENT
440 Harcourt Avenue
Seaside, CA 93955
Telephone (831) 899-6735
FAX (831) 899-6211

Tuesday, September 12, 2017

7015 0640 0006 3649 7796

Ms. Irene Zwierlin
Chairperson
Amah Mutsun Tribal Band of Mission San Juan Bautista
789 Canada Road
Woodside, CA 94062

RE: AB 52 Consultation, City of Seaside General Plan Update Project, Seaside, Monterey County, California

Dear Ms. Zwierlin:

The City of Seaside is preparing a General Plan Update that includes the completion of a cultural resources records search at the Northwest Information Center and review of available cultural resources studies (including those related to the closing of Fort Ord), a review of the Sacred Lands File (SLF) by the Native American Heritage Commission (NAHC), and government-to-government consultation between the City of Seaside and the Tribal community. The proposed project is subject to the California Environmental Quality Act (CEQA).

A records search was completed for the project on August 29, 2017 at the Northwest Information Center, located at Sonoma State University. The results of the search identified six cultural resources, including two prehistoric sites, a historic water tank, the Southern Pacific Railroad Southern Pacific Coast Line rail line, the Pacific Gas & Electric Sal-Del transmission tower, and the Seaside First Baptist Church, all of which are located within City limits and five of which are situated within the project area. However, based upon the nature of the project, there is no potential for impacts to any of these resources.

A review of the SLF performed by the NAHC did not identify any Tribal cultural resources as being located within the project. However, NAHC does note the project as being sensitive for cultural resources.

The proposed project must comply with California Public Resources Code § 21080.3.1 (Assembly Bill [AB] 52 of 2014), which requires local governments to conduct meaningful consultation with California Native American tribes that have requested to be notified by lead agencies of proposed projects in the geographic area with which the tribe is traditionally and culturally affiliated.

The input of the Amah Mutsun Tribal Band of Mission San Juan Bautista is important to the City of Seaside's planning process. Under AB 52, you have 30 days from receipt of this letter to respond in writing if you wish you consult on the proposed project. If you require any additional

wish you consult on the proposed project. If you require any additional information or have any questions, please contact me at 831-899-6734 or via e-mail at SMikesell@ci.seaside.ca.us . Thank you for your assistance.

Sincerely,

Sharon Mikesell

Sharon Mikesell
Administrative Analyst
Community & Economic Development
City of Seaside

Enclosure: Project Location Map

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440 Harcourt Avenue
Seaside, CA 93955
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Tuesday, September 12, 2017

Ms. Irene Zwierlin
Chairperson
Amah Mutsun Tribal Band of Mission San Juan Bautista
789 Canada Road
Woodside, CA 94062

Subject: SB 18 Consultation, City of Seaside General Plan Update Project, Seaside, Monterey County, California

Dear Ms. Zwierlin:

The City of Seaside is preparing an update to their General Plan that requires compliance with the requirements of Senate Bill 18, to perform Native American consultation. The project encompasses the entirety of the City of Seaside (see enclosed map).

The proposed project requires a General Plan Amendment and, therefore, must comply with California Public Resources Code § 65352.3 – 65352.4 (Senate Bill 18), which requires local governments to conduct meaningful consultation with California Native American tribes on the contact list maintained by the Native American Heritage Commission prior to the adoption or amendment of a city or county general plan for the purpose of protecting cultural places on lands affected by the proposal.

On August 08, 2017, a letter was sent to the Native American Heritage Commission (NAHC) requesting a Sacred Lands File Search and a current SB 18 Native American Contact List for the vicinity of the project area. The response, dated August 22, 2017, stated that while no Tribal cultural resources or areas of Native American heritage significance have been documented within the project area, the City is sensitive for cultural resources. The NAHC further recommended that we contact you to see if you have any knowledge of cultural resources within the project vicinity or if you would like to request consultation with the City of Seaside regarding the General Plan Amendment.

Input by the Amah Mutsun Tribal Band of Mission San Juan Bautista is important to the City's planning process. We request that you advise us as early as possible if you wish to consult on the proposed project. The Amah Mutsun Tribal Band of Mission San Juan Bautista, under the provisions of SB 18, has 90 days from the date of receipt of this notice to advise the City of Seaside if you are interested in further consultation

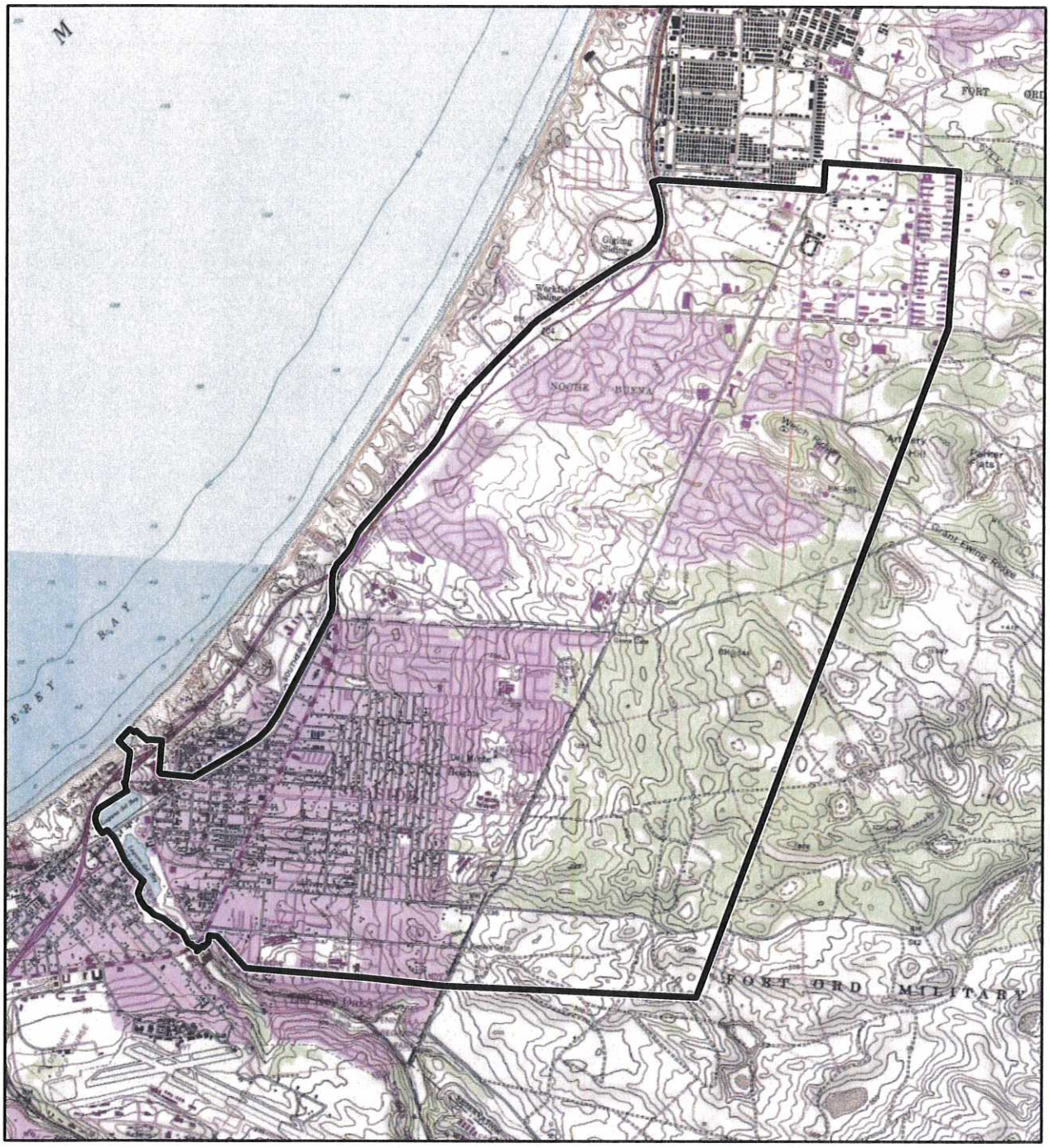
If you require any additional information or have any questions, please contact me at 831-899-6734 or via e-mail at SMikesell@ci.seaside.ca.us . Thank you for your assistance.

Sincerely,

Sharon Mikesell

Sharon Mikesell
Administrative Analyst
Community & Economic Development
City of Seaside

Enclosure: Project Location Map



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Outreach Map

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Tuesday, September 12, 2017

Mr. Tony Cerda
Chairperson
Coastanoan Rumsen Carmel Tribe
244 E. 1st Street
Pomona, CA 91766

7015 0640 0006 3649 7802

RE: AB 52 Consultation, City of Seaside General Plan Update Project, Seaside, Monterey County, California

Dear Mr. Cerda:

The City of Seaside is preparing a General Plan Update that includes the completion of a cultural resources records search at the Northwest Information Center and review of available cultural resources studies (including those related to the closing of Fort Ord), a review of the Sacred Lands File (SLF) by the Native American Heritage Commission (NAHC), and government-to-government consultation between the City of Seaside and the Tribal community. The proposed project is subject to the California Environmental Quality Act (CEQA).

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A review of the SLF performed by the NAHC did not identify any Tribal cultural resources as being located within the project. However, NAHC does note the project as being sensitive for cultural resources.

The proposed project must comply with California Public Resources Code § 21080.3.1 (Assembly Bill [AB] 52 of 2014), which requires local governments to conduct meaningful consultation with California Native American tribes that have requested to be notified by lead agencies of proposed projects in the geographic area with which the tribe is traditionally and culturally affiliated.

The input of the Coastanoan Tribe is important to the City of Seaside's planning process. Under AB 52, you have 30 days from receipt of this letter to respond in writing if you wish you consult on

wish you consult on the proposed project. If you require any additional information or have any questions, please contact me at 831-899-6734 or via e-mail at SMikesell@ci.seaside.ca.us . Thank you for your assistance.

Sincerely,

Sharon Mikesell

Sharon Mikesell
Administrative Analyst
Community & Economic Development
City of Seaside

Enclosure: Project Location Map

CITY OF SEASIDE/COMMUNITY & ECONOMIC DEVELOPMENT
440 Harcourt Avenue
Seaside, CA 93955
Telephone (831) 899-6735
FAX (831) 899-6211

Tuesday, September 12, 2017

Mr. Tony Cerda
Chairperson
Coastanoan Rumsen Carmel Tribe
244 E. 1st Street
Pomona, CA 91766

Subject: SB 18 Consultation, City of Seaside General Plan Update Project, Seaside, Monterey County, California

Dear Mr. Cerda:

The City of Seaside is preparing an update to their General Plan that requires compliance with the requirements of Senate Bill 18, to perform Native American consultation. The project encompasses the entirety of the City of Seaside (see enclosed map).

The proposed project requires a General Plan Amendment and, therefore, must comply with California Public Resources Code § 65352.3 – 65352.4 (Senate Bill 18), which requires local governments to conduct meaningful consultation with California Native American tribes on the contact list maintained by the Native American Heritage Commission prior to the adoption or amendment of a city or county general plan for the purpose of protecting cultural places on lands affected by the proposal.

On August 08, 2017, a letter was sent to the Native American Heritage Commission (NAHC) requesting a Sacred Lands File Search and a current SB 18 Native American Contact List for the vicinity of the project area. The response, dated August 22, 2017, stated that while no Tribal cultural resources or areas of Native American heritage significance have been documented within the project area, the City is sensitive for cultural resources. The NAHC further recommended that we contact you to see if you have any knowledge of cultural resources within the project vicinity or if you would like to request consultation with the City of Seaside regarding the General Plan Amendment.

Input by the Coastanoan Rumsen Carmel Tribe is important to the City's planning process. We request that you advise us as early as possible if you wish to consult on the proposed project. The Coastanoan Rumsen Carmel Tribe, under the provisions of SB 18, has 90 days from the date of receipt of this notice to advise the City of Seaside if you are interested in further consultation.

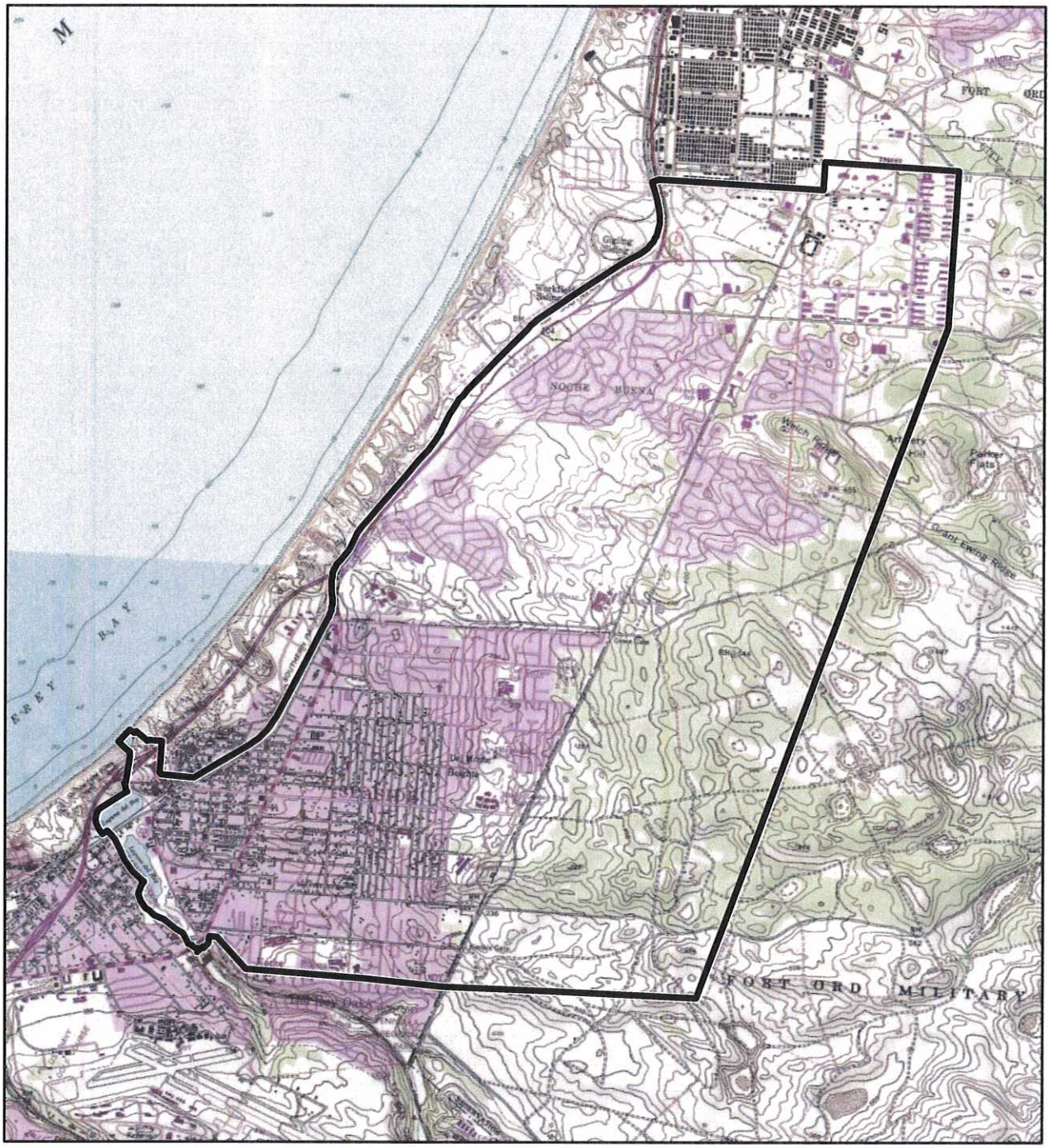
If you require any additional information or have any questions, please contact me at 831-899-6734 or via e-mail at SMikesell@ci.seaside.ca.us . Thank you for your assistance.

Sincerely,

Sharon Mikesell

Sharon Mikesell
Administrative Analyst
Community & Economic Development
City of Seaside

Enclosure: Project Location Map



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Outreach Map

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Seaside, CA 93955
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FAX (831) 899-6211

Tuesday, September 12, 2017

Tom Little Bear Nason
Esselen Tribe of Monterey County
38655 Tassajara Road
Carmel Valley, CA 93924

7015 0640 0000 0215 7101

RE: AB 52 Consultation, City of Seaside General Plan Update Project, Seaside, Monterey County, California

Dear Mr. Little Bear Nason:

The City of Seaside is preparing a General Plan Update that includes the completion of a cultural resources records search at the Northwest Information Center and review of available cultural resources studies (including those related to the closing of Fort Ord), a review of the Sacred Lands File (SLF) by the Native American Heritage Commission (NAHC), and government-to-government consultation between the City of Seaside and the Tribal community. The proposed project is subject to the California Environmental Quality Act (CEQA).

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A review of the SLF performed by the NAHC did not identify any Tribal cultural resources as being located within the project. However, NAHC does note the project as being sensitive for cultural resources.

The proposed project must comply with California Public Resources Code § 21080.3.1 (Assembly Bill [AB] 52 of 2014), which requires local governments to conduct meaningful consultation with California Native American tribes that have requested to be notified by lead agencies of proposed projects in the geographic area with which the tribe is traditionally and culturally affiliated.

The input of the Esselen Tribe is important to the City of Seaside's planning process. Under AB 52, you have 30 days from receipt of this letter to respond in writing if you wish you consult on the

if you wish you consult on the proposed project. If you require any additional information or have any questions, please contact me at proposed project. If you require any additional information or have any questions, please contact me at 831-899-6734 or via e-mail at SMikesell@ci.seaside.ca.us . Thank you for your assistance.

Sincerely,

Sharon Mikesell

Sharon Mikesell
Administrative Analyst
Community & Economic Development
City of Seaside

Enclosure: Project Location Map

CITY OF SEASIDE/COMMUNITY & ECONOMIC DEVELOPMENT
440 Harcourt Avenue
Seaside, CA 93955
Telephone (831) 899-6735
FAX (831) 899-6211

Tuesday, September 12, 2017

Mr. Tom Little Bear Nason
Esselen Tribe of Monterey County
38655 Tassajara Road
Carmel Valley, CA 93924

Subject: SB 18 Consultation, City of Seaside General Plan Update Project, Seaside, Monterey County, California

Dear Mr. Little Bear Nason:

The City of Seaside is preparing an update to their General Plan that requires compliance with the requirements of Senate Bill 18, to perform Native American consultation. The project encompasses the entirety of the City of Seaside (see enclosed map).

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Input by the Esselen Tribe of Monterey County is important to the City's planning process. We request that you advise us as early as possible if you wish to consult on the proposed project. The Esselen Tribe of Monterey County, under the provisions of SB 18, has 90 days from the date of receipt of this notice to advise the City of Seaside if you are interested in further consultation.

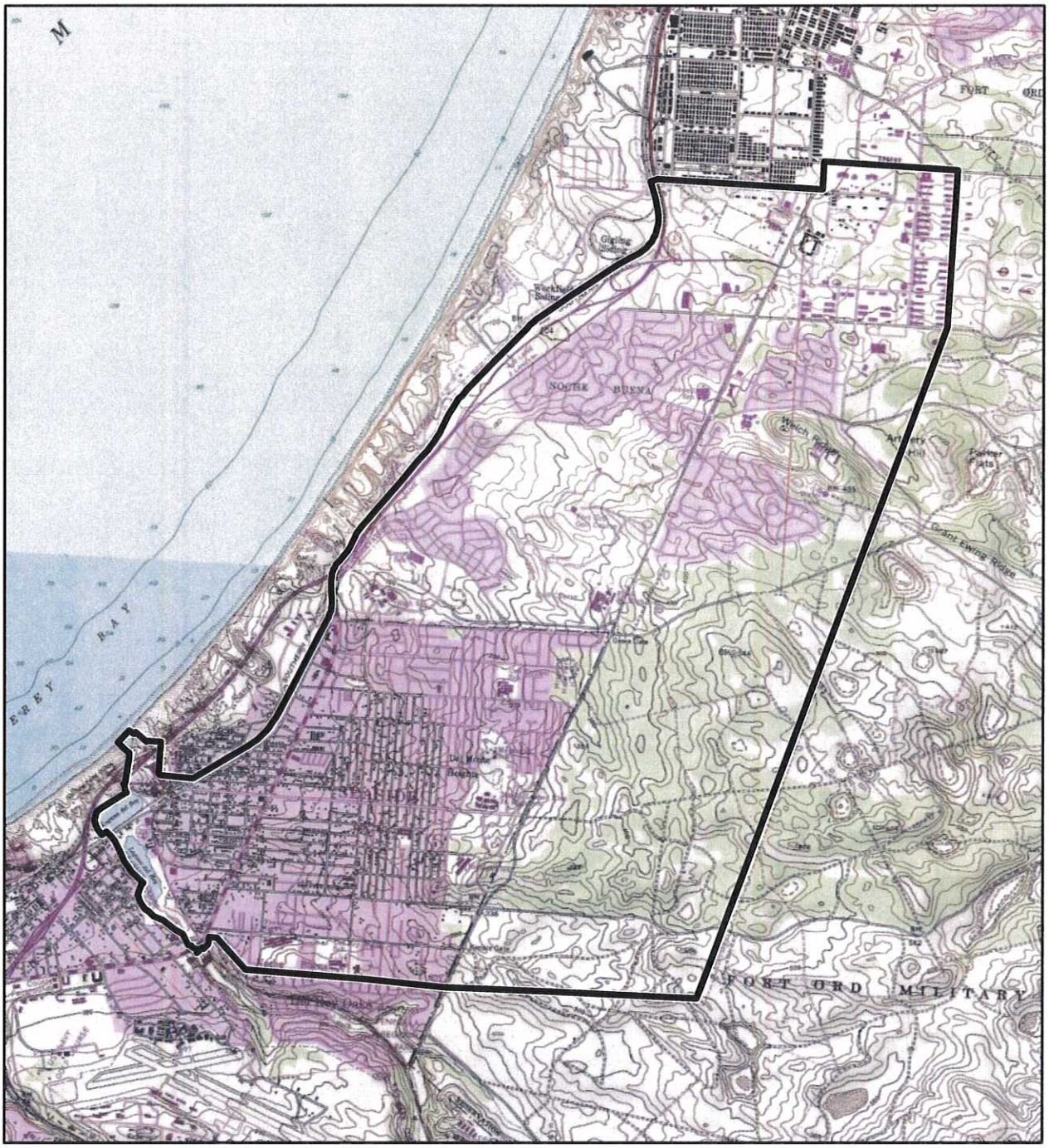
If you require any additional information or have any questions, please contact me at 831-899-6734 or via e-mail at SMikesell@ci.seaside.ca.us . Thank you for your assistance.

Sincerely,

Sharon Mikesell

Sharon Mikesell
Administrative Analyst
Community & Economic Development
City of Seaside

Enclosure: Project Location Map



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Outreach Map

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440 Harcourt Avenue
Seaside, CA 93955
Telephone (831) 899-6735
FAX (831) 899-6211

Tuesday, September 12, 2017

7015 0640 0006 3649 7772

Ms. Anne Marie Sayers
Chairperson
Indian Canyon Mutsun Tribal Band of Coastanoan
P.O. Box 28
Hollister, CA 95024

RE: AB 52 Consultation, City of Seaside General Plan Update Project, Seaside, Monterey County, California

Dear Ms. Sayers:

The City of Seaside is preparing a General Plan Update that includes the completion of a cultural resources records search at the Northwest Information Center and review of available cultural resources studies (including those related to the closing of Fort Ord), a review of the Sacred Lands File (SLF) by the Native American Heritage Commission (NAHC), and government-to-government consultation between the City of Seaside and the Tribal community. The proposed project is subject to the California Environmental Quality Act (CEQA).

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The input of the Indian Canyon Mutsun Band of Coastanoan is important to the City of Seaside's planning process. Under AB 52, you have 30 days from receipt of this letter to respond in writing

wish you consult on the proposed project. If you require any additional information or have any questions, please contact me at 831-899-6734 or via e-mail at SMikesell@ci.seaside.ca.us . Thank you for your assistance.

Sincerely,

Sharon Mikesell

Sharon Mikesell
Administrative Analyst
Community & Economic Development
City of Seaside

Enclosure: Project Location Map

CITY OF SEASIDE/COMMUNITY & ECONOMIC DEVELOPMENT
440 Harcourt Avenue
Seaside, CA 93955
Telephone (831) 899-6735
FAX (831) 899-6211

Tuesday, September 12, 2017

Ms. Anne Marie Sayers
Chairperson
Indian Canyon Mutsun Tribal Band of Coastanoan
P.O. Box 28
Hollister, CA 95024

Subject: SB 18 Consultation, City of Seaside General Plan Update Project, Seaside, Monterey County, California

Dear Ms. Sayers:

The City of Seaside is preparing an update to their General Plan that requires compliance with the requirements of Senate Bill 18, to perform Native American consultation. The project encompasses the entirety of the City of Seaside (see enclosed map).

The proposed project requires a General Plan Amendment and, therefore, must comply with California Public Resources Code § 65352.3 – 65352.4 (Senate Bill 18), which requires local governments to conduct meaningful consultation with California Native American tribes on the contact list maintained by the Native American Heritage Commission prior to the adoption or amendment of a city or county general plan for the purpose of protecting cultural places on lands affected by the proposal.

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Input by the Indian Canyon Mutsun Tribal Band of Coastanoan is important to the City's planning process. We request that you advise us as early as possible if you wish to consult on the proposed project. The Indian Canyon Mutsun Tribal Band of Coastanoan, under the provisions of SB 18, has 90 days from the date of receipt of this notice to advise the City of Seaside if you are interested in further consultation

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Sharon Mikesell

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Administrative Analyst
Community & Economic Development
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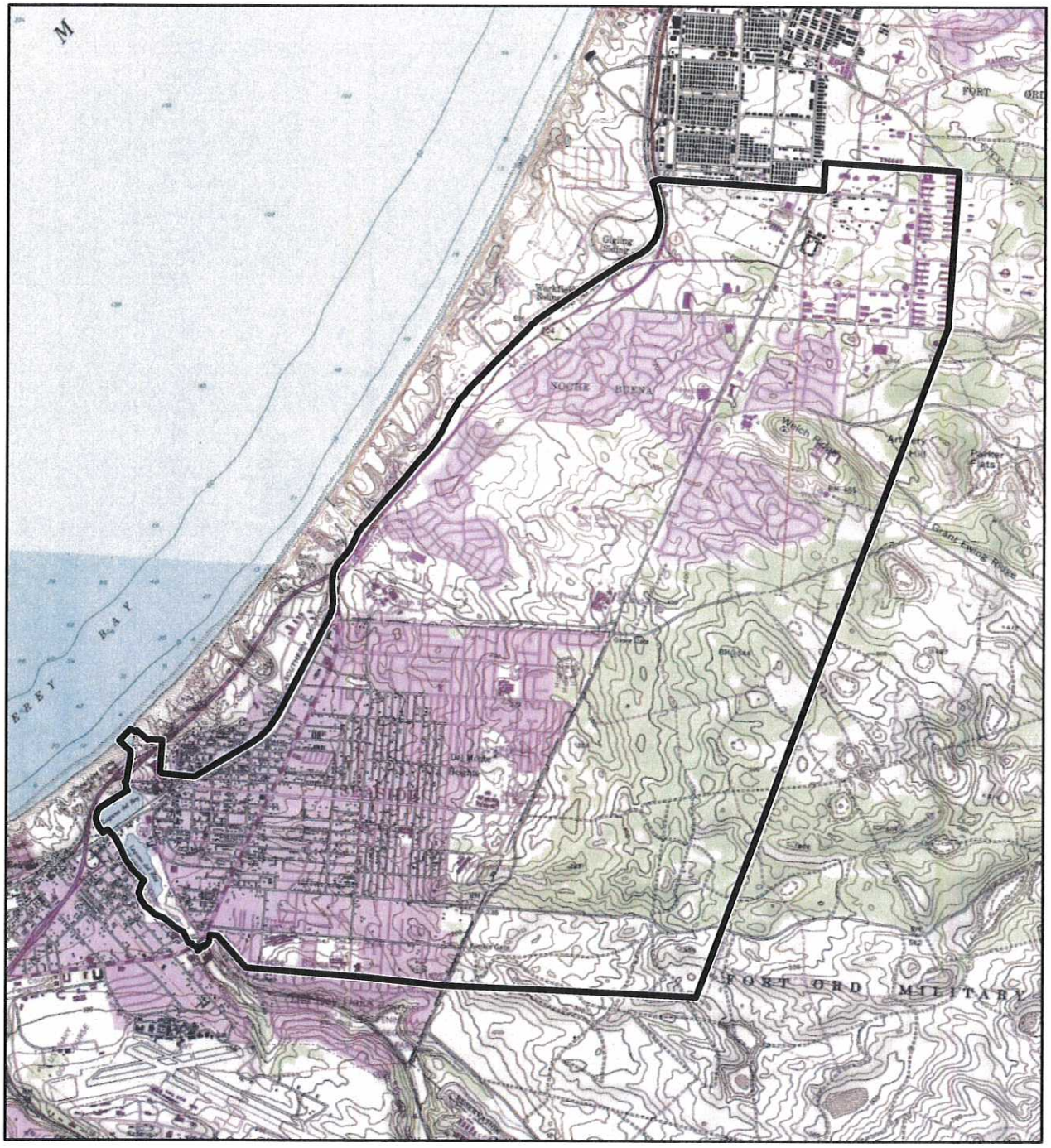

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440 Harcourt Avenue
Seaside, CA 93955
Telephone (831) 899-6735
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Tuesday, September 12, 2017

Ms. Louise Miranda-Ramirez
Chairperson
Ohlone/Coastanoan-Esselen National
P.O. Box 1301
Monterey, CA 93942

7015 0640 0006 3649 7789

RE: AB 52 Consultation, City of Seaside General Plan Update Project, Seaside, Monterey County, California

Dear Ms. Miranda-Ramirez:

The City of Seaside is preparing a General Plan Update that includes the completion of a cultural resources records search at the Northwest Information Center and review of available cultural resources studies (including those related to the closing of Fort Ord), a review of the Sacred Lands File (SLF) by the Native American Heritage Commission (NAHC), and government-to-government consultation between the City of Seaside and the Tribal community. The proposed project is subject to the California Environmental Quality Act (CEQA).

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The input of the Ohlone/Coastanoan-Esselen Nation is important to the City of Seaside's planning process. Under AB 52, you have 30 days from receipt of this letter to respond in writing if you

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Sincerely,

Sharon Mikesell

Sharon Mikesell
Administrative Analyst
Community & Economic Development
City of Seaside

Enclosure: Project Location Map

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440 Harcourt Avenue
Seaside, CA 93955
Telephone (831) 899-6735
FAX (831) 899-6211

Tuesday, September 12, 2017

Ms. Louise Miranda-Ramirez
Chairperson
Ohlone/Coastanoan-Esselen National
PO Box 1301
Monterey, CA 93942

Subject: SB 18 Consultation, City of Seaside General Plan Update Project, Seaside, Monterey County, California

Dear Ms. Miranda-Ramirez:

The City of Seaside is preparing an update to their General Plan that requires compliance with the requirements of Senate Bill 18, to perform Native American consultation. The project encompasses the entirety of the City of Seaside (see enclosed map).

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Input by the Ohlone/Coastanoan-Esselen National is important to the City's planning process. We request that you advise us as early as possible if you wish to consult on the proposed project. The Ohlone/Coastanoan-Esselen National, under the provisions of SB 18, has 90 days from the date of receipt of this notice to advise the City of Seaside if you are interested in further consultation

If you require any additional information or have any questions, please contact me at 831-899-6734 or via e-mail at SMikesell@ci.seaside.ca.us . Thank you for your assistance.

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Community & Economic Development
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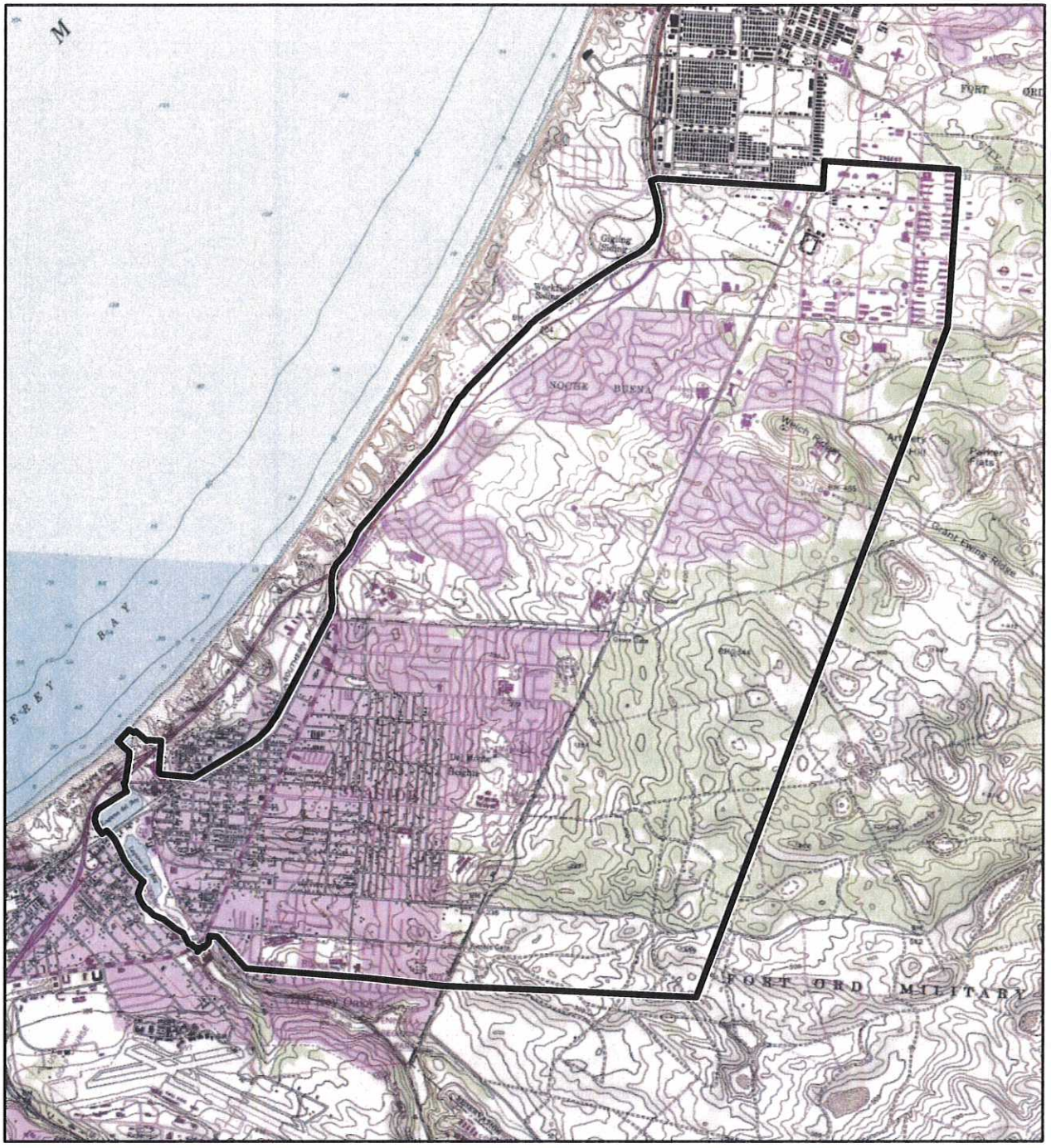

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Mr. Tony Cerda
Chairperson
Coastanoan Rumsen Carmel Tribe
244 E. 1st Street
Pomona, CA 91766

7015 0640 0006 3649 7802

RE: AB 52 Consultation, City of Seaside General Plan Update Project, Seaside, Monterey County, California

Dear Mr. Cerda:

The City of Seaside is preparing a General Plan Update that includes the completion of a cultural resources records search at the Northwest Information Center and review of available cultural resources studies (including those related to the closing of Fort Ord), a review of the Sacred Lands File (SLF) by the Native American Heritage Commission (NAHC), and government-to-government consultation between the City of Seaside and the Tribal community. The proposed project is subject to the California Environmental Quality Act (CEQA).

A records search was completed for the project on August 29, 2017 at the Northwest Information Center, located at Sonoma State University. The results of the search identified six cultural resources, including two prehistoric sites, a historic water tank, the Southern Pacific Railroad Southern Pacific Coast Line rail line, the Pacific Gas & Electric Sal-Del transmission tower, and the Seaside First Baptist Church, all of which are located within City limits and five of which are situated within the project area. However, based upon the nature of the project, there is no potential for impacts to any of these resources.

A review of the SLF performed by the NAHC did not identify any Tribal cultural resources as being located within the project. However, NAHC does note the project as being sensitive for cultural resources.

The proposed project must comply with California Public Resources Code § 21080.3.1 (Assembly Bill [AB] 52 of 2014), which requires local governments to conduct meaningful consultation with California Native American tribes that have requested to be notified by lead agencies of proposed projects in the geographic area with which the tribe is traditionally and culturally affiliated.

The input of the Coastanoan Tribe is important to the City of Seaside's planning process. Under AB 52, you have 30 days from receipt of this letter to respond in writing if you wish you consult on

wish you consult on the proposed project. If you require any additional information or have any questions, please contact me at 831-899-6734 or via e-mail at SMikesell@ci.seaside.ca.us . Thank you for your assistance.

Sincerely,

Sharon Mikesell

Sharon Mikesell
Administrative Analyst
Community & Economic Development
City of Seaside

Enclosure: Project Location Map

CITY OF SEASIDE/COMMUNITY & ECONOMIC DEVELOPMENT
440 Harcourt Avenue
Seaside, CA 93955
Telephone (831) 899-6735
FAX (831) 899-6211

Tuesday, September 12, 2017

Mr. Tony Cerda
Chairperson
Coastanoan Rumsen Carmel Tribe
244 E. 1st Street
Pomona, CA 91766

Subject: SB 18 Consultation, City of Seaside General Plan Update Project, Seaside, Monterey County, California

Dear Mr. Cerda:

The City of Seaside is preparing an update to their General Plan that requires compliance with the requirements of Senate Bill 18, to perform Native American consultation. The project encompasses the entirety of the City of Seaside (see enclosed map).

The proposed project requires a General Plan Amendment and, therefore, must comply with California Public Resources Code § 65352.3 – 65352.4 (Senate Bill 18), which requires local governments to conduct meaningful consultation with California Native American tribes on the contact list maintained by the Native American Heritage Commission prior to the adoption or amendment of a city or county general plan for the purpose of protecting cultural places on lands affected by the proposal.

On August 08, 2017, a letter was sent to the Native American Heritage Commission (NAHC) requesting a Sacred Lands File Search and a current SB 18 Native American Contact List for the vicinity of the project area. The response, dated August 22, 2017, stated that while no Tribal cultural resources or areas of Native American heritage significance have been documented within the project area, the City is sensitive for cultural resources. The NAHC further recommended that we contact you to see if you have any knowledge of cultural resources within the project vicinity or if you would like to request consultation with the City of Seaside regarding the General Plan Amendment.

Input by the Coastanoan Rumsen Carmel Tribe is important to the City's planning process. We request that you advise us as early as possible if you wish to consult on the proposed project. The Coastanoan Rumsen Carmel Tribe, under the provisions of SB 18, has 90 days from the date of receipt of this notice to advise the City of Seaside if you are interested in further consultation.

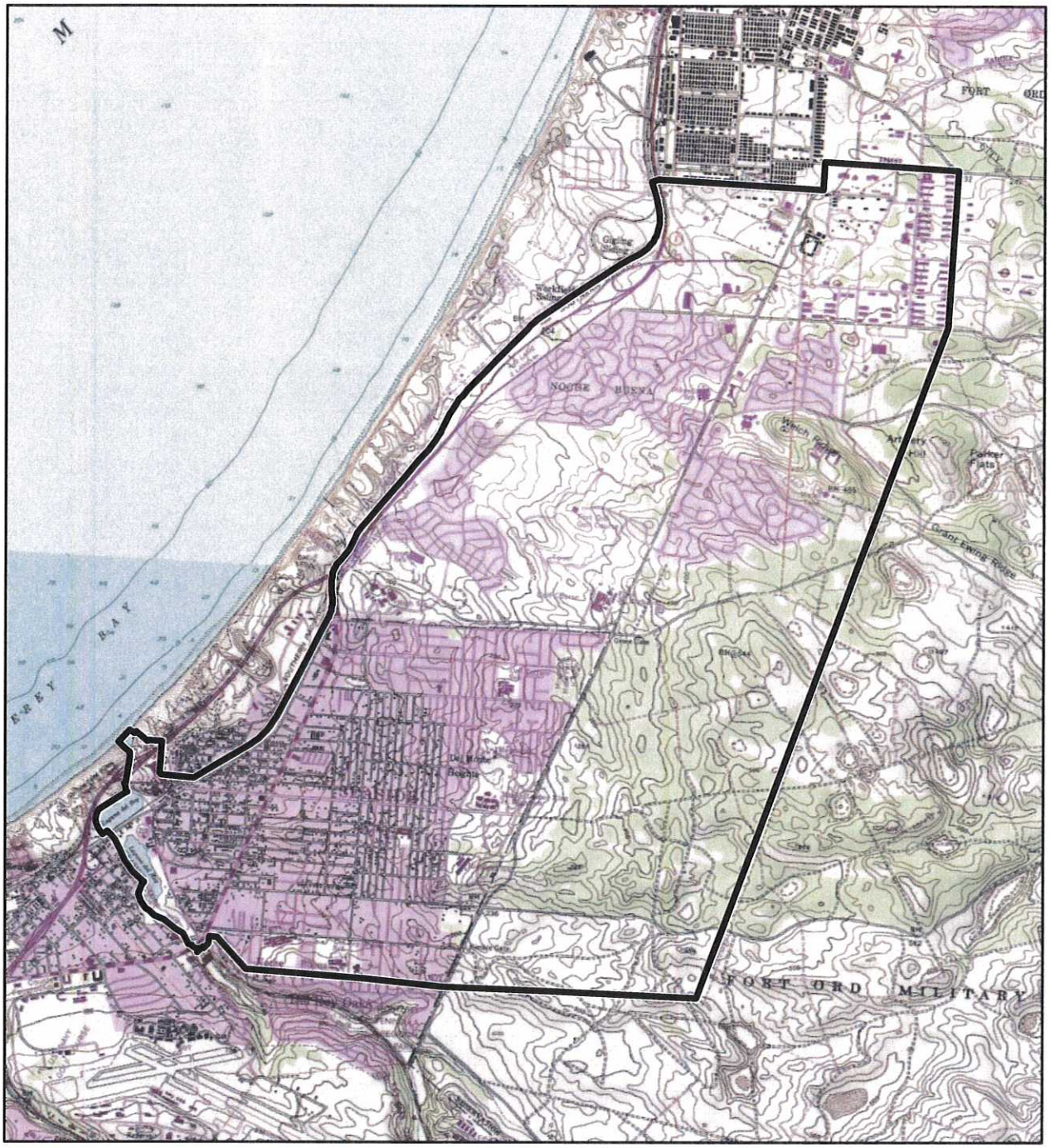
If you require any additional information or have any questions, please contact me at 831-899-6734 or via e-mail at SMikesell@ci.seaside.ca.us . Thank you for your assistance.

Sincerely,

Sharon Mikesell

Sharon Mikesell
Administrative Analyst
Community & Economic Development
City of Seaside

Enclosure: Project Location Map



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Marina and Seaside Quadrangles.T15S R01E S01,02,10,11,12,13,14,15,21,22,23,24,25,26,27,28; T15S 2E S06,07,18
The topographic representation depicted in this map may not portray all of the features currently found in the vicinity today and/or features depicted in this map may have changed since the original topographic map was assembled.

City Limits

N

0 2,000 4,000 Feet

0 500 1,000 Meters

1:48,000

Outreach Map

Appendix H

SB 10 Correspondence Tracking

City of Seaside GPU SB 18 Correspondence Tracking

Contact List	Date Letter Sent to contact	Date of Response	Comments/Concerns
Esselen Tribe of Monterey County Tom Little Bear Nason 38655 Tassajara Road Carmel Valley, California 93924 (408) 659-2153	9/12/17		9/22 8:45 am left voicemail & phone & mailing address to follow up. Asked if letter/map were received + if we can ans. questions. —Shaun Mikesell
Coastanoan Rumsen Carmel Tribe Tony Cerda, Chairperson 244 E. 1st Street Pomona, California 91766 rumsen@aol.com (909) 524-8041	9/12/17		9/22 - did not recall receiving ~~asked me to send to~~ Rumsen@aol.com and he would respond. Spoke w/Tony @ 9:52 AM —Shaun Mikesell
Ohlone/ Coastanoan-Esselen Nation Louise Miranda-Ramirez, Chairperson P.O. Box 1301 Monterey, California 93942 ramirez.louise@yahoo.com (408) 629-5189	9/12/17		9/22/17 - Left voicemail for Louise Miranda Ramirez asking if they had received. Should we resend? 8:55AM —Shaun Mikesell
Amah Mutsun Tribal Band Valentin Lopez, Chairperson P.O. Box 5272 Galt, CA 95632 vlopez@amahmutsun.org (916) 743-5833	9/12/17		9/22/17 8:55 am Spoke w/ Valentin Lopez says we are just outside of their area + they have no comment on our plan. —Shaun Mikesell
Amah Mutsun Tribal Band of Mission San Juan Bautista Irenne Zwierlein, Chairperson 789 Canada Road Woodside, California 94062 amahmutsuntribal@gmail.com (650) 851-7489	9/12/17	9/22/17 verbal →	9/22/17 Spoke w/ Irenne Zwierlein Seaside is a new community. Archeological reports ~~+~~ they will be happy to answer any questions if needed. Be sure to do 9 AM — Shaun Mikesell receipt card rec'd by Seaside 9/18/17

Contact List	Date Letter Sent to contact	Date of Response	Comments/Concerns
Indian Canyon Mutsun Band of Costanoan Ann Marie Sayers, Chairperson P.O. Box 28 Hollister, CA 95024 ams@indiancanyon.org (831) 637-4238	9/12/17		9/20/17 - Left a voice mail for Ann Marie Sayers asking if letter was received, if any additional info was needed or if we should be expecting a response from them. Left contact info - Shaun Mikesell