

Local Coastal Program  
**City of Marina**

Land Use Plan – Post Planning Commission Public Review Draft

October 6 February 23, 2026



Prepared by  
**EMC Planning Group and  
Integral Consulting Inc**



LOCAL COASTAL PROGRAM

## CITY OF MARINA

LAND USE PLAN – POST PLANNING COMMISSION PUBLIC  
REVIEW-DRAFT

### 2025 COMPREHENSIVE UPDATE

PREPARED FOR



#### City Council

Mayor Bruce Delgado  
Mayor Pro Tem Liesbeth Visscher  
Council Member Brian McCarthy  
Council Member Kathy Biala  
Council Member Jenny McAdams

#### Planning Commission

Glenn Woodson, Chair  
Audra Walton, Vice Chair  
Commissioner Paul Cheng  
Commissioner Vic Jacobsen  
Commissioner Surinder Rana  
Commissioner Galia Baron  
Commissioner Richard St. John

#### City Staff

Layne Long, City Manager  
Guido Persicone, AICP Community Development Director  
Alyson Hunter, AICP, Retired Planning Manager

Phil Angelo, Senior Planner

211 Hillcrest Avenue,  
Marina, CA 93933  
Tel 831.884.1251



PREPARED BY

**EMC Planning Group Inc.**

601 Abrego St.

Monterey, CA 93940

Tel 831.649.1799

www.emcplanning.com

*In honor of Polaris Kinison Brown*

*In memoriam*



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

**Integral Consulting Inc.**

200 Washington St. Unit 201

Santa Cruz, CA 95060

www.integral-corp.com



~~October 6~~ February 23, 2026

This document was produced on recycled paper.



# Table of Contents

1.0	INTRODUCTION AND FRAMEWORK.....	1-1
1.1	Overview.....	1-1
1.2	California Coastal Act.....	1-5
1.3	City of Marina Local Coastal Program.....	1-6
1.4	City of Marina Coastal Zone.....	1-10
1.5	Relationship of the Local Coastal Program to Other Plans and Laws.....	1-13
1.6	Terminology Used in the Land Use Plan.....	1-13
2.0	PUBLIC ACCESS AND RECREATION (PAR).....	2-1
2.1	Background – Public Access and Recreation.....	2-1
2.2	Coastal Act Policies and Definitions.....	2-10
2.3	Land Use Plan Policies – PAR.....	2-10
3.0	BIOLOGICAL RESOURCES AND ENVIRONMENTALLY SENSITIVE HABITAT AREAS (BIO).....	3-1
3.1	Background – Biological Resources and Environmentally Sensitive Habitat Areas.....	3-1
3.2	Coastal Act Policies and Definitions.....	3-12
3.3	Land Use Plan Policies - BIO.....	3-13
4.0	MARINE RESOURCES AND WATER QUALITY (MWQ).....	4-1
4.1	Background – Marine Resource and Water Quality.....	4-1
4.2	Coastal Act Policies and Definitions.....	4-2
4.3	Land Use Plan Policies - MWQ.....	4-2
5.0	COASTAL HAZARDS (HAZ).....	5-1
6.0	LAND USE AND DEVELOPMENT (LUD).....	6-1
6.1	Background – Development.....	6-1

6.2	Coastal Act Policies and Definitions .....	6-9
6.3	Land Use Development Policies – LUD .....	6-10
7.0	SCENIC AND VISUAL RESOURCES (VIS) .....	7-1
7.1	Background – Scenic and Visual Resources .....	7-1
7.2	Coastal Act Policies and Definitions .....	7-1
7.3	Land Use Plan Policies – VIS .....	7-2
8.0	TRIBAL, CULTURAL AND HISTORIC RESOURCES (TCH) .....	8-1
8.1	Background – Tribal, Cultural and Historic Resources .....	8-1
8.2	Coastal Act Policies and Definitions .....	8-1
8.3	Land Use Plan Policies – CUL .....	8-2
9.0	ENVIRONMENTAL JUSTICE (EJ) .....	9-1
9.1	Background – Environmental Justice .....	9-1
9.2	Coastal Act Policies and Definitions .....	9-2
9.3	Land Use Plan Policies – EJ .....	9-3
10.0	SOURCES .....	10-1

**Tables**

Table 3-1	City of Marina Wetlands .....	3-10
Table 6-1	City Land Use Priorities .....	6-2

**Figures**

Figure 1	Regional Location .....	1-3
Figure 2	City of Marina LCP Jurisdiction and Coastal Zone Boundary .....	1-11
Figure 3	Coastal Act and LCP Relationship .....	1-15
Figure 4	Southern Marina Primary Coastal Access Points .....	2-3
Figure 5	Northern Marina Primary Coastal Access Points .....	2-5
Figure 6	Environmentally Sensitive Habitat Areas (ESHA) South .....	3-3

Figure 7	Environmentally Sensitive Habitat Area (ESHA) North.....	3-5
Figure 8	Wetlands.....	3-7
Figure 9	Coastal Hazard Dune Erosion Area <i>(to be included with the separately certified Coastal Hazards chapter)</i> .....	5-3
Figure 10	Coastal Zone Land Use Designation Map.....	6-5
Figure 11	Urban Growth Boundary .....	6-7
Figure 12	Archaeologically Sensitive Area.....	8-3

## Appendices

Appendix A	Terminology Used in the Land Use Plan
Appendix B	<i>City of Marina Biological Resources Memo</i> , EMC Planning Group, 2025
Appendix C	<i>Marina Beach and Coastal Access Questionnaire Report</i> , EMC Planning Group, July 12, 2024
Appendix D	<i>City of Marina 2023 Existing Conditions and Sea Level Rise Adaptation Report</i> , Integral Consulting, August 2023
Appendix E	<i>Social Vulnerability Assessment</i> , Integral Consulting, August 18, 2023
Appendix F	Summary of Community Engagement for the Comprehensive Update <i>(forthcoming)</i>



# Introduction and Framework

## 1.1 Overview

The City of Marina, incorporated in 1975, is located on the southern Monterey Bay, approximately 8 miles north of the city of Monterey and 8 miles south of Moss Landing, as shown in [Figure 1, Regional Location](#). Marina’s coastal zone is defined by the Monterey Bay coastal dune complex, which stretches from Seaside to Moss Landing, and is dominated by mostly undeveloped sand dunes.



Towering sand dunes define Marina’s coast and provide unique recreational opportunities.

*Photo Credit: California Beaches*

The City lies immediately adjacent to and includes portions of former Fort Ord. Fort Ord was a military base established in 1917 and brought significant growth to the City of Marina between the 1940’s and 1970’s. The closure of the Fort Ord Military Reservation in 1994 caused Marina’s population to drop by 9,000. In recent years, the number of housing units built in Marina has increased rapidly, along with its population. Marina is the most diverse city in Monterey County, with the highest percentage of Asian residents in the region (Integral Consulting, 2023). According to the City’s 2023–2031 Housing Element, the largest racial and ethnic groups are Non-Hispanic White (33%) and Hispanic or Latino (33%), followed by Asian (18%).

While the City of Marina is facing growth generally, the city’s coastal zone is small, dominated by environmentally sensitive habitat areas, and does not provide significant growth potential. The coastal zone includes approximately 1.5 square miles within the city. The city has approximately 3 miles of coastline which is generally divided north and south by Reservation Road. The predominant coastal use in the area to the south of Reservation Road is Marina State Beach. To the north, the ownership is currently private and the past use in this area was sand mining, chiefly from the tidal zone but also from the dunes. In 2023, the cessation of the Cementos Mexicanos (often referred to as ‘CEMEX’) sand mining operation marked the end of sand mining in Marina. The CEMEX site, hereinafter referred to as the “North Dunes” site is anticipated to transition to open space and be operated by a public or non-profit agency.

The critical coastal planning issues in Marina focus on accessibility to the coast and sand dunes, protection of environmentally sensitive habitat areas primarily including coastal dune habitat and

wetlands, coastal hazards, and environmental justice. Coastal hazards and environmental justice were not addressed in the City’s previous Land Use Plan; these issues have risen to the forefront of planning Statewide.

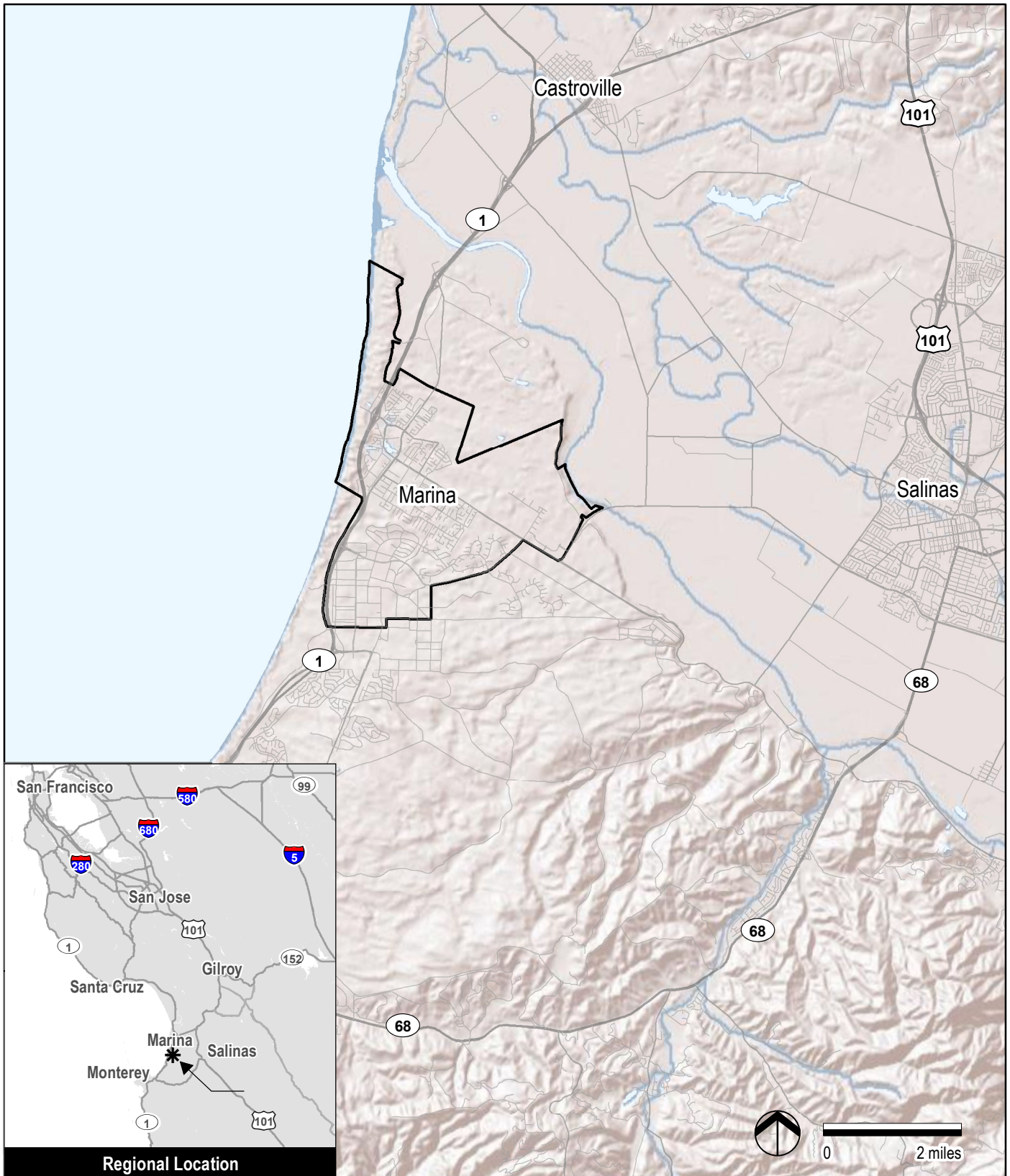
Regional recreation facilities are an important aspect of coastal planning in Marina. The State purchased about 160 acres of the Marina sand dunes for a State Beach in the early 1980s. Marina State Beach access is focused at Reservation Road where visitor-serving facilities including parking for 48 cars, restrooms, picnic tables and ADA accessible overlooks of the beach and ocean. Access points to the State Beach are also found on Marina Drive, Lake Court, Dunes Drive, and through the Sanctuary Beach Resort on Dunes Drive. These access points require significant walking through the dune environment on trails that are difficult to maintain, steep at times, and not easily accessible for all visitors. There is another access point at the terminus of 8<sup>th</sup> Street to Fort Ord Dunes State Park. While Fort Ord Dunes State Park is located just outside of the City’s limits, the street in which it is accessed is located within the City. This access point includes a large parking area and sandy trails to the beach that wind through the dune environment. The City is working with State Parks and the California Coastal Conservancy to improve access at this location including adding restrooms, trail improvements, and an ADA accessible overlook. Continued partnership between the City, State Parks, and Monterey Peninsula Regional Parks District (MPRPD) is crucial to maintain existing access and provide expanded access opportunities for all.



Migratory Birds at the Salinas River National Wildlife Refuge  
*Photo Credit: Tripadvisor*

Marina’s coastal zone is dominated by the Monterey Bay coastal dune complex and a significant portion of the City’s coastal zone is considered environmentally sensitive habitat. To the south, the City’s coastal zone borders Fort Ord Dunes State Park which provides recreational opportunities. The habitat to the south of the City has been somewhat degraded by past Army use. To the north, the City’s coastal zone borders Martin Dunes, a 125-acre area managed and protected by the Big Sur Land Trust. Just north of Martin Dunes is the Salinas River National Wildlife Refuge at

the mouth of the Salinas River. The Salinas River National Wildlife Refuge was established in 1973 and protects 367 acres of coastal dunes and beach, grasslands, a saline pond and salt marsh, and riparian habitats which support migratory birds during breeding, wintering, and migration periods (U.S. Fish & Wildlife Service, 2025). Protecting the sand dune ecosystem within the City of Marina, particularly within the northernmost portion of the City adjacent to the protected areas described above is a fundamental goal of the Local Coastal Land Use Plan (‘Plan’). The Plan includes continued preservation by public and/or private means and restrictions on development which can be destructive in this particular environment. The Plan seeks to balance low-impact recreation and public access opportunities with protection of environmentally sensitive habitat areas.



Source: ESRI 2024


 City Limit



Figure 1  
Regional Location Map

Land Use Plan

*This side intentionally left blank.*

Across California, coastal communities are facing rising sea levels and increasingly severe winter storms. The City of Marina is uniquely positioned to adapt to sea level rise. While the City faces some of the highest rates of erosion in California, unlike most jurisdictions, it has not placed any shore-parallel coastal armoring. With the unique dune topography, inland distance to development, and soon to be reduced erosion rates from the cessation of sand mining, the City of Marina faces minimal exposure to most coastal hazards and sea level rise.

Demographically, Marina is the most diverse city in Monterey County and has a greater share of low-income residents than other cities in southern Monterey Bay. Additionally, Marina experiences a higher cumulative burden from environmental stressors compared to other cities on the Monterey Bay Peninsula and is within close proximity to a number of significant regional services such as the Monterey Regional Waste Management District and Monterey One Water Treatment Plant (Integral Consulting, 2023). The policies of this plan and the land use designations applied address these concerns and resolve them in terms of the mandates of the California Coastal Act.

Public facilities were also considered in preparation of the Marina Local Coastal Land Use Plan and key public utility stakeholders were consulted. Public facilities within the City's LCP jurisdiction include: Highway 1, the Marina Coast Water District's small desalination plant, the City's corporation yard, and the Marina Branch Monterey County Free Library. Currently, Highway 1 provides adequate capacity to meet regional access to the City of Marina and local wastewater and water needs can accommodate the land uses as proposed in the Local Coastal Land Use Plan. Several other properties within the coastal zone are publicly owned by State Parks and Monterey Peninsula Regional Parks District.

The following chapters provide greater detail on these aspects of the Local Coastal Program in Marina.

## 1.2 California Coastal Act

In 1972 California voters approved a ballot initiative known as Proposition 20 ("The Coastal Initiative"), establishing the California Coastal Commission and six regional commissions. The charge of these commissions was to implement state policies in the coastal zone through the exercise of permit authority. Concurrently, the commissions were to prepare a comprehensive Coastal Plan "to preserve, protect, and where possible, to restore the resources of the coastal zone or the enjoyment of the current and succeeding generations." The Coastal Plan, completed in late 1975, served as the basis for permanent coastal legislation.

The permanent coastal legislation was initiated in 1976 when the state legislature passed the California Coastal Act of 1976 (Coastal Act). The Coastal Act requires each coastal city and county to prepare a Local Coastal Program that establishes the kind, location, and intensity of land and water uses appropriate to its portion of the coastal zone and consistent with state coastal policies, as

well as the resource protection standards that such development must meet. In this way, the Coastal Act creates a partnership between local government and the state Legislature to implement broad state policies in the precise manner adopted by the local government and certified by the Coastal Commission. The Coastal Act is part of the state's Public Resources Code, beginning at §30000.

Local Coastal Program policies and standards are intended to reflect and carry out the broad coastal resources planning and management policies contained in Chapter 3 of the Coastal Act (Public Resources Code §30200). The basic goals of the Coastal Act, as stated in Public Resources Code §30001.5, are to:

- a) Protect, maintain, and where feasible, enhance and restore the overall quality of the coastal zone environment and its natural and man-made resources.
- b) Assure orderly, balanced utilization and conservation of the coastal zone resources taking into account the social and economic needs of the people of the state.
- c) Maximize public access to and along the coast and maximize public recreation opportunities in the coastal zone consistent with sound resource conservation principles and constitutionally protected rights of private property owners.
- d) Ensure priority for coastal-dependent development and coastal-related development over other development on the coast.
- e) Encourage state and local initiatives and cooperation in preparing procedures to implement coordinated planning and development for mutually beneficial uses, including educational uses, in the coastal zone.

Local Coastal Programs contain the ground rules for future development by specifying appropriate location, type, and scale of new or changed uses of land and water and the protection of coastal resources by governing decisions that determine the short- and long-term conservation and use of coastal resources. While each Local Coastal Program reflects unique characteristics of individual local coastal communities, regional and statewide interests and concerns are also reflected because the LCP is certified to be in conformity with Coastal Act goals and policies.

## 1.3 City of Marina Local Coastal Program

On February 17, 1981, and June 2, 1981, the City Council of the City of Marina, adopted Resolutions 81-8 and 81-31 approving in concept the land use and implementation plans of the City's Local Coastal Program. Amendments to the land use plan were made on January 19, 1982, and March 16, 1982. Final certification by the California Coastal Commission (CCC) occurred after a public hearing on April 20, 1982, and the City assumed CDP-issuing authority on December 17, 1982.

A number of new statewide coastal land use issues that were not addressed in the 1982 Local Coastal Program have come to the fore over the past decades including:

- Sea Level Rise and Coastal Hazards
- Tribal Cultural Consultation and Resources
- Environmental Justice
- California’s Affordable Housing Crisis

The City has also updated its Local Coastal Programs (LCP) provisions concerning Coastal Hazards and Sea Level Rise (SLR) with a grant from the California Coastal Commission. Both the coastal hazards update and the broader LUP update were funded by CCC grants.

## Administrative Procedures

### LCP Amendments

Amendments to the Local Coastal Program may be proposed by the City, the Coastal Commission, or private applicants. All proposed LCP Amendments must include sufficient documentation and analyses to support review. City staff will evaluate each amendment for consistency with Coastal Act policies and provide recommendations to the City Council which will make the local decision. Adopted amendments will be submitted to the Coastal Commission for review and certification prior to being incorporated into the LCP.

### CEQA

Preparation of Local Coastal Programs and LCP amendments are exempt from CEQA pursuant to PRC Section 21080.9 and Section 15251(f) of the CEQA Guidelines.

## Supporting Documents

The following reports were prepared to support the comprehensive Land Use Plan update:

- City of Marina 2023 Existing Conditions and Sea Level Rise Adaptation Report (Integral Consulting, 2023)
- Social Vulnerability Assessment (Integral Consulting, 2023)
- Marina Beach and Coastal Access Questionnaire Report (EMC Planning Group, 2024)
- City of Marina Biological Resources Memo (EMC Planning Group, 2025)

The following were used as background information:

- City of Marina General Plan 2000
- 2045 General Plan Update background studies and reports
- 6<sup>th</sup> Cycle Housing Element

The following CCC Guidance Documents were used to support the comprehensive Land Use Plan update:

- Environmentally Sensitive Habitats and Other Natural Resources, 2013
- Water Quality Protection, 2017
- Planning and Locating New Development and Archaeological/Cultural Resources, 2013
- Sea Level Rise Policy Guidance, 2024
- Critical Infrastructure Guidance, 2021
- California Coastal Commission Environmental Justice Policy, 2019
- Informational Briefing on Lower-Cost Accommodations, 2024
- Fair Housing in the Coastal Zone, July 2024
- Affordable Housing and the Coastal Act, 2023
- For Marina, By Marina: Community Engagement Report for a Public Access & Amenities Plan, 2025

## Land Use Plan

The Land Use Plan is defined in the Coastal Act as:

. . . the relevant portions of a local government's general plan, or local coastal element which are sufficiently detailed to indicate the kinds, location, and intensity of land uses, the applicable resource protection and development policies, and, where necessary, a listing of implementing actions. (Public Resources Code §30108.5)

The Land Use Plan provides policy direction for decision-makers, property owners, and the public regarding coastal land use and development. It also includes a land use designation map, a map of environmentally sensitive areas, and maps of other coastal resources, as appropriate, such as coastal public accessways and archaeological resources.

The Land Use Plan is divided into eight major coastal act resource area sections based on Coastal Act policy areas, as follows: 1) Public Access and Recreation; 2) Biological Resources and Environmentally Sensitive Habitat Areas (ESHA); 3) Marine Resources and Water Quality; 4) Coastal Hazards; 5) Opportunistic Beach Nourishment Program; 6) Land Use and Development; 7) Scenic and Visual Resources; 8) Tribal and Cultural Resources; and 9) Environmental Justice.

Each section includes background information and Land Use Plan policies. Such introductory background text, as well as the Appendices and background reports, provides some broad context for each chapter, but shall not be used as the legal standard of review for Coastal Development Permit decisions. Only the Land Use Plan policies, located within Chapters 2 through 9, shall be

used as the legal standard of review. In such cases where one or more Land Use Plan policies conflict, such conflicts shall be resolved in a manner which, on balance, is the most protective of significant coastal resources. In any case in which the interpretation or application of an LCP is unclear, as that policy may relate to a particular development application or project, the application or interpretation of the policy which most clearly conforms to the relevant Coastal Act policy shall be utilized. Additionally, any interpretation of its policies must be consistent with the coastal resources planning and management policies of Chapter 3 of the Coastal Act, which is incorporated herein by reference. Wherever references to the Coastal Act or other statute or regulation are included, the reader is hereby notified that said references may be amended by the responsible agency.

Furthermore, the following rules of interpretation shall apply:

1. When used in the Land Use Plan, the words “shall,” “must,” and “will” are always mandatory; and
2. “Including” means “. . . including but not limited to. . .”

## Implementation Plan

The Implementation Plan, or implementing actions, is defined in the Coastal Act as:

...the ordinances, regulations, or programs which implement either the provisions of the certified local coastal program or the policies of this division and which are submitted pursuant to §30502 [Designation of sensitive coastal resource areas]. (Public Resources Code §30108.4)

The Implementation Plan is adopted into the City’s Municipal Code as Chapter 17.40 and includes relevant portions of the zoning code applicable to the coastal zone and other programs needed to carry out the goals, policies, and land use designations of the Land Use Plan. The Implementation Plan lists allowable land uses for each land use designation, implements appropriate height, mass, and setback requirements for development, and specifies the coastal resources protection standards that allowable development must meet, all of which must be based upon Land Use Plan policies. In addition, it contains procedural requirements that govern the types of projects requiring a Coastal Development Permit, how a Coastal Development Permit can be obtained, and the opportunities for public participation in Coastal Development Permit review. The City of Marina’s Implementation Plan is found in Title 17 of the City of Marina Municipal Code.

## Coastal Development Permits

A central feature of the Coastal Act is the transfer to local governments of most permitting authority vested in the Coastal Commission by the Coastal Act once the adoption and certification of a Local Coastal Program has occurred. The adopted and certified LCP becomes the legal standard of review for the issuance of Coastal Development Permits within the City’s coastal zone. The Coastal

Commission retains jurisdiction on appeal within designated appealable areas, as well as retaining permit issuing authority over development within tidelands, submerged lands, and public trust lands, whether filled or unfilled, and out to a distance of three (3) nautical miles from the mean high tide line.

All development within the coastal zone requires a Coastal Development Permit, unless the proposed development qualifies for a waiver or exemption, as specified in the City’s Implementation Plan.

## 1.4 City of Marina Coastal Zone

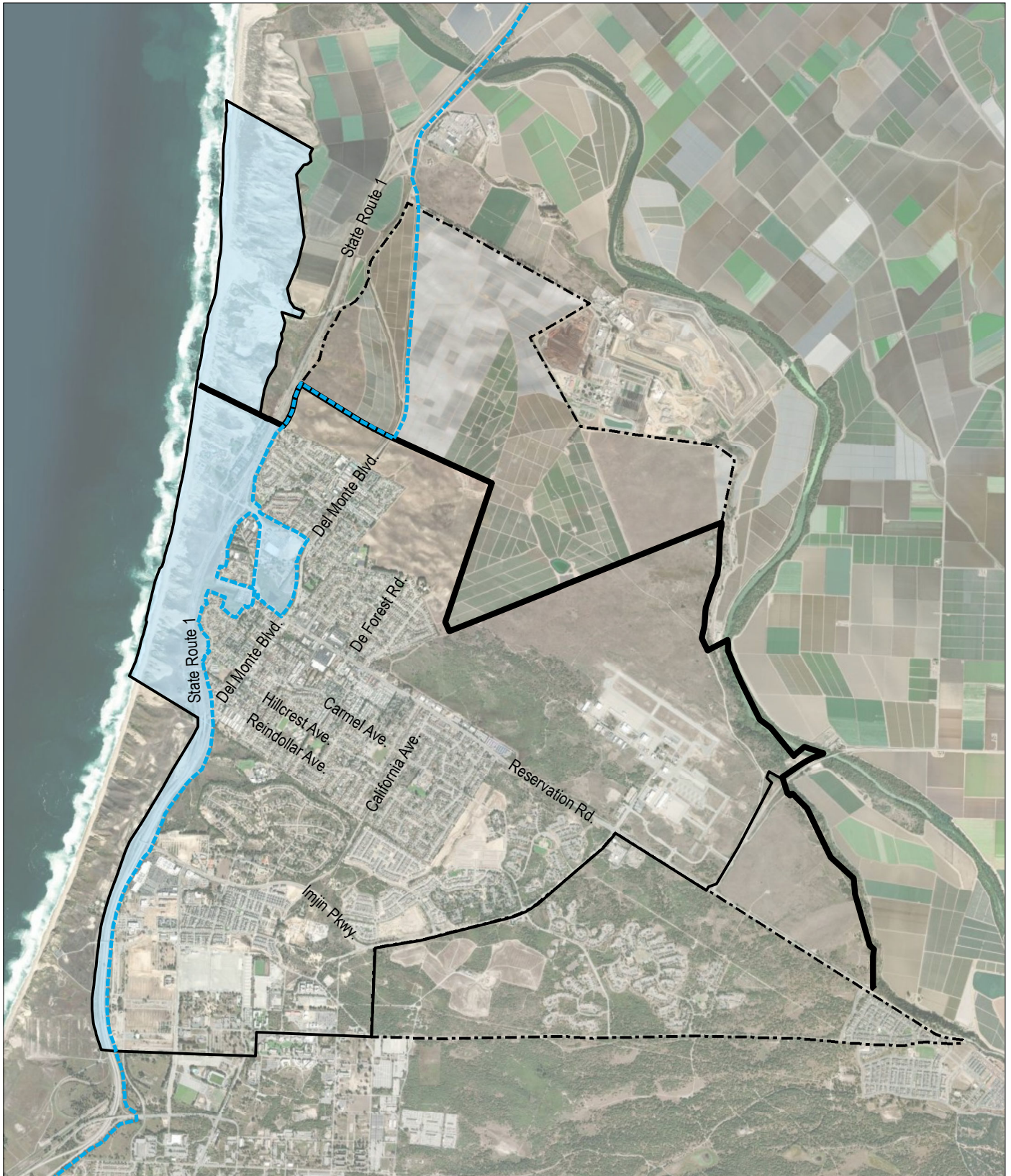
Within the City of Marina, the coastal zone includes all lands west of State Route 1, from the City’s northern boundary to the City’s southern boundary. East of State Route 1, the coastal zone includes the residential area between Robin Drive and Messinger Drive as well as the land bounded by Del Monte Boulevard, Beach Road, and Reservation Road including, but not limited to the Locke-Paddon Wetland Community Park, the Monterey County Free Library – Marina Branch, and the partially developed properties to the north.








Marina Dunes Preserve  
*Photo Credit: EMC Planning Group*

The City of Marina’s LCP jurisdiction is depicted in [Figure 2, City of Marina Coastal Zone and LCP Jurisdiction](#). The California Coastal Commission retains jurisdiction of all land below the Mean High Tide Line (MHTL).

West of State Route 1, the City’s coastal zone consists of predominately undeveloped, publicly owned sand dunes, providing recreational opportunities and coastal access. In addition to the undeveloped dunes west of State Route 1, there are two wetlands, a limited amount of non-conforming residential development and public facilities located along Lake Court, and public facilities and visitor oriented commercial development along Dunes Drive and Reservation Road. East of State Route 1, the City’s coastal zone includes five wetlands, Locke-Paddon Park, the Marina Branch of the Monterey County Free Libraries, the Walmart shopping center, undeveloped parcels, and a small area of single-family residential homes.



-  Marina City Limit
-  City of Marina Sphere of Influence
-  Urban Growth Boundary
-  California Coastal Zone
-  City of Marina LCP Jurisdiction

Source: Monterey County GIS 2024,  
 Google Earth 2024,  
 California State Geoportal 2024

Figure 2

## City of Marina LCP Jurisdiction and Coastal Zone Boundary



*This side intentionally left blank.*

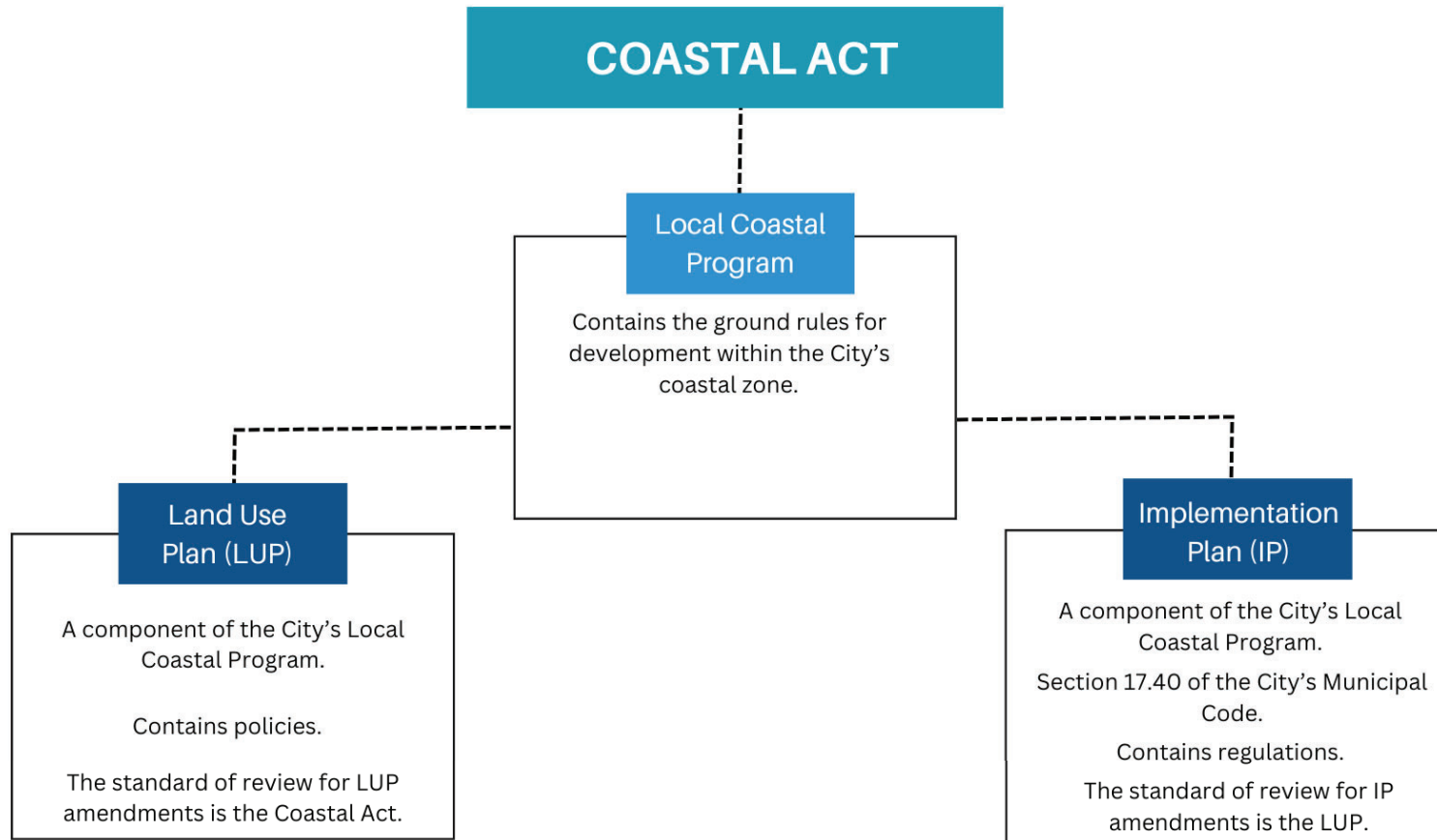
## 1.5 Relationship of the Local Coastal Program to Other Plans and Laws

The Local Coastal Program is an element of the Marina General Plan. The City also has a major City of Marina 2045 General Plan Update underway and is anticipated to be complete in 2026. Within the LCP, in case of conflicts between policy statements, the policy most protective of the coastal resource shall prevail. Within the coastal zone area of the City, the Local Coastal Program shall take precedence over the General Plan and its other elements where policies conflict. When the Local Coastal Program is silent on certain policy areas, such as concerning the subjects of noise and other non-coastal resource issues, the General Plan shall apply, but not be used as a standard of review for Coastal Development Permits. In reviewing or carrying out projects outside the coastal zone, the City will consider the effect of such projects or actions on coastal zone resources in order to ensure that the policies of the LCP are achieved. [Figure 3, Relationship between Coastal Act and Local Coastal Program](#), provides a flowchart of the relationship between the various regulatory documents.

## 1.6 Terminology Used in the Land Use Plan

Terminology used in the Land Use Plan is included as Appendix A.

*This side intentionally left blank.*



Source: EMC Planning Group

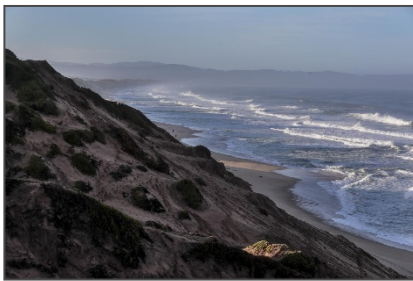
Figure 3  
Relationship between Coastal Act and Local Coastal Program

*This side intentionally left blank.*

# 2.0 Public Access and Recreation (PAR)

## 2.1 Background – Public Access and Recreation

Creating and maintaining public access is one of the major goals of the Coastal Act. The Coastal Act states that “each local coastal program...shall contain a specific public access component to assure that maximum public access to the coast and public recreation is provided” (Public Resources Code §30500). This section focuses on opportunities to preserve, provide, and enhance public access to and across the unique coastal dune habitat that dominates the City’s shoreline.



Monterey Bay Dunes Complex  
*Photo Credit: Los Angeles Times*

The City of Marina contains three miles of coastline marked by wide sandy beaches and expansive sand dunes. Marina’s coast is largely undeveloped and is home to several rare and/or endangered species which inhabit the coastal dune environment. The topography of the dune complex, 100 feet high in places, and lack of development along Marina’s coastline provides visitors with a unique coastal experience which feels wild and immersive. Visitors and residents enjoy walking, birdwatching, whale watching, viewing the natural beauty of the ocean and sand dunes, picnicking, sunbathing, and paragliding along Marina’s coastline.

While the sand dune environment provides a unique and immersive coastal experience to visitors, it can also present challenges for accessibility. The topography of the sand dunes poses a physical barrier between the beach and beach parking lot or trailheads. There are four main areas to access the coast in Marina, as discussed in more detail below, and only one of the four areas provides beach visitors with parking and access directly adjacent to the beach.

In a Beach and Coastal Access Questionnaire (EMC Planning Group, 2024), community members indicated a need for improved access and amenities, including paved pathways and boardwalks, stairs, improved parking facilities, and improved day-use areas. [Figure 4, South Marina Coastal Access Points](#), and [Figure 5, North Marina Coastal Access Points](#), demonstrate the location of existing and proposed coastal access in the City.

One of the City’s primary goals related to coastal access is to provide equitable access (Tripepi Smith, 2025). This includes developing more easily accessible overlook and beach access areas. The City is committed to pursuing grant funding opportunities and partnering with State Parks to encourage expanded accessibility to the City’s coast for all people. Equitable access also includes reducing barriers to accessing the coast for those without a car. The policies below encourage the City to expand their active transportation network to connect low-income neighborhoods to the coast.

The City of Marina’s coastal access points and natural shoreline provide an invaluable and unquantified service to disadvantaged populations both in the community and around the Monterey Bay region. Daily, elderly and disabled individuals line the ocean front parking spots at Marina State Beach. On sunny weekends, large families picnic and recreate along the beach.

## Primary Coastal Access Points

### Fort Ord Dunes State Park




Fort Ord Dunes State Park is located adjacent to the southern portion of the City of Marina and serves students from CSUMB, recreationalists using the Monterey Bay Coastal Recreation Trail, residents of southern Marina, and visitors. Fort Ord Dunes State Park is one of the major beach access points along the City’s coastline and includes a parking lot, portable toilets, a viewing area, and an approximately quarter-mile unimproved trail to the beach. The viewing area and beach access trail are currently in need of maintenance and do not offer adequate accessibility for some users. The City of Marina, in partnership with State Parks, received a grant from the California Coastal Conservancy in 2024 to plan for beach access and day-use recreation improvements and maintenance to the existing facilities at Fort Ord Dunes State Park.



Existing Viewing Area at Ford Ord Dunes State Park.  
*Photo credit: EMC Planning Group*

It should be noted that Fort Ord Dunes State Park itself is just outside Marina’s city limits. Access to the park is gained from the City of Marina, over the 8<sup>th</sup> Street overpass, which is immediately adjacent to the Park. While the beach access itself is located outside of the jurisdiction of this LCP, wayfinding signage throughout the City could be improved to assist with access to Fort Ord Dunes State Park.



-  Marina City Limit
-  City of Marina Sphere of Influence
-  City of Marina LCP Jurisdiction

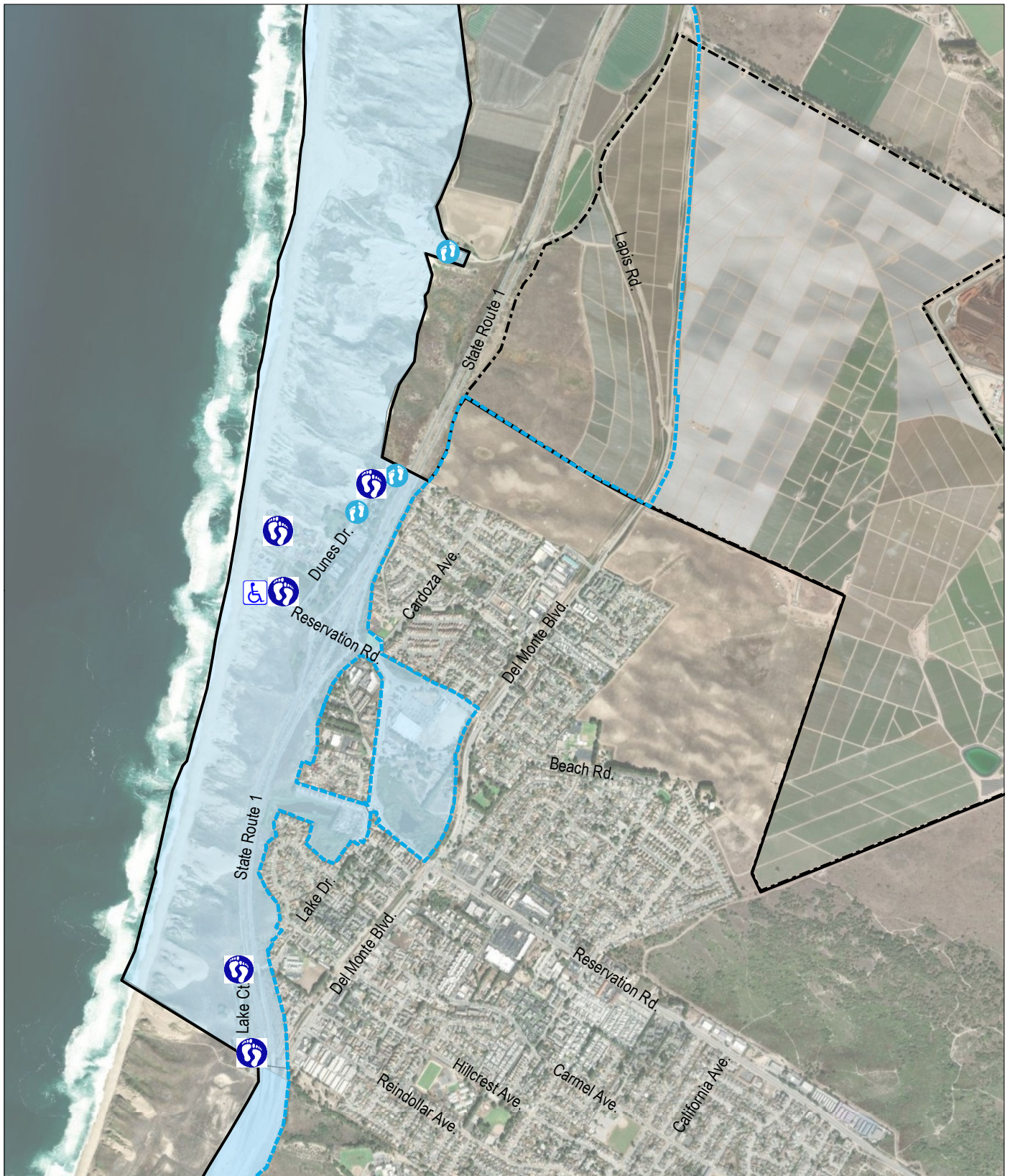
-  California Coastal Zone
-  Existing Beach Access Point

Source: Monterey County GIS 2024,  
 Google Earth 2024,  
 California State Geoportal 2024

Figure 4

## Southern Marina Primary Coastal Access Points

*This side intentionally left blank.*



Source: ,Google Earth 2024,  
 Monterey County GIS 2024  
 California State Geoportal 2024



Figure 5  
 Northern Marina Primary Coastal Access Points  
 Land Use Plan

*This side intentionally left blank.*

## Lake Court

Lake Court is located just north of Fort Ord Dunes State Park. Lake Court is a cul-de-sac off Lake Drive and provides informal parking and two unimproved coastal access trails over large sand dunes through State Parks properties to both Marina State Beach and Fort Ord Dunes State Park. There are three legal non-conforming houses at the end of Lake Court on private water and septic systems. One of the City's two corporation yards, which is currently underutilized, is also located on Lake Court.

Access to the beach from Lake Court requires an approximately quarter mile walk through the sand dunes on unimproved hilly, deep sandy trails. The trails limit accessibility for anyone with mobility issues. The dunes and beach along Lake Court are owned and managed by California State Parks. Improvements at Lake Court to enhance the existing beach access could include:

- Sidewalk improvements;
- Coastal access wayfinding signs; and
- Striped and formalized parking.

If possible, improvements to the existing unimproved trails which are managed by State Parks would also be beneficial. City staff have identified beach access improvements at Lake Court and are committed to working with State Parks to pursue future grant funding which could fund erosion control, trail rehabilitation, benches, a viewing area, bicycle racks, educational signage, and boardwalks.

City staff have identified the city-owned site where the aging city-corporation yard currently exists as a potential site to provide State Parks corporation yard space, office space, and employee housing for the State of California Parks and Recreation Monterey District. State Parks has indicated that lack of affordable housing in the area is a significant constraint to staffing. The handful of houses at the end of Lake Court, which are legal nonconforming, could be repurposed into a park and day-use recreation area in the future. There are water and sewer constraints in this area.



Trail leading to the beach at the end of Lake Court.

*Photo credit: EMC Planning Group*

## Marina State Beach

Marina State Beach is the most popular area to access and enjoy the coast in the City of Marina. There are three access points to Marina State Beach. The main way to access Marina State Beach is via the parking lot at the end of Reservation Road which provides 48 parking spaces, a restroom, picnic benches, bike racks, and direct views and access to the beach. Marina State Beach can also be accessed from Lake Court and through the Sanctuary Beach Resort, just north of Reservation Road, which includes a lateral public access easement, and provides a handful of parking spaces for the public to use.



Restroom at Marina State Beach Parking Lot  
*Photo credit: EMC Planning Group*

Marina State Beach is known for hang-gliding, paragliding, fishing from the shore, and picnics. Radio-controlled gliders and kites are also popular. Water recreation is extremely hazardous due to strong rip currents.

## Marina Dunes Preserve



Marina Dunes Preserve  
*Photo credit: EMC Planning Group*

Marina Dunes Preserve is located just north of Marina State Beach. Marina Dunes Preserve is owned and managed by the Monterey Peninsula Regional Parks District. Parking for Marina Dunes Preserve is limited to street parking and is located at the north end of Dunes Drive. Beach access requires an approximately 0.4-mile walk on a sandy trail. Snowy Plover habitat at the existing beach access point through Marina Dunes Preserve makes trail improvements difficult. There is potential to move the trail a quarter-mile south on Dunes Drive, where there is a historic trail that is currently closed for restoration purposes. This southern trail could be a candidate for trail improvements, including a boardwalk, which would

improve accessibility for those with limited mobility, because of its location further from critical snowy Plover habitat.

## North Dunes Site (Former CEMEX Site)

Just north of Marina Dunes Preserve, from the end of Dunes Drive to the City of Marina's northern city-limits, is the North Dunes site. The North Dunes site is situated between the Martin Dunes owned by the Big Sur Land Trust to the north and the Marina Dunes Preserve owned by the Monterey Regional Parks District to the south. Just north of the Martin Dunes lies the Salinas River National Wildlife Refuge. The North Dunes site is part of the larger Monterey dune complex and consists of beach and dune



Dredge Pond at the Former CEMEX Site

*Photo Credit: Monterey Herald*

habitats, including a central foredune and central dune scrub. The coastal dunes located in the North Dunes area are important for habitat connectivity to the protected lands just north of the city and provide habitat for many special-status species that are adapted to the shifting dune sands environment. Two beach access points are proposed within the North Dunes site. One is located at the end of Dunes Drive, where there appears to be an existing unimproved desire path heading north, and the other is located off Lapis Road.

Historically, the former CEMEX property has been mined for sand since the early 1900's. Until the 1980's, there were six active mines (including CEMEX) along the Monterey Bay removing sand from the Southern Monterey Bay Littoral Cell. The other mines were all dragline operations that removed sand directly from below the mean high tide line and within the jurisdiction of the Army Corps of Engineers ("ACOE"), which required operators to obtain authorization for their drag line operations pursuant to the Rivers and Harbors Act. Around 1970, when these authorizations came due for renewal, the Army Corps determined that these coastal sand mines were causing erosion and stopped issuing permits for the use of drag-lines. As the required permits were no longer being issued by the ACOE, all the coastal sand mining in Monterey Bay, other than the CEMEX operation which was a dredge pond mining operation, ceased.

On July 13, 2017, the California Coastal Commission approved a Cease and Desist Order (CCC-17-CDO-02) (herein referred to as 'the Order') which required CEMEX to stop all sand mining on the property and remove all equipment associated with sand mining. This effectively marked the end of sand mining in the City of Marina. In addition to halting sand mining, the Order also required that the property be conveyed to a non-profit or governmental agency to be restored. While a restoration plan has been prepared and approved for the site, the Order does still allow low-intensity, coastal resource dependent recreational activity on the site, which could include hiking, boardwalks, restrooms, tent-camping, and possibly employee housing for the managing entity. Additionally, the North Dunes site is located outside of the Urban Growth Boundary. The Urban Growth Boundary Initiative, which is in effect until December 31, 2040, prohibits development other than public parks and open space uses outside of the Urban Growth Boundary.

## Locke-Paddon Wetland Community Park (LPP or Park)



Locke-Paddon Park

*Photo Credit: See Monterey County*

Locke-Paddon Park is partially owned and managed by the City of Marina and partially owned and managed by the Monterey Peninsula Regional Park District (District). The Park is the City's main open space area east of State Route 1, within the City's coastal zone, providing low-impact recreation opportunities. The Park features a vernal pond which provides significant habitat for a variety of wildlife and plant species, especially birds and amphibians, which utilize the emergent vegetation for cover. The Park provides opportunities for

birders, who may spot grebes, coots, mallards, warblers, sparrows and blackbirds. Many other bird species frequent the Park, especially during the migratory season in the winter and spring.

Around the vernal pond are recreational trails, a viewing platform which is in poor condition, public restrooms, and benches. The Locke-Paddon Community Park extends towards the Marina Branch Monterey County Free Library and includes a community garden and picnic tables.

The City has identified the following goals for the park: manage invasive vegetation, provide better sight lines from the trails, ensure public safety, discourage encampments, improve water quality, provide needed maintenance to existing infrastructure, and create new interpretive and recreational areas.

## 2.2 Coastal Act Policies and Definitions

Coastal Act sections 30210 through 30224 are hereby incorporated by reference and provide essential background for the Public Access and Recreation (PAR) policies. The Coastal Act's public access and recreation policies (Coastal Act sections 30210 through 30224) apply to all new development located seaward of the first public road (which, in Marina's case, is all development located seaward of Highway 1). While these Coastal Act sections are not the standard of review for development elsewhere within the City, they provide the framework for the LUP's public access policies.

## 2.3 Land Use Plan Policies – PAR

The following policies shall govern public access to Marina's coast.

## ***Policies - General***

### **PAR-1**

The City shall provide maximum coastal access and recreational opportunities for all people consistent with public safety needs and the need to protect public rights, rights of property owners, and natural resource areas from overuse.

### **PAR-2**

Barriers to public coastal access shall be reduced to the maximum extent feasible, including ensuring that public access and recreational opportunities account for the social, physical, and economic needs of all people.



Paragliding in Marina  
*Photo Credit: See Monterey County*

### **PAR-3**

Public access facilities vulnerable to coastal dune erosion or sea level rise shall be sited and designed to anticipate eventual loss, retreat, and replacement of such facilities, when feasible. (See also HAZ-10)

### **PAR-4**

New development proposed between the first public roadway and the shoreline and along the coast shall be required to provide public access. Exceptions to this requirement shall be granted only where public access would pose a safety risk or threat to fragile resources, or where adequate access exists nearby.

### **PAR-5**

Any reductions or limitations in access to the beach, shoreline, trails, and parks for coastal recreation, such as signs limiting public parking or restricting use of existing lateral and/or vertical accessways, shall require a Coastal Development Permit. Such projects shall ensure that existing overall levels of public access are maintained or enhanced, such as through the provision of bike lanes and bicycle parking, pedestrian trails, and relocated vehicular parking spaces so as to fully mitigate any potential negative impacts and maximize access opportunities.

### **PAR-6**

The City shall encourage California State Parks and other agencies and organizations to enhance the quality of the city's beaches, watercourses, and open spaces by reducing the amount of litter and pollution present in these areas and providing appropriate amenities as follows:

- A. Increase public awareness of the sources of pollution in the city's waterways;
- B. Increase public awareness of litter and its impacts on the landscape;

- C. Provide trash receptacles in strategic locations with associated signage along the city’s open space network;
- D. Encourage volunteer events and activities to pick up litter in public open spaces; and
- E. Provide more amenities to support high quality coastal access where appropriate, including boardwalks, public restrooms, benches, bicycle facilities, signage, trash receptacles, etc.

**PAR-7**

Encourage and support State Parks to relocate existing State Parks facilities, including office spaces, that are seaward of State Route 1 inland and repurpose those spaces with uses that support public access which can easily be retreated. (See also HAZ-7, HAZ-10, and HAZ-14)

***Policies - Coastal Access Points***

**PAR-8**

Wayfinding signage to and trailhead signage at coastal access points throughout the City, as identified in [Figure 4, South Marina Primary Coastal Access Points](#) and [Figure 5, North Marina Primary Coastal Access Points](#) shall be improved and provided budgets allow. All vertical and lateral public accessways shall have clearly posted and maintained signs specifying the public's right to use these areas. Signs shall also identify any limitations on the public’s right of access and specific uses. Signs shall be provided in English, Spanish, and Korean, and/or others as appropriate.

**PAR-9**

Safety, accessibility, environmental sustainability, and aesthetics of coastal access points shall be improved, including those specified in [Figure 4, South Marina Primary Coastal Access Points](#) and [Figure 5, North Marina Primary Coastal Access Points](#).

**PAR-10**

Improvement and expansion of parking at coastal access points shall be required, with the following goals and characteristics included, when possible:

- A. Incorporate site-appropriate setbacks and reserve suitable surrounding land for expansion or retreat for existing or redeveloped public parking areas near the beach, as permitted by environmental constraints.
- B. Locate parking facilities so that beach access minimizes impacts to sensitive habitat areas such as dunes and wetlands. Where no other accessway is feasible, use site and design measures such as boardwalks, fencing, and signage to ensure habitat protection.
- C. Include green infrastructure features such as vegetated swales, permeable pavement, or bioretention areas to ensure that water runoff does not exceed that which exists prior to installation of new parking areas and to ensure that stormwater runoff impacts are minimized to the extent feasible for improvements to existing parking areas.

- D. Provide EV charging stations, bike racks, and bicycle repair stations at new and existing parking facilities, when feasible.
- E. Ensure that any new beach parking areas located on the east side of Highway 1 are connected to coastal access points via alternative modes of transportation such as MST bus routes, shuttles and bicycle/pedestrian trails.

### **PAR-11**

Existing free beach parking shall remain and minimized parking lot and beach curfews shall be maintained to the extent feasible to maximize public access and recreation opportunities. Imposing new time restrictions or fees at public parking lots, particularly where none previously existed, shall require a CDP and shall evaluate potential for impacts to lower income users, and any such impacts shall be appropriately mitigated.

### **PAR-12**

Lateral and vertical public coastal accessways shall be sited and designed to account for likely uses of the facility, topographic and site constraints, the fragility of natural resources, potential future risks of erosion and sea level rise, the need for adaptable, non-permanent designs in erosive areas, and compatibility with adjacent land uses. While trails and their buffers are permitted uses within environmentally sensitive habitat areas (ESHA), new trail segments and improvements shall be sited and designed to minimize and mitigate impacts to the habitat and buffer areas.

### **PAR-13**

A Coastal Development Permit for any proposed abandonment of a public right-of-way that may affect public access shall be required. Abandonment may be permitted only if it is demonstrated that commensurate public access to the coast will be preserved or provided elsewhere.

### **PAR-14**

A public or private entity shall be required to be responsible for maintaining public accessways and protecting adjacent ESHA if present when public coastal access is a condition for new development. Such accessways shall be open to the public unless access poses a danger to public safety or unreasonable impacts to ESHA.

### **PAR-15**

Existing trails and trail amenities shall be improved to address erosion, environmental concerns, and public safety. Consider options to retrofit or relocate existing trails and amenities to reduce potential impacts from sea level rise.

## PAR-16

Public trails and beach accessways shall be considered coastal-dependent uses unless there is a habitat-specific limitation that precludes development or aggravates hazards. The California Coastal Trail (a network of public trails for walkers, bikers, equestrians, wheelchair users, and others) is considered a coastal-dependent use and its implementation, maintenance, and improvement along the coastline shall be a priority.

## *Policies – ADA Accessibility*

### PAR-17

ADA accessible coastal access shall be required where feasible. Improvements that focus on accessibility to the coast including, but not limited to, construction of boardwalks, viewing areas, day-use areas, benches and viewing platforms that meet ADA standards.

## *Policies - Bicycle Access*

### PAR-18

The City shall provide bicycle lanes connecting Marina’s city-center to coastal access points, where feasible. The City should facilitate and support bicycle lane connections between FORTAG and the Monterey Bay Coastal Recreation Trail. Bicycle racks and repair stations shall be provided and maintained at coastal access trailheads as funding is available.

## *Policies - Low Cost Overnight Accommodations*

The City of Marina has a number of overnight accommodations along Dunes Drive, with options ranging between a short-stay and camping RV Park to a beachfront resort. As overnight accommodations redevelop overtime, care should be taken to ensure a range of overnight accommodation types, which could include campgrounds, hostels, RV Parks, cabins, hotels, motels, and yurts, are provided in the City’s coastal zone to ensure a range of cost options for visitors.

California State Parks is currently planning a campground project at Fort Ord Dunes State Park, which would provide approximately 45 RV campsites, 43 traditional tent campsites, and 10 walk-in or bike-in style campsites. The Fort Ord Dunes State Park campground would be located less than a mile south of Marina’s southern city boundary.



Marina Dunes RV Resort

*Photo Credit: EMC Planning Group*

## PAR-19

The City shall protect and retain existing lower cost visitor and recreational facilities. The following shall be prohibited:

- Conversion of an existing lower-cost overnight facility shall be prohibited unless replaced in kind.
- Conversion of existing visitor serving facilities on public land to private membership use.

The City shall prioritize development of visitor serving and commercial recreational facilities designed to enhance public opportunities for lower-cost coastal recreation. New development of overnight visitor-serving accommodations shall provide a component of lower cost overnight visitor accommodations open to the public, such as a campground, RV park, hostel, or lower cost hotel units at a rate comparable to the standard rate required by the Coastal Commission (generally less than 75% of the local average daily room rate in summer) at the time the development is proposed. This requirement may be met on site, off site, or by means of payment of an in-lieu fee to the City for deposit into a fund to subsidize the construction of lower-cost overnight facilities in the coastal zone.

## PAR-20

The City will prioritize recreational related development over private residential or general commercial development on land designated for Visitor Serving Commercial.

## Fort Ord Dunes State Park

### PAR-21

Wayfinding signs throughout the City, including on State Route 1, Second Avenue, 9<sup>th</sup> Street, and 8<sup>th</sup> Street shall increase awareness of the coastal access at Fort Ord Dunes State Park for automobiles, cyclists and pedestrians.

## Lake Court

### PAR-22

Facilitate repurposing the existing city-owned corporation yard at Lake Court for State Parks employee housing, offices, a corporation yard, or lower-cost public overnight accommodations such as a small campground.

### PAR-23

The City shall assess parking and street improvements, a day-use area, playground, restroom, and limited overnight uses at the end of Lake Court.

## PAR-24

The City will collaborate with the State Parks to address trail improvements on Lake Court including rerouting the trail from the end of Lake Court to a gentler grade and paving a portion of the trail that extends from Beach Range Road to the coast.

## *Marina State Beach*

### PAR-25

Encourage the inland retreat and relocation of the Marina State Beach parking lot further from the shore to avoid the erosion impacts of sea level rise and storm surge, acknowledging that access to Marina Coast Water District (MCWD) shall be maintained, until such time as it is no longer needed by MCWD.

## *Sanctuary Beach Resort*

### PAR-26

Maintain clear beach access signage and include adequate beach access wayfinding signs in the public right-of-way and within the resort itself. The public access area shall be developed to look distinct from the Sanctuary Beach Resort. The provision of additional public parking spaces adjacent to the beach access is encouraged and shall be properly identified.

### PAR-27

The Endangered Species Act prohibits harassment, harm, injury, and killing of Western snowy plovers. Due to the presence of federally threatened Western snowy plover habitat, dogs shall only be allowed on leash for the beach fronting Sanctuary Beach Resort. ~~on the beach fronting the Sanctuary Beach Resort, dogs are only allowed on leash.~~ Owners must clean up after their pets and dispose of waste in trash receptacles.

## *Dunes Drive*

### PAR-28

Encourage Monterey Peninsula Regional Parks District to provide boardwalk access through the Marina Dunes Preserve, if feasible. The boardwalk shall be sited to reduce impacts to ESHA and special-status species to the greatest extent feasible.

### PAR-29

The City shall evaluate constructing a parking lot along Dunes Drive near the trailhead to the Marina Dunes Preserve.

## North Dunes (Former CEMEX Site)

### PAR-30

Develop the North Dunes (former CEMEX site) to enhance public access and recreation opportunities, including a visitor center, restrooms, parking facilities, ADA-accessible trails, viewing areas, and tent camping areas as allowed by / consistent with the Coastal Commission's cease and desist order.

### PAR-31

The establishment of trailheads at the terminus of Dunes Drive and at the main entrance off Lapis Road shall be designed to enhance public access and connectivity in northern Marina. New trails on the North Dunes site shall be accompanied by new, additional parking at the north end of Dunes Drive as feasible.

### PAR-32

Permit and encourage minimal public agency employee housing on the North Dunes site (former CEMEX site) to support park operations and management in the regional area, as allowed by / consistent with the Coastal Commission's cease and desist order.

## Locke-Paddon Park

### PAR-33

Plan and implement passive recreation improvements in concert with habitat enhancement and restoration activities at Locke-Paddon Park.

### PAR-34

The City shall expand the Park's accessibility to provide low-impact recreation and provide educational opportunities about wetlands and birds. The City shall plan for trail improvements and viewing area improvements and implement an interpretive sign network that educates the public about the ecological function of the Park, including as important habitat for migrating birds.



Dock at Locke-Paddon Park

*Photo Credit: EMC Planning Group*

*This side intentionally left blank.*

## 3.0 Biological Resources and Environmentally Sensitive Habitat Areas (BIO)

### 3.1 Background – Biological Resources and Environmentally Sensitive Habitat Areas

The coastal zone in Marina contains a diverse mixture of plant communities and habitat types adapted to the coast, local topography and soils, and historic uses of the region. These habitats may provide foraging, nesting, breeding, dispersal, and shelter opportunities for numerous species, including special-status species such as species listed as rare, threatened or endangered under federal or state Endangered Species Acts or species considered of special concern. Numerous habitat types are present in the region that are unique to coastal areas along the Pacific Ocean, including some that are considered sensitive by the California Department of Fish and Wildlife and California Coastal Commission, or that have been designated by the U.S. Fish and Wildlife Service as critical habitat for threatened or endangered species under the federal Endangered Species Act. [Detailed information on the biological resources and special-status species present in Marina can be found in Appendix B, City of Marina Biological Resources Memo.](#)



Vernal Pond at Locke-Paddon Park  
*Photo Credit: EMC Planning Group*

## Environmentally Sensitive Habitat Area

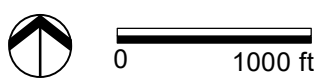
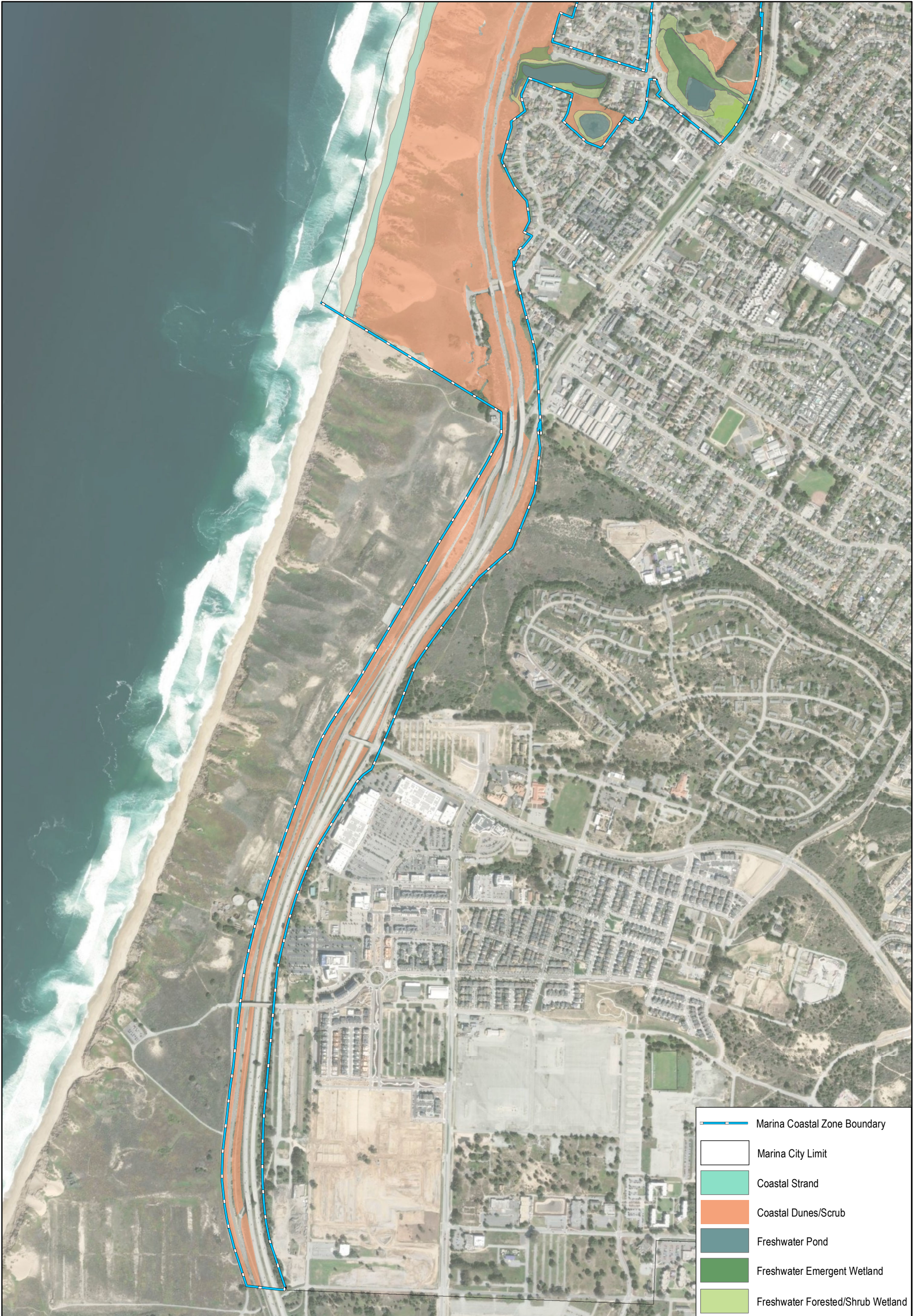
Environmentally sensitive habitat areas (ESHAs) are defined by the California Coastal Act as, “any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments” (Public Resources Code § 30107.5). In the terrestrial coastal zone of Marina, ESHAs may include coastal strand, coastal dunes/ scrub, ~~closed-cone cypress~~, and non-aquatic habitat for special-status and unique species. ESHA associated with aquatic habitats include wetlands such as estuarine and marine wetlands, freshwater emergent wetlands, freshwater forested/shrub, and freshwater ponds (Figure 6, [Environmentally Sensitive Habitat Areas \(ESHA\) South](#) and Figure 7, [Environmentally Sensitive Habitat Areas \(ESHA\) North](#)). As wetlands and watercourses have significantly different biological functions and protections under the Coastal Act, the LCP treats these habitat types distinctly. Figure 8, [Wetlands](#), depicts the locations of wetlands within the City’s coastal zone.

The following figures include maps of lands where ESHA may occur based on previous biological studies, known conservation areas, stakeholder outreach with various resource groups and agencies, and coastal zone-wide biological mapping efforts conducted for the 2024 Land Use Plan update. Areas mapped as ESHA may support sensitive habitat or special-status species but require further site-specific study to make this determination. ESHA shown on the figures in this section is meant to serve as an indication that further studies must be undertaken when development is proposed in areas of potential ESHA. ESHA may also be present on additional sites not included in Figures 6, 7 and 8.

ESHA could occur on any vacant or undeveloped parcel or portions of developed properties throughout the coastal zone but may not have been mapped because it has not been subject to previous biological study by qualified professionals. It is important, therefore, that all vacant parcels with potential to support sensitive plant or wildlife species be subject to a biological resource evaluation early in any project review process and prior to any ground disturbance, in order to determine if sensitive habitats or special status species or their habitats are present and require protection as mandated by the policies of the Coastal Act and this LCP.

The Coastal Act includes a definition of ESHA but does not include specific vegetation classifications. In general, the coastal zone of Marina supports the following ESHA types:

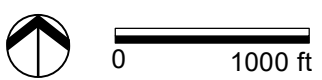
- Coastal Strand: Coastal strand is the zone located just above the high tide line to the edge of dune coastal scrub habitats. Soils are deep and well-drained, largely deposited by wind or wave action. Plants that grow along the strand have adapted to be tolerant of wind, wave action, and salt spray.



Source: ESRI 2024, Monterey County GIS 2024, CALVEG 2024, EMC Planning 2024

Figure 6  
 Environmentally Sensitive Habitat Areas (ESHA) South  
 Land Use Plan

*This side intentionally left blank.*

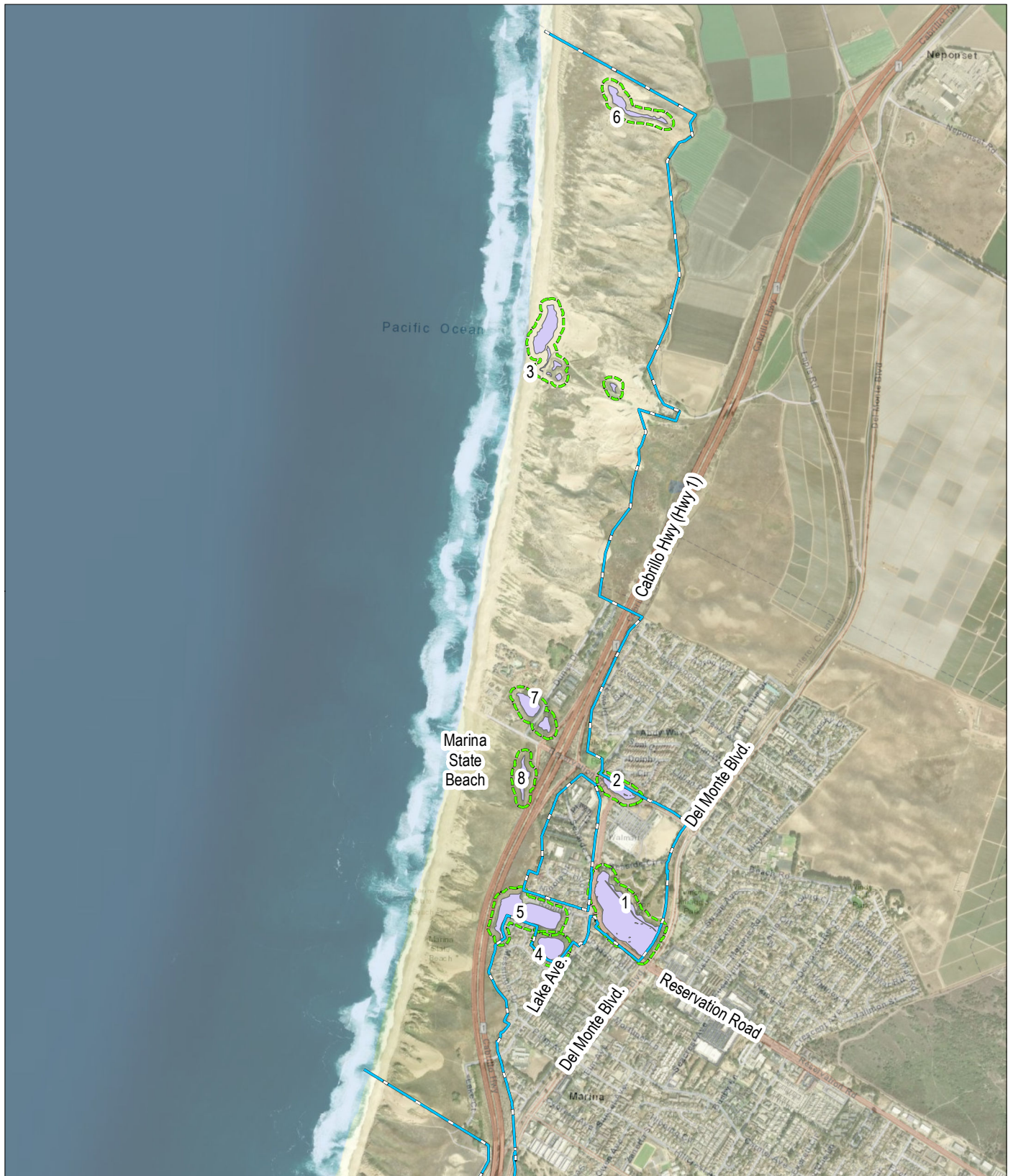


Source: ESRI 2024, Monterey County GIS 2024, CALVEG 2024, EMC Planning 2024

Figure 7  
Environmentally Sensitive Habitat Areas (ESHA) North

Land Use Plan

*This side intentionally left blank.*



- Marina Coastal Zone
- 100-Ft Wetland Buffer
- Wetlands

Source: ESRI 2024, Monterey County GIS 2024, CALVEG 2013

\*Note: No Wetlands Present within Coastal Zone out of Current Extent.



Figure 8  
**Wetlands**  
 Land Use Plan

*This side intentionally left blank.*

- Coastal Dune/ Coastal Scrub: Coastal dune/scrub vegetation communities are located outside of the coastal strand, including fore- and back dune habitats within coastal areas, influenced by marine conditions, such as wind and fog, and transitioning to chaparral habitats. Vegetation is described as low-growing herbs and shrubs that can tolerate harsh conditions like strong winds, shifting sandy soils, low nutrients, and low rainfall. ~~Closed Cone Cypress: Closed cone pines and eypresses are defined as having characterized by serotinous cones, and are limited to typically occur in coastal areas with poor, unfertile nutrient deficient soils. Closed cone forests are rare and usually found in only a handful of locations and occur naturally only in two stands located on the north and south sides of Carmel Bay. Although not native or endemic in to Marina, Monterey cypress (*Hesperocyparis macrocarpa*) is endemic to two natural stands located on the north and south side of the Carmel Bay. Monterey cypress has since has been widely planted and are now naturalized and self-sustaining oin the California coast. Within Marina, Monterey cypress in the City of Marina have occurs primarily as been planted within the trees within the coastal zone, and while not endemic to the area, they These trees are large, trees that are defined classified as major vegetation, and require a CDP for removal of trees when six (6) inches or greater in trunk diamete.~~
- Wetland/Riparian: Wetland and riparian habitats are found adjacent to rivers, streams, lakes and other water bodies, or in low areas and transitional zones between upland and aquatic habitats. Within the coastal zone of Marina, riparian vegetation is found adjacent to depressional areas close to ground water (ponds). Dominant species in the canopy layer are willows, with a mixed understory of native and non-native shrubs and herbs.

## Wetlands

Wetlands present within the City of Marina include vernal ponds, estuarine and marine wetlands, freshwater emergent wetlands, and freshwater forested/shrub wetlands. These habitat types are typically associated with natural and human-made ponds, intermittent and perennial creeks, wetlands, and roadside swales within or surrounded by other plant communities. Vegetation within wetlands may include taller-growing tules (*Scirpus* sp.) and cattails (*Typha* sp.) and low-growing rushes (*Juncus* sp.) and sedges (*Carex* sp.). These wetland habitats support a variety of wildlife species, especially birds and amphibians, which utilize the emergent vegetation for cover.

There are several wetlands in Marina's coastal zone, as shown in [Figure 8, Wetlands](#), and listed in [Table 3-1, City of Marina Wetlands](#), below. Ponds subject to tidal influence or impacted by saltwater intrusion are brackish and, except in the very wettest years, most are dry for some part of the year. Policies for wetland management are included in this update.

**Table 3-1 City of Marina Wetlands**

Number	Location	Current Ownership/Management
1	Locke Paddon Park, Reservation Road and Del Monte Blvd.	City of Marina and Monterey Peninsula Regional Parks District
2	Reservation Road and Beach Road	City of Marina
3	West of Hwy 1	Private
4	West of Lake Drive	City of Marina
5	West of Lake Drive	City of Marina
6	West of Hwy 1	Private
7	West of Hwy 1	City of Marina and Monterey Coast Water District
8	West of Hwy 1	State Parks

**Critical Habitat Threatened and Endangered Species**

The coastal zone of Marina ~~supports four threatened and endangered species discussed below. includes critical habitat for two federally-listed species pursuant to the Endangered Species Act: Monterey spineflower and western snowy plover.~~

***Monterey Spineflower***

~~Monterey spineflower (*Chorizanthe pungens* var. *pungens*) was federally listed as threatened in 1994 (USFWS 1994). Critical habitat was designated in 2006 for Monterey spineflower by the USFWS). Critical habitat was designated in 2006 for Monterey spineflower by the USFWS). — This low-growing annual in the buckwheat family (Polygonaceae) occurs within coastal dune, coastal scrub, grassland, maritime chaparral, and oak woodland communities, most often found in sparsely vegetated, sandy openings or recently disturbed sites such as firebreaks, roadsides and trails.~~



Monterey spineflower  
Photo Credit: iNaturalist

Critical habitat was designated in 2006 for Monterey spineflower by the USFWS. A portion of Monterey spineflower critical habitat is located in Marina (884 acres), which includes coastal beaches, dunes, and bluffs ranging from just south of the mouth of the Salinas River south to the City of Monterey, west of State Route 1.

Threats that may require special management considerations or protection in this area consist of invasive non-native plants, particularly ice plant, which forms dense ground cover on coastal beaches and crowds out Monterey spineflower, recreational activities such as foot traffic which could result in the trampling of plants and edge effects of urban development.

### ***Monterey Gilia***

Monterey gilia (*Gilia tenuiflora* ssp. *arenaria*) was federally listed as endangered in 1992 and state listed as threatened in 1987. This small annual herb in the phlox family (Polemoniaceae) is endemic to the Monterey Bay and Peninsula dune complexes, spanning approximately 22 miles of coastline in Monterey County (USFWS 2008).



Monterey Gilia  
Photo Credit: Neal Kramer

Monterey gilia is restricted to sandy soils within coastal dune and maritime chaparral habitats (USFWS 2008). It occupies open, sandy, wind-sheltered areas characterized by low vegetation cover and minimal plant litter. Within Marina's coastal zone, the species occurs in dune habitats west of State Route 1 and in the vicinity of Locke-Paddon Park. No critical habitat has been designated for this species.

Monterey gilia faces threats from trampling associated with recreational use, development, loss, and fragmentation of habitat, and competition from invasive species, particularly iceplant (*Carpobrotus* spp.), which forms dense mats that displace native vegetation.

### ***Western Snowy Plover***

The western snowy plover (*Anarhynchus nivosus nivosus*) was listed as federally threatened in March 1993. It is typically found along the beach above the high tide limit but is also known to use shores of salt ponds and alkali or brackish inland lakes. The Monterey Bay population of western snowy plovers includes both year-round residents and winter migrants.

Critical habitat was designated in 2012 for western snowy plover by USFWS. Critical habitat for western snowy plover is located from Monterey to Moss Landing (959 acres) and includes the beaches along the southern half of Monterey Bay from the city of Monterey to Moss Landing and the mouth of Elkhorn Slough in Monterey County.



Western Snowy Plover  
Photo Credit: Charlene Boarts

Threats that may require special management considerations or protection in western snowy plover critical habitat consist of human disturbance, development, horses, dogs, other domesticated

animals, offroad vehicle use, predators and habitat changes resulting from exotic vegetation. Control of non-native vegetation and enforcement of existing human-use regulations are needed to ensure the suitability of the critical habitat area.

### ***Smith's Blue Butterfly***

Smith's blue butterfly (*Euphilotes enoptes smithi*) was federally listed as endangered on June 1, 1976 (USFWS 1976). Historically, the species occurred in two areas along an approximately 80-mile stretch of California's central coast: from the Salinas River area south to the City of Monterey in Monterey County, and from the Carmel River area south to San Carpoforo Creek in San Luis Obispo County.



Smith's Blue Butterfly  
Photo Credit: Diane Kodama

Within Marina's coastal zone, Smith's blue butterfly has been recorded in coastal dune habitat west of State Route 1, where buckwheat species are present. According to the Smith's Blue Butterfly Recovery Plan, populations of Smith's blue butterfly at former Fort Ord, Marina State Beach, Salinas River National Wildlife Refuge, and the Naval Postgraduate School are considered important to the recovery of the species (USFWS 1984). No critical habitat has been designated for this species.

Threats that are disrupting populations of Smith's blue butterfly include, but are not limited to, habitat loss and degradation associated with coastal development, the spread of non-native invasive plants that reduce or eliminate buckwheat host plants, loss of buckwheat species due to disturbance or altered dune processes and recreational impacts such as trampling.

## **3.2 Coastal Act Policies and Definitions**

The following Coastal Act sections are included to provide essential background for the Biological Resources and ESHA (BIO) policies. While these Coastal Act sections are not the standard of review for development within the City, they provide the framework for the LUP's biological resource and ESHA policies.

### **Coastal Act Section 30107.5 Environmentally sensitive area**

"Environmentally sensitive area" means any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments.

### **Coastal Act Section 30240: Environmentally sensitive habitat areas; adjacent developments.**

(a) Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values and only uses dependent on those resources shall be allowed within those areas.

(b) Development in areas adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade those areas and shall be compatible with the continuance of those habitat and recreation areas.

### 3.3 Land Use Plan Policies - BIO

The following policies address biological resources and ESHA in the City of Marina.

#### *Policies - General*

##### **BIO-1**

While [Figure 6, Environmentally Sensitive Habitat Areas \(ESHA\) South](#), and [Figure 7, Environmentally Sensitive Habitat Areas \(ESHA\) North](#), can serve as an illustrative tool to help identify potential ESHA resources, it is the actual presence of ESHA on the site that dictates whether ESHA policies apply. To determine the presence of ESHA, a qualified biologist shall conduct a site visit and use the following resources to evaluate whether an area is considered ESHA:

- The list of rare, threatened or endangered species prepared under the California or Federal Endangered Species Act;
- Species identified in the vicinity of a site recorded in the California Department of Fish and Wildlife's (CDFW) California Natural Diversity Database and the list of "fully protected species" or "species of special concern";
- The list of 1A (plants presumed extirpated in California and either rare or extinct elsewhere), 1B (plants rare, threatened, or endangered in California and elsewhere), 2A (plants presumed extirpated in California but common elsewhere) or 2B (plants rare, threatened, or endangered in California but more common elsewhere) species maintained by the California Native Plant Society; and
- The CDFW List of Sensitive Natural Communities.

##### **BIO-2**

Development in ESHA, as defined in Coastal Act §30107.5, shall be limited to uses dependent on the resource (e.g., habitat restoration, scientific research, low-intensity public access and recreation, including trails and boardwalks, parking for coastal access, low-impact camping, educational signage, managed retreat in response to sea-level rise, etc.), and shall be sited and designed to protect against significant disruption of habitat values including to rare and endangered species.

##### **BIO-3**

Development shall be sited and designed to avoid impacts to ESHA, wetlands, and watercourses. Methods for avoiding impacts include, but are not limited to, utilizing raised boardwalks, installing informative signage and exclusion fencing, and implementing construction best management

practices. If there is no feasible alternative (e.g. with respect to siting, size, or design) that can eliminate / avoid all impacts, the City shall consider whether there are any alternatives to the proposed development that achieve most of the same goals but would reduce them to less than significant levels. If such an alternative exists, the City shall either deny the proposed development or approve the alternative. Impacts for otherwise permissible development that cannot be avoided shall be fully mitigated (see BIO-11).

#### **BIO-4**

Where impacts to ESHA cannot be fully avoided in meeting other Coastal Act and Land Use Plan priorities, such as public access, coastal hazard mitigation, and reduction of greenhouse gas emissions, such impacts may be allowed where they are determined to be the most Coastal Act consistent option and coastal resources are protected on balance. All unavoidable impacts to ESHA must be fully mitigated to the maximum extent feasible, as outlined in BIO-11.

#### **BIO-5**

Applications for development within and near ESHA, including wetlands and streams, shall be accompanied by a biological assessment, botanical survey, and an evaluation of aquatic resources prepared by a qualified biologist, depending on the types of resources potentially present. Biological reports shall be prepared at the owner's expense, prior to consideration of a project within the City.

The biological assessment and botanical survey shall, at a minimum, identify and confirm the extent of the ESHA, document any site constraints and the presence of sensitive species, recommend buffers and development setbacks and standards to protect the ESHA, recommend mitigation measures to address any allowable impacts, and include any other information and analyses necessary to understand potential ESHA impacts as well as measures necessary to protect the ESHA resource as required by the Local Coastal Program.

#### **BIO-6**

If impacts to ESHA are unavoidable, a Restoration and Monitoring Plan shall be submitted and approved as part of the CDP for the development impacting ESHA. The following information shall be required in the Restoration and Monitoring Plan:

- Existing Conditions;
- Revegetation Plan (Target Habitat, Implementation, Maintenance); and
- Monitoring and Reporting (Performance Criteria, Monitoring Methods, Adaptive Management Measures, Reporting).

## BIO-7

All revegetation for restoration projects within ESHA shall use plant species naturally found around the project site and native to coastal Monterey County and shall not include species listed on the California Invasive Plant Council's (Cal-IPC) Invasive Plant List (Cal-IPC 2024). Invasive non-native plants, such as pampas or jubata grass, wattle (*Acacia* sp.), French broom, and non-native ice plant, pose a threat to the indigenous plant community and are prohibited in any landscaping plan. The restoration plan must be prepared by a qualified biologist and shall be reviewed and approved by the City of Marina's Planning Department.

## BIO-8

Any conservation projects intended to protect habitats or species that could reduce public coastal access, including barriers or signs limiting or restricting use of existing lateral and/or vertical accessways, shall require a Coastal Development Permit, and shall include appropriate mitigation measures to reduce any access impacts as much as possible while still achieving the primary conservation goal.

## BIO-9

Managed retreat shall be planned and accommodated in a manner that maintains contiguous ESHA habitat and wildlife corridors between the beach, foredune, and back dune to the greatest extent feasible.

## BIO-10

Support pruning of major vegetation when necessary to maintain tree health and ensure public safety.

## *Policies – Mitigation Ratios*

### BIO-11

If development is allowed within ESHA, as identified in BIO-2, such development shall mitigate impacts to ESHA at the ratios provided in the Implementation Plan.

### BIO-12

Within Marina, certain trees within Environmentally Sensitive Habitat Areas are considered "major vegetation," where removal constitutes development and shall require a Coastal Development Permit.

## *Policies – Coastal Dune Habitat*

Coastal dunes are dynamic landforms created by the interaction between wind, sand, and vegetation. Coastal dunes form when sand from the beach is blown inland by onshore wind and accumulates in mounds or ridges, often stabilized by vegetation. Coastal dunes serve as a natural buffer between the ocean and inland areas, providing important environmental functions and habitats. Dune-backed

beaches account for roughly a quarter of California's shoreline; however, beach-dune complexes constitute only 2-3% of the State's landmass (Pickart & Barbour 2007), making them one of the rarest landscapes.

The Monterey Bay coastal dune complex is one of the most significant and diverse coastal dune ecosystems in California, spanning from Seaside to Moss Landing. This extensive dune system is characterized by dynamic and shifting sands, formed by wind and wave action over thousands of years. Coastal sand dunes are the predominant geologic formation along Marina's coastline. The dune habitat in the City's coastal zone provides habitat for a number of threatened and endangered plant and animal species and is considered ESHA.

#### **BIO-13**

Maintain the natural and undeveloped state of Marina's coastal dunes and beaches.

#### **BIO-14**

The City shall support and encourage conservation, land and easement acquisition, and habitat restoration efforts of Marina's coastal sand dunes. In particular, conservation activities of all land within the Open Space Land Use Designations shall be considered a high priority in the coastal zone, and otherwise permissible development in these areas shall be located in already developed locations as much as possible.

#### **BIO-15**

Dune conservation and restoration efforts shall be concentrated in areas which provide high-quality, contiguous habitat, such as in the northern area of Marina's coastal zone.

#### **BIO-16**

Access to or across coastal dune habitats shall not result in damage or degradation to the habitat. Pedestrian traffic shall be directed to well-defined formal pathways and away from sensitive areas. Signs informing recreational users not to disturb the dunes or their natural vegetation, and prohibiting all non-authorized motor vehicles, shall be posted.

#### **BIO-17**

Nesting and roosting areas in sand dune habitats for sensitive birds such as Western snowy plovers shall be protected by means which may include, but are not limited to, fencing, signage, or seasonal access restrictions.

### ***Policies - Wetlands Including Vernal Ponds***

The City of Marina contains eight wetlands some of which are considered vernal ponds. Vernal ponds are a type of seasonal wetland, which expand during the wet season and support marshy wetlands much of the year. The fresh and brackish ponds are unique along California's coast and

usually occur when a combination of circumstances such as a depression within the fast-draining sandy soils, a lens of less pervious soil and a high-water table occur simultaneously. Vernal ponds support many rare and endangered species and are incredibly ecologically important. These ponds and their wetlands can be highly sensitive to human use which can break up less pervious soils, cause drainage of poor quality, and can contribute to oil laden water in the pond creating a different kind of seal on the pond's bottom during the dry season. The wetlands and ponds provide habitat and cover for migratory waterfowl and a number of animals, some of which include the special-status Northern California legless lizard, southwestern pond turtle, and tricolored blackbird. Grasslands in this planning area and the coastal zone are also potential habitat for of the special-status Salinas harvest mouse.



Northern California legless lizard  
*Photo Credit: William Flaxington*



Southwestern pond turtle  
*Photo Credit: EMC Planning Group*



Tricolored blackbird  
*Photo Credit: Cornell Lab*



Salinas harvest mouse  
*Photo Credit: J.N. Stuart*

## BIO-18

The City shall preserve and maintain Marina's wetlands as productive wildlife habitats and protect them against significant disruption of habitat values. The only allowed uses within wetlands and other waterways shall be those specified in Coastal Act §30233.

~~Most d~~Development shall be set back a minimum of 100 feet from wetlands, with wider buffers required where site assessments demonstrate the need to protect wetland resources. Exceptions to this general policy may be considered for development that does not cause significant degradation of habitat values and is compatible with the continuance of those habitat and recreation areas as specified in Coastal Act §30240.

Legally established development within the buffer may be maintained, repaired, or redeveloped, provided it does not create new or increased impacts. Residential additions or modifications consistent with State housing law, including ADUs and SB 9, may be allowed where sited and designed to avoid or minimize impacts to wetland resources.

### **BIO-19**

Residential, commercial, and industrial development in wetlands shall be prohibited. Access for nature observation should not be permitted unless a qualified biologist determines that the impacts of construction and human observation can be sufficiently mitigated to ensure continuation of rare and endangered species and/or their habitats.

### **BIO-20**

The following routine maintenance activities shall be allowed, if it is determined by a qualified biologist that they will not result in adverse impacts to the vernal pond habitat:

- Annual limbing of willows;
- Removal of invasive species;
- Limbing around viewing platforms;
- Removal of dead vegetation;
- Implementation of indigenous management strategies; and
- Implementation of indigenous interpretive programs such as tule harvesting.

### **BIO-21**

~~Active and P~~assive recreation improvements are permitted at Locke-Paddon Park, provided that all applicable mitigation requirements of the BIO Chapter are met.

## Marine Resources and Water Quality (MWQ)

### 4.1 Background – Marine Resource and Water Quality

Marina’s marine environment includes intertidal and subtidal areas of the coastline, sandy beaches, and wetlands, including the vernal ponds located throughout the City’s coastal zone, all of which provide diverse and highly valued public coastal habitats.



Fishing at Marina State Beach

*Photo Credit: California Beaches*

Coastal Act policies relating to marine resources require that these resources be maintained, enhanced and, where feasible, restored; and that development be sited and designed in such a way as to protect the

biological productivity of coastal waters and to maintain healthy populations of species (Public Resources Code §30230 and 30231). Control over specific types of adverse impacts on coastal waters, such as polluted runoff, particularly from significant potential sources of pollution in stormwater, including gas stations/carwashes, wastewater discharges, and spillage of hazardous substances is required (Public Resources Code §30232 and 30233).

Additional policies require protection against disruption of sensitive habitat areas, both within and adjacent to the habitat (Public Resources Code §30240); and require protection of coastal waters, wetlands, estuaries and lakes from inappropriate diking, filling and dredging, with specified exceptions (Public Resources Code §30233).

The occurrence of homeless encampments is on the rise on the central coast resulting in increased impacts associated with excessive trash, human waste, drug paraphernalia, and erosion that pose risks to public health and safety, and to water quality. Studies using DNA have confirmed human sources of fecal bacteria in central coast water bodies (California Water Boards, 2023). The City is making strides to address the State’s housing crisis and rise in homelessness, however; local agencies, including Marina, are spending tens of thousands of dollars every year to cleanup homeless encampment related trash that have water quality impacts. Policies are included to address homeless encampments in a manner consistent with the adopted Housing Element.

## 4.2 Coastal Act Policies and Definitions

The following Coastal Act sections are included to provide essential background for the Marine Resources and Water Quality (MWQ) policies. While these Coastal Act sections are not the standard of review for development within the City, they provide the framework for the LUP's marine resources policies.

### **Section 30230: Marine resources; maintenance**

Marine resources shall be maintained, enhanced, and where feasible, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environment shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.

### **Section 30231: Biological productivity; water quality**

The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface waterflow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.

## 4.3 Land Use Plan Policies - MWQ

### *Policies - Marine Environment*

It is important to note that areas in the marine environment that are located below the mean high tide line are within the Coastal Commission retained permitting jurisdiction. In such areas, the policies below are intended for guidance.

#### **MWQ-1**

Marine resources shall be maintained, enhanced, and where feasible, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environment shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.

The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing

adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface waterflow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.

## Policies – Water Quality

### MWQ-2

To reduce the potential for degradation or impairment of water quality, the City will continue to investigate and implement new measures to reduce potential pollutants in storm water and irrigation runoff and require the following:

- Development that has the potential for water quality impairment shall, at a minimum, be designed to meet National Pollutant Discharge Elimination System stormwater runoff requirements.
- Development shall include specific measures to help reduce potential pollutants and water quality impairment, including controlling the disposal of chemicals and hazardous materials, controlling the use of pesticides and herbicides, maintaining existing storm water capture programs, applying low impact development designs and requiring on-site retention and/or reuse of runoff.
- The City will utilize ecologically responsible pest control methods and integrated pest management to the extent feasible on public property and encourage this practice on private property.
- Drainage plans and erosion, sediment and pollution control measures shall be required as conditions of approval of every application for new development that has the potential to impair water quality.
- Construction phase storm water pollutant controls shall be required for development that has the potential for water quality impairment, including erosion controls, sediment traps and filtering of off-site storm water flows, capture of site-generated pollutant sources, street sweeping of dirt tracked offsite, litter control, post-construction monitoring, and other best



Aerial Photo of Marina's Wetlands  
*Photo Credit: California Coastal Records Project*

management practices. Construction-phase water quality impacts shall be avoided by minimizing the disturbed area, phasing grading activities, implementing soil stabilization and pollution prevention measures, and preventing unnecessary soil compaction.

### **MWQ-3**

Development shall minimize to the extent practicable new impervious surfaces, especially impervious areas directly connected to water and marine resources, and, where feasible, increase the area of pervious surfaces in re-development to reduce runoff.

# 5.0 Coastal Hazards (HAZ)

## ~~5.1 Background – Coastal Hazards~~

~~Forthcoming.~~

~~Approved by Council January 22, 2025 (Council Reso. 2025-06)~~

~~Conditionally Submitted-certified by ~~to~~ CCC ~~February~~ ~~November 13~~, 2025 ~~for certification~~ with suggested modifications.~~

~~Certification City Council accepted CCC suggested modifications on December 2, 2025 (Council Resolution 2025-134). pending.~~

~~Certified by CCC and effective February 4, 2026.~~

## ~~5.2 Policies~~

~~Forthcoming.~~

*This side intentionally left blank.*

**Figure 9 Coastal Hazard Dune Erosion Area**  
*(to be included with the separately certified Coastal Hazards chapter)*

*This side intentionally left blank.*

## Land Use and Development (LUD)

### 6.1 Background – Development

Marina’s coastal zone is primarily located seaward of State Route 1. The majority of the land in this area is designated Open Space. There are small areas designated as Public Service Facilities and Visitor Oriented Commercial seaward of State Route 1. East of State Route 1, there are two areas included within the coastal zone, due to their location near wetlands. The land use designations east of State Route 1 include Single Family Residential, Open Space, General Commercial, Public Service Facilities, and Visitor Oriented Commercial. Aside from a few undeveloped parcels within the General Commercial Land Use Designation, most of the land is either already developed or is designated as Open Space.



Former CEMEX Sand Mining Operation  
Photo Credit: California Coastal Records Project

The most significant change in land use that has occurred within the city is the cessation of sand mining. On July 13, 2017, the California Coastal Commission issued a Cease and Desist Order (referred to as “the Order”) directing CEMEX to cease all sand mining operations on the property by the end of 2020. This decision officially ended sand mining within the City of Marina. Moving forward, the North Dunes site is designated primarily for conservation purposes, with limited allowances for low-impact, passive recreation and public access. This

action will facilitate approximately 400 acres of beach, coastal strand, and dune habitat to be restored and used for low-impact recreation and public access within the city’s coastal zone.

### Priority of Land Uses

The Coastal Act established a framework for preserving coastal resources, protecting public access to the ocean, and guiding development to maximize protection of these resources. Consistent with the Coastal Act, the Local Coastal Program establishes a prioritization of land uses, where lower priority development may not interfere with higher priority uses of land and resources. This prioritization is shown below in [Table 6-1, City Land Use Priorities](#).

**Table 6-1 City Land Use Priorities**

	Undeveloped Areas	All Coastal Areas	Developed Areas
<p style="text-align: center;">High</p> <p style="text-align: center;">↑</p> <p style="text-align: center;">Priority of Use</p> <p style="text-align: center;">↓</p> <p style="text-align: center;">Low</p>	Coastal dependent public recreational facilities, open space, habitat restoration [30213, 30242, 30243, 30250(a), 30250(b)].	Coastal dependent <sup>1</sup> public recreational facilities and public access areas, climate resilience projects [30213, 30220, 30221]	Coastal dependent industry and commerce, commercial fishing, mariculture, aquaculture and fishing support infrastructure (docks, ice manufacturing, processing facilities, boat ramps, etc.), coastal dependent public recreational facilities and special communities [30213, 30234, 30250(a), 30250(b), 30253(e), 30255]
	Water dependent <sup>1</sup> public recreation, public utilities and transit [30220, 30221, 30223]		
	Local Priority: Affordable dwelling units for extremely low, very low, and low-income households. Accessory dwelling units.		
	Non-coastal <sup>1</sup> or non-water dependent public recreation [30220, 30221]		
	Visitor-serving <sup>1</sup> commercial recreation (lower cost), public transit [30222, 30213, 30250 (c)]		
	Visitor-serving <sup>1</sup> commercial recreation, higher cost [30222, 30250 (c)]		
	Market rate housing general industrial, or commercial development <sup>2</sup> [30222, 30250, 30255]		
	Development that is not a priority use is discouraged in undeveloped areas.		

NOTES:

<sup>1</sup> Recreational uses of the coast that do not require extensive alteration of the natural environment have priority in intertidal and waterfront areas over recreational uses that would result in substantial alteration of the natural environment [30233, 30235, 30255]

<sup>2</sup> Concentration of development policies [30250(a)] limit development in rural areas, except public recreation and visitor serving uses.

Figure 10, Coastal Zone Land Use Designation Map, supports the policies and illustrates the general types, locations, and intensities of uses to be permitted within the coastal zone. Figure 10 and the land use policies that follow are, with limited exceptions, a reflection of existing development and present city regulations.

## Urban Growth Boundary

In 2000, a majority of voters of the City of Marina approved Measure E, the Marina Urban Growth Boundary Initiative, which amended the City's General Plan and Local Coastal program to adopt an Urban Growth Boundary Line (delineated on Figure 11, Urban Growth Boundary) and to prohibit any new development other than park and open space uses outside of the Urban Growth Boundary Line for a period of 20-years. Open space uses are those uses defined in Government Code Section 65560. In 2020, a majority of voters of the City of Marina approved Measure Q, extending the expiration date of the Urban Growth Boundary Initiative to December 31, 2040.

Within the coastal zone, the former CEMEX site, now referred to as the North Dunes site, is the only area located outside of the Urban Growth Boundary, and is therefore limited to parks and open space uses, as defined by Government Code Section 65560.

## Housing

Over the past decade the State's housing crisis has continued to grow and the State legislature has responded by passing multiple laws each year in an attempt to address this issue. The City of Marina has stayed abreast of the legislative changes, including the following:

- Certification of the 6<sup>th</sup> Cycle Housing Element
- Housing Accountability Act (HAA) and the Builder's Remedy
- Accessory Dwelling Units, including the adoption of pre-approved ADU plans for use by the public
- Streamlined and By-Right Approvals including, but not limited to, Objective Design Standards
- Density Bonus
- Fees

The Association of Monterey Bay Area Governments (AMBAG) forecasts Marina's population to grow by about 8,500 over the next two decades, with an estimated population of approximately 30,044 by 2045. The City's 6<sup>th</sup> Cycle Housing Element (2023-2031) allocated the need for a total of 685 new housing units; 329 of these units must be considered affordable. According to 2019 Comprehensive Housing Affordability Strategy estimates provided by the U.S. Department of Housing and Urban Development, approximately 40 percent of total households in Marina were cost burdened, while another 18 percent were severely cost burdened (City of Marina 2023). Between 2015 and 2022, there was an estimated 12-percent increase in housing units in Marina, almost three times higher than the county growth rates (City of Marina 2023).

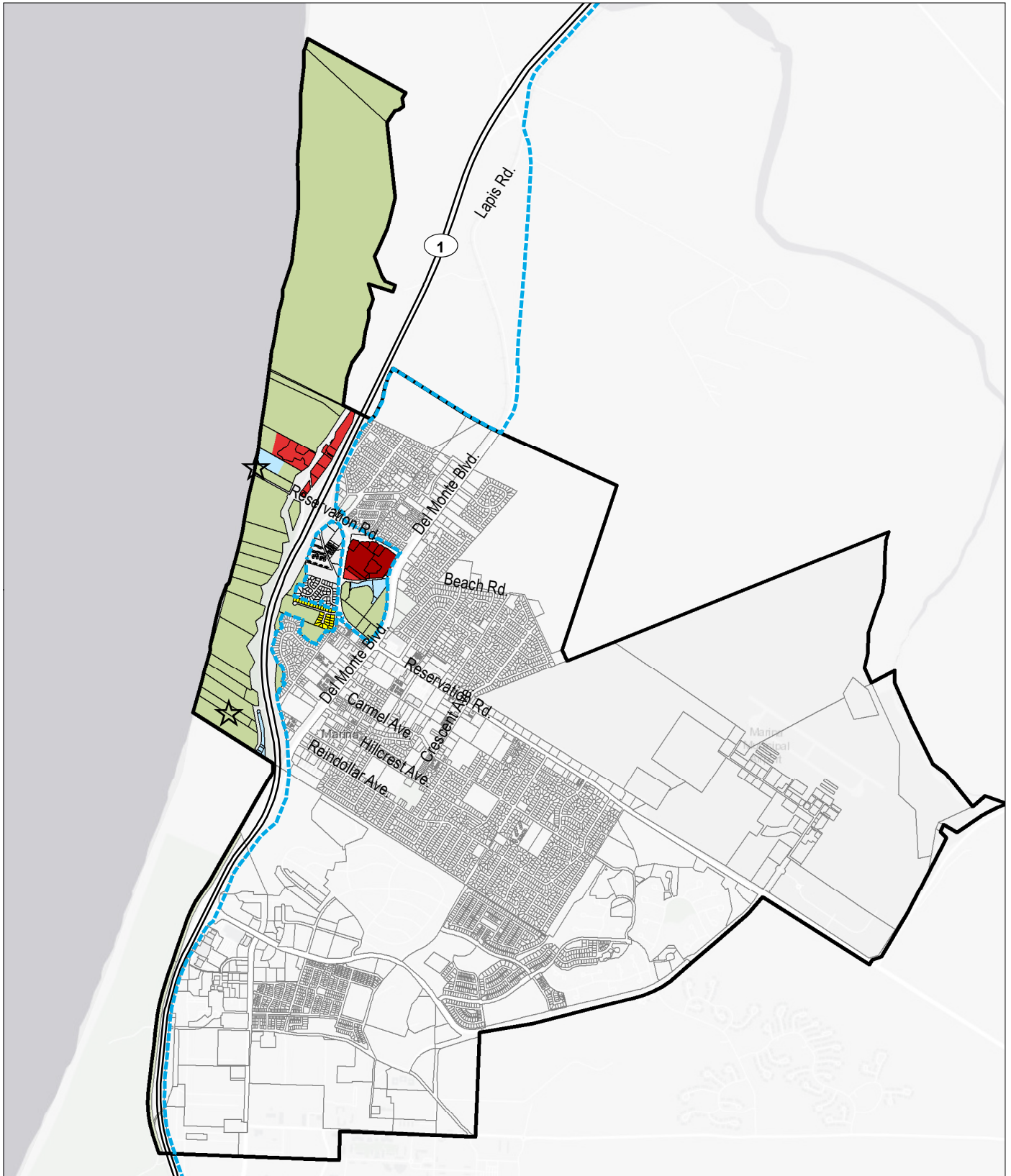
Many of these laws had not previously applied to the coastal zone, but that is changing due to the Statewide level of effort to address the housing crisis. These laws include, but are not limited to, AB 1893, SB 1211, AB 2533, and amendments to SB 9. The coastal zone has previously been exempted from many of the State's housing laws. This has changed with recent amendments to some housing laws, including SB 9 which has been amended to allow subdivision with an administrative CDP.

While the City of Marina has recently increased its housing supply city-wide, opportunities for new residential development in Marina's coastal zone are very limited. The coastal zone includes a small area zoned for Single-Family Residential. There is no Multi-Family Residential or High-Density residential zoning in Marina's coastal zone. Additionally, there are currently no deed restricted affordable housing units located within the coastal zone. Affordable housing is typically built in areas zoned for multi-family development where higher densities can be achieved, making development costs lower per unit. Given the single-family residential zoning in Marina's coastal zone, the City's focus for providing affordable units is on the development of ADUs and JADUs.

The adjacent residential parcels that are not located within the coastal zone are entitled to planning permit exemptions to facilitate the construction of ADUs and JADUs. Marina's coastal zone is limited to 32 parcels zoned for residential uses. The 32 parcels zoned Single-Family Residential are not located within ESHA (see [Figure 6, Environmentally Sensitive Habitat Areas \(ESHA\) South](#) and [Figure 7, Environmentally Sensitive Habitat Areas \(ESHA\) North](#)). To facilitate affordable housing in Marina's coastal zone, the Local Coastal Program exempts qualifying ADUs and JADUs and provides for issuance of an Administrative CDP for those that do not meet the exemption criteria.

## Transportation

The Marina Transit Exchange is a major transit station located in the City of Marina on Reservation Road outside of the coastal zone. Monterey-Salinas Transit plans to implement 6 linear miles of off-highway roadway dedicated to express bus service, referred to as "the SURF! Busway". The project received permit entitlements and federal funding in 2024. A small portion of the SURF! Busway project is within the City's coastal zone boundary. The project will relieve congestion, reduce greenhouse gas emissions, provide affordable access to the coast, and support more frequent public transit services for people traveling within the corridor and beyond. Expanded public transportation, pedestrian and bicycle access within Marina's coastal zone is a high priority for achieving climate goals and providing low-income inland communities with expanded access to the coast.



Source: Monterey County GIS 2024,  
 Google Earth 2024,  
 City of Marina LUP Designation Map 1982



- Marina City Limit
- California Coastal Zone
- C- General Commercial
- C- Visitor Serving Commercial

- C- Open Space
- C- Public Facilities - Civic
- C- Low Density Residential

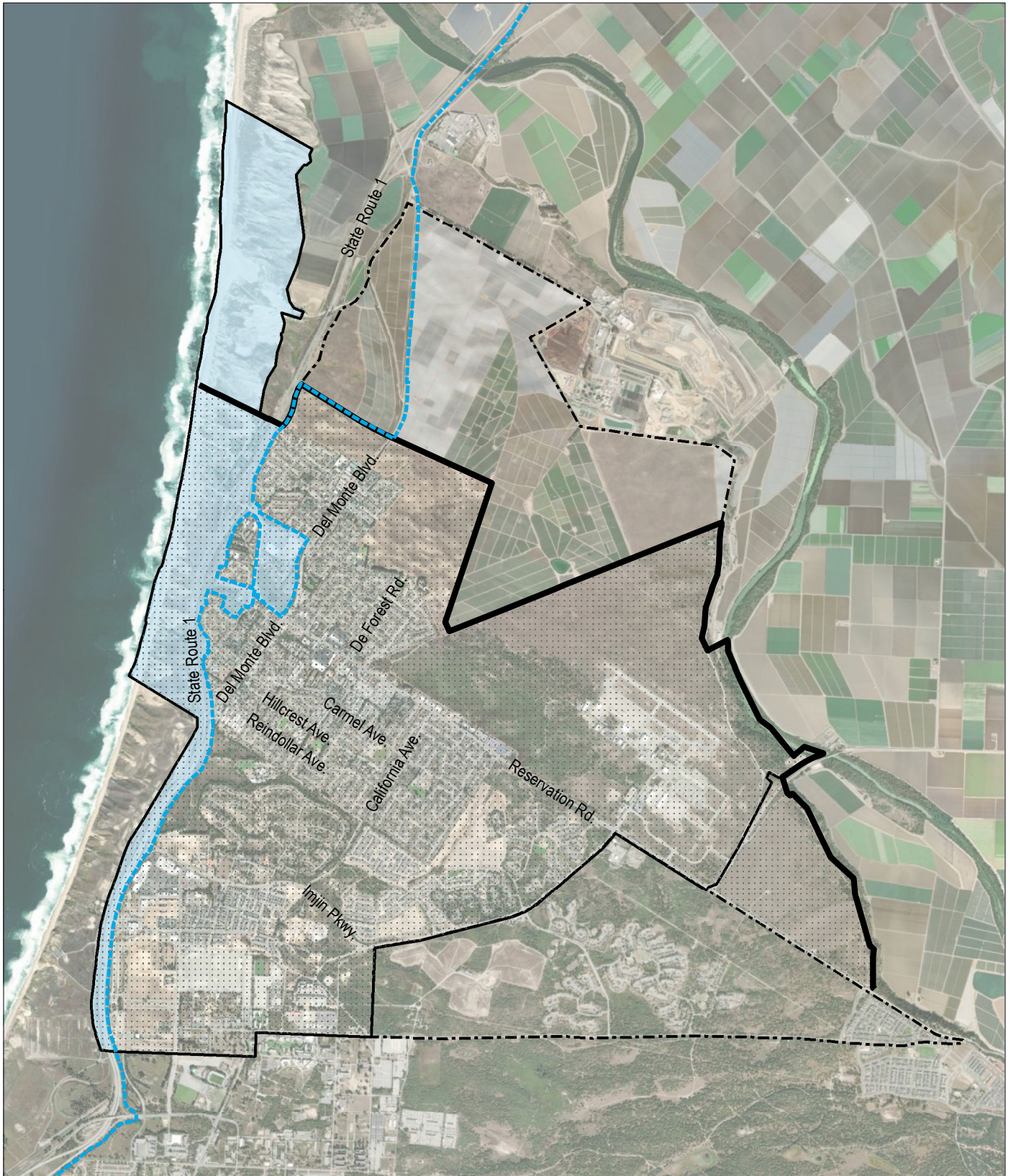
- Park Facilities
- State Route 1



# Figure 10 Coastal Zone Land Use Designation Map

Land Use Plan

*This side intentionally left blank.*



Source: Monterey County GIS 2024,  
 Google Earth 2024,  
 California State Geoport 2024



0 4000 feet

Marina City Limit

Urban Growth Boundary

City of Marina Sphere of Influence

City of Marina LCP Jurisdiction

California Coastal Zone

Urban Growth Boundary Area

E

M

C

Figure 11  
 Urban Growth Boundary  
 Land Use Plan

*This side intentionally left blank.*

Within the City, only 2 percent of buildings are within walking distance of a coastal access location and less than 10 percent are within a half-mile walk (Integral, 2023a). This data suggests a need for expanded bicycle lanes and public transportation that can connect residents of Marina safely to the coast. A stated goal of this Land Use Plan is to expand public transportation, pedestrian, and bicycle access within Marina’s coastal zone.

## Coastal Resiliency

Coastal resiliency is one of the major planning areas to evolve in recent years. As sea levels rise and the frequency and severity of storm events increase, coastal communities must plan to adapt their coastline to these challenges. Dune erosion is the biggest threat to the City of Marina and may impact approximately 50 acres of dunes, a beach water supply well, four buildings at Marina Coast Water District, and portions of the Marina State Beach parking lot (Integral, 2023b).

Dune erosion will result in loss of open space, recreational opportunities and dune habitat. The City must identify parcels as open space to accommodate and maintain coastal access and dune habitat as the shoreline changes. These issues are addressed in the City’s Coastal Hazards (HAZ) and Opportunistic Beach Nourishment Policies (OBNP) chapters in further detail.

## 6.2 Coastal Act Policies and Definitions

The following Coastal Act sections are included to provide essential background for the Land Use Development (LUD) policies. While these Coastal Act sections are not the standard of review for development within the city, they provide the framework for the policies below.

### **Section 30250: Location; existing developed area**

(a) New residential, commercial, or industrial development, except as otherwise provided in this division, shall be located within, contiguous with, or in close proximity to, existing developed areas able to accommodate it or, where such areas are not able to accommodate it, in other areas with adequate public services and where it will not have significant adverse effects, either individually or cumulatively, on coastal resources. In addition, land divisions, other than leases for agricultural uses, outside existing developed areas shall be permitted only where 50 percent of the usable parcels in the area have been developed and the created parcels would be no smaller than the average size of surrounding parcels.

(b) Where feasible, new hazardous industrial development shall be located away from existing developed areas.

(c) Visitor-serving facilities that cannot feasibly be located in existing developed areas shall be located in existing isolated developments or at selected points of attraction for visitors.

## 6.3 Land Use Development Policies – LUD

### *Policies - General*

#### LUD-1

The City shall require a Coastal Development Permit for any project that meets the definition of development pursuant to Coastal Act Section 30106. The City shall ensure that all new development complies with the policies of the Land Use Plan. New development means any project for which a Coastal Development Permit is required.

#### LUD-2

New residential, commercial, or industrial development, except as otherwise provided in this division, shall be located within, contiguous with, or in close proximity to, existing developed areas able to accommodate it or, where such areas are not able to accommodate it, in other areas with adequate public services and where it will not have significant adverse effects, either individually or cumulatively, on coastal resources. ~~The City shall Design p~~Public infrastructure, including water, sewer, stormwater management, communications, energy, and transportation systems shall be designed to meet the needs of anticipated development. ~~\_-~~New public infrastructure should support new technology and shift away from fossil fuels. Infrastructure shall be designed according to best practices for sustainability, maintenance, aesthetics, resilience, and durability. As applicable, new infrastructure shall be installed underground.

#### LUD-3

Concentrate new development within existing developed areas to minimize sprawl and maximize open space.

#### LUD-4

Encourage affordable public transit accessibility to coastal access areas.

#### LUD-5

The City shall encourage multi-modal streets that are ADA accessible, transit supportive and integrate safe bicycle lanes and other modes of transportation to facilitate coastal access for everyone.

#### LUD-6

The City shall identify parcels which can be redeveloped to accommodate managed retreat for critical coastal uses.

### *Policies – Coastal – Open Space*

A significant portion of Marina's coastal zone is designated as C - Open Space. The goal of the C - Open Space district is to retain open space for wildlife corridors, preserve ESHA, and to provide low-impact passive recreation, parks, and recreation facilities.

## LUD-7

Principally permitted uses shall include preserved open space, dune preservation, coastal dependent research, beach access, and sensitive habitat areas and restoration projects supporting them, open space for hazard protection or scenic preservation, and coastal-dependent recreation, and passive recreation facilities and supporting uses that will not result in impacts to wildlife and do not create noise impacts. These uses include, but are not limited to, walking trails, parking lots, restrooms, picnic areas, overlooks, and public parks, including botanical gardens and community gardens, parking lots, restrooms, picnic areas, overlooks, sensitive habitat areas and restoration projects supporting them, open space for hazard protection or scenic preservation, and coastal-dependent recreation. Conditional uses shall include active recreational facilities, such as, bicycle paths, camping facilities and ancillary uses supporting public agencies.

## LUD-8

The City shall prioritize improvements to recreational facilities within the C - Open Space district and encourage and support ongoing public access and restoration activities on properties under public ownership.

### ***Policies – Coastal – Public Service Facilities***

There are three areas designated C – Public Service Facilities within Marina’s coastal zone.

One area is located at the southern end of Lake Court and includes six parcels. The City’s corporation yard and four legal non-conforming single-family dwellings are located within this area. A potential long-term goal for this area is to repurpose the City’s corporation yard as State Parks housing or another supportive use and to convert the residential uses to recreational facilities to support the coastal access at the end of Lake Court.

The second area designated for C- Public Service Facilities is located just north of the Marina State Beach parking lot off Reservation Road. It is the site of Marina Coast Water District offices and a desalination plant that was last in operation in 2010, but is intended to be reestablished in early 2026.

The third location in the City’s coastal zone designated C- Public Service Facilities is located at the north end of Locke-Paddon Park and includes the Marina Branch – Monterey County Free Libraries.

## LUD-9

Uses allowed in the C- Public Service Facilities district include, but are not limited to civic center, library, police and fire stations, post office, and parks district employee housing, public works yard, other civic offices, and supportive and transitional housing.

## ***Policies – C – Visitor Serving Commercial***

The Marina LCP anticipates future development oriented toward less intensive, lower cost visitor facilities than those available in the more intensively developed coastal areas to the north and south. Two kinds of commercial uses are anticipated: one visitor-oriented (Visitor Serving Commercial) and one that is more general in nature (General Commercial). The objective of these designations is to provide as many opportunities to visitors as possible, while encouraging those visitor activities not requiring location on the coast itself to be located in nearby inland areas. As a result, Marina's coastal activities must have a strong local attraction as well as a regional one. Over time a strong visitor base will be developed.

The Visitor Serving Commercial land use designation is primarily located seaward of State Route 1 along Dunes Drive and includes Sanctuary Beach Resort, Country Inn & Suites, Best Western Marina State Beach, and Marina Dunes RV Park. One parcel, which is currently developed with a hotel, is designated for Visitor Serving Commercial inland of State Route 1.

### **LUD-10**

Hotels, restaurants, retail, other visitor serving uses, and supportive and transitional housing shall be the principally permitted uses in the Visitor Serving Commercial land use category. Drive-thru uses shall not be permitted.

### **LUD-11**

Visitor-oriented commercial activities shall have precedence on the east side of Dunes Drive. Priority shall be given to support facilities for the following activities which are dependent on the unique coastal recreation opportunities available in Marina because of its isolated beaches and not available elsewhere in coastal locations in the Monterey Bay area: horseback riding, overnight camping, hang-gliding, paragliding, surf-fishing, walking trails, and related recreational activities.

### **LUD-12**

Visitor-serving commercial uses should be located and designed so that they complement one another and meet a range of visitor needs, including affordability.

### **LUD-13**

Visitor-oriented commercial uses should be designed and priced to be attractive and meet the affordability needs of local and nearby residents as well as the needs of regional visitors.

### **LUD-14**

The City shall prioritize lower-cost visitor serving accommodations (see PAR-19 and Informational Briefing on Lower-Cost Accommodations, 2024).

## ***Policies – C – Low-Density Residential***

The major goal of this section is to protect and promote low- and moderate-cost housing in the coastal zone to carry out the provisions of California Coastal Act Policy Section 30604 (f)-(g):

“(f) The commission shall encourage housing opportunities for persons of low and moderate income. In reviewing residential development applications for low- and moderate-income housing, as defined in paragraph (3) of subdivision (h) of Section 65589.5 of the Government Code, the issuing agency or the commission, on appeal, may not require measures that reduce residential densities below the density sought by an applicant if the density sought is within the permitted density or range of density established by local zoning plus the additional density permitted under Section 65915 of the Government Code, unless the issuing agency or the commission on appeal makes a finding, based on substantial evidence in the record, that the density sought by the applicant cannot feasibly be accommodated on the site in a manner that is in conformity with Chapter 3 (commencing with Section 30200) or the certified local coastal program.

(g) The Legislature finds and declares that it is important for the commission to encourage the protection of existing and the provision of new affordable housing opportunities for persons of low and moderate income in the coastal zone.

(h) When acting on a Coastal Development Permit, the issuing agency, or the commission on appeal, may consider environmental justice, or the equitable distribution of environmental benefits throughout the state.”

Visitor-serving commercial development and coastal-dependent uses, to varying degrees, all depend on the availability of seasonal and year-round housing opportunities for people operating or employed in these industries. However, there are unique considerations for affordable housing development in the coastal zone, including high property values and the remote nature of the coastal zone. Within Marina, the area designated for residential uses is very limited, and as a result, there are very few residential units in the City’s coastal zone. This area is east of State Route 1 and was developed, generally, between 1960 and 1990.

The Association of Bay Area Governments (ABAG) conducted an analysis of ADU affordability and concluded approximately 30 percent of ADUs are affordable to very low-income households, 30 percent affordable to low-income households, 30 percent affordable to moderate-income households, and 10 percent affordable to above-moderate income households (Association of Bay Area Governments, 2022).

As housing laws are frequently updated, the Local Coastal Plan will rely on the policies in the City’s current certified Housing Element to stay current with State mandates and incentives as they change to address the housing affordability crisis.

## LUD-15

Single family homes and accessory dwelling units (ADUs and JADUs) and supportive and transitional housing are the principal permitted uses in the Low-Density Residential land use category.

## LUD-16

The City supports senior housing, transitional and supportive housing, the conservation and rehabilitation of existing homes, code enforcement, and streamlined development of ADUs and JADUs.

## LUD-17

ADUs and JADUs are recognized and encouraged as an approved housing type that can increase the City's affordable housing stock while minimizing impacts. The City shall encourage retention and further construction of ADUs and JADUs on parcels with single family dwellings. ADUs and JADUs may be exempt from CDP requirements.

## LUD-18

New housing units in the coastal zone shall be designed on the site to protect existing sensitive habitat areas, reduce the cost of the unit and conserve energy. Clustering and other techniques of minimizing visual impacts and enhancing the feasibility of desirable forms of housing may be required.

## ***Policies – Coastal – General Commercial***

C- General Commercial indicates land designated for a broad range of regional retail and commercial uses in suitable areas for service to coastal visitors and others. These uses include retail stores and shops of a commercial character conducted within a building, such as large retail centers, appliance stores, banks, salons, bookstores, food stores, furniture shops, professional and medical offices, veterinary offices and clinics, restaurants, art studios and galleries, clothing stores, hotels and motels, clubs, lodges, churches, and public and quasi-public uses and buildings, public utility uses and buildings, gas and service stations, schools and academies, health clubs and wellness spas, retail plant nurseries, and other uses with similar characteristics. Drive-thru uses are not allowed.

## LUD-19

Permitted uses in the General Commercial Land Use Designation include retail stores, commercial shops conducted within a building, hotels, and other uses with similar characteristics and which will not be detrimental or obnoxious to the neighborhood in which they are to be located, and supportive and transitional housing.

## LUD-20

General Commercial uses are a low priority use in the coastal zone and shall be sited to have no impact on sensitive coastal resources.

# 7.0 Scenic and Visual Resources (VIS)

## 7.1 Background – Scenic and Visual Resources

Marina’s coastal view is defined by towering sand dunes and has been called the “Gateway to the Monterey Peninsula”. The coastal dunes rise high on the west side of Highway 1, ~~virtually eliminating providing limited the views~~ of the ocean ~~in some areas from the city~~. Inland from Highway 1 is gently rolling terrain dotted with wetlands, single family homes and isolated groves of trees. View protection is an important aspect of coastal planning in Marina. The primary view is from Highway 1 which is elevated through much of the city. Views from the beach to the west are important as well. From the inland areas of the coastal zone east of highway, coastal views are primarily of vegetated dune ridgelines and wetlands and their marshes.



Marina’s coastal sand dunes.  
Photo Credit: EMC Planning Group

## 7.2 Coastal Act Policies and Definitions

The following Coastal Act sections are included to provide essential background for the Scenic and Visual Resources (VIS) policies. While these Coastal Act sections are not the standard of review for development within the City, they provide the framework for the LUP’s scenic and visual resources policies.

### **Coastal Act Section 30251 Scenic and visual qualities**

The scenic and visual qualities of coastal areas 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 shall be subordinate to the character of its setting.

## 7.3 Land Use Plan Policies – VIS

The following policies apply west of State Route 1.

### *General Policies*

#### **VIS-1**

New development shall be sited and designed as not to block views to and along the ocean, to minimize the alteration of natural land form, to be visually compatible with the character of its setting, and, where feasible, to restore and enhance visual quality in visually degraded areas.



Sand Dunes from Marina Dunes Preserve.  
Photo Credit: EMC Planning Group

#### **VIS-2**

The City shall ensure that fences, walls, and landscaping shall not block public views of or from scenic and visual resource areas including along scenic corridors, at parks and beaches, and other scenic public viewing areas through height restrictions and required landscape maintenance.

#### **VIS-3**

Views of the dunes from State Route 1 and the beach shall be protected by prohibiting ridgeline development. Development below the ridgelines shall be limited in height and mass to blend into the face of the dunes. Generally, structures should be hidden from public view where physical and habitat constraints allow. Where this is not possible because of ESHA or other constraints, structures shall be clustered and sited to be as inconspicuous as possible.

#### **VIS-4**

Revegetation of disturbed areas, particularly those which are highly visible, shall be a priority.

#### **VIS-5**

In areas where sand mining or past development has removed sand dune landforms, new development shall not exceed the height of the nearest adjacent sand dunes. Development shall be clustered, where feasible, to preserve and create coastal view corridors from State Route 1.

## ***Lighting, Signs, Utilities, and Landscaping***

### **VIS-6**

The City shall protect dark night skies as part of Marina’s scenic and visual character. Impacts from exterior lighting on dark night skies and sensitive habitat areas will be avoided by:

- A. Limiting exterior lighting to low-intensity fixtures that are of low-wattage, shielded, down-cast, and concealed so that the light source is not directly visible from public viewing areas, with the exception of traffic lights, navigational lights, and other similar safety lighting; and
- B. Limiting installation and use of high-intensity perimeter lighting and lighting for sports fields, other private recreational facilities, or public facilities in the coastal zone, with the exception of safety lighting provided that any high-intensity lighting is down-cast, shielded, and minimizes spillover.

### **VIS-7**

The City shall ensure that signs are designed and located to minimize visual impacts. Signs approved as part of commercial development shall be incorporated into the design of the project and shall be subject to height, width, and lighting limitations and design standards to ensure that they are visually compatible with surrounding areas and protect views to and from visual resource areas. Prohibit placement of signs, excluding traffic or public safety signs, which obstruct views to the ocean or beaches from public viewing areas or public roads.

### **VIS-8**

The City shall prohibit the construction of new non-wayfinding, off-site commercial signs, including billboards.

### **VIS-9**

The City shall require applications for new development to include preliminary utilities plans to ensure that undergrounding and the minimization of negative visual impacts of utilities are considered during the earliest phases of project design. For all new development and new subdivisions, utilities shall be underground unless infeasible, such as in locations subject to erosion or with especially high-water tables, or unless otherwise permitted on a case-by-case basis such as where no protected public views would be impacted. For such cases, the City shall require utilities to be designed and sited in a manner to minimize impacts to coastal resources, and require the development to contribute in-lieu fees to support undergrounding utilities in other locations.



Example of drought tolerant landscaping

*Photo Credit: City of Marina*

## **VIS-10**

The City shall require all telecommunications facilities to place support facilities underground where feasible. Where undergrounding is not feasible, require new facilities including small cell and other wireless communication facilities to be sited and designed in a manner that minimizes impacts to visual resources by co-locating facilities, utilizing a constructed disguise, or ensuring compatibility with surrounding development or natural character.

## **VIS-11**

Landscaping shall be comprised of drought tolerant California native species, and utilize drip or similar irrigation when irrigation is required.

## Tribal, Cultural and Historic Resources (TCH)

### 8.1 Background – Tribal, Cultural and Historic Resources

This chapter provides policies for protection and enhancement of Marina’s cultural and historic resources. Throughout the chapter, the term “cultural resources” is used to collectively refer to archaeological and paleontological resources, including Native American cultural sites, tribal cultural resources, artifacts, and remains. Cultural resources are also tied to the identity and practices of Native American peoples, and their relationship to these resources is significantly different from the relationship the non-native community has to them. “Historic resources” refers to structures, sites and artifacts associated with colonization, settlement, and development in the coastal zone by non-Native American cultures. Historic resources are generally structures, sites and artifacts associated with non-Native American cultures during and after the Mexican and Spanish colonial periods, but these sites may also contain Native American cultural and sacred sites, tribal cultural resources, artifacts, and remains. The Lapis Sand Mining Plant District (aka, CEMEX) is considered a historic resource according to an October 2024 search of the Northwest Information Center and is, therefore, eligible for the National Register.

Policies that address protection and preservation of significant archaeological, historical, and tribal cultural sites apply to all Coastal Development Permits located within the Archaeologically Sensitive Area, as shown in [Figure 12, Archaeologically Sensitive Area](#). The entire coastal zone was determined to be archaeologically sensitive based on the presence of known archaeological resources.

### 8.2 Coastal Act Policies and Definitions

The following Coastal Act sections are included to provide essential background for the Tribal, Cultural and Historic (TCH) policies. While these Coastal Act sections are not the standard of review for development within the City, they provide the framework for the LUP’s tribal, cultural, and historic resources policies.

#### **Coastal Act Section 30244 Archaeological or paleontological resources**

Where development would adversely impact archaeological or paleontological resources as identified by the State Historic Preservation Officer, reasonable mitigation measures shall be required.

## **Coastal Act Section 30116 Sensitive coastal resource areas**

"Sensitive coastal resource areas" means those identifiable and geographically bounded land and water areas within the coastal zone of vital interest and sensitivity. "Sensitive coastal resource areas" include the following: ...

(d) Archaeological sites referenced in the California Coastline and Recreation Plan or as designated by the State Historic Preservation Officer. ...

## **8.3 Land Use Plan Policies – CUL**

### ***General Policies***

#### **CUL-1**

The City shall protect and preserve historical, archaeological and paleontological resources, including federally and non-federally recognized California Native American Tribes' (Tribes) cultural and sacred sites, tribal cultural resources, artifacts, and remains.

#### **CUL-2**

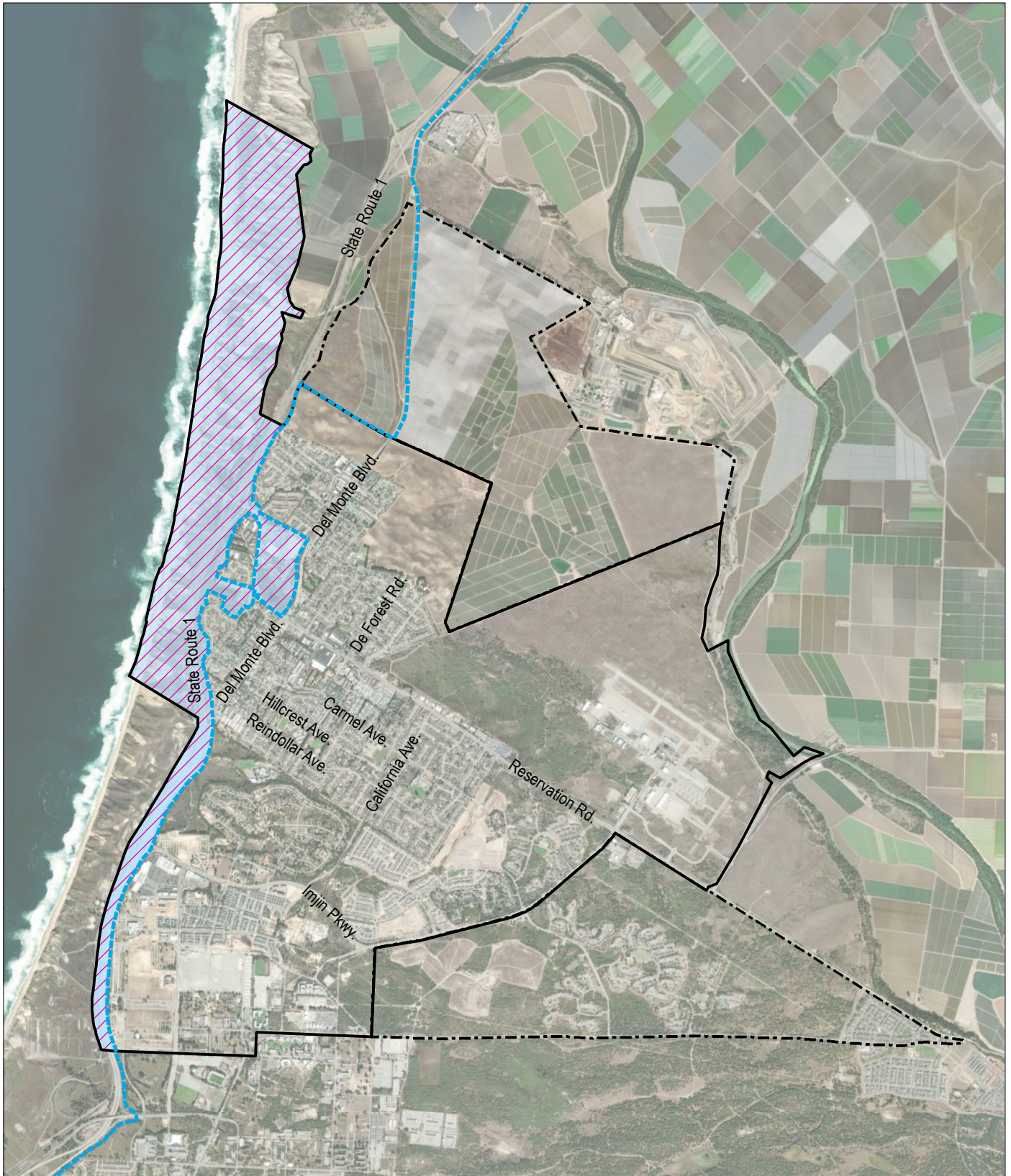
The City shall continue to maintain a respectful and effective means of communicating and consulting with Tribes with regard to identification, protection, preservation of, and access to these resources.




#### **CUL-3**



Any development project within the mapped Archaeologically Sensitive Area (Figure 11) that involves new disturbance of soils shall be required to submit a Phase 1 archaeological survey report, prepared by a Registered Professional Archaeologist, unless previous tribal consultation correspondence for the project site indicates there is no concern with grading activities on site. The survey report shall include a record search, utilizing the Sonoma State University database, of known archaeological resources and document results of the field survey including any resources encountered.

#### **CUL-4**

New development shall avoid impacts to cultural resources through siting and design measures to the extent feasible. Any unavoidable impacts, disturbance, or substantial adverse changes caused by development on cultural resources shall be mitigated through measures such as preservation in place or site sampling and salvage. The preferred and required alternatives for mitigating impacts, if feasible, are avoidance or preservation in place. The City shall consult with Native American representatives who have formally requested consultation on appropriate alternatives on the preferred method



-  Marina City Limit
-  City of Marina Sphere of Influence
-  California Coastal Zone

-  City of Marina LCP Jurisdiction
-  Archaeologically Sensitive Area

Source: Monterey County GIS 2024,  
 Google Earth 2024,  
 California State Geoportal 2024



Figure 12  
 Archaeologically Sensitive Area  
 Land Use Plan

*This side intentionally left blank.*

## CUL-5

If archaeological resources are discovered during construction, work shall cease immediately. If potential remains are discovered, the Coroner shall be contacted and the Most Likely Descendant (MLD) as identified by the Native American Heritage Commission (NAHC) shall be contacted if the remains are determined to be Native American. The resource shall be preserved or the impact mitigated according to the MLD's preference.

## CUL-6

To establish and maintain a respectful and effective means of communicating and consulting with Tribes the following principles shall be followed, to the greatest extent practicable, when evaluating coastal development projects:

- (1) Communicate and consult with federally and non-federally recognized California Native American Tribes in a manner that is considerate, respectful, and cognizant of the Tribes individual rights and interests. Seek tribal input regarding the identification of potential issues, possible means of addressing those issues, and appropriate actions, if any, to be taken by the city.
- (2) Assess the potential impact of proposed city actions on Tribal rights and interests and ensure, to the maximum extent feasible and required by law, that tribal concerns are considered before such actions are taken, such that impacts are avoided, minimized, or mitigated in conformity with Coastal Act and other applicable legal requirements.
- (3) Provide Tribes with meaningful opportunities to respond and participate in City decision-making processes that affect Tribal rights and Interests. Consult with Tribes early and often to ensure Tribal rights and interests are protected and enforced.
- (4) Acknowledge and respect both the confidential nature of information concerning cultural practices, traditions, beliefs, tribal histories, and Tribal lands, and legal protections of the confidentiality of certain tribal cultural information (e.g., Gov. Code §§ 6254(r), 6254.10, Pub. Res. Code § 21082.3(c)). The City will take all lawful and necessary steps to ensure confidential information provided by a Tribe is not disclosed without the prior written permission from the Tribe.
- (5) Encourage collaborative and cooperative relationships with Tribes in matters affecting coastal resources.
- (6) Acknowledge and seek ways to accommodate Tribes with limited financial and staffing resources, and staffing resources of the City and the California Coastal Commission to ensure effective communication and consultation, including joint consultation with the Coastal Commission Tribal Liaison staff.

(7) Identify and recommend means to remove procedural impediments to working directly and effectively with Tribes.

(8) Consultation should not be viewed as a one-time, one-meeting activity, but rather an iterative process.

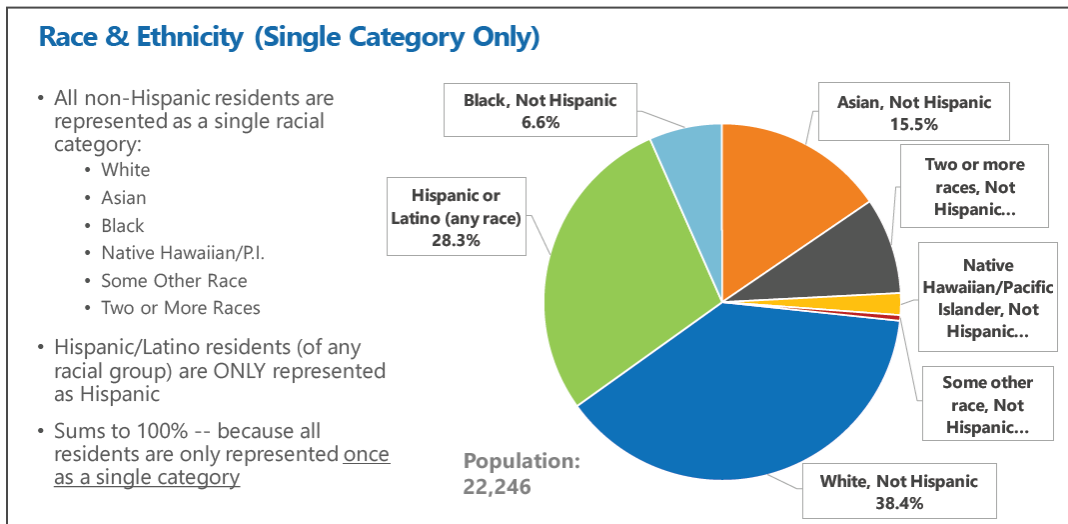
# 9.0 Environmental Justice (EJ)

## 9.1 Background – Environmental Justice

Integral Consulting prepared a Social Vulnerability Assessment which is included as Appendix E and provides detail about Environmental Justice issues within Marina. Areas immediately adjacent to Marina have long been the site of various industrial uses that, while providing benefits to neighboring communities in the Monterey Bay area, have placed environmental and health burdens on Marina residents. These uses include the former Fort Ord military base, which left a legacy of environmental contamination from leaking underground storage tanks and other pollutants. Marina was also home to the CEMEX sand mine, which ceased operations in 2020. The sand mining activities contributed to significant erosion impacts along the southern half of Monterey Bay and posed barriers to coastal access. More recently, in 2022, the Coastal Commission approved a CDP for new slant-wells to be installed at the former CEMEX property which would support a new desalination plant to be developed just outside the City's boundaries in an area already developed with an approximately 460-acre sanitary landfill and regional wastewater treatment facility.

Demographically, Marina is the most diverse city in Monterey County, with the highest percentage of Asian residents and more than twice the proportion of Black/African American residents compared to other cities in the region (Integral Consulting 2023). The demographic data for the City is shown below. Additionally, Marina has a greater share of low-income residents than other cities in southern Monterey Bay, with one-third of its population identified as low-income and just over 10 percent living below the poverty line (Integral Consulting 2023).

According to CalEnviro Screen data, Marina experiences a higher cumulative burden from environmental stressors compared to other cities on the Monterey Bay Peninsula and in California (Integral Consulting, 2023). Specifically, within the City of Marina, increased vulnerability to pollution is 51 percent higher than the rest of California, the number of people exposed to pollutants and adverse environmental conditions caused by pollution is 36 percent higher than the rest of California, and 36 percent of individuals are living below twice the federal poverty level. (Coastal Commission Environmental Mapping Tool 2024). This context underscores the need for environmental justice considerations in local planning efforts.



Source: American Community Survey, 2021 5-Year Estimates, DP05: Demographic and Housing

Historically, underserved and socially vulnerable communities have faced barriers to disaster preparedness and recovery, including limited financial and technical resources, reliance on others for basic needs and transportation, and potential discrimination or stigma that could impact recovery efforts. Recognizing these challenges, the city has an opportunity to lead by example. Proactive planning can help Marina identify potential impacts and community needs within the coastal zone, engage with vulnerable communities, and work to reverse past injustices that have placed undue strain on these populations.

The policies in this section relate to environmental justice issues as they intersect with Marina’s coastal zone boundary, which is limited, and deal mostly with the issues of coastal access, affordable housing, and civic engagement. The City’s 2045 General Plan includes an Environmental Justice Element which covers a broad range of EJ issues that apply to the rest of the City.

## 9.2 Coastal Act Policies and Definitions

The following Coastal Act sections are included to provide essential background for the Environmental Justice (EJ) policies. While these Coastal Act sections are not the standard of review for development within the City, they provide the framework for the below policies.

### Section 30013: Environmental justice

The Legislature further finds and declares that in order to advance the principles of environmental justice and equality, subdivision (a) of Section 11135 of the Government Code and subdivision (e) of Section 65040.12 of the Government Code apply to the commission and all public agencies implementing the provisions of this division. As required by Section 11135 of the Government Code, no person in the State of California, on the basis of race, national origin, ethnic group identification, religion, age, sex, sexual orientation, color, genetic information, or disability, shall be

unlawfully denied full and equal access to the benefits of, or be unlawfully subjected to discrimination, under any program or activity that is conducted, operated, or administered pursuant to this division, is funded directly by the state for purposes of this division, or receives any financial assistance from the state pursuant to this division.

## 9.3 Land Use Plan Policies – EJ

### *Policies – General*

#### EJ-1

The City shall promote and protect equitable access to beaches, recreational facilities, and open spaces for all residents and visitors, regardless of income, race, ethnicity, age, or ability. Identify and remove physical, economic, and informational barriers to access.

### *Policies – Community Engagement*

#### EJ-2

The City will create an open and transparent community engagement process that builds trust between the city, tribes, residents, business owners, visitors, and other stakeholders.

#### EJ-3

The City will create accessible information materials in both English, Spanish, Korean, and other languages if needed, and provide translation services for community outreach events when possible.

### *Policies – Public Health*

#### EJ-4

The City shall ensure that low-income communities and communities of color, and other disadvantaged communities are not disproportionately affected by water contamination or overuse, or diminished environmental functions such as those provided by healthy ecosystems, fully-functioning wetlands, and clean waters and lands in the coastal zone.

#### EJ-5

The City shall avoid siting hazardous facilities in flood-prone areas and areas prone to erosion.

#### EJ-6

The City shall require mitigation for environmental and Environmental Justice impacts to be mitigated for within the City of Marina.



Community Development Outreach at the MLK Celebration

*Source: City of Marina*

## ***Policies – Multi-Modal Transportation***

### **EJ-7**

The City shall prioritize improvements to walking and biking infrastructure to ensure safe, accessible, and convenient routes to coastal access points including parks and the beach. These improvements may include, but are not limited to, the creation of bike lanes, sidewalks, crosswalks, and traffic calming measures, with the goal of promoting sustainable transportation and equitable access for all residents.

### **EJ-8**

The City will support Monterey Salinas Transit’s expansion of public transit service in the form of flat rates and increased headway frequency to the City’s coast.

## ***Policies – Coastal Access***

### **EJ-9**

The City shall improve access to the coast for all, including investing in improvements to ADA accessible overlooks along the coast.

## ***Policies – Housing***

### **EJ-10**

The City shall encourage lower-cost housing within the coastal zone.



Picnic Tables at Marina State Beach  
*Source: EMC Planning Group*

# 10.0 Sources

- Arc GIS. “Coastal California Environmental Justice Mapping Tool”. Accessed December 12, 2024.  
<https://coastalcomm.maps.arcgis.com/apps/webappviewer/index.html?id=b28f35719d0645bf8e16da3be77d9101>
- Association of Bay Area Governments. June 2022. *Using ADUs to Satisfy RHNA, Technical Memo*.
- City of Marina. November 2023. *2023-2031 Housing Element Update*. Marina, CA.
- EMC Planning Group, 2024. Beach and Coastal Access Questionnaire Report. Monterey, CA.
- Integral Consulting, August 2023a. *City of Marina Social Vulnerability Assessment for LCP Update*. Santa Cruz, CA.
- Integral Consulting, August 2023b. *2023 Existing Conditions and Sea Level Rise Adaptation Report*. Santa Cruz, CA.
- California Water Boards Central Coast. “Water Quality and Homelessness.” Last modified September 29, 2023.  
[https://www.waterboards.ca.gov/centralcoast/water\\_issues/programs/wqh.html](https://www.waterboards.ca.gov/centralcoast/water_issues/programs/wqh.html)
- Tripepi Smith, April 10, 2024. For Marina, By Marina: Community Engagement Report for a Public Access & Amenities Plan.
- U.S. Fish & Wildlife Service. “Salinas River National Wildlife Refuge.” Accessed January 30, 2025.  
<https://www.fws.gov/refuge/salinas-river/about-us>

*This side intentionally left blank.*

## Terminology Used in the Land Use Plan





The following terms are used in the City of Marina Land Use Plan:

- ~~**Active Recreation:** Moderate intensity recreational uses that are typically offered in a City park, including but not limited to park buildings, community centers, bicycle paths, campgrounds and ancillary uses supporting public agencies.~~
- **Adaptation:** Adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which minimizes harm or takes advantage of beneficial opportunities. It involves taking practical actions to manage risks from climate impacts and protect communities.
- **Armor:** To fortify a structure or topographical feature to protect it from the effects of wave action, erosion and other natural forces (e.g., constructing a wall to armor the base of a sea cliff), or to construct a feature (e.g., a seawall, dike, or levee) to protect other resources (e.g., development or agricultural land) from flooding, erosion, or other hazards. The term soft armoring refers to a non-permanent, relatively short-term armoring (e.g., temporary sand bags, vegetated berms).
- **Botanical Gardens.** A publicly or privately managed garden devoted to the collection, cultivation, and display of a wide variety of plants for scientific, educational, conservation, aesthetic purposes, or enjoyment purposes. Botanical gardens may include labeled plant collections, research, educational programs, and public visitation, and do not provide individual cultivation plots. Botanical gardens may also include features for public enjoyment, such as benches, walking paths, and water elements.
- **Climate Change:** A shift from the normal climate weather patterns associated with a place, whether due to natural causes or as a result of human activity, such as the burning of fossil fuels and the release of greenhouse gases (GHGs).
- **California Coastal Trail:** A continuous public right-of-way along the California coastline; a trail designed to foster appreciation and stewardship of the scenic and natural resources of the coast through hiking and other complementary modes of non-motorized transportation.
- **California Native American Tribe:** Means either a federally-recognized California Tribal government listed on the most recent notice of the Federal Register or a non-federally recognized California Tribe on the California Tribal Consultation List maintained by the California Native American Heritage Commission.
- **Coastal Act:** The California Coastal Act of 1976, California Public Resources Code §30000 et seq., as amended.
- **Coastal-dependent development or use:** Any development or use which requires a site on, or adjacent to, the sea to be able to function at all.

- **Coastal-dependent recreational facilities:** Any public facility that requires a site on or adjacent to the sea to function at all. Examples include, but are not limited to, coastal trails, coastal viewing platforms, and paragliding related infrastructure.
- **Coastal-dependent research:** Includes low-impact research such as; annual sea-level rise and erosion monitoring; water quality monitoring; special-status species research; restoration; biological monitoring; and similar activities. Coastal-dependent research does not provide for development of permanent structures to conduct research.
- **Coastal Erosion:** Loss of sand, sediment, vegetation, or soil in the dunes or cliffs along the coast caused by wave attack. Erosions may also be caused by wind although this was not analyzed as part of the erosion estimates for the Marina coastline.
- **Coastal Hazards:** Including but not limited to, episodic and long-term shoreline retreat, dune recession and coastal erosion, high seas, ocean waves, storms, tsunamis, coastal flooding, landslides, bluff and geologic instability, and the interaction of same, and all as impacted by sea level rise.
- **Coastal Hazard Dune Erosion area:** Refers to the area mapped in Figure 1-1 of the LUP. It is the area projected to be susceptible to active Dune Erosion during a major storm wave event and sea level rise up to 5 feet above 2000 water levels.
- **Coastal Resource:** A general term used to refer to those resources addressed in Chapter 3 of the California Coastal Act, including the ocean, beaches, wetlands, agricultural lands, and other coastal habitats; certain types of coastal development; public access and recreation opportunities; cultural, archaeological, and paleontological resources; and scenic and visual resources. Coastal resources also include but are not limited to public access and public access facilities and opportunities, recreation areas and recreational facilities and opportunities (including for recreational water-oriented activities), lower cost visitor serving facilities (including lower cost accommodations), coastal-dependent and coastal-related uses, public views, natural landforms, marine resources, watercourses (e.g., rivers, streams, creeks, etc.), and their related corridors, water bodies (e.g. wetlands, estuaries, lakes, etc.), and their related uplands, groundwater resources, biological resources, environmentally sensitive habitat areas, agricultural lands and archeological and paleontological resources.
- **Coastal Zone:** That land and water area of the State of California from the Oregon border to the border of the Republic of Mexico, specified on the maps identified and set forth in Section 17 of that chapter of the Statutes of the 1975-76 Regular Session enacting this division, extending seaward to the state's outer limit of jurisdiction, including all offshore islands, and extending inland generally 1,000 yards from the mean high tide line of the sea. In significant coastal estuarine, habitat, and recreational areas it extends inland to the first major ridgeline paralleling the sea or five miles from the mean high tide line of the sea, whichever is less, and in

developed urban areas the zone generally extends inland less than 1,000 yards. The Coastal Zone does not include the area of jurisdiction of the San Francisco Bay Conservation and Development Commission, established pursuant to Title 7.2 (commencing with §66600) of the Government Code, nor any area contiguous thereto, including any river, stream, tributary, creek, or flood control or drainage channel flowing into such area.

- **Community Garden:** Privately or publicly owned land used for the noncommercial cultivation of fruits, vegetables, plants, flowers, or herbs by multiple users. These gardens may be subdivided into individual plots or farmed collectively and may include common-use areas.
- **Community indicators:** The characteristics of a population that are often reflected in metrics such as low-income populations, linguistic isolation, housing burden, and demographic factors. Community indicators represent traits or characteristics that can affect a particular community's adaptive capacity and level of sensitivity to environmental stressors such as coastal hazards.
- **Development:** The term "development" is defined in the Coastal Act and is synonymous with "new development." The term is broadly defined to include (among others) proposed construction of buildings, or divisions of land. Specifically, in compliance with Public Resources Code §30106, "development" means "on land, in or under water, the placement or erection of any solid material or structure; discharge or disposal of any dredged material or of any gaseous, liquid, solid, or thermal waste; grading, removing, dredging, mining, or extraction of any materials; construction, reconstruction, demolition, or alteration in the size of any structure, including any facility of any private, public, or municipal utility; change in the density or intensity of use of land, including subdivision in compliance with the Map Act, and any other division of land, except where the land division is brought about in connection with the purchase of the land by a public agency for public recreational use; change in the intensity of use of water, or of access to water; and the removal or harvesting of major vegetation other than for agricultural purposes, and kelp harvesting."

As used in these policies, "development" is synonymous with "new development" and shall include construction of entirely new structures (whereby the policies apply to the entire new structure), additions to existing structures (whereby the policies apply only to the addition itself), and redevelopment (whereby the entire structure shall be considered new development subject to all applicable coastal hazards policies).

- **Disadvantaged, Marginalized, Underserved:** SB 1000 (Leyva) (Ch. 587, Stats. 2016) added Government Code Section 65302(h)(4)(A), expanding the definition of "disadvantaged communities" for the purpose of general plans to mean "an area identified by the California Environmental Protection Agency pursuant to Section 39711 of the Health and Safety Code or an area that is a low-income area that is disproportionately affected by environmental pollution and other hazards that can lead to negative health effects, exposure, or environmental

degradation.” This policy uses the terms “disadvantaged”, “marginalized” and “underserved” interchangeably; it intends to encompass not only the definitions contemplated by SB 1000, but also to include other low-income and minority populations that are disproportionately burdened by or less able to prevent, respond, and recover from adverse environmental impacts.

- **Environmental Justice:** The fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies. Environmental justice includes, but is not limited to, all of the following:
  - a. The availability of a healthy environment for all people.
  - b. The deterrence, reduction, and elimination of pollution burdens for populations and communities experiencing the adverse effects of that pollution, so that the effects of the pollution are not disproportionately borne by those populations and communities.
  - c. Governmental entities engaging and providing technical assistance to populations and communities most impacted by pollution to promote their meaningful participation in all phases of the environmental and land use decision making process.
  - d. At a minimum, the meaningful consideration of recommendations from populations and communities most impacted by pollution into environmental and land use decisions.
- **Environmentally Sensitive Habitat Area (ESHA):** Any area of land or water in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments (Public Resource Code §30107.5). In the Marina coastal zone, these areas include, but are not limited to, all beach and dune habitat, including dunes that are disturbed/degraded, or existing in isolated fragments and all wetland and watercourse habitats.
- **Erosion:** The wearing away of land by natural forces; on a beach, the carrying away of beach material by wave action, currents or the wind. Development and other non-natural forces (e.g. water leaking from pipes or scour caused by wave action against coastal armoring) may create or worsen erosion problems
- **Equity:** This policy uses the term “equity” as defined in the context of social and racial equity,<sup>12</sup> where “equity” refers to the fairness of achieving outcomes for all groups and no one factor, such as race, can be used to predict outcomes.
- **Existing Development:** An “existing structure,” means a structure lawfully in existence prior to the effective date of the Coastal Act (January 1, 1977) that has not been redeveloped since.  
(Added by PC, 12/14/23)

- **Exposure or burden:** Describe whether or to what degree a community will experience a stress or hazard. This includes exposure to environmental stressors or adverse environmental conditions, such as pollutants, climate change, or coastal hazards. Burden is often used to describe the degree of exposure, while exposure is often used to describe vulnerable areas, such as a geographical area that will be exposed to sea level rise and coastal hazards.
- **Feasible:** Capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, and technological factors.
- **Fill:** “Fill” means earth or any other substance or material, including pilings placed for the purposes of erecting structures thereon, placed in a submerged area.
- **Green infrastructure:** Refers to the use of vegetative planting, dune management, beach nourishment or other methods that mimic natural systems with native materials to capitalize on the ability of these systems to provide flood and erosion protection, stormwater management, and other ecosystem services while also contributing to the enhancement or creation of natural habitat areas.
- **Land Use:** The purpose for which land or a structure is designed, arranged, intended, occupied, or maintained.
- **Land Use Plan (LUP):** The Land Use Plan is defined as “the relevant portion of a local government’s general plan, or local coastal element which are sufficiently detailed to indicate the kinds, location, and intensity of land uses, the applicable resource protection and development policies and, where necessary, a listing of implementing actions.” (Public Resource Code §30108.5)
- **Lateral Accessway:** An area of land providing public access along the edge and parallel to the shoreline either along the beach or coastal blufftop trail where access along the beach is not available.
- **Local Coastal Program (LCP):** An LCP is a program for the use of property within the Coastal Zone. An LCP includes “the Land Use Plan, land use regulation maps, and specific implementing regulations such as coastal resource protection standards, which have been adopted by the local government and certified by the California Coastal Commission to implement the provisions and policies of the Coastal Act by the local governments”. (Public Resource Code §30108.6).
- **Low-Cost Visitor Serving Accommodations.** Lodging facilities that are accessible and affordable to the general public and are typically offered at a rate that is less than the median income rate for overnight accommodations in the area.

- **Major Vegetation:** Within Marina, protected vegetation includes all Coast Live Oak and Monterey cypress (6) inches or greater in trunk diameter measured 54 inches above grade, and native vegetation of any kind within Environmentally Sensitive Habitat Areas.
- **Mitigation:** The term “mitigation” refers to projects, measures or programs intended to offset impacts to resources.
- **Natural Disaster:** A natural event such as a flood, earthquake, or hurricane that causes great damage or loss of life.
- **Nature Based Adaptation Strategies:** Refers to infrastructure protection strategies that seek to restore, maintain, or enhance ecological value through designs that incorporate natural features, thus minimizing impacts to coastal resources as compared to traditional hard armoring methods.
- **Passive erosion:** The process whereby erosion causes the shoreline to retreat and migrate landward of any hardened structures that have fixed the location of the back beach therefore resulting in the gradual loss of beach in front of the hardened structure.
- **Passive Recreation:** Low intensity recreational uses such as walking trails, hiking trails, boardwalks, picnic areas, interpretive signage, interpretive centers, botanical gardens, community gardens, and nature observation decks and other uses that will not result in impacts to wildlife and do not create noise impacts.
- **Pre-Coastal Act Development:** A “Pre-Coastal Act development” means a structure or development lawfully in existence prior to the effective date of the Coastal Act (January 1, 1977) that has not been redeveloped since.
- **Public Access:** The right or privilege of citizens to visit or view an area or resource.
- **Redevelopment:** A structure shall be considered redeveloped, whereby the structure is no longer considered an existing structure and instead the entire structure and all development on the site must be made to conform with all applicable LCP policies, when such development consists of:
  - (1) Alteration (including interior and/or exterior remodeling and renovations, demolition or partial demolition, etc.) of 50% or more of the major structural components (including exterior walls, floor and roof structure, and foundation) of such development.
  - (2) Additions and alterations to such development that lead to more than a 50% increase in floor area for the development.

Changes to floor area and individual major structural components are measured cumulatively over time from January 1, 1977.

- **Repair and Maintenance:** Repair and maintenance activities are defined by the California Code of Regulations (CCR). CCR § 13252(b) states that unless destroyed by natural disaster, the replacement of 50 percent or more of a structure is not repair and maintenance under Coastal Act Section 30610(d) but instead constitutes a replacement (or redeveloped) structure requiring a coastal development permit.
- **Sea Level Rise:** Gradual and long-term elevation of sea level can change, both globally and locally, due to (a) changes in the shape of the ocean basins, (b) changes in the total mass of water and (c) changes in water density. Factors leading to sea level rise under global warming include both increases in the total mass of water from the melting of land-based snow and ice, and changes in water density from an increase in ocean water temperatures and salinity changes. Relative sea level rise occurs where there is a local increase in the level of the ocean measured over time at established/representative local tidal gauges relative to the land, which might be due to ocean rise and/or land level subsidence.
- **Sensitive Coastal Resource Areas:** An area in which the coastal resources, including scenic qualities and the views of scenic landscapes, and/or biological resources, are considered especially valuable.
- **Sensitivity:** The degree to which a community is affected by exposure to climate risks and hazards. It is often related to a particular community's livelihood, location, and built environment, as well as environmental health and demographic factors. For instance, livelihoods that are dependent on coastal tourism may be inherently more sensitive to impacts from coastal hazards.
- **Shoreline Access:** The provision of pedestrian access and other forms of universal access including bicycle, stroller, etc. from a public thoroughfare to and along the shoreline.
- **Shoreline Protective Device:** Structures along the shoreline that are used to protect development against coastal hazards, including but not limited to seawalls, revetments, gunite, sheet piles, breakwaters, groins, bluff retention devices, retaining walls, and pier/caisson foundation and/or wall systems.
- **Significant Adverse Environmental Impact:** A substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance. An economic or social change by itself shall not be considered a significant effect on the environment. A social or economic change related to a physical change may be considered in determining whether the physical change is significant. (CEQA Guidelines, 14 California Code of Regulations §15382). **Surf Ecosystem:** The land to sea interface that create the conditions for breaking, rideable waves, and the flora and fauna and human communities that are dependent upon it.

- **Special-Status Species:** Special-status species are those listed as Endangered, Threatened, or Rare, or as Candidates for listing by the USFWS or CDFW under the state and/or federal Endangered Species Acts. The special-status designation also includes CDFW Species of Special Concern and Fully Protected species, CNPS Rare Plant Rank 1B and 2B species, and other locally rare species. Special-status species are generally rare, restricted in distribution, declining throughout their range, or have a critical, vulnerable stage in their life cycle that warrants monitoring.
  
- **Tribal Cultural Resources:** Tribal Cultural Resources are either of the following:
  - 1) Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following:
    - A. Included or determined to be eligible for inclusion in the California Register of Historical Resources.
    - B. Included in a local register of historical resources as identified in Public Resources Code Section 520.1(k)
  - 2) A resource determined by the CEQA lead agency or the Commission, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in Public Resources Code Section 5024.1(c). In applying these criteria, the lead agency shall consider the significance of the resource to a California Native American tribe.
  - 3) A cultural landscape that meets the criteria of subdivision (a) is a tribal cultural resource to the extent that the landscape is geographically defined in terms of the size and scope of the landscape.
  
- **Traditional Ecological Knowledge:** The phrase “traditional ecological knowledge,” also called “indigenous knowledge” or “Native science,” refers to the evolving knowledge acquired by indigenous and local peoples over hundreds or thousands of years through direct contact with the environment. This knowledge is specific to a location and includes the relationships between plants, animals, natural phenomena, landscapes and timing of events that are used for lifeways, including but not limited to hunting, fishing, trapping, agriculture, and forestry. Traditional knowledge is an accumulating body of knowledge, practice, and belief, evolving by adaptive processes and handed down through generations by cultural transmission, about the relationship of living beings (human and non-human) with one another and with the environment. It encompasses the world view of indigenous people which includes ecology, spirituality, human and animal relationships, and more.

- **Vertical Accessway** is an area of land providing a connection between the first public road, trail, or use area nearest the sea, or a lateral accessway, and the immediate shoreline, beach, publicly-owned tidelands, and ocean. In cases of steep grades changes, it may include stairs or ramps to access the water's edge and beaches.
  
- **Wetland:** Lands within the coastal zone which may be covered periodically or permanently with shallow water and include saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats, and fens. Wetland shall be defined as land where the water table is at, near, or above the land surface long enough to promote the formation of hydric soils or to support the growth of hydrophytes, and shall also include those types of wetlands where vegetation is lacking and soil is poorly developed or absent as a result of frequent and drastic fluctuations of surface water levels, wave action, water flow, turbidity or high concentrations of salts or other substances in the substrate.



*City of Marina Biological Resources Memo,*  
EMC Planning Group, 2025

B  
APPENDIX



Biological Resources Memo  
**City of Marina**

Local Coastal Program Update

~~October-December 26, 2025~~



Prepared by  
**EMC Planning Group**



BIOLOGICAL RESOURCES MEMO

**CITY OF MARINA**  
**LOCAL COASTAL PROGRAM UPDATE**

PREPARED FOR

**City of Marina**

~~Alyson Hunter, AICP, Planning Services Manager~~

211 Hillcrest Avenue

Marina, CA 93933

Tel 831.884.1251

~~ahunter@cityofmarina.org~~

PREPARED BY

**EMC Planning Group Inc.**

601 Abrego Street

Monterey, CA 93940

Tel 831.649.1799

Fax 831.649.8399

www.emcplanning.com

~~October~~ December 26, 2025





# Biological Resources

The coastal zone in Marina contains a diverse mixture of plant communities and habitat types adapted to the coast, local topography and soils, and historic uses of the region. These habitats may provide foraging, nesting, breeding, dispersal, and shelter opportunities for numerous species, including special-status species such as species listed as rare, threatened or endangered under federal or state Endangered Species Acts or species considered of special concern. Numerous habitat types are present in the region that are unique to coastal areas along the Pacific Ocean, including some that are considered sensitive by the California Department of Fish and Wildlife and California Coastal Commission, or that have been designated by the U.S. Fish and Wildlife Service as critical habitat for threatened or endangered species under the federal Endangered Species Act.

## Environmentally Sensitive Habitat Areas

Environmentally sensitive habitat areas (ESHAs) are defined by the California Coastal Act as, “any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments.” In the terrestrial coastal zone of Marina, ESHAs may include coastal strand, coastal dunes/scrub, ~~closed-cone cypress~~, and non-aquatic habitat for special-status and unique species. ESHA associated with aquatic habitats include wetlands such as estuarine and marine wetlands, freshwater emergent wetlands, freshwater forested/shrub, and freshwater ponds (Figure 1, [Environmentally Sensitive Habitat Areas - South](#), and Figure 2, [Environmentally Sensitive Habitat Areas - North](#)). As wetlands and watercourses have significantly different biological functions and protections under the Coastal Act, the LCP treats these habitat types distinctly.

The following figures include maps of lands where ESHA may occur based on previous biological studies, known conservation areas, and coastal zone-wide biological mapping efforts conducted for the 2024 Land Use Plan update. Areas mapped as ESHA may support sensitive habitat or special-status species but require further site-specific study to make this determination. ESHA shown on the figures in this section is meant to serve as a flag for further studies to be undertaken when development is proposed.

ESHA could occur on any vacant or undeveloped parcel or portions of developed properties throughout the coastal zone, but may not have been mapped because it has not been subject to previous biological study by qualified professionals. It is important, therefore, that all vacant parcels with potential to support sensitive plant or wildlife species be subject to a biological resource

evaluation early in any project review process and prior to any ground disturbance, in order to determine if sensitive habitats or special status species or their habitats are present and require protection as mandated by the policies of the Coastal Act and this LCP.

The Coastal Act includes a definition of ESHA, but does not include specific vegetation classifications. In general, the coastal zone of Marina supports the following ESHA types:

- Coastal Strand: the vegetated zone that typically occurs along the shore in loose sand just above the high tide line to the edge of coastal dune/scrub habitats. Soils are deep and well-drained, largely -deposited by wind or wave action. Plants that grow along the strand have adapted to be tolerant of wind, wave action, and salt spray.
- Coastal Dune/Coastal Scrub: typically occupies areas outside of the coastal strand, including fore- and back dune habitats within coastal areas influenced by marine conditions, such as wind and fog, transitioning to chaparral habitats. Coastal dune/scrub vegetation can be described as low-growing herbs and shrubs that can tolerate harsh conditions like strong winds, shifting sandy soils, low nutrients, and low rainfall.
- ~~Closed Cone Cypress: Closed cone pines and cypresses are defined as having serotinous cones, and are limited to coastal areas with poor, unfertile soils. Closed cone forests are rare and usually found in only a handful of locations. The Monterey cypress (*Hesperocyparis macrocarpa*) is endemic to two natural stands located on the north and south side of the Carmel Bay. Monterey cypress has since been widely planted and naturalized on the California coast. Monterey cypress in the City of Marina have been planted within the coastal zone, and while not endemic to the area, they are large, landmark trees that may require additional permitting for removal.~~
- Riparian: riparian habitats are found in low areas bordered by sloping alluvial fans, slightly dissected terraces, lower foothills, and coastal plains. Within the coastal zone of Marina, riparian vegetation is found adjacent to depressional areas close to ground water (ponds). Dominant species in the canopy layer are willows, with a mixed understory of native and non-native shrubs and herbs.

## Vernal Ponds/Wetlands



Vernal ponds/wetlands present within the City of Marina include estuarine and marine wetlands, freshwater emergent wetlands, and freshwater forested/shrub wetlands. These habitat types are typically associated with natural and man-made ponds, intermittent and perennial creeks, wetlands, and roadside swales within or surrounded by other plant communities. Vegetation within vernal ponds/wetlands may include taller-growing tules (*Scirpus* sp.) and cattails (*Typha* sp.) and low-growing rushes (*Juncus* sp.) and sedges (*Carex* sp.). These wetland habitats support a variety of wildlife species, especially birds and amphibians, which utilize the emergent vegetation for cover.






## Special-Status Species






Special-status species in this report are those listed as Endangered, Threatened, or Rare, or as Candidates for listing by the U.S. Fish and Wildlife Service or California Department of Fish and Wildlife under the state and/or federal Endangered Species Acts. The special-status designation also includes California Department of Fish and Wildlife Species of Special Concern and Fully Protected species, California Native Plant Society Rare Plant Rank 1B and 2B species, and other locally rare species that meet the criteria for listing as described in Section 15380 of California Environmental Quality Act Guidelines. Special-status species are generally rare, restricted in distribution, declining throughout their range, or have a critical, vulnerable stage in their life cycle that warrants monitoring.




A search of the California Department of Fish and Wildlife’s *California Natural Diversity Database* was conducted to evaluate potentially occurring special-status plant and wildlife species in the project vicinity (California Department of Fish and Wildlife 2024). Records of occurrence for special-status plants were researched in the California Native Plant Society *Inventory of Rare and Endangered Plants* (California Native Plant Society 2024). [Table 1-1, Special-Status Species Known to Occur within the Coastal Zone](#), list special-status species documented within the coastal zone, their listing status and suitable habitat description. [Figure 3, Special-Status Species Plant Species](#), and [Figure 4, Special-Status Species Wildlife Species](#), show locations of recorded observations of special-status species within the coastal zone.

**Table 1-1 Special-Status Species Known to Occur within the Coastal Zone**

Species	Photo	Status (Federal/State/CNPS)	Suitable Habitat Description
<b>Plants</b>			
Menzies's wallflower ( <i>Erysimum menziesii</i> ssp. <i>menziesii</i> )	 <small>Dana York</small>	FE/SE/1B.1	Coastal dunes. Known only from Mendocino and Monterey Counties, localized on dunes and coastal strand; elevation 0-35m. Blooming Period: March - June
Monterey gilia ( <i>Gilia tenuiflora</i> ssp. <i>arenaria</i> )	 <small>Dean Wm. Taylor</small>	FE/ST/1B.2	Maritime chaparral, cismontane woodland, coastal dunes, coastal scrub, sandy openings; elevation 0-45m. Blooming Period: April - June

Species	Photo	Status (Federal/State/CNPS)	Suitable Habitat Description
Monterey spineflower ( <i>Chorizanthe pungens</i> var. <i>pungens</i> )	 <p>Evaristo Alvarez</p>	FT/--/1B.2	Sandy openings in maritime chaparral, cismontane woodland, coastal dunes, coastal scrub, and valley and foothill grassland; elevation 3-450m. Blooming Period: April - June
Point Reyes horkelia ( <i>Horkelia marinensis</i> )	 <p>O'Brien Liam</p>	--/--/1B.2	Sandy sites in coastal dunes, coastal prairie, and coastal scrub; elevation 5-755m. Blooming Period: May - September
Sand-loving wallflower ( <i>Erysimum ammophilum</i> )	 <p>Cara Wilcox</p>	--/--/1B.2	Maritime chaparral, coastal dunes, coastal scrub, sandy openings; elevation 0 – 60m. Blooming Period: February - June
Seaside bird's-beak ( <i>Cordylanthus rigidus</i> ssp. <i>littoralis</i> )	 <p>R.A. Chasey</p>	--/SE/1B.1	Closed-cone coniferous forest, maritime chaparral, cismontane woodland, coastal dunes, coastal scrub, sandy often disturbed sites; elevation 0-215m. Blooming Period: May - October
<b>Wildlife</b>			
Burrowing owl ( <i>Athene cucularia</i> )	 <p>Charles J. Sharp</p>	--/SSC, SC	Open, dry, annual or perennial grasslands, desert, or scrubland, with available small mammal burrows.

Species	Photo	Status (Federal/State/CNPS)	Suitable Habitat Description
California horned lark ( <i>Eremophila alpestris actia</i> )	 <p>Christoph Moning</p>	--/WL	Coastal regions, chiefly from Sonoma County to San Diego County, also within the main part of the San Joaquin Valley and east to the foothills. Prefers short-grass prairie, mountain meadows, open coastal plains, fallow grain fields, alkali flats.
Coast horned lizard ( <i>Phrynosoma blainvillii</i> )	 <p>Richie Nomas</p>	--/SSC	Arid grassland and scrubland habitats; prefers lowlands along sandy washes with scattered low bushes. Requires open areas for sunning, bushes for cover, patches of loose soil for burrowing, and abundant supply of ants and other insects for feeding.
Ferruginous hawk ( <i>Buteo regalis</i> )	 <p>Brian Sullivan</p>	--/SSC	(Wintering) Open grasslands, sagebrush flats, desert scrub, low foothills and fringes of pinyon-juniper habitats. Mostly consumes flat lagomorphs, ground squirrels, and mice.
Northern California legless lizard ( <i>Anniella pulchra</i> )	 <p>Kuoni W.</p>	--/SSC	Sandy or loose loamy soils under sparse vegetation, moist soils. <i>Anniella pulchra</i> is traditionally split into two subspecies: <i>A. pulchra pulchra</i> (silvery legless lizard) and <i>A. pulchra nigra</i> (black legless lizard), but these subspecies are typically no longer recognized.
Smith's blue butterfly ( <i>Euphilotes enoptes smithi</i> )	 <p>Diane Kodama</p>	FE/--	Coastal dunes and coastal sage scrub plant communities. Host plants include <i>Eriogonum latifolium</i> and <i>E. parvifolium</i> for larval and adult stages.

Species	Photo	Status (Federal/State/CNPS)	Suitable Habitat Description
Southwestern pond turtle ( <i>Clemmys marmorata pallida</i> )	 Yathin Krishnappa	FC/SSC	A thoroughly aquatic turtle of ponds, marshes, rivers, streams, and irrigation ditches with aquatic vegetation. Need basking sites and suitable (sandy banks or grassy open fields) upland habitat for egg-laying.
Tricolored blackbird ( <i>Agelaius tricolor</i> )	 Nigel Voaden	--/SE	Areas adjacent to open water with protected nesting substrate, which typically consists of dense, emergent freshwater marsh vegetation.
Western snowy plover ( <i>Charadrius alexandrinus nivosus</i> )	 Greg Lavaty	FT/SSC	Sandy beaches, coastal strand, salt pond levees, shores of large alkali lakes; sandy, gravelly, or friable soils for nesting.

SOURCE: CDFW 2024, CNPS 2024

NOTE: Status Codes:

Federal (USFWS)

FE: Listed as Endangered under the Federal Endangered Species Act.

FT: Listed as Threatened under the Federal Endangered Species Act.

FC: A Candidate for listing as Threatened or Endangered under the Federal Endangered Species Act.

FSC: Species of Special Concern.

FD: Delisted under the Federal Endangered Species Act.

State (CDFW)

SE: Listed as Endangered under the California Endangered Species Act.

ST: Listed as Threatened under the California Endangered Species Act.

SR: Listed as Rare under the California Endangered Species Act.

SC: A Candidate for listing as Threatened or Endangered under the California Endangered Species Act.

SSC: Species of Special Concern.

SFP: Fully Protected species under the California Fish and Game Code.

SD: Delisted under the California Endangered Species Act.

WL: Watch List

CNPS Rare Plant Ranks and Threat Code Extensions

1B: Plants that are considered Rare, Threatened, or Endangered in California and elsewhere.

2B: Plants that are considered Rare, Threatened, or Endangered in California, but more common elsewhere.

.1: Seriously endangered in California (over 80% of occurrences threatened/high degree and immediacy of threat).

.2: Fairly endangered in California (20-80% occurrences threatened).

.3: Not very endangered in California (<20% of occurrences threatened or no current threats known).

### *Threatened and Endangered Species*

Monterey gilia, Monterey spineflower, Smith's blue butterfly, and western snowy plover are state and federally threatened and /or endangered species that are common in Marina's coastal zone. The coastal zone of Marina includes critical habitat for two federally listed species: Monterey spineflower and western snowy plover is designated within Marina's coastal zone (Figure 3, Special-Status Species Plant Species, and Figure 4, Special-Status Species Wildlife Species).

#### Monterey Gilia

Monterey gilia (*Gilia tenuiflora* ssp. *arenaria*) was federally listed as endangered in 1992 and state listed as threatened in 1987. This small annual herb in the phlox family (*Polemoniaceae*) is endemic to the Monterey Bay and Peninsula dune complexes, spanning approximately 22 miles of coastline in Monterey County (USFWS 2008).



Monterey Gilia  
Photo Credit: Neal Kramer

Monterey gilia is restricted to sandy soils within coastal dune and maritime chaparral habitats (USFWS 2008).

It occupies open, sandy, wind-sheltered areas characterized by low vegetation cover and minimal plant litter. Within Marina's coastal zone, the species occurs in dune habitats west of State Route 1 and in the vicinity of Locke-Paddon Park.

Monterey gilia faces threats from trampling associated with recreational use, development, loss, and fragmentation of habitat, and competition from invasive species, particularly iceplant (*Carpobrotus* spp.), which forms dense mats that displace native vegetation. No critical habitat has been designated for this species.

#### Monterey Spineflower

Monterey spineflower (*Chorizanthe pungens* var. *pungens*) was federally listed as threatened in 1994 (USFWS1994). This low-growing annual in the buckwheat family (*Polygonaceae*) is endemic to sandy soils along the coast of southern Santa Cruz and northern Monterey counties, extending inland to the coastal plain of the Salinas Valley (USFWS 1994, USFWS 2001). The species occurs within coastal dune, coastal scrub, grassland, maritime chaparral, and oak woodland communities, most often found in sparsely vegetated, sandy openings or recently disturbed sites such as firebreaks, roadsides, and trails.



Monterey Spineflower  
Photo Credit: iNaturalist

Individual plants produce a single seed per flower, with dozens to over one hundred seeds potentially produced by a healthy, mature plant. Seed dispersal occurs primarily through wind and by attachment to passing animals, facilitated by the seed's hooked structure. Monterey spineflower thrives in areas with low competition from other vegetation, particularly where sandy soils are present. Invasive and non-native plant species can inhibit seedling establishment by excluding open sandy patches and limiting nesting habitat for hymenopteran pollinators—bees, wasps, and ants—which play a critical role in the plant's reproduction (USFWS 2008).

Within Marina's coastal zone, Monterey spineflower is found in dune habitat west of State Route 1, as well as in the vicinity of Locke-Paddon Park.

Critical habitat was designated in 2006 for Monterey spineflower (50 CFR Part 17 75189 - 75215). Unit 3, Marina (884 acres) includes coastal beaches, dunes, and bluffs ranging from just south of the mouth of the Salinas River south to the city of Monterey, west of State Route 1.

Threats that may require special management considerations or protection in this unit consist of invasive non-native plants, particularly ice plant, which forms dense ground cover on coastal beaches and crowds out Monterey spineflower; recreational activities such as foot traffic which could result in the trampling of plants; and edge effects of urban development.

### **Smith's Blue Butterfly**

Smith's blue butterfly (*Euphilotes enoptes smithi*) was federally listed as Endangered on June 1, 1976 (USFWS 1976). According to the *Smith's Blue Butterfly Recovery Plan*, this species is endemic to select inland and coastal sand dunes, serpentine grasslands, and cliffside chaparral communities (USFWS 1984). It historically occurred within two areas along an approximately 80-mile strip of California's central coast, from the Salinas River area in the north (Monterey County) to the City of Monterey, as well as from the Carmel River area south to San Carpoforo Creek (San Luis Obispo County). Additional records have been documented approximately 10 miles inland in Carmel Valley (USFWS 2006). Within the northern portion of its range along the Monterey Bay coast, which includes the City of Marina, Smith's blue butterfly is limited to the use of sand dune habitat areas.



Smith's Blue Butterfly  
Photo Credit: USFWS

Smith's blue butterfly is a small lycaenid butterfly, which as an adult has a slightly less than one-inch wingspan. The larvae (caterpillar form) feed on two species of buckwheat: seacliff buckwheat (*Eriogonum parvifolium*), generally found in the southern portion of their range, and coast buckwheat (*Eriogonum latifolium*), generally found in the northern portion of their range (USFWS 1984). Populations of Smith's blue butterfly within Marina utilize both species of buckwheat.

Female Smith's blue butterflies lay their eggs singly on flower heads of the host plants. The larvae hatch in about a week and begin eating the flowering heads of the buckwheat. As larvae grow, they molt, passing through five instars (developmental stages). Following the fifth instar, the larvae pupate sometime between August and November, and then overwinter in the leaf litter at the base of the plants.

Smith's blue butterfly is a weakly flying species; therefore, long distance dispersal is believed to occur only rarely. Common dispersal distances have been reported as up to a few hundred yards at former Fort Ord and Marina State Beach (Arnold 1983). Flight usually occurs within one or two meters above the ground. Observations of extended flight, more than a few minutes for an individual butterfly, are rare. Since Smith's blue butterfly spends the majority of its time in short flights within patches of buckwheat, any area of non-habitat, such as active construction areas, bare areas, large blow-outs on sand dunes, or extensive dense patches of vegetation that do not contain buckwheat (such as mats of non-native iceplant), act as barriers to dispersal.

Within Marina's coastal zone, Smith's blue butterfly has been recorded in coastal dune habitat west of State Route 1, where buckwheat species are present. According to the *Smith's Blue Butterfly Recovery Plan*, populations of Smith's blue butterfly at former Fort Ord, Marina State Beach, Salinas River National Wildlife Refuge, and the Naval Postgraduate School are considered important to the recovery of the species (USFWS 1984). However, no critical habitat has been designated for this species.

### Western Snowy Plover



Western Snowy Plover  
Photo Credit: Charlene Boarts

The western snowy plover (*Anarhynchus nivosus nivosus*) was listed as federally threatened in March 1993. The western snowy plover is a small, pale colored shorebird with dark patches on either side of the upper breast. It is typically found along the beach above the high tide limit but is also known to use shores of salt ponds and alkali or brackish inland lakes. The western snowy plover typically nests on flat, barren to sparsely vegetated sandy substrate and nests are frequently located near objects such as grass clumps or pieces of driftwood. The breeding season occurs from mid-March through mid-September and most eggs are laid by mid-July. Males incubate three-egg clutches about 10 percent of the time during the day and most of the night (Warriner et al. 1986). Females normally desert hatched young within six days and the males attend the young for 29 to 47 days. Females often re-nest with new mates during the same breeding season. The last chicks of the season fledge during the first or second week of September.

The Monterey Bay population of western snowy plovers includes both year-round residents and winter migrants. Winter flocks of western snowy plovers regularly roost on beaches at Marina Dunes

Preserve and Marina State Beach at Reservation Road. Migratory birds begin arriving as early as July, with courtship and nesting starting around February (PBCS 2022, PBCS 2023). Critical habitat was designated in 2012 for western snowy plover by USFWS.

Critical habitat was designated in 2012 for western snowy plover (50 CFR Part 17 36728 - 36869). Unit CA 22, Monterey to Moss Landing (959 acres) includes the beaches and coastal strand habitat along the southern half of Monterey Bay from the City of Monterey at the south end of the unit to Moss Landing and the mouth of Elkhorn Slough at the north end of the unit in Monterey County.

Threats that may require special management considerations or protection in this unit consist of human disturbance, development, horses, offroad vehicle use, pets, predators, and habitat changes resulting from exotic vegetation. Control of non-native vegetation and enforcement of existing human-use regulations are needed to ensure the suitability of the unit.

### **Critical Habitat**

~~The coastal zone of Marina includes critical habitat for two federally listed species: Monterey spineflower and western snowy plover (Figure 3, Special Status Species Plant Species, and Figure 4, Special Status Species Wildlife Species).~~

#### ***Monterey Spineflower***

~~Critical habitat was designated in 2006 for Monterey spineflower (50 CFR Part 17 75189 – 75215). Unit 3, Marina (884 acres) includes coastal beaches, dunes, and bluffs ranging from just south of the mouth of the Salinas River south to the city of Monterey, west of State Route 1.~~

~~Threats that may require special management considerations or protection in this unit consist of invasive non-native plants, particularly ice plant, which forms dense ground cover on coastal beaches and crowds out Monterey spineflower; recreational activities such as foot traffic which could result in the trampling of plants; and edge effects of urban development.~~

#### ***Western Snowy Plover***

~~Critical habitat was designated in 2012 for western snowy plover (50 CFR Part 17 36728 – 36869). Unit CA 22, Monterey to Moss Landing (959 acres) includes the beaches and coastal strand habitat along the southern half of Monterey Bay from the City of Monterey at the south end of the unit to Moss Landing and the mouth of Elkhorn Slough at the north end of the unit in Monterey County.~~

~~Threats that may require special management considerations or protection in this unit consist of human disturbance, development, horses, offroad vehicle use, pets, predators, and habitat changes resulting from exotic vegetation. Control of non-native vegetation and enforcement of existing human-use regulations are needed to ensure the suitability of the unit.~~

*Marina Beach and Coastal Access Questionnaire Report,*  
EMC Planning Group,  
July 12, 2024

C  
APPENDIX



2024 Local Coastal Program Update

# Beach and Coastal Access Questionnaire Report

City of Marina

July 2024



Prepared by  
EMC Planning Group



# Table of Contents

1.0 BEACH AND COASTAL ACCESS QUESTIONNAIRE.....	1-1
1.1 Introduction .....	1-1
1.2 Questionnaire Responses .....	1-2
1.3 Summary and Recommendations.....	1-11

## Attachments

Attachment A	Questionnaire
Attachment B	Open Ended Questions

## Figures

Figure 1	How old are you? .....	1-3
Figure 2	With which of the following ethnic or racial group(s) do you identify? .....	1-3
Figure 3	What is your annual income? .....	1-4
Figure 4	With which of the following do you identify? .....	1-4
Figure 5	Which of the following describes you? .....	1-5
Figure 6	How often do you visit the beach? .....	1-6
Figure 7	What types of outdoor activities do you enjoy on the coast? .....	1-6
Figure 8	Please rate how important the following topics are to you for Marina's coast, where five is very important and one is not important to you. ....	1-9



# Beach and Coastal Access Questionnaire

## 1.1 Introduction

The Beach and Coastal Access Community Questionnaire was conducted from April 10, 2024, to June 30, 2024, to provide community members and visitors an opportunity to share their input on the most valued beach and coastal features in Marina, identify any missing or improvable features, and gauge their knowledge of the public coastal access points available in Marina. The questionnaire consisted of 20 questions designed to inform the City about existing demographics, community needs, and how the Local Coastal Program (LCP) Update can include policy and programmatic measures to enhance access and amenities. To cater to Marina's diverse community, the questionnaire was conducted in English, Spanish, and Korean. It was available online at the City of Marina LCP Update website ([marinalcpupdate.com](http://marinalcpupdate.com)).

City of Marina staff shared information about how to take the questionnaire during the April 27, 2024, General Plan Community Workshop. City staff also distributed information through various channels, including local social media platforms, community bulletin boards, and city newsletters to ensure broad participation. A total of 101 questionnaire responses were received, reflecting a range of perspectives and experiences from Marina's residents and visitors.

The questionnaire responses discussed below represent an uncontrolled sample size of self-selected community members who are considered to be motivated and interested in the 2024 LCP Update. This can make it difficult to draw definitive conclusions based on the responses received. However, the insights gathered provide valuable information on community preferences and priorities regarding Marina's coastal access and amenities. The following is a brief summary of the responses received.

Respondents were asked to identify their three favorite things about Marina's coastline. The most frequently mentioned aspects were the natural, undeveloped state of the coastline, the quiet and uncrowded environment, and the scenic beauty. These responses indicate a strong appreciation for the existing natural conditions and a desire to preserve the coastline's current character.

Respondents also highlighted the need for better access points, wheelchair-friendly paths, and more amenities such as picnic tables, trash cans, benches, bathrooms, and fire pits. Additionally, there was a significant desire for more dog-friendly spaces, including off-leash areas and dog-friendly beaches.

Concerns about safety and cleanliness were prominent, with many respondents mentioning the presence of homeless encampments, trash, and general litter as factors that detract from their beach experience. Improved safety measures, increased patrols, and better maintenance were commonly suggested solutions.

When asked about undesirable developments, respondents expressed strong opposition to residential, commercial, and industrial developments, emphasizing the importance of preserving the natural beauty and ecological integrity of the coastline.

The questionnaire results indicate that the community values the natural state of Marina's coastline and seeks to balance preservation with improvements in access and amenities. These insights will be crucial in shaping the Local Coastal Program Update to reflect the community's preferences and enhance their beach experience.

## 1.2 Questionnaire Responses

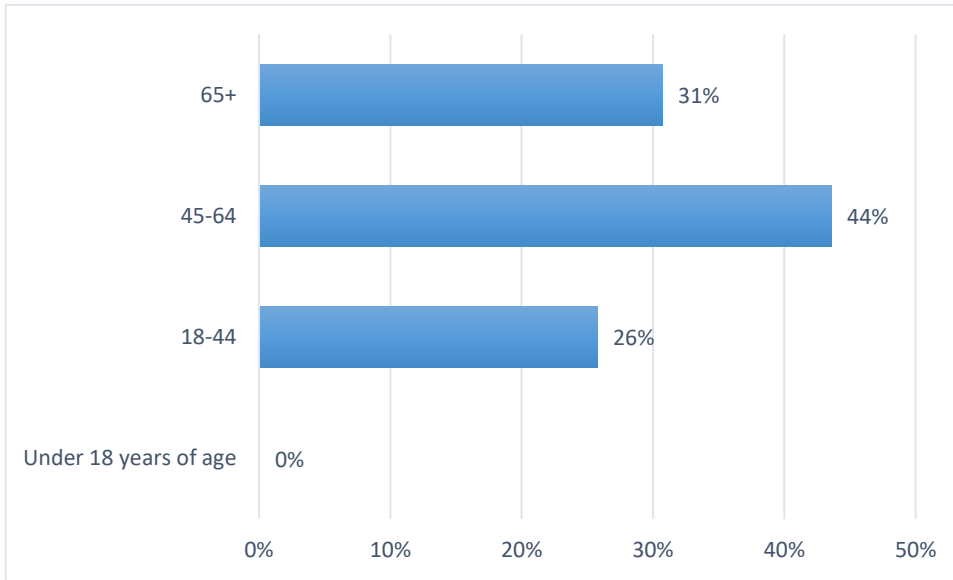
### Respondent Demographics

The City collected a total of 101 responses to the questionnaire. As shown in [Figure 1](#), respondents' ages range from 18 to 65 years and older. The fewest responses were from individuals aged 18 to 44 years (26 percent), while the majority were from those aged 45 to 64 years (44 percent). This indicates an underrepresentation of younger community members (under 18 years of age) and highlights the need for additional future outreach to target this group.

[Figure 2](#) illustrates which ethnic or racial group(s) respondents identified with and [Figure 3](#) illustrates respondents' annual income. Among the respondents, 65 percent identified as White, and 31 percent reported earning between \$100,000 and \$200,000 annually. Thirty percent of respondents opted not to disclose their annual income. Generally, the majority of respondents are aged between 45 and 64, identify as White, and earn between \$100,000 and \$200,000 annually.

[Figure 4](#) presents how respondents characterized themselves. Approximately 48 percent identified as seniors (aged 55+), 18 percent as female heads of households, 9 percent as people living with disabilities, and 3 percent as single-parent households. Additionally, 33 percent indicated that none of the choices applied to them.

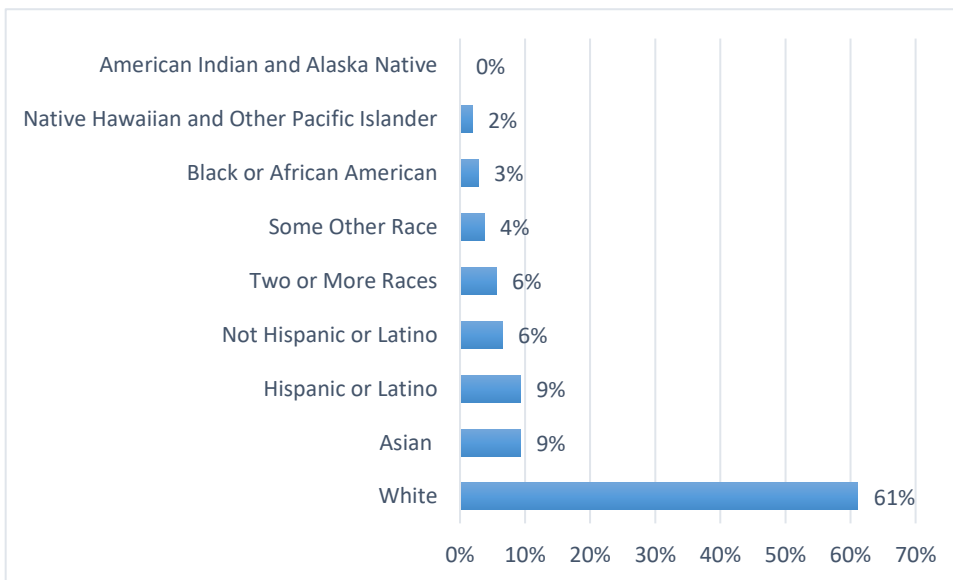
**Figure 1 How old are you?**



SOURCE: City of Marina, Beach and Coastal Access Questionnaire, 2024

---

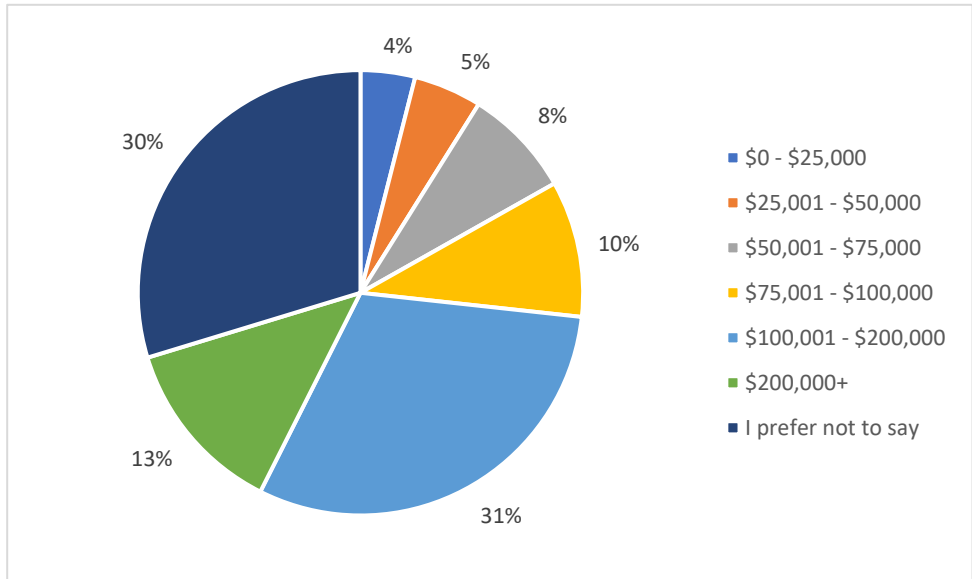
**Figure 2 With which of the following ethnic or racial group(s) do you identify?**



SOURCE: City of Marina, Beach and Coastal Access Questionnaire, 2024

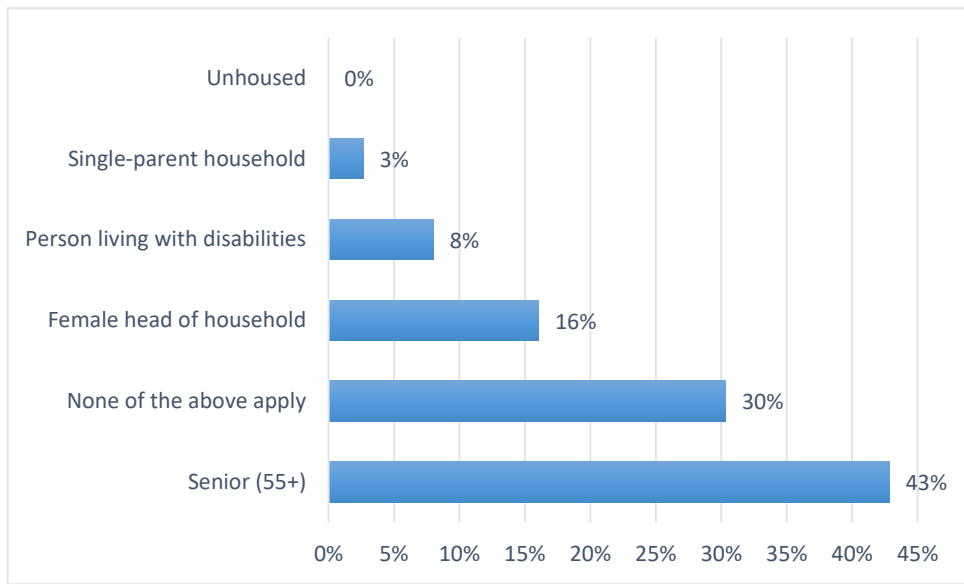
---

**Figure 3** What is your annual income?



SOURCE: City of Marina, Beach and Coastal Access Questionnaire, 2024

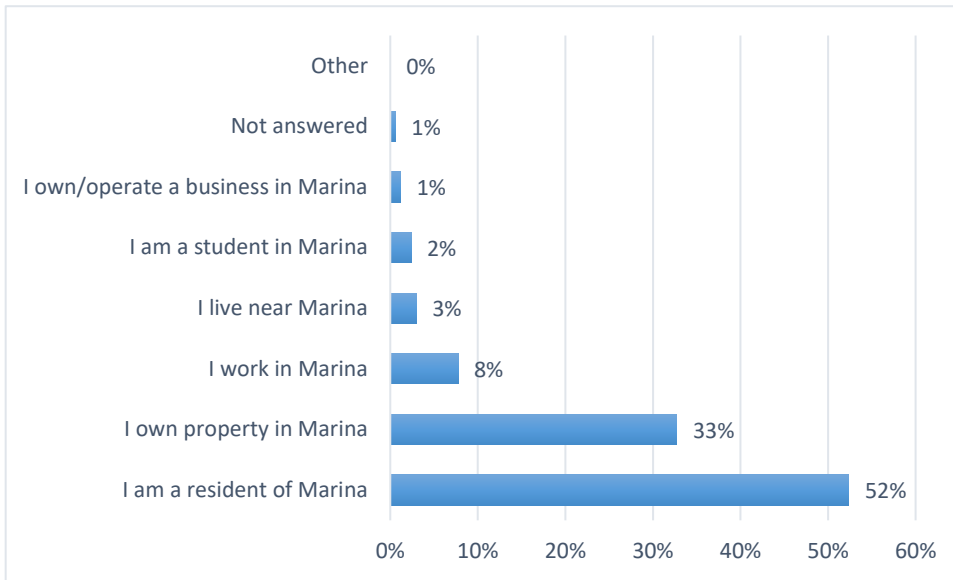
**Figure 4** With which of the following do you identify?



SOURCE: City of Marina, Beach and Coastal Access Questionnaire, 2024

Figure 5 illustrates the respondents' roles in the community. Respondents were encouraged to select all applicable options, so the results may include overlapping responses. The data shows that 87 percent of respondents are residents of Marina, 55 percent own property in Marina, 13 percent are employed in Marina, 5 percent live near Marina, 4 percent are students in Marina, 2 percent own or operate a business in Marina, and one individual did not respond to this question.

**Figure 5 Which of the following describes you?**



SOURCE: City of Marina, Beach and Coastal Access Questionnaire, 2024

Respondents were asked to identify their zip codes. Ninety percent indicated they live in Marina, with a zip code of 93933. Eleven respondents indicated they live outside of Marina in nearby jurisdictions, including Alisal, Salinas, Del Rey Oaks, Sand City, and some from further away in Santa Clara County, Santa Cruz County, and San Diego County.

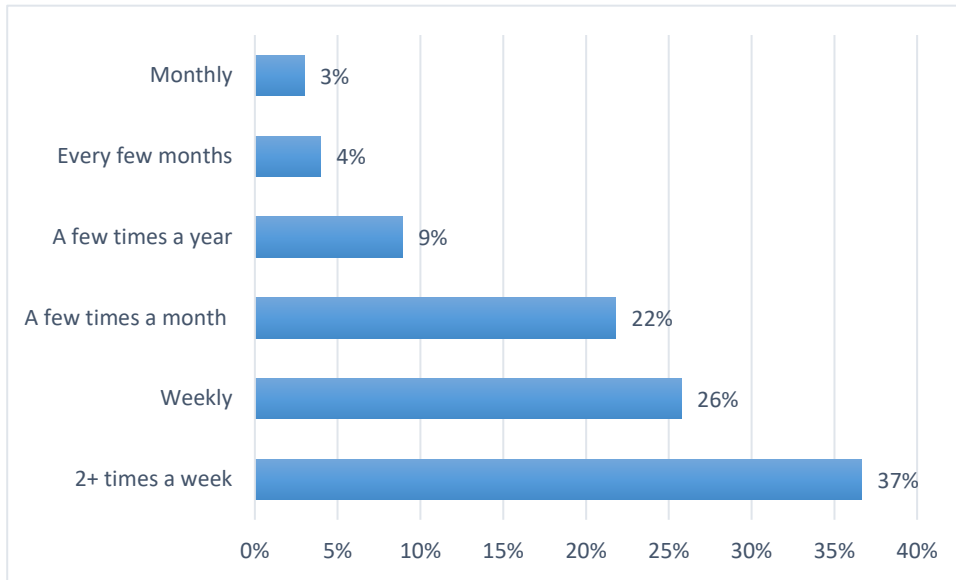
## Beach Visitation Frequency

Figure 6 illustrates how often respondents reported visiting the beach. The data shows that 37 percent visit the beach two or more times a week, 26 percent visit weekly, 22 percent visit a few times a month, 9 percent visit a few times a year, 4 percent visit every few months, and 3 percent visit monthly.

## Preferred Coastal Activities

Figure 7 presents a word cloud illustrating the types of outdoor activities respondents enjoy on the coast. This question was open-ended, allowing respondents to provide written responses. The activities mentioned range from walking, hiking, botanizing, beachcombing, bird watching, whale watching, scuba diving, surfing, and enjoying the trails along the water to lunch breaks, biking, kayaking, relaxing with friends and family, habitat restoration, dog walking, picnicking, attending festivals, and photographing the coastline.

**Figure 6** How often do you visit the beach?



SOURCE: City of Marina Beach and Coastal Questionnaire, 2024

**Figure 7** What types of outdoor activities do you enjoy on the coast?



SOURCE: City of Marina Beach and Coastal Questionnaire, 2024

Respondents were asked to identify their three favorite things about Marina's coastline. This question was open-ended, allowing respondents to provide written responses. Among the responses, the top three most common responses included the following:

- Undeveloped / Natural: This was mentioned most frequently, emphasizing the natural, undeveloped state of Marina's coastline;
- Quiet / Not Crowded: Many respondents appreciated the peace, quiet, and lack of crowds; and
- Beauty / Scenic Views: The natural beauty and scenic views were also a common favorite.

The results indicate that respondents have a strong appreciation for the natural qualities of Marina's coastline, and highlight a desire to preserve the area's pristine environment and serene atmosphere. This suggests that residents value the coastline's current state and prefer to maintain its natural character rather than see it developed or commercialized. A full list of responses is provided as [Attachment B](#).

Additionally, respondents were asked to identify any outdoor activities they would like to see offered at the local beaches and coast that are currently missing. This question was open-ended, allowing respondents to provide written responses. Among the responses, the top three most common responses included the following:

- Access and Accessibility: Many responses highlight the need for better access points to the beach, wheelchair-friendly paths, and easier access to various areas;
- Amenities and Facilities: There are numerous mentions of wanting more amenities such as picnic tables, trash cans, benches, bathrooms, and fire pits; and
- Dog-Friendly Areas: A significant number of responses express a desire for more dog-friendly spaces, including off-leash areas and dog-friendly beaches.

These themes indicate a strong community interest in improving access and amenities at local beaches while ensuring they are welcoming to dogs and their owners. A full list of responses is provided as [Attachment B](#).

## Desired Improvements and Safety Protocols

Respondents were asked whether they had visited a beach or coastal area that they did not enjoy or that made them feel unsafe, and to specify what aspects they disliked or what made them feel unsafe. Among the responses, the top three most common responses included the following:

- Homeless Encampments: Many respondents expressed discomfort with the presence of homeless individuals and encampments near the beaches;
- Trash and Litter: Several comments mentioned the issue of garbage, broken glass, and general litter, contributing to an unsafe and unclean environment; and
- Safety Concerns: Various respondents highlighted safety issues, including feelings of vulnerability when alone, unsafe access points, and the risk of violence associated with homeless individuals.

This indicates that visitors to the beaches and coastal areas are significantly impacted by social and environmental factors, particularly the presence of homeless individuals, unsafe access, and litter, which can affect their overall sense of safety and enjoyment. A full list of responses is provided as [Attachment B](#).

To better understand how Marina's beaches and coast can be improved for safety and enjoyment, respondents were asked to specify what would make them feel safe and welcome in these areas. Among the responses, the top three most common responses included the following:

- **Increased Safety and Patrols:** Many respondents requested more park rangers, police presence, and regular patrols to ensure safety and monitor activities;
- **Enhanced Facilities and Cleanliness:** A frequent theme was the need for clean bathrooms, better parking, improved trash management, and overall maintenance of the beach areas; and
- **Better Access and Amenities:** Respondents expressed a desire for easier access to the beach, more parking spaces, and additional amenities like food vendors, seating, and accessible pathways.

This indicates that visitors prioritize safety and comfort while enjoying the beaches and coastal areas, highlighting a strong desire for improved management, cleanliness, and accessibility to enhance their overall experience. A full list of responses is provided as [Attachment B](#).

## **Coastal Development and Amenities**

Respondents were asked what types of development they would like to see excluded from the City of Marina's coastline. Among the responses, the top three most common responses included the following:

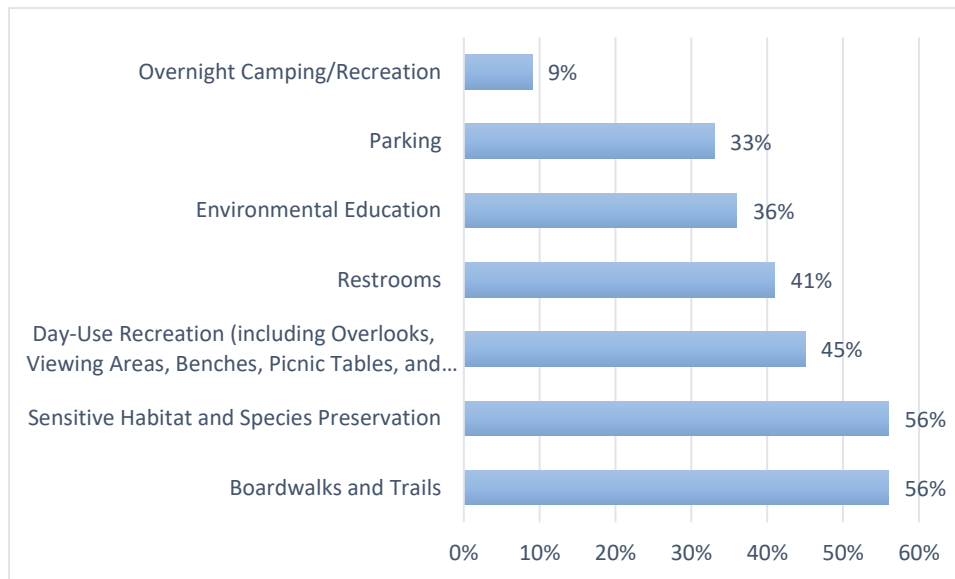
- **Residential Development:** Many respondents expressed a strong desire to prevent the construction of houses, condos, and any type of residential buildings to maintain the natural state of the coastline;
- **Commercial Development:** There was significant opposition to hotels, businesses, restaurants, and any commercial ventures that could disrupt the coastal environment; and
- **Industrial Development:** Respondents frequently mentioned the exclusion of industrial facilities, such as desalination plants, sand mining operations, and other industrial developments that could harm the ecosystem or visual appeal of the coastline.

This indicates a strong community sentiment favoring the preservation of the coastline's natural beauty and ecological integrity, reflecting concerns about overdevelopment and its potential negative impacts on the environment and quality of life.

Figure 8 illustrates how respondents ranked the following topics: Sensitive Habitat and Species Preservation, Environmental Education, Day-Use Recreation (including Overlooks, Viewing Areas, Benches, Picnic Tables, and BBQs), Overnight Camping/Recreation, Boardwalks and Trails, Parking, and Restrooms. As shown, the majority of respondents identified Sensitive Habitat and Species Preservation, and Boardwalks and Trails as very important aspects of Marina's beaches and coast. These were followed by Day-Use Recreation, Restrooms, Environmental Education, Parking, and Overnight Camping/Recreation.

This reflects a community priority for environmental conservation and accessible, nature-oriented recreation. Additionally, while day-use recreation and restrooms are also important, they are secondary to habitat preservation and trails. Environmental education, parking, and overnight camping/recreation are considered less critical but still noteworthy. This suggests a preference for sustainable and accessible coastal amenities that enhance the natural environment and provide educational opportunities.

**Figure 8 Please rate how important the following topics are to you for Marina’s coast, where five is very important and one is not important to you.**



SOURCE: City of Marina Beach and Coastal Questionnaire, 2024

## Knowledge of Marina’s Beach and Coastal Access Points

Respondents were asked if they were aware of coastal access at Lake Court Drive in Marina. Just over half (52 percent) indicated they did not know there was coastal access at that location. In contrast, when asked about access to Dunes Drive in Marina, the majority of respondents (64 percent) confirmed they were aware of the coastal access there.

To further assess their knowledge of Marina's coastal access points, respondents were also asked to identify the locations of the four coastal access points. Forty-three respondents indicated that they know where the four coastal access points are, while 58 respondents indicated that they do not know. A full list of responses is provided as [Attachment B](#).

## Beach Preference in the Area

To gauge Marina residents' preferences for Marina's beaches, respondents were asked whether they visit Marina's beaches or prefer beaches elsewhere. Those who chose beaches outside Marina were asked to specify their reasons for preferring another beach despite living in Marina. Approximately 44 percent of respondents indicated they prefer Marina beaches, whereas 56 percent indicated they prefer other beaches. Among the responses, the top three most common responses included the following:

- **Preference for Other Beaches:** Many respondents indicated they prefer visiting other beaches such as Monterey, Carmel, and Asilomar due to better access, amenities, and dog-friendliness;
- **Frequent Visits to Marina Beaches:** A significant number of respondents mentioned they primarily visit Marina beaches, appreciating their proximity and suitability for activities like walking and picnicking; and
- **Access and Facilities:** Respondents highlighted concerns about accessibility and facilities at Marina beaches, often noting issues like steep access, limited parking, and the need for more amenities compared to other locations.

Lastly, respondents were asked if they had any specific comments or insights to share about coastal access in Marina. Among the responses, the top three most common responses included the following:

- **Improved Access and Facilities:** Many respondents emphasized the need for better access to the beaches, including paved pathways, stairs, and improved parking facilities;
- **Preservation of Natural State:** Several respondents expressed the importance of keeping the beaches clean and natural, avoiding commercialization, and protecting sensitive habitats; and
- **Information and Amenities:** Respondents suggested having more information available about coastal access points, visitor services, and community events, along with amenities like picnic benches and snack huts.

This indicates that respondents prioritize both accessibility and preservation when it comes to coastal access in Marina. They want improvements to facilities and pathways to make the beaches more accessible, while also valuing the natural state of the coastline and expressing concerns about potential commercialization. Additionally, there is a desire for better information and amenities to enhance the beach experience for both residents and visitors.

## 1.3 Summary and Recommendations

The analysis of Marina's Beach and Coastal Access Questionnaire highlights a community deeply invested in the natural beauty and tranquility of their coastline. Respondents overwhelmingly favor the undeveloped and scenic state of the area, with a significant portion visiting the beach frequently for various outdoor activities. However, they also express a strong desire for improved access and amenities, indicating that while they cherish the natural environment, they seek enhancements to safety, cleanliness, and overall experience.

### Recommendations for Implementation

#### Enhance Access and Amenities

- Develop accessible pathways and ramps to improve beach access, especially for individuals with disabilities; and
- Install necessary amenities such as picnic tables, trash cans, benches, and restrooms to promote longer visits and enhance comfort.

#### Preserve Natural State

- Implement strict policies to prevent residential, commercial, and industrial development along the coastline. Prioritize initiatives that maintain the area's ecological integrity and scenic beauty.

#### Increase Safety and Cleanliness

- Increase park ranger and police presence to ensure safety and monitor beach activities; and
- Establish regular maintenance schedules for trash collection and beach cleanups to keep the areas pristine.

#### Promote Education and Awareness

- Provide educational materials and signage about local coastal access points, environmental features, and conservation efforts. Consider creating a visitor-serving kiosk to distribute this information.

#### Encourage Community Engagement

- Organize community events and activities that promote stewardship of the coastline, such as beach cleanups and habitat restoration projects; and
- Involve local residents in discussions about future developments and coastal management strategies to foster a sense of ownership and commitment to preserving Marina's natural resources.

By addressing these priorities, the City of Marina can create a welcoming and sustainable coastal environment that meets community needs while preserving the natural beauty that residents cherish.

*This side intentionally left blank.*

Questionnaire

A

ATTACHMENT



1. How old are you?/ ¿Cuántos años tiene usted? / 몇 살이예요?

- Under 18 years / Menores de 18 años / 18세 미만
- 18-44
- 45-64
- 65+

2. With which of the following ethnic or racial group(s) do you identify?

¿Con cuál de los siguientes grupos étnicos o raciales se identifica?

귀하는 다음 중 어느 민족 또는 인종 집단에 속합니까?

- American Indian and Alaska Native / Indio americano y nativo de Alaska / 아메리칸 인디언 및 알래스카 원주민
- Asian / Asiático / 아시아 사람
- Black or African American / Negro o Afroamericano / 흑인 또는 아프리카계 미국인
- Hispanic or Latino / Origen Hispano o Latino / 히스패닉 또는 라티노
- Native Hawaiian and Other Pacific Islander / Nativo de Hawái y otras islas del Pacífico / 하와이 원주민 및 기타 태평양 섬 주민
- Not Hispanic or Latino
- Some Other Race / Alguna otra raza / 다른 인종
- Two or More Races / Dos o mas razas / 두 개 이상의 레이스
- White / Blanco / 하얀색

3. With which of the following do you identify? Select all that apply.

¿Con cuál de los siguientes te identificas? Selecciona todas las que correspondan.

다음 중 귀하는 무엇에 속합니까? 해당되는 모든 것들을 고르세요.

- Senior (55+) / Mayor (55+) / 시니어(55세 이상)
- Female head of household / Hogar encabezado por una mujer / 여성 가장
- Person living with disabilities / Residentes viviendo con capacidades diferentes/desactivado / 장애가 있는 사람
- Unhoused / Desarzonado / 무주택
- Single-parent household / Hogar monoparental / 한부모가구
- None of the above apply / Ninguno de los anteriores aplica / 위 사항 중 어느 것도 해당되지 않습니다

4. What is your annual income? / ¿Cuál es su ingreso anual? / 귀하의 연간 수입은 얼마입니까?

- \$0 - \$25,000
- \$25,001 - \$50,000
- \$50,001 - \$75,000
- \$75,001 - \$100,000
- \$100,001 - \$200,000
- \$200,000+
- I prefer not to say / Prefiero no decirlo / 나는 말하고 싶지 않다

5. Which of the following describes you? (Check all descriptions that apply to you.)

¿Cuál de las siguientes características se describe? (Marca todas las descripciones que se apliquen a usted).

다음 중 귀하를 설명하는 것은 무엇입니까? (귀하에게 해당되는 설명을 모두 확인하세요.)

- I am a resident of Marina. / Soy residente de Marina. / 나는 마리나 주민이다
- I own property in Marina. / Soy propietario en Marina. / 저는 마리나에 부동산을 소유하고 있습니다.
- I own/operate a business in Marina. / Tengo/manejo un negocio en Marina. / 나는 마리나에서 사업체를 소유/운영하고 있습니다.
- I work in Marina. / Yo trabajo en Marina. / 나는 마리나에서 일해요.
- I am a student in Marina. / Yo soy estudiante en Marina. / 저는 마리나에 다니는 학생입니다.
- I live near Marina. / Vivo cerca de Marina. / 나는 마리나 근처에 산다.
- Other / Otro / 다른:

6. What is your Zip Code? / ¿Cuál es su código postal? / 당신의 우편번호는 무엇입니까?

7. How often do you visit the beach? / ¿Con qué frecuencia visitas la playa? / 얼마나 자주 해변을 방문하시나요?

- 2+ times a week / 2+ veces por semana / 일주일에 2번 이상
- Weekly / Semanalmente / 주간
- A few times a month / Algunas veces por mes / 한 달에 몇 번
- Monthly / Mensualmente / 월간

- Every few months / Cada pocos meses / 몇 달에 한 번씩
- A few times a year / Algunas veces al año / 일년에 몇 번

8. What types of outdoor activities do you enjoy on the coast?  
 ¿Qué tipo de actividades al aire libre disfruta en la costa?  
 해안에서는 어떤 종류의 야외 활동을 즐기시나요?
9. What are your three favorite things about Marina's coastline?  
 ¿Cuáles son sus tres cosas favoritas de la costa de Marina?  
 마리나 해안선에서 가장 좋아하는 세 가지는 무엇입니까?
10. Are there any types of outdoor activities missing from the local beaches and coast that you would enjoy?  
 ¿Falta algún tipo de actividad al aire libre en las playas y la costa locales que le gustaría disfrutar?  
 현지 해변이나 해안에서 즐길 수 없는 야외 활동 유형이 있나요?
11. Have you visited a beach or coastal area that you didn't enjoy and/or made you feel unsafe?  
 What didn't you like or what made you feel unsafe?  
 ¿Has visitado una playa o zona costera que no disfrutaste y/o te hizo sentir inseguro? ¿Qué no te gustó o qué te hizo sentir inseguro?  
 즐겁지 않거나 안전하지 않다고 느끼게 만든 해변이나 해안 지역을 방문한 적이 있습니까? 마음에 들지 않았던 점이나 불안한 느낌을 준 점은 무엇입니까?
12. What would make you feel safe or welcome on Marina's coast or beaches?  
 ¿Qué te haría sentir seguro o bienvenido en la costa o las playas de Marina?  
 마리나의 해안이나 해변에서 무엇이 당신을 안전하고 환영받는다고 느끼게 만들까요?
13. Are there any types of development you would like excluded from the City of Marina's coastline?  
 ¿Hay algún tipo de desarrollo que le gustaría excluir de la costa de la ciudad de Marina?  
 마리나시의 해안선에서 제외하고 싶은 개발 유형이 있습니까?

14. Please rate how important the following topics are to you for Marina's coast, where five is very important and one is not important to you.

Por favor Califique qué tan importantes son para usted los siguientes temas para la costa de Marina, donde cinco es muy importante y uno no es importante para usted.

마리나 해안에 대해 다음 주제가 얼마나 중요한지 평가해 주십시오. 5개는 매우 중요하고 1개는 중요하지 않습니다.

- Sensitive Habitat & Species Preservation / Preservación de especies y hábitats sensibles / 민감한 서식지 및 종 보존
- Environmental Education / Educación Ambiental / 환경교육
- Day-Use Recreation (Overlooks/Viewing Areas/Benches/Picnic Tables/BBQs) / Recreación de uso diurno (miradores/áreas de observación/bancos/mesas de picnic/barbacoas) / 주간 레크리에이션 (전망/전망 공간/벤치/피크닉 테이블/바비큐)
- Overnight Camping Recreation / Recreación para acampar durante la noche / 하룻밤 캠핑 레크리에이션
- Boardwalks/Trails / Paseos marítimos/senderos / 보드워크/트레일
- Parking / Estacionamiento / 주차
- Restrooms / Los baños / 화장실

15. Did you know there was coastal access at Lake Court Drive?

¿Sabía que había acceso costero en Lake Court Drive?

Lake Court Drive에 해안 접근로가 있다는 것을 알고 계셨습니까?

- Yes / Sí / 예
- No / No / 아니요

16. Did you know there was coastal access at Dunes Drive?

¿Sabía que había acceso costero en Dunes Drive?

Dunes Drive에 해안 접근로가 있다는 것을 알고 계셨나요?

- Yes / Sí / 예
- No / No / 아니요

17. Do you know where Marina's four coastal access points are? Where are they?

¿Sabes dónde están los cuatro accesos costeros de Marina? ¿Dónde están?

마리나의 해안 접근 지점 4개가 어디에 있는지 아시나요? 그들은 어디에 있나요?

18. If you are a resident of Marina, do you visit Marina's beaches or do you go elsewhere to visit the beach? If you live in Marina but go elsewhere to visit the coast/beach, what is the reason you prefer another beach?

Si es residente de Marina, ¿visita las playas de Marina o va a otro lugar para visitar la playa? Si vive en Marina pero va a otro lugar para visitar la costa/playa, ¿cuál es la razón por la que prefiere otra playa?

마리나 주민이라면 마리나 해변을 방문하시나요, 아니면 해변을 방문하기 위해 다른 곳으로 가시나요? 마리나에 거주하지만 해안/해변을 방문하기 위해 다른 곳으로 간다면, 다른 해변을 선호하는 이유는 무엇입니까?

19. Do you have anything else you'd like to share about coastal access in Marina?

¿Tiene algo más que le gustaría compartir sobre el acceso costero en Marina?

마리나의 해안 접근에 관해 공유하고 싶은 다른 내용이 있나요?

20. If you are interested in continuing to participate in the City of Marina Local Coastal Program update, please leave your email.

Si está interesado en continuar participando en la actualización del Programa Costero Local de la Ciudad de Marina, deje su correo electrónico.

마리나시 지역 해안 프로그램 업데이트에 계속 참여하고 싶다면 이메일을 남겨주세요.

*This side intentionally left blank.*

Open-Ended Responses

B

ATTACHMENT



The following lists the open-ended responses received for questionnaire questions 6, 8, 9, 10, 11, 12, 13, 17, 18, and 19.

**Question 6:** What is your Zip Code? / ¿Cuál es su código postal? / 당신의 우편번호는 무엇입니까?

**Responses:**

92064	93940
93905	93955
93907	95951
93933	95062
93933-3314	N/A

**Question 8:** What types of outdoor activities do you enjoy on the coast?

¿Qué tipo de actividades al aire libre disfruta en la costa?

해안에서는 어떤 종류의 야외 활동을 즐기시나요?

**Responses:**

Hiking, walking dog, sitting in the sunshine, looking for cool rocks and plants
Gardening, Beachcombing
Beachcombing, looking for seaglass/shells, Bird watching, whale watching
walking, reading , observing wildlife, just lounging, the sunsets
Scuba Diving, Surfing, Walking Dog.
Kids build sandcastles, go in water, fly kites, scuba diving
Walk my dogs where possible, walk north of MSB to Dunes park
Walking
walking on the beach and walking on the trails along the water; relaxing looking out at the water
Walking, biking, bringing my elderly mother to sit on a bench or in my car for us to visit, food break
Walking, enjoying the natural beauty
walking
Walking
Kite flying, bicycle riding, trail hiking.
Beachcombing, kayaking, enjoying wildlife
Just walking and looking at the waves
Hiking, playing on the beach with family and friends, relaxing

walking if it's a sunny, warmer day.
Watching sunsets. Walks on beach.
Walking, Hiking, Climbing the Dunes
Walking on shoreline
Habitat restoration, removal of litter & non-natural weeds in parks, bicycling, hiking, botanizing, dog walking, festivals
Biking, hiking, lunch @ the beach, park w/ grandkids, pickleball
Biking, walking/hiking
Walking through dune habitat, laying in sand, having a picnic
Dog walks, bird watching, hiking, swimming, reading, relaxing
Walks and hikes along the coast
Walking
Walk, hike, fish, BBQ
Walking
walking biking
Walking, Whale/Animal watching
Cycling, walking, enjoying open spaces.
walking, jogging, surfing
Walking. Dog walking. Exploring. Picking up trash.
walking
Bike, walk, hike, bird watching
Picnic on the beach
Walking
Hiking. Walking on the beach. Bike riding. Picnics.
walking, reading, watching birds and marine life
Walking on the beach, driving to the coast and watching the waves from my car, walking my dog, meeting up with friends, used to love beach bonfires before they were banned
Bird watching, beach combing, walking on the beach, looking at the sunset
Walking along the bluffs
Walking, relaxing, playing in the sand
Walking, bicycling
none
Hiking, photography, wildlife viewing, watching hang gliders/parasailors and surfers
walking, relaxing, exercising, watching sea and wildlife
Dog walking, biking, beach walking, kite flying

Diving, walking, taking the dog, photography, tidepooling,
Walking
Walking, riding along the trail or on the beach
Hikes and walks
Walking, running, weather, watching wild life.
Eating, attending festivals
Skateboarding & Playing tennis, camping, bonfires, etc.
Walking, sunbathing, sand castle building, playing in the water, bike rides.
Hiking, kayaking, biking, outrigger paddling
Run to and on the beach. Sit and relax
Reading. Riding my longboard. Sitting on the beach. Walking in the beach.
Bike rides & walking. Watching the waves
Hiking, jogging and cycling
Walking
Biking, walking the trails, going to the beach, taking pictures of nature & grabbing food/drinks (if accessible)
Dog walk, hike, biking, sitting on the beach
Bicycle ride
Walking, exercise, fishing, biking, photography, nature.
Picnic
Walking on the beach
walking, watching for whales and sunsets
sitting and watching the ocean, take walks, play with the grandchildren
walking, hiking
Walking
Hiking and biking
Hiking, reading on the beach, swimming
walking
Walking, sitting at the beach, boogie boarding, swimming
Hiking
Walking, Reading
Walking
Walking
Beach volleyball, exploring tide pools, climbing dunes, walking/hiking, sand castles

walking on the beach
Biking, playing with the kids, walks, dog walks, water play, paddle boarding
walking, bicycling, hiking in dunes
Walking with my dog (on a leash).
Walking, standup paddling
Walking
Picnic, sunbathing, walking on the sand, watching the sunset.
walking along the beach and collecting sea glass
Biking, birding, walking and walking the dog, riding the rail cars
Walking, hiking, biking, beach combing
walking, hiking, birding, lounging outside with a good book/magazine
Walk
Photography, picnicking
walking
Walking my dogs, hiking, swimming, picnicking
Sunbathing
Walking/hiking,biking
Biking, swimming, paddle boarding, hiking, boogie boarding

**Question 9:** What are your three favorite things about Marina’s coastline?

¿Cuáles son sus tres cosas favoritas de la costa de Marina?

마리나 해안선에서 가장 좋아하는 세 가지는 무엇입니까?

**Responses:**

Marinas coastline is less trafficked by tourists
It's wild, less visited, love the colors of the dune environment
undeveloped, accessible from the Highway 1, visually stunning
Quiet, lots of birds, great for walks and sunsets
The expansive dune habitat and lack of development.
Natural landscape / no buildings, wide beaches with plenty of sand, constant breeze
The Beauty, Snowy Plovers, The opening to the monterey canyon
The waves, open beach and the scenery

The walking trails at Fort Ord Dunes State park are wonderful; beach is peaceful and not crowded at anytime; and is close to home
Clean air, in FODSP bike and walking road with no vehicles, easy access
Large portion is undeveloped. Native dune habitat. Trail
the peace and quiet
Birds...shells...picking up trash
Beach, Parks, Wildlife
Beach, dunes, wildlife
There are no 3 Favorites I love it all
Undeveloped with lots of open space, free (no cost), continuous dune habitat up and down the coast
How expansive it is.
Clean. No dogs allowed. Dramatic waves.
1) The dunes, 2) That it is open to the public, 3) That it is mostly preserved in its natural state
Natural, unobstructed beach
Wild, big, healthy
Beach
Clean, spacious, free availability
The views of the bay, the native plant habitat, the shore birds
Beautiful dune plant life, excellent birdwatching, excessive otters
Relatively uncrowded and surrounded by open space. Largely unspoiled.
The ocean view. Limited visitors. Clean air and sand dunes.
Undeveloped, open space with no buildings, walkable
It's wildness
not crowded
Proximity, soft sand, fairly easy access
State park's open coastal zone, bike trail and wide road through park for multiple uses. Access south to Seaside and Monterey.
lack of development, access to public
Clean beaches. Accessible. Beauty.
beauty, access, not crowded
Pristine, quiet
Natural
Free parking free, beach access, walking trails
Its beauty. Not crowded. Dogs are always on leash.
wide, wild, clean, empty

Pristine and not developed. Sand dunes are always changing. Birds and wildlife are protected.
accessibility, not commercially developed, Marine Protected Areas
No one is there, no one is there and no one is there
It's wild, it's expansive
Quiet, wide open, marine life
beach
Undeveloped, wildlife/habitat preserve, hang gliders/parasailors
Not overly busy/crowded, dunes, close to my home
Wild, desolate, expansive
It's close, clean and accessible
The weather, and sand
Unfortunately, only the view because the weather is not great, and the trail needs a lot of upkeep.
The weather, the views, my boyfriend lives near by
Dunes, cleanliness (mostly debris free), proximity to town/shops/housing.
The seals, whale watching, collecting sea shells, the weather, the sights/views, and I also enjoy the parks
Fresh air, beautiful sight, the beautiful beach
Walking, sunbathing, sand castle building, playing in the water, bike rides on the nearby bike trail.
Beauty, not crowded, proximity
It's natural, no buildings or sand wall.
It's beautiful. The beaches are clean. It's not too busy at any one spot.
Proximity, nice beaches
Temperate weather, trails and easy access to beaches
Peaceful, not crowded
natural beauty/preserve, close proximity, bike trails
Close access, Fort Ord Dunes, bike trail
Undeveloped, few people, beautiful
Privacy, cleanliness, location.
Beaches, trails, rock and sand available beaches
How close it is, that it is pretty quiet, how clean it is
quiet, not overcrowded, can see Monterey and toward Santa Cruz
Weather is perfect, the closeness, not crowded except for holidays
the sand dunes, beach area, dog friendly places.
proximity, not crowded, natural


It's open, protected, and undeveloped (for the most part).
Pristine, peaceful, beautiful sand
few people, beautiful, view
The variety of coastal access
I like that it is a habitat for native plants & animals, its solitude, and it is a part of the Monterey Bay National Marine Sanctuary.
Sandy beach
Natural beauty and the dunes
The birds, trails, natural sea scape
not crowded, beautiful, fun paths to get to the beach
It is difficult to get to the beach in Marina - I can only view from quite a distance
Beautiful, great trails, easy access
The dunes and vegetation, sun, water.
1) Not crowded. 2) Lovely waves. 3) Natural beauty.
Accessible and quiet plus they are sandy
Beautiful beaches, not so crowded and stunning sunset
Easy access, nearby parking, beautiful sunset
sandy beaches
You can walk for miles on the beach with very little reminders of humanity; you can enjoy seeing beautiful native vegetation and wildlife from lizards to whales; it is not overcrowded with people (yet).
It's mostly unspoiled. The dunes are gorgeous. It's not overdeveloped
accessibility, natural scenery, not too crowded
Eat at restaurant overlooking the ocean
It's close by, it's not over developed, it's clean
walking
Beauty, proximity, cleanliness
Tranquil, well protected, not crowded
Long beaches, dunes & not crowded.
Easily accessible, biking trail, dunes climbing

**Question 10:** Are there any types of outdoor activities missing from the local beaches and coast that you would enjoy?

¿Falta algún tipo de actividad al aire libre en las playas y la costa locales que le gustaría disfrutar?

현지 해변이나 해안에서 즐길 수 없는 야외 활동 유형이 있나요?

**Responses:**

There could be more child activities like small playgrounds and more benches and picnic tables.
No-just more access points
not really
Bonfire pits
No.
Boardwalk, food stands, bathrooms
There aren't any flat areas to do things like volleyball. You can't BBQ anywhere .. there are few if any picnic tables.
No
Places to sit for awhile to look out at the water; a pier to walk out on
Boardwalk that was at Marina State Beach that allows people to walk in the dunes without traversing the steep incline. Bike rentals
The Boardwalk should be repaired
being able to walk my dog on the beach in marina
Don't know
Night life activities
Greater accessibility 
No
No
Not much to do, since it's so often windy, foggy and cold.
As beautiful and inviting as it is, Marina beach is not walkable. Its steep. Uneven. That hill to get up and down. Would love to watch more sunsets from up above but that parking lot is tough. It would be so nice if something were designed to make it easier to enjoy. We talk about it all the time. Can we have bonfires? What a loss that was when Carmel stopped allowing that. There is nothing so dreamy as a bonfire on the beach.
No
Maybe a simple pier at the Marina State Beach. Would be a good visitor attraction.
Better bike facilities, better sitting opportunities
Fort Ord Dunes could use a circle walking trail w/out fences.
No
More accessible boardwalks and benches like Casa Verde beach
No
None that I can think of.
A walkable boardwalk that I could see the ocean from.
Trash cans, benches

No
no
Swimming
Dog beach. A little more parking.
no
Dog friendly
not that i can think of
Boating, kayaking
Yes
No
Sailing
keep it wild
Please continue to protect our pristine coast in marina
beach cleanup activities
Nuclear missile launches from submarines
Walking paths along or to the beach. They are not easily accessible.
No
no
I think Marina State Beach and Fort Ord Dunes are just perfect how they are. Looking forward to CEMEX disappearing for added coastal access.
fire pits
more opportunities for interpretive walks about local flora in dunes, restoration activities, plein air art
Huh? Weird question.
The access to the beach can be hard , especially with the access near Lake Drive and the Kennel, near the septic tank
NA
Beach yoga and meditation
Don't have an attraction like a harbor or a pier (I often visit Pismo beach for their pier/shops/downtown area).
Beach soccer
Camping & Bonfires are great but no beach allows it.
A boardwalk and beach shops. Tourist attractions. Beach night life opportunities.
No
Maybe a dog friendly area where they can be off leash.
No

More parking & better services. ie. porta potties, trash containers
N/A
No
Today there are very limited beaches that allow dogs, wish there were more spots to converse and have a social atmosphere, wish the beach was way more accessible and easy to get to via trails/underground walkways
Dog-friendly beaches
Hiking
Better access, fishing spots, boating, safe swimming, diving areas. Picnic tables, seating, easier access thru and over the dunes.
Fishing pier
No
No
no
More dog access to certain places
Dog friendly
Can't think of any.
N/A
no
Marina is missing a beach with access that has ample parking and clean restrooms similar to Monterey Municipal Beach access. Marina State Beach is not ideal for swimming access or children due to the steep hills and poorly maintained restrooms. Additionally, homeless people often set up tents at the beach or destroy the bathrooms making it unfavorable for family use.
I don't think we need organized outdoor activities at our beaches.
Sufficient parking
Access and safety
Kite flying areas
no
Access for anyone with disabilities - you can't really get to the beach in Marina. You have to go to Monterey or Pacific Grove
Camping would be awesome
Easier kayaking access
Leash-less dog area. I understand it would have to be fenced off to protect the habitat, but it would be great if a sizable section of the beach allowed this so that I don't have to drive to Carmel for this.
Nothing missing
Picnic tables
Access to coastal stores, restaurants or cafes with coastal views, ice cream vendors, snack and drinks availability.

No
Guided tours by naturalists
More parking and easier access to get down to the water, cleaner parking lots. Marina seems to be neglected compared to other beach areas in Monterey County
occasional sanctioned bonfires?
We do not want it too crowded
Some sort of path for wheelchairs
no
Camping
I feel the wind is too strong here, its a little hard to just sit and enjoy the beach
No
Bonfire rings, on the beach family activities such as movies, volleyball

**Question 11:** Have you visited a beach or coastal area that you didn't enjoy and/or made you feel unsafe? What didn't you like or what made you feel unsafe?

¿Has visitado una playa o zona costera que no disfrutaste y/o te hizo sentir inseguro? ¿Qué no te gustó o qué te hizo sentir inseguro?

즐겁지 않거나 안전하지 않다고 느끼게 만든 해변이나 해안 지역을 방문한 적이 있습니까? 마음에 들지 않았던 점이나 불안한 느낌을 준 점은 무엇입니까?

**Responses:**

It's usually just the homeless population that makes me uncomfortable
n/a
scary parking lot, trash on the beach, unhoused folks sleeping/encampments on the beach
Parts of Santa Cruz are full of homeless
Yes. Garbage, litter, broken glass.
Marina beaches near fort ord have rebar sticking out of the sand, homeless people are a risk of violence, rip tide zones with no lifeguards is unsafe
The pathways/walkways are either burried or in poor repair. Trails in some areas a difficult to walk.
No
No
Steep and unsafe access at Lake Ct trail
No
homeless people

No...pretty safe at 5.30am...no problems with can scavengers/homeless
The dunes behind Marina Del Mar, need more safety signs.
No
Nothing
No
Not enough parking and places to sit.
Animal excrement on beaches is gross.
The pit near the sand factory seems unsafe. The path to the beach from the coastal trail / end of Lake Court is washed out.
Derelict cars in beach access parking lots
No, always felt safe
I don't like the fences at Ft. Ord/Dunes state park. It block the view.
No
Not unsafe. But hard for me, disabled person to walk up and down sandy slope to the water at any of Marina's beaches, and hard to walk through dunes, Casa Verde beach much more accessible to me. I would appreciate more accessible/disabled parking.
Sand City's beach behind Costco has some debris that can be difficult to safely navigate
In Sand City there were individuals that seemed to be suffering from drug effects on the walkways along the coast. They made us uncomfortable.
Marina State Beach. The waves can be wild, sometimes. Parking is a challenge, as well.
Underpass between CSUMB and Fort Ord has graffiti and homeless encampments
No
no
No
Homeless camps. Especially abandoned but trashed areas
nm
Homeless camps toward Monterey
trash
Not safe to get to the beach, lack of easy access. Not disability friendly, someone with mobility issues cannot get onto the beach. Lack of parking at times.
No
No
No
no
I've been to beaches that have a lot of trash and broken glass and feel unsafe to walk on without shoes.
no

no
No
Sometimes an aggressive dog. Not very often
no
Too many people
Down Marina State Beach, closer to the quarry plant, there are homeless up hiding in the dunes and leaving spent needles on the beach :(
Sometimes when I am by myself down the beach, I feel a little vulnerable, since there are not many people around.
I have seen broken glass and used condoms/trash at some of the beach trail heads and that is unpleasant.
No
Hard to walk access to beach
I never felt unsafe, but it's disheartening how people let their dogs defecate anywhere along the trail or beach and don't pick up after them. Even worse when they bag up the feces, but proceed to leave the poop bag along the trail because there are no visible trash cans to deposit the waste in, but I believe this is a State Parks issue.
No
No - always feel safe in Marina
N/a
NA/
No
Yes. There was a couple in a secluded part of the beach. Unclear if they were homeless. No people nearby do turned back.
No
No
Two access points have fairly long walks from nearest parking. Limited or no parking
Need better maintenance of the access points to beaches
No
No
No
No
While the privacy is nice, there often is nobody around should there be a problem.
Homeless camps and homeless taking parking spaces to live at. Personal assault for parking in a space that was theirs. Dogs not on lease or not cleaned up after
No
Yes - Del Monte beach is uncomfortable with homeless camps, sometimes dead animals as well as sealife (I've found two dead dogs) and depending on the tide it smells worse than in Pacific Grove, or Marina.

Homeless camps along the trails of the coast
Beach area at the end of Reservation Rd.
very high winds
No
Closer to Monterey, homeless encampments (temporary or overnight) and general vagrancy. Has not seemed to be the same problem in Marina.
no
Marina State Beach and Monterey Municipal Beach frequently have homeless tents set up. As a woman who often goes alone with my small children I frequently feel unsafe due to clear drug use present and full tents that I'm not sure who is in them. The bathrooms are often destroyed and I would not ever take my kids to them.
Yes. I often walk or hike alone at our local beaches. The presence of park rangers would be welcome.
N/A
Could be safer and the graffiti and homeless stuff needs to go
Family member needs safer steps down to the shore at Marina beach. Have clearer areas just for bikes away from walkers on all beaches in county. More benches.
yes, my family walked barefoot over the dunes off of Lake Ct. and on the way back, many of them stepped on "spiky" plants that were quite painful and difficult to remove from the bottom of their feet. also, the bathrooms are extremely disgusting/unusable at marina state beach.
I can't answer because we can't access the beach easily from anywhere in Marina
O
Yes, homeless on Seaside and Sand City beaches.
No
Santa cruz amusement activities, it felt tacky and cheap
No
No
homeless encampments
Sometimes tourists can be aggressive on their bikes and electric bikes or let their dogs run off leash.
Occasionally there is a lot of pot smoking and people sitting in blacked out cars. Sometimes transients that have approached me
no
No
No
No
Homeless population, litter (particularly related to alcohol and drugs)
No
No
No

**Question 12:** What would make you feel safe or welcome on Marina’s coast or beaches?

¿Qué te haría sentir seguro o bienvenido en la costa o las playas de Marina?

마리나의 해안이나 해변에서 무엇이 당신을 안전하고 환영받는다고 느끼게 만들까요?

**Responses:**

I'm not sure
I feel safe & welcome. I worry for the homeless that set up camp in the dunes.
a maintained wooden boardwalk with subtle lighting, nature signs, park rangers
More State Park trucks patrolling up and down the beach
Bike locks along the bike path/coastal access points.
Clean bathrooms, lifeguards, food vendors, community events (sandcastle contests, kite events, dog meetups, etc)
Better amenities, signage, areas set aside for play, bbq's, etc.
More parking
Unsure
Return of the boardwalk at Marina State Beach, repairing the parking lot broken concrete at Marina State Beach, better garbage enclosures to accommodate busy weekends
I feel safe
get rid of homeless people
Better lighting at the entrance to Marina State Beach. Repairing the wooden walkway....getting close to collapsing near the pond...soft spots.
No
I feel safe now
I DO FEEL SAFE
NA
Have more parking and places to sit.
Easier access getting up and down to the beach.
Walking paths to the beach that do not get washed out.
Occasional police patrols
Better bike parking/storage
Open space views
Maintain erosion area of Marina parking lot
See 11
I do feel safe at Marina's beaches

Occasional patrols by MPD.
More parking and a boardwalk in the dunes.
Formal parking, routine policing, lighting, cement or asphalt paths
Not sure
OK
Peace officer presence
Park rangers and bike safety patrols. More trash pickup even with more volunteers
a nicer and more pedestrian-friendly corridor to Marina State Beach on Reservation Rd. Currently no crosswalks and cars exiting/entering highway don't always look.
Homeless camps
clean and not crowded
Easy access to the beach, more lighting in certain areas
Easier access for seniors
Love them already, but not very accessible for wheelchairs
Dogs allowed on leashes.
Marina beaches feel safe but not the access road on Reservation RD.
I love marina beaches and feel safe here.
easy access, wide open vistas
Already welcome
More park rangers or staff monitoring activities
I feel it's safe
more parking spaces
Not having too many people
More state park rangers patrolling the beach line
Clean, well-lit entry points. Public transportation access. eBike or scooter rentals.
Already feel safe.
Improve access to beach near septic Tank and rail tracks
Upkeep of the area.
I feel safe on the coastlines
Welcome: street artists, food trucks, boardwalk along the beach (Marina State beach to Dunes with a shuttle bus to start/return from old marina downtown area!).
Lifeguards
Clean beaches, accessible parking, decent bathrooms.
Signage in dangerous areas, benches for sitting, garbage cans, lifeguards.

Monitoring of beaches to ensure safety
N/a
...
More parking
Well maintained pathways and parking
Easy walking access to coastline at Ford Ord Dunes
More accessible by walking vs driving. Better parking at local beaches, better lighting and facilities
Dog-friendly beaches (leashed)
Fewer coyotes, but they're also an important part of the ecosystem. Fewer abandoned buildings
Better access to the beach, services and safety.
Park ranger patrolling
I already do
Lifeguards or more Rangers - not because people should be encouraged to go in the water due to the rip tides but because they do it anyway, and allow their children too. You want to say something but they just ignore regular citizens.
Get rid of the homeless camps/garbage/needles, etc...
Parking lot lights, less trash, cleaner bathrooms, easier access down to beach.
Clean parking areas and bathrooms
I already feel safe and welcome.
I appreciate the rangers and other patrols along Marina's beaches.
clean up large areas of decomposing plastics washed up on shore
More enforcement that prevents homeless tents from setting up. I pay taxes in this community to be able to access the public properties and it's deeply disappointing to see law and bylaw enforcement fail to enforce decorum and public safety in those public spaces. Tents set up all along the beaches, parks and coastlines should not be allowed and more resources should be dedicated to either housing those people or providing a locations that doesn't impede everyone else who would like to use those public spaces. I've seen tents take over volleyball courts and surrounding areas so teams can't use the courts.
The presence and visibility of more park rangers
More parking. Easier access to the beach. More frequent police presence.
Cleanliness safety and accessibility
Alert system on trails if you needed help.
if the spiky plants could be removed from areas where people are walking without shoes, it would help the overall experience a lot. regular maintenance of the bathrooms at marina state beach would also be appreciated.
ACCESS - again there is no good, easy to access public access
They are ok
Clean beach, respectful people.
NA

Cleaner, too much debris and some old pipes stick out from the dunes, they don't look nice and make me feel as if it is likely to be polluted at times.
More parking spots at Marina Beach
Access to food, drinks, snacks and cafes/restaurants with nice beach views.
beach patrol
More rangers to protect the environment and remind visitors about the rules like keeping dogs on leash and not leaving trash or going off trail in sensitive habitat.
More rangers, better parking and patrols
no campers / people residing in park
Ongoing Police /Park surveillance will be good
Wheelchair access, picnic tables
I feel safe
Allow leashed dogs, life guard, vendors - just more consistent activity from city-approved entities
Maybe some amenities and more activities, for example bike rental
More park rangers
More family friendly activities such as a beach friendly play area for children

**Question 13:** Are there any types of development you would like excluded from the City of Marina's coastline?

¿Hay algún tipo de desarrollo que le gustaría excluir de la costa de la ciudad de Marina?

마리나시의 해안선에서 제외하고 싶은 개발 유형이 있습니까?

**Responses:**

Less houses stacked up together. More affordable housing
Desalinization plant
Hotels, parking lots, cars on beach (Pismo beach), oil drilling, industry, billboards
NO MORE HOUSES - it is getting too crowded and the traffic is awful for our tiny two lane highway.
Development along shoreline.
No housing, limit it to food stands only. A high-scale eatery/bar would be nice, similar to Sea Harvest Moss Landing. Scenic parks would be great with seating and play structures for kids. Boardwalk like asilomar with walkways would be great. No homeless.
No Desal plants, Hotels on the beach, houses on the beach
The MTA bus lane
MST SURF bus!!
Return of vehicles on the road at FODSP that bikes and walkers now enjoy. Parking for large RVs. Hotels. Sandmining

No SURF bus lane should be paved.
no
Marina State Beach Doesn't need anymore development .
No
Shops, factories, fast food...keep it natural
ALL DEVELOPMENTS, they do not belong on our beach, it is there to enjoy it
No large buildings for any purpose!
Things that obstruct the view of the coastline.
Noting that would turn it into a santa cruz beach boardwalk. That would be too noisy and take away from the serenity of marina beach.
I'm opposed to any development except that which makes it accessible to the public. More restrooms along the coastal trail would be nice.
Please, NO SURF BUS LANE!
Industrial facilities such as sand mines and groundwater desal pipes and above ground facilities
N/A
No
Keep passive recreation mostly, no other buildings really. Maybe more restrooms or signs
Yes, we should retain the dunes between the beach and development and only develop behind the dunes or on the east side of highway 1.
This question lacks clarity. I think however that the SURF busway shouldn't be developed and will be happy if the CCC stops it.
No condos!
Houses, hotels, lawns/fields, structures
Everything! Except restrooms and boardwalks...
buildings
Hotels
Business and residential. Keep existing open space/coastline west of highway 1 free from development. Please!!!
no development, except possibly a boardwalk and benches like at Del Monte Beach
Businesses or homes on the beachfront.
homes, commercial buildings
SURF bus
Hotels, Businesses
Keep it clean and local
Overpopulation
All of them. esp. Desal plant. Keep the dunes and beach wild.

I don't want to see any development on Marina's beaches. Maintain access at the designated entry points but don't add development. You could improve the connection sidewalks from central marina to the beach access points - great nicer pathways/sidewalks/trails that make it pleasant to walk to and from the beach.
ALL commercial development
everything
Any building that restricts public use.
Yes. No retail or food establishments. Keep it like it is!
no
All types of development
Houses! RV parks or campground! There are too many houses for sure --> our highway cannot handle it.
Keep the dunes wild!
Any and all development. Leave our beaches alone.
Houses so near
NA
Tall buildings that block the view
CALAM Desal plant
Further information needed, examples
NA/
Cal Am Desal plant.
Housing, hotels, golf courses, camp sites
Anything interfering with the space between the existing roads and the beach. For example, I love the old train lines and handcart. I would not want that converted to bus lines.
No
Less housing without additional infrastructure including better traffic corridor onto Hwy 1. Current plans don't address the freeway access bottleneck on Imjin
The coastline should remain as natural as possible
No
encourage development as long as it's not creating hazards to preserve wildlife habitats to an unreasonable degree, impacting the view of the ocean & putting our water supply for the city at high risk
Not sure
All non-essential development
Housing, hotels, business that pollute the water and environment.
Homeless camps
All. No houses, hotels, restaurants, camping, etc. Leave it be please.
neither residential nor commercial should be on our coastline. As more development occurs on the east side of hwy 1 there is less and less natural soace or area for deer, rabbits and coyotes. Additional our

beaches are nesting grounds for birds and harbor seals which should not be disturbed by hoards of people or development.
Developers on the beach, keep them on the other side of Hwy 1
n/a
exclusive non-public developments
Any construction. There's an old California saying, "If you don't surf here. don't develop here." The bay is a protected sanctuary. This should also apply to the coastline.
Anything physically or environmentally disruptive to the current ecosystem / coastline.
hotels and residential
Would not like to see anything that creates a significant negative impact to the environment
I'd hate to see any housing or commercial buildings.
N/A
Cement factory and ugly things
Keep Marina beach from becoming a tourist attraction, leave as is except make more views and access to shoreline.
no
no camping
Commercial ventures, large scale ones at least.
Residential, commercial and industrial buildings.
Do not develop the Marina coastline with buildings. Leave it in its natural state.
Houses, hotels, amusement parks
No
More parking space close to the beaches.
NO urban development, firepits, picnic tables, BBQ pits, camping, etc
The CalAm deal plant would be horrible. Also, would not like the bus line to Monterey near the rec trail because the rec trail is a way to ride your bike or walk while enjoying nature and views of the beach. We already have to tune out the freeway and adding buses right there would probably completely kill the vibe. Also the bus project would destroy the rail car business which I really enjoy having in Marina.
Desanilization plants , bus lines, building
ones that bring too many people at one time ( keep it clean, keep it natural)
Leave the sand dunes as is
Commercial
don't know
No
N/A
Keep desalination plant out of Marina, remove Cemex buildings.
No

**Question 17:** Do you know where Marina’s four coastal access points are? Where are they?

¿Sabes dónde están los quatros accesos costeros de Marina? ¿Dónde están?

마리나의 해안 접근 지점 4개가 어디에 있는지 아시나요? 그들은 어디에 있나요?

**Responses:**

I don't know
No-I know of the Beach Drive access near thee water company office and the one near Imjin at Fort Ord.
No, just two - Marina State Beach, and Ft. Ord state beach access
yes
Fort Ord Dunes State Park; Lake Court Drive; Marina State Beach; Dunes Drive.
Marina Beach
Lake Dr., Marina Ft. Ord State Park, Marina State Beach, MPRPD trail across from RV park.
Dunes, Reservation, Lake, 9th
Lake Drive; Dunes Drive; Marina State Park; Fort Ord Dunes State Park
FODSP, Marina State Beach, Lake ct, Dunes Dr
Lake ct., Marina State Beach, sanctuary, Dunes habitat path
no
Yes...Actually, I think there are more than four. There's suppose to be access through the Sanctuary on Dunes Drive... sign is long gone...part of legal settlement from many years ago.
No
Marina State Beach, Ft Ord Dunes State Park, the trail past Sanctuary & RV parks
Dunes Dr., Reservation Rd, 1st Street at Ft, Ord. I do not know of another.
Marina State Beach, Dunes Drive, Ft Ord State Beach
No.
Nope
Marina State Park, Fort Ord Dunes State Park, Lake Drive/Lake Court, Marina Dunes Preserve
Fort Ord Dunes, Dunes Drive, Lake Court, Marina State Beach
Lake court, Fort Ord Dunes State Park, Res. Rd/Marina St. Beach, Dunes Drive - MPRPD preserve
Reservation, Dunes, ?, ?
Yes
Fort Ord, Lake court, Marina beach, dunes

I know at least three: Reservation Road/Dunes Drive, Lake Court, 8th street, the Fort Ord trail access (unless that's Seaside?)
Nope
Not sure.
Yes
Fort Ord, Beach Rd., Dunes Drive, Lake Court Drive
ft ord dunes, lake st, marina beach, by RV place
Marina State Beach (Reservation Road), Fort Ord Dunes State Park, Fort Ord Dunes Trail
Marina state beach. Dunes rd. Lake court. Regional Park north of marina state beach
nm
Not familiar with names
Lake Drive, Dunes Drive, Beach Drive/Reservation, The Sanctuary, Fort Ord Dunes
Yes
No
Marina beach, dunes beach, by the rv campground
No
no
End of street past the sanctuary, by the water district with parking lot, and of lake Dr, state park entrance
no
Lake Court Drive, Dunes Drive, Reservation Road, Ft Ord State Park, Salinas River Bird Sanctuary
No
Fort Ord, Reservation Rd, Sanctuary, Lake Court Dr
no
Beach/Reservation Road, Lake Court, Dunes Drive, and Sanctuary Beach Resort (but let's keep that last one a secret)
Dunes Drive, Lake Court, Marina State Beach and 8th Street
Ft Ord Dunes Park (by the VA) and the two access points by the Sanctuary Resort!
This isn't supposed to be a test, let's stick to the questionnaire.
No
Lake court, Dunes drive, MSB, and MDP
No
Yes, river loop trail, state beach, lake court drive, ford ord dunes.
No
Marina state beach, Reservation Road, Dunes drive, and Del Monte blvd
No

No
Yes
Fort ord beach. Dunes public beach.
I do now
Fort Ord, Marina State beach
Dunes Dr, Marina State Beach, Lake Ct, Fort Ord Dunes
I'd have to look them up. Know of two I frequent regularly
Reservation Road, 8th St
Reservation, lake Court, dunes, sanctuary resort
Yes.
No, dunes, marina beach
The street Walmart is on.
No I don't know four access points.
No
Sadly I don't
Lake court drive, dunes drive, reservation, by the VA facility
West of the VA Hospital (9th St), end of Reservation Rd, Marina State Beach (Lake Dr. access), and the 4th...not sure.
Fort Ord, Dunes State Park, Lake Court Dr
I know of two
Dunes, lake court, fort ord
No
No
No and there needs to be direct access from Seahaven neighborhood that is really the only access that matters
Near VA on 9th, near Sanctuary
I guess not. Lake Ct, Marina State Beach, and Fort Ord are the 3 I knew of
yes
Yes - I think so
Yes.
No.
The two above + reservation road and divarty street
I know 2 access points
Reservation Road and Ford Ord Dunes State park.

No
Fort Ord Dunes State Park, Reservation Rd, Sanctuary beach, Marina State Park
Dunes Drive, state beach parking lot, Ft Ord Dunes State park
no
I think
No
Marina Beach SP,
IDK
No
I know of 2
No

**Question 18:** If you are a resident of Marina, do you visit Marina’s beaches or do you go elsewhere to visit the beach? If you live in Marina but go elsewhere to visit the coast/beach, what is the reason you prefer another beach?

Si es residente de Marina, ¿visita las playas de Marina o va a otro lugar para visitar la playa? Si vive en Marina pero va a otro lugar para visitar la costa/playa, ¿cuál es la razón por la que prefiere otra playa?

마리나 주민이라면 마리나 해변을 방문하시나요, 아니면 해변을 방문하기 위해 다른 곳으로 가시나요? 마리나에 거주하지만 해안/해변을 방문하기 위해 다른 곳으로 간다면, 다른 해변을 선호하는 이유는 무엇입니까?

**Responses:**

I don't know too much of marina beaches. So I end up going to Monterey.
Honestly, we usually go elsewhere. Carmel River Beach, Asilomar, or PG
Pebble Beach, = beauty, Carmel Beach, = dog walking, Asilomar = beauty
I am a resident and go to Marina Beach
N/A
Typically asilomar or Carmel beach or Carmel river beach. Sand is better, water is calmer, tide pools and rocks at asilomar, bathrooms at both Carmel beaches, alcohol allowed at Carmel beach
Better trails and paths, walking for our dogs . we often go to Del Monte, Asilomar, and Carmel
Monterey, ease of access and more parking.
I enjoy going to our Marina beaches.

I often go to Asilomar because of the boardwalk. I go to Carmel River State Beach for the easy access and the lagoon for birding. I go to Ribera Rd beach access in Carmel for the trails.
Mostly MSB but I will take family and friends to other beaches. Limited parking and steep access to the water.
because other beaches allow dogs
Pretty much just use the Marina State Beach.
Yes, I visit Marina beaches, I like other beaches because of convenience to exit from beach way.
Primarily Marina but Asilomar, as well
Yes, Marina Beach
Mostly we go to Marina beaches because they are close. Sometimes we go to other areas like Carmel River State Beach because wave action is less intense and it's safer for kids. Sometimes we go other places for variety
I go to beaches that are warmer and don't have wind and fog.
We go to Del Monte Beach. It flat and walkable.
I mostly visit the beach in Marina.
I visit Fort Ord Dunes State Beach nearly every day
Almost always Marina beaches. If elsewhere cuz a friend wants to do eat/drink at Beachside restaurant
We go to the beach often in Marina -Lunch -Sunset, we visit Lovers' to surf
Marina 1st, Various others on occasional usage
I go to casa verde beach more because accessible.
I am not a resident of Marina. My husband lived in Marina for several years and when I moved here we moved to Monterey. We still occasionally go to the Reservation Road/Dunes Drive access point and that was his favorite when we lived nearby. Our favorite beach is usually the one that is closest to us at a given time.
Both
I will go to Carmel Beach because it's easier to walk and see the water. Parking is difficult there, though.
Long sand trails are needed to access beach which reduces use
Sometimes elsewhere...harder to walk at Marina Beach for me, colder, and worse restrooms.
here mainly
Carmel Beach, Carmel River State Beach, Del Monte Beach, Asilomar. Marina beaches can be a bit more challenging to access due to the dunes, long access trails and sand is soft and not conducive to taking long walks, more for lounging, picnics, and fishing.
Access for dog walks. More parking.
Del Monte Beach has safer currents for when I go in the water
We use dog friendly beaches in Monterey and Carmel
Marina beaches also Salinas River, Zmudowski
Easier access, dog friendlier areas
Warmer and less wind and fog

I love all the local beaches. Sometimes I go other beaches as easier beach access. More sea glass in Monterey.
Only when I want to walk my dog on the beach
I go to the beach off Reservation or Lake Drive 2 times a week.
Regularly visit my marina beaches to walk and sit on sand, but also go to casa verde beach and lovers point for kids to play in the water, and to Carmel beach to see lots of people
different birds, different coasts, tidepooling requires rocks & algae, variety
I really don't care for the beach as far as 'visiting'...too much sand, not enough shade. I live about 1/4 mile from the beach and totally enjoy the fresh air and the fog!
More accessible with kids and older family members. Access to restrooms is easier
Change of scenery
visit Marina Beach
We love our local beach.
Depends on the weather - I alternate between Marina State Beach and Carmel or Carmel River Beach
n/a
I visit Marina's beaches.
Accessibility
I visit Marina Beach and other beaches. I follow the weather and unfortunately, Marina is usually cooler than other beaches.
Not a resident
Visit Marina beaches 4-5 times/week. Monterey wharf & lovers point 1/month. Travel to Pismo beach 1/quarter. Rarely visit (keep it) weird Santa Cruz .
I don't live in Marina
I like to go to Carmel beach.
Mostly just Marina
Elsewhere frequented by more people
Sometimes seaside,
I go to Marina beaches
Yes
I enjoy variety of coastal views
Go to Casa Verde because it's easy walking access to beach, bathrooms, and parking.
Very seldomly go to Marina beaches. Typically go in Monterey where its more accessible, ample parking, allow dogs, more lively, have facilities and a hotel for food/beverage
Have been to Marina State Beach and Fort Ord Dunes. Like to go to Carmel Beach because it's dog friendly.
Marina beaches or Carmel Beach
I often visit Marina's beaches. But access for some seniors and disabled folks is rough at best. I do go to other beaches at times that offer better access and recreational opportunities and facilities.

No parking available go to seaside by hotel
I visit our beach but prefer the access of the beach in Seaside but the treatment plant because you can walk right onto it. Our beach access is steeper.
access, parking, walkability
I go to Marina State Beach daily
Dog friendly, easy access to beach, beautiful sights, clean, safety.
Dog friendly
I live in Marina and visit the beach here. The only other beach I've walked/used would be around the Monterey Wharf.
50% Marina (mostly Dunes State Park), 50% Monterey for easier access, better swimming, better restrooms
Marina, Monterey and PG
Almost always go to Monterey, Pacific Grove or Asilomar due to poor access to beaches in Marina and not suitable for children
I'm a resident of Marina, but I don't frequent its beaches. I prefer Asilomar and Pacific Grove as I used to live there. I feel the Marina beaches are too remote. I had a bad experience many years ago that made me wary of ever going alone again. I also think beach access and parking lots could be improved.
Easier access to the beach. More parking.
I live in Marina and go elsewhere. Because Carmel beach has nice sand and it's better
If I'm with spouse we prefer Pacific Grove/Lover's pt. Because of better trails closer to water. Too hard to get to shore in Marina and fear of high tides.
Both. Go to Carmel beach often for the beach volleyball and other beaches for a change of scenery/better weather.
If we actually want to go to the beach we go elsewhere because access is quite difficult if you have any physical limitations
Both.
Both. No.
I go to Carmel for the leash-less dog beach.
Monterey beach has less waves so I prefer to go there, it is also easier to access
I sometimes go to Lovers Point in Monterey / Pebble Beach
Elsewhere. Enough parking space availability, no hiking to the beach, easy access, access to snacks, drinks, ice cream etc.
Yes. Easier access
Both. We go almost daily to Fort Ord Dunes. We go frequently to Reservation Rd Beach, And occasionally to Sanctuary Beach and Marina Dunes. But we also frequently go to the rec trail in Monterey, PG, Asilomar.
I sometimes go to PG or Carmel because they are cleaner, feel safer and better parking
warmer temperature, more sun
Both
We visit both for variety.
not a resident

Go to Monterey - allows dogs, more people walking on the beach so I feel safer
Less windy in pacific grove beach and more trees/shades along the trail, also more business along the coast in other area
Visit both Marina and other beaches in the area, for variety
I live in Marina and visit lovers point in pacific grove because the waves are small child friendly, there are easily accessible bathrooms and a park walking distance from the beach

**Question 19:** Do you have anything else you'd like to share about coastal access in Marina?

¿Tiene algo más que le gustaría compartir sobre el acceso costero en Marina?

마리나의 해안 접근에 관해 공유하고 싶은 다른 내용이 있나요?

**Responses:**

It would be nice to have a little snack hut in one our marina beaches
Probably more naturalist information about the features of our unique coastline, picnic benches, parking and facilities would encourage me to visit more-although I only knew about 2 of the 4 access points in Marina...
Free parking is perfect, don't change it.
Please do not develop it or allow any more campgrounds
Most of the access is very far from the shore and the trails are not improved or easily accessible.
Lots of opportunity, highly suggest building parks with play structures - could have multiple of them. Advertise community events. Allow food vendors like lovers point grill. Plenty of benches and walkways like asilomar.
We need to take better care of our beaches and make them more accessible to residents and tourists.
No
Easy access to beach
Our beach access and our beaches are not promoted as an economic benefit to our community in bringing tourism to Marina. Need a visitor serving kiosk somewhere in Marina that provides info about our beaches and Fort Ord National Monument.
Access should be improved. Stair cases, boardwalk, etc
allow dogs
No
No
Please don't let it get commercialized
No, and it is nice that there are no Dogs on the Beach,
I love having coastal access! Invasive ice plant removal is needed in many areas to protect sensitive habitat!
no

Love that it's clean. Love the no pets allowed. Love the sunsets. Love the rugged . Just so hard to access. The parking and no paths or trails.
I'm concerned about being able to safely access the beach from Del Monte Ave after the Surf Busway is built. I usually walk along the coastal trail from Del Monte, then cross the train tracks to access the path to the beach.
Please DON'T ruin the coast with an unnecessary surf bus lane
I love our beautiful coast!
Make access friendly
No
Individual filling out survey did not complete this question.
We are very lucky to have great coastal access that is maintained well! Thank you.
Our city staff and city council should be aggressively protective of our coasts. Many of the cities to the south have stopped certain developments because they would ruin their coasts or blight the natural views. I have not seen that same level of protectionism in Marina.
Please preserve our dunes by using boardwalks.
Paved pathways (simple) would help improve access. Also, safe and free parking
No
no
The beaches and water are beautiful, but challenging to access compared to other local beaches.
Please, please protect open coast. Limit bus /transit access/ plan
nm
NA
I strongly feel that we should have access for people with disabilities
No
More beach activities and events
No
The pathways are difficult to traverse
Keep it wild and clean, have more trash cans near parking areas, and organize cleanup days. Make access convenient, and put signs showing access roads.
I love that our coastline is not developed, and that our values as a community are to protect our natural resources.
Make beach access maps/signs more accessible. on the website, signs on roads, Facebook page, etc
the nuclear missile launches would be cool...
No
I like that it is low key. If you want more services, there are plenty of choices available nearby.
no

Wild and undeveloped beaches are becoming more and more rare along the Central California Coast which threatens rare and sensitive species and habitats. We have a rare opportunity to preserve it, be thoughtful stewards of it on into the future, and leave a lasting legacy for generations.

It is natural and I love it

Glad you all are putting some thought into this!

Don't mess it up.

No

Again, I believe State Parks is who has jurisdiction over this area. But because the city is showing interest in improving the coastal area of Marina, I hope you all share the information you all are collecting and collaborate in the efforts to improve our coastal area. Marina is rapidly growing, but the city has been looking tired for several decades. I'm glad that the City is looking to improve our community as I strongly believe we are quickly becoming the coastal town to live in.

No

It a gem and I like it! So much potential if city council wants to explore it.

No

NA/

Marina is beautiful.

Keep it pristine

Keep it clean, keep it natural. Thank you!

The Fort ord beach access is difficult to navigate even as someone in their mid 20's. It isn't impossible but it would be nice to have a path that isn't half washed away.

No

No

No

No

No

None

Finding the right balance of public access and privacy is key.

No

No

Marina needs to provide significant control and guidance to ensure our beaches remain clean, safe, and welcoming to wildlife which is what makes our beaches more special than many others.

Need to keep them clean after the holidays...tourists come and leave all their garbage everywhere

n/a

Stairs in hard to access areas

I'm grateful to the city for being mindful about beach access, and hiking and biking trails. I would like to see some kind of a map that shows where all of the hiking/biking trails are within the city limits (besides the existing Ft. Ord footprint trail map).

I greatly appreciate how special our coastline is and how well it has been maintained.

no
na
No
Allow business activity like coffee places, restaurants, etc.
Make it nice like Carmel beach the nice homes in Seahaven pay WAY too much in property tax and have nice homes that deserve a much nicer Marina coastline without homeless and druggies and junkies
Need safer, less steep access for those with disabilities or joint issues.
No
I look forward to better access for ALL to the beach.
No
No.
No
No
More costal access information would be helpful
Parking needs to be improved. There are not enough parking spaces close to the beach.
Not at this time
Marina beaches are enjoyable because of their more natural state. I worry that making them more accessible will result in the habitat destruction you see along the coast at PG which is supposed to be a preserve but people show up with tents, kegs and tons of plastic. We already pick up tash daily at Fort Ord Dunes State Park, especially following a weekend of tourists. It's hard to balance accessibility with preservation. Besides the trash, it is concerning to see so many people wandering off trail in snowy plover habitat and of course many with dogs off leash. I think more accessibility requires more supervision by rangers or naturalists. Good luck!!
More trails and parking would be nice. Ada access. Cleaner and patrolled.
no
No
No
no
No
Cool business along the coast would be fun, fine dining, brunch place, coffee shop etc.i think the such business will allow people enjoy the view and nit exposed to string wind.
It is important to have multiple access points to the beaches
No

*City of Marina 2023 Existing Conditions and  
Sea Level Rise Adaptation Report,*  
Integral Consulting, August 2023

D  
APPENDIX



**FINAL**

**City of Marina**

**2023 Existing Conditions and Sea Level Rise Adaptation Report**



**City of Marina  
211 Hillcrest Avenue  
Marina, CA 93933**

**August 2023**



# Contents

---

- Figures.....iv**
- Tables.....vi**
- Executive Summary.....vii**
- Acronyms and Abbreviations.....xii**
- Report, Map, and Data Disclaimer .....xiii**
- Glossary.....xiv**
- 1. Planning Background and Regulatory Setting.....1-1**
  - 1.1 Introduction .....1-1
  - 1.2 Location.....1-1
  - 1.3 History of Marina’s Local Coastal Program.....1-2
  - 1.4 LCP Planning Process .....1-4
  - 1.5 Outreach and Stakeholder Engagement.....1-7
  - 1.6 Safeguarding California.....1-8
  - 1.7 OPC 2018 Policy Guidance Update .....1-8
- 2. Existing Conditions Physical Setting.....2-1**
  - 2.1 Climate .....2-1
  - 2.2 Geology .....2-1
  - 2.3 Littoral Cell and Sediment Budget .....2-1
  - 2.4 Coastal Processes.....2-3
  - 2.5 Existing Hazards .....2-3
  - 2.6 Tsunami Wave Hazards.....2-8
  - 2.7 Habitats.....2-11
  - 2.8 Human Alterations to the Shoreline .....2-12
- 3. Climate Science.....3-1**
  - 3.1 Climate Cycles .....3-1
  - 3.2 Climate Change .....3-1
  - 3.3 Climate Projections: Scientific Overview .....3-2
  - 3.4 Other Regional Sea Level Rise and Coastal Management Initiatives.....3-7
- 4. Vulnerability Assessment Methods.....4-1**
  - 4.1 Introduction .....4-1
  - 4.2 Sector Geospatial Data and Exposure Selection.....4-1

4.3 Vulnerability Assessment Methodology .....4-4

**5. Sector Vulnerability Results.....5-1**

5.1 Land Use and Parkland .....5-3

5.2 Trails and Access .....5-5

5.3 Wastewater and Water Supply.....5-7

5.4 Roads, Parking, and Bike Routes.....5-9

5.5 Dune Habitat.....5-11

5.6 Coastal Flooding with 5 Feet of Sea Level Rise .....5-14

**6. Adaptation .....6-1**

6.1 Introduction .....6-1

6.2 Adaptation Planning .....6-2

6.3 Maladaptation .....6-3

6.4 Challenges and Opportunities .....6-3

6.5 Protect, Accommodate, and Retreat.....6-4

6.6 Secondary Impacts.....6-7

6.7 Adaptation Strategies for Marina .....6-10

6.8 Potential Adaptation Approaches for the Identified Vulnerabilities.....6-13

6.9 Possible Funding Mechanisms .....6-16

**7. Preparers.....7-1**

**8. References.....8-1**

**Appendix A. Key Decisions of Scenarios and Hazards..... A-1**

**Appendix B. Social Vulnerability Assessment ..... B-0**

**Appendix C. Vulnerability Tabular Results.....C-1**

# Figures

	<b>Page</b>
Figure 1-1. City of Marina Overview.....	1-3
Figure 1-2. California Coastal Commission Guidance for Including Sea Level Rise into Local Coastal Programs (CCC 2018).....	1-5
Figure 2-1. Photo of the Dunes in the City of Marina. Note color differences between the older Pleistocene (darker/redder) dunes and the more recent Holocene dunes. ....	2-2
Figure 2-2-A. Extents of FEMA Flood Mapping in the City of Marina .....	2-5
Figure 2-3. California Geological Survey Tsunami Inundation Map, July 2009 .....	2-9
Figure 2-4. Tsunami Hazards Extents .....	2-10
Figure 2-5. Existing Dredge Pond Mining Operation (October 2014). Courtesy of CCC.....	2-13
Figure 2-6. Existing dredge pond mining operation following a major winter storm (December 2015). Courtesy of CCC.....	2-14
Figure 3-1. Tide Record and Sea Level Rise Trend from Monterey Tide Gauge (NOAA Station 9413450) 3-3	
Figure 4-1. Projected Long Term and Storm Induced Coastal Erosion with 5 Feet of Sea Level Rise and Considering the Cessation of Sand Mining and the Subsequent Change to Coastal Erosion Trends.....	4-7
Figure 4-2. Projected Extent of Coastal Flood Hazards with 5 Feet of Sea Level Rise and a Major Storm Wave Event.....	4-9
Figure 5-1. Overview of Threatened Areas of Marina off Reservation Road. Credit: Coastal Records Project .....	5-2
Figure 5-2. Central Marina Dune Erosion, Land Use, Structures, and Parkland.....	5-3
Figure 5-3. Central Marina Dune Erosion, Trails & Coastal Access .....	5-5
Figure 5-4. Central Marina Dune Erosion, Wastewater and Water Supply.....	5-7
Figure 5-5. Central Marina Dune Erosion, Roads, and Parking .....	5-9
Figure 5-6. Central Marina Dune Erosion, Habitat .....	5-13
Figure 5-7. Central Marina Coastal Storm, Land Use, Structures, and Parkland.....	5-14
Figure 5-8. Central Marina Coastal Storm, Trails and Coastal Access.....	5-15
Figure 5-9. Central Marina Coastal Storm, Wastewater and Water Supply.....	5-16
Figure 5-10. Central Marina Coastal Storm, Roads and Parking .....	5-17

Figure 5-11. Central Marina Coastal Storm, Habitat ..... 5-18

Figure 6-1. California Seafloor Mapping. Source: USGS California State Waters Map Series Data Catalog  
..... 6-5

Figure 6-2. The Former Officers Club at Stillwell Hall on Ford Ord. (A) Revetment reduced erosion but  
resulted in the loss of the beach (2002). (B). Following removal of the revetment and  
equilibrating erosion, the beach returned as the dune eroded (2005). Photos courtesy of the  
California Coastal Records Project ..... 6-8

Figure 6-3. Example of a Potential Adaptation Pathway and Triggers for Sea Level Rise Accommodation  
..... 6-11

Figure 6-4. Parking Lot Erosion at Marina State Beach (July 2019)..... 6-14

# Tables

	<b>Page</b>
Table 1-1. Sea Level Rise Elevations Used in the Hazard Modeling Incorporated into the Vulnerability Assessment Compared with the Latest Scientific Ranges.....	1-6
Table 2-1. FEMA Coastal Base Flood Elevations for Shoreline Segments in Marina City Limits .....	2-4
Table 3-1. Results from the California 4th Climate Assessment for Key Climate Variables.....	3-4
Table 3-2. Probabilistic Projections of Sea Level Rise for Monterey (OPC 2018).....	3-6
Table 3-3. Sea Level Rise Scenarios by Planning Horizon (adapted from NRC 2012, ESA PWA 2014, OPC 2018). Baseline condition is from 2000.....	3-6
Table 4-1. Description of Available Geospatial Data: Potential Resource Sectors, Measures of Impacts, and Data Sources.....	4-2
Table 4-2. Projected Erosion Distances Through Time .....	4-8
Table 5-1. Sensitive Dune Habitat Directly Influenced by Coastal Hazards and Sea Level Rise .....	5-11

---

# Executive Summary

---

## Introduction

The 2023 City of Marina Existing Conditions and Sea Level Rise Adaptation Report provides a science-based vulnerability assessment that considered potential impacts from coastal hazards exacerbated by various elevations of sea level rise (9 inches, 28 inches, and 63 inches) to a wide range of infrastructure and natural resource sectors. Following extensive geospatial data gathering, an evaluation of potential vulnerabilities identified impacts to five different sectors in the City—Land Use and Parklands, Trails and Access, Water Supply and Wastewater, Roads, Parking, and Bike Routes, and Dune Habitat. Recent work has also added a social vulnerability assessment identifying some of the social equity challenges in the coastal zone faced by the City of Marina. The report also identifies potential adaptation strategies to reduce the risk and exposure to these sectors through time while acknowledging the secondary effects of some of these potential strategies.

The City of Marina is a unique place in California. Currently, the City faces some of the highest rates of erosion in California, and yet it has not placed any coastal armoring. The high rates of erosion have largely been caused by the long-standing, last remaining coastal sand mine in the United States. In 2017, a monumental settlement agreement between the City, the California Coastal Commission (CCC), the California State Lands Commission (CSLC), and CEMEX, the owner of the sand mine, laid out the phased end and remediation to nearly a century of sand mining activities.

With the unique dune topography, inland distance to development and soon to be reduced erosion rates from the cessation of sand mining, the City of Marina faces minimal exposure to most coastal hazards and sea level rise. Coastal dune erosion hazards are the biggest threat to the City of Marina even with up to 5 feet of sea level rise. The primary impact from this erosion will be to open space, recreation, and dune habitats along Marina State Beach. Infrastructure projected to be eroded and damaged include Marina Coast Water District facilities, some portions of the wastewater conveyance system, and the Sanctuary Beach Resort. Most damages to sectors begin to occur from erosion with less than a foot of sea level rise, but escalate to more substantial damages with ~2 feet of sea level rise. With ~5 feet of sea level rise, coastal wave flooding could begin to cause temporary flood impacts inland of Highway 1 during high tides and a rare 1% annual chance (aka 100-year) storm wave events.

## Report Overview

### *Planning Background and Regulatory Setting*

This section describes the purpose of the report, the history of the City of Marina's Local Coastal Program (LCP), the planning process that was conducted as part of the preparation for the report, and the connection with the State of California sea level rise and adaptation guidance documents including the *California Coastal Commission Sea Level Rise Policy Guidance* document (CCC 2015), the *State of California Sea-Level Rise Guidance 2018 Update* (OPC 2018), an update to the *Coastal Commission Sea Level Rise Policy Guidance Document* (CCC 2018), and the *Safeguarding California Plan: 2018 Update* report (California Natural Resources Agency 2018).

The key differences between these guidance documents are that the 2018 California Ocean Protection Council (OPC) guidance lays out broad statewide information, and the California Coastal Commission (CCC) guidance 2018 integrates the OPC (2018) recommendations for use in an updated CCC planning and permitting process previously laid out in 2015.

### *Physical Setting*

This section characterizes the existing conditions in the City and its setting and climate in the Monterey Bay, including the geology, littoral cell, physical coastal processes as well as reviewing the existing Federal Emergency Management Agency (FEMA) hazards.

### *Climate Science*

The differences between climate “cycles” and climate “change” are provided for background purposes. Projections of climate-induced impacts created by temperature and precipitation patterns, wildfires, extreme event flooding, and sea level rise are provided. In addition, this section describes relevant climate and coastal management-related work in the region to foster regional awareness and potential collaborations with related initiatives in the Monterey Bay region.

### *Vulnerability Assessment*

This section describes the methods and results of the vulnerability assessment. Specific descriptions of the hazard projections and vulnerability assessment methodologies and assumptions used to model and map coastal hazards are presented for use in determining future levels of vulnerability for the various planning horizons (i.e., 2010, 2030, 2060, and 2100). The long-term coastal erosion projections considered a 70% reduction in the historical long-term erosion rates due to the cessation of sand mining.<sup>1</sup>

Potential impacts on urban uses and natural resources are described, based primarily on the coastal erosion hazards as the foundation for the vulnerability assessment. Based on the characteristics of the City’s coastline and watersheds and input from the City and the public, Integral analyzed five sectors in the vulnerability assessment. The sector profiles are presented in Appendix A and are discussed in more detail throughout the report:

- Land Use and Parkland
- Trails and Access
- Water Supply and Wastewater
- Roads, Parking, and Bike Routes
- Dune and Beach Habitat

### *Adaptation Planning*

This section describes both policy and project approaches to adaptation which fall into the following categories: do nothing, protect, accommodate, and retreat. Each approach has its own financial costs and benefits, and each has secondary impacts that should be considered. Some adaptation strategies

---

<sup>1</sup> Reduction of erosion rates based on input from Dr. Ed Thornton in 2008 as part of the Southern Monterey Bay Coastal Regional Sediment Management Plan and integrated into the “without sand mining scenario” modeled in ESA PWA 2014

may be maladaptive, reducing short-term vulnerabilities while limiting long-term adaptation options, which are described.

Specific policy and adaptation strategies are highlighted for the City of Marina that focus on reducing erosion rates, maintaining beaches and coastal habitats, and avoiding future hazards that fit within the larger regional Monterey Bay context.

This adaptation planning section identifies some potential pathways through time that reduce risk and accommodate increased levels of sea level and coastal hazards. In considering the lead times needed to plan, permit, finance and implement various adaptation strategies, this section proposes some triggers to catalyze additional adaptation planning for the most vulnerable stakeholders and encourages engagement and participation in regional resiliency planning initiatives.

### *Social Vulnerability Memorandum*

The purpose of this technical memorandum is to assess social vulnerability for the City and develop recommendations for the City to integrate social vulnerability and environmental justice concerns into the LCP Update.

## **ES.4 Key Findings**

### *Overall Findings*

The following are key findings identified as a result of analyses in this report:

- Coastal dune erosion hazards are the biggest threat to the City of Marina even with up to 5 feet of sea level rise. The primary impact from this erosion is to open space and dune habitats with temporary impacts to beaches during storm events.
- One sewer pump station, one visitor-serving resort, one inactive groundwater supply well, an inactive water treatment facility, district offices for the Marina Coast Water District, and the coastal access and associated parking lot at Marina State Park are the key vulnerabilities in the City to projected coastal erosion.
- With 5 feet of sea level rise and a 1% annual chance wave event, there is a chance that additional areas near the Reservation Road underpass in the City could be temporarily impacted by wave run-up induced flooding.

## **Vulnerabilities by Planning Horizon**

The following is a summary of the resulting vulnerabilities organized by planning horizon:

### *Existing Vulnerabilities*

- Dune erosion threatens 49.6 acres of habitat.
- A beach water supply well and control vault are exposed to coastal erosion at Marina State Beach.
- Portions of the parking lot at Marina State Beach are vulnerable to coastal erosion.
- Four buildings associated with the Marina Coast Water District may be exposed to coastal erosion damages.
- Portions of all of the coastal access trails may be eroded.

- An outfall pipe

### 2030 Vulnerabilities

#### *(<1 foot of sea level rise)*

- Dune erosion threatens an additional 16.3 acres of habitat.
- Two more buildings at the Marina Coast Water District, the Marina State Beach restroom, and the first row of ocean-facing buildings at the Sanctuary Beach Resort become vulnerable to coastal erosion.
- More than half of the Marina State Beach parking lot could be vulnerable to coastal erosion.
- The sewer lift station co-located with the restroom at Marina State Beach could also become vulnerable.

### 2060 Vulnerabilities

#### *(~ 2 feet of sea level rise)*

- Dune erosion threatens an additional 32.4 acres of habitat.
- Several fire hydrants associated with the Sanctuary Beach Resort could become at risk.
- Approximately 1,500 feet of access roads to the Sanctuary Beach resort and the Marina Coast Water District could be impacted by coastal dune erosion.
- Additional structures at the Sanctuary Beach Resort could become at risk.
- Some portions of the coastal dune trail heading south from Marina State Beach parking lot could be eroded.

### 2100 Vulnerabilities

#### *(~ 5 feet of sea level rise)*

- Dune erosion threatens an additional 88.9 acres for a total of 154.1 acres of habitat potentially eroded.
- Several fire hydrants associated with the Sanctuary Beach Resort could become at risk.
- Approximately 1,500 feet of access roads to the Sanctuary Beach resort and the Marina Coast Water District could be impacted by coastal dune erosion.
- Additional structures at the Sanctuary Beach Resort for a total of 26 buildings could become at risk to coastal erosion.
- The remainder of the coastal dune trail heading south from Marina State Beach parking lot (a total distance of 1,300 feet) could be eroded.
- Coastal wave flooding during a 1% annual chance storm could potentially temporarily affect 196 residential parcels, 164 structures in the Cardoza Avenue neighborhood, and the Gloria Jean Park through wave overtopping of the dunes flowing down Reservation Road.

### Positive Findings

- The pending cessation of sand mining and subsequent projected reduction in future erosion and hydraulic connectivity has substantially reduced the potential long term impacts of sea level rise and coastal hazards to the City.
- There are no projected impacts to any residential land uses from erosion even with up to 5 feet of sea level rise.<sup>2</sup>
- The City of Marina currently has no coastal armoring, which allows for the continuation of natural coastal and dune processes and maintenance of beach width over time.

---

<sup>2</sup> The Sanctuary Beach Resort and MCWD properties are zoned Coastal Conservation and Development and Public Facility District.

- The coastal zone of the City is among the highest income areas and as a result, there is very little social vulnerability for those living in the coastal zone. The access to coastal recreational in the City is fee-free, creating fewer barriers for accessibility to all populations.

# Acronyms and Abbreviations

<b>AMBAG</b>	Association of Monterey Bay Area Governments
<b>CCC</b>	California Coastal Commission
<b>CDP</b>	Coastal Development Permit
<b>CEQA</b>	California Environmental Quality Act
<b>City</b>	City of Marina
<b>CoSMoS</b>	Coastal Storm Modeling System (USGS)
<b>CSLC</b>	California State Lands Commission
<b>EPA</b>	U.S. Environmental Protection Agency
<b>ESHA</b>	Environmentally Sensitive Habitat Areas
<b>ESRI</b>	Environmental Systems Research Institute
<b>FEMA</b>	Federal Emergency Management Agency
<b>FIRM</b>	Flood Insurance Rate Map
<b>GHG</b>	Greenhouse Gas
<b>GIS</b>	Geographic Information System
<b>IPCC</b>	Intergovernmental Panel on Climate Change
<b>LCP</b>	Local Coastal Program
<b>LiDAR</b>	Light Detection and Ranging
<b>MCWD</b>	Marina Coast Water District
<b>MND</b>	Mitigated Negative Declaration (CEQA)
<b>MSL</b>	Mean Sea Level
<b>NAVD88</b>	North American Vertical Datum of 1988
<b>NOAA</b>	National Oceanic and Atmospheric Administration
<b>NRC</b>	National Research Council
<b>OBNP</b>	Opportunistic Beach Nourishment Program
<b>OPC</b>	Ocean Protection Council
<b>PDO</b>	Pacific Decadal Oscillation
<b>PWA</b>	Philip Williams & Associates
<b>RCP</b>	Relative Concentration Pathways
<b>USACE</b>	U.S. Army Corps of Engineers
<b>USGS</b>	U.S. Geological Survey

---

# Report, Map, and Data Disclaimer

---

The data utilized for purposes of this report were collected from various sources and are not to be construed as “legal description.” This report is advisory and not a regulatory or legal standard of review for actions that the City of Marina or the California Coastal Commission may take. This report is part of an ongoing process to understand and prepare for future coastal hazards as a result of climate change. Substantial uncertainties associated with modeling and projecting future hazards and their potential impacts exist.

Although we strive to review all resource sector and infrastructure data received, we cannot verify the location or completeness of all spatial data. For this reason, Integral Consulting Inc. cannot accept responsibility for any errors, omissions, or positional accuracy, and therefore, there are no warranties accompanying this product. Users of the information displayed in maps are strongly cautioned to verify all information.

# Glossary

**1% Annual Chance Storm:** A single storm wave event with a 1% annual chance of occurring in any given year based on extreme value analysis of historic storms (also referred to as a 100-Year storm event). A wave event of this magnitude on one day does not change the probability of another 1% annual chance event occurring in the same year.

**Adaptation:** Adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which minimizes harm or takes advantage of beneficial opportunities.

**Coastal Erosion:** Loss of sand, sediment, vegetation, or soil in the dunes or cliffs along the coast caused by wave attack. (Erosion can also be caused by wind, but this was not included in this analysis).

**Coastal Flooding:** Flooding caused by wave run-up that occurs during high tide during a large 1% annual chance storm. The wave run-up typically has a velocity that can cause damage.

**Coastal Zone:** A regulatory zone established by State Legislature and shown on maps prepared by the California Coastal Commission, and for which the California Coastal Act establishes policies and regulations.

**Climate Change:** A shift from the normal climate weather patterns associated with a place, whether due to natural causes or as a result of human activity, such as the burning of fossil fuels and the release of greenhouse gases (GHGs).

**Extreme Monthly High Water:** Highest tide elevation based on the average elevation of the highest monthly high tide for a 19-year tidal epoch period. This level would be expected to be inundated once a month.

**Environmentally Sensitive Habitat Areas (ESHAs):** Any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments. In Marina, ESHAs are primarily associated with beach and dune habitats.

**Extreme Monthly High Water:** Highest tide elevation based on the average elevation of the highest monthly high tide for a 19-year tidal epoch period. This level would be expected to be inundated once a month.

**Monterey One (M1) Water:** The public wastewater treatment provider in northern Monterey County. The agency serves 11 member cities and districts including the City of Marina. Among the agencies infrastructure, an interceptor pipeline and an ocean outfall pipeline are located within the City of Marina. The Regional Treatment Plant for the region is located approximately 1 mile to the northeast of the City.

**Planning Horizon:** Within this report, the span of time outward to the future when sea level rise or other climate-based impacts are projected to occur. This plan cycle is often defined by an agency to analyze and prepare for potential vulnerabilities, define a planning framework with policies focused on physical development of the land, and to manage community services and resources.

**Sea Level Rise:** The worldwide average rise in mean sea level, which may be due to a number of different causes, such as the thermal expansion of sea water and the addition of water to the oceans from the melting of glaciers, ice caps, and ice sheets. In contrast, relative sea level rise is the global average adjusted

to local conditions based on tectonic uplift, subsidence from groundwater, or oil and gas development (see Chapter 3 of CCC 2015).

**Sector:** A category of natural or built resources, such as building structures, wastewater infrastructure, beach access, and sensitive biological resources.

**Sector Profile:** A summary or description of existing sector resources that may be impacted by future sea level rise and coastal hazards.

**Social Vulnerability:** Within the context of this report, effects on communities that are at heightened climate risks and have less capacity and fewer resources to prepare for, respond to, and recover from negative impacts.

**Threshold:** A specific time or sea level rise elevation when vulnerabilities escalate rapidly.

**Tidal Inundation:** Flooding caused during predictable monthly high tides that occur at least once a month.

**Trigger:** A catalyst for additional steps of adaptation planning leading to implementation based on a monitored condition (i.e., the distance of the dune crest from a structure).

**Vulnerability Assessment:** Within this report, the process of identifying, quantifying, and prioritizing (or ranking) potential exposures, threats, and values (intrinsic and economic) of resources and infrastructure in an area or a system.

# 1. Planning Background and Regulatory Setting

## 1.1 Introduction

The California Coastal Act requires local governments in the state’s coastal zone to create and implement Local Coastal Programs (LCPs). Each LCP consists of a Coastal Land Use Plan and an Implementation Plan. Using the California Coastal Act, the California Coastal Commission (CCC) and local governments manage coastal development, including addressing the challenges presented by coastal hazards like storms, flooding, and erosion. Sea level rise and the changing climate present new management challenges with the potential to significantly threaten many coastal resources, including both natural and public access. One of the CCC’s priority goals is to coordinate with local governments, such as the City of Marina (City), to complete an LCP in a manner that addresses sea level rise.

To address sea level rise and associated hazards in the City’s LCP, the City and its consultant team prepared this 2023 City of Marina Existing Conditions and Sea Level Rise Adaptation Report. This work was begun in 2018 and was nearly completed when the Covid-19 pandemic stopped progress in 2020. With renewed funding from the CCC, this report has been completed in support of LCP hazard policy amendments. This report provides technical analysis using climatic modeling to support the City’s effort to incorporate a range of coastal and climate change hazards into the City’s planning and regulatory processes. This information will assist the City in making more informed decisions regarding land use and development standards from the project level to the plan level.

The purpose of this vulnerability assessment and adaptation planning is to improve community resilience and help the City to revise and certify the LCP and Updated General Plan consistent with State and Federal law. Under the Coastal Act, the purpose of LCP is to conserve coastal dependent uses.

## 1.2 Location

The City of Marina is located on the Pacific Ocean in Central California on the Monterey Bay in Monterey County. The City is situated along California Highway 1 (Highway 1), the major coastal highway running the length of the state. Marina is approximately 100 miles south of San Francisco and 370 miles north of Los Angeles.

The Coastal Zone and City boundaries are presented in Figure 1-1, *City of Marina Overview*, along with neighboring jurisdictions. The City covers 9.8 square miles, which comprises 8.9 square miles of land and 0.9 square miles of water. The City limits also contain approximately 9.2 square miles of coastal water

area in Monterey Bay. The adjacent jurisdictions include the following: City of Sand City, County of Monterey, and the Monterey Bay National Marine Sanctuary.

Situated behind sandy dunes adjacent to the Monterey Bay National Marine Sanctuary, the City is an area of exceptional natural beauty. A portion of the City, 1.6 square miles, and its 3.2-mile Pacific shoreline, is within the California Coastal Zone. The coastal zone boundaries are shown in Figure 1-1.

Currently, the City's resident population is approximately 20,000 persons. Historically, the military has been a significant driver of life and livelihood in Marina, which is located adjacent to the former Fort Ord. The City's predominant land use is residential, reflective of the City's previous role as a bedroom community to the former Fort Ord military base and now to the California State University Monterey Bay. Retail corridors and commercial development are located around Reservation Road, Del Monte Boulevard and Imjin Parkway. There is also significant visitor-serving development off Dunes Dr., with three hotels and an RV park.

Stormwater runoff from the built environment is generally accommodated by small (< 0.5 acre) retention basins known as percolation ponds. As the soils in Marina are characterized by fine- to medium-grained sands, the soil has a high percolation rate, so instead of gravity-feeding stormwater to the nearest body of water, the percolation ponds serve to absorb and dissipate excess runoff.

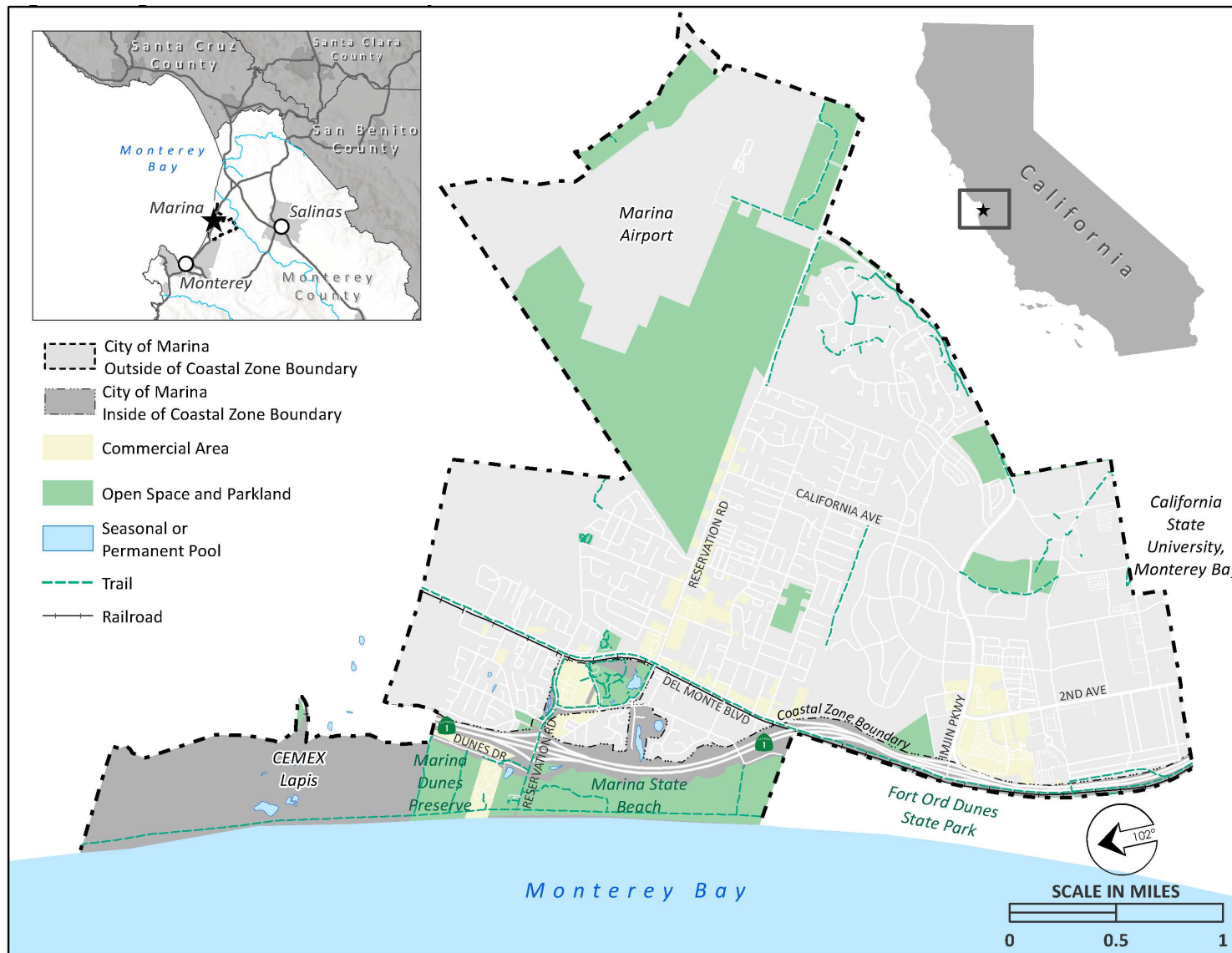
Marina's six main perennial and vernal pools are not only important as a biotic resource, they are also an integral part of the city's stormwater drainage system.

## 1.3 History of Marina's Local Coastal Program

The CCC certified the City's LCP in 1982. Various amendments were adopted over the years until 2009. The City of Marina's goal is to update to its LCP for certification by the CCC to address, at minimum, coastal erosion, sea level rise, land uses within the zone, updated maps, and verification of the coastal boundary.

Various amendments were adopted over the years until 2009, as listed below:

- Certified by the California Coastal Commission April 20, 1982
- Approved, Adopted, and Certified by City Council Resolution No. 82-61 October 27, 1982
- Amended by Resolution No. 88-71 (October 11, 1988), 89-22 (June 20, 1989), and 89-52 (September 5, 1989)
- Approved by Coastal Commission via LCP No. 1-88 (Major) (October 10, 1989)
- Amended by Resolution No. 2001-118 (October 16, 2001)
- Approved by Coastal Commission via LCP No. 1-01 (Major) (November 14, 2001)
- Amended by Resolution No. 2007-268 (November 20, 2007)
- Approved by Coastal Commission via LCP No. MAR-MAJ-1-07-Part 1 (April 10, 2008).



**Figure 1-1. City of Marina Overview**

The City of Marina originally proposed a \$300,000 grant to the CCC, which included a \$75,000 local match to do a comprehensive update to the LCP. However, following a settlement agreement between the CCC, California State Lands Commission (CSLC), City of Marina, and CEMEX, the City was awarded an \$85,685 Local Assistance Grant by the CCC on August 9, 2017, to prepare an update to the LCP that focused on integrating a vulnerability and risk assessment and adaptation report to address the effects that sea level rise could have on coastal resources along the Marina shoreline. Much of this work was completed and was approaching final approvals following City Council meeting on January 28, 2020. However, the onset of the Covid-19 pandemic stopped all progress. In fall 2022, the City received an additional \$100,000 from the CCC, to restart this work, to add an additional social vulnerability assessment, and to finish the LCP amendment policy work.

During this time, the City worked with CCC as part of a settlement agreement with CEMEX to close the last remaining coastal sand mine in the United States, which has had a major regional impact on the rates of coastal erosion. The erosion rates on the Marina shoreline were identified by the U.S. Geological Survey (USGS) in 2006 as some of the highest erosion rates in California (Hapke et al. 2006). The cessation of sand mining was listed as the highest priority Coastal Regional Sediment Management Plan prepared for the Association of Monterey Bay Area Governments in 2008. In 2017, CCC developed a settlement and termination agreement with the CEMEX sand mine to phase out (i.e., close) and remediate the CEMEX sand mine. CCC agreed to partner with the City to assist in an update to appropriate zoning and policies and redefine the vision of the City for the reuse of the CEMEX site once the sand mine ceases operations and completes the consensus remediation plan (CCC 2017). As per the settlement agreement, sand mining has ceased the removal of sand from the beach in January 2022 and will cease operations in December 2023, pending approval of the final reclamation plan in Fall 2023.

## 1.4 LCP Planning Process

In August 2015, the CCC adopted the *Sea Level Rise Policy Guidance* to aid public agencies in preparing for sea level rise in LCPs and regional strategies, and to assist applicants preparing coastal development permit (CDP) applications. The 2015 CCC policy guidance document outlines specific issues that policymakers and developers may face as a result of sea level rise, such as extreme events, challenges to public access, increased vulnerabilities, and compliance/consistency with the California Coastal Act. The policy guidance document also lays out the recommended planning steps for public agencies to follow in their efforts to incorporate sea level rise into their planning strategies and regulatory context, and to reduce vulnerabilities and inform sea level rise adaptation planning efforts (Figure 1-2). In April 2018, the State Ocean Protection Council finalized an update to its *State of California Sea-Level Rise Guidance* document that follows this same methodology (OPC 2018) but provides an interpretation of the updated scientific projects, which estimates the probabilities for sea level rise at future time horizons (Table 1-1). The CCC integrated the OPC (2018) recommendations into the updated *Coastal Commission Sea Level Rise Policy Guidance Document* (CCC 2018).

The purpose of this vulnerability assessment is to complete Steps 1–3 shown below and provide initial input on Step 4. The 2018 CCC policy guidance document places a strong emphasis on incorporating coastal hazards and sea level rise into LCP planning and using “soft” or “green” adaptation strategies, which mimic or enhance natural processes and defenses, rather than “gray” or “hard” engineering strategies, such as seawalls and riprap. The following are specific steps outlined in the 2018 CCC policy guidance document:



**Figure 1-2. California Coastal Commission Guidance for Including Sea Level Rise into Local Coastal Programs (CCC 2018).**

### Step 1. Establish the Projected Sea Level Rise Ranges

Consistent with the CCC policy guidance, the City evaluated a range of scenarios, including a high sea level rise scenario with an estimated 63 inches by 2100 as based on available Coastal Resilience coastal hazard

modeling, which relied on the sea level rise projections from the National Research Council (NRC) Report on Sea Level Rise (NRC 2012). This sea level rise scenario considered a high, though not worst-case scenario, and was used in the regional County of Monterey and Santa Cruz Coastal Resilience Project (Coastal Resilience model) to map projections of existing and future coastal hazards. The City has selected 2030, 2060, and 2100 as the planning horizons for this report because they align with the available modeling completed in 2014 to support coastal management, planning, and LCP updates in the County. Year 2010 represents the “existing conditions,” or baseline for future monitoring because it was the most recently flown light detection and ranging (LiDAR) topographical map available for the coastal hazard mapping. The 2100 time frame is the furthestmost (or most distant) planning horizon given that this is the last year that the coastal hazard models are available and is close to the ~75-year economic life of a structure. However, more recent science has assigned probabilities of future sea level rise occurring by certain time horizons (Table 1-1). The most recent science also included an H++ worst case or “extreme risk aversion” scenario, which projected ~5 feet of sea level rise occurring by 2070 and ~10.1 feet by 2100 (OPC 2018). The CCC updated its sea level rise guidance in 2018 and recommended three levels of potential risk to evaluate—“low-risk aversion” for areas and assets likely to be vulnerable regardless of uncertainties; “medium-high risk aversion,” which included projects with greater consequences and/or a lower ability to adapt; and the “extreme risk aversion” scenario for projects with little to no adaptive capacity that would be irreversibly destroyed or significantly costly to repair, and/or would have considerable public health, public safety, or environmental impacts should that level of sea level rise occur (CCC 2018). This study relied on sea level rise projections from the Coastal Resilience model, which largely follow the “medium risk-averse” sea level rise elevations and represent the best available science. The exceedance probabilities columns in Table 1-1 illustrate the potential for these sea level rise projections to occur by the projected year in time based on OPC (2018).

**Table 1-1. Sea Level Rise Elevations Used in the Hazard Modeling Incorporated into the Vulnerability Assessment Compared with the Latest Scientific Ranges.**

Model/year	Sea Level Rise (inches)			Exceedance Probability		
	2030	2060	2100	2030	2060	2100
<b>Coastal Resilience, High<sup>a</sup></b>	<b>9</b>	<b>28</b>	<b>63</b>	<b>0.50%</b>	<b>&gt;5%&lt;67%</b>	<b>&gt;5%&lt;67%</b>
<b>Low Risk Aversion<sup>b</sup></b>	5	16.8	39.6	17%	12%	6%
<b>Med-High Risk Aversion<sup>b</sup></b>	9.6	31.2	82.8	0.50%	0.50%	0.50%
<b>Extreme Risk Aversion (H++)<sup>b</sup></b>	12	45.6	121.2	NA	NA	NA

<sup>a</sup>ESA PWA (2014)

<sup>b</sup>OPC (2018)

## Step 2. Identify Potential Impacts from Sea Level Rise

Based on the coastal hazard modeling from the 2014 Monterey Bay Sea Level Rise Vulnerability Assessment Report (ESA PWA 2014), the range of potential hazards evaluated for the City included dune erosion, coastal wave flooding, and tidal inundation. Given the topography, exposure and jurisdictional boundaries and setting of the City, tidal inundation was determined not to be a risk to the City with up to 5 feet of sea level rise. The most dominant hazard affecting the City is coastal dune erosion, and with 5+ feet of sea level rise, there is a slight possibility of episodic impacts from coastal wave flooding. A

summary of the key decisions, coastal hazard model interpretation and sea level rise scenario selection, as well as the sectors and measures of impact are documented in Appendix A.

### Step 3. Assess the Risks and Vulnerabilities to Coastal Resources and Development

The following sectors were determined to experience some form of existing or future risk and related vulnerability to sea level rise (e.g., dune erosion and/or coastal flooding):

- Land Use and Parklands
- Trails and Access
- Water Supply and Wastewater
- Roads and Bike Routes
- Dune and Beach Habitat.

### Step 4. Identify Adaptation Measures

The City anticipates conducting additional work on adaptation strategy development during future public education, outreach, and decision-maker engagement efforts. The process will consider the full range of potential adaptation measures such as beach nourishment, shoreline protection including living shorelines/beach sand dune restoration, groins, managed relocation, and shoreline management. The process will identify triggers and evaluation criteria to determine the approach and measure the success of the various strategies and evaluate whether the strategies could be considered long-term maladaptation. A thorough cost-benefit analysis of the various adaptation strategies is also recommended as an important decision-making tool.

## 1.5 Outreach and Stakeholder Engagement

The following is a list of outreach and stakeholder engagement meetings that were conducted during the course of this study.

### Coastal Commission Staff Meetings

- First Meeting: September 7, 2018. Roles and Responsibilities, Scope of Work and Schedule, Team Coordination and Management, General Discussion
- Second Meeting: October 3, 2022. Project restart.

### Stakeholder Meetings

- July 29, 2019. State Parks, Marina Coast Water District, Sanctuary Beach Resort
- February 21, 2023. Monterey Peninsula Regional Parks District
- February 23, 2023. Monterey Coast Water District, State Parks
- March 1, 2023. City of Monterey, Kim Cole on the Monterey Bay Opportunistic Beach Nourishment Program.

### Public Workshops

- Workshop #1: March 26, 2019. The City Council held the project's first joint public workshop with the Planning Commission on the Local Coastal Plan Update and received the Draft 2019

Existing Conditions and Sea Level Rise Report at a special meeting on March 26, 2019, at 6:00 p.m. Planning effort was introduced, and draft results of background report were reviewed.

- Workshop #2: June 13, 2019. Revisions to Existing Conditions and Vulnerability Assessment, Visions and Goals
- Workshop #3: September 12, 2019. Refined Vision and Goals, Adaptation Plan Alternatives.
- Workshop #4: January 28, 2020. Review of Policy Development; Discussion of Opportunistic Sand Use Program; Introduction of Draft Local Coastal Land Use and Implementation Plan Amendments; Drafting of Coastal Hazards, Sea Level Rise and Implementation Strategies; Public, Planning Commission and City Council Comments.

## 1.6 Safeguarding California

The Safeguarding California Plan: 2018 Update (California Natural Resources Agency 2018) describes the State's climate change adaptation plan and actions state agencies are taking to adapt communities, infrastructure, services, and the natural environment to climate change. This plan outlines several programmatic and policy responses as well as examples of adaptation projects. In addition, the plan includes metrics for monitoring and evaluation. Seven overarching principles provide the framework for this plan:

- Consider climate change in all functions of government
- Partner with California's most vulnerable populations to increase equity and resilience through investments, planning, research, and education
- Support continued climate research and data tools
- Identify significant and sustainable funding sources to reduce climate risks, harm to people, and disaster spending
- Prioritize natural infrastructure solutions that build climate preparedness, reduce greenhouse gas emissions, and produce other multiple benefits
- Promote collaborative adaptation processes with federal, local, tribal, and regional government partners
- Increase investment in climate change vulnerability assessments of critical built infrastructure systems.

## 1.7 OPC 2018 Policy Guidance Update

In March 2018, the California Natural Resources Agency and the Ocean Protection Council (OPC) released an updated State of California Sea-Level Rise Guidance including eight preferred sea level rise planning and adaptation approaches:

- Prioritize social equity, environmental justice, and the needs of vulnerable communities.
- Prioritize protection of coastal habitats and public access.
- Consider the unique characteristics, constraints, and values of existing water-dependent infrastructure, ports, and Public Trust uses.
- Consider episodic increases in sea level rise caused by storms and other extreme events.

- Coordinate and collaborate with local, state, and federal agencies when selecting sea level rise projections; where feasible, use consistent sea level rise projections across multi-agency planning and regulatory decisions.
- Consider local conditions to inform decision-making.
- Include adaptive capacity in design and planning.
- Conduct assessment of risk and adaptation planning at community and regional levels, when possible.

# 2. Existing Conditions

## Physical Setting

---

### 2.1 Climate

Episodic winter storms with cool foggy summers and warm “Indian summer” fall seasons characterize the mediterranean climate of this region. August temperatures average about 68° F, and January temperatures average about 58° F. Precipitation is variable but averages between 16.12 and 21.33 inches across the city depending on which rain gauge is considered. Rainfall primarily occurs in the winter months, with actual rainfall amounts varying widely depending on tropical moisture in the subtropical Pacific. El Niño conditions can increase this subtropical moisture; many of the wettest years on record occurred during El Niño years.

### 2.2 Geology

The City of Marina is situated in the Central California coast on the southern portion of the Monterey Bay. The City spans a 3.2-mile portion of sandy dune-backed shoreline of Monterey Bay.

The dunes of Southern Monterey Bay visible along the Marina coastline have been created during multiple lower sea level rise stands in the Pleistocene (>12,000 years ago) and the Holocene (<12,000 years ago) when the Salinas River was at a steeper gradient and discharged much more sediment to the coast (Cooper 1967). During these relatively cold geologic periods, when much of the Earth’s water was frozen in ice, sea levels were hundreds of feet lower and the shoreline was several miles west at the continental shelf. During these ice ages/low sea level times, wind transport blowing over a much larger width of the coastal plain formed the sand dunes. As sea level rose during the interglacial time period, coastal erosion occurred until the next ice age and created a unique set of sand dunes in California that show two sets of dunes formed over the last two ice ages (Figure 2-1).

### 2.3 Littoral Cell and Sediment Budget

The City of Marina is in the Southern Monterey Bay littoral cell, which is bounded at the north by the Monterey Bay Submarine Canyon and at the south by Point Piños on the Monterey Peninsula. This cell is subdivided into smaller segments; the north sub-cell extends from the Monterey Submarine Canyon and Elkhorn Slough south to the Salinas River; the central sub-cell extends from the Salinas River south to Sand City; the south sub-cell extends from Sand City to Monterey Harbor or Wharf 2; and the west sub-cell extends from Monterey Harbor to Point Piños (Patsch and Griggs 2007; Thornton 2016). The City of Marina is in the central sub-cell, where the main sources of sediment to the Southern Monterey Bay littoral cell, are erosion of coastal dunes and discharge of sediment from the Salinas River.



**Figure 2-1. Photo of the Dunes in the City of Marina. Note color differences between the older Pleistocene (darker/redder) dunes and the more recent Holocene dunes.**

The Salinas River is the main river source of sand to the Southern Monterey Bay littoral cell. Over the years, the volume of beach-compatible sand delivered by the Salinas River has been reduced due to upstream dams, the diversion of the river mouth to its current location, and current management activities at the river mouth. Estimates of the current volume of sand supplied to the Southern Monterey Bay littoral cell annually range from 50,000 to 273,000 cy/yr. Not all river sand will go south into the central sub-cell given the typical current directions in the winter when the river delivers most of the sand. Estimates are that ~27% of the Salinas River sand will be transported south, resulting in an estimated supply to the central sub-cell of river sand volume ~74,000 cy/yr (Thornton 2016).

Beaches experience seasonal cycles during which winter storms may remove significant amounts of sand, creating steep, narrow beaches. In the summer, gentle waves return the sand, widening beaches and creating gentle slopes. Because there are so many factors involved in coastal erosion, including human activity, sea-level rise, seasonal fluctuations, and climate change, sand movement will not be consistent year after year in the same location.

Beach and sand dunes are dynamic systems with an active exchange of sand into and off of the dunes. Sand dunes provide a reservoir of sand that is eroded onto the beach during large wave events and then rebuild from onshore wind transport (called aeolian transport) during times of beach accretion or lower levels of sea level. The dunes in the Southern Monterey Bay littoral cell are actively eroding and little buildup has been observed in recent decades. Annual average dune erosion rates range from about 3 to 6 feet, with an estimated loss of dune sand of about 200,000 cy/yr (Thornton 2016). These erosion rates are in excess of the rates of erosion that can be attributed to solely to sea level rise. The Southern Monterey Bay has over a century-long history of sand mining, which exacerbates coastal erosion (Thornton et al

2006) and has led to some of the highest erosion rates in California (Hapke et al. 2006). The large volumes of dune sand eroded each year provide sand that is removed from current sand mining (Thornton 2006; 2016).

## 2.4 Coastal Processes

The coastal processes of tides, waves, and ocean currents shape the coastline of the City of Marina.

**Tides**—The tides in Monterey are mixed, predominantly semi-diurnal and are composed of two low and two high water levels of unequal heights per 24.8-hour tidal cycle. Typically, the largest tide ranges in a year occur in late December to early January. A tide recorder has been in continuous operation at Monterey on Wharf #2 since 1964.

Maximum tide elevations are due to astronomical tide, wind surge, wave setup, density anomalies, long waves (including tsunamis), climate-related El Niño, and Pacific Decadal Oscillation (PDO) events. On longer time scales, sea level rise becomes increasingly important.

**Waves**—The waves that approach Marina are characterized by three dominant modes. The northern hemisphere waves typically are generated by cyclones in the North Pacific during the winter and bring the largest waves (up to 25 feet). The southern hemisphere waves are generated in the Southern Ocean during summer months and produce smaller waves with longer wave periods (> 20 seconds), depending on the swell direction, many of these waves are blocked by the Monterey Peninsula. Local wind waves are generated throughout the year either as a result of storms coming ashore during the winter, or strong sea breezes in the spring and summer (Storlazzi and Field 2000).

**Rip currents**—The near-normal approach of waves along the southern Monterey Bay shoreline is conducive to rip current generation and maintenance (Thornton et al. 2007). Rip currents create holes in the nearshore sandbars and cause waves to break sooner on nearshore bars, while the same waves travel less impeded in the deeper rip channels. This results in higher wave run up on the beach in the deeper rip channels which can create erosional hotspots and higher rates of storm-induced dune erosion.

**Longshore transport**—changes in wave approach angles and seasonal wind patterns transport sand to the North and the South and redistribute sand along the littoral cell. The net longshore transport is to the north and eventually, sand is lost into the Monterey Submarine Canyon.

## 2.5 Existing Hazards

Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRMs) delineate coastal and creek flood hazards as part of the regulatory National Flood Insurance Program. This program requires very specific technical analysis of watershed and nearshore characteristics, topography, channel and beach morphology, hydrology, and hydraulic modeling to map the extent of existing watershed-related, and wave run-up related flood hazards. These maps, representing existing 100-year and 500-year flood hazards (1 percent annual chance of flooding and 0.2 percent, respectively) are known as the FIRMs and determine the flood extents and flood elevations across the landscape.

Coastal erosion and coastal flooding are caused by large storm waves coupled with high tides. FEMA recently updated the regulatory FIRM maps delineating the coastal high-velocity wave hazard zone, but the revised FIRM maps do not include coastal erosion or sea level rise in the regulatory mapping of coastal

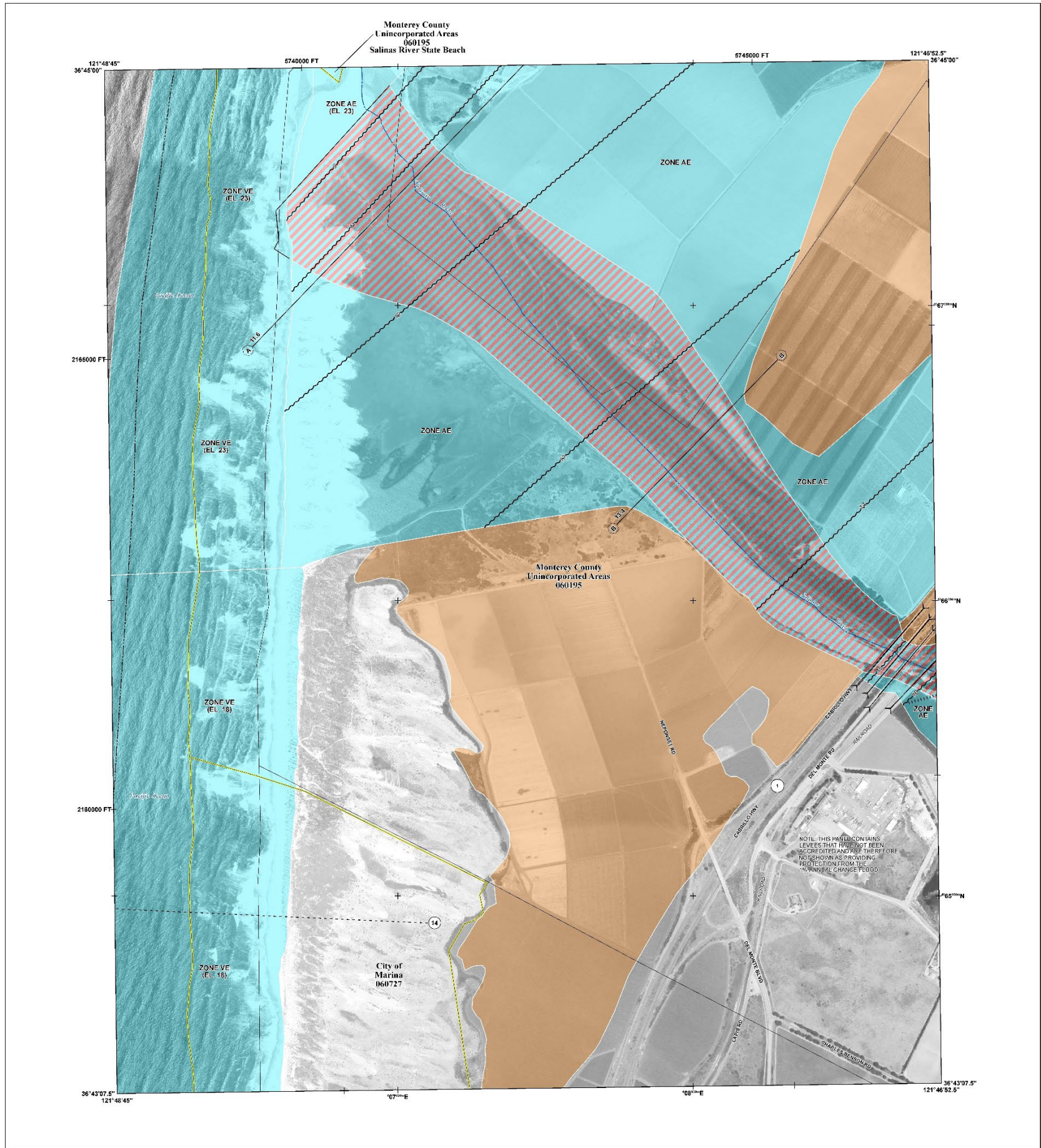
hazards. These new maps became effective on June 21, 2017 (Panels 06053C0181H, 06053C0183, 06053C0191H FEMA 2017) (Figures 2-2, A, B, C).

Table 2-1 shows the range of FEMA-modeled coastal wave storm flood hazard zones.

**Table 2-1. FEMA Coastal Base Flood Elevations for Shoreline Segments in Marina City Limits**

Shoreline Segment	Base Flood Elevation (NAVD88)
North Terminus of Dunes at Salinas River Mouth to CEMEX Lapis Facility	18 feet
CEMEX Lapis Facility to Reservation Road	21 feet
Reservation Rd to County Boundary near Lake Court	23 feet

FEMA repetitive loss data show that there have not been any parcels in Marina with multiple claims against the National Flood Insurance Program.



**FLOOD HAZARD INFORMATION**

SEE THIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT. THE INFORMATION DEPICTED ON THIS MAP AND SUPPORTING DOCUMENTATION ARE ALSO AVAILABLE IN DIGITAL FORMAT AT [HTTP://MSC.FEMA.GOV](http://MSC.FEMA.GOV)

<b>SPECIAL FLOOD HAZARD AREAS</b>	Without Base Flood Elevation (BFE) Zone A, V, AD99
	With BFE or Depth Zone AE, AO, AH, VE, AR
	Regulatory Floodway
<b>OTHER AREAS OF FLOOD HAZARD</b>	0.2% Annual Chance Flood Hazard, Areas of 1% Annual Chance Flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
	Future Conditions 1% Annual Chance Flood Hazard Zone X
	Area with Reduced Flood Risk due to Levee See Notes Zone X
<b>OTHER AREAS</b>	NO SCREEN Area of Minimal Flood Hazard Zone X
	Area of Undetermined Flood Hazard Zone D
<b>GENERAL STRUCTURES</b>	Channel, Culvert, or Storm Sewer
	Accredited or Provisionally Accredited Levee, Dike, or Floodwall
	Non-accredited Levee, Dike, or Floodwall
<b>OTHER FEATURES</b>	Cross Sections with 1% Annual Chance Water Surface Elevation (BFE)
	Coastal Transect
	Coastal Transect Baseline
	Profile Baseline
	Hydrographic Feature
	Base Flood Elevation Line (BFE)
	Limit of Study
	Jurisdiction Boundary

**NOTES TO USERS**

For information and questions about the Flood Insurance Rate Map (FIRM), available products associated with the FIRM, including historic versions, the current map data for each FIRM panel, how to order products, or the National Flood Insurance Program (NFIP) in general, please call the FEMA Map Information Center at 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA Flood Map Service Center website at <http://msc.fema.gov>. Available products may include previously issued letters of Map Change, a Flood Insurance Study Report, and/or digital versions of the map. Many of these products can be ordered or obtained directly from the website.

Contractors utilizing land use adjacent FIRM panels must obtain a current copy of the adjacent panel, as well as the current FIRM files. These may be ordered directly from the Flood Map Service Center at the number listed above.

For community and countywide map data refer to the Flood Insurance Study report for this jurisdiction. To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-658-5600.

Please map information shown on this FIRM was derived from Coastal California EIMR and Digital Imagery dated 2011. ©2011 USGS NAD 2011. Imagery is used in areas not covered by the Coastal California digital imagery.

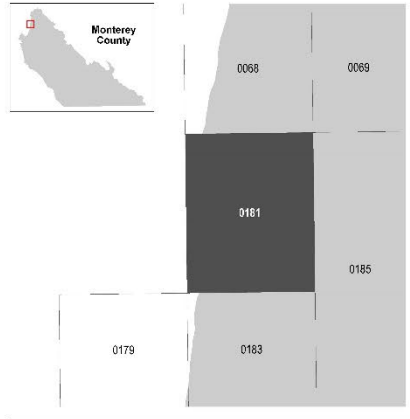
**SCALE**

Map Projection: Universal Transverse Mercator Zone 10N, North American Datum 1983, North American Vertical Datum of 1988

1 inch = 500 feet

1:6,000

**PANEL LOCATOR**



**NATIONAL FLOOD INSURANCE PROGRAM**  
FLOOD INSURANCE RATE MAP  
MONTEREY COUNTY, CALIFORNIA  
and Incorporated Areas

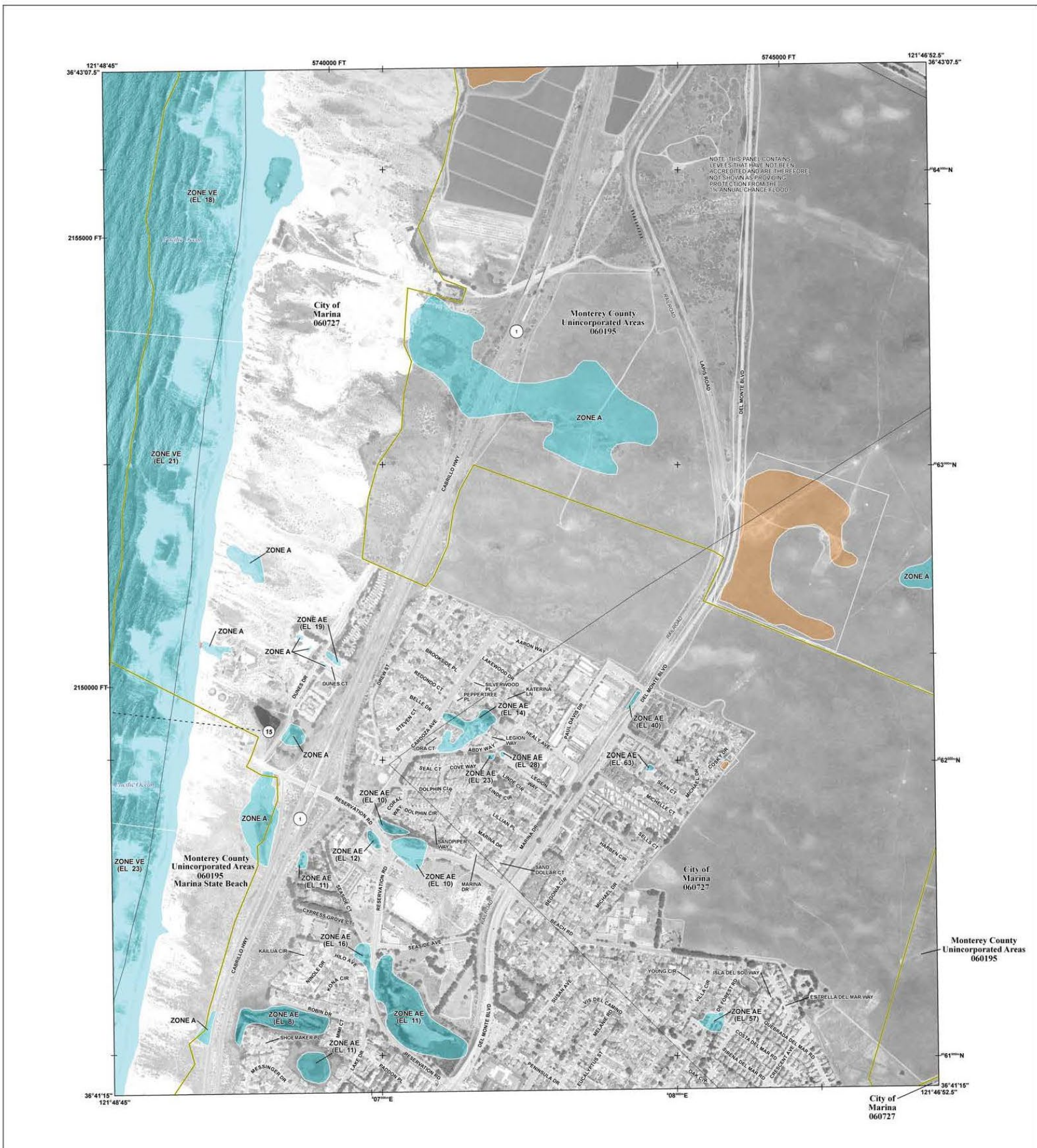
PANEL 181 OF 2050

Panel Contains:

COMMUNITY	NUMBER	PANEL	SUFFIX
MARINA, CITY OF	060727	0181	H
MONTEREY COUNTY	060195	0181	H

VERSION NUMBER: 2.3.2.1  
MAP NUMBER: 06053C0181H  
MAP REVISED: June 21, 2017

Figure 2-2-A. Extents of FEMA Flood Mapping in the City of Marina



**FLOOD HAZARD INFORMATION**

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT  
**THE INFORMATION DEPICTED ON THIS MAP AND SUPPORTING DOCUMENTATION ARE ALSO AVAILABLE IN DIGITAL FORMAT AT**  
[HTTP://MSC.FEMA.GOV](http://MSC.FEMA.GOV)

	Without Base Flood Elevation (BFE) Zone A, V, AD9
	With BFE or Depth Zone AE, AO, AH, VE, AR
	Regulatory Floodway
	0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
	Future Conditions 1% Annual Chance Flood Hazard Zone X
	Area with Reduced Flood Risk due to Levee See Notes Zone X
	Area of Minimal Flood Hazard Zone X
	Area of Undetermined Flood Hazard Zone D
	Channel, Culvert, or Storm Sewer Accredited or Provisionally Accredited Levee, Dike, or Floodwall
	Non-accredited Levee, Dike, or Floodwall
	Cross Sections with 1% Annual Chance Water Surface Elevation (BFE)
	Coastal Transect
	Coastal Transect Baseline
	Profile Baseline
	Hydrographic Feature
	Base Flood Elevation Line (BFE)
	Limit of Study
	Jurisdiction Boundary

**NOTES TO USERS**

For information and questions about this Flood Insurance Rate Map (FIRM), available products associated with this FIRM, including historic versions, the current map date for each FIRM panel, how to order products, or the National Flood Insurance Program (NFIP) in general, please call the FEMA Map Information Exchange at 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA Flood Map Service Center website at <http://msc.fema.gov>. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the website.

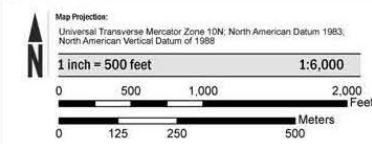
Communities annexing land on adjacent FIRM panels must obtain a current copy of the adjacent panel as well as the current FIRM Index. These may be ordered directly from the Flood Map Service Center at the number listed above.

For community and countywide map dates refer to the Flood Insurance Study report for this jurisdiction.

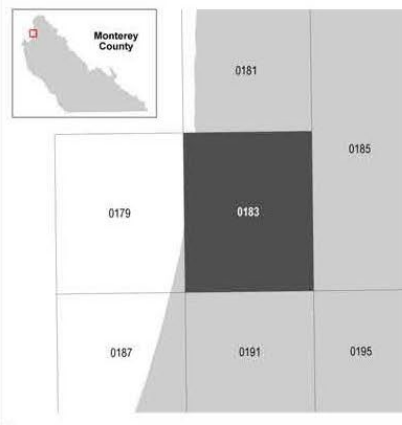
To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

Base map information shown on this FIRM was derived from Coastal California LIDAR and Digital Imagery dated 2011. USDA NAIP 2010 imagery is used in areas not covered by the Coastal California digital imagery.

**SCALE**



**PANEL LOCATOR**



**FEMA**  
**National Flood Insurance Program**

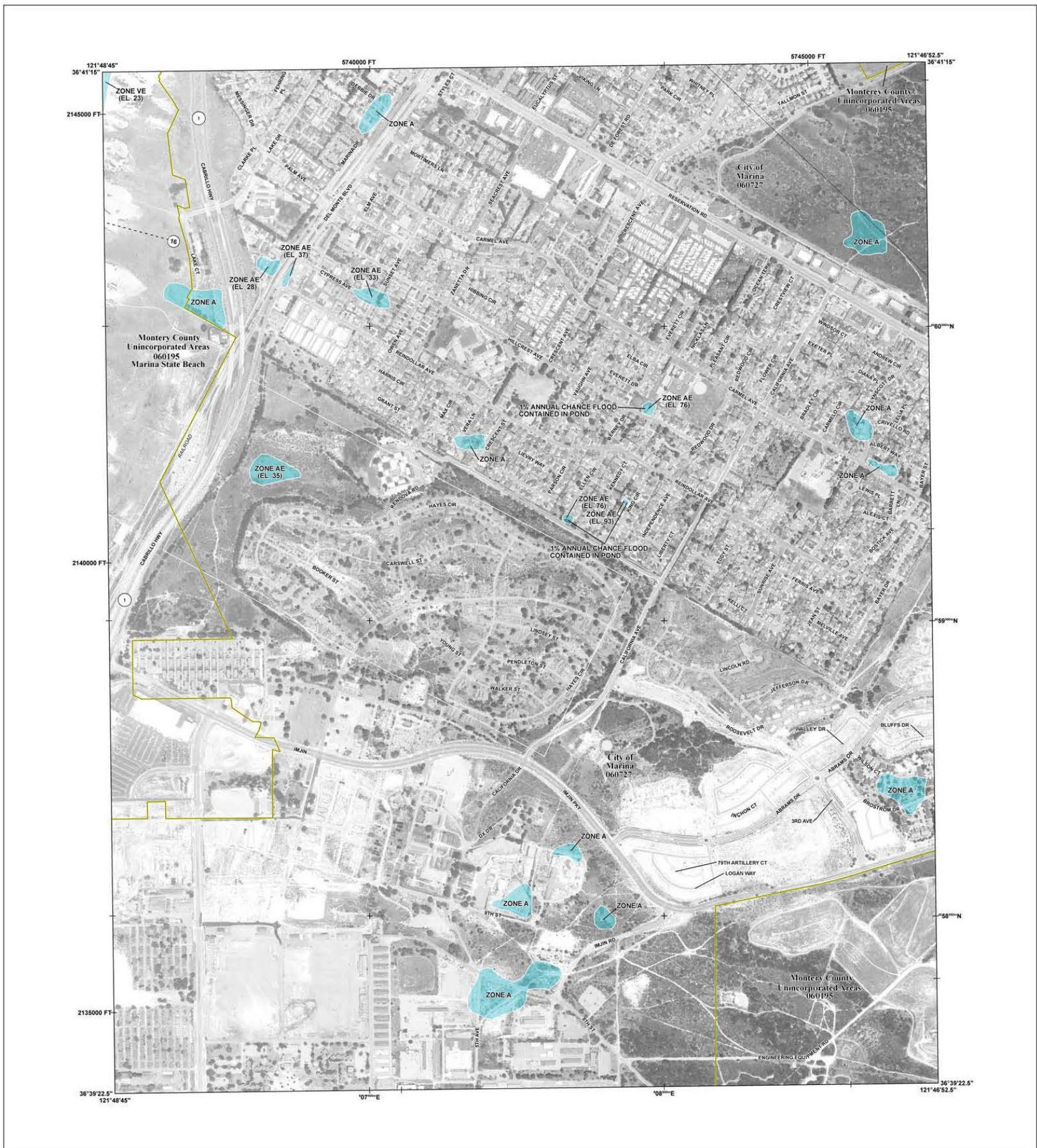
**NATIONAL FLOOD INSURANCE PROGRAM  
 FLOOD INSURANCE RATE MAP  
 MONTEREY COUNTY, CALIFORNIA  
 and Incorporated Areas**

PANEL 183 OF 2050

Panel Contains:  
 COMMUNITY: MARINA, CITY OF MONTEREY COUNTY  
 NUMBER: 060727, 060195  
 PANEL SUFFIX: 0183, 0183, H

VERSION NUMBER: 2.3.2.1  
 MAP NUMBER: 06053C0183H  
 MAP REVISED: June 21, 2017

Figure 2-2-B. Extents of FEMA Flood Mapping in the City of Marina



**FLOOD HAZARD INFORMATION**

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT  
**THE INFORMATION DEPICTED ON THIS MAP AND SUPPORTING DOCUMENTATION ARE ALSO AVAILABLE IN DIGITAL FORMAT AT [HTTP://MSC.FEMA.GOV](http://MSC.FEMA.GOV)**

	Without Base Flood Elevation (BFE) Zone X, V, VE
	With BFE or Depth Zone AE, AD, AH, VE, AR
	Regulatory Floodway
	0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
	Future Conditions 1% Annual Chance Flood Hazard Zone X
	Area with Reduced Flood Risk due to Levee See Notes Zone X
	Area of Minimal Flood Hazard Zone X
	Area of Undetermined Flood Hazard Zone D
	Channel, Culvert, or Storm Sewer
	Accredited or Provisionally Accredited Levee, Dike, or Floodwall
	Non-accredited Levee, Dike, or Floodwall
	Cross Sections with 1% Annual Chance Water Surface Elevation (BFE) 18.2 17.6
	Coastal Transect
	Coastal Transect Baseline
	Profile Baseline
	Hydrographic Feature
	Base Flood Elevation Line (BFE)
	Limit of Study
	Jurisdiction Boundary

**NOTES TO USERS**

For information and questions about this Flood Insurance Rate Map (FIRM), available products associated with the FIRM, including historic versions, the current map date for each FIRM panel, how to order products, or the National Flood Insurance Program (NFIP) in general, please call the FEMA Map Information eXchange at 1-877-FEMA-MAP (1-877-336-2672) or visit the FEMA Flood Map Service Center website at <http://msc.fema.gov>. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the website.

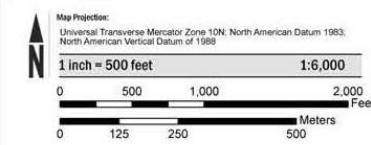
Communities annexing land on adjacent FIRM panels must obtain a current copy of the adjacent panel as well as the current FIRM index. These may be ordered directly from the Flood Map Service Center at the number listed above.

For community and countywide map dates refer to the Flood Insurance Study report for this jurisdiction.

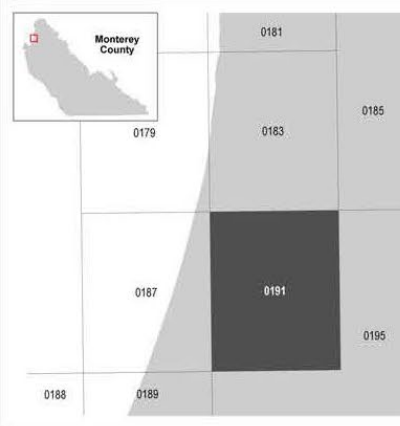
To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

Base map information shown on this FIRM was derived from Coastal California LIDAR and Digital Imagery dated 2011. USDA NAD 2011 Imagery is used in areas not covered by the Coastal California digital imagery.

**SCALE**



**PANEL LOCATOR**



**FEMA**  
**National Flood Insurance Program**

**NATIONAL FLOOD INSURANCE PROGRAM**  
**FLOOD INSURANCE RATE MAP**  
**MONTEREY COUNTY, CALIFORNIA**  
 and Incorporated Areas

PANEL 191 of 2050

Panel Contains:  
 COMMUNITY: MARINA, CITY OF MONTEREY COUNTY  
 NUMBER: 060727  
 PANEL SUFFIX: 0191 H

VERSION NUMBER: 2.3.2.1  
 MAP NUMBER: 06053C0191H  
 MAP REVISED: June 21, 2017

Figure 2-2-C. Extents of FEMA Flood Mapping in the City of Marina

## 2.6 Tsunami Wave Hazards

Tsunamis that could potentially affect the Marina coast can be generated by either distant earthquakes or nearby source locations. According to the California Geological Survey, a local source of tsunamis could include a Monterey Canyon landslide, and distant sources could include massive subduction zone earthquake-triggered tsunamis from the Pacific Northwest Cascadia fault, the Aleutians, Chile, Japan, Marianas, or the Kuril Islands (California Geological Survey 2009; Figure 2-3). Tsunamis are rare events, and it should be noted that there is extreme uncertainty associated with predicting the probability or recurrence interval of any tsunami affecting Marina due to a lack of long-term known occurrences in the historical record. Tsunamis have been recorded at Monterey Harbor as far back as 1840, and generally coincide with nearby earthquakes that may trigger submarine landslides. Distant sources have also been recorded with the 1957 and 1964 Aleutian Islands Tsunamis and the 2011 Tohoku Japan Tsunami. Two statewide models have been developed to predict the potential extent of tsunami wave runup, the 2013 USGS SAFRR model, which is based on a distant-source (Aleutian Islands) megathrust earthquake event ( $M_w$  9.1), and the 2009 California Geological Survey model, which is based on an ensemble of potential source events tailored to the Marina coast. In both cases, the projected extent of tsunami wave run-up does not pass beyond the crest of the dunes and does not threaten any coastal development or infrastructure (Figure 2-4). Neither model has any run-up elevation associated with the potential event, or potential coastal erosion and the coarse mapping resolution does not allow for an easy determination of the elevation extent with recent topography. As a result, it is not possible to reliably project these models into future sea level rise scenarios. However, given the existing hazard mapping, tsunamis do not seem to be a major coastal hazard to the City of Marina.

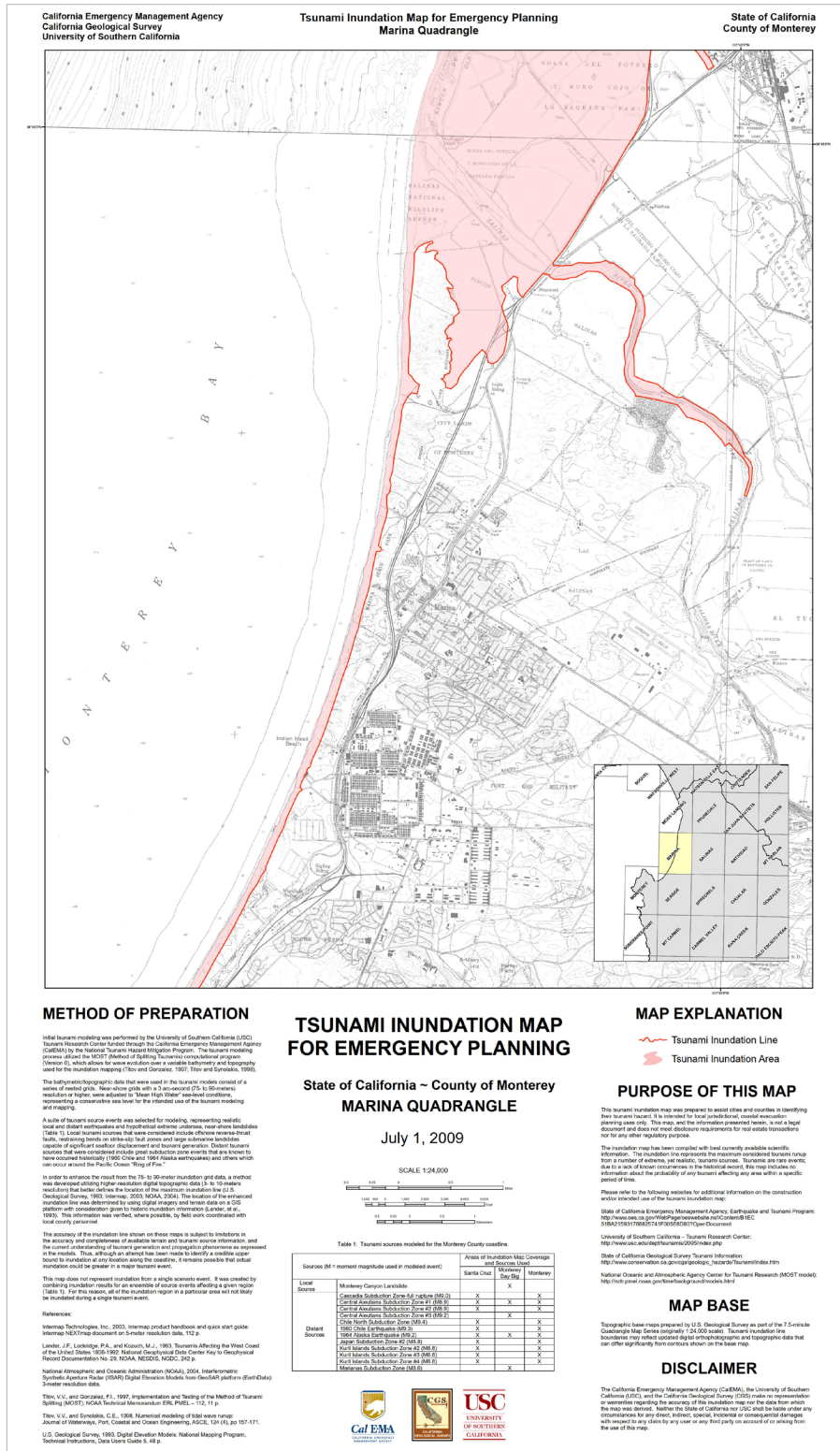
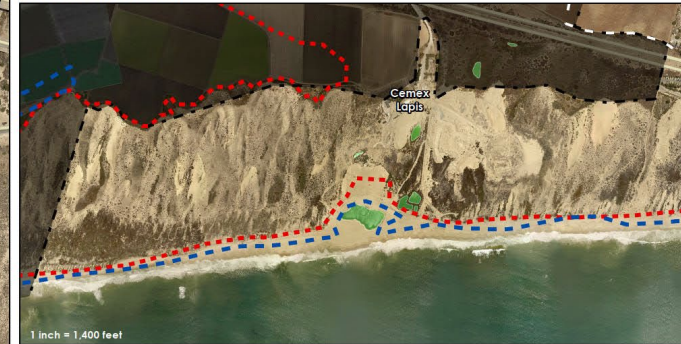


Figure 2-3. California Geological Survey Tsunami Inundation Map, July 2009

### Central Marina - Tsunami Hazards



### North Marina



### South Marina

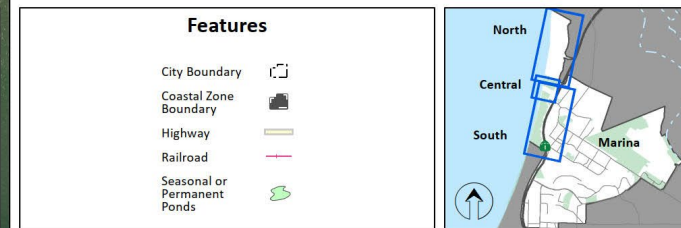


Figure 2-4. Tsunami Hazards Extents

## 2.7 Habitats

Within the City of Marina, there are a wide variety of dune and beach habitats that contain a large number of endemic species and high plant diversity. The Monterey Dunes once contained more than 50 native plant species, but that has now been reduced by a combination of factors including human disturbance, erosion, sand-mining, and encroachment from non-native species such as ice plant and Holland dune grass (Dorell-Canepa 2005). Many of these habitats are considered sensitive and home to several sensitive and endangered species.

### Special Status and Notable Dune Species of Concern

#### Plants

- Seaside Painted Cup (*Castilleja latifolia* ssp. *Latifolia*)
- Monterey Spine Flower (*Chorizanthe pungens* var. *pungens*)
- Eastwood's Ericameria (*Ericameria fasciculata*)
- Coast Wallflower (*Erysimum ammophilum*)
- Menzies' Wallflower (*Erysimum menziesii*)
- Coastal Dunes Milk Vetch (*Astragalus tener* var. *titi*)
- Dune Gilia (*Gilia tenuiflora* var. *arenaria*)
- Wild Buckwheat (*Eriogonum latifolium*) \*
- Wild Buckwheat (*Eriogonum parvifolium*) \*
- Bush Lupine (*Lupinus* ssp.) +

#### Animals:

- Smith's Blue Butterfly (*Shijimiaeooides enoptes smithi*)
- Globose Dune Beetle (*Coelus globosus*)
- Black Legless Lizard (*Anniella pulchra nigra*)
- Salinas Kangaroo Rat (*Dipodomys Heermanni Goldmani*)
- Western Snowy Plover (*Charadrius nivosus nivosus*)

\* only within the range of Smith's Blue Butterfly.

+ only within the range of the Black Legless Lizard.

Environmentally Sensitive Habitat Areas (ESHAs) are defined by the California Coastal Act Section 30107.5 as any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments. These areas are to be protected against significant disruption of habitat quality and only uses consistent with those habitats are allowed. Developments near ESHAs are required to be designed to prevent impacts and degradation of the site (Section 30240).

As important bioclimatic variables are altered due to climate change, species that previously inhabited the Marina dunes may become stressed and face increased difficulty in finding suitable habitats. Species with restricted ranges are acutely sensitive to changes in abundance, distribution, and timing of growth or life stages and will require intervention to continue living in these altered biological systems (California Office of Environmental Health Hazard Assessment 2013). Some species may shift up the coast to find temperature and precipitation thresholds more conducive to their individual species life history; however, the dynamics at play that will determine which species may become better adapted to Marina's future climate is uncertain.

## 2.8 Human Alterations to the Shoreline

The shoreline in the City of Marina has been altered by several different activities. These human alterations have changed the natural functioning of the system. While most jurisdictions in California have varying levels of coastal armoring, the City of Marina has no coastal armoring. Sand mining is the main category of human alteration which has affected the overall coastline, erosion rates and coastal hazard extents along the City of Marina.

Southern Monterey Bay has been one of the most intensively mined shorelines in the United States. The sand is valuable due to its high silica content and is used for a variety of purposes including packing for water well casings, filtration, sandblasting, and foundation and surface finishing (Combellick and Osborne 1977). More than a century-long history of sand mining has exacerbated coastal erosion (Thornton et al. 2006) and led to some of the highest erosion rates in California (Hapke et al. 2006). On June 6, 2017, the City Council of the City of Marina adopted a resolution finding that the existing CEMEX dredge pond extraction operation constituted a public nuisance, which opened the regulatory door for the CCC and the State of California to pressure CEMEX through possible enforcement actions to develop a settlement agreement to close the CEMEX sand mine, the last coastal sand mine in the United States by December 31, 2025. Provided below is a history of the CEMEX sand mine largely excerpt and summarized from the CCC Staff Report for the Settlement Agreement.<sup>3</sup>

Historically, sand mining began in 1906 near the mouth of the Salinas River. In the 1940s, intensive dragline mining extracted sand from the beach itself at five different locations in the Southern Monterey Bay littoral cell. By 1925, a rail line was placed through the CEMEX property, and a drag-line shovel attached to a railroad car extracted sand from the dunes in the areas adjacent to the rail lines; and a beach hoist, a dragline attached to a structure on the upper beach, extracted sand from the beach. Extraction during this time occurred with little to no processing of the sand after extraction.

In 1959, beach mining ceased, and circa 1960, a dredge was installed to extract dune sand via a manmade pond located approximately 1,400 feet inland of the ocean. Processing of the extracted sand also began during this time period. A wet sand sorting facility (“wet plant”) was installed on the property in 1959, and in late 1960 a sand drying and sorting facility (“dry plant”) was installed. Circa 1964, “objectionable material” was reached at the inland dredge pond, and mining at the inland dredge pond ceased. At that time, the inland dredge pond was about 200 feet wide by 300 feet long, with a depth of 38 feet. Circa 1965, the dredge was moved to the beach, near its current location, and its operation resulted in the creation of a new dredge pond. Since the dredge was placed on the beach, the combined mechanism of the dredge and the anthropogenic dredge pond continued to siphon sand from the ocean washed onto the beach by winter waves, and the extraction of sand from the beach continues to present day.

In the 1960s, extraction of sand from the ocean occurred in five other locations throughout Southern Monterey Bay via use of an ocean dragline. The U.S. Army Corps of Engineers (USACE) determined that these mines required authorization pursuant to the Rivers and Harbors Act, and although initially it granted such authorizations, later, when the first authorizations expired, USACE determined that the coastal sand mines were causing erosion and stopped issuing permits for coastal sand mines using draglines. As the required permits were no longer being issued by USACE, all of the mining operations in the City of Marina using a dragline had ceased by 1986, and the last dragline mining operation in Monterey Bay, which was occurring in Sand City, ceased by 1990. However, USACE did not regulate the Marina sand

---

<sup>3</sup> <https://documents.coastal.ca.gov/reports/2017/7/th22/th22-7-2017-report.pdf>

mine dredge pond, which did not use a dragline into the ocean. Once the other sand mines were closed, the Marina sand mine escalated production and the erosion hot spot shifted to the north (Thornton et al. 2006). CEMEX, the current property owner, acquired the property in 2005, and since that time has used the sand mine property for the extraction of beach sand via a floating hydraulic dredge, and the processing, storage, and sale of that sand on the upland portion of the property (Figure 2-5 and Figure 2-6).

As the sand mining increased, the rate of coastal erosion also increased leading to some of the highest erosion rates in the State of California (Hapke et al. 2006). It has been projected that once sand mining stops, the rates of erosion could experience a 70% reduction or even a change to mild accretion (Thornton et al. 2006; PWA 2008; ESA PWA 2014; Thornton 2016). For purposes of this study, the erosion hazard distances that considered a reduced historical erosion rates were used.

As per the schedule laid out in the Settlement Agreement, all of the active sand mining operations including the dredge pond, booster pump and pipelines were removed from operation in December 2020. Due to Covid-19, some delays occurred in the next phases of the Settlement Agreement, but a final grading and planting plan has been completed and approved by CCC and submitted to the Department of Conservation State Mining and Geology Board in April 2023.

Outstanding aspects of the Settlement Agreement remain to implement the final grading and planting plan, conduct long-term monitoring of the revegetation plan, remove the remaining buildings on site, and sell the property to a conservation or public trust organization. The Settlement Agreement calls for all of these to occur by December 31, 2024; however, delays in the project may affect the final dates.



**Figure 2-5. Existing Dredge Pond Mining Operation (October 2014). Courtesy of CCC.**



**Figure 2-6. Existing dredge pond mining operation following a major winter storm (December 2015). Courtesy of CCC.**

# 3. Climate Science

---

## 3.1 Climate Cycles

Climate change is not to be confused with climate cycles, which also operate independently of human-induced climate change. Some of these climate cycles occur at long time periods and are related to the orbit of the earth around the sun, the tilt of the earth on its axis, and precession (subtle shift) of the Earth's orbit. These Milankovitch cycles occur at approximately 41,000, 120,000, and 400,000 years and are responsible for the Glacial and Interglacial Ages observed in the geologic record.

Some of these climate cycles are shorter; the most commonly known cycle is the El Niño/La Niña cycle, which is related to changes in equatorial trade winds and shifts in ocean temperatures across the Pacific Ocean. An El Niño brings warmer water to the Eastern Pacific, and this shift in ocean temperatures elevates sea level rise by about a foot above predicted tides in Monterey Bay. These warmer ocean temperatures can increase evaporation, resulting in more atmospheric moisture and often substantially more precipitation. The 1982–1983 and 1997–1998 El Niños have caused both river and coastal flood damages across the Monterey County region. The January 1983 wave event is considered to be one of the largest coastal wave storm events recorded in Monterey Bay.

Another climate cycle that impacts the Monterey Bay area is the PDO, which is an approximately 25–30-year cycle that changes the distribution of sea surface temperatures across the Pacific. Its effects were first noticed by fishery researchers in Washington (Mantua et al. 1997). The result of this ocean temperature shift is largely a shift in the jet stream. During the warm phase, the jet stream changes the storm track toward the south, affecting both the wave direction (increase in wave energy into Monterey Bay) and precipitation. At present, the index has been on the cool side, which tends to lead to less precipitation in Monterey. One other implication of the PDO is that the rate of sea level rise is reduced in the Eastern Pacific (off the U.S. West Coast). Recent PDO research indicates that a shift in the PDO would likely result in a much more rapid rise in sea levels off the U.S. West Coast than has been seen in the last three decades (Bromirski et al. 2011).

## 3.2 Climate Change

Human-induced climate change is a consequence of increased greenhouse gas (GHG) emissions from the burning of fossil fuels that accumulate in the atmosphere and insulate the earth from outgoing long-wave radiation. As this atmospheric emissions blanket gets thicker, more heat is trapped in the Earth's atmosphere, warming the Earth and triggering a series of climate changes related to different feedback mechanisms. Once set in motion, many of the climate change feedbacks take centuries to millennia to stabilize.

Worldwide, there are multiple global climate models that attempt to project future climate variables by modeling the earth, ocean, and atmospheric dynamics and interactions based on assumptions of global future population growth and global levels of GHG emissions. The modeling assumptions of future geopolitical response to addressing GHG emissions is called the relative concentration pathways (RCP). The two RCP scenarios included in the climate projections are RCP 4.5, which assumes global emissions

peak in 2040 and then begin to decline, and the RCP 8.5, which assumes emissions peak around 2100 and then decline.

### 3.3 Climate Projections: Scientific Overview

Substantial research in California is currently under way to effectively downscale climate change models and to project various human-induced climate change impacts at a local scale. By analyzing the outputs of these downscaled models, the City can better understand the range of likely climate impacts specific to the Monterey Bay region. Several of the key climate change impacts are likely to include increased temperature, uncertainty in precipitation changes, decreased wildfire, and sea level rise. This section summarizes recent scientific data and relevant studies that form the basis of recent climate hazard understanding in Marina.

#### Sea Level Rise

Globally, sea levels are rising as a result of two factors caused by human-induced climate change. The first factor is the thermal expansion of the oceans. As ocean temperatures warm, the water in the ocean expands and occupies more volume, resulting in a rise in sea levels. The second factor contributing to eustatic (global) sea level rise is the additional volume of water added to the oceans from the melting of mountain glaciers and ice sheets on land. It is predicted that if all of the ice were to melt on earth, ocean levels would rise by approximately 225–265 feet above present-day levels. The rate at which sea levels will rise is largely dependent on the feedback loop between the melting of the ice, which changes the land cover from a reflective ice surface, and the open ocean water, which absorbs more of the sun's energy and increases the rate of ice melt. The uncertainties associated with the rate at which ice melt occurs is largely responsible for the wide variation in sea level rise projections in the latter half of this century (i.e., between 2050 and 2100).

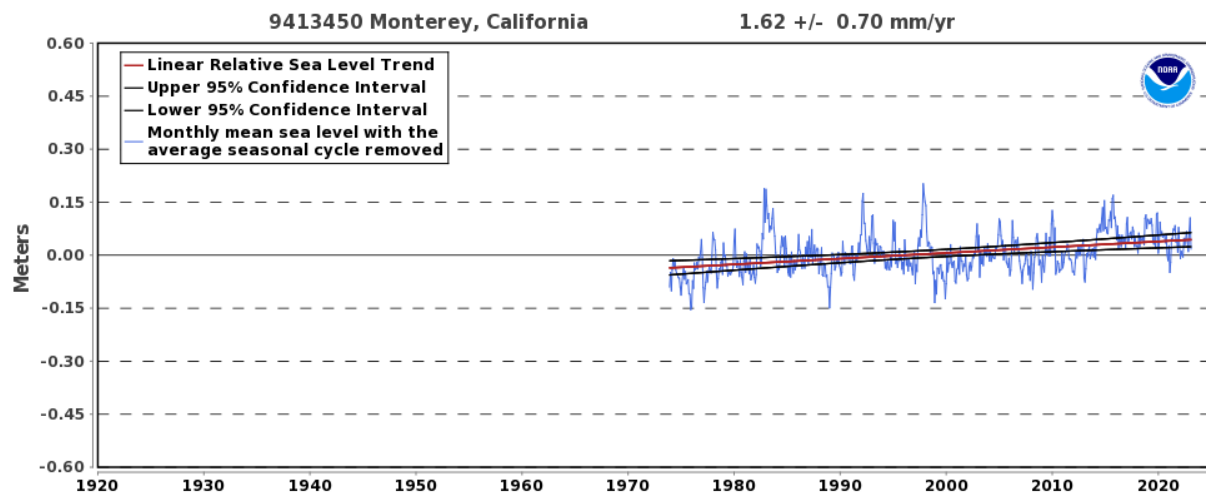
Sea level rise can increase flood risks in low-lying coastal areas and areas bordering rivers. A 5-foot increase in water levels caused by sea level rise, storms, and tides is estimated to affect 499,822 people, 644,143 acres, 209,737 homes, and \$105.2 billion of property value in California coastal areas (Climate Central 2014) based solely on increasing tidal elevations. If one considers future large coastal storm events on top of increasing elevation of high tide, this estimate is likely low.

The time scales for sea level rise are related to complex interactions between the atmosphere and the oceans and the lag times associated with the stabilization of GHGs in the atmosphere with the dissolution of those gases into the ocean. The Intergovernmental Panel on Climate Change (IPCC) has published scientific evidence that demonstrates that, due to the GHGs already released into the atmosphere, the sea levels will be rising for the next several thousand years. Given this long-term perspective, it is not a question of if sea level rise will happen, but when it will happen.

Much of the scientific advancement in recent years has been in understanding the contribution and rate of ice melt to global sea levels. It has also revealed the potential for extreme sea level rise resulting from rapid acceleration of ice melt as noted above under the RCP 8.5 scenario. In general, the higher the GHG emissions, the higher the temperature, the more rapid the ice melt, and the higher the rate of sea level rise.

## Relative (Local) Sea Level Rise

Sea level rise is not the same everywhere around the world. Because of local differences in tectonic uplift; subsidence caused by oil, gas, and groundwater extraction; and saltwater intrusion, the land itself is moving vertically. The difference between the local land motion and the global rise of sea level gives the relative sea level rise that will determine the magnitude of local sea level rise impacts. The Monterey Tide Gauge, which reports the local sea level rise rate at 1.62 millimeters/year with a 95% confidence interval of  $\pm 0.70$  mm/year based on monthly mean sea level data from 1973 to 2022, which is equivalent to a change of 0.53 feet in 100 years (Figure 3-1). Since the tide gauge was installed in the mid-1970s, the relatively short time period of record leaves high range in the confidence intervals for the relative sea level rise calculations from the tide gauge.



**Figure 3-1. Tide Record and Sea Level Rise Trend from Monterey Tide Gauge (NOAA Station 9413450)**

## 2016–2018 California 4th Climate Assessment and Projections

Biannually, the California Energy Commission funds climate assessments to better understand the impacts of climate on various natural resource and urban settings. As an initial integral part of the 4<sup>th</sup> Climate Assessment, Scripps Institution of Oceanography at the University of California, San Diego was commissioned to develop a new suite of climate projections reflecting the latest scientific publications and global level emission reduction pledges made at the 2015 IPCC Paris climate change convention.

The downscaled climate model projections include the entire suite of climate variables including temperature, wildfire risk, precipitation, and sea levels. The modeling included assumptions on population growth, and future global political response to addressing GHGs called the RCP. The modeling included assumptions on population growth and future global political response to addressing GHGs and used RCP 4.5 and RCP 8.5 as described above. Future climate scenarios are compared to the historical time period from 1961 to 1990. Four global climate models were identified by the State for use in the 4<sup>th</sup> Climate Assessment work.

- HADGEM2-ES (Warm/Dry)
- CNRM-CM5 (Cool/Wet)
- CanESM2 (Average)

- MIROC5 (Compliment)

Results for key climate variables for the Marina area were extracted from the downscaled models. The results shown in Table 3-1 are the average of all four of the State-prioritized global climate models and assume the Business as Usual emissions scenario (RCP 8.5) and a medium population growth. RCP 8.5 is considered an extreme scenario with a low probability (0.5% chance) of occurring by 2100 as shown in Table 3-1 below. A brief discussion of the implications to Marina is included below.

**Table 3-1. Results from the California 4th Climate Assessment for Key Climate Variables**

Category	Threshold	Units	Observed Historical Record (1961–1990)	2030	2060	2090
Extreme Heat	>89.3°F	days	4	6	10	18
Temperature	Average Maximum	°F	67.1	69.6	71.9	74.4
Temperature	Average Minimum	°F	47.0	49.6	51.8	54.7
Precipitation	Annual Total	inches	13.0	14.5	14.4	16.0
Wildfire	Annual average	hectares	33.2	31.8	32.5	31.5

*Scenario RCP 8.5 (Emissions continue to rise under business as usual and plateau around 2100).*

*Using a 20-year running average (2020–2039, 2050–2069, 2080–2099).*

*Future predictions are comprised of ensemble averages from four models selected by California's Climate Action Team Working Group.*

## Temperature

Overall average maximum temperatures in Marina are projected to rise by 7.3°F by 2090 as shown in Table 3-1. These projections differ depending on the time of year and the type of measurement (highs vs. lows), all of which have different potential effects to the state's ecosystem health, agricultural production, water use and availability, and energy demand. Extreme heat has been defined for the Marina area as 89.3°F for the time of year between April and October. Extreme heat during this baseline time period averaged four days per year. There are wide ranges between the available climate models; however, in general, the extreme heat projections show not only an increase in the number of days expected to exceed the extreme heat threshold, but also their occurrence both earlier and later in the season. Near the end of the century long periods may meet heat wave conditions.

## Precipitation

In Marina, the average of the models' precipitation projections shows an increase in total annual precipitation. However, among the four chosen models, precipitation projections are not consistent over the next 80 years. Some individual models show a decrease and others show an increase. Uncertainty around the future trend of precipitation is high. The mediterranean seasonal precipitation pattern is expected to continue, with most precipitation falling during the winter from North Pacific storms. However, even modest changes could have a significant impact on California ecosystems as they are conditioned to historical rainfall and temperature patterns. Increased seasonal and inter-annual rainfall

variability as well as increased temperature could lead to significant soil moisture stress on plant life, and place a significant burden on the region's nearly fully utilized freshwater resources.

### *Wildfire Risk*

As the devastating Soberanes Fire in 2016 and Basin Complex fire of 2008 attests, wildfire is a serious hazard in Monterey County and for the City of Marina. The historical average return interval between large wildfires (> 10,000 ac) in Monterey County is 7.3 years, with a minimum return interval as short as 1 year, and a maximum as long as 16 years. The greatest potential wildfire risk to the City of Marina is from the Bureau of Land Management's Fort Ord National Monument, which is in close proximity to the southern end of the city. Severe weather conditions could make this landscape consisting of fuel-rich maritime chaparral and oak woodlands highly susceptible to wildfire outbreak (Monterey Fire Safe Council 2010). Several studies have indicated that the risk of wildfire will increase with climate change. While the models differ, there is a general pattern for wildfires in California to start earlier in the season, continue later in the year, and occur with increasing frequency.

### *Sea Level Rise*

The 4<sup>th</sup> Climate Assessment scenarios take a new approach and carefully quantify each contributing factor to global sea level rise and assign a probability of occurrence based on the scientific uncertainties associated with each factor. The new resulting sea level rise projections for California identify probabilities for future levels of sea level rise (Cayan et al. 2016). The new sea level rise numbers are summarized in a scientific summary that was written to be more approachable for policy making (OPC 2018). Overall, the sea level rise projections in 2018 are lower than the NRC (2012) projections, except for the high emissions (RCP 8.5) 2100 scenario. In addition, recent scientific work has identified the potential for an extreme sea level rise scenario caused by runaway ice melt. This scenario is called the H++ scenario and projects 10.1 feet of sea level rise by 2100 for the Monterey Bay region. The State's Ocean Protection Council has used these scientific updates to develop revised sea level rise planning guidance and has included the associated probabilities of sea level rise for the Monterey tide gauge. The CCC has updated its sea level rise guidance to account for these changes. The difference between these two guidance documents is that the OPC guidance lays out broad statewide scientific information, and the CCC Guidance integrates those recommendations for use in Coastal Commission planning and permitting processes. These projections are summarized in Table 3-2 below.

Sea level rise scenarios used in this analysis were selected to be consistent with the CCC's 2015 Sea Level Rise Policy Guidance (CCC 2015) and consistent with the more recent results from the OPC's update to the guidance in 2018 (OPC 2018; Table 3-1). Projections of future climate change impacts came from a variety of sources including Cal Adapt and Scripps Institution of Oceanography.

From a baseline year of 2000, Monterey can expect between 5 and 10 inches of sea level rise by 2030, between 12 and 31 inches by 2060, and between 28 and 63 inches by 2100 (Table 3-3). Table 3-3 shows the elevation of sea level rise used in the coastal hazard modeling (top row) and the relative probability of occurrence by the time horizon (OPC 2018). Note that the extreme worst case "extreme risk aversion" scenario for Monterey Bay is for 10.1 feet by 2100 (Table 3-2).

**Table 3-2. Probabilistic Projections of Sea Level Rise for Monterey (OPC 2018)**

		Probabilistic Projections (in feet) (based on Kopp et al. 2014)				H++ scenario (Sweet et al. 2017) *Single scenario
		MEDIAN	LIKELY RANGE	1-IN-20 CHANCE	1-IN-200 CHANCE	
		50% probability sea-level rise meets or exceeds...	66% probability sea-level rise is between...	5% probability sea-level rise meets or exceeds...	0.5% probability sea-level rise meets or exceeds...	
				Low Risk Aversion	Medium - High Risk Aversion	Extreme Risk Aversion
High emissions	2030	0.4	0.3 - 0.5	0.6	0.8	1.0
	2040	0.6	0.4 - 0.8	0.9	1.2	1.7
	2050	0.8	0.5 - 1.1	1.3	1.9	2.7
Low emissions	2060	0.9	0.5 - 1.2	1.5	2.3	
High emissions	2060	1.0	0.7 - 1.4	1.8	2.6	3.8
Low emissions	2070	1.0	0.6 - 1.4	1.9	3.0	
High emissions	2070	1.3	0.9 - 1.8	2.3	3.4	5.1
Low emissions	2080	1.2	0.7 - 1.7	2.3	3.8	
High emissions	2080	1.6	1.1 - 2.3	2.9	4.4	6.6
Low emissions	2090	1.3	0.8 - 2.0	2.7	4.6	
High emissions	2090	2.0	1.3 - 2.8	3.5	5.5	8.2
Low emissions	2100	1.5	0.9 - 2.3	3.1	5.5	
High emissions	2100	2.3	1.5 - 3.3	4.3	6.9	10.1
Low emissions	2110*	1.6	1.0 - 2.4	3.3	6.1	
High emissions	2110*	2.5	1.7 - 3.4	4.4	7.2	11.8
Low emissions	2120	1.7	1.0 - 2.7	3.8	7.3	
High emissions	2120	2.8	2.0 - 4.0	5.2	8.5	14.0
Low emissions	2130	1.9	1.1 - 3.0	4.2	8.3	
High emissions	2130	3.1	2.2 - 4.5	5.9	9.9	16.4
Low emissions	2140	2.0	1.1 - 3.2	4.7	9.5	
High emissions	2140	3.5	2.4 - 5.1	6.7	11.3	18.9
Low emissions	2150	2.1	1.1 - 3.6	5.3	10.8	
High emissions	2150	3.8	2.6 - 5.7	7.6	12.9	21.8

**Table 3-3. Sea Level Rise Scenarios by Planning Horizon (adapted from NRC 2012, ESA PWA 2014, OPC 2018). Baseline condition is from 2000.**

Model/year	SLR - in			% Probability		
	2030	2060	2100	2030	2060	2100
Coastal Resilience, High <sup>4</sup>	9	28	63	0.50%	>5%<67%	>5%<67%
Low Risk Aversion <sup>5</sup>	5	16.8	39.6	17%	12%	6%
Med-High Risk Aversion <sup>5</sup>	9.6	31.2	82.8	0.50%	0.50%	0.50%
Extreme Risk Aversion (H++) <sup>5</sup>	12	45.6	121.2	NA	NA	NA

<sup>4</sup> ESA PWA 2014

<sup>5</sup> OPC 2018, CCC 2018

## 3.4 Other Regional Sea Level Rise and Coastal Management Initiatives

Currently, there are a wide variety of scientific investigations studying and modeling the impacts of coastal hazards, climate change, and adaptation economics for the Monterey region. The studies discussed below demonstrate the most promising and focused applicability to the City of Marina. In addition, there are currently multiple regional planning initiatives to integrate the impacts of coastal hazards, climate change, and sea level rise into local planning documents. Many local jurisdictions are updating their LCPs with the intent of moving toward adaptation planning in the Santa Cruz and Monterey Bay region.

### 2008 Coastal Regional Sediment Management Plan for Southern Monterey Bay

In 2008, Philip Williams & Associates (PWA) completed a Coastal Regional Sediment Management Plan, which identified what is known about sand supplied to the coast between Wharf 2 in Monterey and the Monterey Submarine Canyon, including new understanding of the sediment budget, causes of erosion hot spots, the impact of sand mining, and shoreline armoring. Recommendations from this plan include new ways to manage sediment, including the development of an opportunistic beach nourishment program, sand rights policies, and changes in regional governance structure, which would support better use of coastal sediments.

### 2010 Technical Evaluation of Erosion Mitigation Alternatives

Between 2008 and 2010, PWA working with the Southern Monterey Bay Coastal Erosion Working Group and the Monterey Bay National Marine Sanctuary conducted a study evaluating potential erosion mitigation alternatives. This project took a holistic approach looking at both the engineering feasibility, the technical effectiveness, and the net economic benefits to more than 20 different erosion mitigation strategies (aka adaptation strategies). Key findings were to stop sand mining and avoid coastal armoring to maximize the long-term economic benefits to the region. While the study did not directly include sea level rise, this study led the way to the 2014 Monterey Bay Sea Level Rise Vulnerability Study and the 2016 Adapt Monterey Bay studies.

### 2014 Monterey Bay Sea Level Rise Vulnerability Study

This modeling effort projects the impacts of coastal erosion and coastal flooding for Monterey Bay, extending from Año Nuevo Point to Wharf 2 in Monterey. A technical methods report presents technical documentation of the methods used to map erosion and coastal flood hazards under various future climate scenarios (ESA PWA 2014). The climate-change-exacerbated coastal hazard modeling considered different scenarios of sea level rise, wave climate, and sand mining. This study and model outputs provide much of the hazard identification used in support of the City's vulnerability assessment. Results of the various modeling scenarios are available at the TNC Coastal Resilience Mapping portal.

## 2016 Adapt Southern Monterey Bay

This study is an update to the economic and physical analysis conducted in the 2010 Technical Evaluation of Erosion Mitigation Alternatives. The overall project evaluates a range of adaptation strategies and compares the benefits of having a beach versus protecting upland property. The approach includes improved coastal hazard modeling resulting from the implementation of various adaptation strategies and improved economic analysis that includes accounting for the value of storm damage reduction to upland properties, recreational benefits, and ecosystem services. Some of the economic analyses showed the benefits of dune restoration and opportunistic sediment placement at reducing erosion in Marina.

## 2015 The Nature Conservancy's Coastal Resiliency Mapping Tool

The Coastal Resiliency Mapping Tool by The Nature Conservancy has been developed for geographies around the world to visualize the extent and magnitude of sea level rise and coastal hazards. The web mapping application provides an interactive visualization tool.<sup>6</sup> This tool allows users to explore the risks of different scenarios of coastal hazards—such as sea level rise, storm surges, and inland flooding—at a variety of spatial scales. In addition, it provides access to coastal hazard model projection data and the technical documentation of the modeling.

## 2016 Monterey and Santa Cruz County Vulnerability Assessment

Consistent with the CCC's emphasis on crafting regional approaches to sea level rise and funded by the Ocean Protection Council to Monterey County, this project is evaluating future vulnerabilities to sea level rise to Santa Cruz and Monterey County. The project includes improved coastal confluence modeling of Soquel Creek (Capitola) and the old Salinas River (Moss Landing). Focus areas of interest were Capitola and Moss Landing.

## 2017 FEMA Pacific Coastal Flood Mapping

FEMA is currently updating the Pacific Coastal flood maps for FEMA Region IX. The California Coastal Analysis and Mapping Project is conducting updates to the coastal flood hazard mapping with improved science, coastal engineering, and regional understanding. The project incorporates regional wave transformation modeling and new run-up methods to revise the effective flood insurance rate maps for coastal flood hazard zones. This included revisions to the VE (wave velocity), AE (ponded water), and X (minimal flooding) zones. The revised maps became effective in 2017.

## 2017 CEMEX/CCC Settlement Agreement

On July 13, 2017, the CCC (working with and on behalf of the City of Marina) and CEMEX reached a Consent Settlement Agreement to close the CEMEX Sand Mine in Marina, the last coastal sand mine in the United States. The CEMEX sand mine used a hydraulic dredge to mine sand from a pond at the back of the beach. The Settlement agreement laid out a program to phase out the sand mining activities by December 31, 2020, conduct remediation on the site including a regrading and seeding plan by December 31, 2021, and complete the full remediation plan by December 31, 2025. At that point, the property could be purchased

---

<sup>6</sup> Web link: [maps.coastalresilience.org/California](https://maps.coastalresilience.org/California)

by a government entity or nonprofit with limitations on the types of future land uses. Currently, the City of Marina and CCC are working on changes to the land use designation in the land use plan.

## 2017 Dune Restoration at Salinas River State Beach

Sand dunes, in their natural state, buffer coastal erosion and minimize ocean-induced flooding, while providing critical habitat to many special status species. Sand dune systems in the Monterey Bay provide a natural barrier that protects thousands of acres of low-lying communities, agricultural lands, and wetlands resources from winter storms. Small breaches in the dunes could allow ocean flooding of vast areas of the Salinas Valley. In many areas, invasive plants have reduced important ecological and storm-buffering functions. The Central Coast Wetlands Group at Moss Landing Marine Labs, with funding from the State Coastal Conservancy, is restoring areas of the Salinas Beach State Park to reduce the vulnerability of two breach points in the dune complex by restoring native vegetation and improving the natural adaptive capacity of these coastal dunes as a proof of concept for future adaptation projects.

## 2019 City of Monterey Opportunistic Beach Nourishment Program

The City of Monterey, on behalf of the coastal communities in the Southern Monterey Bay littoral cell, has developed an opportunistic beach nourishment program (OBNP). The OBNP program is intended to streamline the placement of clean, beach-compatible sediments from upland sources (e.g., construction projects, flood control) on the beaches of Southern Monterey Bay at designated locations to reduce potential erosion impacts, improve coastal resiliency, and maintain dune and beach habitats.

The City of Monterey with funding by the State Department of Boating and Waterways has completed the technical sedimentological studies and a programmatic California Environmental Quality Act (CEQA) document (Initial Study/Mitigated Negative Declaration [MND]) that is applicable to all of the Southern Monterey Bay beaches. This regional program came out of the 2008 Coastal Regional Sediment Management Plan and various other regional adaptation related studies. This MND has been certified and approved by the City of Monterey and is appropriate for use by other jurisdictions. The benefits of this program are that it would allow for streamlined permits to place sand on the back of the beach (above mean high water), to address areas of erosion concern while balancing benefits of opportunistic beach nourishment and avoiding adverse impacts to water quality, sensitive species and/or habitats (including the waters of the Monterey Bay National Marine Sanctuary), cultural resources, traffic and transportation, nearby businesses or residences, and human uses including coastal recreation.

Currently, the program identifies a list of suitable stockpile locations, and receiver sites where erosion concerns have been documented, as well as outlines stringent testing standards for any potential sources of sand (e.g., grading of dunes during construction or flood control clean out). The proposed receiver sites in the City of Marina are located at the end of Reservation Road and at the CEMEX property.

## Central Coast Climate Collaborative

The Central Coast Climate Collaborative is an organization of six counties that is fostering a regional dialogue to share information and best practices on climate change impacts, leverage regional adaptation efforts, attract funding, and improve resiliency across the Central Coast.

## 2019 USGS CoSMoS 3.1.

USGS has been developing the Coastal Storm Modeling System (CoSMoS) to provide projections of coastal flood hazards and cliff erosion using a state of the art numerical and statistical downscaling of global climate model projections. The intent is to provide region-specific, consistent information on coastal storm and sea level rise scenarios. The model uses downscaled global climate models and considers factors such as long-term coastal shoreline change, stream inputs, dynamically downscaled winds, and varying sea level rise scenarios to produce hazard projections for every 9.8 inches (0.25 meters) of sea level rise. Results map a dynamic wave run-up extent (differing from FEMA and Coastal Resilience maximum wave run-up) and account for various sea level rise, storm frequencies, and uncertainties. An interactive web mapping portal shows the results of the hazard data at Our Coast Our Future.<sup>7</sup>

The CoSMoS results do not explicitly project long-term coastal dune erosion and the wave flooding analyses show no exposure to any infrastructure or resources within the City.

---

<sup>7</sup> Map portal at: [www.ourcoastourfuture.org](http://www.ourcoastourfuture.org)

# 4. Vulnerability Assessment Methods

## 4.1 Introduction

This chapter summarizes the projected vulnerabilities from sea level rise and coastal hazards for the City of Marina. First, there is an overview of the methodologies used to assess existing and projected vulnerabilities from coastal hazards including the geospatial data collection, identification of coastal hazards, and a summary of the results. Decisions on the sea level rise scenarios, sector selection, hazard models, and measures of impacts were made in concert with the City, CCC, and the consultant team, and are documented in Appendix A.

This report considered several primary data sources for the coastal hazard vulnerability assessment:

- Coastal hazards modeling analysis results (ESA PWA 2014).
- FEMA effective flood maps (FEMA 2017).
- Spatial and locational data available from the City of Marina, County of Monterey, the Association of Monterey Bay Area Governments (AMBAG), and Environmental Systems Research Institute (ESRI).

Projections of future coastal hazards and sea level rise were modeled as part of a separate project completed during the Monterey Bay Sea Level Rise Vulnerability Assessment (ESA PWA 2014). Substantial research in California recently published as part of the 4<sup>th</sup> California Climate Change Assessment has effectively downscaled climate change to project various human-induced climate change impacts at a local scale (see Section 3).

## 4.2 Sector Geospatial Data and Exposure Selection

With input from the City and following guidance from the CCC and the consulting team's experience in other jurisdictions, potential sectors were identified to be considered for analysis as well as the measures of impact for each sector that were available and deemed useful (Table 4-1). Data collection efforts began with available City data and expanded to include Monterey County data, CCC, and available regional (AMBAG), state, federal, and open source public data libraries. In some cases, data such as structures were updated by drawing from open source data sets such as Open Street map and Bing Maps building footprint data and using standard digitizing from the most recent available aerial data from AMBAG. All data were

checked for topological fidelity (spatial relationships), spatial accuracy, and accuracy of tabular data (attributes).

Initially the data collection phase collected, reviewed, and analyzed the full range of potential sectors below. Once the geospatial sector data were evaluated with the coastal hazard modeling exposure for the unique setting in the City of Marina, it was determined that only the following **BOLD** sectors were worth further vulnerability evaluation from potential coastal erosion and sea level rise impacts. For non-assessed sectors a brief description follows the sector. Results of the full vulnerability analysis are shown in the tables of Appendix C.

Sectors Evaluated (sectors in **bold** are described in the Section 5, “Sector Vulnerability Results”)

- **Land Use and Parkland**
- **Coastal Trails and Public Access**
- **Water Supply and Wastewater**
- **Roads, Parking and Bike Routes**
- **Sensitive Dune Habitats**
- Public Transportation—limited to coastal flooding 2100
- Storm Water—limited exposure, majority of stormwater captured in percolation ponds
- Community Facilities and Critical Services—no exposure
- Hazardous Material Storage—no erosion exposure, limited to coastal flooding 2100

**Table 4-1. Description of Available Geospatial Data: Potential Resource Sectors, Measures of Impacts, and Data Sources**

Sector	Subsector	Measures of Impacts	Data Source
<b>Land Use Parcels and Structures</b>	Commercial	Number of parcels, acreage of parcels, # of structures, square feet of structures	Parcels – County Assessors  Structures – AMBAG with Input from Integral and Open Source Data sets
	Institutions and Government	Number of parcels, acreage of parcels, number of structures, square feet of structures	
	Open Space and Recreation	Number of parcels, acreage of parcels, # of structures, square feet of structures	
	Residential	Number of parcels, acreage of parcels, # of structures, square feet of structures	
	Mining *	Number of parcels, acreage of parcels, # of structures, square feet of structures	

Sector	Subsector	Measures of Impacts	Data Source
<b>Roads, Parking, and Bike Routes</b>	Roads	Length of road	County Open Data Portal, Open Street Map
	Parking Lots	Number of lots, acreage of lots	Integral with Input from City of Marina Planning Department
	Bike Routes	Length of bike routes	Integral with Input from Ord Reuse Authority, Open Street Map
<b>Coastal Trails and Public Access</b>	Coastal Access and Trails	Number of access points, length of trail by type	Integral with input from CCC and the City of Marina Planning Department, Open Street Map
<b>Water Supply and Wastewater Infrastructure</b>	Stormwater Infrastructure	Numbers of drop inlets, outfall;, length of drains	Marina Coast Water District (MCWD), Second Nature, City of Marina Planning Department
	Wastewater Infrastructure	Number of lift stations, number of manholes; length of pipes	MCWD, M1 Water
	Water Supply Infrastructure	Numbers of control valves, pressure regulators, water meters, fire hydrants, pump stations, manholes, ground water wells; length of pipes	MCWD
<b>Sensitive Dune Habitats</b>	Environmentally Sensitive Habitat	Area and types of habitats (date unknown)	City of Marina Planning Department
<b>Stormwater</b>	Stormwater Infrastructure	Numbers of drop inlets, outfalls; length of drains	MCWD, Second Nature, City of Marina Planning Department
<b>Public Transportation</b>	Public Transportation	Length of bus routes, railroad lines; number of bus stops	MST and the City of Marina Planning Department
<b>Community Facilities and Critical Services</b>	Community Facilities	Numbers of government, religious, lodges, other cultural buildings	Integral with input from County Planning Department
	Critical Services	Numbers of police, fire, school, medical, communication, water treatment facilities	Integral with input from County Planning Department

Sector	Subsector	Measures of Impacts	Data Source
Hazardous Materials Sites	Geotracker ESI Reporting Sites (Hazardous Business Materials Storage)	Number of sites	State Water Resources Control Board
	U.S. Environmental Protection Agency (EPA) Small Quantity Generators	Number of sites	EPA
	Cleanup Program Active Sites	Number of sites	EPA

### 4.3 Vulnerability Assessment Methodology

The vulnerability assessment involves spatial analysis on the geospatial sector data acquired from a wide variety of sources. The sector data, sea level rise, and model selection decisions were made with input from the City and the consultant team and are documented in Appendix A. In addition, efforts were made to obtain data directly from CCC staff in order to identify the appropriate resource sectors and measures of impact. All spatial data were evaluated for accuracy (Table 4-1).

All geospatial analysis was conducted in ArcGIS. For each resource sector and measure of impact, the respective data set was queried for intersection with the coastal hazard modeling data. From these spatial queries, summary statistics were calculated by sea level rise elevation) for each measure of impact by each type of coastal hazard.

Vulnerability points (e.g., bus stops) and line features (e.g., roads) are determined by the spatial intersection of the various coastal hazard horizons with the various resource/infrastructure assets. Vulnerability counts for smaller polygons with specific categories (e.g., structures) are determined by dissolving the entire polygon with attributes from the first (i.e., lowest) coastal hazard horizon intersection. Meaning, if a structure was eroded across multiple horizons, only the first instance was documented. Vulnerability for larger polygons (e.g., dune habitats, where the area affected across horizons is a relevant statistic) was determined in the same manner as points and lines. Results are collated into a master vulnerability table and summarized in the sector profiles found in Section 5, *Sector Vulnerability Results*. The complete vulnerability table of results is found in Appendix C.

### Coastal Hazard Modeling

The modeling work for the 2014 Monterey Bay Sea Level Rise Vulnerability Assessment included modeling of the following coastal processes:

- **Short-Term Coastal Erosion:** Short-term coastal erosion based on the largest historical storm wave event in the Monterey buoy record.
- **Long-Term Coastal Erosion:** Long-term coastal changes caused by erosion related to sea level rise and historical trends in erosion. For this vulnerability assessment, the long-term coastal

erosion projections considered a 70% reduction in the historical long-term erosion rates due to the cessation of sand mining.<sup>8</sup>

- **Coastal King Tide Flooding:** Based on an expected monthly recurrence—**No exposure.**
- **Coastal Wave Flooding:** Flooding caused by waves associated with the dune erosion and wave flooding from a 1% annual chance storm wave event, including run-up, overtopping and filling of low-lying areas. For sea level rise elevations less than 5' there is virtually no chance that any amount of coastal wave flooding beyond what is discussed in the coastal erosion-related impacts would occur.
- **Emergent groundwater:** Based on the increase in groundwater elevation rising to above ground surface – **No exposure** (see note below)

**A note about potential groundwater rise.** The city of Marina's surficial geology is comprised primarily of dune sands of varying ages (see Section 2.2 Geology). These soils are highly permeable, and as a result, rainfall and stormwater percolates quickly through these soils. The City's current stormwater system depends on the permeability of this underlying geology as the existing stormwater pipe network drains into seven low-lying vernal pools and several percolation ponds. Most of these areas are brackish except in the very wettest years, and many dry out during the late summer and early fall in most years. USGS CoSMoS has mapped groundwater rise in relation to sea level rise, and these data can be found on the Our Coast Our Future website. The emergent groundwater data allows for a selection of permeability. Given the underlying geology, the most appropriate permeability selection would be "more permeable/deeper water table" ( $K > 100$ ). All of these existing low-lying percolation ponds see some projected rise in water table depth with rising sea levels, but even with 5.7 ft of sea level rise, the extent of the emergent water table remains within the current pond area extents. To determine more specific effects, a pond-specific study would be required to determine how these low-lying vernal pool areas may respond to sea level rise, but this is not recommended at this time.

*Based on the spatial extents of projected future coastal hazards and sector data, the vulnerability assessment focused primarily on long-term (from sea level rise) and episodic dune erosion from a large storm wave erosion event considering that sand mining is stopped and erosion rates return to more natural levels.*

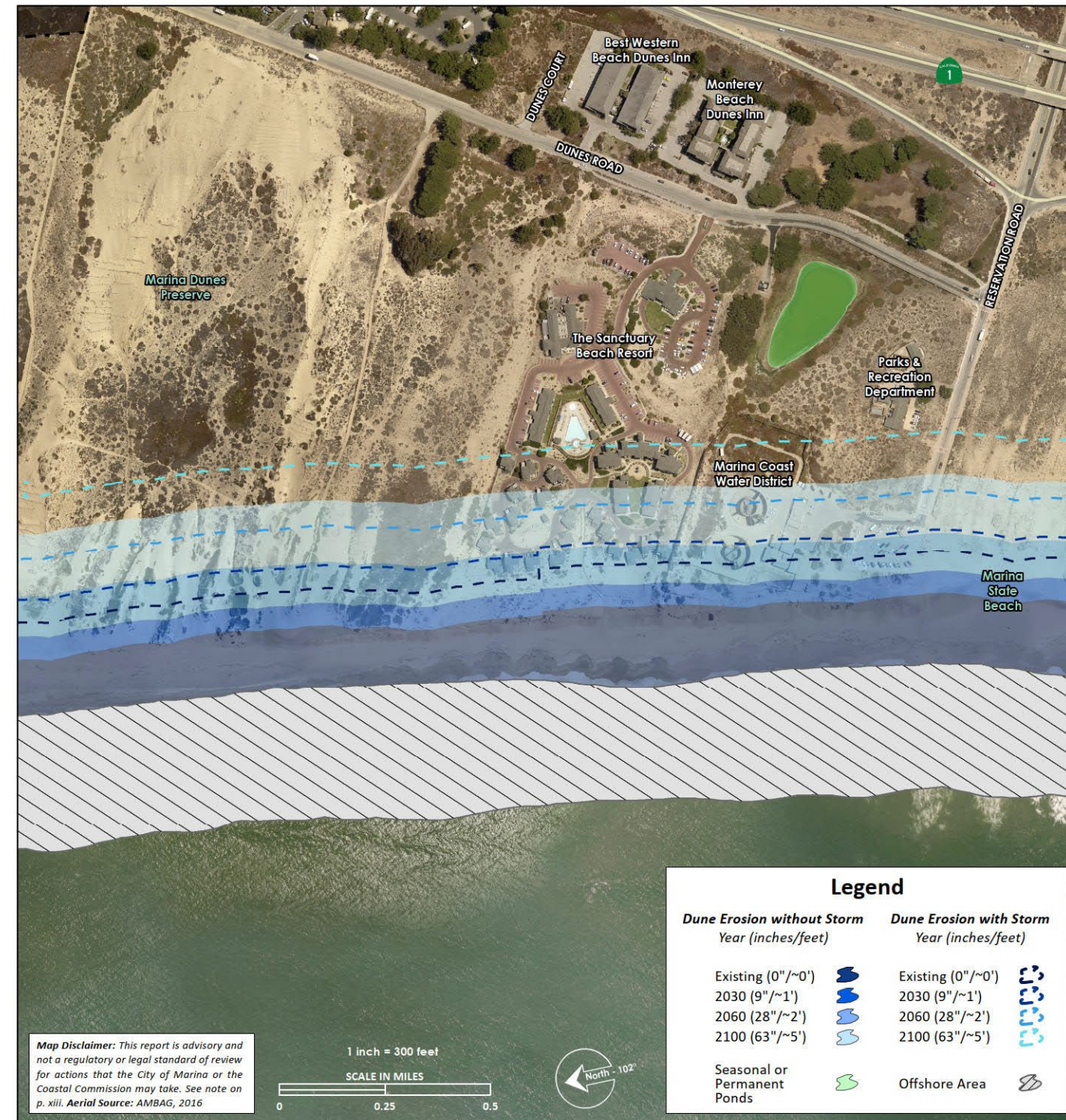
## Coastal Dune Erosion

The coastal dune erosion hazard modeling considered a short-term response based on the erosion from a 100-year storm wave event. For long-term dune erosion, two components—projected long-term erosion caused by historical trends in shoreline change (as a proxy for sediment supply) and accelerated by sea level rise—were mapped separately (Figure 4-1; Table 4-2). For this vulnerability assessment, the long-term coastal erosion projections considered a 70% reduction in the historical long term erosion rates due to the cessation of sand mining (PWA 2008, ESA PWA 2014).

<sup>8</sup> Reduction of erosion rates based on input from Dr. Ed Thornton in 2008 as part of the Southern Monterey Bay Coastal Regional Sediment Management Plan and integrated into the "without sand mining scenario" modeled in ESA PWA (2014).

The USGS CoSMoS model was also examined for the City's shoreline, but there were no dune erosion hazards mapped, and the projected shoreline change hazard maps did not show any exposure to any sector in the City.

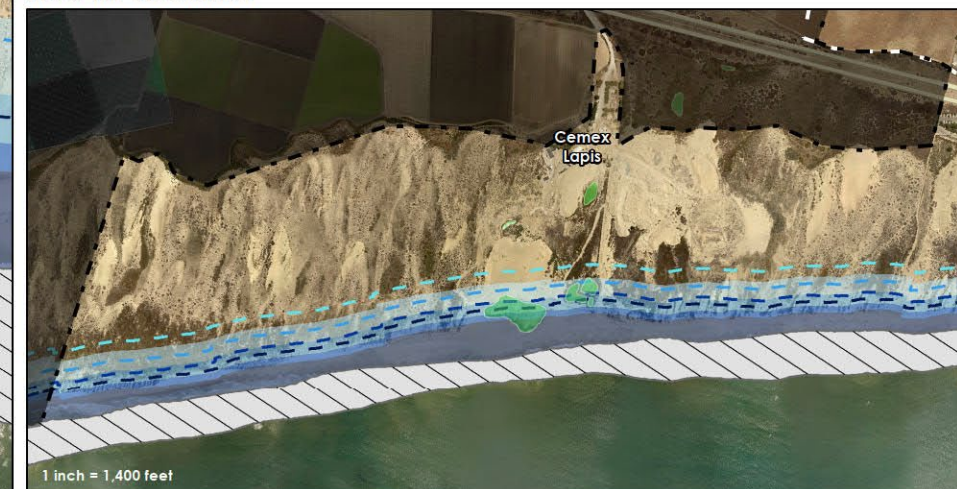
### Central Marina - Dune Erosion Comparison



### South Marina



### North Marina



Dune Erosion without Storm		Dune Erosion with Storm	
Year (inches/feet)	Symbol	Year (inches/feet)	Symbol
Existing (0"/~0')		Existing (0"/~0')	
2030 (9"/~1')		2030 (9"/~1')	
2060 (28"/~2')		2060 (28"/~2')	
2100 (63"/~5')		2100 (63"/~5')	
Seasonal or Permanent Ponds		Offshore Area	

Features	
City Boundary	
Coastal Zone Boundary	
Highway	

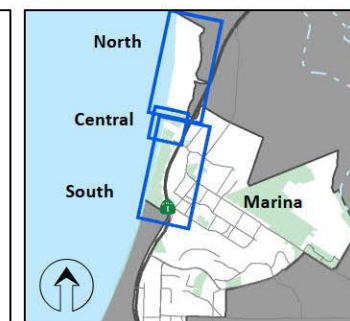


Figure 4-1. Projected Long Term and Storm Induced Coastal Erosion with 5 Feet of Sea Level Rise and Considering the Cessation of Sand Mining and the Subsequent Change to Coastal Erosion Trends

In modeling for both types of dune erosion, inland extents were projected using a geometric model of dune erosion originally proposed by Komar et al. (1999) and applied with different slopes to make the model more applicable to sea level rise (Revell et al. 2011). This method is consistent with the FEMA Pacific Coast Flood Guidelines for storm-induced erosion (FEMA 2005). One of the sea level rise scenarios modeled in 2014 included projections that assumed reduced erosion from the cessation of sand mining. After consultation with the City and Coastal Commission, this modeling scenario was selected for as the coastal erosion hazard projections used in the modeling.

**Table 4-2. Projected Erosion Distances Through Time**

Horizon	Long term erosion distance (feet)	Storm-induced erosion distance (feet)	Total erosion distance (feet)
0 Feet Sea Level Rise (2000)	165.8	97.5	263.3
9 Feet Sea Level Rise (~2030)	225.8	96.9	322.7
28 Feet Sea Level Rise (~2060)	333.3	95.4	428.7
63 Feet Sea Level Rise (~2100)	492.5	99.4	591.9

*Distance as measured from shoreline.*

*Average distance from five transects from Marina Dunes Preserve to Marina State Beach.*

## Coastal Storm Flooding

The coastal storm flood modeling from the Monterey Bay Coastal Resilience Project was consistent with FEMA’s Pacific Coastal Flood Guidelines (FEMA 2005, ESA PWA 2014). The high tide coastal storm flood modeling was integrated with the coastal erosion hazard zones. Every 10 years, erosion projections were made and the coastal storm flood model considered areas that were eroded during this time period and thus exposed to wave flooding through enhanced hydraulic connectivity. For the coastal storm flooding, the storm of record was used—the largest historical storm event that occurred during 18 years of wave buoy data available at the time of the 2014 modeling study.

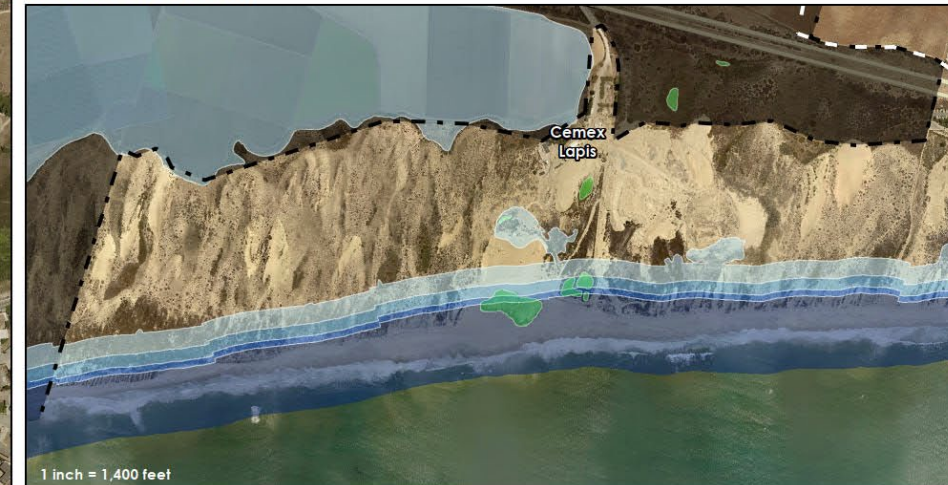
The one caveat however with this coastal storm flooding modeling is that the coastal flood extents did not consider the “without sand mining reduction” in coastal erosion. As a result of the reduced coastal erosion from the cessation of sand mining, there was a corresponding reduction in the inland extents of erosion and number of hydraulic connections caused by breaching of the dunes. The reduced erosion and hydraulic connections decreased the volume and extents of coastal storm wave flooding which were adjusted to the sole hydraulic connection along Reservation Road under Highway 101. The coastal flood layer extends inland to all hydraulically connected areas below the 25-foot contour line (Figure 4-2).

For more detail on the coastal flood hazard delineation, see Appendix A.

### Central Marina - 2100 Coastal Storm Flooding.



### North Marina



### South Marina



Legend	
Coastal Storm Year (inches/feet)	
Existing (0"/~0')	
2030 (9"/~1')	
2060 (28"/~2')	
2100 (63"/~5')	
Seasonal or Permanent Ponds	

Features	
City Boundary	
Coastal Zone Boundary	
Highway	
Railroad	

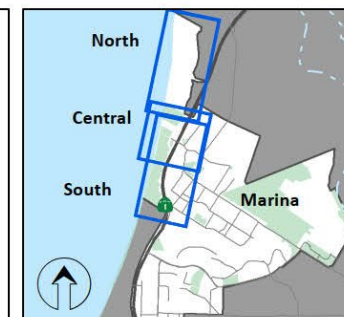


Figure 4-2. Projected Extent of Coastal Flood Hazards with 5 Feet of Sea Level Rise and a Major Storm Wave Event

## Sensitive Biological Beach and Dune Resources

All habitats will be affected by climate change. Beaches and dunes are important coastal resources and in some places constitute ESHA. While current ESHAs have not been mapped, all coastal erosion in Marina affects dune and beach habitats. Landscape connectivity between dunes and beaches provides a critical corridor for species to escape landward during storm wave events, as well as sand to be delivered to beaches. A simple GIS analysis of acreages on dated and generalized mapped dune or beach habitats provides an initial investigation of the potential exposure of beach and dune habitats, but this process does not provide good accuracy of estimations for habitat vulnerability or complex ecological interactions, habitat fragmentation, changing physical processes, and other climate variables.

Beaches in the City are largely classified as open spaces and are an important part of the community identity. Detailed mapping of southern Monterey Bay beaches and their seasonal and intra-annual fluctuations has not been conducted extensively. However, given the lack of any coastal armoring in the City, as dune erosion occurs during large storm events and sea level rise over time moving the toe of the dunes inland, then beaches should be naturally maintained into the future. This allowance of continuing dune erosion and acceptance of beach fluctuations allows the ecology and recreational uses that depend on this connection between beach and dune habitat to be maintained in the future. Under current and future conditions, during large storm events, access and beach recreational use may be hazardous, but the lack of armoring promotes habitat connectivity, which allows species to retreat landward during such erosive storm events.

Beaches and other coastal ecosystems have many other benefits not quantified or incorporated in this report, such as the ability to buffer storm waves, filter water, and provide recreation and habitat. The City should consider the loss or degradation of sensitive biological beach and dune resources when evaluating different adaptation options.

# 5. Sector Vulnerability Results

The key findings for each impacted sector are summarized below by sea level rise elevation and approximate planning horizon below. Each sector profile includes a map color-coded by the projected elevation of potential impact. On the other side of the sector profiles is a summary of the specific vulnerabilities to coastal dune erosion by sea level rise elevation and likely planning horizon and includes a discussion of the existing conditions, key findings and adaptation recommendations.

Each sector has its own profile, complete with a color-coded vulnerability map and a two-page summary of findings. They are as follows:

- Land Use and Parklands
- Trails and Access
- Water Supply and Wastewater
- Roads and Bike Routes
- Dune Habitat.

The overview section provides a summary of the key findings for each resource sector over time. The existing and future vulnerabilities sections highlight what is potentially vulnerable today and projected to be at risk in the future from coastal erosion, and coastal wave flooding for each sea level rise elevation/ planning horizon.<sup>9</sup> Results in each sector profile are reported based on what becomes potentially exposed and vulnerable with a certain amount of sea level rise. If nothing is reported with additional sea level rise over that time frame, then no additional vulnerabilities are reported.

The ~5 feet of sea level rise by 2100 scenario identifies both what becomes vulnerable between ~2 and ~5 feet of sea level rise, as well as the cumulative totals for all planning horizons.

The adaptation section mentions a few potential adaptation strategies. This section will evolve as additional workshops and dialogs are held with the City and key stakeholders. The criteria for prioritizing adaptation measures include feasibility, implementation and maintenance costs, and community acceptance.

The most vulnerable areas of Marina are found on the ocean side of Highway 1 off of Reservation Road (Figure 5-1).

---

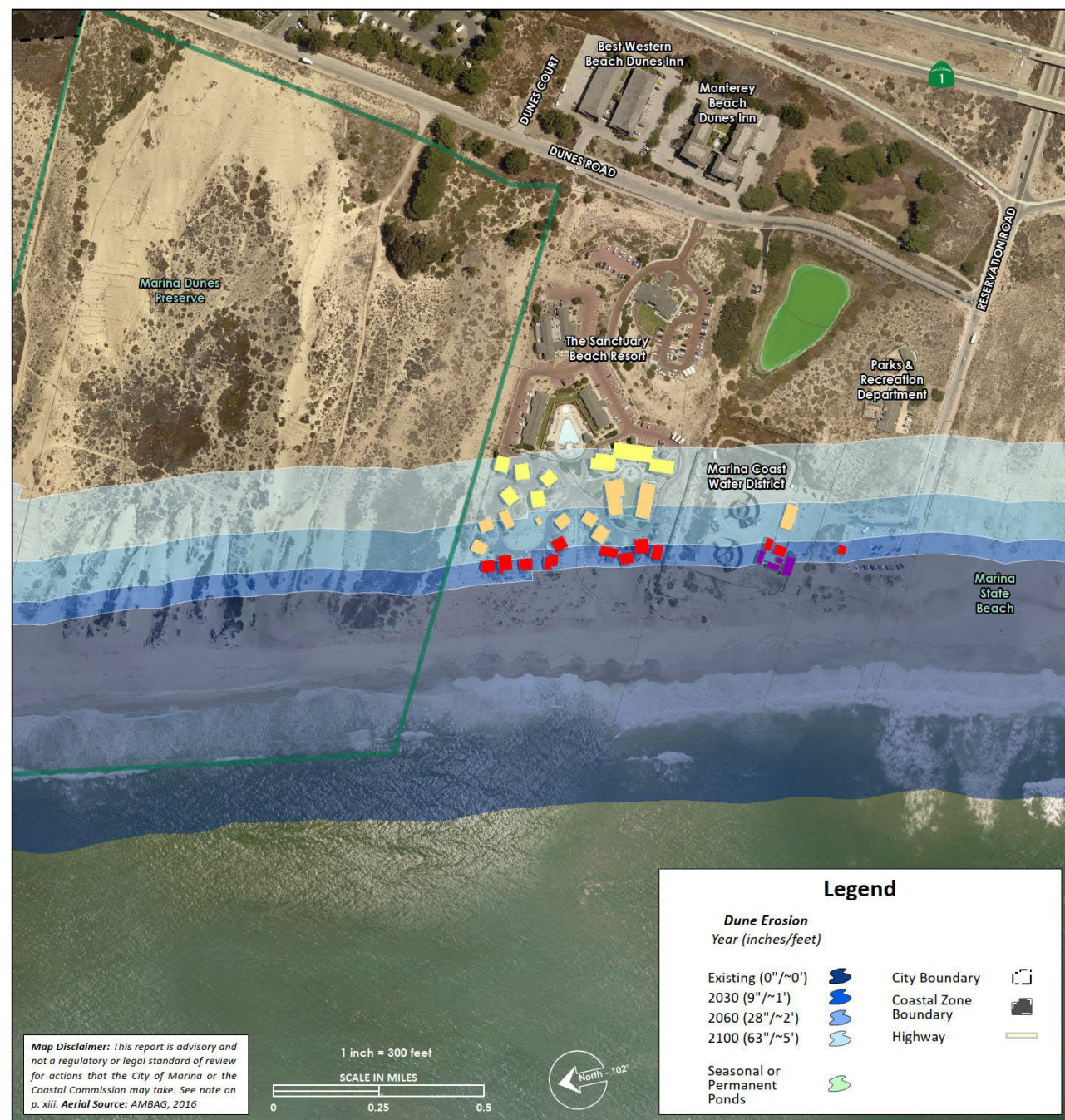
<sup>9</sup> Tidal inundation and groundwater daylighting were also considered but deemed not to be critical coastal hazards due to the topography and exposure.



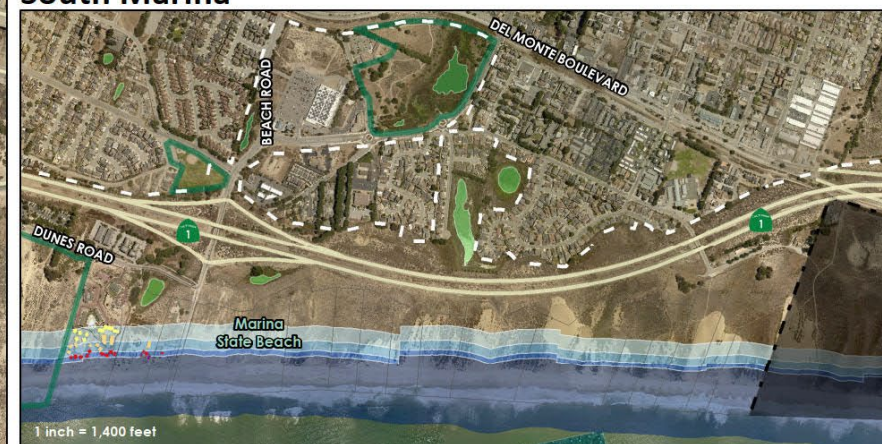
**Figure 5-1. Overview of Threatened Areas of Marina off Reservation Road. Credit: Coastal Records Project**

## 5.1 Land Use and Parkland

### Central Marina



### South Marina



### North Marina

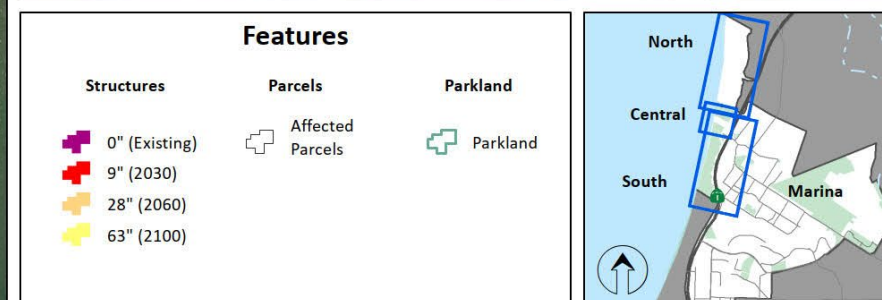


Figure 5-2. Central Marina Dune Erosion, Land Use, Structures, and Parkland

# LAND USE

## Overview

Land uses in the City of Marina are categorized by: (1) commercial and mixed, (2) institutional, (3) mining\*, (3) open space (4) residential and common, (5) vacant, and (6) visitor serving. To identify land uses vulnerable to SLR and coastal hazards, this study evaluated the land uses exposed to the projected **coastal dune erosion hazard** extents. Coastal erosion could cause substantial damages to structures and cause a permanent reduction in parcels size.

While there are many more parcels and structures in the entire City, this analysis only considered parcels and land uses that were within or near close proximity to projected coastal hazards which included:

- 22 parcels
- 274 acres of parcels
- 32 structures

No residential developments fell within projected coastal erosion hazard zones even with 5' of SLR.

*Note: Parcels and structures are reported to be impacted at the first exposure to coastal erosion hazards. Acres of parcels are reported to include the portion of those parcels that are vulnerable at each hazard horizon. Results shown in each planning horizon are additional land uses that become exposed at that elevation of sea level rise.*

## Existing Vulnerabilities

### Coastal Erosion (Parcels (first instance)/Acres/Buildings (first instance))

Institutional	Mining	Open Space	Visitor Serving
2/6.6 acres/4	2/71.6 acres/0	16/71.9 acres/0	1/6.1 acres/0

**Visitor Serving** – The ocean fronting parcel at the Sanctuary Beach Resort

**Mining** – Two parcels comprising the CEMEX Lapis property. The dredge ponds are exposed

**Open Space** – 16 parcels comprising the Marina Dunes Preserve and Marina State Beach

**Institutional** – Four buildings and one parcel owned and operated by the Marina Coast Water District Facility. The State owned parcel comprising the State Parks beach access parking.

## Future Vulnerabilities

### 9 inches (~1 foot) by ~2030

#### Coastal Erosion (Parcels/Acres/Buildings)

Institutional	Mining	Open Space	Visitor Serving
0/9 acres/3	0/12.1 acres/0	0/9.0/7 acres/0	0/0.8 acres/9

**Visitor Serving** – Nine ocean fronting hotel room buildings at The Sanctuary Beach Resort

**Institutional** – Two buildings at the Water District Facility. The restroom at the Reservation Road Parking Lot.

### 28 inches (~2 feet) by ~2060

#### Coastal Erosion (Parcels/Acres/Buildings)

Institutional	Mining	Open Space	Visitor Serving
0/1.5 acres/1	0/21.6 acres/0	0/17.1/7 acres/0	1/1.4 acres/9

**Visitor Serving** – Another parcel at the Sanctuary Beach Resort including eight hotel room buildings and one comfort station

**Institutional** – One building at the Marina Coast Water District Facility.

### 63 inches (~5 feet) by ~2100

#### Coastal Erosion (Parcels/Acres/Buildings)

Institutional	Mining	Open Space	Visitor Serving
0/2.3 acres/0	0/33.4 acres/0	0/26.1 acres/0	0/2.2 acres/6

**Visitor Serving** – An additional six hotel room buildings at The Sanctuary Beach Resort

## Adaptation Strategies

### Range of Strategies:

**Manage** – Relocate development from the hazardous areas along shoreline. Restore native dune vegetation.

**Accommodate** – Increase setbacks, and foundation standards to facilitate elevating or relocating structures.

**Protect** – Implement regular opportunistic nourishment, to widen and increase the elevation of beach and dunes as “green” protection. Nourish beach with cobbles or cobble berms to provide more robust natural protection.

### Secondary Impacts:

Secondary impacts from “Green” protection through beach and dune nourishment will depend on the frequency and volume of sand placement. Over time, it should be anticipated that there will be an increasing expense associated with more frequent maintenance with higher levels of SLR. “Gray” techniques using revetments would provide protection, but could negatively impact beach and dune habitats, natural processes and coastal access.

## Potential Next Steps

### Policy:

- Develop a policy to prioritize beaches and deny any shoreline protective devices.
- Develop policies to encourage relocation of threatened facilities and structures.
- Consider delineating a current primary and secondary Environmentally Sensitive Habitat Area which prioritizes landscape connectivity between the ocean, beach and dunes over isolated dune habitats to allow for inland relocation.
- Coordinate regionally with State Parks, Marina Coast Water District and the Sanctuary Beach Resort to adapt to escalating coastal erosion hazards
- Downzone the portions of the CEMEX sand mine property to be consistent with the 2010 City General Plan and preclude future development in hazardous areas.
- Encourage the use of opportunistic sand placements to reduce future erosion rates

### Projects

- Develop an opportunistic sand use program

### Monitoring:

Work with vulnerable stakeholders to monitor rates of sea level rise, erosion of dune crest, wave flooding depth, extents, and frequency of overtopping on roads and parking lots.

## Summary of Findings

### Total Cumulative Number of Parcels/Acreages/Number of Structures at Risk from Erosion with 5' of SLR

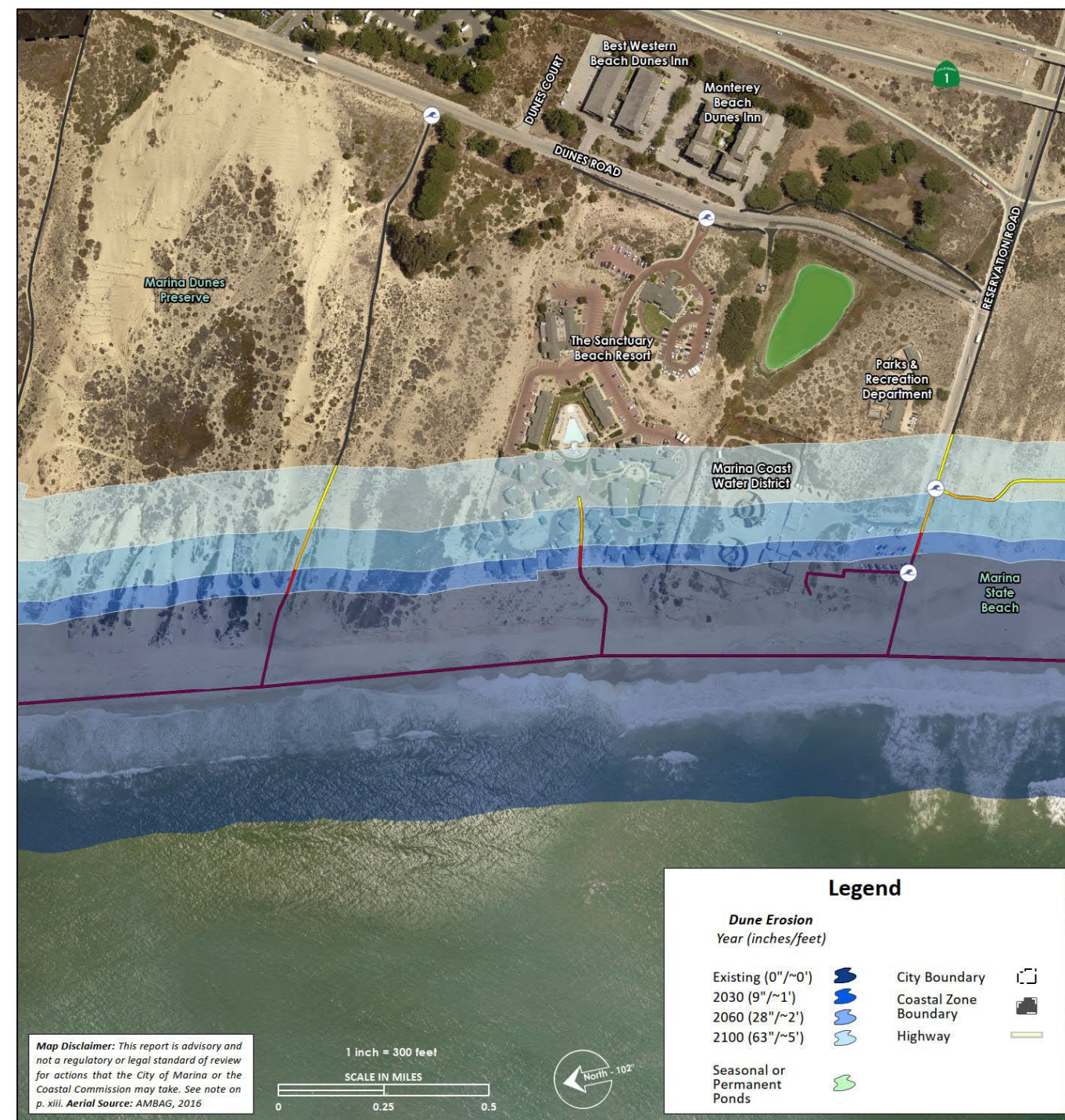
Institutional	Mining	Open Space	Visitor Serving
2/11.3 acres/8	2/138.6 acres/0	16/124.8 acres/0	2/10.5 acres/24

Currently, the Marina Coast Water District, Marina State Beach, CEMEX sand mine and the Sanctuary Beach Resort are all exposed to coastal erosion. **With 1' of SLR**, these erosion impacts increase the exposure to structures at the Sanctuary Beach Resort, MCWD, and Marina State Beach **With 2' of SLR**, the entire Marina Coast Water District facility could be damaged. **With 5' of SLR**, a total of 22 parcels and 285 acres could be eroded including 154.1 acres of dune habitat and open space. Projected erosion could also damage 24 buildings at the Sanctuary Beach Resort.



## 5.2 Trails and Access

### Central Marina



### South Marina



### North Marina

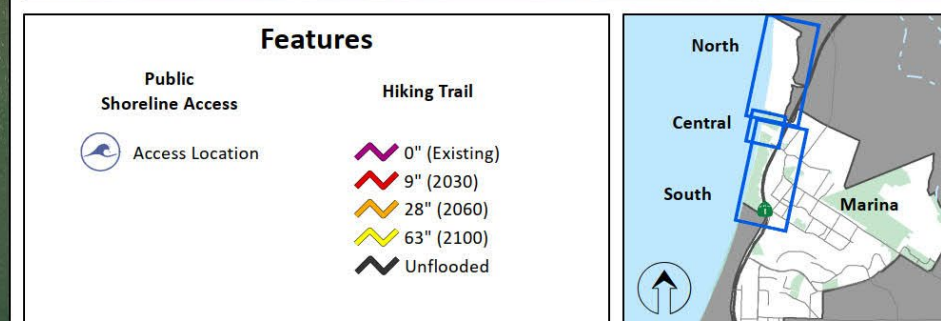


Figure 5-3. Central Marina Dune Erosion, Trails & Coastal Access

## TRAILS AND BEACH ACCESS

### Overview

To identify coastal access ways and trails potentially vulnerable to coastal erosion and SLR hazards, this study evaluated the following:

- 7 Vertical Coastal Access Points
- 3.2 Miles of Lateral Beach Access
- 1.22 Miles of Coastal Access Trail
- 35.79 Miles of Walking Trail

The City has a wide variety of trails throughout the extensive dune system. Some trails provide vertical beach access through the dunes and others provide access along the crest of the dunes observing the ocean and the dune habitats and species. Part of this trail system is a part of the California Coastal Trail, a network of trails visioned to run the length of the California Coast.

### Existing Vulnerabilities

#### Coastal Erosion

- Vertical Coastal Access – 1,913 feet
- Lateral Beach Access – 3.2 miles
- Hiking Trails – 0

**Vertical Coastal Access:** All of the vertical coastal accesses are exposed to coastal erosion.

**Lateral Coastal Access:** All 3.2 miles (100%) of lateral access along City beaches are vulnerable to coastal flooding and erosion from a 100-year wave event, but generally recover post-storm.

**Trails:** No coastal dune hiking trails are susceptible to existing coastal erosion hazards.

### Future Vulnerabilities

#### 9 inches (~1 foot) by ~2030

#### Coastal Erosion

- Vertical Coastal Access – ~375 feet
- Lateral Beach Access – no additional
- Hiking Trails – 0

**Vertical Coastal Access:** Additional portions of the vertical coastal accesses are exposed to coastal erosion.

**Lateral Coastal Access:** All 3.2 miles (100%) of lateral access along City beaches are vulnerable to coastal flooding and erosion from a 100-year wave event, but generally recover post-storm.

**Trails:** No coastal dune hiking trails are susceptible to coastal erosion hazards.

#### 28 inches (~2 feet) by ~2060

#### Coastal Erosion

- Vertical Coastal Access – ~550 feet
- Lateral Beach Access – no additional
- Hiking Trails – ~1000 feet

**Vertical Coastal Access:** Additional portions of the vertical coastal accesses are exposed to coastal erosion.

**Lateral Coastal Access:** All 3.2 miles (100%) of lateral access along City beaches are vulnerable to coastal flooding and erosion from a 100-year wave event, but generally recover post-storm.

**Trails:** About 1000 feet of dune hiking trails may be susceptible to coastal erosion hazards.

#### 63 inches (~5 feet) by ~2100

#### Coastal Erosion

- Vertical Coastal Access – ~550 additional for a total of ~0.6 miles with ~5 ft of SLR
- Lateral Beach Access – no additional for a total in the City of ~ 3.2 miles with ~5 ft of SLR
- Hiking Trails – an additional ~1300 feet for a total of ~0.4 miles with ~5 ft of SLR

**Vertical Coastal Access:** Additional portions of the vertical coastal accesses are exposed to coastal erosion.

**Lateral Coastal Access:** All 1.65 miles (100%) of lateral access along City beaches are vulnerable to coastal flooding and erosion from a 100-year wave event, but generally recover post-storm.

**Trails:** About 1000 feet of dune hiking trails may be susceptible to coastal erosion hazards.

### Adaptation Strategies

#### Range of Strategies:

**Manage** – Relocate trails from the hazardous areas along shoreline. Develop a policy to prioritize beaches and deny any shoreline protective devices.

**Accommodate** – Regrade eroded dune scarps, particularly in the spring, to continue to provide vertical access

**Protect** – Implement an opportunistic sand use program, to augment sand supply, widen and increase the elevation of beach and dunes as “green” protection. Nourish beach with cobbles or cobble berms to provide more robust natural protection. Restore native dune vegetation.

#### Secondary Impacts:

Secondary impacts from “Green” protection through beach and dune sand nourishment will depend on the frequency and volume of sand placement. Over time, it should be anticipated that there will be an increasing expense associated with more frequent maintenance with higher levels of SLR. “Gray” techniques using revetments would provide protection, but would negatively impact beach and dune habitats, natural processes, recreation and coastal access.

### Potential Next Steps

#### Policy

- Coordinate with State Parks on shoreline management to maintain beach access
- Develop a long-range plan for the California Coastal Trail.
- Monitor the remediation of the CEMEX mine
- Align the CEMEX zoning in the LCP to be consistent with the City’s General Plan

#### Projects

- Develop a trail and access plan through the CEMEX property
- Relocate portions of trails exposed to erosion.

#### Monitoring

- Monitor erosion of dune crest, wave flooding depth, extents, and frequency of overtopping on the State Beach parking lot.

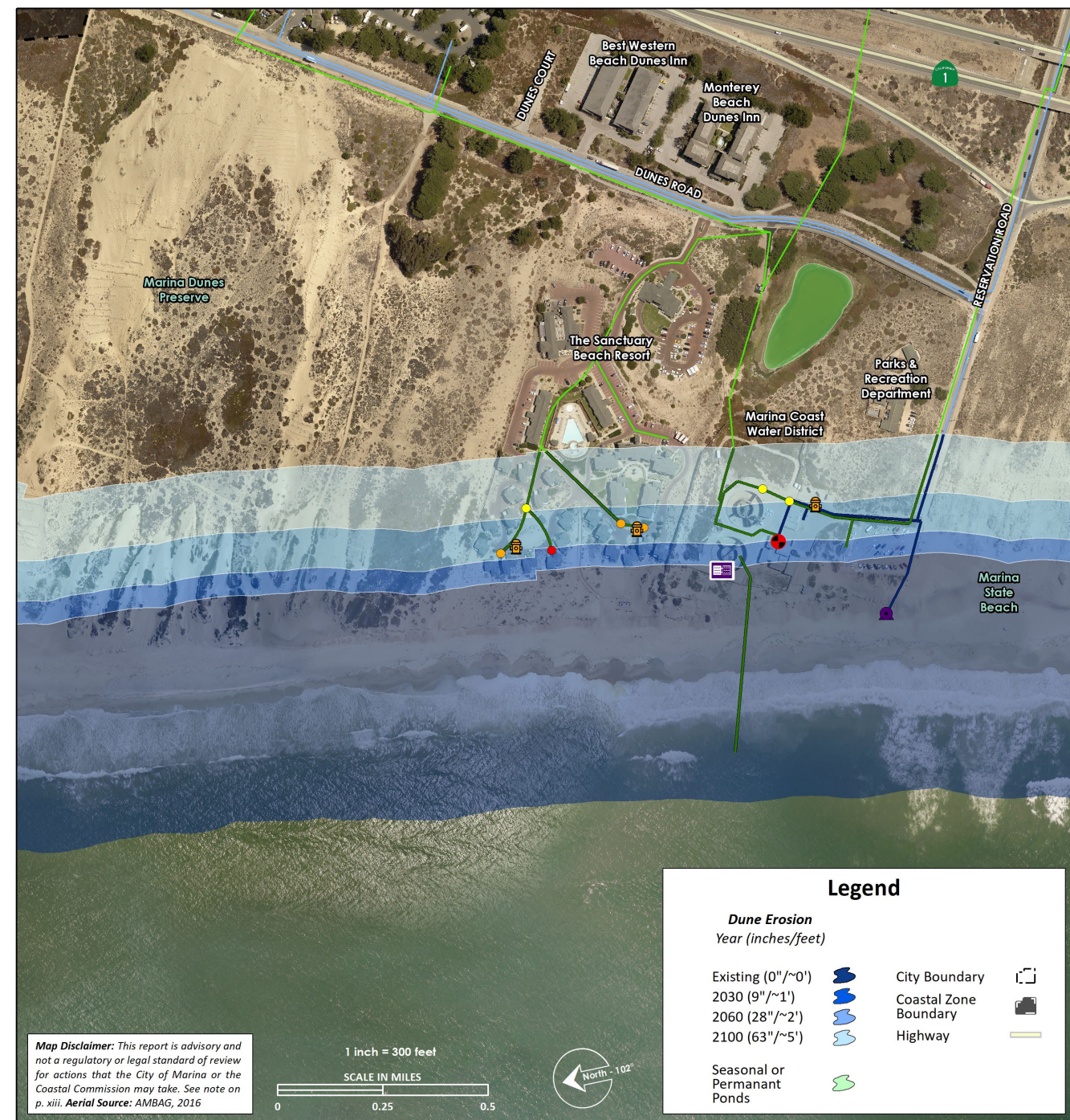
### Summary of Findings

**Currently**, all the vertical coastal access points and all lateral coastal trails are vulnerable to coastal erosion and coastal flooding, and more than half of them are vulnerable to tidal inundation. **With 1’ and 2’ of SLR**, additional vertical access may be impacted. **With 5’ of SLR**, all vertical access trails, lateral coastal access along beach and all bluff top coastal trails and those within Carpinteria Salt Marsh Park are vulnerable to coastal erosion, coastal flooding, and tidal inundation.

**Thresholds:** With 2’ of SLR, coastal erosion impacts beaches, hiking trails, and dunes erosion may impact lateral and vertical access trails.

## 5.3 Wastewater and Water Supply

### Central Marina



### South Marina



### North Marina

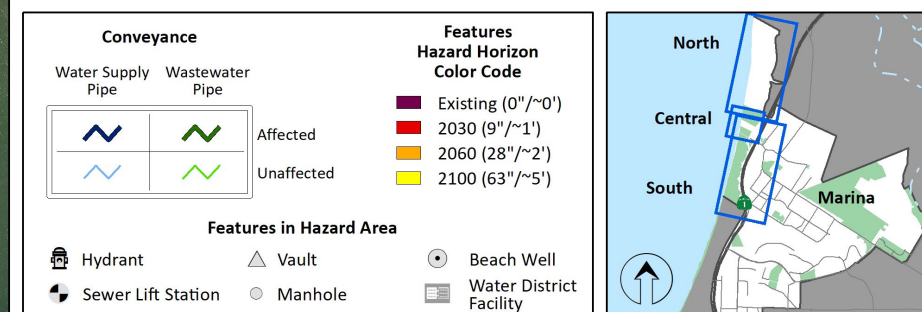


Figure 5-4. Central Marina Dune Erosion, Wastewater and Water Supply

## WATER SUPPLY AND WASTEWATER

### Overview

To identify water supply infrastructure potentially vulnerable to dune erosion and SLR, this study evaluated the following:

- 107 Miles of Water Supply Pipes
- 921 Hydrants
- 31 Control Valves
- 14 wastewater pump stations
- 92 Miles of Wastewater Pipes
- 4 Groundwater Wells

The City's water supply system is managed by the Marina Coast Water District (MCWD) and maintained by pressure regulators, hydrants, and control valves that distribute water through pipes to connect to ~33,000 customer base. Currently the water comes from the Salinas Valley Groundwater Basin, and the City is in development of a required Groundwater Sustainability Plan. In the 1990s, the MCWD installed a desalinization test well in the beach with permits from the California State Land Commission. The well was capped and is inactive and the permits have lapsed.

Historically, the City treated its wastewater at the current location of the MCWD offices which still has two remnant tanks and offshore discharge infrastructure with no removal plans. This MCWD treatment facility was closed in the 1990s when the regional Monterey One Water (formerly the Monterey Regional Water Pollution Control Agency), wastewater facility opened which collects and treats wastewater from across the Southern Monterey Bay area. The main treatment facility is just outside of the City of Marina near the Salinas River, and outside of projected coastal hazard zones. The plant treats to a secondary state treatment standard and produces about 60% of its treated wastewater as recycled water.

### Existing Vulnerabilities

#### Coastal Erosion (Water Supply/Wastewater)

- Pipes – <175 feet / ~1,200 feet
- Hydrants/ Vaults – 0/1
- Sewer Pump Stations/ Manholes – 0/0
- Wells / Treatment facility – 1/1
- Ocean Outfall – 1/1

**Water Supply:** The MCWD offices, one inactive desalinization intake well, some water supply pipe, and a control vault (photo right) is currently vulnerable to coastal erosion.

**Wastewater:** One ocean outfall in the north of the City, and an old offshore discharge pipe near Marina State Beach is vulnerable to coastal erosion.



### Future Vulnerabilities

#### 9 inches (~1 foot) by ~2030

#### Coastal Erosion (Water Supply/Wastewater)

- Pipes – ~65 / ~130 feet
- Hydrants/ Vaults – 0/0
- Sewer Pump Stations/ Manholes – 1/1
- Wells / Treatment facility – 0/0

**Water Supply:** No additional impacts to water supply are projected, although additional MCWD offices may be impacted.

**Wastewater:** A pump station co-located with the restroom at Marina State Beach may become exposed. One of the remnant treatment tanks, an additional 130 feet of pipe and a manhole access could be vulnerable to coastal erosion.

#### 28 inches (~2 feet) by ~2060

#### Coastal Erosion (Water Supply/Wastewater)

- Pipes – ~575 feet / ~1,110 feet
- Hydrants/ Vaults – 3/0
- Sewer Pump Stations/ Manholes – 0/3
- Wells / Treatment facility – 0/0

**Water Supply:** Three water supply hydrants, two at the Sanctuary Beach Resort and one at Marina State Beach, as well as an additional 500+ feet of supply pipeline may become exposed to coastal erosion.

**Wastewater:** The second remnant wastewater treatment tank and an additional 1,000+ feet of wastewater collection and ocean outfall pipe may be exposed to coastal erosion.

#### 63 inches (~5 feet) by ~2100

#### Coastal Erosion (Water Supply/Wastewater)

- Pipes – an additional of ~180 feet / ~1,100 feet for a total of ~1,000/3,540 feet of pipe with ~5 feet of SLR
- Hydrants/ Vaults – an additional 0/0 for a total of 3/1 with ~5 feet of SLR
- Sewer Pump Stations/ Manholes – an additional 0/3 for a total of 1 pump station and 7 manholes with ~5 feet of SLR
- Wells / Treatment facility – 1 inactive desalinization well and 1 inactive treatment facility with ~5 feet of SLR

**Water Supply:** Additional pipeline and 3 hydrants may become exposed to coastal erosion.

**Wastewater:** An additional ~1,100 feet of wastewater collection and ocean outfall pipe may be exposed to coastal erosion.

### Adaptation Strategies

#### Range of Strategies:

**Manage** – Relocate remnant wastewater and water supply infrastructure from erosion areas. Evaluate the foundation and consider relocation of the MCWD offices. Develop a policy to prioritize beaches and deny any shoreline protective devices.

**Accommodate** – Increase setbacks for new infrastructure.

**Protect** – Implement an opportunistic use program, to widen and increase the elevation of beach and dunes as “green” protection. Nourish beach with cobbles to provide more robust natural protection. Restore native dune vegetation.

#### Secondary Impacts:

Secondary impacts from “Green” protection through beach and dune nourishment will depend on the frequency and volume of sand placement. Over time, it should be anticipated that there will be an increasing expense associated with more frequent maintenance with higher levels of SLR. “Gray” techniques using shoreline protective devices would provide infrastructure protection, but would negatively impact beach and dune habitats, natural processes, recreation, and coastal access.

### Potential Next Steps

#### Policy:

- Provide input to MCWD on current draft water supply, sewer and recycled water master plans to ensure SLR is considered.
- Develop policies to promote water conservation and increase reclaimed water use and availability.
- Coordinate regionally with MCWD to adapt the water supply and wastewater systems to future demands and include climate change into the Integrated Water Resource Management and Sustainable Groundwater Management Act plans.
- Ensure adequate long-term water supplies for the lifetime and intended use of development prior to permitting.
- Restrict development of new water supply wells including potential desalinization wells in hazardous areas.

#### Projects:

- Specific projects should be identified in other water supply planning documents such as updates to the Salinas Valley Groundwater Basin Master Plan.
- Develop an opportunistic sand use program

#### Monitoring:

Support MCWD efforts to develop an monitoring wells to evaluate the salinity intrusion into the aquifer.

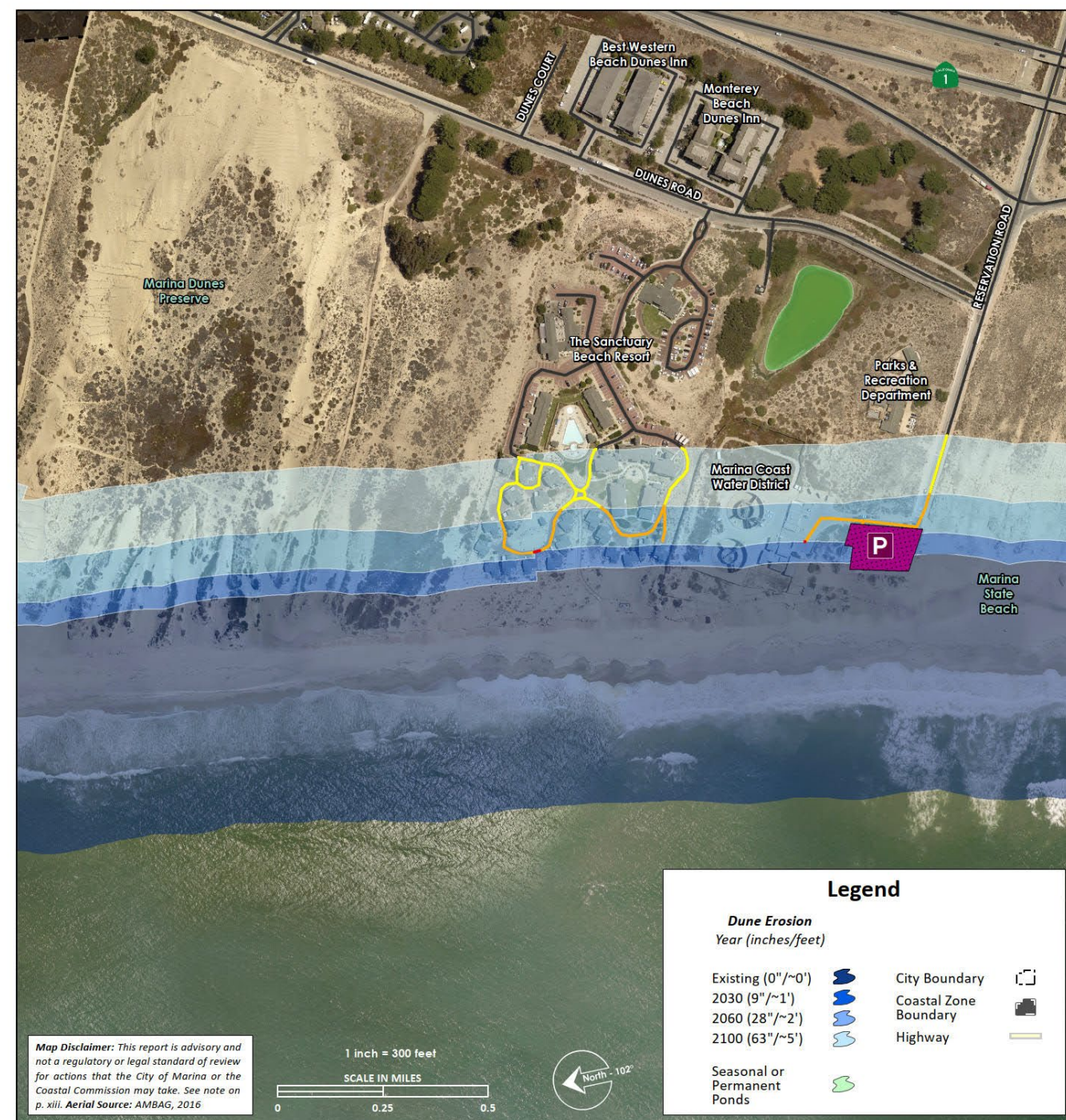
### Summary of Findings

**Currently**, one one inactive desalinization supply well and the old wastewater outfall are vulnerable to coastal erosion, and coastal erosion could damage the Marina Coast Water District offices. **With 1' of SLR**, a sewer pump station located at the Marina State Beach restroom and one remnant wastewater treatment tank may be vulnerable to coastal erosion. **With 2' of SLR**, the second remnant wastewater treatment tank and 3 water supply hydrants could be affected. **With 5' of SLR**, coastal erosion impacts could impact water supply and wastewater to the Sanctuary Beach Resort.

**Threshold:** With 2' of SLR, the MCWD district offices, both remnant wastewater treatment tanks, pipes, hydrants, and inactive desalinization well and control vault for water supply become substantially vulnerable to coastal erosion hazards.

## 5.4 Roads, Parking, and Bike Routes

### Central Marina



### South Marina



### North Marina

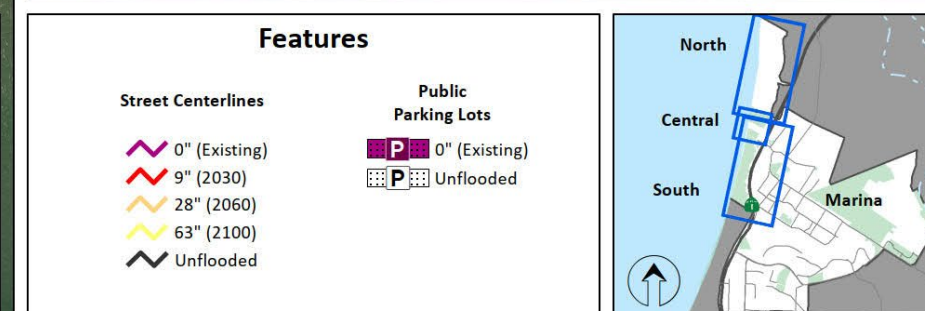


Figure 5-5. Central Marina Dune Erosion, Roads, and Parking

# ROADS, PARKING, AND BIKE ROUTES

## Overview

To identify coastal dune erosion impacts to roads, parking lots and bike routes potentially vulnerable to climate change, coastal erosion and SLR, this study evaluated:

- 100.9 Miles of Roads
- 3 Parking Lots
- 12.9 miles of Bike Routes

Roads in Marina are largely managed by the City of Marina public works department. There are also several access roads that are managed by other entities. The Sanctuary Beach Resort manages and maintains its access roads, and the State Parks maintains the access road to the Marina Coast Water District facility.



State Parks manages the Marina State Beach parking lot and coastal access amenities which is currently being undermined (photo left).

The City has many miles of bike routes throughout the City which connect the City to the rest of Monterey Bay, primarily along Dunes Drive. The bike route also travels to the coast along Reservation Road.

## Existing Vulnerabilities

### Coastal Erosion

- Roads – <150 feet
- Parking Lots – 1 lot with 0.12 acres
- Bike Routes - 0

**Roads:** Small portions of the road network in the Sanctuary Beach Resort are the most vulnerable to coastal erosion.

**Parking:** Portions of the Marina State Beach parking lot is vulnerable to coastal erosion.

**Bike Routes:** No portion of any of the bike routes are at risk to coastal erosion.

## Future Vulnerabilities

### 9 inches (~1 foot) by ~2030

### Coastal Erosion

- Roads – <300 feet
- Parking Lots – 1 lot with 0.24 acres
- Bike Routes - 0

**Roads:** A few hundred feet of Reservation Road near Marina State Beach may be vulnerable to coastal erosion.

**Parking:** Potential erosion damages to Marina State Beach Parking doubles in acreage.

**Bike Routes:** No portion of any of the bike routes are at risk to coastal erosion.

### 28 inches (~2 feet) by ~2060

### Coastal Erosion

- Roads – ~1130 feet
- Parking Lots – 1 lot with 0.13 acres
- Bike Routes - <175 feet

**Roads:** Over a thousand feet of Reservation Road near Marina State Beach may be vulnerable to coastal erosion.

**Parking:** Potential damages to Marina State Beach Parking from coastal erosion increase in acreage.

**Bike Routes:** A small portion of the bike route along Reservation Road is at risk to coastal erosion.

## 63 inches (~5 feet) by ~2100

### Coastal Erosion

- Roads – an additional ~1,200 feet of road for a total exposure of 2800 feet (1/2 miles) with ~5 feet of SLR.
- Parking Lots – 1 lot at Reservation Road is likely to have been lost for a total of ~0.5 acres of parking.
- Bike Routes – additional 330 feet of the Reservation Road route could be eroded for a total of ~500 feet with ~ 5 feet of SLR

**Roads:** A few hundred additional feet of Reservation Road near Marina State Beach and more of the Sanctuary Resort access roads may be vulnerable to coastal erosion.

**Parking:** No additional damages, but the Marina State Beach parking lot is likely eroded.

**Bike Routes:** Additional portions of the bike route along Reservation Road is at risk to coastal erosion.

## Adaptation Strategies

### Range of Strategies:

**Manage** – Relocate roads and parking lots from the hazardous areas along shoreline. Develop a policy to prioritize beaches and deny any shoreline protective devices.

**Accommodate** – Increase setbacks for new roads and parking lots.

**Protect** – Implement an opportunistic sand use program, to augment sand supply, widen and increase the elevation of beach and dunes as “green” protection. Nourish beach with cobbles or cobble berms to provide more robust natural protection. Restore native dune vegetation.

### Secondary Impacts:

Secondary impacts from “Green” protection through beach and dune sand nourishment will depend on the frequency and volume of sand placement. Over time, it should be anticipated that there will be an increasing expense associated with more frequent maintenance with higher levels of SLR. “Gray” techniques using revetments would provide protection, but would negatively impact beach and dune habitats, natural processes, recreation and coastal access.

## Potential Next Steps

### Policy:

- Coordinate with State Parks and Marina Coast Water District on shoreline management, coastal access, and parking.
- Identify potential locations for relocation of coastal dependent facilities.
- Update the Local Hazard Mitigation Plan (LHMP) to identify preferred adaptation strategies to reduce impacts to road, parking, and bike routes.

### Projects:

- Develop an opportunistic sand use program
- Realign, or relocate access roads, parking lots, and bike routes to increase resiliency and maintain access.
- Plan for the eventual landward retreat of the parking lot, bathroom, and access road at Reservation Road.

### Monitoring:

- Monitor erosion of dune crest, wave flooding depth, extents, and frequency of overtopping on roads, parking lots, and bike routes along identified potentially vulnerable areas.

## Summary of Findings

**Currently,** coastal dune erosion does not substantially impact roads or bike routes. The parking lot at Marina State Beach may be partially affected. **With 1’ of SLR,** minor erosion damages in the Sanctuary Beach Resort and about half of the Marina State Beach parking lot could erode during a large wave event. **With 2’ of SLR,** coastal erosion impacts escalate and affect access roads in the Sanctuary Beach Resort and to the Marina Coast Water District. All of the Marina State Beach Parking lot could be affected. **With 5’ of SLR,** road impacts from erosion could also impact portions of Reservation Road.

**Threshold:** With 2’ of SLR, coastal erosion impacts affect access roads to the Sanctuary Beach Resort, and Marina Coast Water District as well as affecting the entire Marina State Beach parking.

## 5.5 Dune Habitat

Within the City, sand dunes and beaches are found along the entire Marina shoreline. Coastal dune erosion could impact the greatest acreage of dune through time. However, the impacts of climate change extend beyond sea level rise and would affect temperature, precipitation, droughts, and wildfire risk; for more information see Section 3.3. The specific habitat data available for the City are dated and so precise characterization or location of sensitive flora and fauna species is not currently possible.

**Table 5-1. Sensitive Dune Habitat Directly Influenced by Coastal Hazards and Sea Level Rise**

Hazard	Acres of Dune Erosion
Existing Vulnerabilities	49.6
2030	16.3
2060	32.4
2100	55.86
<b>Cumulative Total</b>	<b>154.1</b>

Dune erosion could potentially affect the following sensitive species.

### Special Status and Notable Dune Species of Concern

#### Plants

- Seaside Painted Cup (*Castilleja latifolia ssp. Latifolia*)
- Monterey Spine Flower (*Chorizanthe pungens var. pungens*)
- Eastwood's Ericameria (*Ericameria fasciculata*)
- Coast Wallflower (*Erysimum ammophilum*)
- Menzies' Wallflower (*Erysimum menziesii*)
- Coastal Dunes Milk Vetch (*Astragalus tener var. titi*)
- Dune Gilia (*Gilia tenuiflora var. arenaria*)
- Wild Buckwheat (*Eriogonum latifolium*) \*
- Wild Buckwheat (*Eriogonum parvifolium*) \*
- Bush Lupine (*Lupinus ssp.*) +

#### Animals:

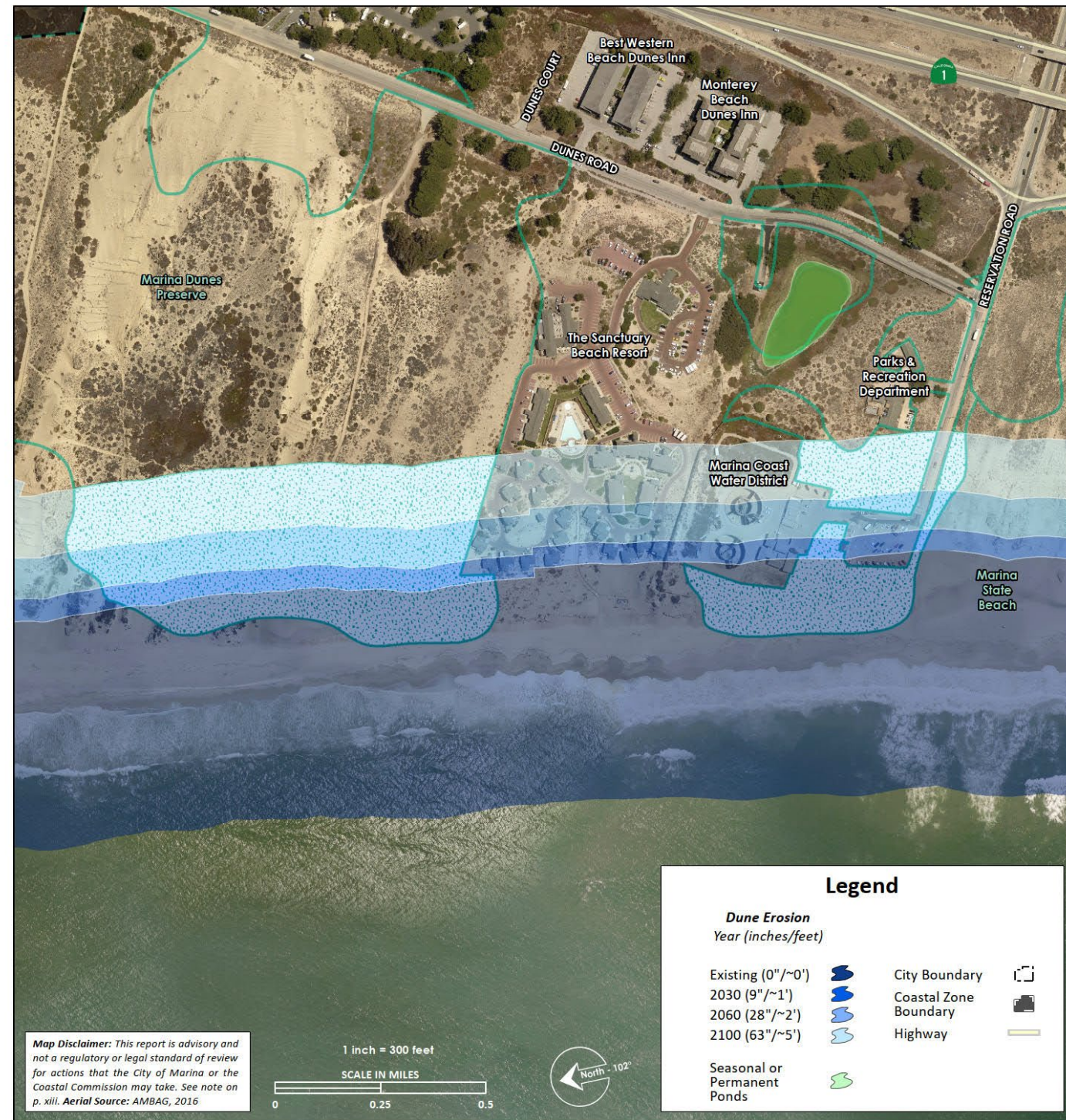
- Smith's Blue Butterfly (*Shijimiaeooides enoptes smithi*)
- Globose Dune Beetle (*Coelus globosus*)
- Black Legless Lizard (*Anniella pulchra nigra*)
- Salinas Kangaroo Rat (*Dipodomys Heermanni Goldmani*)
- Western Snowy Plover (*Charadrius nivosus nivosus*)

\* only within the range of Smith's Blue Butterfly.

+ only within the range of the Black Legless Lizard.

Reporting acreages of vulnerable ESHA may misrepresent habitat vulnerability. Quantitatively predicting future habitats is challenging as there is a complex interplay of variables that cause habitats to evolve. As coastal hazards and sea level rise progress, habitats may disappear from the current location (e.g., dune erosion) if strategies are implemented to protect landward resources or migrate landward if there is adaptation (e.g., dune restoration or beach nourishment or managed retreat).

### Central Marina



### South Marina



### North Marina

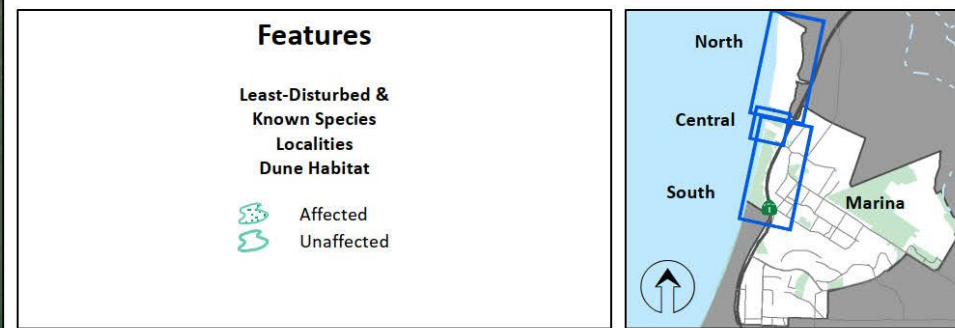
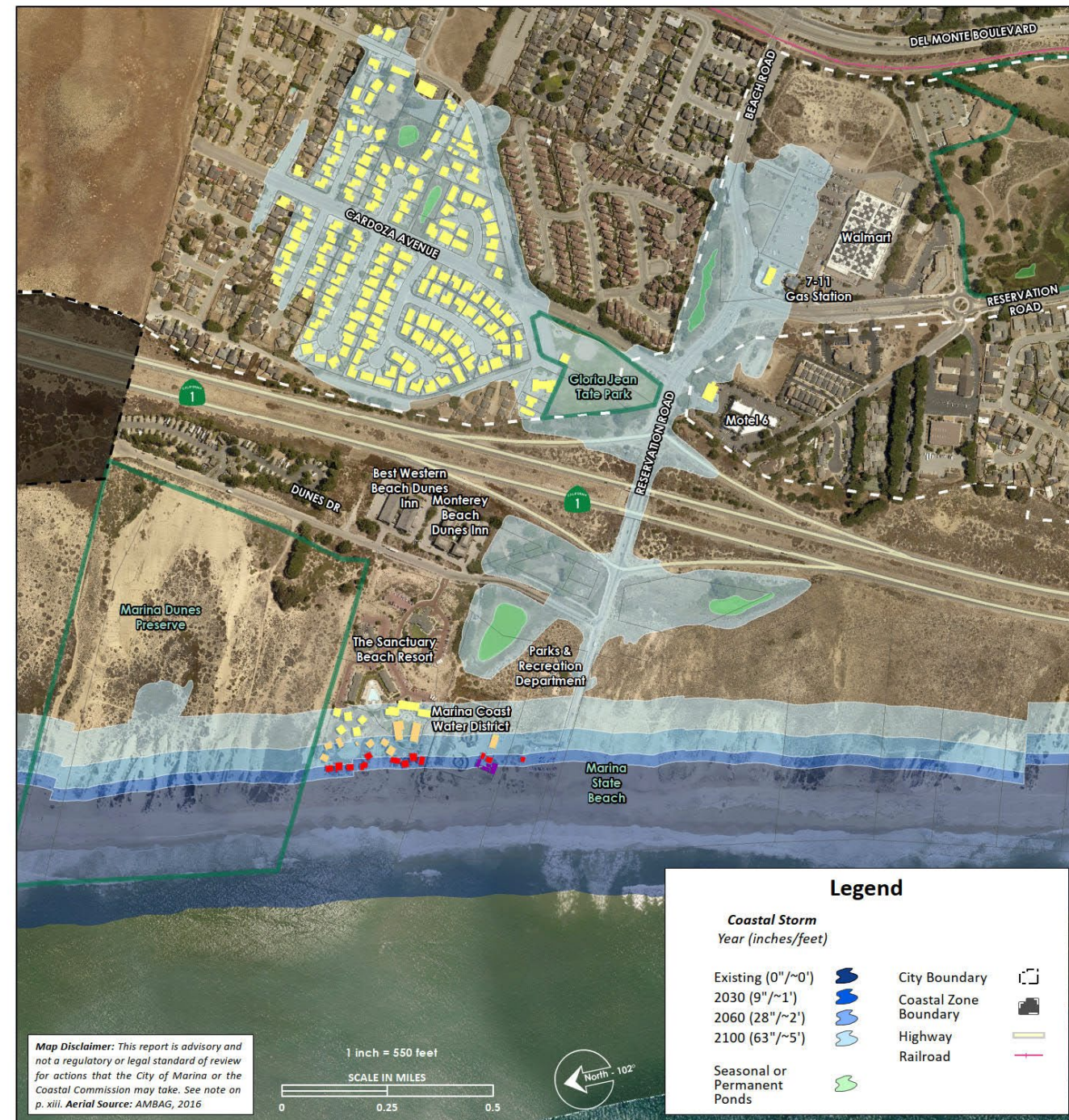


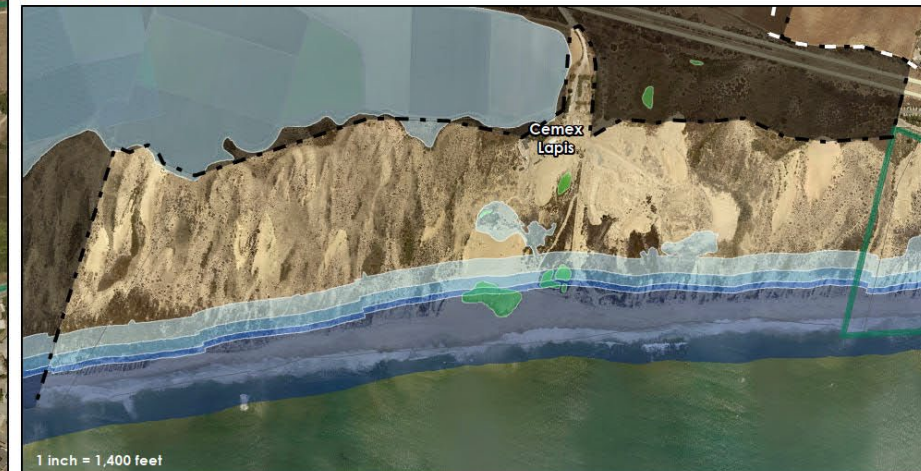
Figure 5-6. Central Marina Dune Erosion, Habitat

## 5.6 Coastal Flooding with 5 Feet of Sea Level Rise

### Central Marina - Coastal Storm



### North Marina



### South Marina

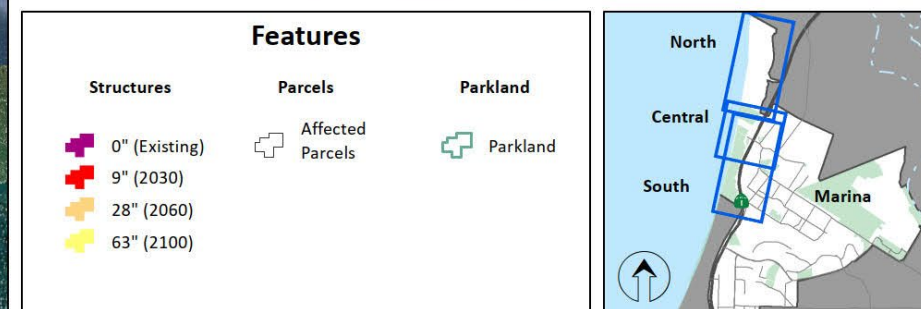
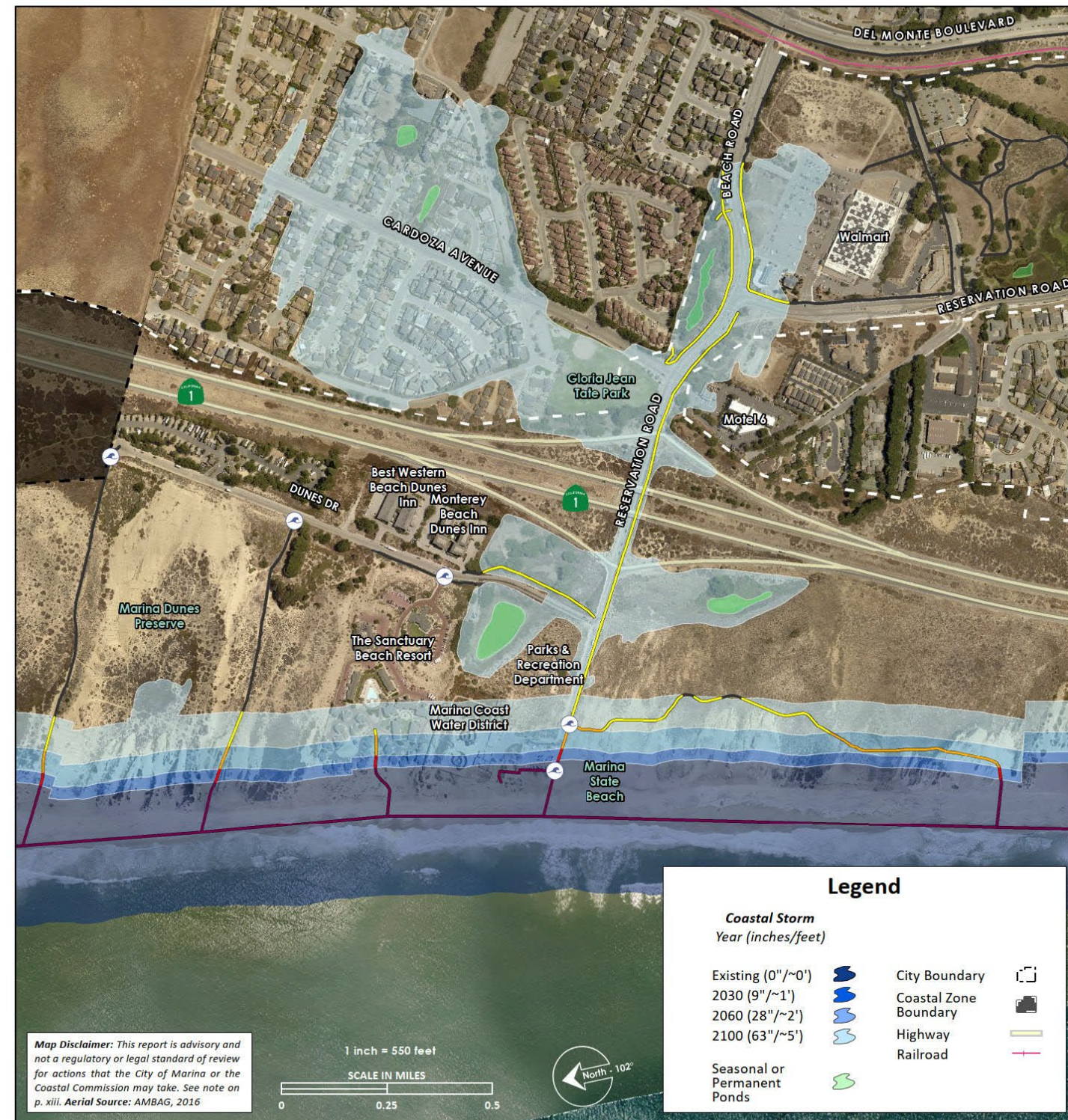
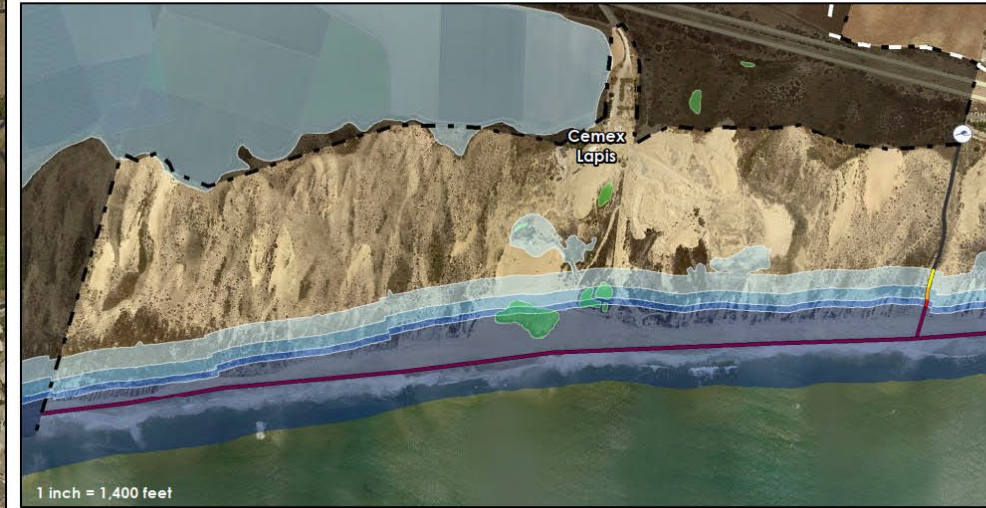


Figure 5-7. Central Marina Coastal Storm, Land Use, Structures, and Parkland

### Central Marina - Coastal Storm



### North Marina



### South Marina

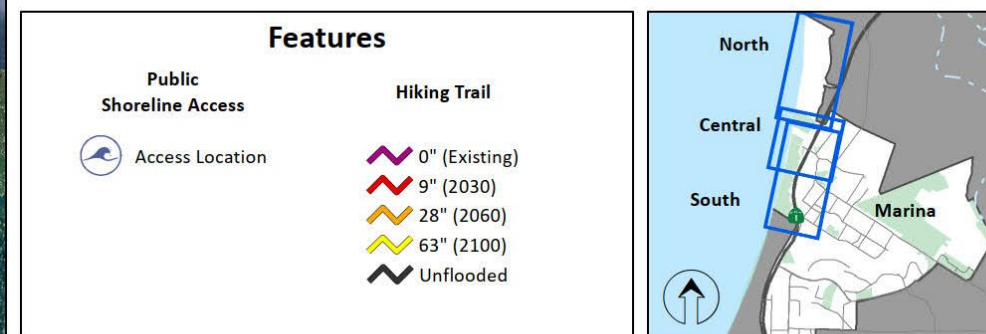


Figure 5-8. Central Marina Coastal Storm, Trails and Coastal Access

### Central Marina - Coastal Storm

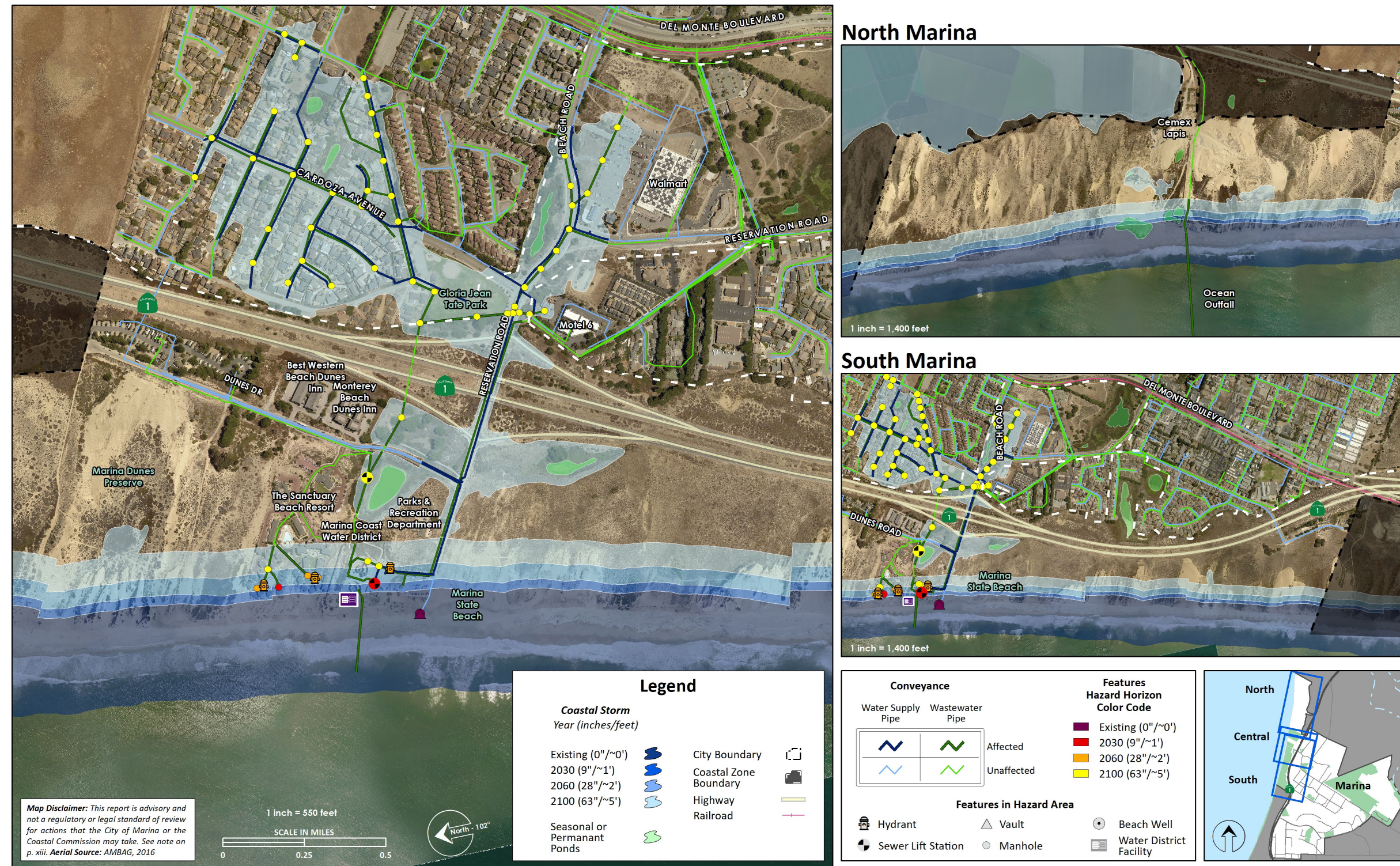
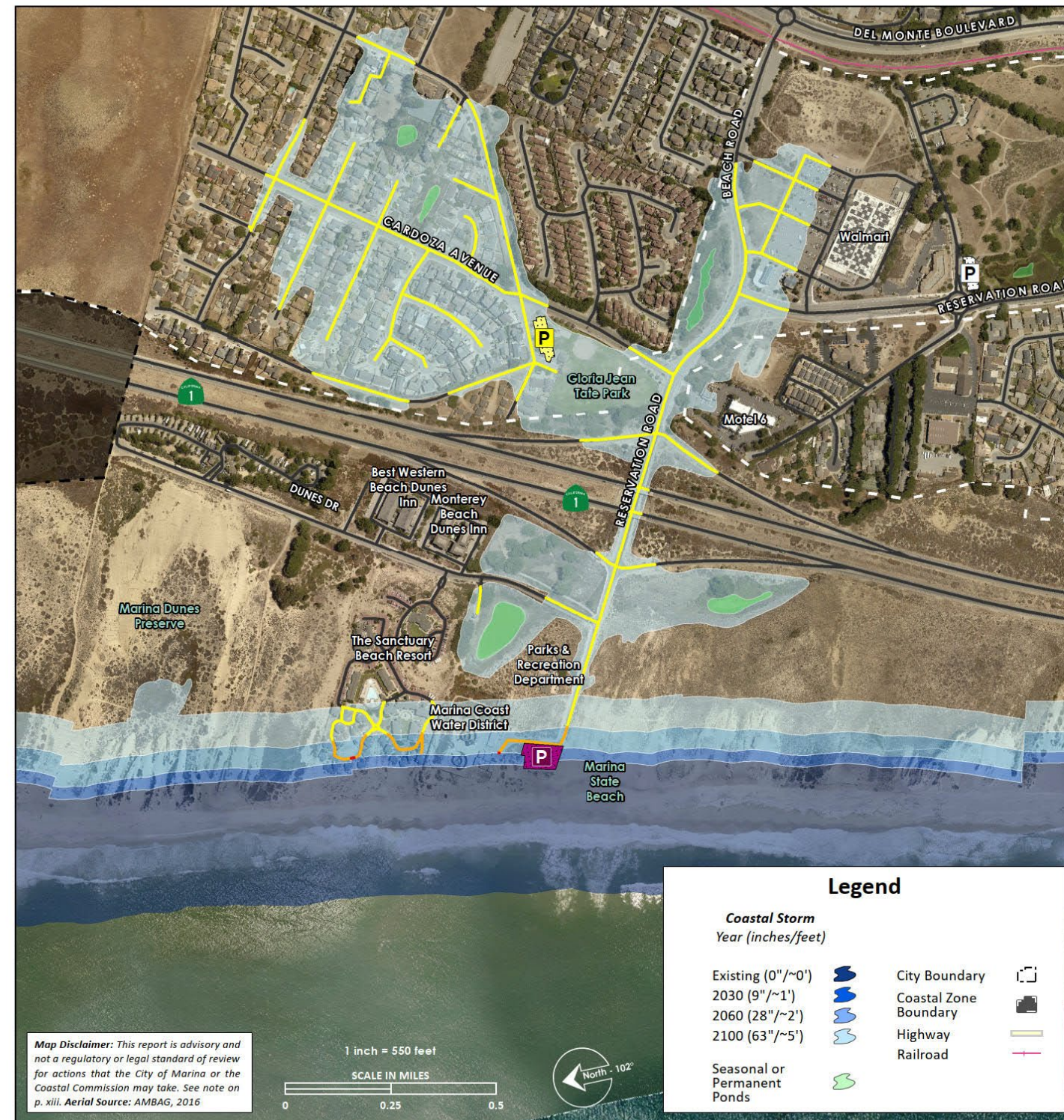
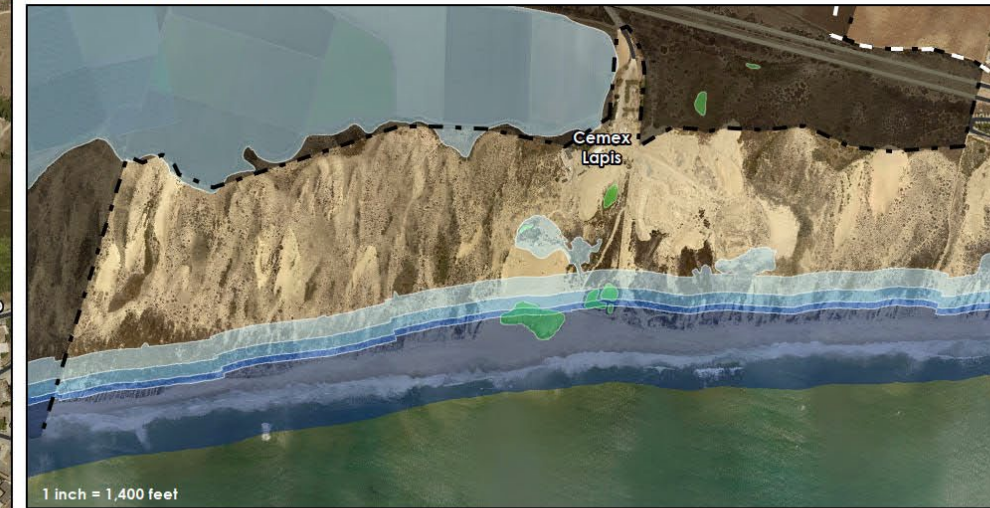


Figure 5-9. Central Marina Coastal Storm, Wastewater and Water Supply

### Central Marina - Coastal Storm



### North Marina



### South Marina

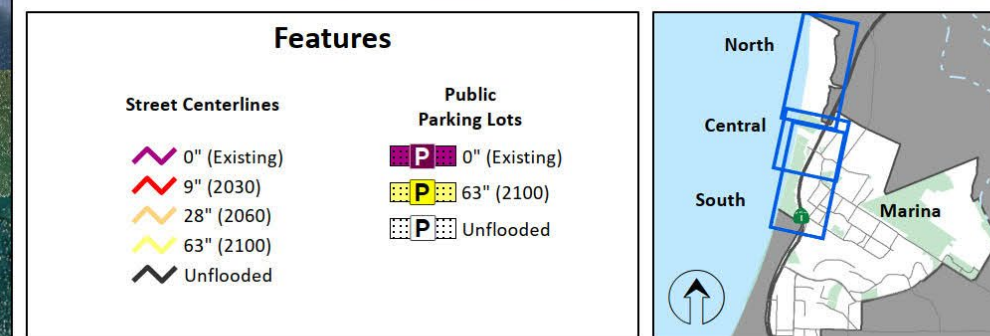
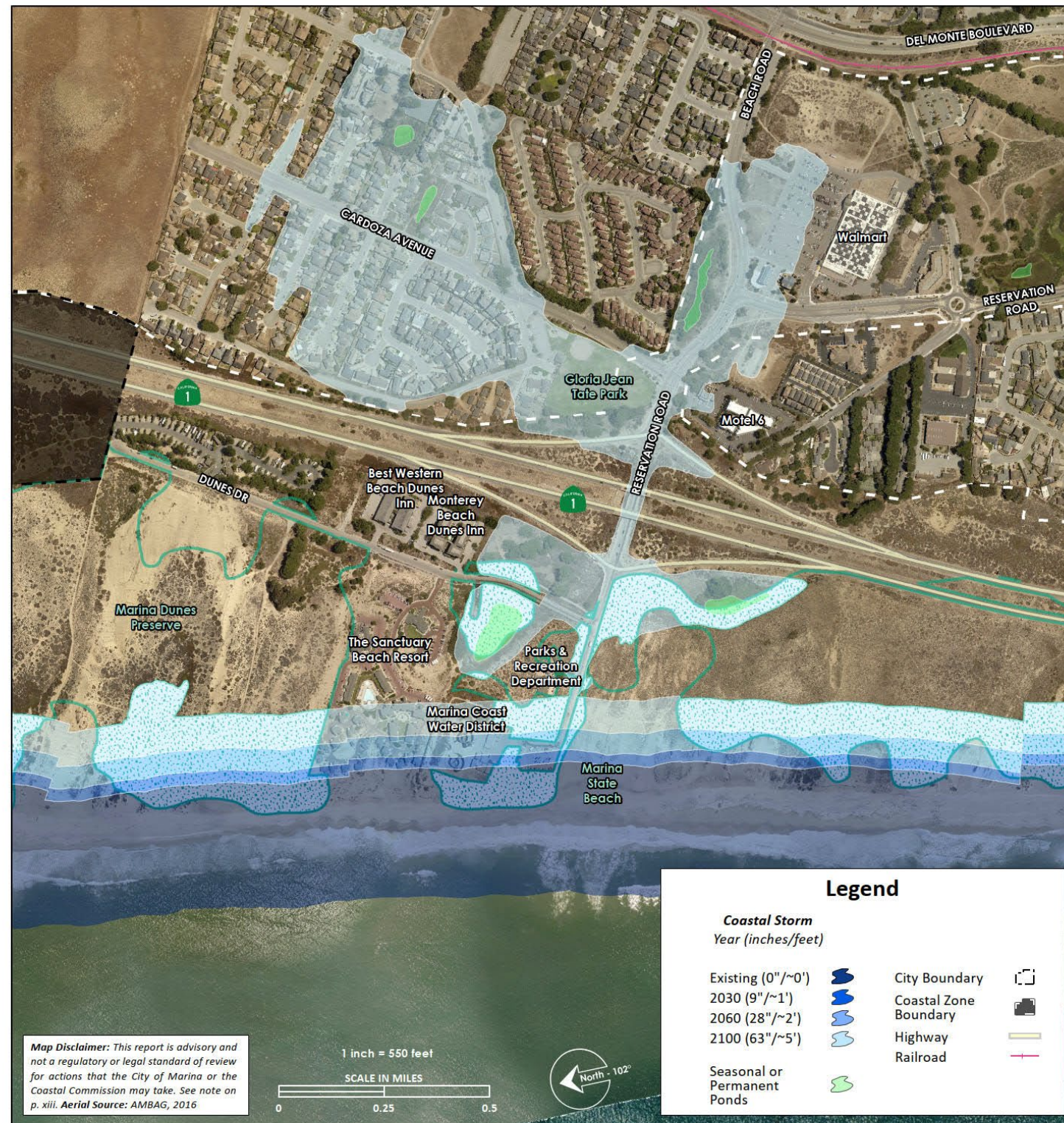
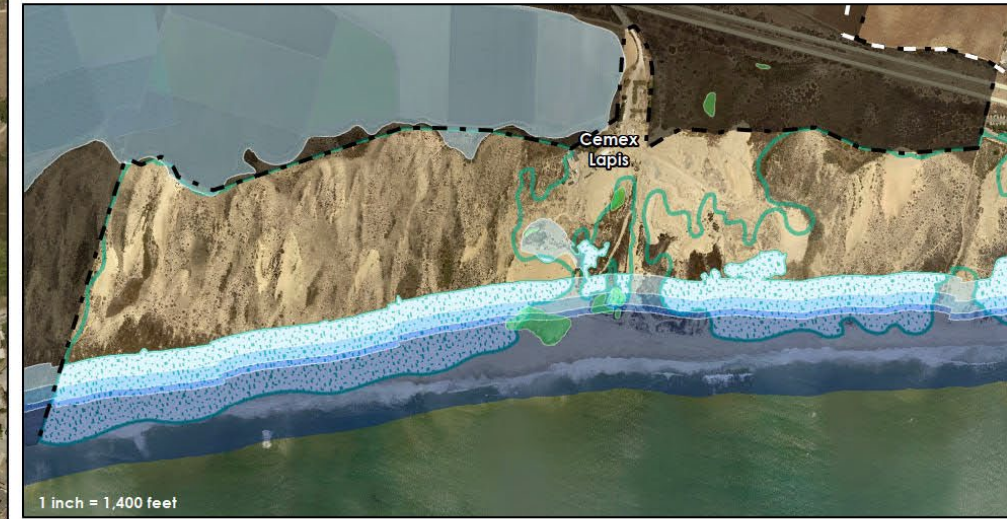


Figure 5-10. Central Marina Coastal Storm, Roads and Parking

### Central Marina - Coastal Storm



### North Marina



### South Marina

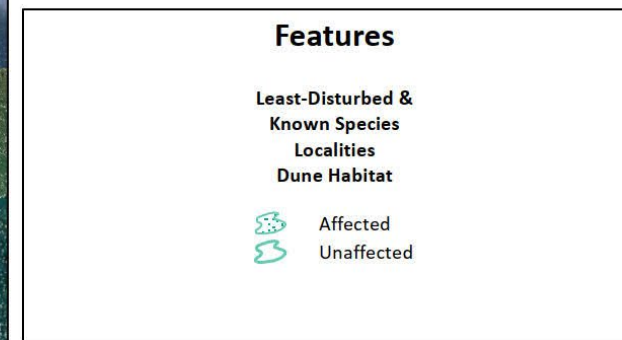


Figure 5-11. Central Marina Coastal Storm, Habitat

## COASTAL FLOODING WITH >5 FEET OF SEA LEVEL RISE

### Overview

This summary of impacts focuses on potential exposure of each of the potential sectors to coastal wave flood hazards that could be caused by a 1% annual chance storm wave event after ~5 feet of sea level rise and related coastal erosion of the dunes described in previous sector vulnerability results. Such a futuristic event may cause temporary flooding for ~2 hours during peak high tides with the main hydraulic connection from the ocean into the City along the Reservation Road underpass.

There is virtually no chance that any amount of sea level rise less than 5' would cause coastal wave flooding beyond what is discussed in the coastal erosion related impacts in the City of Marina. As such these results should be considered as a long term outlook to guide City wide adaptation policies and development standards. More details about the coastal wave flood modeling are found in Appendix A and summarized in Section 3.

### Land Use (Parcels/Buildings/Acres)

Land uses are categorized by: (1) residential, (2) commercial and mixed use, (3) open space, (4) mining, (5) institutional, (6) vacant, and (7) visitor serving.

#### Number of Parcels/Acreages/Number of Structures at Risk from Coastal Flooding with 5' of SLR

Residential	Commercial & Mixed Use	Open Space	Mining	Institutional	Vacant	Visitor Serving
196/25.3acres/152	3/2.9acres/1	0/12.7 acres/0	0/9.7 acres/0	2/2.4 acres/3	13/4.4 acres/0	1/0.6 acres/1

- **Residential** – Neighborhood of primarily single family homes off of Cardoza Ave. Residential parcels comprise approximately 44% of all parcels vulnerable to coastal flooding with >5 feet of sea level rise.
- **Visitor Serving** – The Denny's / Motel 6 Property.
- **Mining** – CEMEX Lapis Property
- **Open Space** – Gloria Jean Tate Park and various Percolation Ponds, Vernal Pools, and Permanent Ponds
- **Institutional** – Two places of worship and the Gloria Jean Tate Park comfort station

### Roads, Parking, Bike Routes

- Roads – 3.0 miles of road, primarily along Reservation Road
- Parking Lots – 1 lot of 0.3 acres at Gloria Jean Tate Park (assumes that the Marina State Beach lot had eroded)
- Bike Routes – 1.2 miles of bike route

### Trails and Beach Accesses

- Hiking Trails – 0.9 miles of walking trail and footpaths.

### Water Supply and Wastewater

- Pipes – 2.5 miles of water mains / 2.9 miles of wastewater gravity and force mains
- Hydrants – 21
- Sewer Pump Stations/ Manholes – 1/48
- Wells / Treatment facility – 0/0

### Beaches and Dunes

- Least Disturbed – 7.92 acres
- Potential and Known Rare Plant Species Location – 3.75 acres
- All Dune Habitats – 11.7 acres
- All Beach Habitats – variable depending on season

### Adaptation Strategies

#### Range of Strategies:

**Manage** - Transfer vulnerable development out of hazard zones, consider real estate disclosures, develop a policy to prioritize beaches and deny any shoreline protective devices.

**Accommodate** – Retrofit structures during major remodels to increase elevation. Amend City building code and zoning ordinance to increase base floor elevation and building heights to occur over time.

**Protect** – Implement an opportunistic sand use program, to augment sand supply, widen and increase the elevation of beach and dunes as “green” protection. Nourish beach with cobbles or cobble berms to provide more robust natural protection. Restore native dune vegetation. Consider a horizontal levee and additional elevation along Cardoza Ave to reduce flooding potential.

**Secondary Impacts:** Secondary impacts from “Green” protection through beach and dune sand nourishment will depend on the frequency and volume of sand placement. Over time, it should be anticipated that there will be an increasing expense associated with more frequent maintenance with higher levels of SLR. “Gray” techniques using revetments would provide protection, but would negatively impact beach and dune habitats, natural processes, recreation and coastal access.

### Potential Next Steps

#### Policy

- Allow increases to base floor elevation or movable foundation standards for new development.
- Develop real estate disclosure requirements to inform homebuyers of the risk of living adjacent to the coast.

#### Projects

- Develop an opportunistic sand use program
- Encourage dune restoration

#### Monitoring

- Monitor dune crest erosion as well as frequency, duration and depth of flood impacts.

### Summary of findings

Projections of coastal erosion associated with ~5 feet of sea level rise after a reduction of erosion rates from cessation of sand mining project coupled with a 1% annual chance wave event are projected to possibly cause temporary flooding impacts to all sectors during a high tide wave event. In addition to impacts from coastal erosion previously described, the coastal flooding impacts could potentially cause temporary flooding around high tide in the residential neighborhood near Cardoza Ave and along the Reservation Road Corridor up to the Walmart Parking lot.

# 6. Adaptation

## 6.1 Introduction

The City of Marina helped lead the United States in improving coastal resiliency to coastal hazards when it took a major leadership role in declaring that the last beach sand mine in the Country was accelerating coastal erosion and did not have a grandfathered right to be a public nuisance. As the sand mining stops in the near future, erosion rates will be reduced providing more time to adapt to sea level rise and coastal erosion hazards. However, this is the first focused endeavor by the City to identify possible responses to climate change impacts, including adaptation strategies and policy changes to improve preparedness, avoid hazards, and examine natural protection measures to reduce the risks projected to occur over time. This adaptation planning process represents the next opportunity for Marina to lead the state and the country on how to effectively adapt.

Marina must consider a range of options to adapt to the identified risks in its adaptation strategy toolbox. Keeping a range of options on the table helps to ensure that the City retains maximum flexibility in determining how best to carry out its long-term vision for the community. Adaptation strategies come in two primary forms, policy changes and specific projects. Considering a range of options is prudent as our understanding of climate science continues to improve in terms of both its predictive capabilities and its ability to identify the most probabilistic local scenarios. Adaptation strategies also span between a green and gray approach. A green approach utilizes more natural processes and landforms such as sand dunes, whereas a gray approach uses a more traditional engineering approach such as imported rock or concrete to build seawalls.

Adaptation to climate change involves a range of small and large adjustments to natural and/or human systems that occur in response to already experienced or anticipated climate change impacts. Adaptation planning involves a wide range of policy, programmatic, and project-level measures that can be implemented in advance of the potential impacts; or reactively, depending on the degree of preparedness and risk tolerance. The vulnerability assessment provides full disclosure and a scientifically based understanding of the City's specific risks, thresholds or projected timing of impacts, and physical processes responsible for causing the risk, now and in the future. Individual adaptation measures will take time to implement to go from planning through permitting and financing and so prioritized adaptation strategies should have triggers tied to easily measurable metrics that catalyze the next phase of adaptation planning before projected damages are realized. Effective adaptation planning should enhance community resilience to hazards and natural disasters.

Successful implementation of any adaptation strategy will require communicating the issues and proposed responses to the community. Community education and outreach will be important aspects of the adaptation planning effort. An informed community is also more likely to implement programs and make decisions that reflect its knowledge of the projected changes and enable the community to contribute to developing a prosperous and affordable City in the face of climate change.

Maladaptation, in contrast to adaptation, is a trait that is (or will become) more harmful than helpful. An example of maladaptation is the levee system for the City of New Orleans in Louisiana. While the levees

provided short-term adaptation and allowed communities to remain in areas below sea level, they actually increased the long-term vulnerability, both by providing a false sense of security and underestimating the impact that storm events could cause.

Ideally, this adaptation plan will lead to dedicated funding for implementation, and updates to the LCP that reflect a community vision based on updated climate science and an understanding of future risks. Ultimately this plan should protect the community, its economic drivers, and natural resources that continue to make Marina a desirable location to live, work, play, and visit.

## 6.2 Adaptation Planning

Adaptation planning requires considering the vision of the community, its tolerance for risk to each vulnerable sector and taking effective and timely action to alleviate the anticipated range of consequences. Successful adaptation requires the education of residents, homeowners, and business owners as well as a vision to identify the appropriate path forward. The adaptation pathway will not be a straight line, as different strategies will accommodate different elevations and rates of sea level rise. The vulnerability assessment identified **thresholds** of impacts when various sectors will be affected. The key vulnerabilities identified in the City of Marina include Marina State Beach, Marina Coast Water District, The Sanctuary Beach Resort, and ESHA associated with sandy dune and beach habitat.

While a selected adaptation measure may reduce the risk to one sector, it may cause issues in another sector or lead to unintended secondary consequences. The most important secondary consequence that the City must consider is the impact of the various strategies on the long-term health of the beaches. Erosion is a natural process that only becomes a hazard when development or infrastructure gets in the way. Erosion helps to supply sand to the coast and maintain beaches as long as there is adequate sand supply and no hardening of the backshore.

Marina has yet to permit any coastal armoring and as a result, Marina's beaches serve as a buffer that protects sensitive dunes and provide substantial recreational opportunities and revenues for the City as well as help to define community identity. Good adaptation planning must consider secondary impacts and how different adaptation measures used to alleviate a vulnerability in one sector interact with the other adaptive measures that may negatively affect other sectors in developing a sustainable community adaptation strategy. Marina currently has healthy beaches accessible year-round and based on past coastal management decisions and land use planning, has a chance to maintain beaches that could drive a thriving coastal eco-tourism economy into the future.

Good adaptation planning is also collaborative, considering interconnected ecological, social, political, and economic systems. Adjacent jurisdictions, including but not limited to Monterey County, City of Monterey, and other jurisdictions represented in AMBAG, the Central Coastal Climate Collaborative and inland jurisdictions whose land uses and flood control activities may reduce the supply of sand to the coast, particularly from the Salinas River, must all be engaged to achieve regional solutions. Overall, this planning process will leverage local resources and help avoid unintended secondary consequences to and from neighboring jurisdictions.

Risks can be addressed by reducing vulnerability or exposure. Historically, the City has been very proactive in planning development away from coastal hazards and thus has few vulnerabilities. To continue along this proactive trajectory, strategies that avoid hazards, improve habitats and

infrastructure resilience, and enhance shoreline management and sand supply while gradually relocating vulnerable developments can all help to accomplish adaptation objectives.

Fortunately for Marina, there is not a lot at risk and so it is possible to avoid major City expenses on adaptation.

## 6.3 Maladaptation

Maladaptation is a trait that is (or has become) more harmful than helpful, in contrast to adaptation, which is more helpful than harmful. One of the most significant concerns with maladaptation is that it reduces incentives to adapt while simultaneously diminishing the capacity to adapt in the future. Maladaptation occurs when efforts intended to protect communities and resources result in increased vulnerability, often realized indirectly or too late after a direction has been set. For instance, previously unaffected areas can become more prone to climate-induced hazards if the system that is being altered is not sufficiently understood. Likewise, if too much focus is placed on one time period—either the future or the present—effects on the other can be ignored, resulting in an increased likelihood of impacts from climate-induced hazards. Avoiding maladaptation is critical to a successful climate adaptation strategy. To do so, the City must first be able to make informed decisions based on an accurate vulnerability assessment, and to determine its own level of tolerance to risk and vulnerability. Flexibility and a precautionary approach are key to avoiding maladaptation in the adaptation planning process.

Adaptation measures that reduce the ability of people and communities to address and respond to climate change over time are called maladaptation. Maladaptation has several characteristics that help identify when it is occurring.

- May result in sustained or increased hazardous conditions
- May result in additional vulnerabilities, and loss of property and resources
- May create a more rigid system with a false sense of security and severe consequences
- May increase GHG emissions
- Reduces incentives to adapt.

One maladaptive strategy that Marina must address is the potential construction of shoreline protection devices, which over time will result in the loss of beaches, coastal access, and beach habitats. Specific risks and consequences of shoreline protective devices are described below in Section 6.6.

## 6.4 Challenges and Opportunities

Adaptation planning is a challenging undertaking and a single jurisdiction cannot adapt to climate changes on its own. A successful process requires regional dialogue and likely state and federal partnerships to identify, fund, and implement solutions. Challenges range from acquiring the necessary funding for adaptation strategies, communicating the need for adaptation to elected officials and staff, and gaining commitment and support from federal and state government agencies to address the realities of local adaptation challenges. Lack of resources from state and federal agencies make it difficult for cities to make significant gains in adaptation on their own due primarily to lack of funding. Regional partnerships and dialogue between adjacent jurisdictions, Santa Cruz and Monterey counties, and regional organizations such as AMBAG will be essential in developing and implementing sound regional adaptation strategies.

## 6.5 Protect, Accommodate, and Retreat

According to the CCC, sea level rise adaptation generally falls into five main categories: do nothing, protect, accommodate, retreat, or a hybrid approach. These approaches are described below.

### The Do Nothing Approach

Choosing to “do nothing” or following a policy of “non-intervention” or “wait and see” may be considered a form of adaptation. However, in most cases, the strategies for addressing sea level rise hazards will require proactive planning to balance protection of coastal resources with development. Fortunately in the City of Marina, the lack of a highly urbanized overdeveloped coastline allows for more do nothing approach and is more similar to a managed retreat strategy.

### The Protection Approach

Protection strategies employ some sort of engineered structure or other measure to protect existing development (or other resources) in its current location without changes to the development itself. Protection strategies can range from gray to green and include both “hard” and “soft” measures. A grey, hard approach is usually an engineered structure and can be located either alongshore such as a seawall, revetment, or offshore breakwater, or cross shore (i.e., shore-perpendicular) such as a groin, groin field, or jetty. Cross-shore structures tend to work better in more unidirectional longshore transport environments and are unlikely to be effective along the Marina shoreline where they would likely stabilize permanent rip currents and accelerate erosion in those locations (ESA PWA 2012).

Although the California Coastal Act provides for potential protection strategies for existing development (i.e., California Coastal Act Section 30235; CCA 1977), it also directs that new development be sited and designed not to require future protection that may alter a natural shoreline. Most protection strategies are costly to construct, require increasing maintenance costs, and have secondary consequences to recreation, habitat, and natural defenses. Many of the engineering or gray protection strategies are forms of maladaptation, especially if applied as a long-term solution.

A soft protection approach may be to nourish beaches, whereas a green, soft approach may be to restore sand dunes. Dune restoration is currently being tested at Salinas River State Beach as a form of adaptation (see Section 3.4). The Monterey OBNP,<sup>10</sup> with two proposed receiver sites along the Marina Shoreline, is another suitable green adaptation approach, which attempts to mimic natural sediment delivery processes and bolster sand supply in hot spot erosion locations

### Sediment Management

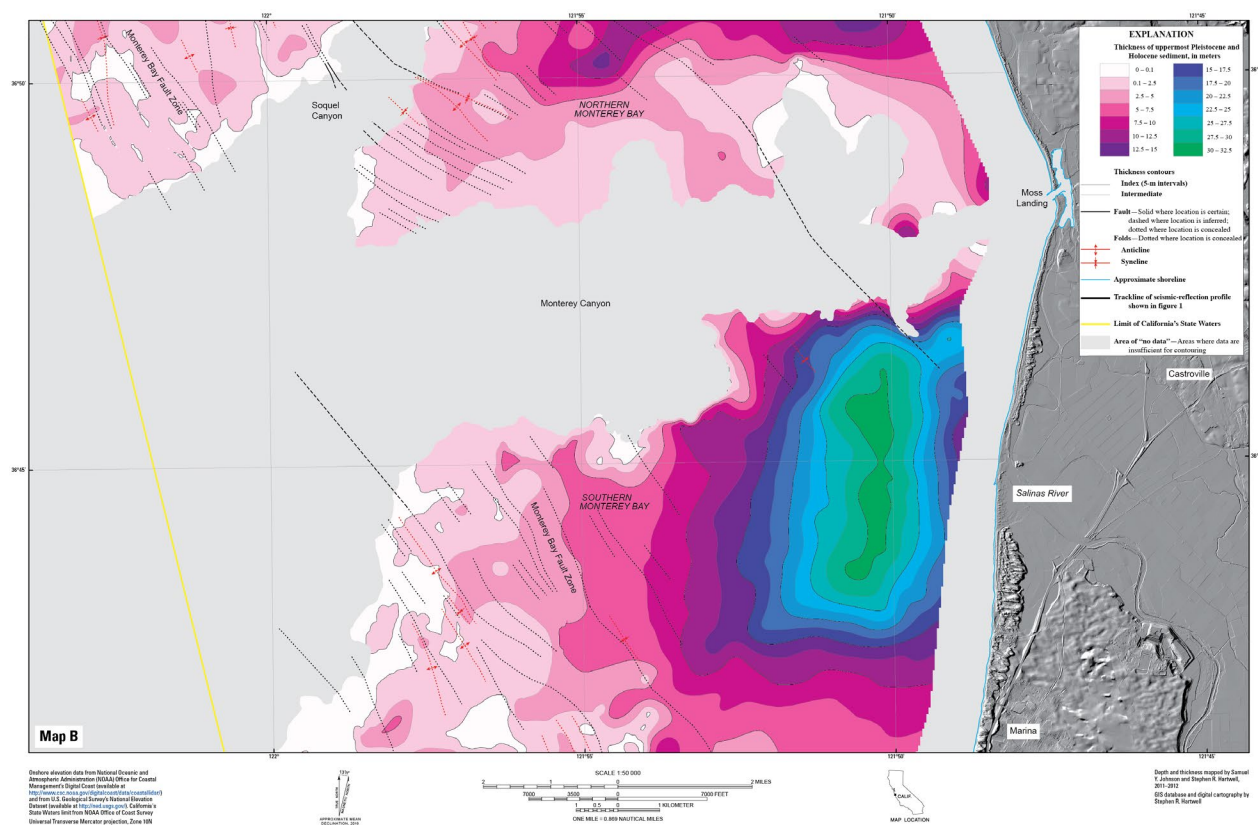
Sediment is nature’s adaptation resource. Beaches and dunes have long survived sea level rise without human interference. Sediment management is another option to combat erosion by building wider beaches and higher sand dunes that can take many forms. Large-scale beach nourishment, dredge disposal, and opportunistic beach nourishment are all possible sediment management strategies that mimic or enhance sand supply in a more natural protection approach. However, sediment management

---

<sup>10</sup> City of Monterey [https://files.monterey.org/Document%20Center/CommDev/Planning/Sea-Level-Rise-Adaptation/19\\_05xx\\_Beach-Nourishment-Initial-Study.pdf](https://files.monterey.org/Document%20Center/CommDev/Planning/Sea-Level-Rise-Adaptation/19_05xx_Beach-Nourishment-Initial-Study.pdf)

can be costly, requiring routine maintenance, and ongoing sand supplies for larger projects can become scarce over time. Impacts and effectiveness of sediment management scale with the volume of sand and the frequency and method with which sand is placed.

Large-scale beach nourishment, commonly practiced on the East Coast, dredges offshore sand deposits and place them on the beach enhancing recreation and natural defenses. While substantial sand deposits greater than 100 feet thick are available off of the Salinas River Delta (Figure 6-1), due to the lack of a suitable dredge with capacity to handle the large wave conditions on the U.S. West Coast, and extremely high mobilization costs make offshore sediment supply difficult and expensive to acquire. In addition, the Monterey Bay National Marine Sanctuary prohibits dredging and dredge disposal in its jurisdiction (below mean high water) making this infeasible from a regulatory standpoint at present. Changes to these rules must be approved by Congress. Currently, there are ongoing sanctuary discussions that are considering revisions to some of these rules to better support ecologically sensitive adaptation practices, but there has been no resolution as of the writing of this report.



**Figure 6-1. California Seafloor Mapping. Source: USGS California State Waters Map Series Data Catalog**

The applicability of dredge disposal for Marina is minimal. Efforts by the Monterey Harbor District may supply some limited sand into the overall system over time, although any immediate direct effects are unlikely to be observed in Marina.

A more probable and likely source of sediment is from opportunistic beach nourishments (see Section 3.4) associated with development projects, flood control maintenance projects, and other opportunistically acquired sources. Implementation of the regionally designed City of Monterey OBNP at the City level

should be a high priority, particularly with placement (or receiver) sites identified at Reservation Road and the existing CEMEX sand mine property.

## The Accommodation Approach

Accommodation strategies employ methods that modify existing areas or design new developments or infrastructure to decrease hazard risks and therefore increase the resiliency of development to the impacts of sea level rise. On a community scale, accommodation strategies include many of the land use designations, zoning ordinances, or other measures that require the above types of actions, as well as strategies such as clustering development, relaxing building height restrictions in less vulnerable areas, or requiring mitigation actions to provide for the protection of natural areas. On an individual project scale, these accommodation strategies include actions such as elevating structures, performing retrofits, or using materials to increase the strength of development such as to handle additional wave impacts, building structures that can easily be moved and relocated, or using additional setback distances to account for acceleration of erosion.

## The Retreat Approach

Retreat strategies prioritize proactive approaches to relocate or remove existing development out of hazard areas and limit the construction of new development in vulnerable areas. For example, at Marina State Beach, as the parking lot is threatened by erosion, it could be reconstructed on vacant land inland of the existing parking lot with construction phased based on the need. Other retreat strategies include creating land use designations and zoning ordinances that encourage building in less hazardous areas, or gradually removing and relocating existing development such as the CEMEX sand mine, or that promote conservation and passive recreation uses. Rezoning of potentially impacted properties currently zoned Coastal Conservation and Development could be better aligned with the existing General Plan<sup>11</sup> zoning by downzoning some oceanfront properties such as the existing CEMEX property to be Open Space and Passive Recreation. Acquisition and buy-out programs, transfer of development rights programs, and removal of structures are examples of strategies designed to encourage retreat.

## The Hybrid Approach

For purposes of implementing the California Coastal Act, no single category or even specific strategy should be considered the best option as a rule. Different types of strategies will be appropriate in different locations and for different hazard management and resource protection goals, and potentially different time horizons. The effectiveness of different adaptation strategies will vary across both spatial and temporal scales. In many cases, a hybrid approach that uses strategies from multiple categories will be necessary, and the suite of strategies chosen may need to change over time. Nonetheless, it is useful to think about the general categories of adaptation strategies to help frame the discussion around adaptation and the consideration of land use planning and regulatory options in the City.

---

<sup>11</sup> General Plan was adopted in 2000 and updated in 2010

## 6.6 Secondary Impacts

Almost all adaptation strategies have secondary impacts associated with them. Some of these impacts are associated with construction or escalating maintenance costs. Other impacts can degrade ecology or limit recreational opportunities. Finally, others can affect community aesthetics or property values. Often one of the most controversial impacts is associated with the long-term preservation of a beach, which often pits private and public interests against each other with strong overtures to social justice and community inequality.

Some of these are minor issues, such as short-term habitat impacts following removal of infrastructure or undergrounding of overhead power lines. Others can be quite confounding and expensive, such as the burial of beaches under rocks following construction of revetments, or a retrofit to a critical infrastructure component. Another example is the potential impacts to visual resources associated with accommodation strategies that elevate buildings or shoreline protection through increased height limits to protect against elevated levels of flooding.

Many communities have relied on setbacks in an effort to reduce hazard risk, and some are currently experimenting with establishing setback lines that are based on modeled predictions of where the new coastline will be in the future. Setbacks alone could be considered potentially maladaptive because they eventually lead to structures being at risk.

### Shoreline Protective Devices

Shoreline Protective Devices (e.g., seawalls, revetments, groins) can adversely affect a wide range of other coastal resources and uses that the California Coastal Act protects (California Coastal Act 1977). They often impede or degrade public access and recreation along the shoreline by occupying beach area or tidelands and by reducing shoreline sand supply.

Currently, there is no shoreline protection within the City; however, given that these shoreline protective devices are often placed under emergency response, they remain a threat to beaches in the City of Marina. Protecting the back of the beach through shoreline protective devices ultimately leads to the loss of the beach as sea level rise and coastal erosion continues adjacent to unarmored sections. Shoreline protective devices, therefore, raise serious concerns regarding consistency with the public access and recreation policies of the California Coastal Act. Such structures can also be placed in coastal waters or tidelands and harm marine resources and biological productivity, which is in conflict with California Coastal Act Sections 30230, 30231, and 30233. In addition, while California Coastal Act Section 30235 allows for shoreline protective devices in certain circumstances when designed to eliminate or mitigate adverse impacts on local shoreline sand supply, shoreline protective devices can degrade the scenic qualities of coastal areas and alter natural landforms, which may create conflicts with Section 30251. Finally, by halting or disrupting landscape connectivity, structures can prevent the inland migration of intertidal and beach species during large wave events. This disruption can prevent intertidal habitats, beaches, and other low-lying habitats from advancing landward as sea levels rise over the long term as well as stop wind-blown (aeolian) dune formation.



**Figure 6-2. The Former Officers Club at Stillwell Hall on Ford Ord. (A) Revetment reduced erosion but resulted in the loss of the beach (2002). (B). Following removal of the revetment and equilibrating erosion, the beach returned as the dune eroded (2005). Photos courtesy of the California Coastal Records Project**

Shoreline protection devices such as seawalls and revetments have several inevitable secondary impacts, such as the following:

### *Placement Loss*

Wherever a hard structure is built, there is a footprint of the structure (Figure 6-2 top). The footprint of this structure results in a loss of coastal area known as placement loss. This inevitable impact can bury the beach beneath the structure and reduce the usable beach for recreation or habitat purposes. For example, a 20-foot high revetment may cover up to 40 feet of dry sand beach. A vertical seawall or sheet pile groin typically has a smaller placement loss than a revetment or rubble mound groin.

## *Passive Erosion*

Wherever a hard structure is built along a shoreline undergoing long-term net erosion, the shoreline will eventually migrate landward to (and potentially beyond) the structure. The effect of this migration will be the gradual loss of beach in front of the seawall or revetment as the water deepens and the shoreface moves landward. While private structures may be temporarily saved, the public beach is lost. This process of passive erosion is a generally agreed-upon result of fixing the position of the shoreline on an otherwise eroding stretch of coast and is independent of the type of seawall constructed. Passive erosion will eventually destroy the recreational and habitat beach area unless this area is continually replenished. Excessive passive erosion may impact the beach profile such that shallow areas required to create breaking waves for surfing are lost (Figure 6-2). One of the best examples of these secondary impacts is illustrated by the example at Stillwell Hall on Fort Ord.

## *Limits on Beach Access*

Depending on the type of structure, impacts to beach access vary. Typically, vertical beach access (ability to get to the beach) can be impacted unless there are special features integrated into the engineering design of the individual structure; however, as passive erosion occurs (see above), lateral beach access is usually impacted.

## *Active Erosion*

Active erosion refers to the interrelationship between coastal structures and beach, whereby due to wave reflection, wave scouring, and enhanced “end effect” erosion and other coastal processes, the shoreline protection may actually increase the rate of loss of beach in front of the structure and escalate the erosion rate along adjacent unprotected sections of the coast. Active erosion is typically site-specific and dependent on sand input, wave climate, specific design characteristics, and other local factors.

## *Ecological Impacts*

Scientific studies have documented a loss of ecosystem services, loss of habitat, and reduction in biodiversity when seawall-impacted beaches were compared to natural beaches. Given the negative impacts of hard solutions, more attention is being focused on the implementation and resulting effectiveness of soft solutions. Soft options often include sediment management aspects such as sand dunes, cobble placement, and/or beach nourishment. Often maintenance costs can be higher than the hard solutions unless nearby sediment sources are abundant. Some soft options are considered “living shorelines” or natural infrastructure (e.g., dune restoration), as they restore or enhance existing habitat, and if done correctly, should be self-sustaining, meaning minimal maintenance costs. These “soft” or “green” solutions tend to mimic natural processes and can help lessen erosion and flooding while also providing habitat, water filtration, and recreational opportunities.

## **Sediment Management**

Secondary impacts from sediment management vary depending on the volume, frequency, and method of sediment placement, but typically result in substantially degraded sandy beach ecosystems, temporary changes to flooding, changes to surfing resources, and limited recreational use. In general, the bigger or more frequent the sand placements, the larger the impact to the sandy beach ecosystem and recreation.

The OBNP certified by the City of Monterey for the Southern Monterey Bay region addresses many of these secondary impacts through seasonal activity, placement locations, and volume restrictions (ESA 2019).

## Horizontal Levees

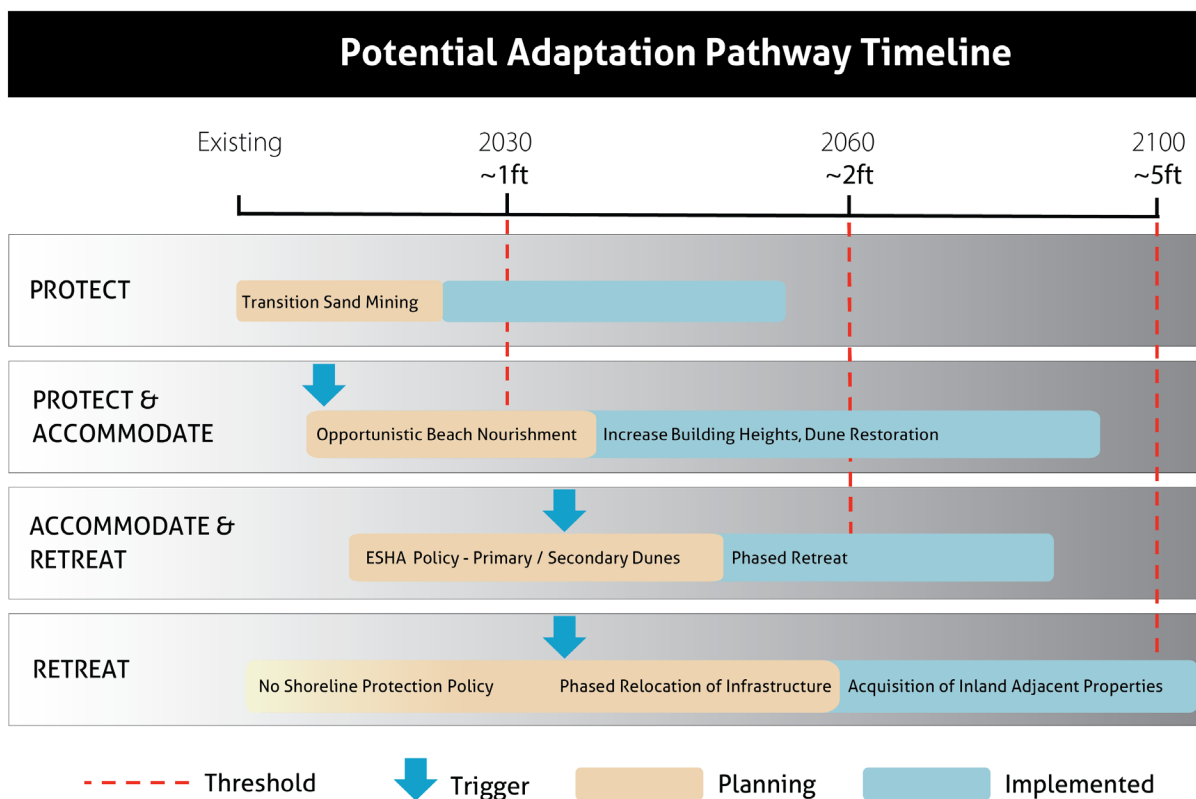
Horizontal levees are a form of natural green infrastructure that has been applied elsewhere, most notably in San Francisco Bay. The concept is usually part of a marsh restoration strategy in which the marsh slope is increased to provide higher elevations near the back of the marsh. This provides a natural levee while also providing marshes room to migrate vertically in elevation upslope. Secondary impacts could be related to costs or changing of existing habitat in exchange for future habitats.

## 6.7 Adaptation Strategies for Marina

Natural dune erosion from large storm waves is the primary hazard challenging the Marina shoreline. Dune erosion, however, is a natural process that creates and maintains beaches through time even in the face of sea level rise. Dune erosion, wide beaches, and development policies that have largely avoided hazards have proven effective. The imminent stopping of the CEMEX sand mine should also buy more time to adapt by reducing erosion rates. However, the goal of any adaptation policy or project in Marina should focus on reducing erosion rates, while allowing natural erosion and shoreline fluctuations to maintain beaches.

An overarching adaptation strategy in Marina will need ongoing community education and will need to take a variety of approaches that include both policy changes and adaptation projects. These approaches will evolve through time and likely range from enhancing natural protection strategies, accommodation, and retreat, as the sea level rise impacts exceed the various strategies' capacity to reduce the vulnerabilities of the most vulnerable sectors. Where most applicable, triggers that identify the need to catalyze further adaptation planning and implementation are identified below. Many of these will need to be revisited as the cessation of sand mining and as a reduction of erosion rates occur in the future.

Specific adaptation approaches were categorized into policies and projects (Figure 6-3). Triggers identified in the figures below are based on estimated lead times needed to catalyze planning for future adaptation measures.



**Figure 6-3. Example of a Potential Adaptation Pathway and Triggers for Sea Level Rise Accommodation**

## Policy Approaches

Potential adaptation strategies identified from professional experience were distilled into the following list largely based on informational community workshops on the vulnerability assessment, community online surveys, and discussions with the most affected stakeholders. A strong sentiment was expressed by the City Council and Planning Commission to avoid the use of any shoreline protective devices in the future.

First, completion of the sand mining remediation plan should be followed closely to ensure compliance with the mine closure and remediation plan as well as to engage with any prospective buyer of the property to encourage alignment with the City's vision.

Second, as part of adaptation education, a real estate disclosure for coastal hazards and sea level rise should be attached to any parcel identified within the coastal erosion hazard zone. Such a disclosure should acknowledge the risk, lay out additional technical studies required for proposed developments, accept liability for any future development or redevelopment, and inform the owner that the City may not always provide access to said parcels.

Third, a policy should be developed to clearly state that coastal armoring will not be permitted within the City of Marina, except in certain limited circumstances if overruled by the California Coastal Commission. This policy would protect beaches for perpetuity within the City and continue the coastal management leadership tradition that the City has championed with its role in terminating the sand mine.

Fourth, in order to support recreation, access and visitor-serving accommodations the City should consider means to allow for relocation or redevelopment of existing facilities and infrastructure away from coastal erosion areas without taking all development rights. The challenge arises that much of the coastal zone is designated as ESHA. Development of policies related to ESHA should support the relocation goals. One approach may be to do a site-specific mapping of ESHA for current conditions, and map ESHA habitats as a primary and secondary ESHA based on the health of the habitat, landscape connectivity, and the proximity to the beach. The land use plan currently identifies that the highest priority ESHA should be:

1. Habitat for all identified plant and animal species that are rare, endangered, or threatened, or are necessary for the survival of an endangered species.
2. Vernal ponds and their associated wetland vegetation. The Statewide Interpretive Guideline for Wetlands and Other Wet Environmentally Sensitive Habitat Areas (CCC 1981) contains technical criteria for establishing the inland boundary of wetland vegetation.
3. All native dune vegetation, where such vegetation is extensive enough to perform the special role of stabilizing Marina's natural sand dune formations.
4. Areas otherwise defined as secondary habitat that have an especially valuable role in an ecosystem for sensitive plant or animal life., as determined by a qualified biologist approved by the City [Resolution No. 2001-118 (October 16, 2001); approved by CCC November 14, 2001].

In addition, it is recommended that another primary ESHA criterion include a prioritization for habitat connectivity between the ocean, beach, and dune habitats. This landscape connectivity is critical for sensitive species to find refuge during storm events.

Secondary ESHA could be previously disturbed areas or infill fragmented habitats that are not widely connected to the dune system areas. The secondary habitat area will be presumed to include the following, subject to more precise determination upon individual site investigation:

1. The potential localities of rare and endangered plant and animal species.
2. Any area within 100 feet of the landward boundary of a wetland primary habitat area.

A policy of some limited development on secondary ESHA for relocation to maintain or protect primary ESHA habitat and balance all coastal resources should be considered.

Fifth, aligning related City plans is also an important adaptation step. The 2010 City update to the General Plan changed the zoning of the CEMEX property. The current zoning is Coastal Conservation and Development, while the current General Plan land use designation is Habitat Reserve. A rezoning of this property to Open Space to align the zoning with the General Plan and policies in the General Plan should be pursued. The City's Capital Improvement Plan should also be updated to consider specific dune erosion impacts and measures to avoid hazard exposure.

Sixth, the City could update its Local Hazard Mitigation Plan with identified adaptation strategies, which would allow for federal FEMA dollars to be used for adaptation planning.

Finally, regional collaboration with partners across Southern Monterey Bay, in particular State Parks and the Marina Coast Water District, who are all engaged in various planning efforts that the City should participate in to ensure that any impacts to sediment supply or facility upgrades consider sea level rise

and the City's beaches. Specifically, the City should closely participate in the Marina State Beach Master Plan update, as well as the MCWD Water, Sewer and Recycled Water Master Plans.

## Project Approaches

The two prioritized adaptation projects aim at increasing sand supply and stabilizing sand dunes with the intent of reducing dune erosion rates.

First, an opportunistic beach nourishment program that allows for the placement of beach and dune-compatible sands on City beaches should be considered (see Section 3-4). The City of Monterey on behalf of the coastal communities in the Southern Monterey Bay littoral cell has developed an opportunistic sand use program. The program is intended to streamline the placement of clean, beach-compatible sediments from upland sources (e.g., construction projects, flood control) on the beaches of southern Monterey Bay at designated locations to reduce potential erosion impacts, improve coastal resiliency, and maintain dune and beach habitats. The proposed receiver sites in the City of Marina are located at the end of Reservation Road and at the CEMEX property. The City should consider the adoption of the program and associated environmental documents.

To implement the OBNP in Marina, the City would have to review the OBNP documents,<sup>11</sup> and make any amendments if so desired to address any local City concerns to the regional program. The next step would then be for the City to certify the programmatic CEQA document, and then file a notice of determination for 30 days to County and State Clearinghouses. The City of Monterey has already completed staff reports and presentations related to its adoption of the OBNP that could be revised and repurposed. The benefits would be for the most vulnerable sectors and land uses identified in the vulnerability assessment and to buy time while other more challenging adaptation strategies such as relocation are pursued.

Second, dune restoration takes many forms but is focused on improving the native dune vegetation as well as providing vegetation stabilization of the dune both of these efforts increase the resilience of the dunes to erosion and reduce the overall rate of erosion and should be a high priority. As dune restoration projects are planned and implemented, thought should be given to possible relocation sites to avoid restoring an area that may be needed in the near future to maintain the ocean, beach, and dune ESHA connectivity. Some examples of this are described in further detail below as applied to the specific managers of the most vulnerable sectors.

## 6.8 Potential Adaptation Approaches for the Identified Vulnerabilities

### State Parks

Marina State Beach faces dune erosion and stormwater-induced erosion to the parking lot and is projected to be substantially eroded in the future (Figure 6-4). Discussions with State Parks identified likely approaches to be pursued. State Parks has a general policy not armor the coast, and there is no intent to pursue that action. The implementation of any of the potential strategies would be laid out in an updated Parks Master Plan. The City should follow that process and provide comments and feedback to ensure consistency with City priorities.



**Figure 6-4. Parking Lot Erosion at Marina State Beach (July 2019)**

### *Near Term*

- Address erosion caused by stormwater runoff and sand clogging of the storm drains
- Control public access near erosion hot spots and prioritize area for restoration
- Implement opportunistic beach nourishments at erosion hot spots following large erosion events.

### *Medium Term*

- Identify an alternative location to relocate the restroom and parking lot with the most promising location near the old restroom location and the State Parks storage facility closer to Highway 101
- Focus dune restoration efforts away from potential alternative locations.

**Possible triggers**—frequency of overtopping onto parking lot, erosion of dune crest to within 5 feet of the parking lot. The distance between the dune crest and the parking lot was identified as a low-cost monitoring approach that could be integrated into existing staff assignments. Monitoring would occur periodically and particularly following any major erosion event.

## Marina Coast Water District

The MCWD facility is a former wastewater treatment plant that was decommissioned in the 1990s when the M1 Water regional wastewater treatment plant was opened. Currently, there are two tanks for which there is no remediation or removal plan. In addition, the facility was a former desalination test location and currently has an inactive capped well that is located under the beach and rarely exposed. The permit status with the CSLC was unknown at time of discussion with current MCWD staff in July 2019. Access to the facility is through Marina State Beach parking lot and so coordination with State Parks, the City, and MCWD was identified as an important step in adaptation to future erosion hazards. The buildings that are identified as vulnerable are used primarily as district offices and conference rooms. Another MCWD facility is located nearby in Fort Ord.

### Near Term

- Identify the foundations of the district buildings
- Begin monitoring dune crest to building foundation distance
- Implement opportunistic beach nourishments at erosion hot spots following large erosion events
- Identify a phased retreat and relocation of offices to other MCWD properties
- MCWD is currently working on several plans related to water supply, sewer and recycled water master plans for the district. The City and MCWD should coordinate closely to ensure that sea level rise is factored into these planning documents.

### Medium Term

- Regional coordination key with State Parks and the City to identify needs, alternate locations and adaptation strategies

**Possible triggers**—erosion of dune crest to within a certain distance of the buildings. The distance between the dune crest and the parking lot was identified as a low-cost monitoring approach that could be integrated into existing staff assignments. Monitoring would occur periodically and particularly following any major erosion event.

## Sanctuary Beach Resort

The Sanctuary Beach resort, built in 1999, was identified as having structures vulnerable to coastal erosion with a small amount of sea level rise. The resort has multiple owners with timeshare owners (Wyndham) set farther back than resort hotel guests that front the ocean and are thus anticipated to be affected sooner. The oceanfront rooms generate the most revenue. The original permits required some dune habitat conservation and allowed for additional development in some of the infill locations. Room renovations occur on a 5–7 year timeline.

A topic of discussion with the management of the Sanctuary Beach resort in 2019 was the possible relocation of future approved developments to areas outside of the projected hazard zones, perhaps with a change in building heights to allow for similar occupancy in fewer buildings. Potential locations discussed included areas that required dune habitat conservation that are effectively fragmented habitats in the resort. Additional discussions were had about the concept of primary and secondary ESHA with the highest value habitat and priority maintaining the ocean, beach, and dune connectivity. The City encourages the Sanctuary Beach Resort participation in the LCP update and sea level rise planning process.

## Monterey Regional Parks District

The Monterey Regional Parks District manages the Monterey Dunes Preserve, which contains some passive recreational hiking trails and substantial acres of ESHA. The Parks District, which manages the dunes preserve, has no current adaptation plan and no infrastructure at risk. It is most likely that a no-action approach would be taken allowing natural physical processes to erode and rebuild the dunes. It is possible that at some point in the future, the Parks District may consider implementing the OBNP if erosion hot spots were to develop. The City encourages the Parks District participation in the LCP update and sea level rise planning process.

## 6.9 Possible Funding Mechanisms

As part of the next steps, the City should identify, evaluate, and pursue all feasible potential sources of revenue for funding the City's shoreline management policies.

Adaptation to sea level rise may require substantial community investment, long term financing plan and diversified approach to begin generating revenues to cover the costs of adaptation strategy implementation. While very few funding sources are specifically focused on sea level rise adaptation, the reduction of risk is a high priority for many funding opportunities. The financing plan should be planned in advance and include identification of milestones and priorities/criteria to support the decision-making process for expenditures. Potential sources of funding that could be explored may include, without limitation:

- FEMA Hazard Mitigation Assistance Programs to support community resiliency
- FEMA Pre-Disaster Mitigation Grant Program
- Regional Sediment Management and opportunistic sand funding sources
- Government grants (e.g., Federal Land and Water Conservation Fund, USACE, SCC, State Tidelands Oil Revenue Fund, Santa Barbara and Ventura Harbor mitigation funds, State Parks Bond, Open Space Bond Act, Park Land Bond Act)
- Bond financing
- Parking revenues, beach fees, etc.
- Two percent of the existing, and any dedicated increases in, the transient occupancy tax, sales tax, or other dedicated taxes
- Environmental mitigation fees (paid by third parties such as the California Department of Transportation, port districts, utility companies, developers)
- Funds from other parties responsible for loss of sand on the beach utilizing assessment districts or other equitable funding mechanisms.

The City may also consider establishing an "adaptation account," which will serve as the primary account where all funds generated pursuant for future resiliency-building programs will be held. The City should invest the Adaptation Account funds prudently and expend them for purposes outlined in the Resiliency Plan including, without limitation:

- Sand replenishment and projects
- Updating the mean high tide line survey
- Preparation of shoreline surveys and monitoring programs
- Opportunistic beach nourishment programs
- Public recreation improvements
- Repair and replacement of beach access infrastructure
- Insurance premiums.

The City may use the funds in the adaptation account, subject to the restrictions of any terms of the funding sources, to pay for projects such as beach sand replenishment, public recreation and public beach access

improvement projects, feasibility and impact studies, operating expenses, insurance, and litigation; and to pay to conduct surveys and monitoring programs. Some potential resiliency building programs and funding mechanisms that can be further explored are described below.

## Infrastructure Financing Districts

California passed a bill in September 2014 allowing cities and other entities to create enhanced infrastructure financing districts. This allows incremental property tax revenues to be devoted to a specified purpose such as a fund for cleanup, infrastructure, parks and open space, transportation, or other things that could be applied to a variety of adaptation approaches. With the passage of Assembly Bill 313 and Senate Bill 628, the requirements for establishing these districts have been streamlined. The intent of these bills was to fill the local funding void left by the dissolution of the redevelopment agencies. Basically, the City establishes an Economic Infrastructure Financing District, develops a business plan with priority projects (e.g., infrastructure, adaptation), and then can draw funds from changes in local tax revenues occurring as part of a redevelopment or rezone or apply for grant funds.<sup>12</sup>

## Dedicated Sales or Transient Occupancy Tax Increase

**Transient Occupancy Tax Increase**—Occupancy tax from hotel stays and short-term vacation rentals already provides a source of General Fund revenues for the City. A dedicated increase in transient occupancy tax (e.g., 2 percent for sand) could be reserved for specifically for adaptation approaches that maintain the City's beaches and open spaces.

**Sales Tax Increase**—The City of Del Mar (San Diego County) recently instituted a 1 percent sales tax increase that is used as a dedicated source of funding for coastal resiliency building. Marina may consider this approach or coordinate on a County-wide approach such as a quality of life initiative to generate local revenues to be used to finance long-term coastal resiliency strategies.

## Hazard Mitigation and Pre-disaster Assistance

There is an overlap between local coastal planning and local hazard mitigation planning as both address a potential range of hazards in a given City. The California Office of Emergency Services' Hazard Mitigation Planning Division and FEMA's Hazard Mitigation Assistance grant programs provide significant opportunities to adapt by reducing or eliminating potential losses to the City's assets through hazard mitigation planning and project grant funding. Much of the funding of specific projects must be tied to an approved Local Hazard Mitigation Plan. An update to this plan could add sea level rise and climate change-related hazards in order to make adaptation projects eligible for federal funding. Currently, the California Office of Emergency Services and FEMA have three grant programs: Hazard Mitigation Grant Program, Pre-disaster Mitigation, and Flood Mitigation Assistance. The total value in each of the grants varies annually based on federal funding authorization, but typically each is in the tens to hundreds of million dollars.

---

<sup>12</sup> For more information on Enhanced Infrastructure Financing Districts, see <http://www.eifdistricts.com/>.

## Impact Mitigation Fees or In Lieu Fees—Sand Mitigation and Public Recreational Impact Fees

Impact mitigation or in lieu fees are another way to generate monies for adaptation measure implementation. Certain structured fees could be established to generate revenues for: **1)** covering the necessary planning of, technical studies for, design of, and implementation of adaptation strategies, or **2)** developing an emergency cleanup fund to be able to respond quickly and opportunistically following disasters. Disasters, through a different lens, are opportunities to implement changes.

There are currently two structured fees that the CCC uses to address the impacts of shoreline protection—sand mitigation fees and a public recreation fee. The sand mitigation fee is a fee intended to mitigate for the loss of sand supply and loss of recreational beaches in front of structures. The public recreation fee addresses impacts to the loss of public recreation based upon the loss of beach area physically occupied by the coastal structure. An additional fee for ecosystem damages is under consideration by the CCC which could assess a fee based on the cost of restoration or replacement value of the damaged habitat. While multiple jurisdictions have developed these types of in lieu fees associated with permits for shoreline protective devices, the limited development potential and proposed City policy approach of avoiding shoreline protective devices may limit the ability to derive substantial revenues to the City.

**Sand Mitigation Fee**—Such a fee would mitigate for actual loss of beach-quality sand that would otherwise have been deposited on the beach. For all development affecting sand supply, a sand mitigation fee could be collected by the City to be used for sediment management purposes. The mitigation fee could be deposited in an interest-bearing account designated by the City Manager in lieu of providing sand directly to replace the sand that would be lost due to the impacts of any proposed protective structure. Consideration of sand volumes lost over time should factor into whether actual sand placement is preferred or whether the volume/dollar should be retained until a substantial volume can be contributed. The methodology used to determine the appropriate mitigation fee has been approved by the CCC. The funds should be used solely to implement projects which provide sand to the City’s beaches, not to fund other public operations, maintenance, or planning studies.

**Public Recreation Fee**—Similar to the methodology established by the CCC for the sand mitigation fee, the CCC is in the process of developing a methodology for calculating a statewide public recreation fee. Until such time as an approved methodology for determining this fee has been established, and the methodology and payment program has been incorporated into the LCP through an LCP amendment, the City could collect a \$1,000 per linear foot interim fee deposit. In the interim period, CCC will evaluate each project on a site-specific basis to determine impacts to public access and recreation, and additional mitigation may be required.

Public recreation fees must be expended for public access and public recreation improvements as a first priority and for sand replenishment as secondary priorities where an analysis done by the City determines that there are no near-term, priority public recreation or public access projects.

## California Infrastructure and Economic Development Bank

The California Infrastructure and Economic Development Bank was created in 1994 to finance public infrastructure and private development that promote a healthy climate for jobs, contribute to a strong economy, and improve the quality of life in California communities. The bank has broad authority to issue tax-exempt and taxable revenue bonds, provide financing to public agencies, provide credit

enhancements, acquire or lease facilities, and leverage state and federal funds. The bank's current programs include the Infrastructure State Revolving Fund Loan Program, California Lending for Energy and Environmental Needs Center, Small Business Finance Center, and the Bond Financing Program.<sup>13</sup>

## Green Bonds

Bonds are debt instruments that allow governments and other entities to borrow money from investors and repay that investment over a certain time at a certain rate. Government bonds often remain tax exempt, meaning the interest that investors earn is tax exempt. Bonds are a very traditional and familiar platform for financing public infrastructure and government programs, and recently the market has developed “green” bonds to finance green adaptation infrastructure.

## California Department of Fish and Wildlife—2019 Proposition 1 and Proposition 68 Grant Opportunities

The California Department of Fish and Wildlife has announced funding opportunities for multi-benefit ecosystem restoration and protection projects under both Proposition 1 (Water Quality, Supply, and Infrastructure Improvement Act of 2014) and Proposition 68 (California Drought, Water, Parks, Climate, Coastal Protection, and Outdoor Access for All Act of 2018). This grant funding opportunity makes available funds for public agencies for planning activities that lead to specific on-the-ground implementation projects, funds for implementation activities (e.g., construction and monitoring) of restoration and enhancement projects, and funds for acquisition or purchases of interests in land or water. These funds could easily support City adaptation approaches of dune restoration, purchase of open space, and or coastal trail planning.

## Cultural, Community and Natural Resources Grant Program—Proposition 68

Following passage of the California Drought, Water, Parks, Climate, Coastal Protection, and Outdoor Access for All Act of 2018 (Proposition 68), \$40 million has been appropriated to the California Natural Resources Agency for competitive grant funds that protect, restore, and enhance California's cultural, community, and natural resources. Funding under this program is available to local agencies and other eligible applicants for projects qualifying under a number of categories including resource protection, enhancement of park, water, and natural resources, and improvement of community and cultural venues or visitor centers.

## California Department of Transportation Adaptation Planning Grant Program

As part of production of this Report, the City received adaptation planning grant funds from Caltrans under their Transportation Planning Grant Program for FY 2018-2019. Caltrans has recently announced another \$6 million is available for eligible climate change adaptation planning for FY 2019-2020. Further

---

<sup>13</sup> For more information on the California Infrastructure and Economic Development Bank, see <http://www.ibank.ca.gov/>.

---

grant funding through the Caltrans Transportation Adaptation Planning Grant Program is available for projects or programs relating to:

- Climate vulnerability assessments
- Extreme weather event evacuation planning
- Resilience planning
- Transportation infrastructure adaptation plans
- Natural and green infrastructure planning
- Integration of transportation planning considerations into existing plans
- Evaluation of or planning for other adaptation strategies
- Development of educational resources, trainings, and workshops for local jurisdictions and transportation service providers.

---

# 7. Preparers

---

This report was prepared by the following individuals and in honor of Polaris Kinison Brown:

## **Integral Consulting Inc. (formerly Revell Coastal)**

- David L. Revell, Ph.D., Project Director
- Matt Jamieson, MFA, Project Manager

## **City of Marina**

- Guido Persicone, AICP, Community Development Director
- Alyson Hunter, AICP, Planning Services Manager
- Christine Hopper, (former) Planning Services Manager
- Alec Barton, AICP (former) Assistant Planner

## **EMC Planning Group**

- In memoriam Polaris Kinison Brown, MS, Principal Planner
- Anastazia Aziz, AICP, Principal
- Esme Wahl, Associate Planner
- Michael Groves, AICP, Senior Principal

# 8. References

Bromirski, P.D., A.J. Miller, R.E. Flick, and G. Auad 2011. Dynamical suppression of sea level rise along the Pacific coast of North America: Indications for imminent acceleration. *Journal of Geophysical Research*, 116:C07005, doi:10.1029/2010JC006759, 2011

California Coastal Act. 1977. <https://www.coastal.ca.gov/coactact.pdf>

California National Research Agency. 2018. Safeguarding California Plan: 2018 Update. Available: <http://resources.ca.gov/docs/climate/safeguarding/update2018/safeguarding-california-plan-2018-update.pdf>

California Office of Environmental Health Hazard Assessment. 2013. Indicators of Climate Change in California. Available: <http://oehha.ca.gov/multimedia/epic/pdf/ClimateChangeIndicatorsReport2013.pdf>

Cayan et al. 2016. Probabilistic Scenarios of Sea Level Rise along the California Coast: A product of the California 4<sup>th</sup> Climate Assessment.

CCC. 1981. Statewide Interpretive Guideline for Wetlands and Other Wet Environmentally Sensitive Habitat Areas. California Coastal Commission. February 14.

CCC. 2015. Final Sea Level Rise Policy Guidance. San Francisco, CA. Adopted August 12, 2015. California Coastal Commission. Available: <http://www.coastal.ca.gov/climate/slrguidance.html>

CCC. 2017. Staff report on the Settlement Agreement of the CEMEX Sand Mine. CCC-17-CD-02. California Coastal Commission. July 13.

CCC. 2018. Updated Sea Level Rise Policy Guidance; Science Update. San Francisco, CA. Adopted November 7, 2018. California Coastal Commission. Available: [https://documents.coastal.ca.gov/assets/slr/guidance/2018/0\\_Full\\_2018AdoptedSLRGuidanceUpdate.pdf](https://documents.coastal.ca.gov/assets/slr/guidance/2018/0_Full_2018AdoptedSLRGuidanceUpdate.pdf)

CGS. 2009. 2009. Tsunami Inundation Map for Emergency Planning, Marina Quadrangle, Monterey County; produced by California Emergency Management Agency, California Geological Survey, and University of Southern California – Tsunami Research Center; dated July 1, 2009, mapped at 1:24,000 scale. California Geological Survey, State of California.

City of Marina. 2013. The City of Marina Local Coastal Land Use Plan. Prepared by Ironside and Associates. Certified by California Coastal Commission on April 30, 1982, as amended through 2008. Available: <https://www.ci.marina.ca.us/DocumentCenter/View/4490>.

Climate Central. 2014. Surging Seas Available: <http://sealevel.climatecentral.org/ssrf/california>

Combellick, R.A., and R.H. Osborne. 1977. Sources and petrology of beach sands from southern Monterey Bay, California. *J. Sediment. Petrol.* 47(2):981±987.

Cooper, W.S. 1967. Coastal Dunes of California. Memoir 104 of the Geological Society of America. 131pp.

Dorrell-Canepa, J. 2005 Dune Habitat Restoration Plan Marina Dunes Preserve, Marina, California. Prepared for the Monterey Peninsula Regional Parks District. December, 2005.

ESA. 2019. Monterey Bay Opportunistic Beach Nourishment Program: Initial Study/Mitigated Negative Declaration. Prepared for the City of Monterey. January 2019.

ESA PWA. 2012. Evaluation of Erosion Mitigation Alternatives for Southern Monterey Bay, Report prepared for the Monterey Bay Sanctuary Foundation and the Southern Monterey Bay Coastal Erosion Working Group. May 2012. Available: <http://montereybay.noaa.gov/research/techreports/tresapwa2012.html>.

ESA PWA. 2014. Southern Monterey Bay Coastal Hazard Modeling and Vulnerability Assessment – Technical Methods Report. Prepared for The Monterey Bay Sanctuary Foundation. June 16, 2014.

FEMA. 2005. Final Draft Guidelines for Coastal Flood Hazard Analysis and Mapping for the Pacific Coast of the United States. Oakland, CA. Prepared for the U.S. Department of Homeland Security. Federal Emergency Management Authority. Available: <http://www.fema.gov/media-library-data/840f98e4cb236997e2bc6771f04c9dcb/Final+Draft+Guidelines+for+Coastal+Flood+Hazard+Analysis+and+Mapping+for+the+Pacific+Coast+of+the+United+States.pdf>.

FEMA. 2017. Digital Flood Insurance Rate Map Database, Monterey County, CA. DFIRM panels 06053C0181H, 6053C0183H, and 06053C0191H effective 6/21/2017. Federal Emergency Management Agency. <https://www.fema.gov/national-flood-hazard-layer-nfhl>

Hapke, C., D. Reid, D. Richmond, P. Ruggiero, and J. List 2006. National Assessment of Shoreline Change, Part 3: Historical Shoreline Change and Associated Land Loss Along Sandy Shorelines of the California Coast. Santa Cruz, California: U.S. Geological Survey Open-file Report 2006-1219, 79p.

Komar, P.D., W.G. McDougal, J.J. Marra, and P. Ruggiero. 1999. The rational analysis of setback distances: applications to the Oregon Coast. *Shore and Beach* 67(1):41-49.

Mantua, N.J., and S.R. Hare, Y. Zhang, J.M. Wallace, and R.C. Francis 1997: A Pacific interdecadal climate oscillation with impacts on salmon production. *Bulletin of the American Meteorological Society* 78:1069–1079.

Monterey Fire Safe Council. November, 2010. Monterey County Community Wildfire Protection Plan.

NRC. 2012. Sea-Level Rise for the Coasts of California, Oregon, and Washington: Past, Present, and Future. National Research Council, National Academy Press: Washington, DC.

OPC. 2017. State of California Sea Level Rise Guidance Document, 2018 Update. California Ocean Protection Council. Accessible at: <http://www.opc.ca.gov>

Patsch and Griggs. 2007. Development of sand budgets for California’s major littoral cells: Santa Cruz, University of California, Institute of Marine Sciences,

PWA. 2008. 2008 Coastal Regional Sediment Management Plan for Southern Monterey Bay. Prepared for Association of Monterey Bay Area Governments. Philip Williams & Associates.

Revell, D.L., R. Battalio, B. Spear, P. Ruggiero, and J. Vandever. 2011. A methodology for predicting future coastal hazards due to sea-level rise on the California coast. *Climatic Change* 109:S251–S276. DOI 10.1007/s10584-011-0315-2.

SAFRR Tsunami Modeling Working Group. 2013. Modeling for the SAFRR Tsunami Scenario— Generation, propagation, inundation, and currents in ports and harbors, chap. D, in Ross, S.L., and Jones, L.M., eds., The SAFRR (Science Application for Risk Reduction) Tsunami Scenario: U.S. Geological Survey Open-File Report 2013-1170, 136 p. Available: <http://pubs.usgs.gov/of/2013/1170/d/>.

Storlazzi, C.D., and M.E. Field :2000. Sediment distribution and transport along a rocky, embayed coast: Monterey Peninsula and Carmel Bay, California. *Marine Geology* 170(200):289-316.

Thornton, E.B., A.H. Sallenger, J. Conforto Sesto, L.A. Egley, T. McGee, and A.R. Parsons. 2006. Sand mining impacts on long-term dune erosion in Southern Monterey Bay. *Marine Geology* 229(1-2):45-58.

Thornton, E.B., A.H. Sallenger, and J.H. MacMahan. 2007. Rip currents, cusped shorelines and eroding dunes. *Marine Geology* 240(1-4):151-167.

Thornton, E.B. 2016. Temporal and spatial variations in sand budgets with application to southern Monterey Bay, California. *Marine Geology* 382:56-67.

# Appendix A.

# Key Decisions of

# Scenarios and Hazards

## Purpose

The purpose of this memorandum is to bring City decision-makers to consensus on technical assumptions and key decisions needed to conduct the City of Marina Sea Level Rise Vulnerability Assessment. This includes key assumptions regarding coastal hazards, sea level rise scenarios, models, and resource sectors. These assumptions were selected to ensure that the project aligns with City Local Coastal Program (LCP) goals as well as achieve consistency with the California Coastal Commission (CCC) Sea Level Rise Policy guidance. Data collection work has been largely completed, and this is the final step before the vulnerability assessment.

## Key Decisions

### *Scenarios and Hazards*

High Sea Level Rise, See Table A-1

- Dune Erosion without Sand Mining and a 100-year Wave Storm, (Current, 9 inches ~ 2030, 28 inches ~2060, 63 inches ~2100.
- Coastal Wave Flooding 2100 (revised based on interpretation of existing modeling to 25 foot contour based on hydraulic connectivity under Reservation Road Highway 1 Underpass, Figure A-1).

### *Modeling to Use*

#### **Coastal Resilience Monterey Bay**

At the time of study (2019), the project area only had one available model of coastal hazards at a scale suitable for planning purposes - the Monterey Bay Coastal Resilience Hazard Models (ESA PWA 2014).<sup>14</sup> This model has data availability for each hazard in a GIS format suitable for analysis (closed polygon shapefiles). In general, it has been found that the Coastal Resilience model for existing conditions has accurately represented historical storm impacts in other jurisdictions (i.e., Oxnard, Carpinteria, Monterey County, Ventura County, Santa Barbara County, Cities of Monterey, Santa Cruz, and Santa Monica) where it has been applied to similar vulnerability assessments based on a local peer review of observed existing

---

<sup>14</sup> While the USGS CoSMoS model has been released for this area, the CoSMoS model does not specifically map dune erosion which is the coastal hazard of most concern for the City, thus the model was not included in this vulnerability assessment.

conditions flood potential with documented historic storm flooding. Regionally, this is the model in use by Santa Cruz and Monterey Counties, as well as the Cities of Monterey, Santa Cruz, Capitola, and the Moss Landing Community.

### Sector Categories considered

- Land Use
- Roads and Parking
- Public Transportation (Bus, Bike)
- Wastewater
- Water Supply
- Storm Water and Percolation Ponds
- Coastal Trails and Public Access
- Public Facilities
- Sensitive Biological Resources
- Hazardous Material Storage

### Sector Categories Selected

- Land Use and Parkland
- Trails and Access
- Water Supply and Wastewater (we can drop stormwater, no drains or percolation ponds affected by erosion)
- Roads and Bike Routes
- Dune Habitat

### Sea Level Rise Scenarios

As a result of the comparative analysis and needs of the City, the Coastal Resilience model was selected for use in the vulnerability assessment. The Coastal Resilience model uses sea level rise and time horizon estimates of 9 inches by 2030, 28 inches by 2060, and 63 inches by 2100. Based on the guidance from the CCC Sea Level Rise Policy Guide to evaluate a “range of possible scenarios,” the sea level rise elevations presented in Table A-1 were selected to be included in the vulnerability assessment. As the science of sea level rise improves, additional information has become available which provides approximate probabilities of sea level rise for various times in the future (Griggs et al. 2017). Unfortunately, both of the available models have utilized other elevations of sea level rise than those in the Griggs report, so the relative probabilities of the Coastal Resilience modeling occurring at that specific time in the future is shown in Table A-1 for comparison.

**Table A-1. High Sea Level Rise Scenarios for Monterey Bay**

Model/year	–Sea Level Rise (inches)			% Probability <sup>15</sup>		
	2030	2060	2100	2030	2060	2100
<b>Coastal Resilience, High</b>	<b>9</b>	<b>28</b>	<b>63</b>	<b>&lt;0.5%</b>	<b>&gt;5%&lt;67%</b>	<b>&gt;5%&lt;67%</b>
Science Range, Low	5	12	28	17%	12%	6%
Science Range, High	10	31	83	0.5%	0.5%	0.5%

*Bold shaded row is the model proposed for use in the vulnerability analysis (also used in Monterey)  
 Science range is assuming the current emissions trend or business as usual (RCP 8.5)*

<sup>15</sup> OPC (2018) State of California Sea-Level Rise Guidance 2018 Update.

## Coastal Hazards

The project reviewed the full suite of coastal hazards including dune erosion, coastal wave flooding, tidal inundation, and potential groundwater daylighting. However, after coastal hazard model interpretation and discussions with the City, only two different coastal hazards affected by sea level rise were selected for detailed evaluation in the vulnerability assessment.

- **Coastal Erosion**—permanent loss of land from potential dune erosion.
- **Coastal Wave Flooding 2100**—adjusted to 25-foot contour as hydraulically connected through the Reservation Road underpass. This could potentially occur as an episodic coastal wave flood impacts from a 100-year wave storm event in 2100 with 5 feet of sea level rise and an end to sand mining. This has a low probability of occurrence.

### Coastal Erosion

#### Marina Dune Erosion Comparison

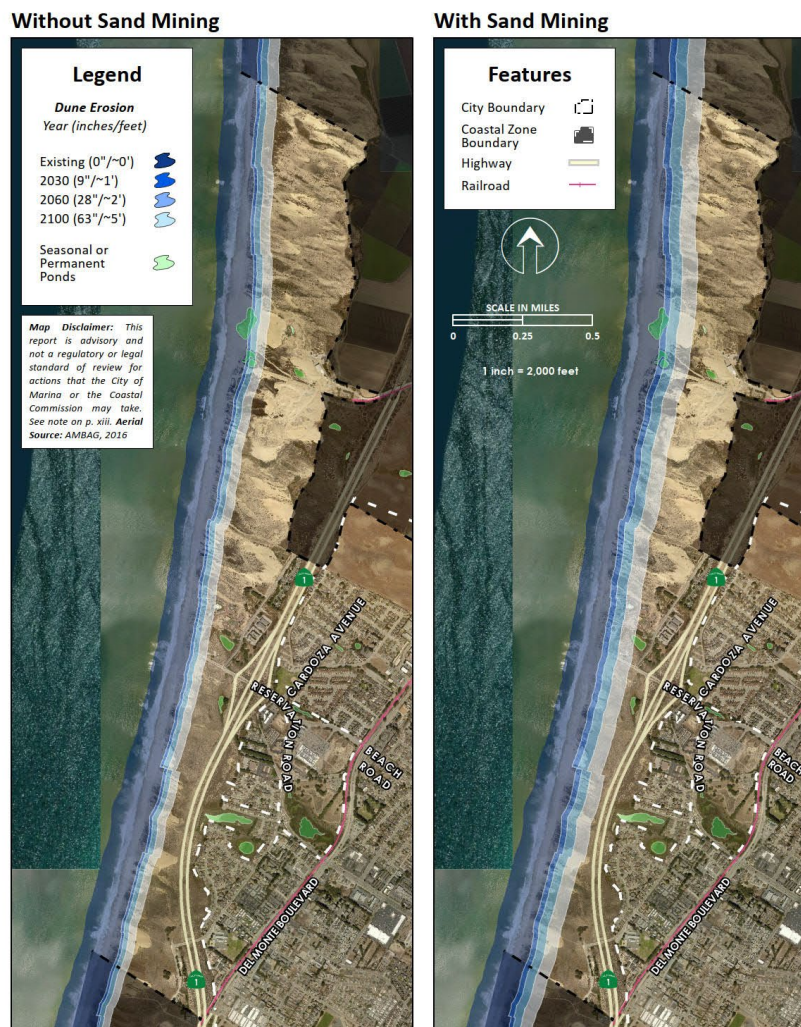


Figure A-1. Marina Dune Erosion Comparison

## *Coastal Wave Flood Model Interpretation*

The available Coastal Resilience modeling for coastal dune erosion and coastal flooding without sand mining showed reduced coastal erosion over the existing conditions (i.e., with sand mining) erosion hazards. Upon detailed review of the model results and the technical methods report,<sup>16</sup> it was identified that the mapped coastal wave flood hazard extents from a 1% annual chance storm were dependent on the sand mining erosion scenario.

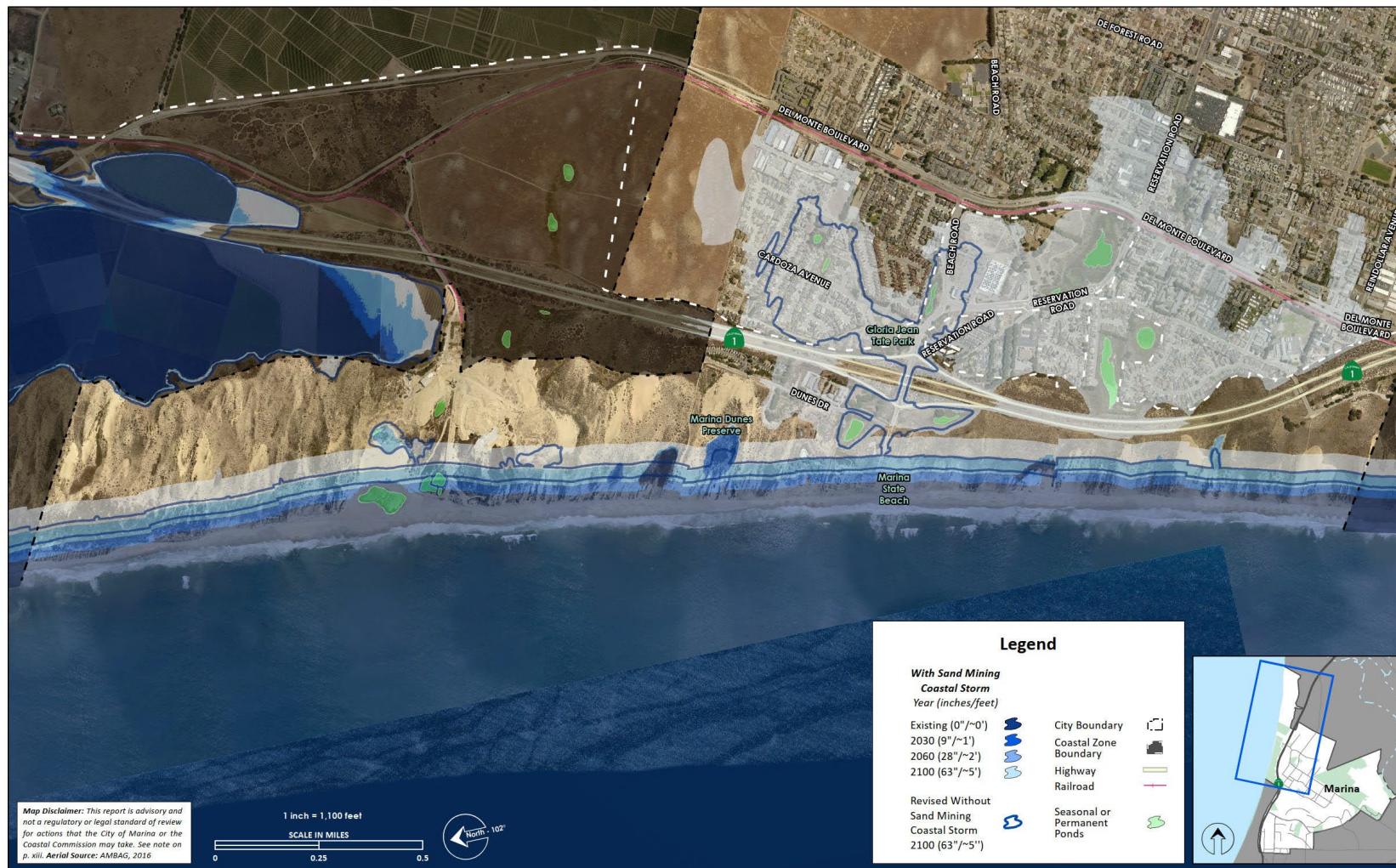
The reliance of the coastal wave flooding on the coastal erosion rates with sand mining resulted in an over-prediction of the potential extent of coastal wave flooding as mapped in the TNC Coastal Resilience Portal. Once this discrepancy was realized, the model results were further evaluated for potential flow pathways and hydraulic connectivity in the future. From the evaluation, it was determined that under a “without sand mining” erosion scenario, the erosion extent and hydraulic connectivity would be reduced. When coupled with a 1% annual chance storm and ~5 feet of sea level rise (~2100), the potential coastal wave storm flooding exposure was reduced to a narrower hydraulic connectivity under the Reservation Road underpass under Highway 1. Using a combination of the revised FEMA FIRM maps, updated topographic data, geomorphic interpretation, and historical ecology, the 2100 coastal wave flood extent was revised to show a reduced extent of episodic coastal flooding with ~5 feet of sea level rise.

The comparison between the “with” and “without” sand mining coastal wave flooding extents is shown below (Figure A-2). Considering the coastal dune erosion from a 1% annual chance storm and ~5 feet of sea level, coastal wave flooding during such an event must overtop road elevations of nearly ~45 feet on Reservation Road and contribute enough volume of water from waves to fill the 2100 coastal wave flooding map extents. This remains a highly unlikely event at 2100, but the vulnerability analysis shows potentially substantial escalation of coastal wave flooding impacts to the City. Results of the coastal wave flood hazard exposure are shown in Section 5 of the main text.

---

<sup>16</sup> ESA. 2014. Monterey Bay Sea Level Rise Vulnerability Study: Technical Methods Report. Prepared for the Monterey Bay Sanctuary Foundation with funding from the California Coastal Conservancy.

### Marina With and Without Sand Mining Coastal Storm Comparison



**Figure A-2. Comparison between the Coastal Resilience with Sand Mining Caused Erosion Affecting Coastal Wave Flooding and the Revised Coastal Wave Flooding Projections Based on Reduced Erosion and Hydraulic Connectivity**

# Appendix B.

# Social Vulnerability

# Assessment



Integral Consulting Inc.  
200 Washington Street  
Suite 201  
Santa Cruz, CA 95060

telephone: 831.466.9630  
facsimile: 831.466.9670  
www.integral-corp.com

## MEMORANDUM

---

---

**To:** Alyson Hunter, AICP, Interim Planning Manager, City of Marina  
**From:** David Revell, Ph.D., and Matthew Jamieson  
**Date:** August 18, 2023  
**Subject:** City of Marina Social Vulnerability Assessment for LCP Update  
**Project No.:** C3346

---

---

The purpose of this memorandum is to assess social vulnerability in the City of Marina (City) and to develop recommendations for the City to integrate social vulnerability and environmental justice concerns into their Local Coastal Program (LCP) update. There have been numerous contributions to the development of guidance frameworks to understand how social vulnerability relates to climate change and coastal hazards on a broad scale (CCC 2022; The Nature Conservancy 2016; BCDC 2012), as well as site-specific assessments of sea level rise and coastal hazards for the City (City of Marina 2019). This assessment focuses on the intersection of coastal hazards and other environmental stressors with measures of social vulnerability, and evaluates these factors to provide the City with the proper context to consider social vulnerability in future sea level rise resiliency planning.

The City's aim for the ongoing LCP amendment process is to build a meaningful outreach process to help inform the scope of the update and identify environmental justice concerns and policy considerations for the LCP. This work was slated to occur following the 2018 City Council Resolution to update existing conditions in the LCP; however, due to the COVID-19 pandemic, this vital step of community outreach and engagement was delayed. The assessment presented in this memorandum is a continuation of this process.

This memorandum includes the following sections:

- **Introduction** describes important terms and the scale of this study
- **Data Sets and Methodology** describes the data sets used in the study
- **Existing Conditions** describes the demographics and neighborhoods of the City

- **Findings** section provides maps and an overview of the vulnerability characteristics of the City
- **Discussion** details some of the major existing community vulnerabilities and how exposure to coastal hazards and climate change can exacerbate these vulnerabilities
- **Conclusion and Next Steps** details what has been learned and where to go next.

## INTRODUCTION

The City's LCP was first certified by the California Coastal Commission (CCC) in 1982 and was last amended in 2009. Since 2009, statewide understanding has grown regarding the potential impacts of sea level rise with an acute focus on consideration of social vulnerability and equitable coastal access.

The mission of the CCC was established with the 1976 California Coastal Act, which guides how land along the coast is developed and is grounded in the principle of equity. The Coastal Act emphasizes the importance of the public being able to access the coast and how the coast is essential to the economic and social well-being of the people of California.

## Definition of Terms

Social vulnerability and environmental justice are burgeoning fields of study and many of the terms used in this memorandum may feel unfamiliar. The section below provides definitions and descriptions of commonly used terms.

**Sensitivity** is the degree to which a community is affected by exposure to climate risks and hazards. It is often related to a particular community's livelihood, location, and built environment, as well as environmental health and demographic factors. For instance, livelihoods that are dependent on coastal tourism may be inherently more sensitive to impacts from coastal hazards.

**Adaptive capacity** refers to the ability of an individual, household, or community to develop resilience and adjust to climate risks and hazards. Adaptive capacity can be affected by financial resources, human/social capital, competency and reliability of institutions, education and knowledge, equity in access and distribution of resources, and the range of potential adaptation options that may be available.

**Community indicators** are the characteristics of a population that are often reflected in metrics such as low-income populations, linguistic isolation, housing burden, and demographic factors. Community indicators represent traits or characteristics that can affect a particular community's adaptive capacity and level of sensitivity to environmental stressors such as coastal hazards.

**Exposure or burden** is often used to describe whether or to what degree a community will experience a stress or hazard. This includes exposure to environmental stressors or adverse environmental conditions, such as pollutants, climate change, or coastal hazards. Burden is often used to describe the degree of exposure, while exposure is often used to describe vulnerable areas, such as a geographical area that will be exposed to sea level rise and coastal hazards.

**Social vulnerability** describes communities that are at heightened climate risks and have less capacity and fewer resources to prepare for, respond to, and recover from negative impacts. Social vulnerability exists at the intersection between exposure/burden, sensitivity, and adaptive capacity.

**Environmental justice** recognizes that minority or low-income communities experience greater exposure to environmental hazards and that there is a legacy of practices in land-use planning that has resulted in barriers to access and inequity (CCC 2022). State law defines environmental justice to mean "the fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies" (Gov. Code, § 65040.12, subd. [e]).

## **Description of the Various Scales of this Study**

This study will discuss potential impacts on three distinct geographic scales within the City in order to focus this analysis on specific vulnerable communities, environmental stressors, and coastal hazards. These geographies are defined below as within the identified coastal hazard zone, the coastal zone, and the City as a whole (Figure 1).

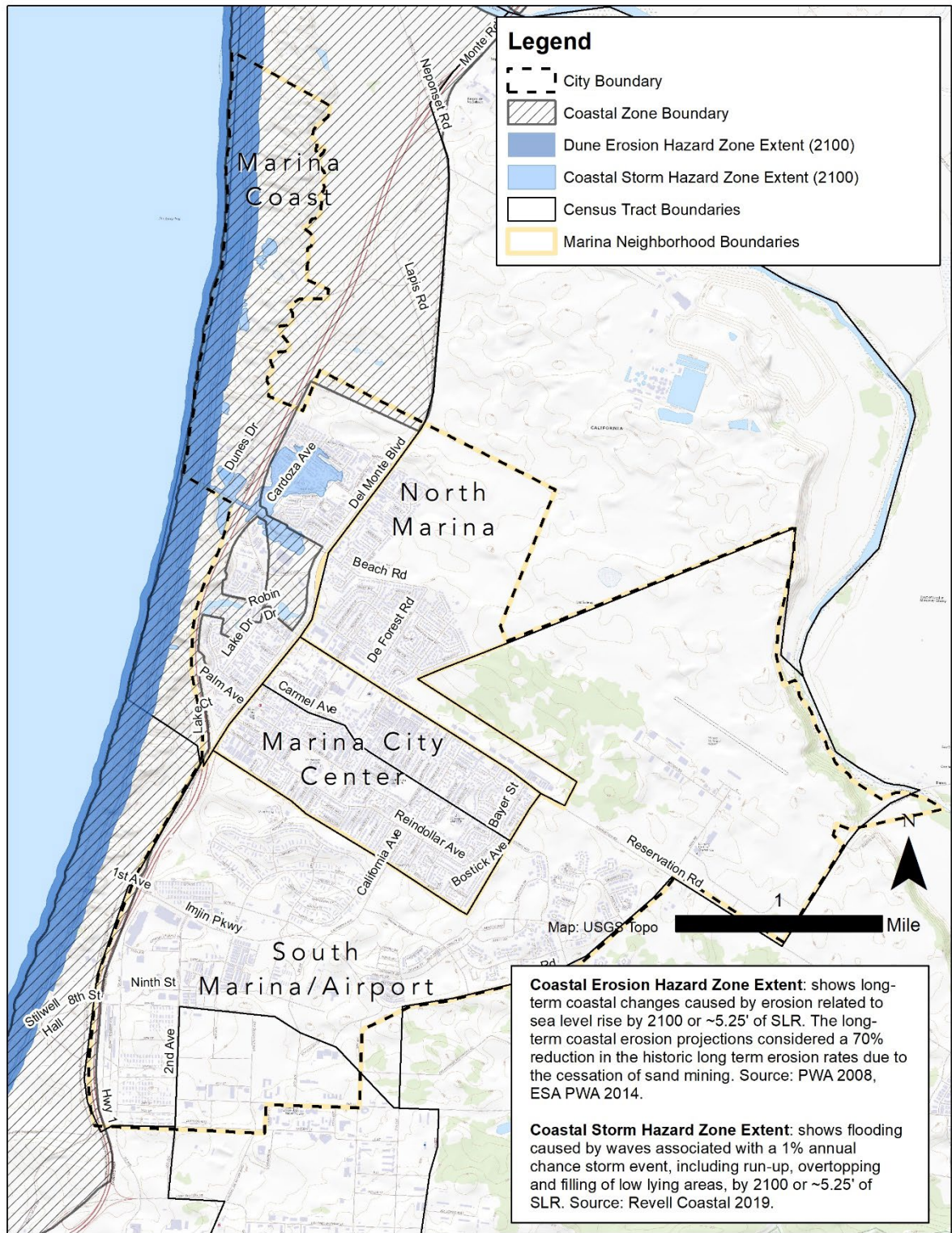


Figure 1. Administrative Boundaries and Coastal Hazard Zones within the City of Marina

**The City of Marina** is the broadest level of analysis (shown as a black-hatched line in Figure 1), and data are displayed for this area to provide context for the City and to assist with future planning efforts. The inland portion of the City encompasses 9.8 mi<sup>2</sup> and is composed of 8.9 mi<sup>2</sup> of land and 0.9 mi<sup>2</sup> of surface water. The adjacent jurisdictions include Sand City to the south, the County of Monterey to the north and east, and the Monterey Bay National Marine Sanctuary to the west. Along the City's coastline are Marina State Beach at the south and the former CEMEX Lapis Sand Mining Facility at the north. Fort Ord State Park, while not directly within the City, provides coastal access at 8th Street. Unique among central coast communities, both the southern and northern areas of the City are planned to see major development in the future. In addition, the City benefits from having minimal development along the coast and no coastal armoring in the coastal zone.

**Coastal zone** is the regulatory boundary in which the CCC establishes policies and regulations (shown as thin black cross-hatching in Figure 1). The jurisdiction includes 3.2 miles of Pacific shoreline and comprises approximately 1.6 mi<sup>2</sup>. This includes all of the land west of Highway 1 and a small low-lying area east of Highway 1 located around Locke-Paddon Park and a seasonal pond near Robin Drive. There are only a handful of private residences in this zone, and the City's LCP amendment effort is the primary guide for planning and development in this area. The most recent LCP in the City was amended in 2009, and remains in a redlined condition. The impetus for this funding is to update the coastal hazards-related LCP policies and implementation language as part of an amended LCP.

**Coastal hazard zone** encompasses the farthest extent of storm wave flooding and coastal erosion under both the high erosion and 100-year storm wave flooding scenarios with 5.25 ft of sea level rise projected out to 2100. This area encompasses 0.43 mi<sup>2</sup> by 2100. Within the coastal storm wave flood hazard zone by 2100 (light blue area in Figure 1), there is a small residential population centered around Cardoza Avenue. It should be noted that following the cessation of mining and a corresponding projected reduction in dune erosion, the extent of coastal erosion and storm wave flooding by 2100 may be less than indicated. Within the dune erosion hazard zone (darker blue area in Figure 1), there is no permanent population; however, the area does service many people from the community. This area along Dunes Drive and Reservation Road west of Highway 1 is a regional employment center and a major local economic driver. The area has three hotels, an RV park, and two government offices. The Marina State Beach parking lot offers coastal access and is a destination for coastal recreation and wildlife viewing (Figure 2).



Figure 2. The Marina State Beach Shoreline at the End of Reservation Road  
Source: Coastal Records Project (2018)

As a coastal community, the entire population is tied to the coast not just physically but through numerous social, recreational, and economic relationships. The impacts from coastal hazards can have lasting impacts beyond just interruptions to coastal access and damage to homes and businesses. This can also include contamination risk, interruptions to emergency services, and social and economic implications from management and adaptation choices. Existing issues on the coast, including the relatively high cost of living, economic and housing inequality, and issues with community segregation, also interact with the effects of climate change. Historically, underserved and socially vulnerable communities may have difficulty managing disasters on their own due to limited technical and financial resources, may depend on others for basic needs or transportation, or already face discrimination or stigma that can affect future recovery efforts.

With proper planning, the City has an opportunity to lead by example in recognizing potential impacts and community needs within the coastal zone, engaging with vulnerable communities, and working to reverse any past injustices that may create undue strain upon these communities. One of the City's stated priorities for the LCP update is to maintain public access and limit the use of coastal armoring so that beaches and dunes are maintained into the future for all people. Like most community engagement and climate

change planning efforts, this is a process that takes time and involves building trust and collaboration. The City can work to proactively plan for an equitable future, and implement land use planning policies that reduce conflicts to public access, benefits access to recreation and education in the coastal zone, support disadvantaged communities, and reduce exposure to environmental stressors or adverse environmental conditions caused by climate change. How these adverse conditions are evaluated for social vulnerability is further discussed below in the Discussions Section.

## **DATA SETS AND METHODOLOGY**

This section provides a description of the community indicators used in this study and covers the scale of the data sets, the year the data were collected, and who collected the data. While there are countless factors that can be used to determine a population's social vulnerability, this analysis was restricted to published federal and state data that could be found at the Census Block Group (CBG) and Census Tract (CT) level (see descriptions below for more information). While these data sets are a good starting point for understanding community vulnerabilities, they may not fully capture all of the nuanced or dynamic community characteristics that can produce vulnerability or resiliency. For instance, the scale of a CBG may obscure certain at-risk populations, or a vulnerability ranking may not properly weigh the level of vulnerability to certain higher-risk populations such as undocumented people, who may not respond to the U.S. Census or other community surveys. Once the data were sourced and compiled, each identified key variable was mapped, and overall findings are detailed in the Discussion Section. The data sets that have been relied on for this study are outlined below.

**United States Census** is conducted every 10 years and includes a wide range of demographic information related to age, sex, ethnicity and race, income, and more at numerous geographic scales. For this study, we are using the 2020 U.S. Census to report demographic data at the CBG level. The City has been mapped into 14 separate CBGs, and each CBG encompasses approximately 600 and 3,000 people. Other data, such as the CalEnviroScreen data set described below, are available at the CT level. There are 6 CTs in the City, and each encapsulates 2-3 CBGs.

**CalEnviroScreen** is a mapping tool that is based on data available from state and federal government sources that helps identify California communities that are most affected by many sources of pollution, and where people are often especially vulnerable to pollution's effects. CalEnviroScreen uses environmental, health, and socioeconomic information to produce scores for every CT in the state. An area with a high score experiences a much higher pollution burden than areas with low scores (CalEnviroScreen 4.0 2023). For this study, we are reporting data as percentiles and percentages. Percentiles are a ranking from

0 to 100 and are equal to the CT's ranking among all California CTs with 0 being the lowest and 100 being the highest. Percentages are reflection of the percentage of all households or individuals in a given area.

**U.S. Environmental Protection Agency (EPA) Smart Location Database** is a large body of research on land uses and urban forms and their effect on transportation outcomes. Indicators include the density of development, diversity of land use, street network design, and accessibility to destinations as well as various demographic and employment statistics (USEPA 2023). The data was published at the CBG level. For this study, we are using the Smart Location Database to report walkability scores.

Note that there are a wide range of data sets and decision support tools that can be used to examine social vulnerability and impacts from climate change. The **CDC/ATSDR Social Vulnerability Index** is one tool that includes an index of demographic factors at the CT level to understand social vulnerabilities. These data are generally more appropriate for a higher-level screening, and more information can be found at [www.atsdr.cdc.gov](http://www.atsdr.cdc.gov). The Federal Emergency Management Agency provides a tool called **HAZUS** that allows users to examine potential economic losses and social impacts from hazards. The HAZUS tool can be found at <https://www.fema.gov/flood-maps/products-tools/hazus>. Finally, the University of California, Berkeley has published a tool called **CalAdapt** that allows for data access and visualization of climate change-related stressors. This is available at <https://cal-adapt.org/>.

While all social vulnerability tools and metrics can be valuable for a broader scale of analysis, all data and results should be considered with caution and ground-truthed wherever possible through consultation and engagement with local communities and community-based organizations.

## **EXISTING CONDITIONS**

The City is located adjacent to Monterey Bay in Central California in Monterey County (County). The City was incorporated in 1975 and had seen steady growth in connection with the Fort Ord military installation. After the base was selected for decommissioning in 1991 and formally closed in 1994, the population of the City marked a 27.5 percent decline between 1990 and 2000 (City of Marina 2010). However, through the redevelopment of the former base and other development efforts, the City's population at the 2020 Census approached 23,000, which is ~87 percent of the population recorded in 1990 (U.S. Census 2020).

The City's predominant land use is residential, reflective of the City's previous role as a bedroom community to the former Fort Ord military base, which is now home to the California State University, Monterey Bay and other institutions. Retail corridors and commercial development are located around Reservation Road, Del Monte Boulevard, and Imjin Parkway. There is also significant visitor-serving development off Dunes Drive with three hotels and an RV park (City of Marina 2019).

The City has the County's highest diversity index with the highest percentages of Asian residents and over 2 times the amount of Black/African American residents compared to other cities in the County (City of Marina 2019). Marina also has more low-income residents than other cities in Southern Monterey Bay with one-third of the community identified as low income, and just over 10 percent of residents live under the poverty line (US Census 2020).

## **Superfund Site Status**

Following the closure of the Fort Ord military base, EPA placed the former base on the Superfund program's National Priorities List. The site contained leaking underground storage tanks, a 150-acre landfill, small amounts of waste generated by the base, and other potential contaminants. Following a series of cleanup activities, on November 20, 2020, EPA announced its proposal to remove 11,934 acres of the 27,827-acre Fort Ord Superfund site from the National Priorities List. EPA and the State of California continue to oversee the U.S. Army's cleanup at the rest of the site. Both the groundwater and soil cleanup for the 11,934 acres are still in the Superfund program (USEPA 2023).

## **Development Plans**

Planned developments include Marina Station in the north and the continuation of ongoing development in the south of the City, known as University Villages and Dunes at Monterey Bay. The City could also see continued business and institutional research development at the Marina Municipal Airport Business and Industrial Park/UC MBEST Center in the eastern portion of the city.

## **Fort Ord State Beach Redevelopment**

Funded with California State Parks bond money, the planned Fort Ord State Beach improvement will include the only coastal State Parks campground for more than 60 miles between Santa Cruz County and Big Sur. This project represents an ongoing effort to expand low-cost overnight accommodation on the coast, and it will increase recreational opportunities and access to community members in the City (State Parks 2023).

## CEMEX Lapis Property

The CEMEX Lapis property is located along the City's northern coastal extent. As part of a consensus agreement between CEMEX, the City, and the State of CA, the sand mine is being retired and decommissioned. While the property is required to be sold to a public or non-profit entity, the future of the CEMEX Lapis property is currently being discussed. As the sand mining operations are retired, there is a possibility for public beach access. Although this parcel falls within City limits, the existing access roads are not, and the future status of the private roads on this parcel are uncertain.

## Marina Demographics at a Glance

Total population	22,359
Total housing units	8,022
Percentage who identifies as white alone and not Hispanic or Latino	38.4%
Median age	34.4
Percentage of the population over 65 years	13.8%
Median household income	\$73,115
Percentage living in poverty	11.5%
Percentage of the population with a bachelor's degree or higher	29.9%
Percentage of the population without health care coverage	6.6%

Source: Decennial Census (2020)

Note:

Demographic figures may vary by source, year, scale, and how the data was calculated.

## Neighborhoods

To assist in understanding, this study will map and discuss demographic and vulnerability findings using neighborhood areas rather than quoting CT or CBG codes. In consultation with the City's staff, each of these neighborhoods follows CT delineations and has been identified to encompass distinct geographic areas (see Figure 1, thick tan colored boundaries on the map). For reference, the total population in each CT is indicated in Figure 3, and the total population in each neighborhood, as well as the size of each neighborhood area, is listed below.

**Marina Coast** (1.7 mi<sup>2</sup>, 3,663 people) includes the areas west of Del Monte Boulevard encompassing Marina State Beach and the former CEMEX lands along the coast including portions of the future development at Marina Station. This neighborhood includes one CT and two CBGs.

**Central Marina** (1 mi<sup>2</sup>, 9,527 people) includes the main commercial areas bounded by Reservation Road in the north, Del Monte Boulevard in the west, Patton Parkway in the

south, and Bayer Drive and Salinas Avenue in the east. This is the densest and most established area of the City. This neighborhood includes two CTs and five CBGs.

**South Marina / Airport** (4.9 mi<sup>2</sup>, 5,599 people) includes all of the southern and eastern portions of the City including the redevelopment areas of old Fort Ord and areas of the University of California, Santa Cruz Fort Ord Natural Reserve and the Marina Municipal Airport. This neighborhood includes two CT and 5 CBGs. Note that some CBGs in this neighborhood, including areas of the former military base and the airport, have no residents.

**North Marina** (1.1 mi<sup>2</sup>, 4,319 people), includes all areas north of Reservation Road and east of Del Monte Boulevard including site of the future development at Marina Station. This neighborhood includes one CT and two CBGs.

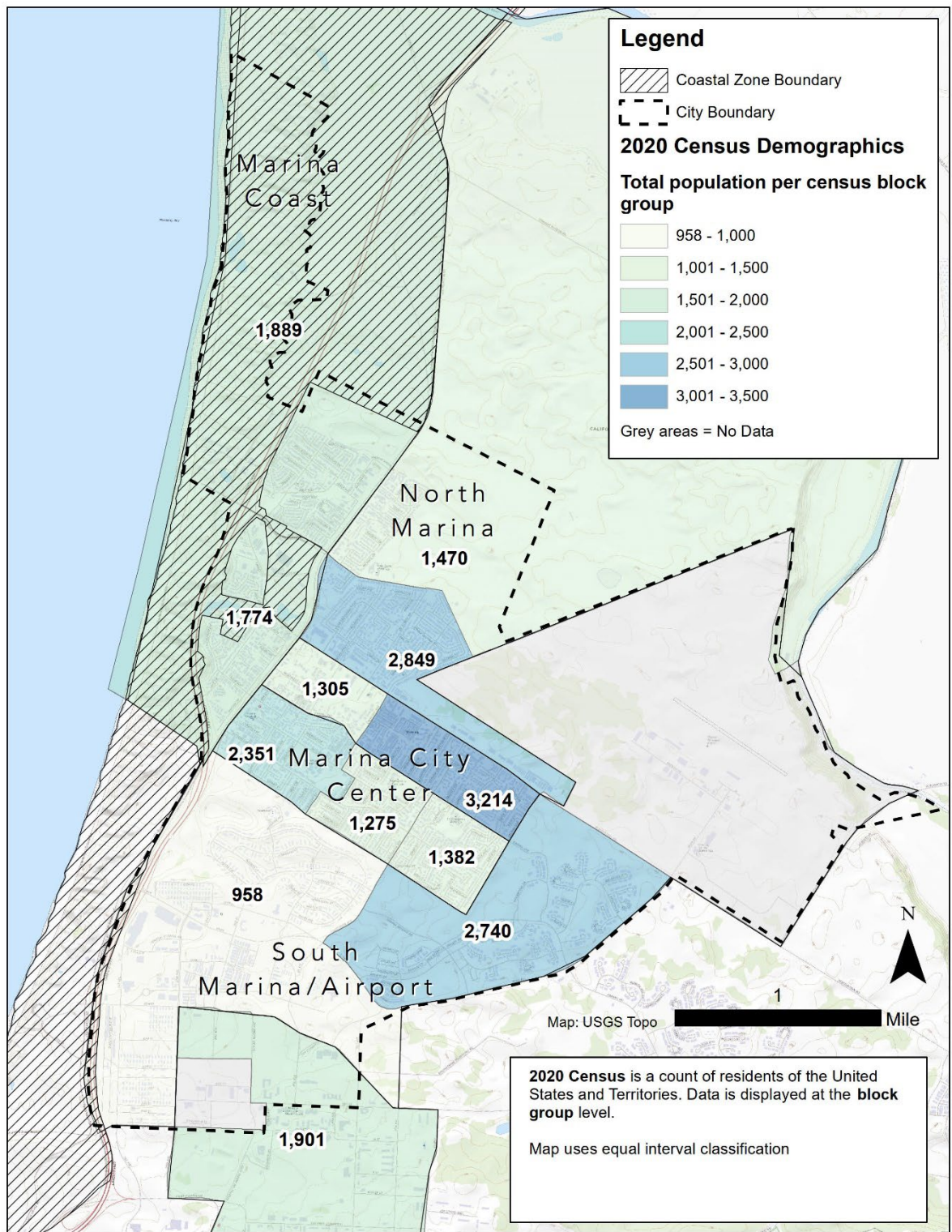


Figure 3. Marina Total Population from the 2020 U.S. Census

## **FINDINGS**

This section organizes social vulnerability using various categories, including demographic characteristics, coastal access, walkability, environmental stressors, and housing burden. For each category, selected data are mapped for the City as a whole, and the coastal zone boundary is shown to provide a reference to areas that are relevant to the LCP update. Note that not all vulnerability characteristics found in the discussion are mapped in this study, and more information can be found at the interactive web viewers linked below.

### **Interactive Web Viewers**

For demographic characteristics, visit [U.S. Census's QuickFacts](#).

For environmental stressors and housing burden, visit [CalEnviroScreen](#).

For walkability, visit EPA's [Smart Location Calculator](#).

### **Demographic Characteristics**

The highest density of residents can be found in Marina City Center closest to Reservation Road and Del Monte Boulevard. The CBGs around these corridors have higher concentrations of residents with English as a second language (15.7, 30.1, and 13.5 percent) and people who identify as non-white (78, 75.5, and 43.3 percent) (see Figure 5). South Marina / Airport stands out for its demographic characteristics, having elevated percentages of people living in poverty (see Figure 4) and who are unemployed. Note that both of these statistics may be biased by California State University, Monterey Bay, which may not be located in the City, but the southern CT likely has a larger number of students who reside in this neighborhood and who may live on limited income. Northern and eastern areas of the City including Marina Coast, North Marina, and the eastern portions of Marina City Center (east of Crescent Avenue) stand out as the highest-income areas. These are areas composed of single-family home developments. Eastern portions of South Marina / Airport stand out as having the highest percentage of households with zero automobiles.

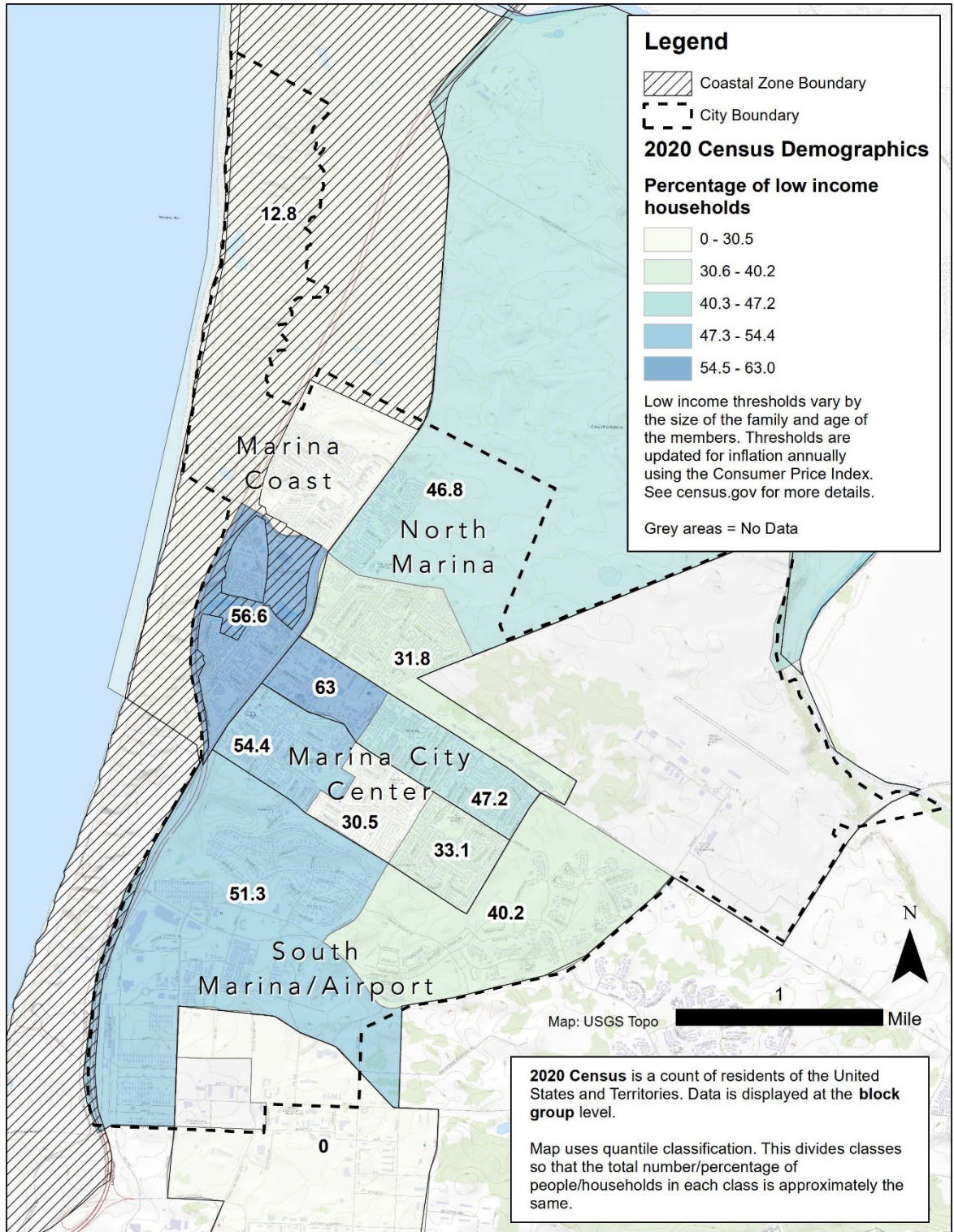


Figure 4. Marina Low-Income Households from the 2020 U.S. Census

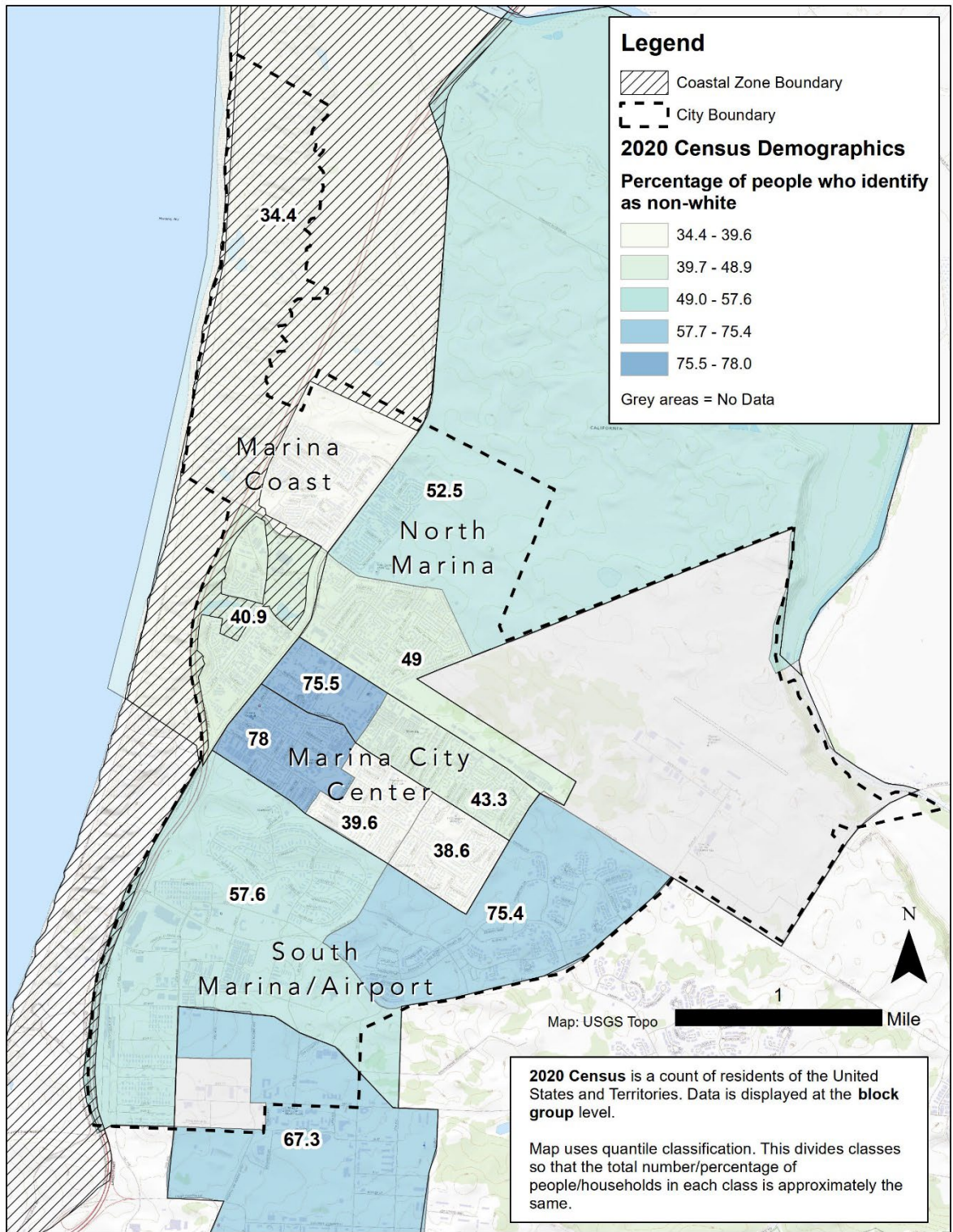


Figure 5. Marina Non-White Population from the 2020 U.S. Census

## **Coastal Access**

There are eight distinct coastal access locations in or around the City. Each of these locations marks a trailhead with direct access to the coast. Of the approximately 5,900 buildings in Marina, 121 (~2 percent) are within a quarter-mile walk to one of these locations, and 600 (~10 percent) are within a half-mile walk (see Figure 6 for walk radius areas).

The most accessible location for those driving to the coast is afforded by the Marina State Beach Parking Lot off Reservation Road with just over 50 parking spaces and Fort Ord State Park Parking Lot (just outside of the City limits) with ~80 spaces. Unfortunately, both of these locations are somewhat remote for those walking or riding from neighborhood areas in the City. The most accessible location for locals to walk to is Lake Court with ~360 buildings within a half-mile walk. This area has limited parking, and access to the coast is made difficult by a steep ascent and descent over the dunes. Additionally, the coastal access location at Sanctuary Beach Resort provides access to a large number of people; however, it does not easily serve non-hotel customers.

## **Walkability**

As a whole, the City ranks lower on walkability scores than other medium-sized cities in the region and the pattern of development is described as car-dependent by walkscore.com. According to walkscore.com, the City ranks 46 out of 100 (average) for walk score and 56 out of 100 for bike score (somewhat bikeable). According to the EPA walkability ratings, the CBGs located in the western portions of Marina City Center score the highest. This is reflective of the higher street densities, variety of land uses, and higher overall connectivity ratings. Some of the least walkable areas within the City can be found in the Marina Coast neighborhood (see Figure 7). This is a result of a lower-density pattern of development with lower overall connectivity ratings and a highway bisecting the neighborhood.

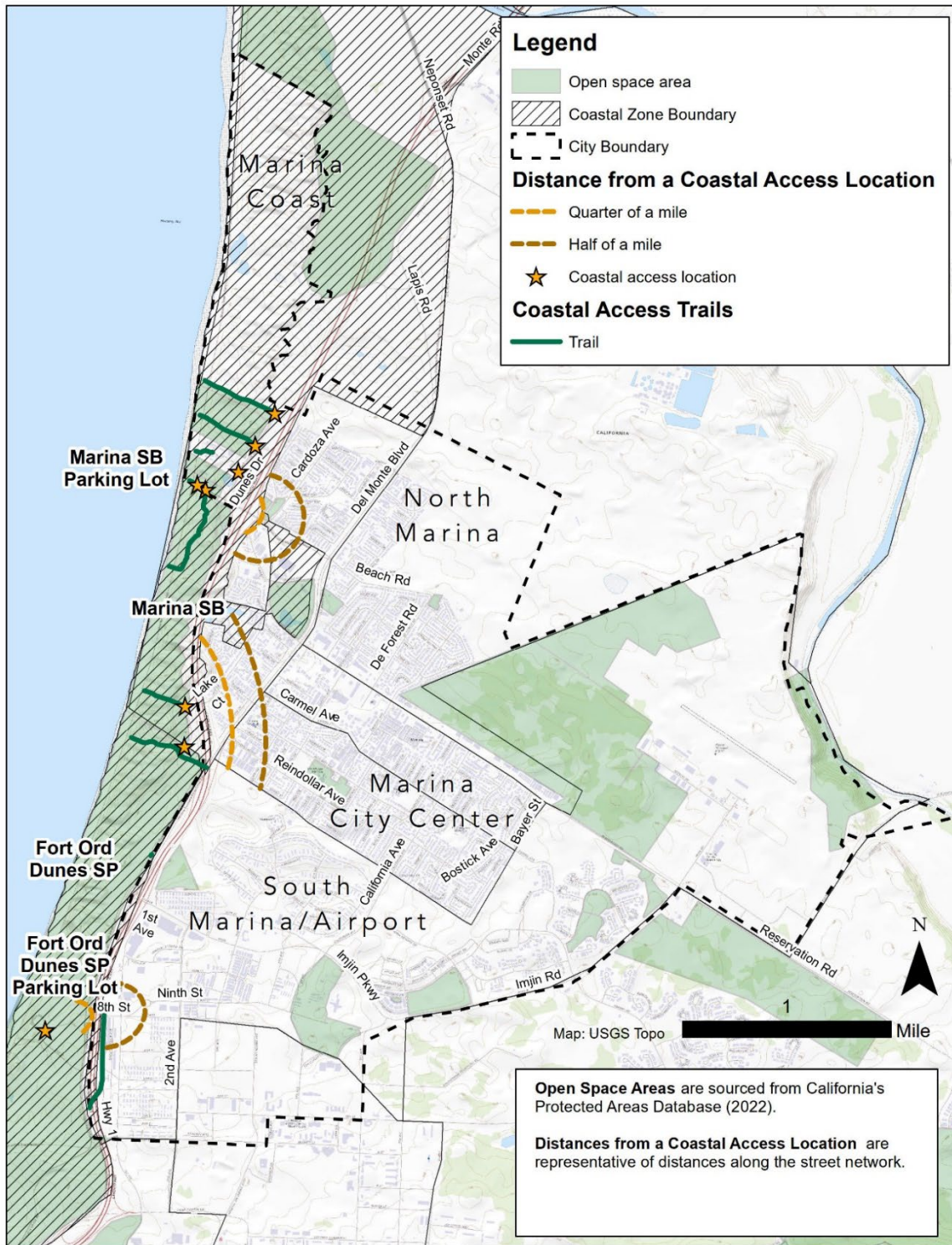


Figure 6. Marina Coastal Access Trails and Locations along with Approximate Distances Form These Coastal Access Locations

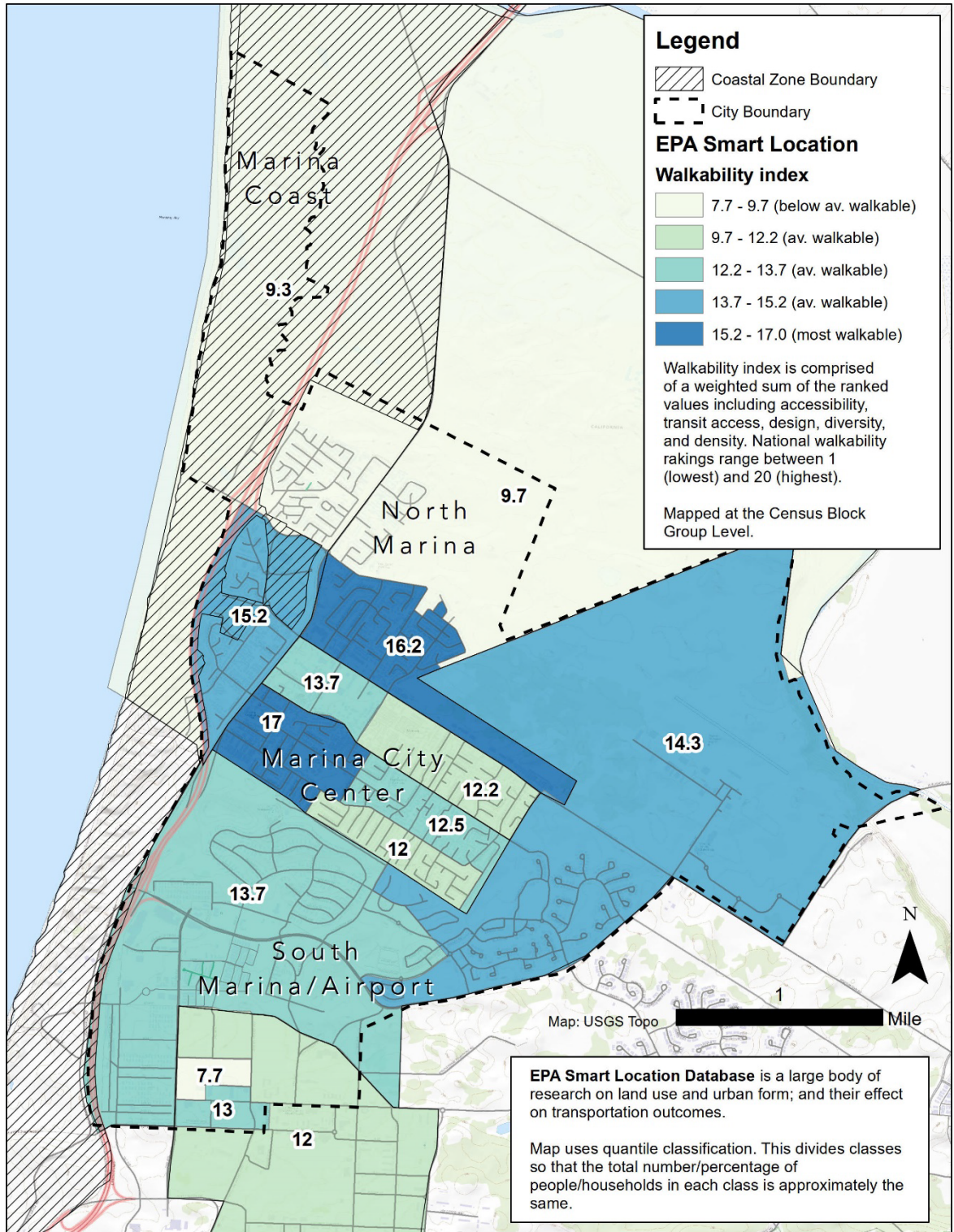


Figure 7. Walkability Scores from EPA Smart Location Database

## **Environmental Stressors**

According to CalEnviroScreen, the City faces more burden from environmental stressors than other cities on the Monterey Bay Peninsula. Much of this added burden can be attributed to the legacy of the old Fort Ord site. It should be noted while the legacy of past and ongoing cleanup efforts will be reflected in the environmental stressor statistics, they may not be reflected in the actual hazard exposure experienced by the community.

For pollution burden stressors, South Marina / Airport stands out in having a higher number of environmental cleanups, lead, drinking water, groundwater threats, and hazardous waste sites. Much of this is likely due to the inclusion of the old Fort Ord and may not be reflective of current conditions within the residential portions of the neighborhood. North Marina stands out as having elevated exposure to pesticides, being over 4 times higher in exposure values than the next closest-ranking neighborhood in the City. However, given that most of the farms just north of the City are organic, statistics may be outdated or pulling in pesticide use data for areas north of the Salinas River. The inclusion of the Monterey Regional Waste Facility and Monterey One Water Treatment Plant in the North Marina CT, despite being located more than a mile from neighborhood areas, does increase the counts (and thus burden) for exposure to solid and hazardous waste facilities.

CalEnviroScreen provides a rolled-up ranking for pollution burden, and North Marina and South Marina / Airport stand out as having the highest percentiles, 13–19 percentage points higher than the next ranking in the City (see Figure 8). For overall CalEnviroScreen scores, where demographic characteristics and pollution burden are considered in tandem (represented as pollution burden times the population characteristics score), South Marina / Airport stands as the highest ranking, due to both the more vulnerable demographic characteristics (e.g., having an elevated housing burden, percentage living in poverty, unemployment) as well as having a high pollution burden. North Marina also stands out and is affected by higher reported pesticide numbers and the inclusion of the landfill and water treatment plant.

Finally, Central Marina and Marina Coast neighborhood's overall CalEnviroScreen scores generally fall much more within the middle of the pack for California. However, both stand out as having higher burden from diesel particulate matter exposure, and Marina Coast has a higher traffic impact burden. In both cases, this is the result of the close proximity to Highway 1 and other major arterial roads.

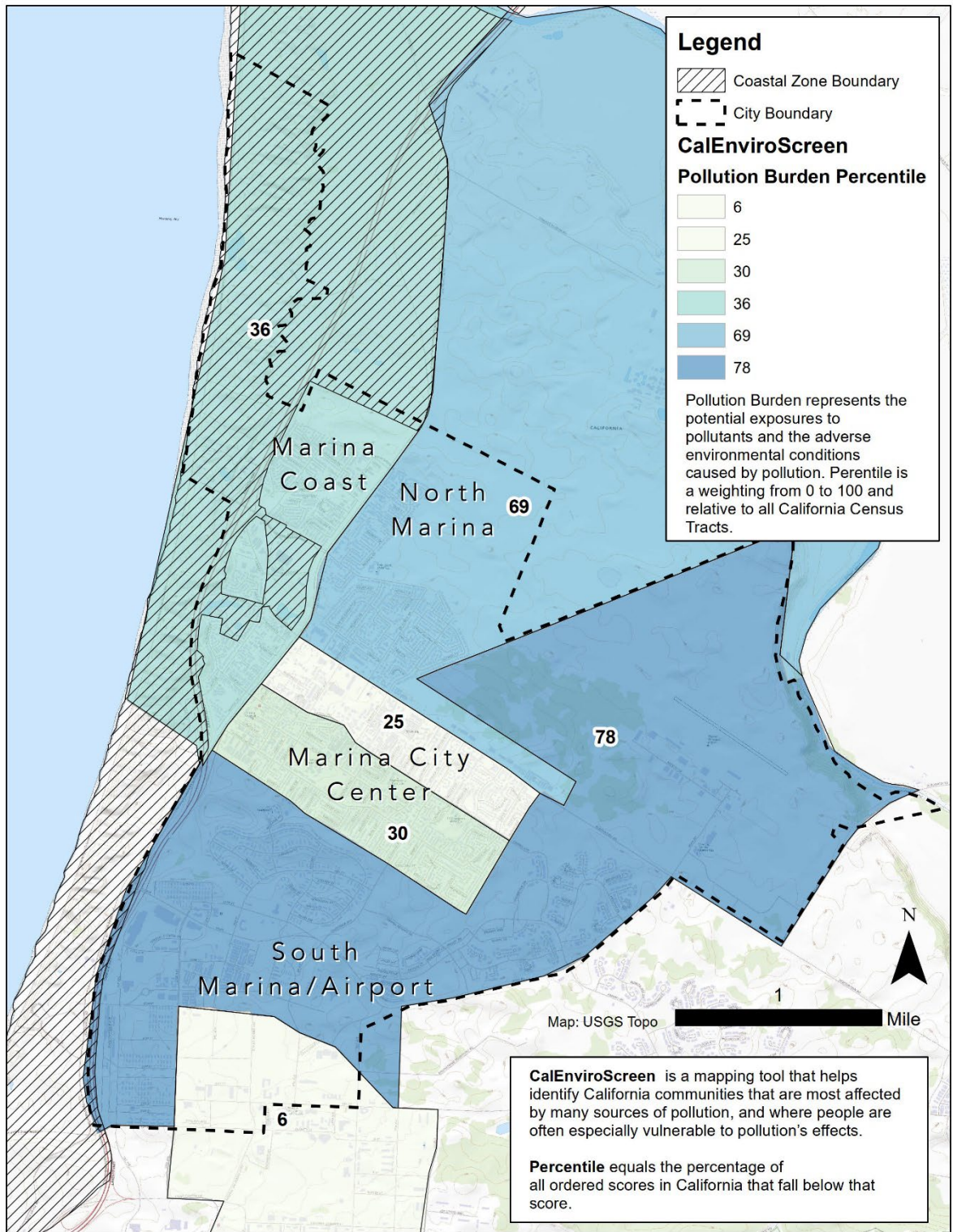


Figure 8. Pollution Burden from CalEnviroScreen 4.0

## **Housing Burden and Cost of Living**

The high cost of living is a challenge to many communities on the California Central Coast and disparities between the cost of housing and median income leave 36 percent of County residents unable to meet the real cost of living (County of Monterey 2016). The housing burden is high across all areas of the City with the exception of Marina Coast, where high incomes offset the cost of housing (see Figure 9). The high cost of housing within the Marina Coast neighborhood limits who can live in this area and thus who can more readily access the coast.

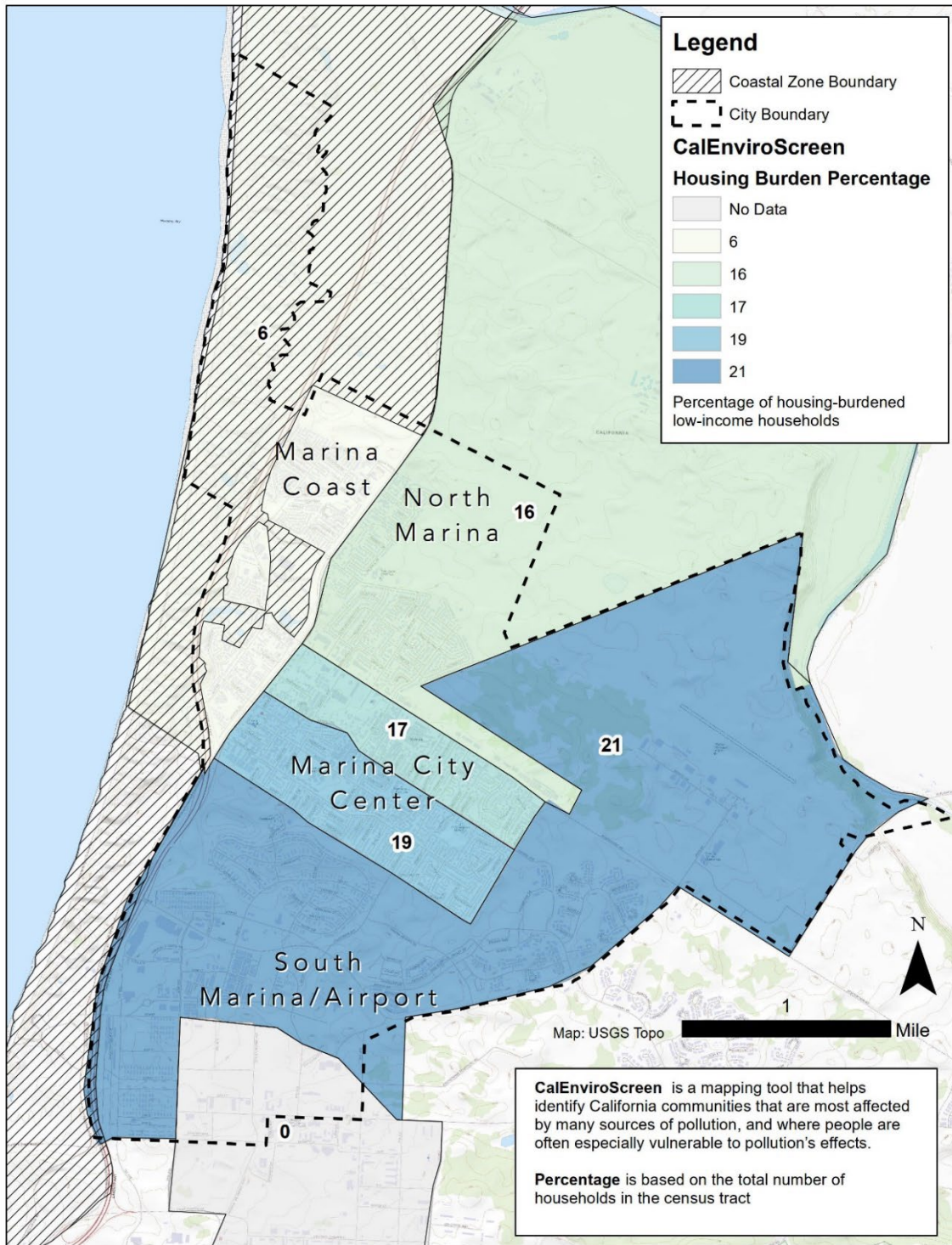


Figure 9. Percentage of Housing-Burdened Low-Income Households Represented as a Percentage of All Households in the Census Tract from CalEnviroScreen 4.0

## **DISCUSSION**

The City can be seen as archetypal of many Central California communities with fewer disadvantaged communities in coastal areas compared to the rest of the City. Despite this, the coastal zone serves all residents, and the inequity in who can live near the coast only highlights the importance of upholding and increasing public access for all residents of the City. California has a long history of discriminatory and unequal coastal access, and this stresses the need to conduct meaningful community engagement with historically underserved communities and those that live further inland with limited access to the coast.

The City's undeveloped shoreline is one of the prized characteristics of the City; however, coastal access in the City is difficult without a vehicle. One of the major impediments to biking and walking is that the coastal access locations are remote, and access to Marina State Beach involves traversing multiple highway on and off ramps. In addition, public transit to the beach does not exist. As the City looks to plan future coastal access projects, consideration should be made for access to all communities.

The residential neighborhoods in the City are not projected to see significant exposure to coastal hazards. However, coastal erosion with sea level rise is projected to impact the visitor-serving areas and park areas along Dunes Drive and the end of Reservation Road. The area is frequented by many visitors and employees from other areas, and serves a broad diversity of people. In addition, as climate changes increase the duration and severity of extreme heat waves and high inland temperatures, the importance of maintaining equitable access to coastal areas will only increase. Any future coastal access projects should consider equitable and inclusive adaptation strategies and provide benefits for all.

Finally, as the City undertakes coastal planning in the future, the City should continue outreach and communications in other major languages that are spoken in the City such as Spanish and Korean. Limited English households may not have access to city communications, and this may limit their ability to prepare for or react to future planning.

## **CONCLUSION AND NEXT STEPS**

The City of Marina's coastal accesses and natural shoreline provide an invaluable and unquantified service to disadvantaged populations both in the community and around the Monterey Bay region. Daily, elderly and disabled individuals line the ocean front parking spots. On sunny weekends, large families of non-English speakers picnic and recreate along the beach.

Previous adaptation work in the region considered the economic impacts of climate adaptation strategies for Southern Monterey Bay determined that traditional approaches to coastal management such as coastal armoring, when considered from a holistic socio-economic perspective, are less economically viable and more environmentally and economically damaging than their alternatives. What we think of as non-traditional approaches, such as managed retreat, have actually been implemented for centuries on coasts around the world and better account for long-term impacts and ancillary consequences (The Nature Conservancy 2016).

The City is proving to be an example for the state with residents and City officials choosing to protect the City's beaches and eschewing coastal armoring and "hold the line" approaches to coastal management. Many coastal landowners interviewed during the LCP process have embraced the general idea of managed retreat. As managed retreat is planned, it will be important to create a participatory process to engage with all communities to identify opportunities for renewal, reorganization, and adaptation in the coastal zone.

The next steps for this social vulnerability assessment are for the findings to be used when considering updating coastal hazard policies within the LCP, as well as during future more comprehensive LCP updates. Community stated preferences to expand access opportunities, reduce the industrial uses of the coastal zone and maintain viewsheds of the coast, dunes, and ocean should be woven around continuing low-cost access for all populations.

## REFERENCES

California Coastal Commission. 2022. Resources for Addressing Environmental Justice through Local Coastal Programs, Draft Document.

CalEnviroScreen 4.0. 2023. Website: <https://oehha.ca.gov/calenviroscreen>

California State Parks. 2023. Ft. Ord Dunes Campground Project. Website: [https://www.parks.ca.gov/?page\\_id=28340](https://www.parks.ca.gov/?page_id=28340).

City of Marina. 2010. City of Marina General Plan, Adopted October 31, 2000. Updated with amendments through August 4, 2010.

City of Marina. 2019. City of Marina Existing Conditions and Sea Level Rise Adaptation Report. November 2019.

Monterey County. 2016. Monterey County Community Resilience Plan.

San Francisco Bay Conservation and Development Commission (BCDC). 2012. Addressing Social Vulnerability and Equity in Climate Change Adaptation Planning. June 2012

The Nature Conservancy. 2016. Economic Impacts of Climate Adaptation Strategies for Southern Monterey Bay.

U.S. Census. 2020. Website: <https://www.census.gov/quickfacts/marinacitycalifornia>

USEPA. 2023. Superfund Site: Fort Ord, Marina, CA. Website: <https://cumulis.epa.gov/supercpad/cursites/csitinfo.cfm?id=0902783>

Walkscore.com. 2023. Living in Marina. Website: <https://www.walkscore.com/CA/Marina>

# Appendix C.

# Vulnerability Tabular

# Results

SECTOR										
METRIC	# of Parcels (instance of parcel on first instance)									
TYPE	Commercial	Common	Institutional	Mining	Mixed	Open Space	Residential	Vacant	Visitor Serving	Total
SUB-TYPE	Commercial	Common	Institutional	Mining	Mixed	Open Space	Residential	Vacant	Visitor Serving	Total
UNITS	count	count	count	count	count	count	count	count	count	count
<b>Total within City</b>										
<b>Cumulative</b>										
<b>Erosion</b>										
Existing conditions	0	0	2	2	0	16	0	0	1	21
9 in	0	0	2	2	0	16	0	0	1	21
28 in	0	0	2	2	0	16	0	0	2	22
63 in	0	0	2	2	0	16	0	0	2	22
<b>Worst Case Coastal Storm</b>										
60.2 in	2	1	2	0	1	12	196	13	1	228

**Non-Cumulative**

TYPE	Commercial	Common	Institutional	Mining	Mixed	Open Space	Residential	Vacant	Visitor Serving	Total
<b>Erosion</b>										
Existing conditions	0	0	2	2	0	16	0	0	1	21
9 in	0	0	0	0	0	0	0	0	0	0
28 in	0	0	0	0	0	0	0	0	1	1
63 in	0	0	0	0	0	0	0	0	0	0
Total	0	0	2	2	0	16	0	0	2	22
<b>Worst Case Coastal Storm</b>										
Storm Alone w/ 63in	2	1	2	0	1	12	196	13	1	228

SECTOR	sq ft and acres of Parcels (portion of parcel on each instance)																			
METRIC																				
TYPE	Commercial		Common		Institutional		Mining		Mixed		Open Space		Residential		Vacant		Visitor Serving		Total	Total
SUB-TYPE																				
UNITS	sq ft	acres	sq ft	acres	sq ft	acres	sq ft	acres	sq ft	acres	sq ft	acres	sq ft	acres	sq ft	acres	sq ft	acres	sq ft	acres
<b>Total within City</b>																			226,189,665	
<b>Cumulative</b>																				
<b>Erosion</b>																				
Existing conditions	0	0.00	0	0.00	287,551	6.60	3,116,584	71.55	0	0.00	3,132,956	71.92	0	0.00	0	0.00	263,357	6.05	6,537,262	150.08
9 in	0	0.00	0	0.00	324,753	7.46	3,642,875	83.63	0	0.00	3,556,043	81.64	0	0.00	0	0.00	298,915	6.86	7,523,864	172.73
28 in	0	0.00	0	0.00	390,149	8.96	4,583,774	105.23	0	0.00	4,299,550	98.70	0	0.00	0	0.00	361,177	8.29	9,273,708	212.90
63 in	0	0.00	0	0.00	490,043	11.25	6,038,931	138.64	0	0.00	5,436,589	124.81	0	0.00	0	0.00	455,449	10.46	11,965,860	274.70
<b>Worst Case Coastal Storm</b>																				
60.2 in	107,973	2.48	5,499	0.13	102,460	2.35	422,675	9.70	16,312	0.37	554,423	12.73	1,103,280	25.33	190,110	4.36	27,487	0.63	2,530,220	58.09

**Non-Cumulative**

UNITS	sq ft	acres	sq ft	acres	sq ft	acres	sq ft	acres	sq ft	acres	sq ft	acres	sq ft	acres	sq ft	acres	sq ft	acres	sq ft	acres
<b>Erosion</b>																				
Existing conditions	0	0.00	0	0.00	287,551	6.60	3,116,584	71.55	0	0.00	3,132,956	71.92	0	0.00	0	0.00	263,357	6.05	6,537,262	150.08
9 in	0	0.00	0	0.00	37,202	0.85	526,291	12.08	0	0.00	423,087	9.71	0	0.00	0	0.00	35,558	0.82	986,602	22.65
28 in	0	0.00	0	0.00	65,396	1.50	940,899	21.60	0	0.00	743,508	17.07	0	0.00	0	0.00	62,262	1.43	1,749,844	40.17
63 in	0	0.00	0	0.00	99,894	2.29	1,455,157	33.41	0	0.00	1,137,038	26.10	0	0.00	0	0.00	94,272	2.16	2,692,152	61.80
<b>Total</b>	0	0	0	0	490,043	11.25	6,038,931	138.64	0	0	5,436,589	124.81	0	0	0	0	455,449	10.46	11,965,860	274.70
<b>Worst Case Coastal Storm</b>																				
Storm Alone w/ 63in	107,973	2.48	5,499	0.13	102,460	2.35	422,675	9.70	16,312	0.37	554,423	12.73	1,103,280	25.33	190,110	4.36	27,487	0.63	2,530,220	58.09

SECTOR																	
METRIC	# of Buildings (instance of building on first instance)							sq ft of Buildings (entire building on first instance)							Parkland		
TYPE	Commercial or Services	Institutional	Residential		Visitor Serving		Total	Commercial or Services	Institutional	Residential		Visitor Serving		Building Area Grand Total			
SUB-TYPE	Commercial	Institutional	Residential	Residential Out Building	Visitor Serving	Visitor Serving Out Building		Commercial	Institutional	Residential	Residential Out Building	Visitor Serving	Visitor Serving Out Building				
UNITS	count	count	count	count	count		count	sq ft	sq ft	sq ft	sq ft	sq ft	sq ft	total sq ft	count	sq ft	acres
<b>Total within City</b>							5,878							16,712,965	24		
<b>Cumulative</b>																	
<b>Erosion</b>																	
Existing conditions	0	4	0	0	0	0	4	0	1,358	0	0	0	0	1,358	1	589,854	13.54
9 in	0	7	0	0	9	0	16	0	3,035	0	0	6,457	0	9,491	1	674,646	15.49
28 in	0	8	0	0	17	1	26	0	5,207	0	0	18,037	293	23,537	1	825,626	18.95
63 in	0	8	0	0	23	1	32	0	5,207	0	0	33,117	293	38,617	1	1,059,259	24.32
<b>Worst Case Coastal Storm</b>																	
60.2 in	1	3	152	1	1	0	158	3,612	4,732	343,222	536	3,011	0	355,113	1	219,402	5

**Non-Cumulative**

UNITS	Commercial	Institutional	Residential	Residential Out Building	Visitor Serving	Visitor Serving Out Building	Total	Commercial	Institutional	Residential	Residential Out Building	Visitor Serving	Visitor Serving Out Building	total sq ft	count	sq ft	acres
<b>Erosion</b>																	
Existing conditions	0	4	0	0	0	0	4	0	1,358	0	0	0	0	1,358	1	589,854	13.54
9 in	0	3	0	0	9	0	12	0	1,677	0	0	6,457	0	8,134	0	84,792	1.95
28 in	0	1	0	0	8	1	10	0	2,172	0	0	11,580	293	14,046	0	150,979	3.47
63 in	0	0	0	0	6	0	6	0	0	0	0	15,080	0	15,080	0	233,633	5.36
<b>Total</b>	0	8	0	0	23	1	32	0	5,207	0	0	33,117	293	38,617	1	1,059,259	24.32
<b>Worst Case Coastal Storm</b>																	
Storm Alone w/ 63in	1	3	152	1	1	0	158	3,612	4,732	343,222	536	3,011	0	355,113	1	219,402	5.04

SECTOR	Roads					Public Transportation				Sewer								Water Supply					Stormwater						
METRIC	length of roads		Parking			# of bus stops	length of routes by type				MCWD				M1 Water				length of water mains		Water Treatment Buildings (former WDR)	# of wells	# of vaults	# of hydrants	length of storm drain pipe		# of storm drains		
TYPE							bike	bike	bus	bus	# of lift/pump stations	length of force mains		length of gravity mains		# of manholes	length of force mains											length of pressure mains	
SUB-TYPE	ft	miles	count	sq ft	acres	count	ft	miles	ft	miles	count	ft	miles	ft	miles	count	ft	miles	ft	miles	ft	miles	count	count	count	count	ft	miles	count
<b>Total within City</b>	585,308	110.85				112	68,102	12.90	155,479	29.45	14	22,987	4.35	464,519	87.98	1,453	16,858.21	3.19	627.58	0.12	564,077	106.83	1	4	?	921	41,562	7.87	568
<b>Cumulative</b>																													
<b>Erosion</b>																													
Existing conditions	147	0.03	1	5,087	0.12	0	0	0.00	0	0.00	0	0	0.00	504	0.10	0	261	0.05	626	0.12	173	0.03	1	1	1	0	0	0.00	0
9 in	438	0.08	1	15,713	0.36	0	0	0.00	0	0.00	1	4	0.00	563	0.11	1	339	0.06	626	0.12	236	0.04	1	1	1	0	0	0.00	0
28 in	1,569	0.30	1	21,527	0.49	0	168	0.03	0	0.00	1	203	0.04	1,440	0.27	4	477	0.09	626	0.12	832	0.16	1	1	1	3	0	0.00	0
63 in	2,749	0.52	1	21,527	0.49	0	498	0.09	0	0.00	1	357	0.07	2,257	0.43	7	686	0.13	626	0.12	1,013	0.19	1	1	1	3	0	0.00	0
<b>Worst Case Coastal Storm</b>																													
60.2 in	15,863	3	1	12,831	0	1	6,122	1	3,632	1	1	246	0	13,773	3	48	686	0	626	0	12,955	2	0	0	0	21	2,774	1	25

**Non-Cumulative**

SECTOR	Roads					Public Transportation				Sewer								Water Supply					Stormwater						
METRIC	length of roads		Parking			# of bus stops	length of routes by type				MCWD				M1 Water				length of water mains		Water Treatment Buildings (former WDR)	# of wells	# of vaults	# of hydrants	length of storm drain pipe		# of storm drains		
TYPE							bike	bike	bus	bus	# of lift/pump stations	length of force mains		length of gravity mains		# of manholes	length of force mains											length of pressure mains	
SUB-TYPE	ft	miles	count	sq ft	acres	count	ft	miles	ft	miles	count	ft	miles	ft	miles	count	ft	miles	ft	miles	ft	miles	count	count	count	count	ft	miles	count
<b>Erosion</b>																													
Existing conditions	147	0.03	1	5,087	0.12	0	0	0.00	0	0.00	0	0	0.00	504	0.10	0	260.76	0.05	625.71	0.12	173	0.03	1	1	1	0	0	0.00	0
9 in	291	0.06	0	10,626	0.24	0	0	0.00	0	0.00	1	4	0.00	59	0.01	1	77.78	0.01	0.00	0.00	63	0.01	0	0	0	0	0	0.00	0
28 in	1,130	0.21	0	5,814	0.13	0	168	0.03	0	0.00	0	199	0.04	877	0.17	3	138.46	0.03	0.00	0.00	596	0.11	0	0	0	3	0	0.00	0
63 in	1,181	0.22	0	0	0.00	0	330	0.06	0	0.00	0	154	0.03	816	0.15	3	209.01	0.04	0.00	0.00	181	0.03	0	0	0	0	0	0.00	0
Total	2,749	0.52	1	21,527	0.49	0	498	0.09	0	0	1	357	0.07	2,257	0.43	7	686.02	0.13	625.71	0.12	1,013	0.19	1	1	1	3	0	0.00	0
<b>Worst Case Coastal Storm</b>																													
Storm Alone w/ 63in	15,863	3.0	1	12,831	0.29	1	6,122	1.16	3,632	1	1	246	0.05	13,773	2.61	48	686	0.1	626	0.1	12,955	2.45	0	0	0	21	2,774	1	25

SECTOR	Public Access										Hazardous Materials Sites	Sensitive Habitat					
METRIC	# of perc ponds (pond locations not lots)	# of access locations	length of trail								# of sites by type	Dunes - Least Disturbed		Dunes - Potential & Known Rare Plant Species Localities		Dunes - of all types	
TYPE			VERTICAL BEACH ACCESS		LATERAL (BEACH)		ALL OTHER DEDICATED WALKING TRAIL		TOTAL OF ALL TYPES OF TRAIL		UST (Underground Storage Tank)						
SUB-TYPE	count	count	ft	miles	ft	miles	ft	miles	ft	miles	count	sq ft	acres	sq ft	acres	sq ft	acres
<b>Total within City</b>	76	7	6,458	1.22	8,710	1.65	165,628	31.37	180,796	31.37		20,062,766	461	1,380,966	32	21,443,731	492
<b>Cumulative</b>																	
<b>Erosion</b>																	
Existing conditions	0	1	1,913	0.36	16,880	3.20	0	0.00	10,623.51	2.01	0	2,065,026	47.41	95,930	2.20	2,161,003	50
9 in	0	1	2,282	0.43	16,880	3.20	0	0.00	10,991.86	2.08	0	2,763,633	63.44	105,736	2.43	2,869,433	66
28 in	0	1	2,827	0.54	16,880	3.20	1,012	0.19	12,548.95	2.38	0	4,138,465	95.01	142,433	3.27	4,280,994	98
63 in	0	2	3,365	0.64	16,880	3.20	2,289	0.43	14,363.57	2.72	0	6,452,177	148.12	262,093	6.02	6,714,418	154
<b>Worst Case Coastal Storm</b>																	
60.2 in	10	0	0	0	0	0	4,808	1	4,808	1	1	345,123	8	162,783	4	507,915	12

**Non-Cumulative**

SECTOR	Public Access										Hazardous Materials Sites	Sensitive Habitat					
METRIC	# of perc ponds (pond locations not lots)	# of access locations	length of trail								# of sites by type	Dunes - Least Disturbed		Dunes - Potential & Known Rare Plant Species Localities		Dunes - of all types	
TYPE			VERTICAL BEACH ACCESS		LATERAL (BEACH)		ALL OTHER DEDICATED WALKING TRAIL		TOTAL OF ALL TYPES OF TRAIL		UST (Underground Storage Tank)						
SUB-TYPE	count	count	ft	miles	ft	miles	ft	miles	ft	miles	count	sq ft	acres	sq ft	acres	sq ft	acres
<b>Erosion</b>																	
Existing conditions	0	1	1,913	0.36	16,880	3.20	0	0.00	10,623.51	2.01	0	2,065,026	47.41	95,930	2.20	2,161,003	49.61
9 in	0	0	368	0.07	0	0.00	0	0.00	368.35	0.07	0	698,607	16.04	9,807	0.23	708,429	16.26
28 in	0	0	545	0.10	0	0.00	1,012	0.19	1,557.09	0.29	0	1,374,833	31.56	36,697	0.84	1,411,561	32.41
63 in	0	1	538	0.10	0	0.00	1,277	0.24	1,814.62	0.34	0	2,313,712	53.12	119,660	2.75	2,433,424	55.86
Total	0	2	3,365	0.64	16,880	3.20	2,289	0.43	14,364	2.72	0	6,452,177	148.12	262,093	6.02	6,714,418	154.14
<b>Worst Case Coastal Storm</b>																	
Storm Alone w/ 63in	10	0	0	0	0	0	4,808	0.91	4,808	0.91	1	345,123	7.92	162,783	3.74	507,915	11.66



*Social Vulnerability Assessment,*  
Integral Consulting, August 18, 2023

E  
APPENDIX





Integral Consulting Inc.  
200 Washington Street  
Suite 201  
Santa Cruz, CA 95060

telephone: 831.466.9630  
facsimile: 831.466.9670  
www.integral-corp.com

## MEMORANDUM

---

---

**To:** Alyson Hunter, AICP, Interim Planning Manager, City of Marina  
**From:** David Revell, Ph.D., and Matthew Jamieson  
**Date:** August 18, 2023  
**Subject:** City of Marina Social Vulnerability Assessment for LCP Update  
**Project No.:** C3346

---

---

The purpose of this memorandum is to assess social vulnerability in the City of Marina (City) and to develop recommendations for the City to integrate social vulnerability and environmental justice concerns into their Local Coastal Program (LCP) update. There have been numerous contributions to the development of guidance frameworks to understand how social vulnerability relates to climate change and coastal hazards on a broad scale (CCC 2022; The Nature Conservancy 2016; BCDC 2012), as well as site-specific assessments of sea level rise and coastal hazards for the City (City of Marina 2019). This assessment focuses on the intersection of coastal hazards and other environmental stressors with measures of social vulnerability, and evaluates these factors to provide the City with the proper context to consider social vulnerability in future sea level rise resiliency planning.

The City's aim for the ongoing LCP amendment process is to build a meaningful outreach process to help inform the scope of the update and identify environmental justice concerns and policy considerations for the LCP. This work was slated to occur following the 2018 City Council Resolution to update existing conditions in the LCP; however, due to the COVID-19 pandemic, this vital step of community outreach and engagement was delayed. The assessment presented in this memorandum is a continuation of this process.

This memorandum includes the following sections:

- **Introduction** describes important terms and the scale of this study
- **Data Sets and Methodology** describes the data sets used in the study
- **Existing Conditions** describes the demographics and neighborhoods of the City

- **Findings** section provides maps and an overview of the vulnerability characteristics of the City
- **Discussion** details some of the major existing community vulnerabilities and how exposure to coastal hazards and climate change can exacerbate these vulnerabilities
- **Conclusion and Next Steps** details what has been learned and where to go next.

## INTRODUCTION

The City's LCP was first certified by the California Coastal Commission (CCC) in 1982 and was last amended in 2009. Since 2009, statewide understanding has grown regarding the potential impacts of sea level rise with an acute focus on consideration of social vulnerability and equitable coastal access.

The mission of the CCC was established with the 1976 California Coastal Act, which guides how land along the coast is developed and is grounded in the principle of equity. The Coastal Act emphasizes the importance of the public being able to access the coast and how the coast is essential to the economic and social well-being of the people of California.

### Definition of Terms

Social vulnerability and environmental justice are burgeoning fields of study and many of the terms used in this memorandum may feel unfamiliar. The section below provides definitions and descriptions of commonly used terms.

**Sensitivity** is the degree to which a community is affected by exposure to climate risks and hazards. It is often related to a particular community's livelihood, location, and built environment, as well as environmental health and demographic factors. For instance, livelihoods that are dependent on coastal tourism may be inherently more sensitive to impacts from coastal hazards.

**Adaptive capacity** refers to the ability of an individual, household, or community to develop resilience and adjust to climate risks and hazards. Adaptive capacity can be affected by financial resources, human/social capital, competency and reliability of institutions, education and knowledge, equity in access and distribution of resources, and the range of potential adaptation options that may be available.

**Community indicators** are the characteristics of a population that are often reflected in metrics such as low-income populations, linguistic isolation, housing burden, and demographic factors. Community indicators represent traits or characteristics that can affect a particular community's adaptive capacity and level of sensitivity to environmental stressors such as coastal hazards.

**Exposure or burden** is often used to describe whether or to what degree a community will experience a stress or hazard. This includes exposure to environmental stressors or adverse environmental conditions, such as pollutants, climate change, or coastal hazards. Burden is often used to describe the degree of exposure, while exposure is often used to describe vulnerable areas, such as a geographical area that will be exposed to sea level rise and coastal hazards.

**Social vulnerability** describes communities that are at heightened climate risks and have less capacity and fewer resources to prepare for, respond to, and recover from negative impacts. Social vulnerability exists at the intersection between exposure/burden, sensitivity, and adaptive capacity.

**Environmental justice** recognizes that minority or low-income communities experience greater exposure to environmental hazards and that there is a legacy of practices in land-use planning that has resulted in barriers to access and inequity (CCC 2022). State law defines environmental justice to mean "the fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies" (Gov. Code, § 65040.12, subd. [e]).

## **Description of the Various Scales of this Study**

This study will discuss potential impacts on three distinct geographic scales within the City in order to focus this analysis on specific vulnerable communities, environmental stressors, and coastal hazards. These geographies are defined below as within the identified coastal hazard zone, the coastal zone, and the City as a whole (Figure 1).

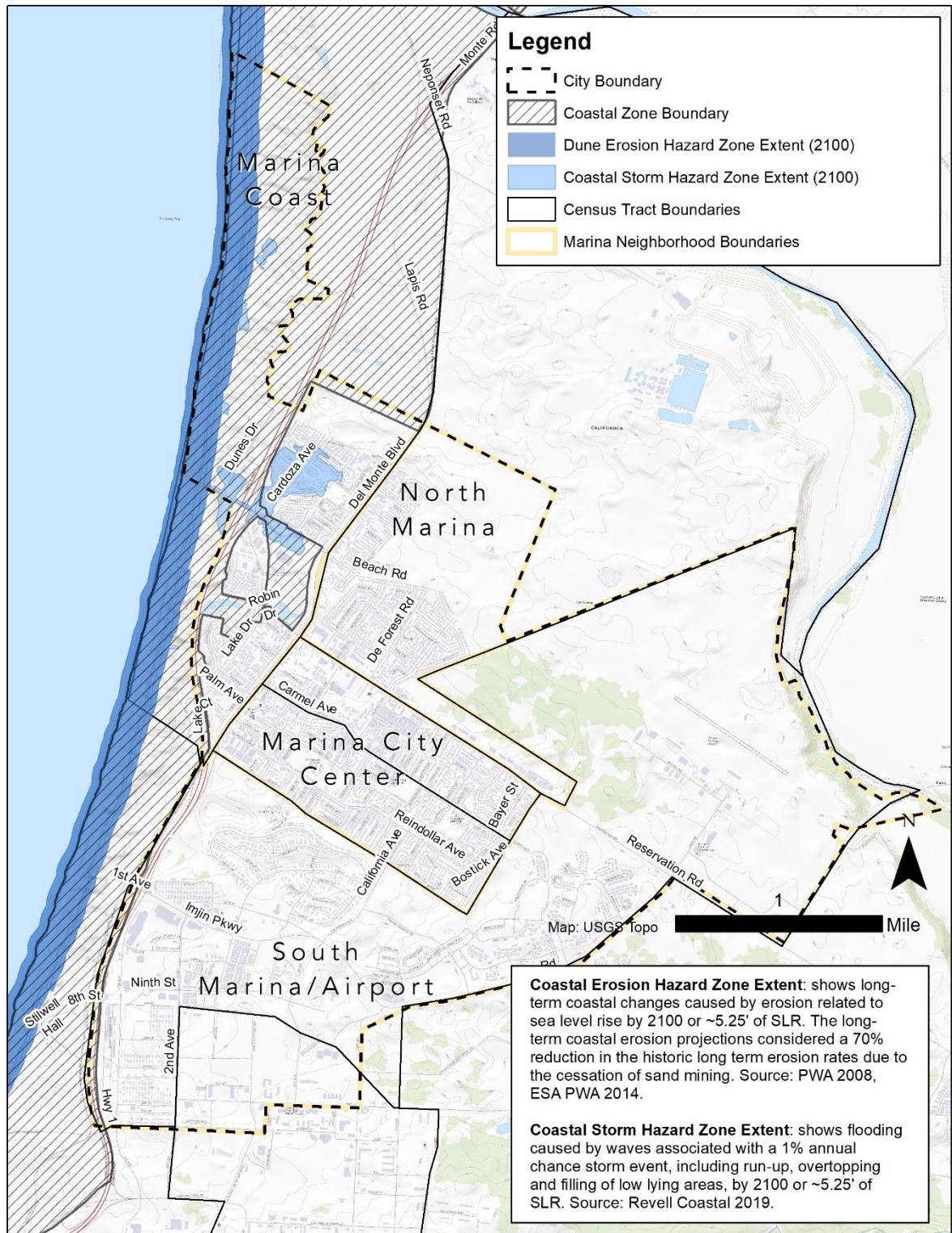


Figure 1. Administrative Boundaries and Coastal Hazard Zones within the City of Marina

**The City of Marina** is the broadest level of analysis (shown as a black-hatched line in Figure 1), and data are displayed for this area to provide context for the City and to assist with future planning efforts. The inland portion of the City encompasses 9.8 mi<sup>2</sup> and is composed of 8.9 mi<sup>2</sup> of land and 0.9 mi<sup>2</sup> of surface water. The adjacent jurisdictions include Sand City to the south, the County of Monterey to the north and east, and the Monterey Bay National Marine Sanctuary to the west. Along the City's coastline are Marina State Beach at the south and the former CEMEX Lapis Sand Mining Facility at the north. Fort Ord State Park, while not directly within the City, provides coastal access at 8th Street. Unique among central coast communities, both the southern and northern areas of the City are planned to see major development in the future. In addition, the City benefits from having minimal development along the coast and no coastal armoring in the coastal zone.

**Coastal zone** is the regulatory boundary in which the CCC establishes policies and regulations (shown as thin black cross-hatching in Figure 1). The jurisdiction includes 3.2 miles of Pacific shoreline and comprises approximately 1.6 mi<sup>2</sup>. This includes all of the land west of Highway 1 and a small low-lying area east of Highway 1 located around Locke-Paddon Park and a seasonal pond near Robin Drive. There are only a handful of private residences in this zone, and the City's LCP amendment effort is the primary guide for planning and development in this area. The most recent LCP in the City was amended in 2009, and remains in a redlined condition. The impetus for this funding is to update the coastal hazards-related LCP policies and implementation language as part of an amended LCP.

**Coastal hazard zone** encompasses the farthest extent of storm wave flooding and coastal erosion under both the high erosion and 100-year storm wave flooding scenarios with 5.25 ft of sea level rise projected out to 2100. This area encompasses 0.43 mi<sup>2</sup> by 2100. Within the coastal storm wave flood hazard zone by 2100 (light blue area in Figure 1), there is a small residential population centered around Cardoza Avenue. It should be noted that following the cessation of mining and a corresponding projected reduction in dune erosion, the extent of coastal erosion and storm wave flooding by 2100 may be less than indicated. Within the dune erosion hazard zone (darker blue area in Figure 1), there is no permanent population; however, the area does service many people from the community. This area along Dunes Drive and Reservation Road west of Highway 1 is a regional employment center and a major local economic driver. The area has three hotels, an RV park, and two government offices. The Marina State Beach parking lot offers coastal access and is a destination for coastal recreation and wildlife viewing (Figure 2).



Figure 2. The Marina State Beach Shoreline at the End of Reservation Road  
Source: Coastal Records Project (2018)

As a coastal community, the entire population is tied to the coast not just physically but through numerous social, recreational, and economic relationships. The impacts from coastal hazards can have lasting impacts beyond just interruptions to coastal access and damage to homes and businesses. This can also include contamination risk, interruptions to emergency services, and social and economic implications from management and adaptation choices. Existing issues on the coast, including the relatively high cost of living, economic and housing inequality, and issues with community segregation, also interact with the effects of climate change. Historically, underserved and socially vulnerable communities may have difficulty managing disasters on their own due to limited technical and financial resources, may depend on others for basic needs or transportation, or already face discrimination or stigma that can affect future recovery efforts.

With proper planning, the City has an opportunity to lead by example in recognizing potential impacts and community needs within the coastal zone, engaging with vulnerable communities, and working to reverse any past injustices that may create undue strain upon these communities. One of the City's stated priorities for the LCP update is to maintain public access and limit the use of coastal armoring so that beaches and dunes are maintained into the future for all people. Like most community engagement and climate

change planning efforts, this is a process that takes time and involves building trust and collaboration. The City can work to proactively plan for an equitable future, and implement land use planning policies that reduce conflicts to public access, benefits access to recreation and education in the coastal zone, support disadvantaged communities, and reduce exposure to environmental stressors or adverse environmental conditions caused by climate change. How these adverse conditions are evaluated for social vulnerability is further discussed below in the Discussions Section.

## **DATA SETS AND METHODOLOGY**

This section provides a description of the community indicators used in this study and covers the scale of the data sets, the year the data were collected, and who collected the data. While there are countless factors that can be used to determine a population's social vulnerability, this analysis was restricted to published federal and state data that could be found at the Census Block Group (CBG) and Census Tract (CT) level (see descriptions below for more information). While these data sets are a good starting point for understanding community vulnerabilities, they may not fully capture all of the nuanced or dynamic community characteristics that can produce vulnerability or resiliency. For instance, the scale of a CBG may obscure certain at-risk populations, or a vulnerability ranking may not properly weigh the level of vulnerability to certain higher-risk populations such as undocumented people, who may not respond to the U.S. Census or other community surveys. Once the data were sourced and compiled, each identified key variable was mapped, and overall findings are detailed in the Discussion Section. The data sets that have been relied on for this study are outlined below.

**United States Census** is conducted every 10 years and includes a wide range of demographic information related to age, sex, ethnicity and race, income, and more at numerous geographic scales. For this study, we are using the 2020 U.S. Census to report demographic data at the CBG level. The City has been mapped into 14 separate CBGs, and each CBG encompasses approximately 600 and 3,000 people. Other data, such as the CalEnviroScreen data set described below, are available at the CT level. There are 6 CTs in the City, and each encapsulates 2-3 CBGs.

**CalEnviroScreen** is a mapping tool that is based on data available from state and federal government sources that helps identify California communities that are most affected by many sources of pollution, and where people are often especially vulnerable to pollution's effects. CalEnviroScreen uses environmental, health, and socioeconomic information to produce scores for every CT in the state. An area with a high score experiences a much higher pollution burden than areas with low scores (CalEnviroScreen 4.0 2023). For this study, we are reporting data as percentiles and percentages. Percentiles are a ranking from

0 to 100 and are equal to the CT's ranking among all California CTs with 0 being the lowest and 100 being the highest. Percentages are reflection of the percentage of all households or individuals in a given area.

**U.S. Environmental Protection Agency (EPA) Smart Location Database** is a large body of research on land uses and urban forms and their effect on transportation outcomes. Indicators include the density of development, diversity of land use, street network design, and accessibility to destinations as well as various demographic and employment statistics (USEPA 2023). The data was published at the CBG level. For this study, we are using the Smart Location Database to report walkability scores.

Note that there are a wide range of data sets and decision support tools that can be used to examine social vulnerability and impacts from climate change. The **CDC/ATSDR Social Vulnerability Index** is one tool that includes an index of demographic factors at the CT level to understand social vulnerabilities. These data are generally more appropriate for a higher-level screening, and more information can be found at [www.atsdr.cdc.gov](http://www.atsdr.cdc.gov). The Federal Emergency Management Agency provides a tool called **HAZUS** that allows users to examine potential economic losses and social impacts from hazards. The HAZUS tool can be found at <https://www.fema.gov/flood-maps/products-tools/hazus>. Finally, the University of California, Berkeley has published a tool called **CalAdapt** that allows for data access and visualization of climate change-related stressors. This is available at <https://cal-adapt.org/>.

While all social vulnerability tools and metrics can be valuable for a broader scale of analysis, all data and results should be considered with caution and ground-truthed wherever possible through consultation and engagement with local communities and community-based organizations.

## **EXISTING CONDITIONS**

The City is located adjacent to Monterey Bay in Central California in Monterey County (County). The City was incorporated in 1975 and had seen steady growth in connection with the Fort Ord military installation. After the base was selected for decommissioning in 1991 and formally closed in 1994, the population of the City marked a 27.5 percent decline between 1990 and 2000 (City of Marina 2010). However, through the redevelopment of the former base and other development efforts, the City's population at the 2020 Census approached 23,000, which is ~87 percent of the population recorded in 1990 (U.S. Census 2020).

The City's predominant land use is residential, reflective of the City's previous role as a bedroom community to the former Fort Ord military base, which is now home to the California State University, Monterey Bay and other institutions. Retail corridors and commercial development are located around Reservation Road, Del Monte Boulevard, and Imjin Parkway. There is also significant visitor-serving development off Dunes Drive with three hotels and an RV park (City of Marina 2019).

The City has the County's highest diversity index with the highest percentages of Asian residents and over 2 times the amount of Black/African American residents compared to other cities in the County (City of Marina 2019). Marina also has more low-income residents than other cities in Southern Monterey Bay with one-third of the community identified as low income, and just over 10 percent of residents live under the poverty line (US Census 2020).

## **Superfund Site Status**

Following the closure of the Fort Ord military base, EPA placed the former base on the Superfund program's National Priorities List. The site contained leaking underground storage tanks, a 150-acre landfill, small amounts of waste generated by the base, and other potential contaminants. Following a series of cleanup activities, on November 20, 2020, EPA announced its proposal to remove 11,934 acres of the 27,827-acre Fort Ord Superfund site from the National Priorities List. EPA and the State of California continue to oversee the U.S. Army's cleanup at the rest of the site. Both the groundwater and soil cleanup for the 11,934 acres are still in the Superfund program (USEPA 2023).

## **Development Plans**

Planned developments include Marina Station in the north and the continuation of ongoing development in the south of the City, known as University Villages and Dunes at Monterey Bay. The City could also see continued business and institutional research development at the Marina Municipal Airport Business and Industrial Park/UC MBEST Center in the eastern portion of the city.

## **Fort Ord State Beach Redevelopment**

Funded with California State Parks bond money, the planned Fort Ord State Beach improvement will include the only coastal State Parks campground for more than 60 miles between Santa Cruz County and Big Sur. This project represents an ongoing effort to expand low-cost overnight accommodation on the coast, and it will increase recreational opportunities and access to community members in the City (State Parks 2023).

## CEMEX Lapis Property

The CEMEX Lapis property is located along the City's northern coastal extent. As part of a consensus agreement between CEMEX, the City, and the State of CA, the sand mine is being retired and decommissioned. While the property is required to be sold to a public or non-profit entity, the future of the CEMEX Lapis property is currently being discussed. As the sand mining operations are retired, there is a possibility for public beach access. Although this parcel falls within City limits, the existing access roads are not, and the future status of the private roads on this parcel are uncertain.

## Marina Demographics at a Glance

Total population	22,359
Total housing units	8,022
Percentage who identifies as white alone and not Hispanic or Latino	38.4%
Median age	34.4
Percentage of the population over 65 years	13.8%
Median household income	\$73,115
Percentage living in poverty	11.5%
Percentage of the population with a bachelor's degree or higher	29.9%
Percentage of the population without health care coverage	6.6%

Source: Decennial Census (2020)

Note:

Demographic figures may vary by source, year, scale, and how the data was calculated.

## Neighborhoods

To assist in understanding, this study will map and discuss demographic and vulnerability findings using neighborhood areas rather than quoting CT or CBG codes. In consultation with the City's staff, each of these neighborhoods follows CT delineations and has been identified to encompass distinct geographic areas (see Figure 1, thick tan colored boundaries on the map). For reference, the total population in each CT is indicated in Figure 3, and the total population in each neighborhood, as well as the size of each neighborhood area, is listed below.

**Marina Coast** (1.7 mi<sup>2</sup>, 3,663 people) includes the areas west of Del Monte Boulevard encompassing Marina State Beach and the former CEMEX lands along the coast including portions of the future development at Marina Station. This neighborhood includes one CT and two CBGs.

**Central Marina** (1 mi<sup>2</sup>, 9,527 people) includes the main commercial areas bounded by Reservation Road in the north, Del Monte Boulevard in the west, Patton Parkway in the

south, and Bayer Drive and Salinas Avenue in the east. This is the densest and most established area of the City. This neighborhood includes two CTs and five CBGs.

**South Marina / Airport** (4.9 mi<sup>2</sup>, 5,599 people) includes all of the southern and eastern portions of the City including the redevelopment areas of old Fort Ord and areas of the University of California, Santa Cruz Fort Ord Natural Reserve and the Marina Municipal Airport. This neighborhood includes two CT and 5 CBGs. Note that some CBGs in this neighborhood, including areas of the former military base and the airport, have no residents.

**North Marina** (1.1 mi<sup>2</sup>, 4,319 people), includes all areas north of Reservation Road and east of Del Monte Boulevard including site of the future development at Marina Station. This neighborhood includes one CT and two CBGs.

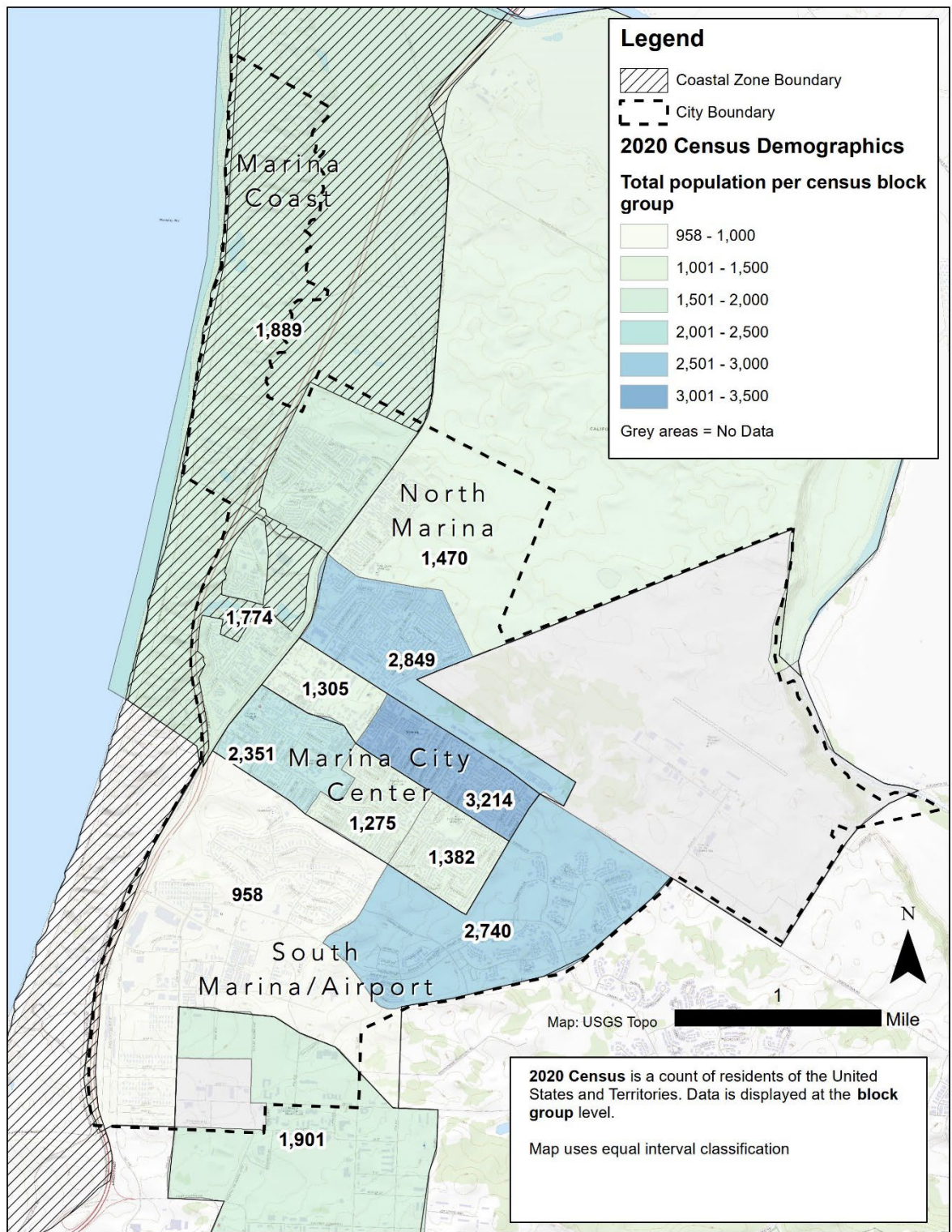


Figure 3. Marina Total Population from the 2020 U.S. Census

## **FINDINGS**

This section organizes social vulnerability using various categories, including demographic characteristics, coastal access, walkability, environmental stressors, and housing burden. For each category, selected data are mapped for the City as a whole, and the coastal zone boundary is shown to provide a reference to areas that are relevant to the LCP update. Note that not all vulnerability characteristics found in the discussion are mapped in this study, and more information can be found at the interactive web viewers linked below.

### **Interactive Web Viewers**

For demographic characteristics, visit [U.S. Census's QuickFacts](#).

For environmental stressors and housing burden, visit [CalEnviroScreen](#).

For walkability, visit EPA's [Smart Location Calculator](#).

### **Demographic Characteristics**

The highest density of residents can be found in Marina City Center closest to Reservation Road and Del Monte Boulevard. The CBGs around these corridors have higher concentrations of residents with English as a second language (15.7, 30.1, and 13.5 percent) and people who identify as non-white (78, 75.5, and 43.3 percent) (see Figure 5). South Marina / Airport stands out for its demographic characteristics, having elevated percentages of people living in poverty (see Figure 4) and who are unemployed. Note that both of these statistics may be biased by California State University, Monterey Bay, which may not be located in the City, but the southern CT likely has a larger number of students who reside in this neighborhood and who may live on limited income. Northern and eastern areas of the City including Marina Coast, North Marina, and the eastern portions of Marina City Center (east of Crescent Avenue) stand out as the highest-income areas. These are areas composed of single-family home developments. Eastern portions of South Marina / Airport stand out as having the highest percentage of households with zero automobiles.

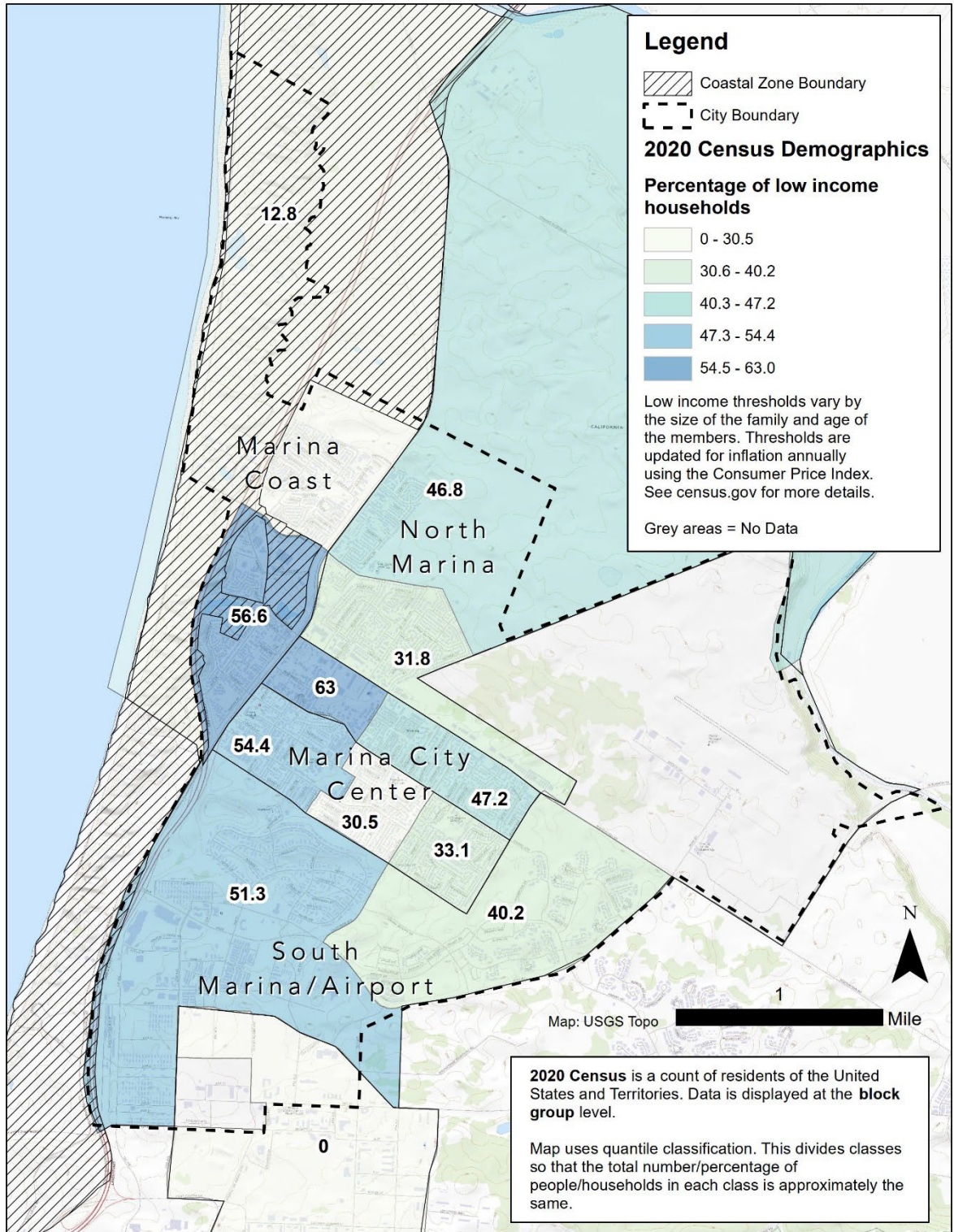


Figure 4. Marina Low-Income Households from the 2020 U.S. Census

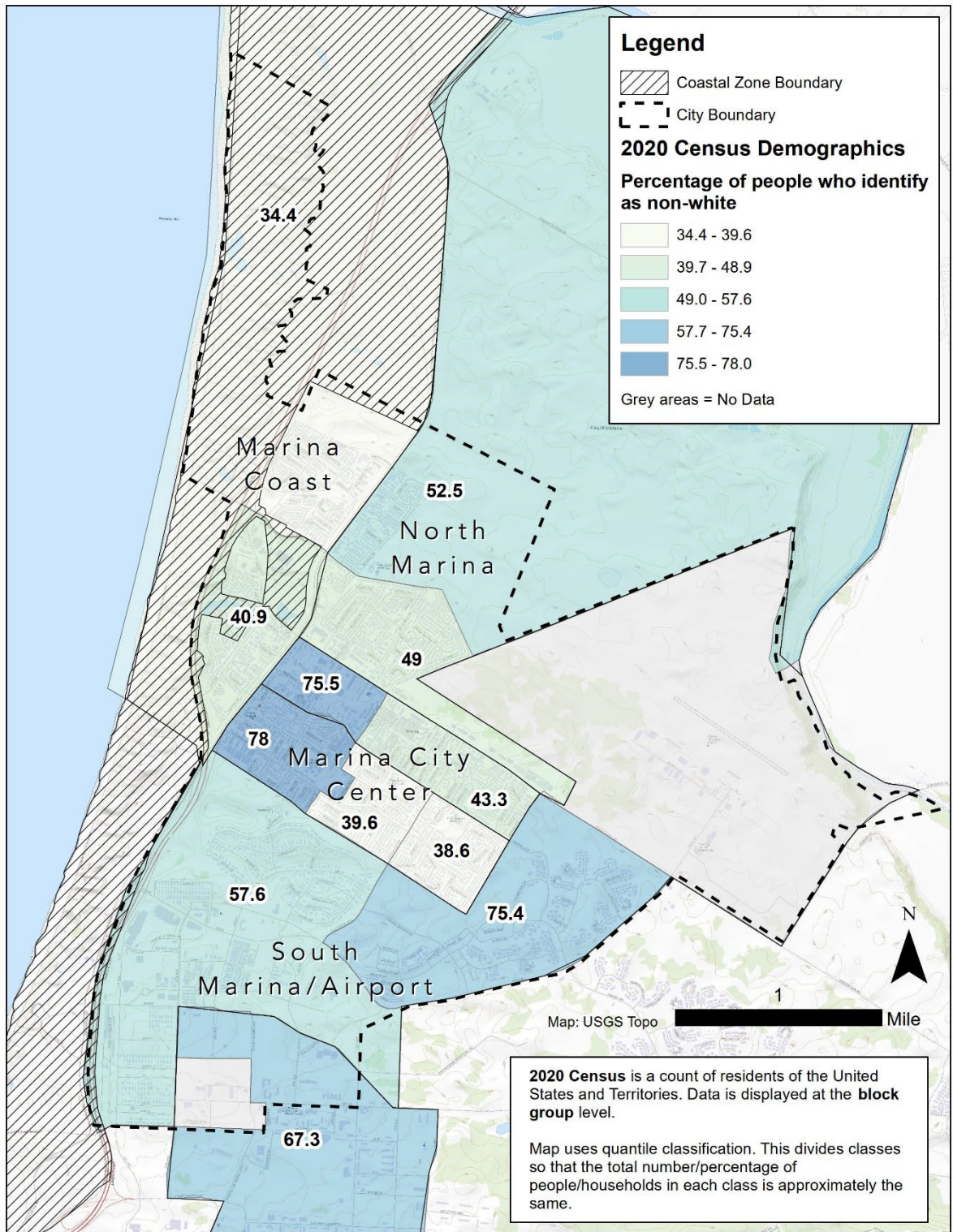


Figure 5. Marina Non-White Population from the 2020 U.S. Census

## **Coastal Access**

There are eight distinct coastal access locations in or around the City. Each of these locations marks a trailhead with direct access to the coast. Of the approximately 5,900 buildings in Marina, 121 (~2 percent) are within a quarter-mile walk to one of these locations, and 600 (~10 percent) are within a half-mile walk (see Figure 6 for walk radius areas).

The most accessible location for those driving to the coast is afforded by the Marina State Beach Parking Lot off Reservation Road with just over 50 parking spaces and Fort Ord State Park Parking Lot (just outside of the City limits) with ~80 spaces. Unfortunately, both of these locations are somewhat remote for those walking or riding from neighborhood areas in the City. The most accessible location for locals to walk to is Lake Court with ~360 buildings within a half-mile walk. This area has limited parking, and access to the coast is made difficult by a steep ascent and descent over the dunes. Additionally, the coastal access location at Sanctuary Beach Resort provides access to a large number of people; however, it does not easily serve non-hotel customers.

## **Walkability**

As a whole, the City ranks lower on walkability scores than other medium-sized cities in the region and the pattern of development is described as car-dependent by walkscore.com. According to walkscore.com, the City ranks 46 out of 100 (average) for walk score and 56 out of 100 for bike score (somewhat bikeable). According to the EPA walkability ratings, the CBGs located in the western portions of Marina City Center score the highest. This is reflective of the higher street densities, variety of land uses, and higher overall connectivity ratings. Some of the least walkable areas within the City can be found in the Marina Coast neighborhood (see Figure 7). This is a result of a lower-density pattern of development with lower overall connectivity ratings and a highway bisecting the neighborhood.

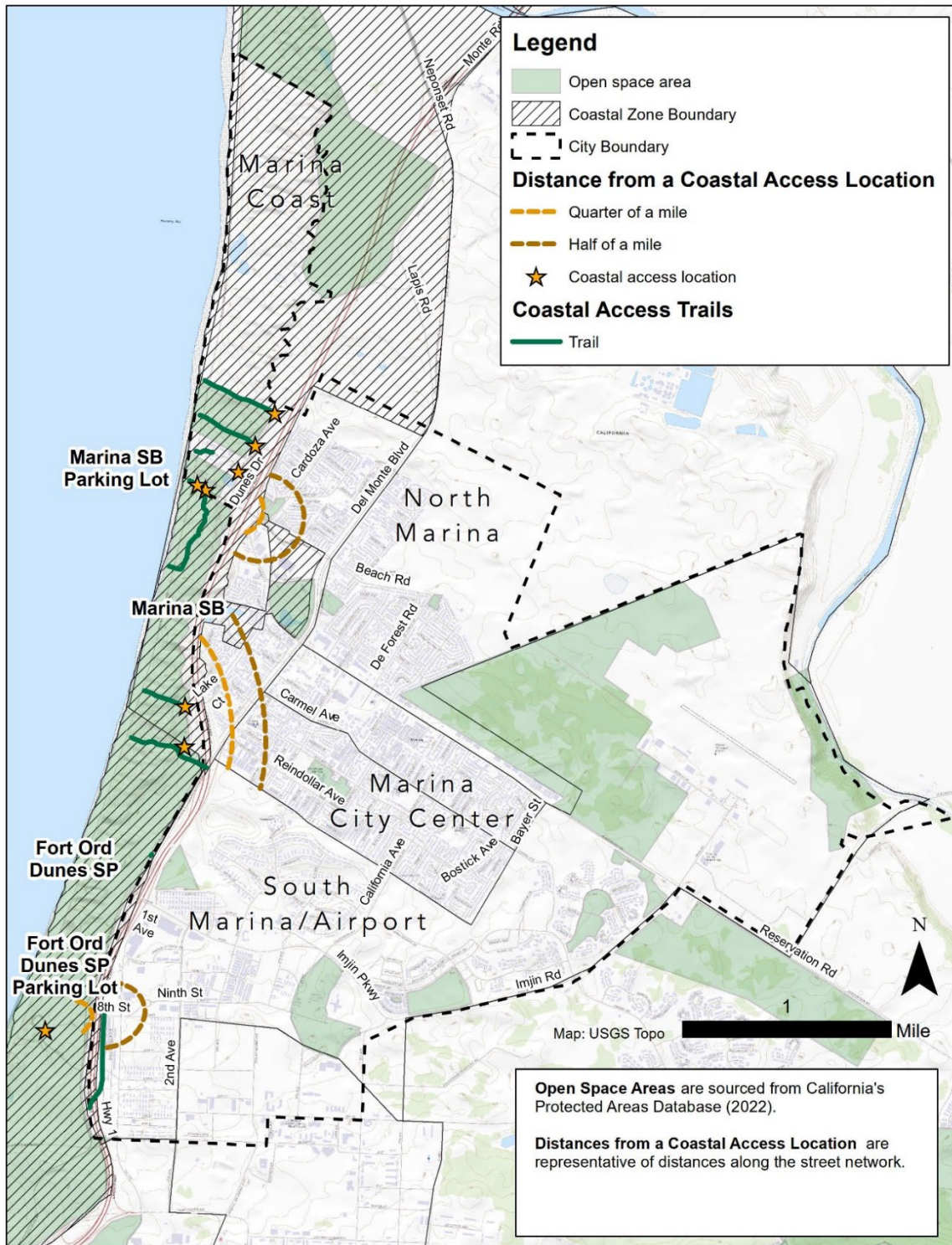


Figure 6. Marina Coastal Access Trails and Locations along with Approximate Distances Form These Coastal Access Locations

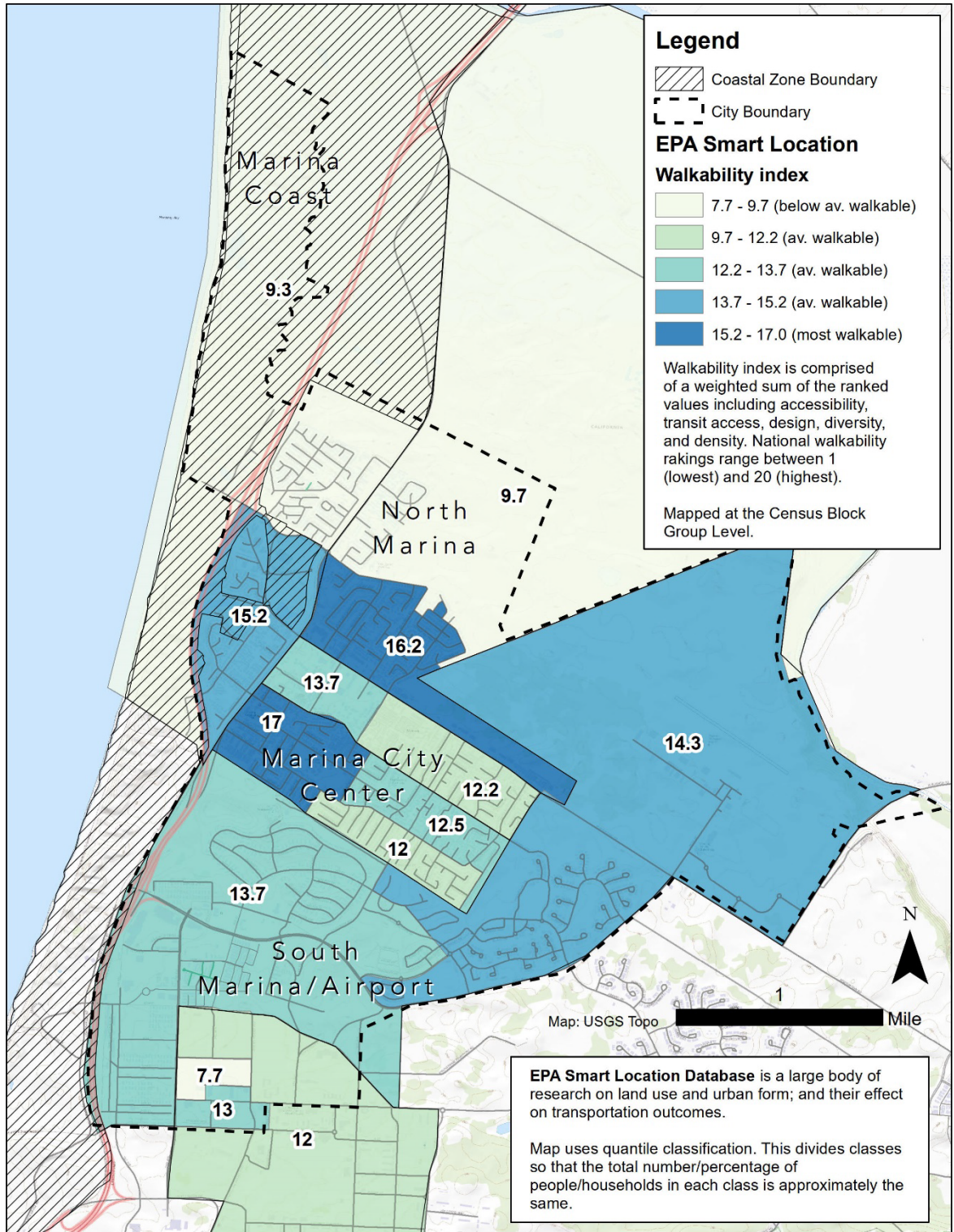


Figure 7. Walkability Scores from EPA Smart Location Database

## Environmental Stressors

According to CalEnviroScreen, the City faces more burden from environmental stressors than other cities on the Monterey Bay Peninsula. Much of this added burden can be attributed to the legacy of the old Fort Ord site. It should be noted while the legacy of past and ongoing cleanup efforts will be reflected in the environmental stressor statistics, they may not be reflected in the actual hazard exposure experienced by the community.

For pollution burden stressors, South Marina / Airport stands out in having a higher number of environmental cleanups, lead, drinking water, groundwater threats, and hazardous waste sites. Much of this is likely due to the inclusion of the old Fort Ord and may not be reflective of current conditions within the residential portions of the neighborhood. North Marina stands out as having elevated exposure to pesticides, being over 4 times higher in exposure values than the next closest-ranking neighborhood in the City. However, given that most of the farms just north of the City are organic, statistics may be outdated or pulling in pesticide use data for areas north of the Salinas River. The inclusion of the Monterey Regional Waste Facility and Monterey One Water Treatment Plant in the North Marina CT, despite being located more than a mile from neighborhood areas, does increase the counts (and thus burden) for exposure to solid and hazardous waste facilities.

CalEnviroScreen provides a rolled-up ranking for pollution burden, and North Marina and South Marina / Airport stand out as having the highest percentiles, 13–19 percentage points higher than the next ranking in the City (see Figure 8). For overall CalEnviroScreen scores, where demographic characteristics and pollution burden are considered in tandem (represented as pollution burden times the population characteristics score), South Marina / Airport stands as the highest ranking, due to both the more vulnerable demographic characteristics (e.g., having an elevated housing burden, percentage living in poverty, unemployment) as well as having a high pollution burden. North Marina also stands out and is affected by higher reported pesticide numbers and the inclusion of the landfill and water treatment plant.

Finally, Central Marina and Marina Coast neighborhood's overall CalEnviroScreen scores generally fall much more within the middle of the pack for California. However, both stand out as having higher burden from diesel particulate matter exposure, and Marina Coast has a higher traffic impact burden. In both cases, this is the result of the close proximity to Highway 1 and other major arterial roads.

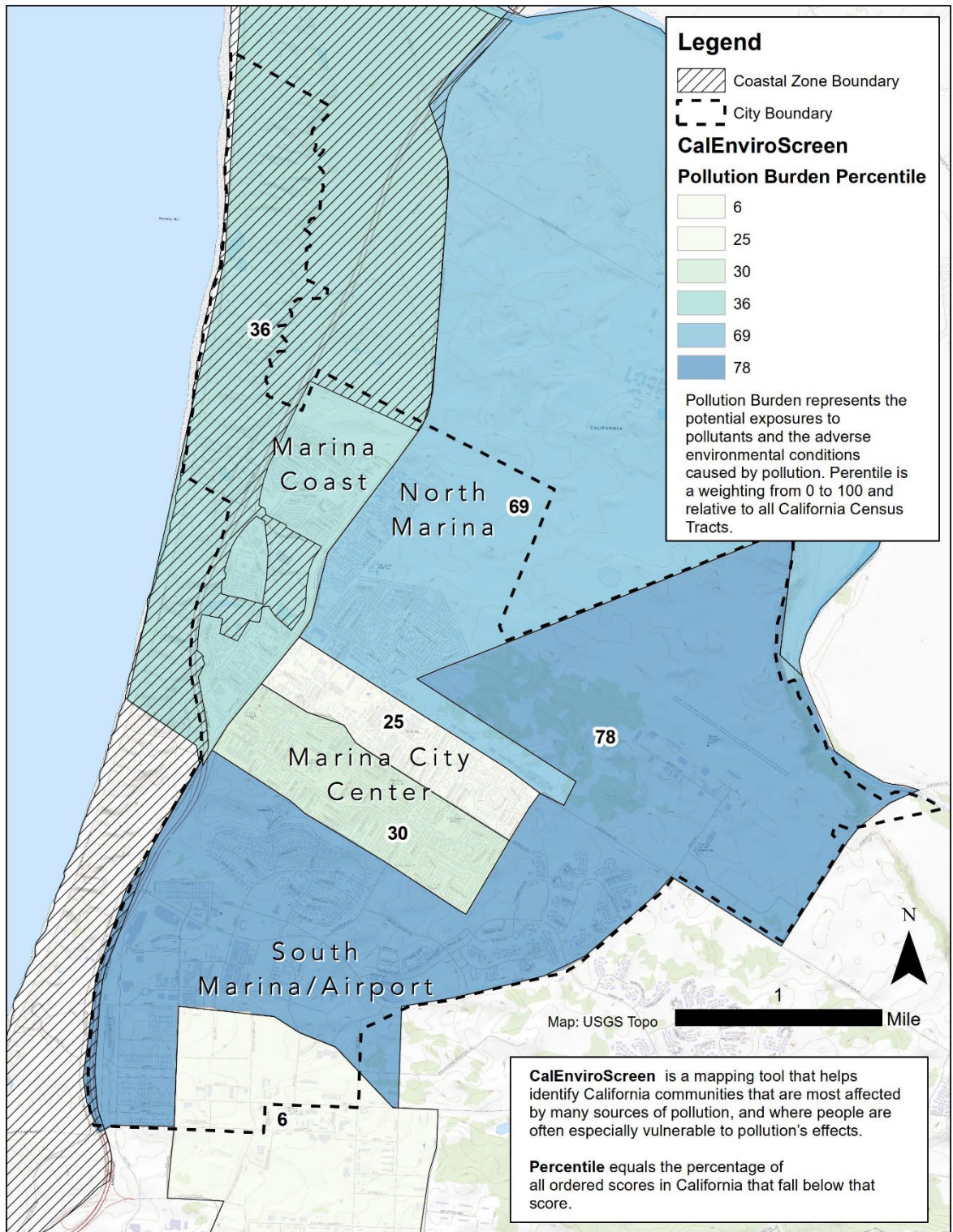


Figure 8. Pollution Burden from CalEnviroScreen 4.0

## **Housing Burden and Cost of Living**

The high cost of living is a challenge to many communities on the California Central Coast and disparities between the cost of housing and median income leave 36 percent of County residents unable to meet the real cost of living (County of Monterey 2016). The housing burden is high across all areas of the City with the exception of Marina Coast, where high incomes offset the cost of housing (see Figure 9). The high cost of housing within the Marina Coast neighborhood limits who can live in this area and thus who can more readily access the coast.

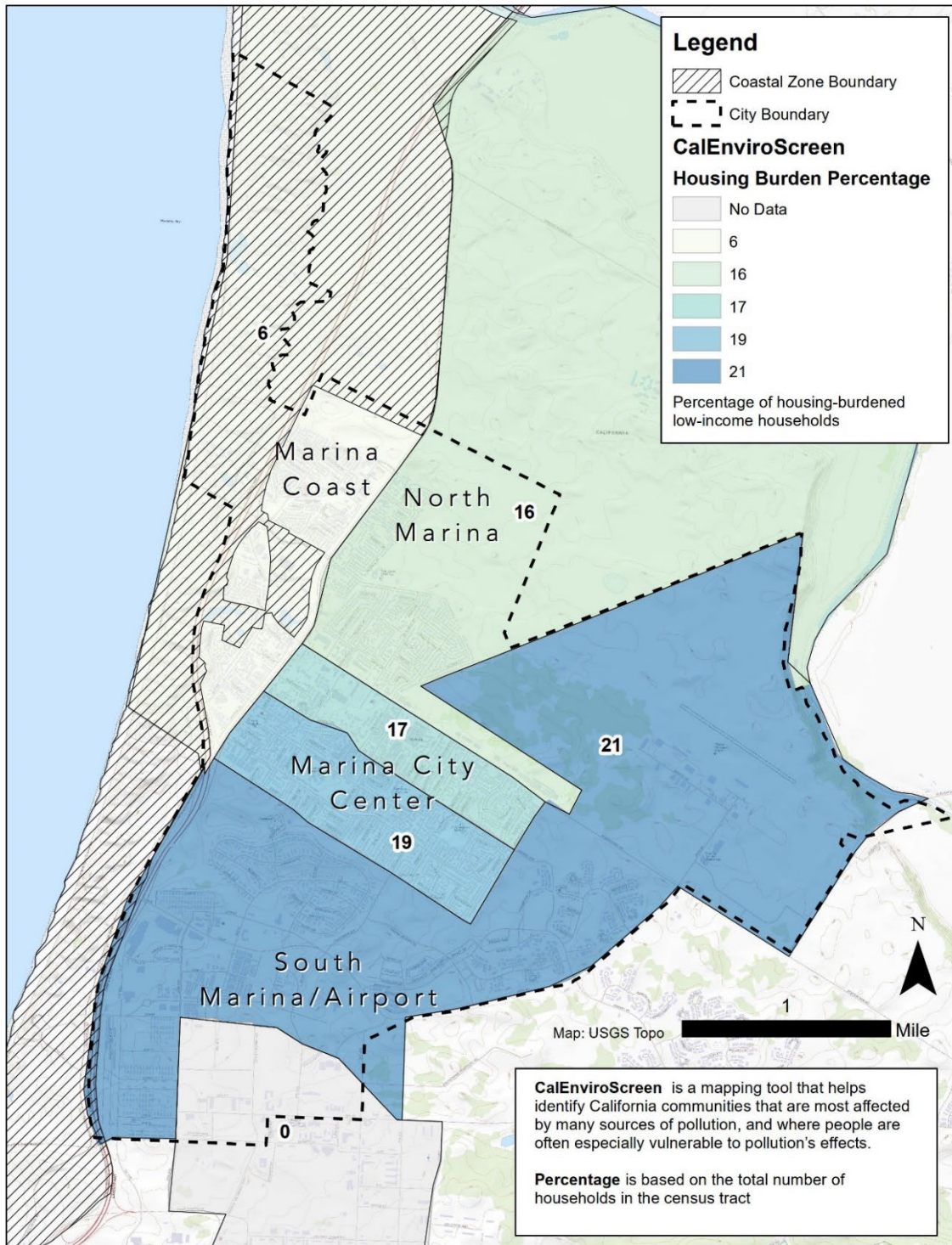


Figure 9. Percentage of Housing-Burdened Low-Income Households Represented as a Percentage of All Households in the Census Tract from CalEnviroScreen 4.0

## **DISCUSSION**

The City can be seen as archetypal of many Central California communities with fewer disadvantaged communities in coastal areas compared to the rest of the City. Despite this, the coastal zone serves all residents, and the inequity in who can live near the coast only highlights the importance of upholding and increasing public access for all residents of the City. California has a long history of discriminatory and unequal coastal access, and this stresses the need to conduct meaningful community engagement with historically underserved communities and those that live further inland with limited access to the coast.

The City's undeveloped shoreline is one of the prized characteristics of the City; however, coastal access in the City is difficult without a vehicle. One of the major impediments to biking and walking is that the coastal access locations are remote, and access to Marina State Beach involves traversing multiple highway on and off ramps. In addition, public transit to the beach does not exist. As the City looks to plan future coastal access projects, consideration should be made for access to all communities.

The residential neighborhoods in the City are not projected to see significant exposure to coastal hazards. However, coastal erosion with sea level rise is projected to impact the visitor-serving areas and park areas along Dunes Drive and the end of Reservation Road. The area is frequented by many visitors and employees from other areas, and serves a broad diversity of people. In addition, as climate changes increase the duration and severity of extreme heat waves and high inland temperatures, the importance of maintaining equitable access to coastal areas will only increase. Any future coastal access projects should consider equitable and inclusive adaptation strategies and provide benefits for all.

Finally, as the City undertakes coastal planning in the future, the City should continue outreach and communications in other major languages that are spoken in the City such as Spanish and Korean. Limited English households may not have access to city communications, and this may limit their ability to prepare for or react to future planning.

## **CONCLUSION AND NEXT STEPS**

The City of Marina's coastal accesses and natural shoreline provide an invaluable and unquantified service to disadvantaged populations both in the community and around the Monterey Bay region. Daily, elderly and disabled individuals line the ocean front parking spots. On sunny weekends, large families of non-English speakers picnic and recreate along the beach.

Previous adaptation work in the region considered the economic impacts of climate adaptation strategies for Southern Monterey Bay determined that traditional approaches to coastal management such as coastal armoring, when considered from a holistic socio-economic perspective, are less economically viable and more environmentally and economically damaging than their alternatives. What we think of as non-traditional approaches, such as managed retreat, have actually been implemented for centuries on coasts around the world and better account for long-term impacts and ancillary consequences (The Nature Conservancy 2016).

The City is proving to be an example for the state with residents and City officials choosing to protect the City's beaches and eschewing coastal armoring and "hold the line" approaches to coastal management. Many coastal landowners interviewed during the LCP process have embraced the general idea of managed retreat. As managed retreat is planned, it will be important to create a participatory process to engage with all communities to identify opportunities for renewal, reorganization, and adaptation in the coastal zone.

The next steps for this social vulnerability assessment are for the findings to be used when considering updating coastal hazard policies within the LCP, as well as during future more comprehensive LCP updates. Community stated preferences to expand access opportunities, reduce the industrial uses of the coastal zone and maintain viewsheds of the coast, dunes, and ocean should be woven around continuing low-cost access for all populations.

## REFERENCES

California Coastal Commission. 2022. Resources for Addressing Environmental Justice through Local Coastal Programs, Draft Document.

CalEnviroScreen 4.0. 2023. Website: <https://oehha.ca.gov/calenviroscreen>

California State Parks. 2023. Ft. Ord Dunes Campground Project. Website: [https://www.parks.ca.gov/?page\\_id=28340](https://www.parks.ca.gov/?page_id=28340).

City of Marina. 2010. City of Marina General Plan, Adopted October 31, 2000. Updated with amendments through August 4, 2010.

City of Marina. 2019. City of Marina Existing Conditions and Sea Level Rise Adaptation Report. November 2019.

Monterey County. 2016. Monterey County Community Resilience Plan.

San Francisco Bay Conservation and Development Commission (BCDC). 2012. Addressing Social Vulnerability and Equity in Climate Change Adaptation Planning. June 2012

The Nature Conservancy. 2016. Economic Impacts of Climate Adaptation Strategies for Southern Monterey Bay.

U.S. Census. 2020. Website: <https://www.census.gov/quickfacts/marinacitycalifornia>

USEPA. 2023. Superfund Site: Fort Ord, Marina, CA. Website: <https://cumulis.epa.gov/supercpad/cursites/csitinfo.cfm?id=0902783>

Walkscore.com. 2023. Living in Marina. Website: <https://www.walkscore.com/CA/Marina>



Summary of Community Engagement  
for the Comprehensive Update

F

APPENDIX



**Community Engagement Summary**

# **Local Coastal Program Update**

City of Marina

February 18, 2026

Prepared by  
**EMC Planning Group**



**COMMUNITY ENGAGEMENT SUMMARY**

**LOCAL COASTAL PROGRAM UPDATE**

**CITY OF MARINA**

**PREPARED FOR**  
**City of Marina**

**PREPARED BY**  
**EMC Planning Group Inc.**  
601 Abrego Street  
Monterey, CA 93940  
Tel 831.649.1799  
Fax 831.649.8399  
[www.emcplanning.com](http://www.emcplanning.com)

February 18, 2026

This document was produced on recycled paper.





# Table of Contents

1.0 COMMUNITY ENGAGEMENT .....	1-1
1.1 Website.....	1-1
1.2 Questionnaires .....	1-2
1.3 Community Workshops.....	1-3
1.4 Community Field Trip .....	1-5
1.5 Tabling at City Outreach Events.....	1-6
1.6 Stakeholder Meetings .....	1-6
1.7 Tribal Consultation.....	1-7

## Attachments

- Attachment A Marina Beach and Coastal Access Questionnaire
- Attachment B Land Use Plan Policy Framework Questionnaire Report
- Attachment C Workshop #2 Summary
- Attachment D Community Field Trip Summary

## Tables

Table 1-1	Summary of Engagement .....	1-1
-----------	-----------------------------	-----



# 1.0 Community Engagement

The Comprehensive Local Coastal Program (LCP) Update is funded by a grant from the California Coastal Commission. The grant requires that the community is engaged throughout the LCP update process, ensuring that community members have a voice in shaping LCP policies. The purpose of this report is to summarize the community engagement tools, efforts and events that took place throughout the Comprehensive LCP Update.

**Table 1-1 Summary of Engagement**

Date	Engagement Activity	Attendees/Responses
April 10, 2024	Beach and Coastal Access Questionnaire	101 responses
April 13, 2024	Tabling Annual Earth Day Event	N/A
April 27, 2024	Community Workshop #1	50 attendees
June 1, 2024	Tabling Marina Multi-Cultural Festival	N/A
January 20, 2025	Tabling Martin Luther King Jr. Day	N/A
April 12, 2025	Tabling Annual Earth Day Event	N/A
April 21, 2025	Community Field Trip	10 attendees
July 1, 2025	Land Use Plan Policy Framework Questionnaire	42 responses
July 30, 2025	Community Workshop #2	8 attendees
September 20, 2025	Tabling Marina Multi-Cultural Festival	N/A
October 6, 2025	Public Review Draft Land Use Plan	4 public comments
November 13, 2025	Planning Commission Meeting	N/A

## 1.1 Website

The City of Marina created a dedicated website for the Comprehensive LCP Update to provide background information on Local Coastal Programs, share project documents, and post details about past and upcoming community outreach events and questionnaires.

The website can be accessed at <https://marinalcpupdate.org/>

The following documents, materials, and information have been posted to the website:

- Beach and Coastal Access Questionnaire;
- Draft Land Use Plan Policy Framework Questionnaire;
- Draft Land Use Plan Policy Framework;
- Public Review Draft Land Use Plan;
- Planning Commission Draft Land Use Plan;
- Community Events;
- Workshop Materials;
- Interested Person Sign-up; and
- Information about the Coastal Act.

## 1.2 Questionnaires

### Beach and Coastal Access Questionnaire

The Beach and Coastal Access Community Questionnaire was conducted from April 10, 2024, to June 30, 2024, to provide community members and visitors an opportunity to share input on their most valued beach and coastal features in Marina, identify any missing or improvable features, and gauge their knowledge of the public coastal access points available in Marina.

The questionnaire consisted of 20 questions designed to inform the City about existing demographics, community needs, and how the Local Coastal Program (LCP) Update can include policy and programmatic measures to enhance access and amenities. To cater to Marina's diverse community, the questionnaire was conducted in English, Spanish, and Korean.

City of Marina staff shared information about how to take the questionnaire during the April 27, 2024, General Plan Community Workshop. City staff also distributed information through various channels, including local social media platforms, community bulletin boards, and city newsletters to ensure broad participation. A total of 101 questionnaire responses were received, reflecting a range of perspectives and experiences from Marina's residents and visitors.

A summary of the questionnaire is included as [Attachment A, Marina Beach and Coastal Access Questionnaire](#).

### Land Use Plan Policy Framework Questionnaire

The Land Use Plan Policy Framework Questionnaire was conducted from July 1, 2025, to August 8, 2025, to provide community members and visitors an opportunity to share their input on policy

ideas being considered for the comprehensive Local Coastal program (LCP) update. The questionnaire was broken into eight sections, with each section corresponding with the major policy chapters of the Land Use Plan. To cater to Marina's diverse community, the questionnaire was conducted in English, Spanish, Korean, and Vietnamese.

It was available online at the City of Marina LCP Update website ([marinalcpupdate.com](http://marinalcpupdate.com)) and in hardcopy at the City of Marina Planning Department. The LCP Update Team (EMC Planning Group and City staff) staff distributed the survey through an email to the City's interested person contact list and to the LCP Update interested person list. The LCP Update Team also shared information about how to take the questionnaire during the July 30, 2025 LCP Workshop #2. A total of 42 questionnaire responses were received, reflecting a range of perspectives from Marina's residents and visitors.

A summary of the questionnaire responses is included as [Attachment B, Land Use Plan Policy Framework Questionnaire Report](#).

## 1.3 Community Workshops

### Workshop #1

On April 27, 2024, the City hosted an in-person workshop to educate the community about ongoing planning efforts in Marina, including the Local Coastal Program (LCP) Update. The City had a booth setup with information on the planning process and the State requirements for updating the LCP key vision for Marina. The postcard mailer below was sent to all Marina residents advertising the April 27, 2024 Community Workshop.

**CITY OF MARINA LAND USE PLANNING WORKSHOP**

Join us on April 27 to learn more and share your input about ongoing planning efforts in Marina, including the proposed Land Use Alternatives for the **2045 General Plan Update**, the **2024 Local Coastal Program (LCP) Update**, and the **Gateway Signage Project**.

Únase a nosotros el 27 de abril para obtener más información y compartir sus opiniones sobre los esfuerzos de planificación en curso en Marina, incluidas las alternativas de uso de la tierra propuestas para la actualización del Plan General de 2045, la actualización del Programa Costero Local (LCP) de 2024 y el proyecto de señalización Gateway.

4월 27일에 우리와 함께 2045년 일반 계획 업데이트를 위한 토지 이용 대안 제안, 2024년 지역 해안 프로그램(LCP) 업데이트 및 게이트웨이 간판 프로젝트를 포함하여 마리아에서 진행 중인 계획 노력에 대해 자세히 알아보고 의견을 공유하십시오.

**STAY CONNECTED**  
For more information, scan the QR code or send City staff an email at [planning@cityofmarina.org](mailto:planning@cityofmarina.org)

**Land Use Planning Workshop**  
Saturday, April 27, 2024 | 10:00 AM - 12:00 PM  
Located at Marina Community Center |  
211 Hillcrest Ave



CITY OF MARINA  
COMMUNITY DEVELOPMENT  
DEPARTMENT  
211 HILLCREST AVENUE  
MARINA, CA 93933

### Taller de Planificación del Uso del Suelo

Sábado, Abril 27, 2024 | 10:00 AM - 12:00 PM  
Ubicado en el Centro Comunitario | 211 Hillcrest Ave

Para obtener más información sobre la actualización del LCP de la ciudad, escanee el código QR o envíe un correo electrónico al personal de la ciudad a [Planning@cityofmarina.org](mailto:Planning@cityofmarina.org)

### 토지이용계획 워크숍

2024년 4월 27일 토요일  
커뮤니티 센터에 위치 | 211 힐크레스트 애비뉴


시의 LCP 업데이트에 대한 자세한 내용을 보려면 QR 코드를 스캔하거나 시 직원에게 [Planning@cityofmarina.org](mailto:Planning@cityofmarina.org)로 이메일을 보내십시오.


## Workshop #2

On July 30, 2025 the City hosted Community Workshop #2 at the Marina Library Community Room. The purpose of the workshop was to receive feedback on the policy framework. There were 9 attendees. A summary of Workshop #2 is included as [Attachment C, Workshop #2 Summary](#).

City of Marina Local Coastal Program Update

# Community Workshop #2






## Draft Land Use Plan (LUP) Policy Framework

30


**JULY** Visit the LCP Update website to review the Draft LUP Policy Framework in advance!

Join the City for a community workshop to review and provide feedback on the goals and ideas being considered for the comprehensive Local Coastal Program (LCP) Update.



**4:00 - 6:00PM**

**MARINA LIBRARY COMMUNITY ROOM**  
190 Seaside Circle, Marina, CA  
*Spanish and Korean translation provided!*



**LUP FRAMEWORK SURVEY**

Rate policy ideas for each chapter of the Land Use Plan in this 10-minute survey!

*Open until August 1, 2025.*

<https://marinalcpupdate.org>

City of Marina Local Coastal Program Update

## Taller Comunitario #2

### Borrador del marco de políticas del Plan de Uso del Suelo

30

**JULIO** Visite el sitio web de Actualización del PCL para revisar el Borrador del Marco de Políticas del Programa Costero Local con anticipación.

Acompañe a la Ciudad en un taller comunitario para revisar y brindar comentarios sobre los objetivos e ideas que se están considerando para la Actualización Integral del Programa Costero Local.

**4:00 - 6:00PM**

**SALA COMUNITARIA DE LA BIBLIOTECA MARINA**  
190 Seaside Circle, Marina, CA  
*Traducción al español disponible*

**ESTUDIO DEL MARCO DEL PLAN DE USO DEL SUELO**

¡Califique las ideas de políticas para cada capítulo del Plan de Uso del Suelo en esta encuesta de 10 minutos!  
*Abierta hasta el 1 de agosto de 2025*

## 커뮤니티 워크숍 #2

### 토지 이용 계획 정책 프레임워크 초안

30

**칠월** 시에서 주최하는 커뮤니티 워크숍에 참여하여 포괄적인 지역 해안 프로그램 업데이트의 목표와 아이디어를 검토하고 피드백을 제공하세요.

LCP 업데이트 웹사이트를 방문하여 토지 이용 계획 정책 프레임워크 초안을 미리 검토하세요!

**오후 4시부터 오후 6시까지**

**마리나 도서관 커뮤니티 룸**  
190 Seaside Circle, 마리나, 캘리포니아  
한국어 번역 제공

**토지 이용 계획 프레임워크 조사**

이 10분 설문조사를 통해 토지 이용 계획의 각 장에 대한 정책 아이디어를 평가해 보세요!  
2025년 8월 1일까지 운영

<https://marinalcpupdate.org>


## 1.4 Community Field Trip

On April 21, 2025, the City hosted a community field trip to Locke-Paddon Park and Marina State Beach. The purpose of the Community Field Trip was to educate the community about the environmentally sensitive habitats in Marina's coastal zone, specifically the coastal dune habitat and vernal ponds. California State Parks staff joined for the portion of the field trip held at Marina State Beach and gave a presentation on dune ecology, aquatic safety, and public access in Marina. A summary of the Community Field Trip is included as [Attachment D, Community Field Trip Summary](#).

The flyer below was posted on the City website and sent to the interested person contact list and stakeholder groups, including local environmental and biological organizations.

City of Marina Local Coastal Program Update


## Community Field Trip



Help shape the future of Marina's coastline!


**12**  
MARCH

Join the City for a community field trip to learn how Marina's Local Coastal Program Update will protect sensitive habitats, vernal ponds, wildlife, and coastal access while promoting low-impact recreation. See these areas firsthand and share your input on our coastal future!



**4:00 - 5:00PM**

**LOCKE-PADDON PARK**  
Meet at the parking lot on the corner of Reservation Road and Seaside Circle.




**5:15 - 6:15PM**

**MARINA STATE BEACH PARKING LOT**  
Hear from State Parks staff about future plans for Marina State Beach.

<https://marinalcpupdate.org>

City of Marina Local Coastal Program Update



## Excursión Comunitaria

¡Ayúdenos a dar forma al futuro de la costa de Marina!

Únase a la ciudad para una excursión comunitaria para aprender cómo la actualización del programa costero local de Marina protegerá los hábitats sensibles, los estanques primaverales, la vida silvestre y el acceso a la costa, al mismo tiempo que promueve la recreación de bajo impacto. ¡Vea estas áreas de primera mano y comparta su opinión sobre nuestro futuro costero!

**12**  
MARZO

**4:00 - 5:00PM**

**LOCKE-PADDON PARK**  
Nos reuniremos en el estacionamiento en la esquina de Reservation Road y Seaside Circle.

**5:15 - 6:15PM**

**MARINA STATE BEACH PARKING LOT**  
Escuche al personal de Parques Estatales sobre los planes futuros para Marina State Beach.

---

## 커뮤니티 현장 견학

마리나 해안선의 미래를 형성하는 데 도움을 주세요!

**12**  
3월

마리나의 지역 해안 프로그램 업데이트가 지역향 레크리에이션을 촉진하는 동시에 민감한 서식지, 봄철 연못, 야생 동물 및 해안 접근을 보호하는 방법을 알아보는 커뮤니티 현장 견학에 도시에 참여하세요. 이러한 지역을 직접 보고 해안 미래에 대한 의견을 공유하세요!

**오후 4시 - 오후 5시**

**록-패던 공원**  
Reservation Road와 Seaside Circle 모퉁이에 있는 주차장에서 만나요

**오후 5시 15분 - 오후 6시 15분**

**마리나 주립 해변 주차장**  
마리나 주립 해변의 미래 계획에 대해 주립 공원 직원으로부터 들어보세요.

<https://marinalcpupdate.org>

## 1.5 Tabling at City Outreach Events

The City has hosted booths and shared information about the Comprehensive LCP Update at two Multi-Cultural Festivals, two Earth Days, two Farmer's Markets, and one Martin Luther King Jr. Day celebration.

## 1.6 Stakeholder Meetings

### California State Parks

On May 8, 2024, City staff met with California State Parks staff to provide an overview of the comprehensive LCP update process taking place. Public Access, ESHA, and State Parks housing were discussed.

## **Coastal Commission**

On May 14, 2024, City staff met with the Central Coast District Office staff and statewide planning staff to discuss policy areas identified to be updated in the comprehensive LCP update. On September 24, 2024, City staff met with Central Coast District Office staff and statewide enforcement staff to discuss the Cemex Site consent order. On July 14, 2025 City staff met with Central Coast District Office staff to discuss the draft Land Use Plan policy framework. On February 18, 2026 City staff met with Central Coast District Office staff to discuss the Land Use Plan and Implementation Plan.

## **Marina Coast Water District**

On May 22, 2024, City staff met with Marina Coast Water District (MCWD) to provide an overview of the comprehensive LCP update process taking place. MCWD's facilities within Marina's coastal zone were discussed.

## **Monterey Peninsula Regional Park District (MPRPD)**

On June 12, 2024 City staff met with MPRPD staff to provide an overview of the comprehensive LCP update process taking place. Long-term plans for the Locke-Paddon Wetland Community Park, Marina Dunes Preserve, and Cemex site were discussed.

## **1.7 Tribal Consultation**

City of Marina sent tribal consultation letters to 19 tribes on April 8, 2024. The City of Marina received a response from the Ohlone/Costanoan-Esselen Nation and is conducting consultation with the Tribe.



# Marina Beach and Coastal Access Questionnaire



ATTACHMENT



2024 Local Coastal Program Update

# Beach and Coastal Access Questionnaire Report

City of Marina

July 2024



Prepared by  
EMC Planning Group



# Table of Contents

1.0 BEACH AND COASTAL ACCESS QUESTIONNAIRE.....	1-1
1.1 Introduction .....	1-1
1.2 Questionnaire Responses .....	1-2
1.3 Summary and Recommendations.....	1-11

## Attachments

Attachment A	Questionnaire
Attachment B	Open Ended Questions

## Figures

Figure 1	How old are you? .....	1-3
Figure 2	With which of the following ethnic or racial group(s) do you identify? .....	1-3
Figure 3	What is your annual income? .....	1-4
Figure 4	With which of the following do you identify? .....	1-4
Figure 5	Which of the following describes you? .....	1-5
Figure 6	How often do you visit the beach? .....	1-6
Figure 7	What types of outdoor activities do you enjoy on the coast? .....	1-6
Figure 8	Please rate how important the following topics are to you for Marina's coast, where five is very important and one is not important to you. ....	1-9



# Beach and Coastal Access Questionnaire

## 1.1 Introduction

The Beach and Coastal Access Community Questionnaire was conducted from April 10, 2024, to June 30, 2024, to provide community members and visitors an opportunity to share their input on the most valued beach and coastal features in Marina, identify any missing or improvable features, and gauge their knowledge of the public coastal access points available in Marina. The questionnaire consisted of 20 questions designed to inform the City about existing demographics, community needs, and how the Local Coastal Program (LCP) Update can include policy and programmatic measures to enhance access and amenities. To cater to Marina's diverse community, the questionnaire was conducted in English, Spanish, and Korean. It was available online at the City of Marina LCP Update website ([marinalcpupdate.com](http://marinalcpupdate.com)).

City of Marina staff shared information about how to take the questionnaire during the April 27, 2024, General Plan Community Workshop. City staff also distributed information through various channels, including local social media platforms, community bulletin boards, and city newsletters to ensure broad participation. A total of 101 questionnaire responses were received, reflecting a range of perspectives and experiences from Marina's residents and visitors.

The questionnaire responses discussed below represent an uncontrolled sample size of self-selected community members who are considered to be motivated and interested in the 2024 LCP Update. This can make it difficult to draw definitive conclusions based on the responses received. However, the insights gathered provide valuable information on community preferences and priorities regarding Marina's coastal access and amenities. The following is a brief summary of the responses received.

Respondents were asked to identify their three favorite things about Marina's coastline. The most frequently mentioned aspects were the natural, undeveloped state of the coastline, the quiet and uncrowded environment, and the scenic beauty. These responses indicate a strong appreciation for the existing natural conditions and a desire to preserve the coastline's current character.

Respondents also highlighted the need for better access points, wheelchair-friendly paths, and more amenities such as picnic tables, trash cans, benches, bathrooms, and fire pits. Additionally, there was a significant desire for more dog-friendly spaces, including off-leash areas and dog-friendly beaches.

Concerns about safety and cleanliness were prominent, with many respondents mentioning the presence of homeless encampments, trash, and general litter as factors that detract from their beach experience. Improved safety measures, increased patrols, and better maintenance were commonly suggested solutions.

When asked about undesirable developments, respondents expressed strong opposition to residential, commercial, and industrial developments, emphasizing the importance of preserving the natural beauty and ecological integrity of the coastline.

The questionnaire results indicate that the community values the natural state of Marina's coastline and seeks to balance preservation with improvements in access and amenities. These insights will be crucial in shaping the Local Coastal Program Update to reflect the community's preferences and enhance their beach experience.

## 1.2 Questionnaire Responses

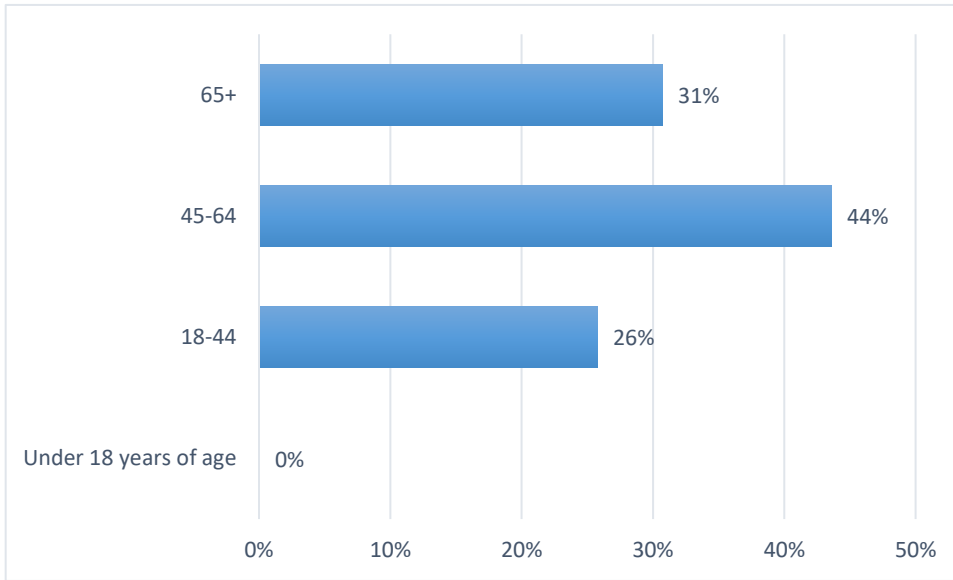
### Respondent Demographics

The City collected a total of 101 responses to the questionnaire. As shown in [Figure 1](#), respondents' ages range from 18 to 65 years and older. The fewest responses were from individuals aged 18 to 44 years (26 percent), while the majority were from those aged 45 to 64 years (44 percent). This indicates an underrepresentation of younger community members (under 18 years of age) and highlights the need for additional future outreach to target this group.

[Figure 2](#) illustrates which ethnic or racial group(s) respondents identified with and [Figure 3](#) illustrates respondents' annual income. Among the respondents, 65 percent identified as White, and 31 percent reported earning between \$100,000 and \$200,000 annually. Thirty percent of respondents opted not to disclose their annual income. Generally, the majority of respondents are aged between 45 and 64, identify as White, and earn between \$100,000 and \$200,000 annually.

[Figure 4](#) presents how respondents characterized themselves. Approximately 48 percent identified as seniors (aged 55+), 18 percent as female heads of households, 9 percent as people living with disabilities, and 3 percent as single-parent households. Additionally, 33 percent indicated that none of the choices applied to them.

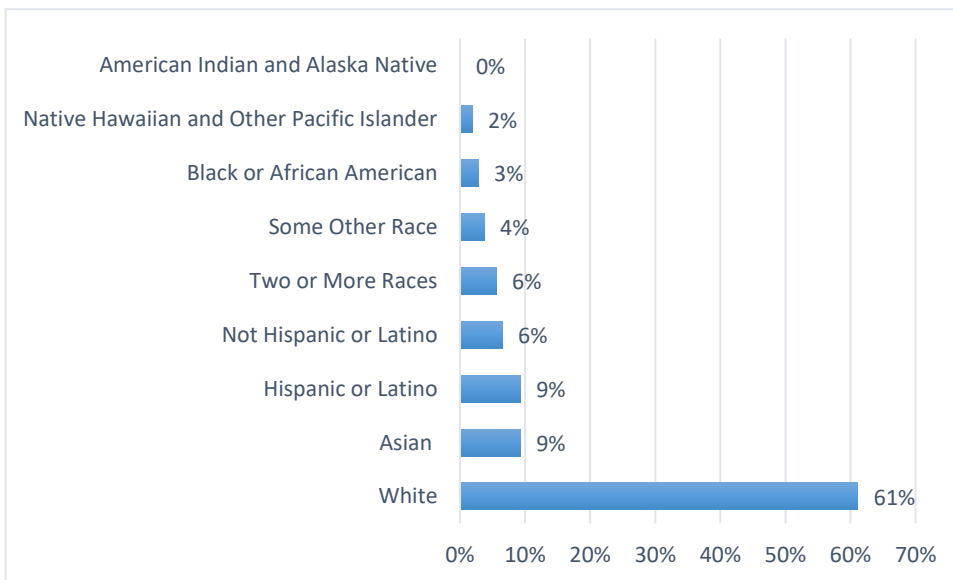
**Figure 1 How old are you?**



SOURCE: City of Marina, Beach and Coastal Access Questionnaire, 2024

---

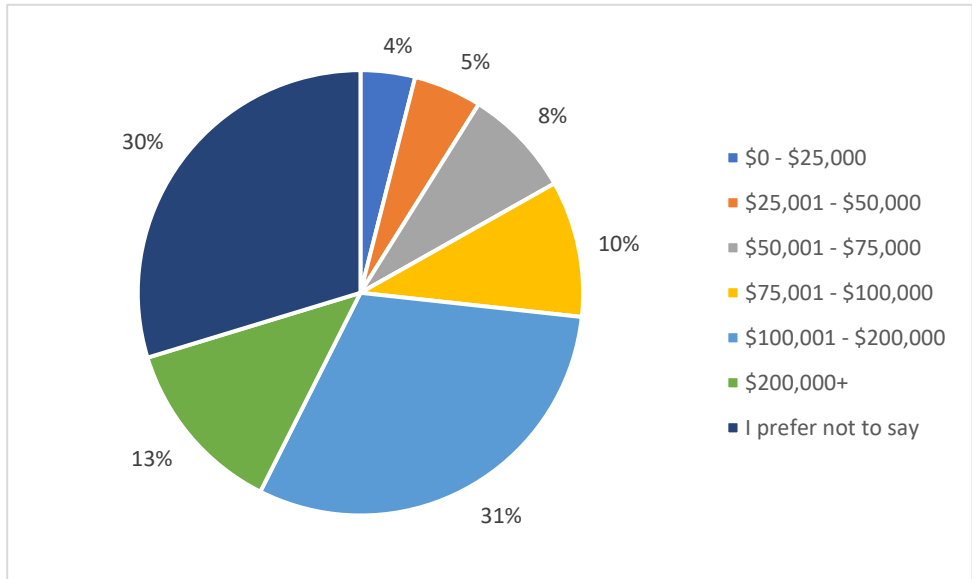
**Figure 2 With which of the following ethnic or racial group(s) do you identify?**



SOURCE: City of Marina, Beach and Coastal Access Questionnaire, 2024

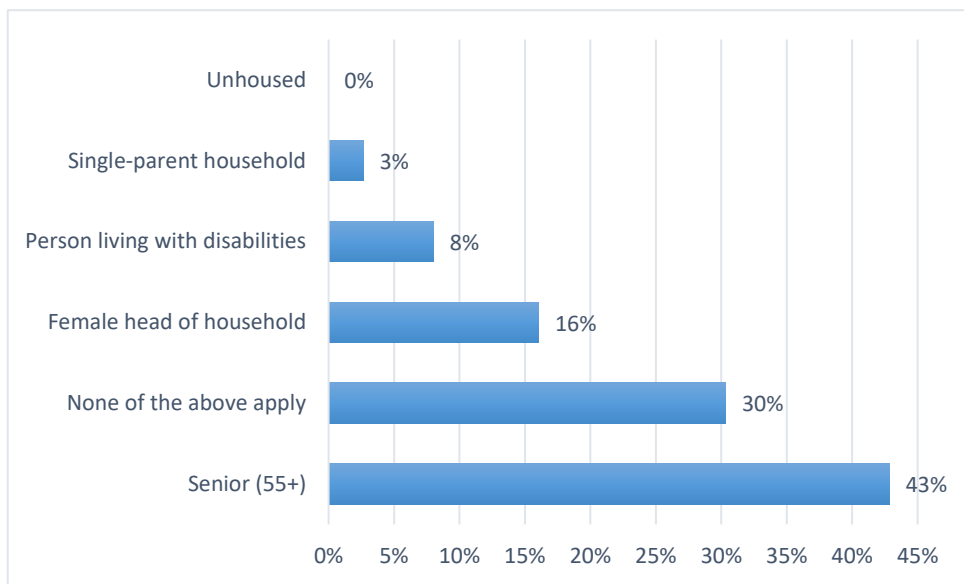
---

**Figure 3** What is your annual income?



SOURCE: City of Marina, Beach and Coastal Access Questionnaire, 2024

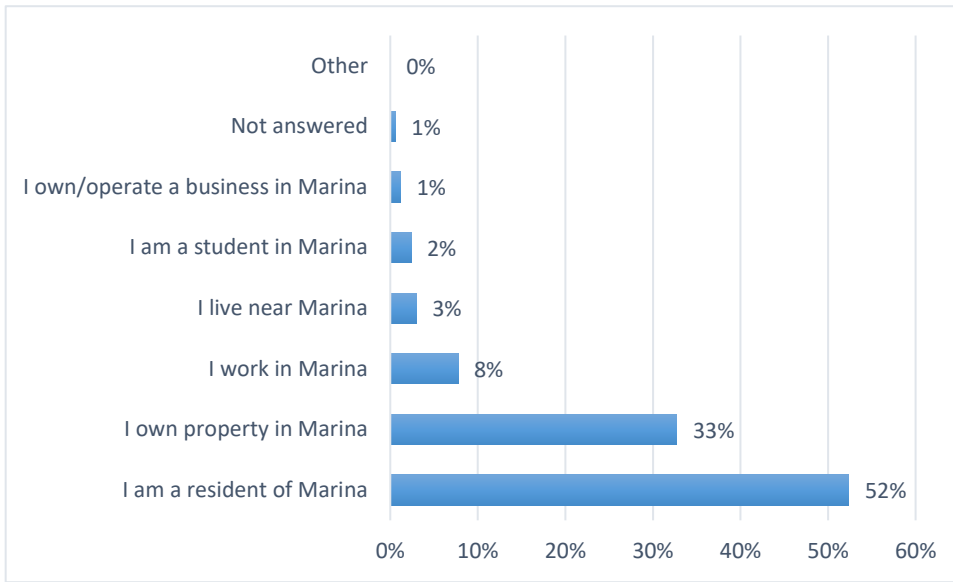
**Figure 4** With which of the following do you identify?



SOURCE: City of Marina, Beach and Coastal Access Questionnaire, 2024

Figure 5 illustrates the respondents' roles in the community. Respondents were encouraged to select all applicable options, so the results may include overlapping responses. The data shows that 87 percent of respondents are residents of Marina, 55 percent own property in Marina, 13 percent are employed in Marina, 5 percent live near Marina, 4 percent are students in Marina, 2 percent own or operate a business in Marina, and one individual did not respond to this question.

**Figure 5 Which of the following describes you?**



SOURCE: City of Marina, Beach and Coastal Access Questionnaire, 2024

Respondents were asked to identify their zip codes. Ninety percent indicated they live in Marina, with a zip code of 93933. Eleven respondents indicated they live outside of Marina in nearby jurisdictions, including Alisal, Salinas, Del Rey Oaks, Sand City, and some from further away in Santa Clara County, Santa Cruz County, and San Diego County.

## Beach Visitation Frequency

Figure 6 illustrates how often respondents reported visiting the beach. The data shows that 37 percent visit the beach two or more times a week, 26 percent visit weekly, 22 percent visit a few times a month, 9 percent visit a few times a year, 4 percent visit every few months, and 3 percent visit monthly.

## Preferred Coastal Activities

Figure 7 presents a word cloud illustrating the types of outdoor activities respondents enjoy on the coast. This question was open-ended, allowing respondents to provide written responses. The activities mentioned range from walking, hiking, botanizing, beachcombing, bird watching, whale watching, scuba diving, surfing, and enjoying the trails along the water to lunch breaks, biking, kayaking, relaxing with friends and family, habitat restoration, dog walking, picnicking, attending festivals, and photographing the coastline.



- Undeveloped / Natural: This was mentioned most frequently, emphasizing the natural, undeveloped state of Marina's coastline;
- Quiet / Not Crowded: Many respondents appreciated the peace, quiet, and lack of crowds; and
- Beauty / Scenic Views: The natural beauty and scenic views were also a common favorite.

The results indicate that respondents have a strong appreciation for the natural qualities of Marina's coastline, and highlight a desire to preserve the area's pristine environment and serene atmosphere. This suggests that residents value the coastline's current state and prefer to maintain its natural character rather than see it developed or commercialized. A full list of responses is provided as [Attachment B](#).

Additionally, respondents were asked to identify any outdoor activities they would like to see offered at the local beaches and coast that are currently missing. This question was open-ended, allowing respondents to provide written responses. Among the responses, the top three most common responses included the following:

- Access and Accessibility: Many responses highlight the need for better access points to the beach, wheelchair-friendly paths, and easier access to various areas;
- Amenities and Facilities: There are numerous mentions of wanting more amenities such as picnic tables, trash cans, benches, bathrooms, and fire pits; and
- Dog-Friendly Areas: A significant number of responses express a desire for more dog-friendly spaces, including off-leash areas and dog-friendly beaches.

These themes indicate a strong community interest in improving access and amenities at local beaches while ensuring they are welcoming to dogs and their owners. A full list of responses is provided as [Attachment B](#).

## Desired Improvements and Safety Protocols

Respondents were asked whether they had visited a beach or coastal area that they did not enjoy or that made them feel unsafe, and to specify what aspects they disliked or what made them feel unsafe. Among the responses, the top three most common responses included the following:

- Homeless Encampments: Many respondents expressed discomfort with the presence of homeless individuals and encampments near the beaches;
- Trash and Litter: Several comments mentioned the issue of garbage, broken glass, and general litter, contributing to an unsafe and unclean environment; and
- Safety Concerns: Various respondents highlighted safety issues, including feelings of vulnerability when alone, unsafe access points, and the risk of violence associated with homeless individuals.

This indicates that visitors to the beaches and coastal areas are significantly impacted by social and environmental factors, particularly the presence of homeless individuals, unsafe access, and litter, which can affect their overall sense of safety and enjoyment. A full list of responses is provided as [Attachment B](#).

To better understand how Marina's beaches and coast can be improved for safety and enjoyment, respondents were asked to specify what would make them feel safe and welcome in these areas. Among the responses, the top three most common responses included the following:

- **Increased Safety and Patrols:** Many respondents requested more park rangers, police presence, and regular patrols to ensure safety and monitor activities;
- **Enhanced Facilities and Cleanliness:** A frequent theme was the need for clean bathrooms, better parking, improved trash management, and overall maintenance of the beach areas; and
- **Better Access and Amenities:** Respondents expressed a desire for easier access to the beach, more parking spaces, and additional amenities like food vendors, seating, and accessible pathways.

This indicates that visitors prioritize safety and comfort while enjoying the beaches and coastal areas, highlighting a strong desire for improved management, cleanliness, and accessibility to enhance their overall experience. A full list of responses is provided as [Attachment B](#).

## **Coastal Development and Amenities**

Respondents were asked what types of development they would like to see excluded from the City of Marina's coastline. Among the responses, the top three most common responses included the following:

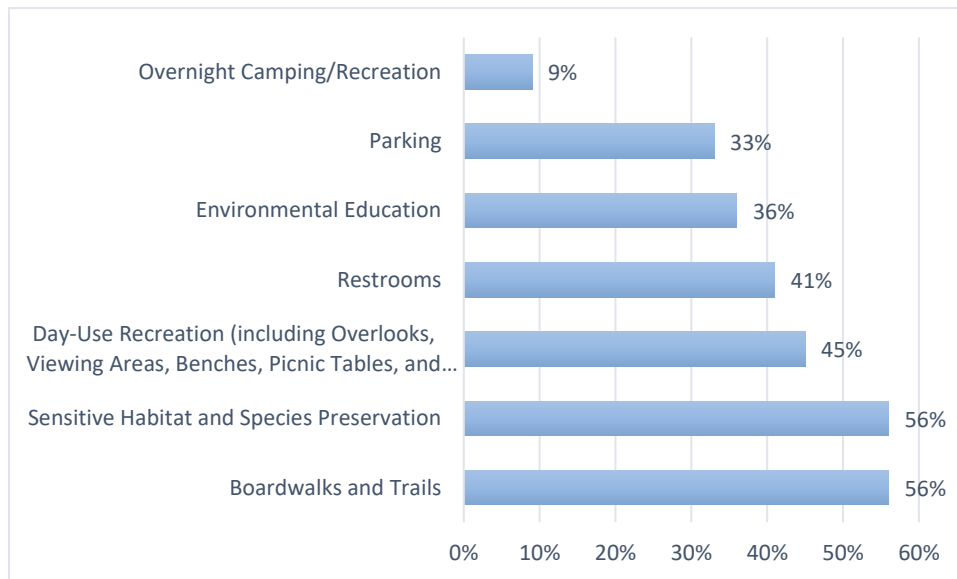
- **Residential Development:** Many respondents expressed a strong desire to prevent the construction of houses, condos, and any type of residential buildings to maintain the natural state of the coastline;
- **Commercial Development:** There was significant opposition to hotels, businesses, restaurants, and any commercial ventures that could disrupt the coastal environment; and
- **Industrial Development:** Respondents frequently mentioned the exclusion of industrial facilities, such as desalination plants, sand mining operations, and other industrial developments that could harm the ecosystem or visual appeal of the coastline.

This indicates a strong community sentiment favoring the preservation of the coastline's natural beauty and ecological integrity, reflecting concerns about overdevelopment and its potential negative impacts on the environment and quality of life.

Figure 8 illustrates how respondents ranked the following topics: Sensitive Habitat and Species Preservation, Environmental Education, Day-Use Recreation (including Overlooks, Viewing Areas, Benches, Picnic Tables, and BBQs), Overnight Camping/Recreation, Boardwalks and Trails, Parking, and Restrooms. As shown, the majority of respondents identified Sensitive Habitat and Species Preservation, and Boardwalks and Trails as very important aspects of Marina's beaches and coast. These were followed by Day-Use Recreation, Restrooms, Environmental Education, Parking, and Overnight Camping/Recreation.

This reflects a community priority for environmental conservation and accessible, nature-oriented recreation. Additionally, while day-use recreation and restrooms are also important, they are secondary to habitat preservation and trails. Environmental education, parking, and overnight camping/recreation are considered less critical but still noteworthy. This suggests a preference for sustainable and accessible coastal amenities that enhance the natural environment and provide educational opportunities.

**Figure 8 Please rate how important the following topics are to you for Marina’s coast, where five is very important and one is not important to you.**



SOURCE: City of Marina Beach and Coastal Questionnaire, 2024

## Knowledge of Marina’s Beach and Coastal Access Points

Respondents were asked if they were aware of coastal access at Lake Court Drive in Marina. Just over half (52 percent) indicated they did not know there was coastal access at that location. In contrast, when asked about access to Dunes Drive in Marina, the majority of respondents (64 percent) confirmed they were aware of the coastal access there.

To further assess their knowledge of Marina's coastal access points, respondents were also asked to identify the locations of the four coastal access points. Forty-three respondents indicated that they know where the four coastal access points are, while 58 respondents indicated that they do not know. A full list of responses is provided as [Attachment B](#).

## Beach Preference in the Area

To gauge Marina residents' preferences for Marina's beaches, respondents were asked whether they visit Marina's beaches or prefer beaches elsewhere. Those who chose beaches outside Marina were asked to specify their reasons for preferring another beach despite living in Marina. Approximately 44 percent of respondents indicated they prefer Marina beaches, whereas 56 percent indicated they prefer other beaches. Among the responses, the top three most common responses included the following:

- **Preference for Other Beaches:** Many respondents indicated they prefer visiting other beaches such as Monterey, Carmel, and Asilomar due to better access, amenities, and dog-friendliness;
- **Frequent Visits to Marina Beaches:** A significant number of respondents mentioned they primarily visit Marina beaches, appreciating their proximity and suitability for activities like walking and picnicking; and
- **Access and Facilities:** Respondents highlighted concerns about accessibility and facilities at Marina beaches, often noting issues like steep access, limited parking, and the need for more amenities compared to other locations.

Lastly, respondents were asked if they had any specific comments or insights to share about coastal access in Marina. Among the responses, the top three most common responses included the following:

- **Improved Access and Facilities:** Many respondents emphasized the need for better access to the beaches, including paved pathways, stairs, and improved parking facilities;
- **Preservation of Natural State:** Several respondents expressed the importance of keeping the beaches clean and natural, avoiding commercialization, and protecting sensitive habitats; and
- **Information and Amenities:** Respondents suggested having more information available about coastal access points, visitor services, and community events, along with amenities like picnic benches and snack huts.

This indicates that respondents prioritize both accessibility and preservation when it comes to coastal access in Marina. They want improvements to facilities and pathways to make the beaches more accessible, while also valuing the natural state of the coastline and expressing concerns about potential commercialization. Additionally, there is a desire for better information and amenities to enhance the beach experience for both residents and visitors.

## 1.3 Summary and Recommendations

The analysis of Marina's Beach and Coastal Access Questionnaire highlights a community deeply invested in the natural beauty and tranquility of their coastline. Respondents overwhelmingly favor the undeveloped and scenic state of the area, with a significant portion visiting the beach frequently for various outdoor activities. However, they also express a strong desire for improved access and amenities, indicating that while they cherish the natural environment, they seek enhancements to safety, cleanliness, and overall experience.

### Recommendations for Implementation

#### Enhance Access and Amenities

- Develop accessible pathways and ramps to improve beach access, especially for individuals with disabilities; and
- Install necessary amenities such as picnic tables, trash cans, benches, and restrooms to promote longer visits and enhance comfort.

#### Preserve Natural State

- Implement strict policies to prevent residential, commercial, and industrial development along the coastline. Prioritize initiatives that maintain the area's ecological integrity and scenic beauty.

#### Increase Safety and Cleanliness

- Increase park ranger and police presence to ensure safety and monitor beach activities; and
- Establish regular maintenance schedules for trash collection and beach cleanups to keep the areas pristine.

#### Promote Education and Awareness

- Provide educational materials and signage about local coastal access points, environmental features, and conservation efforts. Consider creating a visitor-serving kiosk to distribute this information.

#### Encourage Community Engagement

- Organize community events and activities that promote stewardship of the coastline, such as beach cleanups and habitat restoration projects; and
- Involve local residents in discussions about future developments and coastal management strategies to foster a sense of ownership and commitment to preserving Marina's natural resources.

By addressing these priorities, the City of Marina can create a welcoming and sustainable coastal environment that meets community needs while preserving the natural beauty that residents cherish.

*This side intentionally left blank.*

Questionnaire

A

ATTACHMENT



1. How old are you?/ ¿Cuántos años tiene usted? / 몇 살이예요?

- Under 18 years / Menores de 18 años / 18세 미만
- 18-44
- 45-64
- 65+

2. With which of the following ethnic or racial group(s) do you identify?

¿Con cuál de los siguientes grupos étnicos o raciales se identifica?

귀하는 다음 중 어느 민족 또는 인종 집단에 속합니까?

- American Indian and Alaska Native / Indio americano y nativo de Alaska / 아메리칸 인디언 및 알래스카 원주민
- Asian / Asiático / 아시아 사람
- Black or African American / Negro o Afroamericano / 흑인 또는 아프리카계 미국인
- Hispanic or Latino / Origen Hispano o Latino / 히스패닉 또는 라티노
- Native Hawaiian and Other Pacific Islander / Nativo de Hawái y otras islas del Pacífico / 하와이 원주민 및 기타 태평양 섬 주민
- Not Hispanic or Latino
- Some Other Race / Alguna otra raza / 다른 인종
- Two or More Races / Dos o mas razas / 두 개 이상의 레이스
- White / Blanco / 하얀색

3. With which of the following do you identify? Select all that apply.

¿Con cuál de los siguientes te identificas? Selecciona todas las que correspondan.

다음 중 귀하는 무엇에 속합니까? 해당되는 모든 것들을 고르세요.

- Senior (55+) / Mayor (55+) / 시니어(55세 이상)
- Female head of household / Hogar encabezado por una mujer / 여성 가장
- Person living with disabilities / Residentes viviendo con capacidades diferentes/desactivado / 장애가 있는 사람
- Unhoused / Desarzonado / 무주택
- Single-parent household / Hogar monoparental / 한부모가구
- None of the above apply / Ninguno de los anteriores aplica / 위 사항 중 어느 것도 해당되지 않습니다

4. What is your annual income? / ¿Cuál es su ingreso anual? / 귀하의 연간 수입은 얼마입니까?

- \$0 - \$25,000
- \$25,001 - \$50,000
- \$50,001 - \$75,000
- \$75,001 - \$100,000
- \$100,001 - \$200,000
- \$200,000+
- I prefer not to say / Prefiero no decirlo / 나는 말하고 싶지 않다

5. Which of the following describes you? (Check all descriptions that apply to you.)

¿Cuál de las siguientes características se describe? (Marca todas las descripciones que se apliquen a usted).

다음 중 귀하를 설명하는 것은 무엇입니까? (귀하에게 해당되는 설명을 모두 확인하세요.)

- I am a resident of Marina. / Soy residente de Marina. / 나는 마리나 주민이다
- I own property in Marina. / Soy propietario en Marina. / 저는 마리나에 부동산을 소유하고 있습니다.
- I own/operate a business in Marina. / Tengo/manejo un negocio en Marina. / 나는 마리나에서 사업체를 소유/운영하고 있습니다.
- I work in Marina. / Yo trabajo en Marina. / 나는 마리나에서 일해요.
- I am a student in Marina. / Yo soy estudiante en Marina. / 저는 마리나에 다니는 학생입니다.
- I live near Marina. / Vivo cerca de Marina. / 나는 마리나 근처에 산다.
- Other / Otro / 다른:

6. What is your Zip Code? / ¿Cuál es su código postal? / 당신의 우편번호는 무엇입니까?

7. How often do you visit the beach? / ¿Con qué frecuencia visitas la playa? / 얼마나 자주 해변을 방문하시나요?

- 2+ times a week / 2+ veces por semana / 일주일에 2번 이상
- Weekly / Semanalmente / 주간
- A few times a month / Algunas veces por mes / 한 달에 몇 번
- Monthly / Mensualmente / 월간

- Every few months / Cada pocos meses / 몇 달에 한 번씩
- A few times a year / Algunas veces al año / 일년에 몇 번

8. What types of outdoor activities do you enjoy on the coast?  
 ¿Qué tipo de actividades al aire libre disfruta en la costa?  
 해안에서는 어떤 종류의 야외 활동을 즐기시나요?
9. What are your three favorite things about Marina's coastline?  
 ¿Cuáles son sus tres cosas favoritas de la costa de Marina?  
 마리나 해안선에서 가장 좋아하는 세 가지는 무엇입니까?
10. Are there any types of outdoor activities missing from the local beaches and coast that you would enjoy?  
 ¿Falta algún tipo de actividad al aire libre en las playas y la costa locales que le gustaría disfrutar?  
 현지 해변이나 해안에서 즐길 수 없는 야외 활동 유형이 있나요?
11. Have you visited a beach or coastal area that you didn't enjoy and/or made you feel unsafe?  
 What didn't you like or what made you feel unsafe?  
 ¿Has visitado una playa o zona costera que no disfrutaste y/o te hizo sentir inseguro? ¿Qué no te gustó o qué te hizo sentir inseguro?  
 즐겁지 않거나 안전하지 않다고 느끼게 만든 해변이나 해안 지역을 방문한 적이 있습니까? 마음에 들지 않았던 점이나 불안한 느낌을 준 점은 무엇입니까?
12. What would make you feel safe or welcome on Marina's coast or beaches?  
 ¿Qué te haría sentir seguro o bienvenido en la costa o las playas de Marina?  
 마리나의 해안이나 해변에서 무엇이 당신을 안전하고 환영받는다고 느끼게 만들까요?
13. Are there any types of development you would like excluded from the City of Marina's coastline?  
 ¿Hay algún tipo de desarrollo que le gustaría excluir de la costa de la ciudad de Marina?  
 마리나시의 해안선에서 제외하고 싶은 개발 유형이 있습니까?

14. Please rate how important the following topics are to you for Marina's coast, where five is very important and one is not important to you.

Por favor Califique qué tan importantes son para usted los siguientes temas para la costa de Marina, donde cinco es muy importante y uno no es importante para usted.

마리나 해안에 대해 다음 주제가 얼마나 중요한지 평가해 주십시오. 5개는 매우 중요하고 1개는 중요하지 않습니다.

- Sensitive Habitat & Species Preservation / Preservación de especies y hábitats sensibles / 민감한 서식지 및 종 보존
- Environmental Education / Educación Ambiental / 환경교육
- Day-Use Recreation (Overlooks/Viewing Areas/Benches/Picnic Tables/BBQs) / Recreación de uso diurno (miradores/áreas de observación/bancos/mesas de picnic/barbacoas) / 주간 레크리에이션 (전망/전망 공간/벤치/피크닉 테이블/바비큐)
- Overnight Camping Recreation / Recreación para acampar durante la noche / 하룻밤 캠핑 레크리에이션
- Boardwalks/Trails / Paseos marítimos/senderos / 보드워크/트레일
- Parking / Estacionamiento / 주차
- Restrooms / Los baños / 화장실

15. Did you know there was coastal access at Lake Court Drive?

¿Sabía que había acceso costero en Lake Court Drive?

Lake Court Drive에 해안 접근로가 있다는 것을 알고 계셨습니까?

- Yes / Sí / 예
- No / No / 아니요

16. Did you know there was coastal access at Dunes Drive?

¿Sabía que había acceso costero en Dunes Drive?

Dunes Drive에 해안 접근로가 있다는 것을 알고 계셨나요?

- Yes / Sí / 예
- No / No / 아니요

17. Do you know where Marina's four coastal access points are? Where are they?

¿Sabes dónde están los cuatro accesos costeros de Marina? ¿Dónde están?

마리나의 해안 접근 지점 4개가 어디에 있는지 아시나요? 그들은 어디에 있나요?

18. If you are a resident of Marina, do you visit Marina's beaches or do you go elsewhere to visit the beach? If you live in Marina but go elsewhere to visit the coast/beach, what is the reason you prefer another beach?

Si es residente de Marina, ¿visita las playas de Marina o va a otro lugar para visitar la playa? Si vive en Marina pero va a otro lugar para visitar la costa/playa, ¿cuál es la razón por la que prefiere otra playa?

마리나 주민이라면 마리나 해변을 방문하시나요, 아니면 해변을 방문하기 위해 다른 곳으로 가시나요? 마리나에 거주하지만 해안/해변을 방문하기 위해 다른 곳으로 간다면, 다른 해변을 선호하는 이유는 무엇입니까?

19. Do you have anything else you'd like to share about coastal access in Marina?

¿Tiene algo más que le gustaría compartir sobre el acceso costero en Marina?

마리나의 해안 접근에 관해 공유하고 싶은 다른 내용이 있나요?

20. If you are interested in continuing to participate in the City of Marina Local Coastal Program update, please leave your email.

Si está interesado en continuar participando en la actualización del Programa Costero Local de la Ciudad de Marina, deje su correo electrónico.

마리나시 지역 해안 프로그램 업데이트에 계속 참여하고 싶다면 이메일을 남겨주세요.

*This side intentionally left blank.*

Open-Ended Responses

B

ATTACHMENT



The following lists the open-ended responses received for questionnaire questions 6, 8, 9, 10, 11, 12, 13, 17, 18, and 19.

**Question 6:** What is your Zip Code? / ¿Cuál es su código postal? / 당신의 우편번호는 무엇입니까?

**Responses:**

92064	93940
93905	93955
93907	95951
93933	95062
93933-3314	N/A

**Question 8:** What types of outdoor activities do you enjoy on the coast?

¿Qué tipo de actividades al aire libre disfruta en la costa?

해안에서는 어떤 종류의 야외 활동을 즐기시나요?

**Responses:**

Hiking, walking dog, sitting in the sunshine, looking for cool rocks and plants
Gardening, Beachcombing
Beachcombing, looking for seaglass/shells, Bird watching, whale watching
walking, reading , observing wildlife, just lounging, the sunsets
Scuba Diving, Surfing, Walking Dog.
Kids build sandcastles, go in water, fly kites, scuba diving
Walk my dogs where possible, walk north of MSB to Dunes park
Walking
walking on the beach and walking on the trails along the water; relaxing looking out at the water
Walking, biking, bringing my elderly mother to sit on a bench or in my car for us to visit, food break
Walking, enjoying the natural beauty
walking
Walking
Kite flying, bicycle riding, trail hiking.
Beachcombing, kayaking, enjoying wildlife
Just walking and looking at the waves
Hiking, playing on the beach with family and friends, relaxing

walking if it's a sunny, warmer day.
Watching sunsets. Walks on beach.
Walking, Hiking, Climbing the Dunes
Walking on shoreline
Habitat restoration, removal of litter & non-natural weeds in parks, bicycling, hiking, botanizing, dog walking, festivals
Biking, hiking, lunch @ the beach, park w/ grandkids, pickleball
Biking, walking/hiking
Walking through dune habitat, laying in sand, having a picnic
Dog walks, bird watching, hiking, swimming, reading, relaxing
Walks and hikes along the coast
Walking
Walk, hike, fish, BBQ
Walking
walking biking
Walking, Whale/Animal watching
Cycling, walking, enjoying open spaces.
walking, jogging, surfing
Walking. Dog walking. Exploring. Picking up trash.
walking
Bike, walk, hike, bird watching
Picnic on the beach
Walking
Hiking. Walking on the beach. Bike riding. Picnics.
walking, reading, watching birds and marine life
Walking on the beach, driving to the coast and watching the waves from my car, walking my dog, meeting up with friends, used to love beach bonfires before they were banned
Bird watching, beach combing, walking on the beach, looking at the sunset
Walking along the bluffs
Walking, relaxing, playing in the sand
Walking, bicycling
none
Hiking, photography, wildlife viewing, watching hang gliders/parasailors and surfers
walking, relaxing, exercising, watching sea and wildlife
Dog walking, biking, beach walking, kite flying

Diving, walking, taking the dog, photography, tidepooling,
Walking
Walking, riding along the trail or on the beach
Hikes and walks
Walking, running, weather, watching wild life.
Eating, attending festivals
Skateboarding & Playing tennis, camping, bonfires, etc.
Walking, sunbathing, sand castle building, playing in the water, bike rides.
Hiking, kayaking, biking, outrigger paddling
Run to and on the beach. Sit and relax
Reading. Riding my longboard. Sitting on the beach. Walking in the beach.
Bike rides & walking. Watching the waves
Hiking, jogging and cycling
Walking
Biking, walking the trails, going to the beach, taking pictures of nature & grabbing food/drinks (if accessible)
Dog walk, hike, biking, sitting on the beach
Bicycle ride
Walking, exercise, fishing, biking, photography, nature.
Picnic
Walking on the beach
walking, watching for whales and sunsets
sitting and watching the ocean, take walks, play with the grandchildren
walking, hiking
Walking
Hiking and biking
Hiking, reading on the beach, swimming
walking
Walking, sitting at the beach, boogie boarding, swimming
Hiking
Walking, Reading
Walking
Walking
Beach volleyball, exploring tide pools, climbing dunes, walking/hiking, sand castles

walking on the beach
Biking, playing with the kids, walks, dog walks, water play, paddle boarding
walking, bicycling, hiking in dunes
Walking with my dog (on a leash).
Walking, standup paddling
Walking
Picnic, sunbathing, walking on the sand, watching the sunset.
walking along the beach and collecting sea glass
Biking, birding, walking and walking the dog, riding the rail cars
Walking, hiking, biking, beach combing
walking, hiking, birding, lounging outside with a good book/magazine
Walk
Photography, picnicking
walking
Walking my dogs, hiking, swimming, picnicking
Sunbathing
Walking/hiking,biking
Biking, swimming, paddle boarding, hiking, boogie boarding

**Question 9:** What are your three favorite things about Marina’s coastline?

¿Cuáles son sus tres cosas favoritas de la costa de Marina?

마리나 해안선에서 가장 좋아하는 세 가지는 무엇입니까?

**Responses:**

Marinas coastline is less trafficked by tourists
It's wild, less visited, love the colors of the dune environment
undeveloped, accessible from the Highway 1, visually stunning
Quiet, lots of birds, great for walks and sunsets
The expansive dune habitat and lack of development.
Natural landscape / no buildings, wide beaches with plenty of sand, constant breeze
The Beauty, Snowy Plovers, The opening to the monterey canyon
The waves, open beach and the scenery

The walking trails at Fort Ord Dunes State park are wonderful; beach is peaceful and not crowded at anytime; and is close to home
Clean air, in FODSP bike and walking road with no vehicles, easy access
Large portion is undeveloped. Native dune habitat. Trail
the peace and quiet
Birds...shells...picking up trash
Beach, Parks, Wildlife
Beach, dunes, wildlife
There are no 3 Favorites I love it all
Undeveloped with lots of open space, free (no cost), continuous dune habitat up and down the coast
How expansive it is.
Clean. No dogs allowed. Dramatic waves.
1) The dunes, 2) That it is open to the public, 3) That it is mostly preserved in its natural state
Natural, unobstructed beach
Wild, big, healthy
Beach
Clean, spacious, free availability
The views of the bay, the native plant habitat, the shore birds
Beautiful dune plant life, excellent birdwatching, excessive otters
Relatively uncrowded and surrounded by open space. Largely unspoiled.
The ocean view. Limited visitors. Clean air and sand dunes.
Undeveloped, open space with no buildings, walkable
It's wildness
not crowded
Proximity, soft sand, fairly easy access
State park's open coastal zone, bike trail and wide road through park for multiple uses. Access south to Seaside and Monterey.
lack of development, access to public
Clean beaches. Accessible. Beauty.
beauty, access, not crowded
Pristine, quiet
Natural
Free parking free, beach access, walking trails
Its beauty. Not crowded. Dogs are always on leash.
wide, wild, clean, empty

Pristine and not developed. Sand dunes are always changing. Birds and wildlife are protected.
accessibility, not commercially developed, Marine Protected Areas
No one is there, no one is there and no one is there
It's wild, it's expansive
Quiet, wide open, marine life
beach
Undeveloped, wildlife/habitat preserve, hang gliders/parasailors
Not overly busy/crowded, dunes, close to my home
Wild, desolate, expansive
It's close, clean and accessible
The weather, and sand
Unfortunately, only the view because the weather is not great, and the trail needs a lot of upkeep.
The weather, the views, my boyfriend lives near by
Dunes, cleanliness (mostly debris free), proximity to town/shops/housing.
The seals, whale watching, collecting sea shells, the weather, the sights/views, and I also enjoy the parks
Fresh air, beautiful sight, the beautiful beach
Walking, sunbathing, sand castle building, playing in the water, bike rides on the nearby bike trail.
Beauty, not crowded, proximity
It's natural, no buildings or sand wall.
It's beautiful. The beaches are clean. It's not too busy at any one spot.
Proximity, nice beaches
Temperate weather, trails and easy access to beaches
Peaceful, not crowded
natural beauty/preserve, close proximity, bike trails
Close access, Fort Ord Dunes, bike trail
Undeveloped, few people, beautiful
Privacy, cleanliness, location.
Beaches, trails, rock and sand available beaches
How close it is, that it is pretty quiet, how clean it is
quiet, not overcrowded, can see Monterey and toward Santa Cruz
Weather is perfect, the closeness, not crowded except for holidays
the sand dunes, beach area, dog friendly places.
proximity, not crowded, natural


It's open, protected, and undeveloped (for the most part).
Pristine, peaceful, beautiful sand
few people, beautiful, view
The variety of coastal access
I like that it is a habitat for native plants & animals, its solitude, and it is a part of the Monterey Bay National Marine Sanctuary.
Sandy beach
Natural beauty and the dunes
The birds, trails, natural sea scape
not crowded, beautiful, fun paths to get to the beach
It is difficult to get to the beach in Marina - I can only view from quite a distance
Beautiful, great trails, easy access
The dunes and vegetation, sun, water.
1) Not crowded. 2) Lovely waves. 3) Natural beauty.
Accessible and quiet plus they are sandy
Beautiful beaches, not so crowded and stunning sunset
Easy access, nearby parking, beautiful sunset
sandy beaches
You can walk for miles on the beach with very little reminders of humanity; you can enjoy seeing beautiful native vegetation and wildlife from lizards to whales; it is not overcrowded with people (yet).
It's mostly unspoiled. The dunes are gorgeous. It's not overdeveloped
accessibility, natural scenery, not too crowded
Eat at restaurant overlooking the ocean
It's close by, it's not over developed, it's clean
walking
Beauty, proximity, cleanliness
Tranquil, well protected, not crowded
Long beaches, dunes & not crowded.
Easily accessible, biking trail, dunes climbing

**Question 10:** Are there any types of outdoor activities missing from the local beaches and coast that you would enjoy?

¿Falta algún tipo de actividad al aire libre en las playas y la costa locales que le gustaría disfrutar?

현지 해변이나 해안에서 즐길 수 없는 야외 활동 유형이 있나요?

**Responses:**

There could be more child activities like small playgrounds and more benches and picnic tables.
No-just more access points
not really
Bonfire pits
No.
Boardwalk, food stands, bathrooms
There aren't any flat areas to do things like volleyball. You can't BBQ anywhere .. there are few if any picnic tables.
No
Places to sit for awhile to look out at the water; a pier to walk out on
Boardwalk that was at Marina State Beach that allows people to walk in the dunes without traversing the steep incline. Bike rentals
The Boardwalk should be repaired
being able to walk my dog on the beach in marina
Don't know
Night life activities
Greater accessibility 
No
No
Not much to do, since it's so often windy, foggy and cold.
As beautiful and inviting as it is, Marina beach is not walkable. Its steep. Uneven. That hill to get up and down. Would love to watch more sunsets from up above but that parking lot is tough. It would be so nice if something were designed to make it easier to enjoy. We talk about it all the time. Can we have bonfires? What a loss that was when Carmel stopped allowing that. There is nothing so dreamy as a bonfire on the beach.
No
Maybe a simple pier at the Marina State Beach. Would be a good visitor attraction.
Better bike facilities, better sitting opportunities
Fort Ord Dunes could use a circle walking trail w/out fences.
No
More accessible boardwalks and benches like Casa Verde beach
No
None that I can think of.
A walkable boardwalk that I could see the ocean from.
Trash cans, benches

No
no
Swimming
Dog beach. A little more parking.
no
Dog friendly
not that i can think of
Boating, kayaking
Yes
No
Sailing
keep it wild
Please continue to protect our pristine coast in marina
beach cleanup activities
Nuclear missile launches from submarines
Walking paths along or to the beach. They are not easily accessible.
No
no
I think Marina State Beach and Fort Ord Dunes are just perfect how they are. Looking forward to CEMEX disappearing for added coastal access.
fire pits
more opportunities for interpretive walks about local flora in dunes, restoration activities, plein air art
Huh? Weird question.
The access to the beach can be hard , especially with the access near Lake Drive and the Kennel, near the septic tank
NA
Beach yoga and meditation
Don't have an attraction like a harbor or a pier (I often visit Pismo beach for their pier/shops/downtown area).
Beach soccer
Camping & Bonfires are great but no beach allows it.
A boardwalk and beach shops. Tourist attractions. Beach night life opportunities.
No
Maybe a dog friendly area where they can be off leash.
No

More parking & better services. ie. porta potties, trash containers
N/A
No
Today there are very limited beaches that allow dogs, wish there were more spots to converse and have a social atmosphere, wish the beach was way more accessible and easy to get to via trails/underground walkways
Dog-friendly beaches
Hiking
Better access, fishing spots, boating, safe swimming, diving areas. Picnic tables, seating, easier access thru and over the dunes.
Fishing pier
No
No
no
More dog access to certain places
Dog friendly
Can't think of any.
N/A
no
Marina is missing a beach with access that has ample parking and clean restrooms similar to Monterey Municipal Beach access. Marina State Beach is not ideal for swimming access or children due to the steep hills and poorly maintained restrooms. Additionally, homeless people often set up tents at the beach or destroy the bathrooms making it unfavorable for family use.
I don't think we need organized outdoor activities at our beaches.
Sufficient parking
Access and safety
Kite flying areas
no
Access for anyone with disabilities - you can't really get to the beach in Marina. You have to go to Monterey or Pacific Grove
Camping would be awesome
Easier kayaking access
Leash-less dog area. I understand it would have to be fenced off to protect the habitat, but it would be great if a sizable section of the beach allowed this so that I don't have to drive to Carmel for this.
Nothing missing
Picnic tables
Access to coastal stores, restaurants or cafes with coastal views, ice cream vendors, snack and drinks availability.

No
Guided tours by naturalists
More parking and easier access to get down to the water, cleaner parking lots. Marina seems to be neglected compared to other beach areas in Monterey County
occasional sanctioned bonfires?
We do not want it too crowded
Some sort of path for wheelchairs
no
Camping
I feel the wind is too strong here, its a little hard to just sit and enjoy the beach
No
Bonfire rings, on the beach family activities such as movies, volleyball

**Question 11:** Have you visited a beach or coastal area that you didn't enjoy and/or made you feel unsafe? What didn't you like or what made you feel unsafe?

¿Has visitado una playa o zona costera que no disfrutaste y/o te hizo sentir inseguro? ¿Qué no te gustó o qué te hizo sentir inseguro?

즐겁지 않거나 안전하지 않다고 느끼게 만든 해변이나 해안 지역을 방문한 적이 있습니까? 마음에 들지 않았던 점이나 불안한 느낌을 준 점은 무엇입니까?

**Responses:**

It's usually just the homeless population that makes me uncomfortable
n/a
scary parking lot, trash on the beach, unhoused folks sleeping/encampments on the beach
Parts of Santa Cruz are full of homeless
Yes. Garbage, litter, broken glass.
Marina beaches near fort ord have rebar sticking out of the sand, homeless people are a risk of violence, rip tide zones with no lifeguards is unsafe
The pathways/walkways are either burried or in poor repair. Trails in some areas a difficult to walk.
No
No
Steep and unsafe access at Lake Ct trail
No
homeless people

No...pretty safe at 5.30am...no problems with can scavengers/homeless
The dunes behind Marina Del Mar, need more safety signs.
No
Nothing
No
Not enough parking and places to sit.
Animal excrement on beaches is gross.
The pit near the sand factory seems unsafe. The path to the beach from the coastal trail / end of Lake Court is washed out.
Derelict cars in beach access parking lots
No, always felt safe
I don't like the fences at Ft. Ord/Dunes state park. It block the view.
No
Not unsafe. But hard for me, disabled person to walk up and down sandy slope to the water at any of Marina's beaches, and hard to walk through dunes, Casa Verde beach much more accessible to me. I would appreciate more accessible/disabled parking.
Sand City's beach behind Costco has some debris that can be difficult to safely navigate
In Sand City there were individuals that seemed to be suffering from drug effects on the walkways along the coast. They made us uncomfortable.
Marina State Beach. The waves can be wild, sometimes. Parking is a challenge, as well.
Underpass between CSUMB and Fort Ord has graffiti and homeless encampments
No
no
No
Homeless camps. Especially abandoned but trashed areas
nm
Homeless camps toward Monterey
trash
Not safe to get to the beach, lack of easy access. Not disability friendly, someone with mobility issues cannot get onto the beach. Lack of parking at times.
No
No
No
no
I've been to beaches that have a lot of trash and broken glass and feel unsafe to walk on without shoes.
no

no
No
Sometimes an aggressive dog. Not very often
no
Too many people
Down Marina State Beach, closer to the quarry plant, there are homeless up hiding in the dunes and leaving spent needles on the beach :(
Sometimes when I am by myself down the beach, I feel a little vulnerable, since there are not many people around.
I have seen broken glass and used condoms/trash at some of the beach trail heads and that is unpleasant.
No
Hard to walk access to beach
I never felt unsafe, but it's disheartening how people let their dogs defecate anywhere along the trail or beach and don't pick up after them. Even worse when they bag up the feces, but proceed to leave the poop bag along the trail because there are no visible trash cans to deposit the waste in, but I believe this is a State Parks issue.
No
No - always feel safe in Marina
N/a
NA/
No
Yes. There was a couple in a secluded part of the beach. Unclear if they were homeless. No people nearby do turned back.
No
No
Two access points have fairly long walks from nearest parking. Limited or no parking
Need better maintenance of the access points to beaches
No
No
No
No
While the privacy is nice, there often is nobody around should there be a problem.
Homeless camps and homeless taking parking spaces to live at. Personal assault for parking in a space that was theirs. Dogs not on lease or not cleaned up after
No
Yes - Del Monte beach is uncomfortable with homeless camps, sometimes dead animals as well as sealife (I've found two dead dogs) and depending on the tide it smells worse than in Pacific Grove, or Marina.

Homeless camps along the trails of the coast
Beach area at the end of Reservation Rd.
very high winds
No
Closer to Monterey, homeless encampments (temporary or overnight) and general vagrancy. Has not seemed to be the same problem in Marina.
no
Marina State Beach and Monterey Municipal Beach frequently have homeless tents set up. As a woman who often goes alone with my small children I frequently feel unsafe due to clear drug use present and full tents that I'm not sure who is in them. The bathrooms are often destroyed and I would not ever take my kids to them.
Yes. I often walk or hike alone at our local beaches. The presence of park rangers would be welcome.
N/A
Could be safer and the graffiti and homeless stuff needs to go
Family member needs safer steps down to the shore at Marina beach. Have clearer areas just for bikes away from walkers on all beaches in county. More benches.
yes, my family walked barefoot over the dunes off of Lake Ct. and on the way back, many of them stepped on "spiky" plants that were quite painful and difficult to remove from the bottom of their feet. also, the bathrooms are extremely disgusting/unusable at marina state beach.
I can't answer because we can't access the beach easily from anywhere in Marina
O
Yes, homeless on Seaside and Sand City beaches.
No
Santa cruz amusement activities, it felt tacky and cheap
No
No
homeless encampments
Sometimes tourists can be aggressive on their bikes and electric bikes or let their dogs run off leash.
Occasionally there is a lot of pot smoking and people sitting in blacked out cars. Sometimes transients that have approached me
no
No
No
No
Homeless population, litter (particularly related to alcohol and drugs)
No
No
No

**Question 12:** What would make you feel safe or welcome on Marina’s coast or beaches?

¿Qué te haría sentir seguro o bienvenido en la costa o las playas de Marina?

마리나의 해안이나 해변에서 무엇이 당신을 안전하고 환영받는다고 느끼게 만들까요?

**Responses:**

I'm not sure
I feel safe & welcome. I worry for the homeless that set up camp in the dunes.
a maintained wooden boardwalk with subtle lighting, nature signs, park rangers
More State Park trucks patrolling up and down the beach
Bike locks along the bike path/coastal access points.
Clean bathrooms, lifeguards, food vendors, community events (sandcastle contests, kite events, dog meetups, etc)
Better amenities, signage, areas set aside for play, bbq's, etc.
More parking
Unsure
Return of the boardwalk at Marina State Beach, repairing the parking lot broken concrete at Marina State Beach, better garbage enclosures to accommodate busy weekends
I feel safe
get rid of homeless people
Better lighting at the entrance to Marina State Beach. Repairing the wooden walkway....getting close to collapsing near the pond...soft spots.
No
I feel safe now
I DO FEEL SAFE
NA
Have more parking and places to sit.
Easier access getting up and down to the beach.
Walking paths to the beach that do not get washed out.
Occasional police patrols
Better bike parking/storage
Open space views
Maintain erosion area of Marina parking lot
See 11
I do feel safe at Marina's beaches

Occasional patrols by MPD.
More parking and a boardwalk in the dunes.
Formal parking, routine policing, lighting, cement or asphalt paths
Not sure
OK
Peace officer presence
Park rangers and bike safety patrols. More trash pickup even with more volunteers
a nicer and more pedestrian-friendly corridor to Marina State Beach on Reservation Rd. Currently no crosswalks and cars exiting/entering highway don't always look.
Homeless camps
clean and not crowded
Easy access to the beach, more lighting in certain areas
Easier access for seniors
Love them already, but not very accessible for wheelchairs
Dogs allowed on leashes.
Marina beaches feel safe but not the access road on Reservation RD.
I love marina beaches and feel safe here.
easy access, wide open vistas
Already welcome
More park rangers or staff monitoring activities
I feel it's safe
more parking spaces
Not having too many people
More state park rangers patrolling the beach line
Clean, well-lit entry points. Public transportation access. eBike or scooter rentals.
Already feel safe.
Improve access to beach near septic Tank and rail tracks
Upkeep of the area.
I feel safe on the coastlines
Welcome: street artists, food trucks, boardwalk along the beach (Marina State beach to Dunes with a shuttle bus to start/return from old marina downtown area!).
Lifeguards
Clean beaches, accessible parking, decent bathrooms.
Signage in dangerous areas, benches for sitting, garbage cans, lifeguards.

Monitoring of beaches to ensure safety
N/a
...
More parking
Well maintained pathways and parking
Easy walking access to coastline at Ford Ord Dunes
More accessible by walking vs driving. Better parking at local beaches, better lighting and facilities
Dog-friendly beaches (leashed)
Fewer coyotes, but they're also an important part of the ecosystem. Fewer abandoned buildings
Better access to the beach, services and safety.
Park ranger patrolling
I already do
Lifeguards or more Rangers - not because people should be encouraged to go in the water due to the rip tides but because they do it anyway, and allow their children too. You want to say something but they just ignore regular citizens.
Get rid of the homeless camps/garbage/needles, etc...
Parking lot lights, less trash, cleaner bathrooms, easier access down to beach.
Clean parking areas and bathrooms
I already feel safe and welcome.
I appreciate the rangers and other patrols along Marina's beaches.
clean up large areas of decomposing plastics washed up on shore
More enforcement that prevents homeless tents from setting up. I pay taxes in this community to be able to access the public properties and it's deeply disappointing to see law and bylaw enforcement fail to enforce decorum and public safety in those public spaces. Tents set up all along the beaches, parks and coastlines should not be allowed and more resources should be dedicated to either housing those people or providing a locations that doesn't impede everyone else who would like to use those public spaces. I've seen tents take over volleyball courts and surrounding areas so teams can't use the courts.
The presence and visibility of more park rangers
More parking. Easier access to the beach. More frequent police presence.
Cleanliness safety and accessibility
Alert system on trails if you needed help.
if the spiky plants could be removed from areas where people are walking without shoes, it would help the overall experience a lot. regular maintenance of the bathrooms at marina state beach would also be appreciated.
ACCESS - again there is no good, easy to access public access
They are ok
Clean beach, respectful people.
NA

Cleaner, too much debris and some old pipes stick out from the dunes, they don't look nice and make me feel as if it is likely to be polluted at times.
More parking spots at Marina Beach
Access to food, drinks, snacks and cafes/restaurants with nice beach views.
beach patrol
More rangers to protect the environment and remind visitors about the rules like keeping dogs on leash and not leaving trash or going off trail in sensitive habitat.
More rangers, better parking and patrols
no campers / people residing in park
Ongoing Police /Park surveillance will be good
Wheelchair access, picnic tables
I feel safe
Allow leashed dogs, life guard, vendors - just more consistent activity from city-approved entities
Maybe some amenities and more activities, for example bike rental
More park rangers
More family friendly activities such as a beach friendly play area for children

**Question 13:** Are there any types of development you would like excluded from the City of Marina's coastline?

¿Hay algún tipo de desarrollo que le gustaría excluir de la costa de la ciudad de Marina?

마리나시의 해안선에서 제외하고 싶은 개발 유형이 있습니까?

**Responses:**

Less houses stacked up together. More affordable housing
Desalinization plant
Hotels, parking lots, cars on beach (Pismo beach), oil drilling, industry, billboards
NO MORE HOUSES - it is getting too crowded and the traffic is awful for our tiny two lane highway.
Development along shoreline.
No housing, limit it to food stands only. A high-scale eatery/bar would be nice, similar to Sea Harvest Moss Landing. Scenic parks would be great with seating and play structures for kids. Boardwalk like asilomar with walkways would be great. No homeless.
No Desal plants, Hotels on the beach, houses on the beach
The MTA bus lane
MST SURF bus!!
Return of vehicles on the road at FODSP that bikes and walkers now enjoy. Parking for large RVs. Hotels. Sandmining

No SURF bus lane should be paved.
no
Marina State Beach Doesn't need anymore development .
No
Shops, factories, fast food...keep it natural
ALL DEVELOPMENTS, they do not belong on our beach, it is there to enjoy it
No large buildings for any purpose!
Things that obstruct the view of the coastline.
Noting that would turn it into a santa cruz beach boardwalk. That would be too noisy and take away from the serenity of marina beach.
I'm opposed to any development except that which makes it accessible to the public. More restrooms along the coastal trail would be nice.
Please, NO SURF BUS LANE!
Industrial facilities such as sand mines and groundwater desal pipes and above ground facilities
N/A
No
Keep passive recreation mostly, no other buildings really. Maybe more restrooms or signs
Yes, we should retain the dunes between the beach and development and only develop behind the dunes or on the east side of highway 1.
This question lacks clarity. I think however that the SURF busway shouldn't be developed and will be happy if the CCC stops it.
No condos!
Houses, hotels, lawns/fields, structures
Everything! Except restrooms and boardwalks...
buildings
Hotels
Business and residential. Keep existing open space/coastline west of highway 1 free from development. Please!!!
no development, except possibly a boardwalk and benches like at Del Monte Beach
Businesses or homes on the beachfront.
homes, commercial buildings
SURF bus
Hotels, Businesses
Keep it clean and local
Overpopulation
All of them. esp. Desal plant. Keep the dunes and beach wild.

I don't want to see any development on Marina's beaches. Maintain access at the designated entry points but don't add development. You could improve the connection sidewalks from central marina to the beach access points - great nicer pathways/sidewalks/trails that make it pleasant to walk to and from the beach.
ALL commercial development
everything
Any building that restricts public use.
Yes. No retail or food establishments. Keep it like it is!
no
All types of development
Houses! RV parks or campground! There are too many houses for sure --> our highway cannot handle it.
Keep the dunes wild!
Any and all development. Leave our beaches alone.
Houses so near
NA
Tall buildings that block the view
CALAM Desal plant
Further information needed, examples
NA/
Cal Am Desal plant.
Housing, hotels, golf courses, camp sites
Anything interfering with the space between the existing roads and the beach. For example, I love the old train lines and handcart. I would not want that converted to bus lines.
No
Less housing without additional infrastructure including better traffic corridor onto Hwy 1. Current plans don't address the freeway access bottleneck on Imjin
The coastline should remain as natural as possible
No
encourage development as long as it's not creating hazards to preserve wildlife habitats to an unreasonable degree, impacting the view of the ocean & putting our water supply for the city at high risk
Not sure
All non-essential development
Housing, hotels, business that pollute the water and environment.
Homeless camps
All. No houses, hotels, restaurants, camping, etc. Leave it be please.
neither residential nor commercial should be on our coastline. As more development occurs on the east side of hwy 1 there is less and less natural soace or area for deer, rabbits and coyotes. Additional our

beaches are nesting grounds for birds and harbor seals which should not be disturbed by hoards of people or development.
Developers on the beach, keep them on the other side of Hwy 1
n/a
exclusive non-public developments
Any construction. There's an old California saying, "If you don't surf here. don't develop here." The bay is a protected sanctuary. This should also apply to the coastline.
Anything physically or environmentally disruptive to the current ecosystem / coastline.
hotels and residential
Would not like to see anything that creates a significant negative impact to the environment
I'd hate to see any housing or commercial buildings.
N/A
Cement factory and ugly things
Keep Marina beach from becoming a tourist attraction, leave as is except make more views and access to shoreline.
no
no camping
Commercial ventures, large scale ones at least.
Residential, commercial and industrial buildings.
Do not develop the Marina coastline with buildings. Leave it in its natural state.
Houses, hotels, amusement parks
No
More parking space close to the beaches.
NO urban development, firepits, picnic tables, BBQ pits, camping, etc
The CalAm deal plant would be horrible. Also, would not like the bus line to Monterey near the rec trail because the rec trail is a way to ride your bike or walk while enjoying nature and views of the beach. We already have to tune out the freeway and adding buses right there would probably completely kill the vibe. Also the bus project would destroy the rail car business which I really enjoy having in Marina.
Desanilization plants , bus lines, building
ones that bring too many people at one time ( keep it clean, keep it natural)
Leave the sand dunes as is
Commercial
don't know
No
N/A
Keep desalination plant out of Marina, remove Cemex buildings.
No

**Question 17:** Do you know where Marina’s four coastal access points are? Where are they?

¿Sabes dónde están los quatros accesos costeros de Marina? ¿Dónde están?

마리나의 해안 접근 지점 4개가 어디에 있는지 아시나요? 그들은 어디에 있나요?

**Responses:**

I don't know
No-I know of the Beach Drive access near thee water company office and the one near Imjin at Fort Ord.
No, just two - Marina State Beach, and Ft. Ord state beach access
yes
Fort Ord Dunes State Park; Lake Court Drive; Marina State Beach; Dunes Drive.
Marina Beach
Lake Dr., Marina Ft. Ord State Park, Marina State Beach, MPRPD trail across from RV park.
Dunes, Reservation, Lake, 9th
Lake Drive; Dunes Drive; Marina State Park; Fort Ord Dunes State Park
FODSP, Marina State Beach, Lake ct, Dunes Dr
Lake ct., Marina State Beach, sanctuary, Dunes habitat path
no
Yes...Actually, I think there are more than four. There's suppose to be access through the Sanctuary on Dunes Drive... sign is long gone...part of legal settlement from many years ago.
No
Marina State Beach, Ft Ord Dunes State Park, the trail past Sanctuary & RV parks
Dunes Dr., Reservation Rd, 1st Street at Ft, Ord. I do not know of another.
Marina State Beach, Dunes Drive, Ft Ord State Beach
No.
Nope
Marina State Park, Fort Ord Dunes State Park, Lake Drive/Lake Court, Marina Dunes Preserve
Fort Ord Dunes, Dunes Drive, Lake Court, Marina State Beach
Lake court, Fort Ord Dunes State Park, Res. Rd/Marina St. Beach, Dunes Drive - MPRPD preserve
Reservation, Dunes, ?, ?
Yes
Fort Ord, Lake court, Marina beach, dunes

I know at least three: Reservation Road/Dunes Drive, Lake Court, 8th street, the Fort Ord trail access (unless that's Seaside?)
Nope
Not sure.
Yes
Fort Ord, Beach Rd., Dunes Drive, Lake Court Drive
ft ord dunes, lake st, marina beach, by RV place
Marina State Beach (Reservation Road), Fort Ord Dunes State Park, Fort Ord Dunes Trail
Marina state beach. Dunes rd. Lake court. Regional Park north of marina state beach
nm
Not familiar with names
Lake Drive, Dunes Drive, Beach Drive/Reservation, The Sanctuary, Fort Ord Dunes
Yes
No
Marina beach, dunes beach, by the rv campground
No
no
End of street past the sanctuary, by the water district with parking lot, and of lake Dr, state park entrance
no
Lake Court Drive, Dunes Drive, Reservation Road, Ft Ord State Park, Salinas River Bird Sanctuary
No
Fort Ord, Reservation Rd, Sanctuary, Lake Court Dr
no
Beach/Reservation Road, Lake Court, Dunes Drive, and Sanctuary Beach Resort (but let's keep that last one a secret)
Dunes Drive, Lake Court, Marina State Beach and 8th Street
Ft Ord Dunes Park (by the VA) and the two access points by the Sanctuary Resort!
This isn't supposed to be a test, let's stick to the questionnaire.
No
Lake court, Dunes drive, MSB, and MDP
No
Yes, river loop trail, state beach, lake court drive, ford ord dunes.
No
Marina state beach, Reservation Road, Dunes drive, and Del Monte blvd
No

No
Yes
Fort ord beach. Dunes public beach.
I do now
Fort Ord, Marina State beach
Dunes Dr, Marina State Beach, Lake Ct, Fort Ord Dunes
I'd have to look them up. Know of two I frequent regularly
Reservation Road, 8th St
Reservation, lake Court, dunes, sanctuary resort
Yes.
No, dunes, marina beach
The street Walmart is on.
No I don't know four access points.
No
Sadly I don't
Lake court drive, dunes drive, reservation, by the VA facility
West of the VA Hospital (9th St), end of Reservation Rd, Marina State Beach (Lake Dr. access), and the 4th...not sure.
Fort Ord, Dunes State Park, Lake Court Dr
I know of two
Dunes, lake court, fort ord
No
No
No and there needs to be direct access from Seahaven neighborhood that is really the only access that matters
Near VA on 9th, near Sanctuary
I guess not. Lake Ct, Marina State Beach, and Fort Ord are the 3 I knew of
yes
Yes - I think so
Yes.
No.
The two above + reservation road and divarty street
I know 2 access points
Reservation Road and Ford Ord Dunes State park.

No
Fort Ord Dunes State Park, Reservation Rd, Sanctuary beach, Marina State Park
Dunes Drive, state beach parking lot, Ft Ord Dunes State park
no
I think
No
Marina Beach SP,
IDK
No
I know of 2
No

**Question 18:** If you are a resident of Marina, do you visit Marina’s beaches or do you go elsewhere to visit the beach? If you live in Marina but go elsewhere to visit the coast/beach, what is the reason you prefer another beach?

Si es residente de Marina, ¿visita las playas de Marina o va a otro lugar para visitar la playa? Si vive en Marina pero va a otro lugar para visitar la costa/playa, ¿cuál es la razón por la que prefiere otra playa?

마리나 주민이라면 마리나 해변을 방문하시나요, 아니면 해변을 방문하기 위해 다른 곳으로 가시나요? 마리나에 거주하지만 해안/해변을 방문하기 위해 다른 곳으로 간다면, 다른 해변을 선호하는 이유는 무엇입니까?

**Responses:**

I don't know too much of marina beaches. So I end up going to Monterey.
Honestly, we usually go elsewhere. Carmel River Beach, Asilomar, or PG
Pebble Beach, = beauty, Carmel Beach, = dog walking, Asilomar = beauty
I am a resident and go to Marina Beach
N/A
Typically asilomar or Carmel beach or Carmel river beach. Sand is better, water is calmer, tide pools and rocks at asilomar, bathrooms at both Carmel beaches, alcohol allowed at Carmel beach
Better trails and paths, walking for our dogs . we often go to Del Monte, Asilomar, and Carmel
Monterey, ease of access and more parking.
I enjoy going to our Marina beaches.

I often go to Asilomar because of the boardwalk. I go to Carmel River State Beach for the easy access and the lagoon for birding. I go to Ribera Rd beach access in Carmel for the trails.
Mostly MSB but I will take family and friends to other beaches. Limited parking and steep access to the water.
because other beaches allow dogs
Pretty much just use the Marina State Beach.
Yes, I visit Marina beaches, I like other beaches because of convenience to exit from beach way.
Primarily Marina but Asilomar, as well
Yes, Marina Beach
Mostly we go to Marina beaches because they are close. Sometimes we go to other areas like Carmel River State Beach because wave action is less intense and it's safer for kids. Sometimes we go other places for variety
I go to beaches that are warmer and don't have wind and fog.
We go to Del Monte Beach. It flat and walkable.
I mostly visit the beach in Marina.
I visit Fort Ord Dunes State Beach nearly every day
Almost always Marina beaches. If elsewhere cuz a friend wants to do eat/drink at Beachside restaurant
We go to the beach often in Marina -Lunch -Sunset, we visit Lovers' to surf
Marina 1st, Various others on occasional usage
I go to casa verde beach more because accessible.
I am not a resident of Marina. My husband lived in Marina for several years and when I moved here we moved to Monterey. We still occasionally go to the Reservation Road/Dunes Drive access point and that was his favorite when we lived nearby. Our favorite beach is usually the one that is closest to us at a given time.
Both
I will go to Carmel Beach because it's easier to walk and see the water. Parking is difficult there, though.
Long sand trails are needed to access beach which reduces use
Sometimes elsewhere...harder to walk at Marina Beach for me, colder, and worse restrooms.
here mainly
Carmel Beach, Carmel River State Beach, Del Monte Beach, Asilomar. Marina beaches can be a bit more challenging to access due to the dunes, long access trails and sand is soft and not conducive to taking long walks, more for lounging, picnics, and fishing.
Access for dog walks. More parking.
Del Monte Beach has safer currents for when I go in the water
We use dog friendly beaches in Monterey and Carmel
Marina beaches also Salinas River, Zmudowski
Easier access, dog friendlier areas
Warmer and less wind and fog

I love all the local beaches. Sometimes I go other beaches as easier beach access. More sea glass in Monterey.
Only when I want to walk my dog on the beach
I go to the beach off Reservation or Lake Drive 2 times a week.
Regularly visit my marina beaches to walk and sit on sand, but also go to casa verde beach and lovers point for kids to play in the water, and to Carmel beach to see lots of people
different birds, different coasts, tidepooling requires rocks & algae, variety
I really don't care for the beach as far as 'visiting'...too much sand, not enough shade. I live about 1/4 mile from the beach and totally enjoy the fresh air and the fog!
More accessible with kids and older family members. Access to restrooms is easier
Change of scenery
visit Marina Beach
We love our local beach.
Depends on the weather - I alternate between Marina State Beach and Carmel or Carmel River Beach
n/a
I visit Marina's beaches.
Accessibility
I visit Marina Beach and other beaches. I follow the weather and unfortunately, Marina is usually cooler than other beaches.
Not a resident
Visit Marina beaches 4-5 times/week. Monterey wharf & lovers point 1/month. Travel to Pismo beach 1/quarter. Rarely visit (keep it) weird Santa Cruz .
I don't live in Marina
I like to go to Carmel beach.
Mostly just Marina
Elsewhere frequented by more people
Sometimes seaside,
I go to Marina beaches
Yes
I enjoy variety of coastal views
Go to Casa Verde because it's easy walking access to beach, bathrooms, and parking.
Very seldomly go to Marina beaches. Typically go in Monterey where its more accessible, ample parking, allow dogs, more lively, have facilities and a hotel for food/beverage
Have been to Marina State Beach and Fort Ord Dunes. Like to go to Carmel Beach because it's dog friendly.
Marina beaches or Carmel Beach
I often visit Marina's beaches. But access for some seniors and disabled folks is rough at best. I do go to other beaches at times that offer better access and recreational opportunities and facilities.

No parking available go to seaside by hotel
I visit our beach but prefer the access of the beach in Seaside but the treatment plant because you can walk right onto it. Our beach access is steeper.
access, parking, walkability
I go to Marina State Beach daily
Dog friendly, easy access to beach, beautiful sights, clean, safety.
Dog friendly
I live in Marina and visit the beach here. The only other beach I've walked/used would be around the Monterey Wharf.
50% Marina (mostly Dunes State Park), 50% Monterey for easier access, better swimming, better restrooms
Marina, Monterey and PG
Almost always go to Monterey, Pacific Grove or Asilomar due to poor access to beaches in Marina and not suitable for children
I'm a resident of Marina, but I don't frequent its beaches. I prefer Asilomar and Pacific Grove as I used to live there. I feel the Marina beaches are too remote. I had a bad experience many years ago that made me wary of ever going alone again. I also think beach access and parking lots could be improved.
Easier access to the beach. More parking.
I live in Marina and go elsewhere. Because Carmel beach has nice sand and it's better
If I'm with spouse we prefer Pacific Grove/Lover's pt. Because of better trails closer to water. Too hard to get to shore in Marina and fear of high tides.
Both. Go to Carmel beach often for the beach volleyball and other beaches for a change of scenery/better weather.
If we actually want to go to the beach we go elsewhere because access is quite difficult if you have any physical limitations
Both.
Both. No.
I go to Carmel for the leash-less dog beach.
Monterey beach has less waves so I prefer to go there, it is also easier to access
I sometimes go to Lovers Point in Monterey / Pebble Beach
Elsewhere. Enough parking space availability, no hiking to the beach, easy access, access to snacks, drinks, ice cream etc.
Yes. Easier access
Both. We go almost daily to Fort Ord Dunes. We go frequently to Reservation Rd Beach, And occasionally to Sanctuary Beach and Marina Dunes. But we also frequently go to the rec trail in Monterey, PG, Asilomar.
I sometimes go to PG or Carmel because they are cleaner, feel safer and better parking
warmer temperature, more sun
Both
We visit both for variety.
not a resident

Go to Monterey - allows dogs, more people walking on the beach so I feel safer
Less windy in pacific grove beach and more trees/shades along the trail, also more business along the coast in other area
Visit both Marina and other beaches in the area, for variety
I live in Marina and visit lovers point in pacific grove because the waves are small child friendly, there are easily accessible bathrooms and a park walking distance from the beach

**Question 19:** Do you have anything else you'd like to share about coastal access in Marina?

¿Tiene algo más que le gustaría compartir sobre el acceso costero en Marina?

마리나의 해안 접근에 관해 공유하고 싶은 다른 내용이 있나요?

**Responses:**

It would be nice to have a little snack hut in one our marina beaches
Probably more naturalist information about the features of our unique coastline, picnic benches, parking and facilities would encourage me to visit more-although I only knew about 2 of the 4 access points in Marina...
Free parking is perfect, don't change it.
Please do not develop it or allow any more campgrounds
Most of the access is very far from the shore and the trails are not improved or easily accessible.
Lots of opportunity, highly suggest building parks with play structures - could have multiple of them. Advertise community events. Allow food vendors like lovers point grill. Plenty of benches and walkways like asilomar.
We need to take better care of our beaches and make them more accessible to residents and tourists.
No
Easy access to beach
Our beach access and our beaches are not promoted as an economic benefit to our community in bringing tourism to Marina. Need a visitor serving kiosk somewhere in Marina that provides info about our beaches and Fort Ord National Monument.
Access should be improved. Stair cases, boardwalk, etc
allow dogs
No
No
Please don't let it get commercialized
No, and it is nice that there are no Dogs on the Beach,
I love having coastal access! Invasive ice plant removal is needed in many areas to protect sensitive habitat!
no

Love that it's clean. Love the no pets allowed. Love the sunsets. Love the rugged . Just so hard to access. The parking and no paths or trails.
I'm concerned about being able to safely access the beach from Del Monte Ave after the Surf Busway is built. I usually walk along the coastal trail from Del Monte, then cross the train tracks to access the path to the beach.
Please DON'T ruin the coast with an unnecessary surf bus lane
I love our beautiful coast!
Make access friendly
No
Individual filling out survey did not complete this question.
We are very lucky to have great coastal access that is maintained well! Thank you.
Our city staff and city council should be aggressively protective of our coasts. Many of the cities to the south have stopped certain developments because they would ruin their coasts or blight the natural views. I have not seen that same level of protectionism in Marina.
Please preserve our dunes by using boardwalks.
Paved pathways (simple) would help improve access. Also, safe and free parking
No
no
The beaches and water are beautiful, but challenging to access compared to other local beaches.
Please, please protect open coast. Limit bus /transit access/ plan
nm
NA
I strongly feel that we should have access for people with disabilities
No
More beach activities and events
No
The pathways are difficult to traverse
Keep it wild and clean, have more trash cans near parking areas, and organize cleanup days. Make access convenient, and put signs showing access roads.
I love that our coastline is not developed, and that our values as a community are to protect our natural resources.
Make beach access maps/signs more accessible. on the website, signs on roads, Facebook page, etc
the nuclear missile launches would be cool...
No
I like that it is low key. If you want more services, there are plenty of choices available nearby.
no

Wild and undeveloped beaches are becoming more and more rare along the Central California Coast which threatens rare and sensitive species and habitats. We have a rare opportunity to preserve it, be thoughtful stewards of it on into the future, and leave a lasting legacy for generations.

It is natural and I love it

Glad you all are putting some thought into this!

Don't mess it up.

No

Again, I believe State Parks is who has jurisdiction over this area. But because the city is showing interest in improving the coastal area of Marina, I hope you all share the information you all are collecting and collaborate in the efforts to improve our coastal area. Marina is rapidly growing, but the city has been looking tired for several decades. I'm glad that the City is looking to improve our community as I strongly believe we are quickly becoming the coastal town to live in.

No

It a gem and I like it! So much potential if city council wants to explore it.

No

NA/

Marina is beautiful.

Keep it pristine

Keep it clean, keep it natural. Thank you!

The Fort ord beach access is difficult to navigate even as someone in their mid 20's. It isn't impossible but it would be nice to have a path that isn't half washed away.

No

No

No

No

No

None

Finding the right balance of public access and privacy is key.

No

No

Marina needs to provide significant control and guidance to ensure our beaches remain clean, safe, and welcoming to wildlife which is what makes our beaches more special than many others.

Need to keep them clean after the holidays...tourists come and leave all their garbage everywhere

n/a

Stairs in hard to access areas

I'm grateful to the city for being mindful about beach access, and hiking and biking trails. I would like to see some kind of a map that shows where all of the hiking/biking trails are within the city limits (besides the existing Ft. Ord footprint trail map).

I greatly appreciate how special our coastline is and how well it has been maintained.

no
na
No
Allow business activity like coffee places, restaurants, etc.
Make it nice like Carmel beach the nice homes in Seahaven pay WAY too much in property tax and have nice homes that deserve a much nicer Marina coastline without homeless and druggies and junkies
Need safer, less steep access for those with disabilities or joint issues.
No
I look forward to better access for ALL to the beach.
No
No.
No
No
More costal access information would be helpful
Parking needs to be improved. There are not enough parking spaces close to the beach.
Not at this time
Marina beaches are enjoyable because of their more natural state. I worry that making them more accessible will result in the habitat destruction you see along the coast at PG which is supposed to be a preserve but people show up with tents, kegs and tons of plastic. We already pick up tash daily at Fort Ord Dunes State Park, especially following a weekend of tourists. It's hard to balance accessibility with preservation. Besides the trash, it is concerning to see so many people wandering off trail in snowy plover habitat and of course many with dogs off leash. I think more accessibility requires more supervision by rangers or naturalists. Good luck!!
More trails and parking would be nice. Ada access. Cleaner and patrolled.
no
No
No
no
No
Cool business along the coast would be fun, fine dining, brunch place, coffee shop etc.i think the such business will allow people enjoy the view and nit exposed to string wind.
It is important to have multiple access points to the beaches
No

Land Use Plan Policy Framework Questionnaire Report

B

ATTACHMENT



Local Coastal Program Update

# Land Use Plan Policy Framework Questionnaire Report

City of Marina

August 2025





# Table of Contents

1.0 LAND USE PLAN POLICY FRAMEWORK QUESTIONNAIRE .....	1-1
1.1 Introduction .....	1-1
1.2 Survey Design.....	1-1
1.3 Survey Results .....	1-2
1.4 Summary .....	1-36

## Figures

Figure 1	Open-ended Response Word Cloud.....	1-34
----------	-------------------------------------	------

## Tables

Table 1	Public Access and Recreation Responses.....	1-3
Table 2	Biological Resources and Environmentally Sensitive Habitat Areas (ESHA) Responses .....	1-10
Table 3	Marine Resources and Water Quality .....	1-16
Table 4	Opportunistic Beach Nourishment Program Responses .....	1-18
Table 5	Land Use and Development Responses.....	1-21
Table 6	Scenic and Visual Resources Responses.....	1-27
Table 7	Tribal, Cultural and Historic Resources .....	1-30
Table 8	Environmental Justice.....	1-32
Table 9	Open-ended Responses .....	1-35



# Land Use Plan Policy Framework Questionnaire

## 1.1 Introduction

The Land Use Plan Policy Framework Questionnaire was conducted from July 1, 2025, to August 8, 2025, to provide community members and visitors an opportunity to share their input on policy ideas being considered for the comprehensive Local Coastal program (LCP) update. The questionnaire was broken into eight sections, with each section corresponding with the major policy chapters of the Land Use Plan. To cater to Marina's diverse community, the questionnaire was conducted in English, Spanish, Korean, and Vietnamese. It was available online at the City of Marina LCP Update website ([marinalcpupdate.com](http://marinalcpupdate.com)) and in hardcopy at the City of Marina Planning Department.

The LCP Update Team (EMC Planning Group and City staff) staff distributed the survey through an email to the City's interested person contact list and to the LCP Update interested person list. The LCP Update Team also shared information about how to take the questionnaire during the July 30, 2025 LCP Workshop #2. A total of 42 questionnaire responses were received, reflecting a range of perspectives from Marina's residents and visitors.

The questionnaire responses discussed below represent an uncontrolled sample size of self-selected community members who are considered to be motivated and interested in the LCP Update. This can make it difficult to draw definitive conclusions based on the responses received. However, the insights gathered provide valuable information on the community's level of support for various policy ideas being considered for the Land Use Plan update.

## 1.2 Survey Design

The survey was conducted using SurveyMonkey. Each survey question reflected a policy idea being considered. Respondents were asked to provide their level of agreement (from strongly disagree to strongly agree) for each policy idea being considered. Respondents were able to skip questions. Not every respondent responded to every question.

## 1.3 Survey Results

### Public Access and Recreation

The first group of questions included policy ideas being considered for the Public Access and Recreation chapter of the Land Use Plan. Each question asked respondents to rate their level of agreement with each policy (strongly agree, agree, neutral, disagree, strongly disagree). [Table 1, Public Access and Recreation Responses](#), below, shows the responses received for each proposed policy idea, along with the weighted average for each question. The higher the weighted average, the more respondents agreed with the proposed policy idea.

Survey results showed the strongest support for ensuring that everyone can access the coast, preventing future development from restricting that access, reducing pollution and litter along the shoreline, and improving public facilities and access at Lake Court. Conversely, respondents expressed the least support for adding multilingual wayfinding signs in English, Spanish, and Korean; easing restrictions on beach parking curfews and fees; allowing the loss of public coastal access if replaced elsewhere; repurposing the Lake Court corporation yard for housing, offices, or a campground; constructing a parking lot near the Marina Dunes Preserve trailhead; and allowing minimal employee housing at the North Dunes site.

**Table 1 Public Access and Recreation Responses**

Proposed Policy Idea	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total Responses	Weighted Average
PAR-1: Provide maximum coastal access and recreational opportunities for all people.	4.88% 2	4.88% 2	14.63% 6	21.95% 9	53.66% 22	41	4.15
PAR-2: Reduce barriers to public coastal access.	7.32% 3	7.32% 3	12.20% 5	29.27% 12	43.90% 18	41	3.88
PAR-3: Design public access facilities vulnerable to coastal dune erosion or sea level rise to anticipate eventual loss, retreat, and replacement.	9.52% 4	0.00% 0	4.76% 2	38.10% 16	47.62% 20	42	4.14
PAR-4: Require new development proposed between the first public roadway and the shoreline to provide public access.	7.89% 3	0.00% 0	18.42% 7	23.68% 9	50.00% 19	38	4.08
PAR-5: Require a Coastal Development Permit with public access mitigation for any proposed project that reduces or limits access to the beach or coast.	9.76% 4	7.32% 3	4.88% 2	14.63% 6	63.41% 26	41	4.15
PAR-6: Enhance the quality of the City’s beaches and wetlands by reducing sources of pollution and litter, as feasible.	9.52% 4	2.38% 1	2.38% 1	23.81% 10	61.90% 26	42	4.26

Proposed Policy Idea	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total Responses	Weighted Average
PAR-7: Retreat non-coastal dependent facilities, such as offices, inland of State Route 1.	9.76% 4	4.88% 2	7.32% 3	29.27% 12	48.78% 20	41	4.02
PAR-8: Improve wayfinding coastal access signs throughout the City and provide all signs in English, Spanish and Korean.	9.09% 3	33.33% 11	36.36% 12	9.09% 3	12.12% 4	33	2.82
PAR-9: Improve safety, accessibility, environmental sustainability, and aesthetics of coastal access points.	6.06% 2	3.03% 1	9.09% 3	48.48% 16	33.33% 11	33	4.00
PAR-10: Improve and expand parking near existing coastal access points.	12.12% 4	9.09% 3	18.18% 6	36.36% 12	24.24% 8	33	3.52
PAR-11: Minimize beach parking lot curfews and fees.	18.18% 6	15.15% 5	18.18% 6	18.18% 6	30.30% 10	33	3.27
PAR-12: Design coastal trails to reduce biological impacts and to adapt to coastal hazards.	3.03% 1	3.03% 1	15.15% 5	36.36% 12	42.42% 14	33	4.12
PAR-13: Allow abandonment of public rights-of-way that provide access to the coast only if adequate public access is preserved or provided elsewhere.	15.15% 5	21.21% 7	18.18% 6	12.12% 4	33.33% 11	33	3.27

Proposed Policy Idea	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total Responses	Weighted Average
PAR-14: New coastal access that is required as a condition of new development must be maintained by an identified public or private entity.	6.06% 2	0.00% 0	18.18% 6	30.30% 10	45.45% 15	33	4.09
PAR-15: Retrofit or relocate existing trails and amenities to prepare for and prevent potential impacts from sea level rise.	9.09% 3	3.03% 1	18.18% 6	39.39% 13	30.30% 10	33	3.79
PAR-16: Consider coastal trails and beach accessways as coastal-dependent uses, unless there is a habitat-specific limitation that precludes development or aggravates hazards.	3.13% 1	0.00% 0	28.13% 9	46.88% 15	21.88% 7	32	3.84
PAR-17: Require ADA accessible coastal access, where feasible.	3.13% 1	9.38% 3	21.88% 7	40.63% 13	25.00% 8	32	3.75
PAR-18: Provide bicycle lanes connecting Marina's City-center to coastal access points, where feasible.	3.13% 1	0.00% 0	31.25% 10	28.13% 9	37.50% 12	32	3.97
PAR-19: Retain existing and provide new low-cost overnight accommodations.	6.25% 2	9.38% 3	28.13% 9	37.50% 12	18.75% 6	32	3.53

Proposed Policy Idea	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total Responses	Weighted Average
PAR-20: Prioritize recreation-related development over private residential or general commercial development on land designated for Visitor Serving Commercial.	12.50% 4	6.25% 2	21.88% 7	18.75% 6	40.63% 13	32	3.69
PAR-21: Increase awareness of the coastal access at Fort Ord Dunes State Park with wayfinding on State Route 1, Second Avenue, 9th Street, and 8th Street.	3.33% 1	13.33% 4	26.67% 8	26.67% 8	30.00% 9	30	3.67
PAR-22: Encourage the repurposing of the existing city-owned corporation yard at Lake Court for State Parks (or similar public agency) employee housing, offices, a corporation yard, or lower-cost public overnight accommodations such as a small campground.	3.85% 1	15.38% 4	38.46% 10	26.92% 7	15.38% 4	26	3.35
PAR-23: Assess parking and street improvements, a day-use area, playground, restroom, and limited overnight uses at the end of Lake Court.	17.86% 5	10.71% 3	28.57% 8	17.86% 5	25.00% 7	28	3.21
PAR-24: The City will collaborate with State Parks to address trail improvements, parking, and coastal access from Lake Court.	3.57% 1	0.00% 0	0.00% 0	46.43% 13	50.00% 14	28	4.39

Proposed Policy Idea	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total Responses	Weighted Average
PAR-25: Encourage the inland retreat and relocation of the Marina State Beach parking lot further from the shore to avoid the erosion impacts of sea level rise and storm surge.	3.57% 1	14.29% 4	21.43% 6	28.57% 8	32.14% 9	28	3.71
PAR-26: At Sanctuary Beach Resort, ensure public beach access is clearly marked and visually distinct from the resort and that public parking spaces are clearly marked in accordance to its Coastal Development Permit.	0.00% 0	11.11% 3	11.11% 3	40.74% 11	37.04% 10	27	4.04
PAR-27: Allow dogs on leash only due to the presence of federally threatened snowy plovers at the beach fronting the Sanctuary Beach Resort.	3.70% 1	7.41% 2	18.52% 5	18.52% 5	51.85% 14	27	4.07
PAR-28: Encourage the Monterey Peninsula Regional Parks District (MPRPD) to construct a boardwalk to provide easier beach access to the Marina Dunes Preserve, as feasible.	7.41% 2	3.70% 1	22.22% 6	37.04% 10	29.63% 8	27	3.78
PAR-29: Evaluate constructing a parking lot along Dunes Drive near the trailhead to the Marina Dunes Preserve.	18.52% 5	14.81% 4	18.52% 5	22.22% 6	25.93% 7	27	3.22

Proposed Policy Idea	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total Responses	Weighted Average
<b>PAR-30: Develop the North Dunes (former CEMEX site) to enhance public access and recreation opportunities, including a visitor center, restrooms, parking facilities, ADA-accessible trails, viewing areas, and tent camping areas.</b>	3.70% 1	18.52% 5	11.11% 3	7.41% 2	59.26% 16	27	4
<b>PAR-31: Provide additional parking at the north end of Dunes Drive to support future trails on the North Dunes (former CEMEX property).</b>	7.41% 2	18.52% 5	3.70% 1	14.81% 4	55.56% 15	27	3.93
<b>PAR-32: Permit and encourage minimal public agency employee housing on the North Dunes site (former CEMEX site) to support park operations and management in the regional area.</b>	7.41% 2	18.52% 5	14.81% 4	37.04% 10	22.22% 6	27	3.48
<b>PAR-33: Plan and implement recreation improvements in concert with habitat enhancement and restoration activities at Locke-Paddon Park.</b>	7.41% 2	7.41% 2	11.11% 3	29.63% 8	44.44% 12	27	3.96
<b>PAR-34: Provide educational opportunities about wetlands and birds at Locke-Paddon Park.</b>	3.70% 1	0.00% 0	25.93% 7	22.22% 6	48.15% 13	27	4.11

## **Biological Resources and Environmentally Sensitive Habitat Areas (ESHA)**

The second group of questions included policy ideas being considered for the Biological Resources and Environmentally Sensitive Habitat Areas chapter of the Land Use Plan. Each question asked respondents to rate their level of agreement with each policy (strongly agree, agree, neutral, disagree, strongly disagree). [Table 2, Biological Resources and Environmentally Sensitive Habitat Areas \(ESHA\) Responses](#), below, shows the responses received for each proposed policy idea, along with the weighted average for each question. The higher the weighted average, the more respondents agreed with the proposed policy idea.

Survey respondents showed the strongest support for policies that strictly protect environmentally sensitive habitat areas (ESHA) and wetlands. This included requiring restoration and monitoring plans for any development affecting ESHA, using only drought-tolerant native plants for revegetation, keeping Marina's coastal dunes and beaches in their natural state, preventing habitat damage from coastal access, protecting sensitive species such as Western snowy plovers, preserving wetlands for wildlife, prohibiting development in wetlands except for nature observation, and allowing routine maintenance at the Locke-Paddon Park wetland. In contrast, respondents expressed the least support for allowing ESHA impacts in exchange for other Coastal Act priorities, using a sliding-scale mitigation ratio based on project impacts, or permitting recreation improvements at Locke-Paddon Park even with mitigation.

**Table 2 Biological Resources and Environmentally Sensitive Habitat Areas (ESHA) Responses**

Proposed Policy Idea	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total Responses	Weighted Average
BIO-1: A qualified biologist shall conduct a site visit to evaluate whether environmentally sensitive habitat area (ESHA) is present at the time of the proposed development.	11.54% 3	0.00% 0	15.38% 4	15.38% 4	57.69% 15	26	4.08
BIO-2: Limit development in ESHA to uses dependent on the resource (e.g., habitat restoration, scientific research, low-intensity public access and recreation, including trails and boardwalks, parking for coastal access, low-impact camping, educational signage, activities relating to managed retreat in response to sea-level rise, etc.).	7.69% 2	7.69% 2	23.08% 6	11.54% 3	50.00% 13	26	3.88
BIO-3: Site and design development to avoid and reduce impacts to ESHA including, but not limited to, vernal ponds, wetlands, and watercourses to the greatest extent feasible.	7.69% 2	3.85% 1	19.23% 5	26.92% 7	42.31% 11	26	3.92
BIO-4: Allow impacts to ESHA for projects that fulfill other Coastal Act priorities, provided coastal resources are protected on balance.	7.69% 2	15.38% 4	19.23% 5	34.62% 9	23.08% 6	26	3.5

Proposed Policy Idea	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total Responses	Weighted Average
BIO-5: Require a biological assessment, botanical survey, and/or a wetland delineation prepared by a qualified biologist for development within and near ESHA, as needed.	7.69% 2	3.85% 1	19.23% 5	26.92% 7	42.31% 11	26	3.92
BIO-6: Require a Restoration and Monitoring Plan as part of the Coastal Development Permit filing requirement for development impacting ESHA.	0.00% 0	7.69% 2	15.38% 4	26.92% 7	50.00% 13	26	4.19
BIO-7: Require revegetation of project sites within ESHA to use drought tolerant plant species naturally found around the project site. Prohibit species listed on the California Invasive Plant Council's (Cal-IPC) Invasive Plant List (Cal-IPC 2024).	3.85% 1	3.85% 1	11.54% 3	30.77% 8	50.00% 13	26	4.19
BIO-8: Require a Coastal Development Permit for conservation projects that reduce public coastal access. Incorporate mitigation that minimizes access impacts while achieving the conservation goal.	11.54% 3	3.85% 1	23.08% 6	38.46% 10	23.08% 6	26	3.58

Proposed Policy Idea	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total Responses	Weighted Average
BIO-9: Plan and accommodate managed retreat in a manner that maintains contiguous ESHA habitat and wildlife corridors between the beach, foredune, and back dune to the greatest extent feasible.	8.00% 2	4.00% 1	16.00% 4	36.00% 9	36.00% 9	25	3.88
BIO-10: Allow trimming of up to 25 percent of a trees canopy, including trees classified as major vegetation, without a Coastal Development Permit.	7.69% 2	11.54% 3	23.08% 6	30.77% 8	26.92% 7	26	3.58
BIO-11: Mitigate impacts to ESHA on sliding scale ratio depending on the development's impacts.	12.50% 3	4.17% 1	37.50% 9	25.00% 6	20.83% 5	24	3.38
BIO-12: Replace trees that are considered major vegetation at a ratio of 5:1.	3.85% 1	11.54% 3	15.38% 4	26.92% 7	42.31% 11	26	3.92
BIO-13: Maintain the natural and undeveloped state of Marina's coastal dunes and beaches.	4.00% 1	12.00% 3	8.00% 2	12.00% 3	64.00% <sup>^</sup> 16	25	4.20
BIO-14: Support and encourage conservation, land acquisition, and habitat restoration efforts of Marina's coastal sand dunes.	4.00% 1	8.00% 2	20.00% 5	8.00% 2	60.00% 15	25	4.12

Proposed Policy Idea	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total Responses	Weighted Average
BIO-15: Concentrate dune conservation and restoration efforts in areas which provide high-quality, contiguous habitat.	4.00% 1	4.00% 1	20.00% 5	24.00% 6	48.00% 12	25	4.08
BIO-16: Prohibit activities which alter the profile of a dune, result in the disturbance or removal of dune vegetation, or involve any direct removal or excavation of sand from dunes.	8.00% 2	16.00% 4	12.00% 3	12.00% 3	52.00% 13	25	3.84
BIO-17: Ensure that access to or across coastal dune habitats does not cause significant damage or degradation to the habitat.	4.00% 1	4.00% 1	12.00% 3	32.00% 8	48.00% 12	25	4.16
BIO-18: Protect sensitive species habitat, including but not limited to Western snowy plovers nesting and roosting areas.	4.00% 1	0.00% 0	16.00% 4	28.00% 7	52.00% 13	25	4.24
BIO-19: Preserve and maintain Marina's vernal ponds and wetlands as productive wildlife habitats.	4.00% 1	0.00% 0	16.00% 4	28.00% 7	52.00% 13	25	4.24
BIO-20: Prohibit development in wetlands; the only exception shall be for development that supports nature observation.	4.00% 1	4.00% 1	16.00% 4	20.00% 5	56.00% 14	25	4.20

Proposed Policy Idea	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total Responses	Weighted Average
BIO-21: Allow routine maintenance activities in and around the Locke-Paddon Park vernal pond.	0.00% 0	0.00% 0	4.00% 1	28.00% 7	68.00% 17	25	4.64
BIO-22: Permit active and passive recreation improvements at Locke-Paddon Park, provided that all applicable mitigation requirements of the BIO Chapter are met.	12.50% 3	12.50% 3	16.67% 4	29.17% 7	29.17% 7	24	3.5

## Marine Resources and Water Quality

The third group of questions included policy ideas being considered for the Marine Resources and Water Quality chapter of the Land Use Plan. Each question asked respondents to rate their level of agreement with each policy (strongly agree, agree, neutral, disagree, strongly disagree). [Table 3, Marine Resources and Water Quality Responses](#), below, shows the responses received for each proposed policy idea, along with the weighted average for each question. The higher the weighted average, the more respondents agreed with the proposed policy idea.

Based on the survey results, most respondents supported all of the policy ideas being considered.

**Table 3 Marine Resources and Water Quality Responses**

Proposed Policy Idea	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total Responses	Weighted Average
MWQ-1: Allow restoration, public access, viewing areas, temporary lifeguard facilities, and coastal-dependent recreation in the marine environment.	4.35% 1	8.70% 2	13.04% 3	26.09% 6	69.57% 16	23	4.65
MWQ-2: Require new development to incorporate stormwater pollution controls as required by local and State law.	0.00% 0	0.00% 0	4.35% 1	26.09% 6	69.57% 16	23	4.65
MWQ-3: Require development to minimize new impervious surfaces.	4.35% 1	4.35% 1	8.70% 2	26.09% 6	56.52% 13	23	4.26

## Opportunistic Beach Nourishment Program

The fourth group of questions included policy ideas being considered for the Opportunistic Beach Nourishment Program chapter of the Land Use Plan. Each question asked respondents to rate their level of agreement with each policy (strongly agree, agree, neutral, disagree, strongly agree). [Table 4, Opportunistic Beach Nourishment Program Responses](#), below, shows the responses received for each proposed policy idea, along with the weighted average for each question. The higher the weighted average, the more respondents agreed with the proposed policy idea.

Survey respondents supported prioritizing the Opportunistic Beach Nourishment Program as a preferred emergency response to dune erosion and applying standard biological resource protection measures to all such projects. There was no significant disagreement with any of the proposed policy ideas.

**Table 4 Opportunistic Beach Nourishment Program Responses**

Proposed Policy Idea	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total Responses	Weighted Average
OBNP-1: Prioritize the Opportunistic Beach Nourishment Program as the preferred emergency response to dune erosion.	0.00% 0	4.35% 1	8.70% 2	26.09% 6	56.52% 13	23	4.26
OBNP-2: Identify potential receiver and stockpile sites for sand placement.	0.00% 0	0.00% 0	19.05% 4	61.90% 13	19.05% 4	21	4.00
OBNP-3: Identify potentially-suitable sources of sand in the region.	0.00% 0	0.00% 0	19.05% 4	57.14% 12	23.81% 5	21	4.05
OBNP-4: Establish cost-effective and streamlined environmental compliance and permitting processes for OBNP-related activities.	0.00% 0	4.76% 1	33.33% 7	38.10% 8	23.81% 5	21	3.81
OBNP-5: Prior to any sand transfer, the City shall define the design considerations for each planned placement activity, including maximum volume, placement techniques, placement rates and location(s), and transportation methods.	0.00% 0	4.55% 1	22.73% 5	40.91% 9	31.82% 7	22	4.00

Proposed Policy Idea	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total Responses	Weighted Average
OBNP-6: Ensure the OBNP will maximize the benefits of beach nourishment while avoiding significant adverse impacts to water quality, sensitive species and/or habitats, cultural resources, and recreation.	0.00% 0	0.00% 0	31.82% 7	27.27% 6	40.91% 9	22	4.09
OBNP-7: Utilize OBNP in conjunction with other nature-based living shoreline approaches where applicable.	0.00% 0	0.00% 0	36.36% 8	22.73% 5	40.91% 9	22	4.05
OBNP-8: Apply standard biological resource protection mitigation measures to all OBNP projects.	0.00% 0	0.00% 0	27.27% 6	27.27% 6	45.45% 10	22	4.18

## Land Use and Development

The fifth group of questions included policy ideas being considered for the Land Use and Development chapter of the Land Use Plan. Each question asked respondents to rate their level of agreement with each policy (strongly agree, agree, neutral, disagree, strongly agree). [Table 5, Land Use and Development Responses](#), below, shows the responses received for each proposed policy idea, along with the weighted average for each question. The higher the weighted average, the more respondents agreed with the proposed policy idea.

Survey respondents most supported designing public infrastructure—such as water, sewer, stormwater, communications, renewable energy, and transportation systems—to meet the needs of anticipated development. They were least supportive of expanding affordable public transit to coastal areas, broadening the range of uses in the Public Facility district, setting hotel and restaurant uses as the primary permitted visitor-serving uses, promoting affordable visitor-oriented commercial businesses, prioritizing low-cost visitor accommodations, applying the city’s Housing Element programs in coastal residential areas, and treating general commercial uses as a low priority in the coastal zone.

**Table 5 Land Use and Development Responses**

Proposed Policy Idea	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total Responses	Weighted Average
LUD-1: All new development shall comply with the policies of the Land Use Plan.	4.76% 1	0.00% 0	4.76% 1	47.62% 10	42.86% 9	21	4.24
LUD-2: Exempt the following uses from Coastal Development Permits: trail improvements, minor improvements to single-family dwellings including, but not limited to JADUs and ADUs, small habitat restoration projects (defined by CEQA Section 15333), and temporary uses.	4.55% 1	13.64% 3	13.64% 3	31.82% 7	36.36% 8	22	3.82
LUD-3: Design public infrastructure, including water, sewer, stormwater management, communications, renewable energy, and transportation systems to meet the needs of anticipated development.	0.00% 0	4.55% 1	4.55% 1	45.45% 10	45.45% 10	22	4.32
LUD-4: Concentrate new development within existing developed areas.	14.29% 3	9.52% 2	19.05% 4	23.81% 5	33.33% 7	21	3.52
LUD-5: Encourage affordable public transit accessibility to coastal access areas.	4.76% 1	19.05% 4	33.33% 7	14.29% 3	28.57% 6	21	3.43

Proposed Policy Idea	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total Responses	Weighted Average
LUD-6: Encourage multi-modal streets that support active transportation.	0.00% 0	5.00% 1	35.00% 7	30.00% 6	30.00% 6	20	3.85
LUD-7: Identify parcels which can be redeveloped to accommodate managed retreat for critical coastal uses.	0.00% 0	9.52% 2	19.05% 4	42.86% 9	28.57% 6	21	3.90
LUD-8: Until December 31, 2040, no new development other than public parks and open space uses (including agricultural uses) shall be permitted at the former CEMEX site.	14.29% 3	9.52% 2	0.00% 0	14.29% 3	61.90% 13	21	4.00
LUD-10: Permitted uses in the Coastal - Open-Space (C – OS) Land Use Designation include preserved open space, dune preservation, coastal dependent research, beach access, public parks and recreation facilities and supporting uses, sensitive habitat areas and restoration projects supporting them, vernal ponds, open space for hazard protection or scenic preservation, and coastal-dependent recreation.	0.00% 0	5.00% 1	25.00% 5	25.00% 5	45.00% 9	20	4.10
LUD-11: Prioritize improvements to recreational facilities within the Coastal - Open-Space (C-OS) district.	5.00% 1	15.00% 3	15.00% 3	30.00% 6	35.00% 7	20	3.75

Proposed Policy Idea	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total Responses	Weighted Average
LUD-12: Uses allowed in the C – Public Facility (C-PF) district include, but are not limited to civic center, library, police and fire stations, post office, and parks district employee housing, public works yard, school, and other civic offices.	5.00% 1	20.00% 4	25.00% 5	30.00% 6	20.00% 4	20	3.40
LUD-13: Principally permitted uses in the Visitor Serving Commercial land use category are hotels, restaurants, retail, and other visitor serving uses. Drive-thru uses are prohibited.	23.64% 3	9.09% 2	27.27% 6	22.73% 5	27.27% 6	22	3.41
LUD-14: Prioritize visitor-oriented commercial activities over other types of commercial on the east side of Dunes Drive.	0.00% 0	20.00% 4	20.00% 4	30.00% 6	30.00% 6	20	3.70
LUD-15: Visitor-serving commercial uses shall be located and designed so that they complement one another and meet a range of visitor needs, including affordability.	0.00% 0	20.00% 4	20.00% 4	30.00% 6	30.00% 6	20	3.70
LUD-16: Encourage visitor-oriented commercial uses that meet the affordability needs of visitors.	10.00% 2	30.00% 6	15.00% 3	20.00% 4	25.00% 5	20	3.20

Proposed Policy Idea	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total Responses	Weighted Average
LUD-17: Prioritize low-cost visitor serving accommodations. Low-cost visitor serving accommodations are lodging facilities that are accessible and affordable to the general public and are typically offered at a rate that is less than the average rate for overnight accommodations in the area.	22.73% 5	18.18% 4	18.18% 4	27.27% 6	13.64% 3	22	2.91
LUD-18: Principally permitted uses in the Low-Density Residential land use category include single family homes and accessory dwelling units (ADUs and JADUs).	4.76% 1	14.29% 3	14.29% 3	38.10% 8	28.57% 6	21	3.71
LUD-19: Apply the City of Marina's Housing Element housing programs in the areas designated for residential use in the coastal zone.	5.26% 1	10.53% 2	42.11% 8	21.05% 4	21.05% 4	19	3.42
LUD-20: Encourage retention and further construction of ADUs and JADUs on parcels with single family dwellings.	0.00% 0	30.00% 6	20.00% 4	15.00% 3	35.00% 7	20	3.55
LUD-21: Adopt the city's ADU/JADU ordinance by reference, to ensure compliance with State law.	0.00% 0	5.00% 1	25.00% 5	40.00% 8	30.00% 6	20	3.95

Proposed Policy Idea	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total Responses	Weighted Average
LUD-22: Design new housing units in the coastal zone so that habitat impacts are minimized.	4.76% 1	9.52% 2	23.81% 5	38.10% 8	23.81% 5	21	3.67
LUD-23: Permitted uses in the General Commercial Land Use Designation include retail stores, commercial shops conducted within a building and other uses with similar characteristics and which will not be detrimental or obnoxious to the neighborhood in which they are to be located, and supportive and transitional housing uses mandated by State law.	4.55% 1	4.55% 1	27.27% 6	45.45% 10	18.18% 4	22	3.68
LUD-24: General Commercial uses are a low priority use in the coastal zone and shall be sited to have no impact on sensitive coastal resources.	13.64% 3	9.09% 2	31.82% 7	18.18% 4	27.27% 6	22	3.36

## Scenic and Visual Resources

The sixth group of questions included policy ideas being considered for the Scenic and Visual Resources chapter of the Land Use Plan. Each question asked respondents to rate their level of agreement with each policy (strongly agree, agree, neutral, disagree, strongly disagree). [Table 6, Scenic and Visual Resources Responses](#), below, shows the responses received for each proposed policy idea, along with the weighted average for each question. The higher the weighted average, the more respondents agreed with the proposed policy idea.

Generally, respondents supported all of the proposed policy ideas in this section.

**Table 6 Scenic and Visual Resources Responses**

Proposed Policy Idea	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total Responses	Weighted Average
VIS-1: Site and design new development west of Highway 1 to protect views to and along the ocean.	4.75% 1	9.52% 2	0.00% 0	28.57% 6	57.14% 12	21	4.24
VIS-2: Prevent fences, walls, and landscaping from obstructing public scenic views.	0.00% 0	5.26% 1	5.26% 1	31.58% 6	57.89% 11	19	4.42
VIS-3: Protect views of the dunes from Highway 1 and the beach by prohibiting ridgeline development.	0.00% 0	9.52% 2	14.29% 3	14.29% 3	61.90% 13	21	4.29
VIS-4: Revegetate disturbed areas of sand dunes, particularly those which are highly visible.	4.76% 1	0.00% 0	14.29% 3	28.57% 6	52.38% 11	21	4.24
VIS-5: Cluster development to preserve coastal view corridors from Highway 1.	0.00% 0	4.76% 1	14.29% 3	33.33% 7	47.62% 10	21	4.24
VIS-6: Protect dark night skies as part of Marina’s scenic and visual character.	0.00% 0	4.76% 1	4.76% 1	23.81% 5	66.67% 14	21	4.52
VIS-7: Ensure that signs are designed and located to minimize visual impacts.	0.00% 0	0.00% 0	9.52% 2	23.81% 5	66.67% 14	21	4.57

Proposed Policy Idea	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total Responses	Weighted Average
<b>VIS-8: Prohibit the construction of new non-wayfinding, off-site commercial signs, including billboards.</b>	0.00% 0	0.00% 0	14.29% 3	19.05% 4	66.67% 14	21	4.52
<b>VIS-9: Require new development applications to include preliminary utility plans that address and minimize visual impacts.</b>	0.00% 0	4.76% 1	9.52% 2	23.81% 5	61.90% 13	21	4.43
<b>VIS-10: Require all telecommunications facilities to include concealment features and shall place support facilities underground where feasible.</b>	0.00% 0	0.00% 0	4.76% 1	33.33% 7	61.90% 13	21	4.57
<b>VIS-11: Require drought tolerant species for landscaping and use native species to the greatest extent feasible. Require drip or micro-spray irrigation when irrigation is required.</b>	4.76% 1	9.52% 2	9.52% 2	14.29% 3	61.90% 13	21	4.19

## **Tribal, Cultural and Historic Resources (CUL)**

The seventh group of questions included policy ideas being considered for the Tribal, Cultural and Historic Resources chapter of the Land Use Plan. Each question asked respondents to rate their level of agreement with each policy (strongly agree, agree, neutral, disagree, strongly agree). [Table 7, Tribal, Cultural and Historic Resources Responses](#), below, shows the responses received for each proposed policy idea, along with the weighted average for each question. The higher the weighted average, the more respondents agreed with the proposed policy idea.

Most respondents were neutral or supportive of the policy ideas in this section, with the greatest opposition directed toward requiring a Phase 1 archaeological survey by a Registered Professional Archaeologist for any new soil-disturbing development in the coastal zone.

**Table 7 Tribal, Cultural and Historic Resources**

Proposed Policy Idea	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total Responses	Weighted Average
CUL-1: Protect and preserve historical, archaeological and paleontological resources.	4.76% 1	4.76% 1	38.10% 8	9.52% 2	42.86% 9	21	3.81
CUL-2: Adhere to the Coastal Commission’s 2018 Tribal Consultation Policies when reviewing LCP amendments and Coastal Development Permits.	4.76% 1	14.29% 3	19.05% 4	19.05% 4	42.86% 9	21	3.81
CUL-3: Require a Phase 1 archaeological survey report, prepared by a Registered Professional Archaeologist, for any development within the coastal zone that involves new disturbance of soils.	13.64% 3	13.64% 3	18.18% 4	18.18% 4	36.36% 8	22	3.50
CUL-4: Site and design new development to avoid impacts to known cultural resources or when cultural resources are discovered through the archaeological survey report process.	9.52% 2	14.29% 3	19.05% 4	19.05% 4	38.10% 8	21	3.62
CUL-5: Cease work immediately if archaeological resources are discovered during construction in accordance to State law.	9.52% 2	4.76% 1	19.05% 4	28.57% 6	38.10% 8	21	3.81

## Environmental Justice

The eighth group of questions included policy ideas being considered for the Environmental Justice chapter of the Land Use Plan. Each question asked respondents to rate their level of agreement with each policy (strongly agree, agree, neutral, disagree, strongly disagree). [Table 8, Environmental Justice Responses](#), below, shows the responses received for each proposed policy idea, along with the weighted average for each question. The higher the weighted average, the more respondents agreed with the proposed policy idea.

Environmental Justice policy ideas received mixed responses, with lower support for providing civic materials in multiple languages, expanding public transit to the coast with flat rates and more frequent service, and encouraging lower-cost housing within the coastal zone.

**Table 8 Environmental Justice Responses**

Proposed Policy Idea	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total Responses	Weighted Average
EJ-1: The City shall promote and protect equitable access to beaches, recreational facilities, and open spaces for all.	9.52% 2	4.76% 1	9.52% 2	33.33% 7	42.86% 9	21	3.95
EJ-2: Create an open and transparent community engagement process.	0.00% 0	4.76% 1	9.52% 2	19.05% 4	66.67% 14	21	4.48
EJ-3: Provide civic materials in English, Spanish, Korean, and other languages if needed.	4.55% 1	22.73% 5	22.73% 5	18.18% 4	31.82% 7	22	3.50
EJ-4: Ensure that disadvantaged communities are not disproportionately affected by pollution.	13.64% 3	4.55% 1	13.64% 3	22.73% 5	59.09% 13	22	4.32
EJ-5: Avoid siting hazardous facilities in flood-prone areas and areas prone to erosion.	4.55% 1	0.00% 0	13.64% 3	22.73% 5	59.09% 13	22	4.32
EJ-6: Require adverse environmental and Environmental Justice impacts to be mitigated for within the City of Marina.	9.09% 2	9.09% 2	18.18% 4	13.64% 3	50.00% 11	22	3.86
EJ-7: Support and facilitate local farmers markets.	0.00% 0	4.55% 1	13.64% 3	27.27% 6	54.55% 12	22	4.32

Proposed Policy Idea	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total Responses	Weighted Average
EJ-8: Prioritize improvements to walking and biking infrastructure that provide safe, accessible, and convenient routes to the coast.	0.00% 0	0.00% 0	18.18% 4	31.82% 7	50.00% 11	22	4.32
EJ-9: Expand public transit service in the form of flat rates and increased headway frequency to the City's coast.	9.09% 2	4.55% 1	40.91% 9	18.18% 4	27.27% 6	22	3.50
EJ-10: Invest in improvements to ADA accessible overlooks, as feasible, along the coast to improve access to the coast for all.	0.00% 0	15.00% 3	20.00% 4	30.00% 6	35.00% 7	20	3.85
EJ-11: Encourage lower-cost housing within the coastal zone.	28.57% 6	14.29% 3	14.29% 3	19.05% 4	23.81% 5	21	2.95

## Open-ended Responses

Ten open-ended responses were received. Figure 1, Open-ended Response Word Cloud highlighting the most frequently used terms in the responses. Key themes emerging from these responses included:

- **Environmental Protection & Tree Planting** – Support for planting native trees, restoring habitats, and preserving open space over development.
- **Parks & Public Access** – Desire for more parks, safe public access to the coast, and keeping land west of Highway 1 undeveloped.
- **Transportation & Safety** – Improve pedestrian/bike safety and connectivity; limit car access near the coast.
- **Opposition to Development** – Concerns about traffic, loss of views, and incompatible land uses.

Figure 1 Open-ended Response Word Cloud



**Table 9 Open-ended Responses**

Do you have any additional comments, questions, or suggestions?
PLANT COASTAL REDWOODS, Monterey Cypress and Monterey Pine trees!!! Will greatly enhance our community especially when viewable from PCH1. Offer these trees for free to homeowners and businesses. Encourage community to plant more trees!
Many of these questions are confusing and/or redundant. Some are phrased to appeal to a specific political point of view. In my opinion, the survey is flawed. I look forward to seeing the results and hearing the ensuing discussions.
Please create more parks and plant more native trees in Marina, especially Cypress, and prioritize the restoration and preservation of the environment and wildlife habitats over any commercial development projects.
Accessibility for residents and safety for bikes and pedestrians travelling to and from the coast from neighborhoods. Limit car access west of 1. Keep cars east of 1 and provide public transportation and safe roads/streets/sidewalks for access rather than more parking lots on the coast. Ped/bike crossings at on/off hwy1 ramps feel very unsafe at all times vehicles are present. There is safe side walking access beyond the 7/11 near Walmart. Sidewalk access at end of beach road is severely lacking. Pedestrian crossings at streets like Michael and reservation feel very unsafe as well. Children/younger people without adults should be able to safely navigate on foot or bike from their house or school to the coast and nearby parks/library. If it is safe and accessible for them it will be for residents and visitors.
Traffic surveys need to be done to ensure traffic is not going to impact the tranquility of the area!!
We should not open our Coastal Zone to significant commercial or residential development. We should expend our energy to make our coastline accessible and informative to those who visit us. Don't let what is happening in the new Shea section (big homes, tall buildings obscuring sight of the ocean). We don't want to let developers do what they've done in SoCal .. views for the rich and habitat destroyed for development.
There is no clear definition of "recreational opportunities" or "recreation facilities" relative to Locke Paddon Park and CEMEX property. How can you answer a question about recreation activities when you don't know what the activities would be. For Marina State Beach it is not asked if you want a return of the boardwalk on the dunes. For Lake Dr Corp Yard the five options should have been separate questions. No to campgrounds in that area but yes to State

Parks employee housing. For irrigation, no micro spray should be allowed, only subsurface irrigation.

There is an egregious lack of public involvement and transparency regarding city plans to build a garden and a food forest at Locke Paddon park. A few council members are pushing their own pet projects without working with the whole city and MRPMD constituents to have any meaningful public engagement process.

Stop spending working persons tax dollars (e.g. their labor) to support 'low-income' and 'disadvantaged communities'. Those groups can get a job, work, live within their means just like other people do.

Don't ever put anything else West of Highway 1 except managed retreat for existing buildings and a park/historical environment for the CEMEX property.

## 1.4 Summary

The analysis of Marina's Policy Framework Questionnaire highlights a community deeply invested in protecting the natural beauty, biological resources, and tranquility of their coastline. Respondents overwhelmingly support policy ideas which aim to retain and provide more coastal access, limit future development west of State Route 1, retain the largely natural and undeveloped qualities of Marina's coastal zone, and protect biological resources and visual resources. Respondents were less aligned on policy ideas which specified which types of uses should occur within each Land Use Designation.

## Workshop #2 Summary







# City of Marina Local Coastal Program (LCP) Update Community Workshop #2

## Public Comments

### Introduction and Background

The City of Marina hosted LCP Workshop #2 on July 30, 2025 at the Marina Library. The objective of the workshop was to present the policy ideas being considered for each section of the Land Use Plan and to receive community input on the policy ideas through an interactive activity. Eight community members attended the workshop in-person and two community members provided written comments prior to the workshop. All comments are summarized below.

### Public Access and Recreation

The following comments were received:

- Concerned with the limited amount of beach access.
- What is the definition of “coastal-dependent recreation”? Different government agencies have different definitions.
- To implement low-cost accommodations, consider using PG&E’s income determination.
- Reduce barriers to the coast. Boardwalks are an example of how to reduce barriers.
- There is no ADA beach access at Marina State Beach.
- Call the former CEMEX site ‘the Sand Plant’ when referring to that area in documents. It has been called ‘the Sand Plant’ forever.
- There was a boardwalk at Marina State Beach in the past. It was covered in sand.
- Dune restoration and boardwalks in Marina can be done.
- No park employee housing at the former CEMEX site.
- Provide lots of bicycle parking, and maybe repair tools and EV charging stations.

- Provide public transit (MST bus) access to the coast.
- Do not support a campground at Lake Court.
- Include a policy that encourages boardwalk at Marina State Beach.
- Define “recreation improvements”.
- Define “active recreation”.

## **Biological Resources and ESHA**

The following comments were received:

- How often can trees be trimmed up to 25 percent without needing a Coastal Development Permit? Limit the number of times pruning is allowed within a certain time period.
- Locke-Paddon shouldn't be considered a vernal pond because it is not seasonal.
- When revegetating project sites within ESHA, consider allowing California native species, not just species naturally found around the project site.
- Some of the boardwalks at Asilomar are raised off the ground and would seem to allow wildlife passage to continue beneath.
- Needs work: Dogs on leash Snowy Plover. Poor signage at beach.
- Remove “drought tolerant plant species” from BIO-7. There may be CA natives found in an ESHA area that grow naturally in wetlands and the edge of lagoons that are not drought tolerant.
- How would tree removal trimming and replacement policies apply to the native Willow's at Locke-Paddon Park? Replacement plan for Willows would be challenging.
- Consider the biological impacts of managed retreat.

## **Marine Resources and Water Quality**

The following comments were received:

- At a meeting with MPRPD, MPRPD staff shared that the NW corner parcel of Locke-Padon Park at Del Monte Avenue and Reservation Road is critical to the city's responsibility to manage street run-off, and that there is an intricate system that may not be properly maintained given the overgrown shrubs and trees on the site.

## **Opportunistic Beach Nourishment Program**

The following comments were received:

- Don't see storing sand as viable.
- With the cessation of sand mining, the shoreline may build up naturally.
- The only place for Opportunistic Beach Nourishment in Marina would be Marina State Beach and Reservation Road.
- Ocean Beach in San Francisco is an example of sand redistribution that has been highly unsuccessful. It takes major resources (heavy equipment).

## **Scenic and Visual Resources**

The following comments were received:

- Reword policy VIS-1 to avoid misinterpretation.
- Clarify landscape policy. Local natives versus non-invasive California natives. Is it "local native seed stock" or can it be CA native plants from the geographic region?
- No micro-spray irrigation should be allowed for landscaping. Replace with subsurface or drip irrigation, only.
- Keep signs to a minimum. For example, the news signs at Locke-Paddon Park are unused and too many.

## **Tribal, Cultural, and Historic Resources**

No comments were received for this section.

## **Land Use and Development**

The following comments were received:

- The following comments were provided for the vacant properties adjacent to the Walmart that currently have a land use designation of General Commercial:
  - The owners of the large vacant properties adjacent to the Walmart request that the land use and zoning of these two sites be changed to allow high-density residential development, stating that this site is not viable for traditional retail development.
  - A community member asked if the General Commercial land use designation allows hotels and stated that hotels bring in the most revenue to the City.
  - Another community member stated that during the General Plan outreach, the community supported retaining the General Commercial land use designation.
- Regarding the allowed uses within the proposed Open Space land use designation: State Parks housing, for example, is a very permanent structure and seems specific to the former CEMEX site.
- Regarding the allowed uses within the proposed Open Space land use designation: How is "community garden" defined? Is it a community garden of CA native plants similar to the Oak woodland site in Locke Paddon Park? Is it a Food Forest Garden of non-native fruit trees? Is it a garden of exotic plantings? Would the locally found native plant requirements apply?
- Limit allowed uses within the Public Service Facilities land use designation to library and city corporation yard.
- Leave land use designations in place.
- No new development west of Highway 1.
- Do not exempt ADUs and JADUs from Coastal Development Permit requirements. ADUs will have a big impact on parking in neighborhoods.

- Development of mass transportation systems like SURF will allow for higher density housing than the LCP area can accommodate.
- Recreation facilities need to be defined especially relative to Locke-Paddon Park.
- The map from the workshop shows the parcel west of Marina Library identified as Public Facility. We have a Corporation yard on Lake Ct. There should be no additional "Public Facilities" in Marina's Coastal Zone beyond those two existing footprints.

## **Environmental Justice**

The following comments were received:

- Coastal access needs work.



Community Field Trip Summary



ATTACHMENT





# Comprehensive Local Coastal Program Update

## Community Field Trip #1

### SUMMARY

#### Introduction and Background

The City of Marina hosted a community field trip on April 21, 2025 at Locke-Paddon Park and Marina State Beach. The objective of the field trip was to provide the community with background on what a Local Coastal Program is and specifically discuss the significant Environmentally Sensitive Habitat Area in the City. The first stop was at Locke-Paddon Park from 4pm to 5pm. The second stop was at Marina State Beach from 5:15pm to 6:15 pm. State Parks staff joined City staff at Marina State Beach and discussed coastal hazards, biological resources, and public safety. Approximately 10 community members joined the field trip.

#### Locke-Paddon

The following comments were received at Locke-Paddon Park:

- **Comment #1:** Why call it a Vernal Pond? It doesn't dry up and have annual vegetation. Why not call it a wetland?
- **Comment #2:** Are fewer migratory birds coming through because of the tule growth? There has been a decline in birders at the park.
- **Comment #3:** If it is healthy habitat as is, maybe just open up some windows of freshwater views in front of the benches rather than a wholesale clean-up of the tules.
- **Comment #4:** It would be nice to view the water if it is not detrimental to the habitat.
- **Comment #5:** MPRPD did water quality testing. Quality was good but DO2 (dissolved oxygen) levels are low.
- **Comment #6:** It would be nice to have an ecological report that says which species benefit and which are impacted by the tule removal.

- **Comment #7:** This person used to see migrating birds more often. Are they still here and we can't see them, or has the tule growth impacted their habitat? MPRPD is doing a study on this.
- **Comment #8:** MPRPD receives comments about the public feeling unsafe to walk on perimeter path because of unhoused individuals living in the vegetation.

### **Marina State Beach:**

The following comment was received at Marina State Beach:

- **Comment #1:** The underpass on Reservation Road is dangerous feeling and detracts and discourages people from walking from Marina to the Marina State Beach.

### **Additional Discussion:**

- Remove Monterey Cypress from “major vegetation” definition
- Allow up to 25% trimming of canopy without CDP (even for trees considered Major Veg)