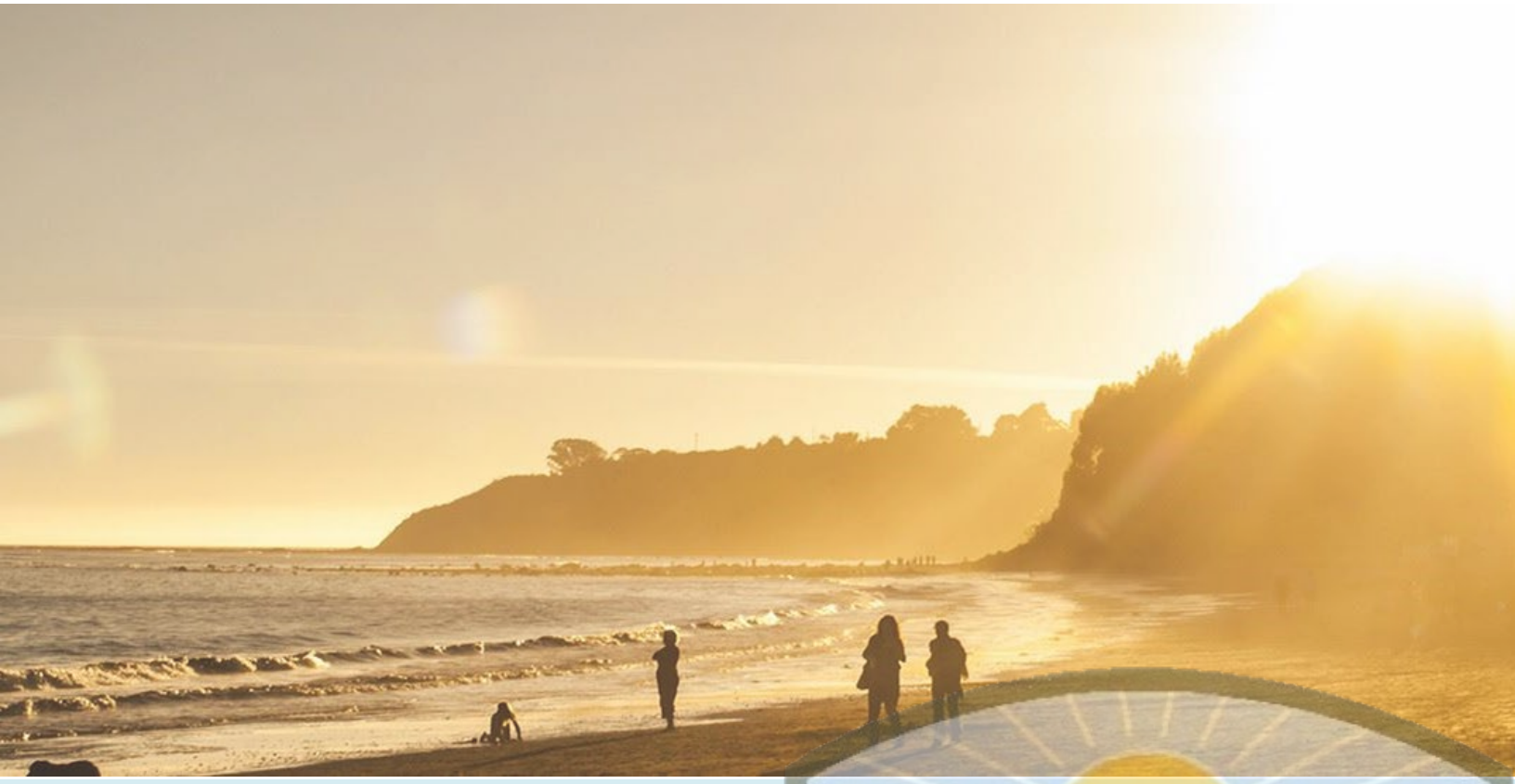
ANNEX G:
CITY OF MARINA



2021 Monterey County
Multi-Jurisdictional
Hazard Mitigation Plan

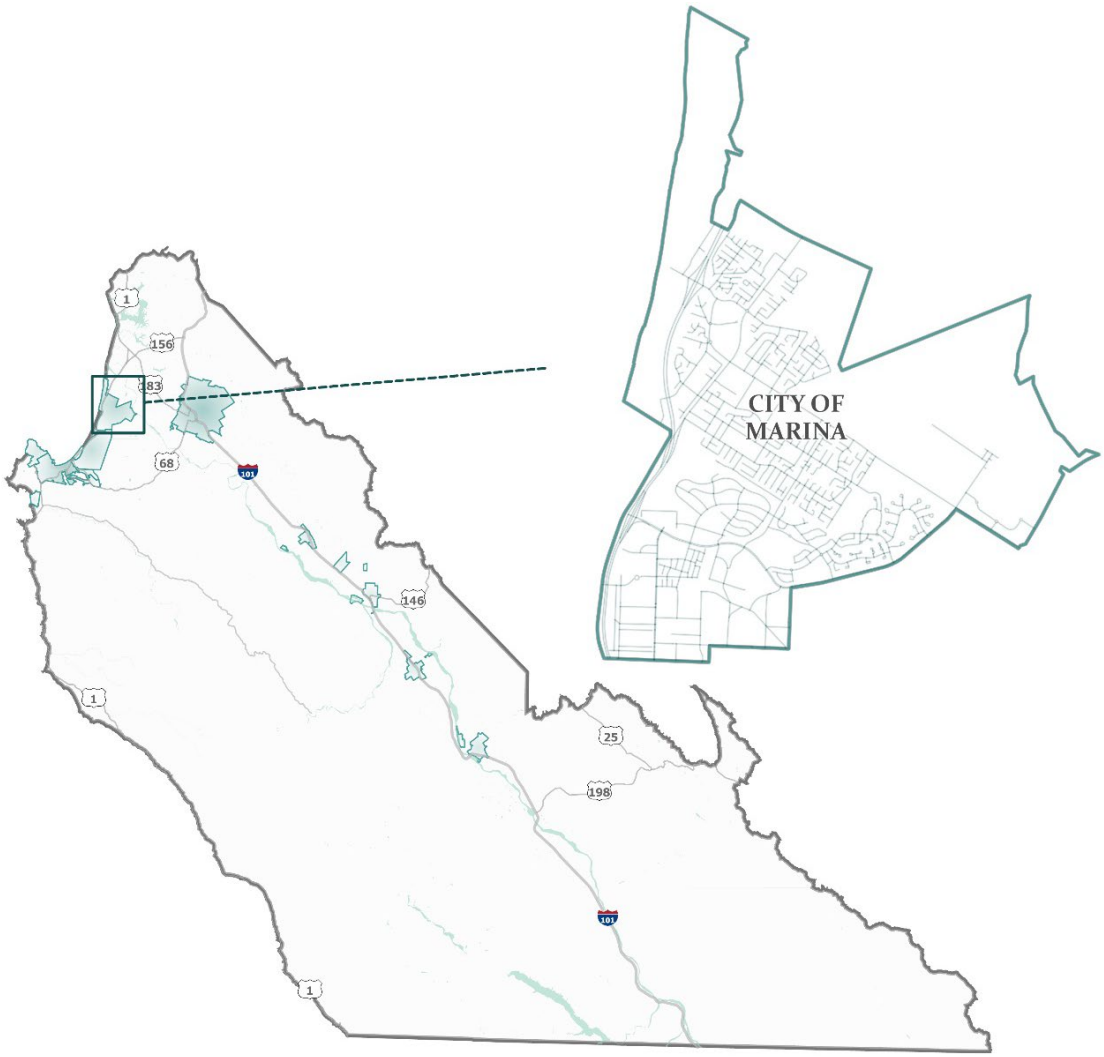
G. CITY OF MARINA

G.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Primary Point of Contact
Chief Doug McCoun
Fire Chief, Marina Fire
211 Hilcrest Avenue
Marina, CA 93933
(831) 275-1700
dmccoun@cityofmarina.org

G.2 COMMUNITY PROFILE

G.2.1 LOCATION



G.2.2 GEOGRAPHY AND CLIMATE

The City of Marina is a small coastal city located along the Monterey Bay. Marina occupies nearly 10 square miles in total area just north of Seaside and west of Salinas. Marina is on California State Route 1 between Monterey and Santa Cruz.

G.2.3 HISTORY

Dating back to (circa) 1868, about 9,000 acres of land stretching north along the Pacific Ocean, and east along the Salinas River, was owned by the late David Jacks and James Bardin. The land block breakup began in 1885, when the Bardin heirs sold 1,372 ½ acres to John Armstrong for farmland and grazing. About a year later, 1,450 acres was sold, then named the Sand Hill Ranch, and then 400 hundred acres near the ocean was sold to the San Francisco Sand Company, which subsequently constructed a sand plant in 1906.

In 1915, real estate salesman William Locke-Paddon from San Francisco was looking for land to sub-divide and found the breakup of the large Bardin and Jacks estate as an opportunity. On May 29, 1915, Locke-Paddon purchased 1500 acres south of Sand Hill Ranch designated as the "Pueblo Tract No. 1, City Lands of Monterey." The Marina Post Office was established in 1919 and by 1926 the town had grown to their first 70 families. The City's history is intertwined with that of Fort Ord Military Base. Major growth during the 1940s, made some impact on the community of Marina, as it became a "rest and relaxation" area for troops stationed at Fort Ord. Throughout the 50s,60s, and 70s, the City continued to grow with new residential, commercial, industrial, and visitor-serving development being built. Marina voters approved incorporation on November 5, 1975, making Marina the newest City along the Monterey Coast. Since incorporation, the City has continued to grow and flourish.

G.2.4 POPULATION

The City of Marina has a population of 22,359 people (2020 Census), an increase of 13.4% since 2010. The Association of Monterey Bay Area Governments (AMBAG) estimates Marina's current population to increase to approximately 30,130 in 2025 (a 54.9% increase), and approximately 32,940 in 2035 (a 59.4% increases). These dramatic increases are primarily associated with the planned development of housing on the former Fort Ord.

G.2.5 GOVERNING BODY FORMAT

The City of Marina's form of government is a council-manager form of government with a Home-Rule City Charter. The five Council members are elected at large with one being Mayor. The Mayor is elected every two years in a general election held in November of even-numbered years. Serving with the Mayor are four members of the City Council who have overlapping terms; every two years, two members of the City Council are also selected by the voters through a general election. The City Manager is appointed by the City Council to manage the daily operations and is responsible for making policy recommendations to the City Council and implementing City Council policy directives.

G.2.6 ECONOMY AND TAX BASE

The economy of this community is based on tourism and local services. The city includes several miles of shoreline along Monterey Bay, though most of the beach is preserved as public park space and

nearly all development is landward of the coastal dunes and US Highway 1. The city is contiguous with the former Fort Ord military installation, an area experiencing and targeted for future infill growth and redevelopment including more than 1,000 new homes, a number of large mixed-use projects, and a new business center at the former military airport which the City now owns. Through these and other recent commercial and industrial developments, Marina is undergoing transition from a small, primarily bedroom community to a more diversified, vibrant, and self-sufficient community.

G.3 PLANNING PROCESS

The City of Marina followed the planning process explained in **Volume 1** of the plan. In addition to providing representation on the Monterey County Hazard Mitigation Planning Steering Committee, the City formulated their own internal planning team to support the broader planning process. The City of Marina held a Hazard Mitigation Plan Stakeholder meeting to discuss vulnerabilities, mitigation activities that had occurred since the last plan update, key problem statements, and mitigation strategies on August 31, 2021. Key stakeholders present at the meeting included:

- Layne Long, City Manager
- Doug McCoun, Fire Chief
- Brian McMinn, Public Works Director
- Fred Aegerter, Community Development Director
- Matt Mogensen, Assistant City Manager
- Marisol Gomez, Acting Finance Director
- Tino Nieto, Police Chief

G.4 LAND USE AND DEVELOPMENT

The City of Marina General Plan was adopted in 2000. The City has about three miles of shoreline fronted by restored coastal dune habitat. The coastal zone inland of Highway 1 is limited to roughly 60 acres that includes commercial development, visitor-serving overnight accommodations, coastal dunes, and three significant coastal wetlands. The City received a grant from the Coastal Commission in 2017 and is currently in the process of a comprehensive update to their Local Coastal Program to address sustainable development, increased opportunities for coastal access and recreation, and vulnerability to climate change and sea level rise. The City is also including provisions that embrace the concept of managed retreat.

The City gained land as part of the Fort Ord reuse, which includes several miles of shoreline along Monterey Bay, though most of the beach is preserved as public park space and nearly all development is landward of the coastal dunes and US Highway 1. The former Fort Ord land is an area experiencing and targeted for future infill growth and redevelopment including more than 1,000 new homes, a number of large mixed-use projects, and a new business center at the former military airport which the City now owns. Through these and other recent commercial and industrial developments, Marina is undergoing transition from a small, primarily bedroom community to a more diversified, vibrant, and self-sufficient community.

Marina's Urban Growth Boundary protects the City of Marina from development in current open space areas north of the City limits and along its coast, and to encourage efficient development in central

Marina and within Marina's portion of former Fort Ord, On June 16, 2020, the City Council of the City of Marina adopted Resolution 2020-75, submitting to the voters at the November 3, 2020 General Municipal Election a Measure approving a General Plan Amendment and Local Coastal Program Amendment extending the expiration date of the operative provisions of the 2000 Marina Urban Growth Boundary Initiative to December 31, 2040.

Safe Growth

The purpose of the Safe Growth Survey was to evaluate the extent to which each jurisdiction is positioned to grow safely relative to its natural hazards. The survey covered 9 distinct topic areas and was also completed as part of the previous plan update process. This allowed survey results to be compared to help measure progress over time and to continue identifying possible mitigation actions as it relates to future growth and community development practices.

This survey was a subjective exercise used to provide some quantitative measures of how adequately existing planning mechanisms were being used to address the notion of safe growth. Each topic area included a number of statements, which were answered on a scale from 1 to 5 based on the degree to which the respondent agreed or disagreed with the statement as it relates to the City's current plans, policies, and programs for guiding future community growth and development. Scores for each topic area statement were averaged to provide a topic area result and the topic area totals were averaged to provide an overall survey score. More information on the survey is provided in *Capability Assessment* in **Volume 1**. The City of Marina Safe Growth Survey was completed by Christy Hopper, Planning Services Manager for the City of Marina Community Development Department. The results are summarized in Table *G-1.*

Table G-1
City of Marina Safe Growth Survey Results

Topic Area	2021	2016
Land Use	3.50	3.50
Transportation	4.33	3.00
Environmental Management	4.67	3.33
Public Safety	4.00	4.00
Zoning Ordinance	4.75	2.50
Subdivision Regulations	2.33	2.67
Capital Improvement Program & Infrastructure Policies	3.33	3.00
Building Code	5.00	4.00
Economic Development	5.00	3.00
Average Survey Ratings	**4.10**	**3.22**

G.5 JURISDICTION SPECIFIC RISK ASSESSMENT

The intent of this section is to profile the City of Marina's hazards and assess the City's vulnerability distinct from that of the countywide planning area, which has already been assessed in **Volume 1** of the plan. The hazard profiles in **Volume 1** discuss overall impacts to the County and describes the hazards, as well as their extent, magnitude/severity, previous occurrences, and the likelihood of future occurrences. Hazard vulnerability specific to the City of Marina is included in this Annex.

The City of Marina's Planning Team used the same risk assessment process as the Monterey County Steering Committee. The City's Planning Team used the Threat Hazard Risk Assessment (THIRA) Survey to compare the impact of various hazards that could affect the City. Each variable was scored by hazard by the Planning Team on a scale from 1 to 4, or negligible/unlikely to extensive/highly likely/ catastrophic. The score for each variable was calculated using a weighted average of all survey responses. Scores were then added together to determine an overall hazard score between 1 and 16. Each score was associated with a qualitative degree of risk ranking from Negligible (between 1 and 4) to Very High (between 14.1 and 16). The Survey is described in more detail in *Risk Assessment Methods* in **Volume 1**. *Table G-2* displays the results of the hazard risk ranking exercise that was performed by the City of Marina's Planning Team.

Table G-2
Threat Hazard Identification Risk Assessment (THIRA): City of Marina

Hazard	Geographic Extent	Likelihood of Occurrence	Magnitude/ Severity	Impact	Total *Out of 16*	Degree of Risk
Agricultural Emergencies	1.6	1.4	1.4	1.4	5.8	Slight
Coastal Erosion	2.8	2.7	2.5	2.5	10.5	Substantial
Coastal Flooding	2.0	1.8	1.8	2.2	7.8	Possible
Cyber-Attack	2.4	2.2	2.2	2.4	9.2	Moderate
Dam Failure	-	-	-	-	-	-
Drought & Water Shortage	2.7	2.7	2.5	2.7	10.5	Substantial
Earthquake	3.0	2.8	2.8	3.0	11.7	Substantial
Epidemic	2.3	2.3	2.3	2.3	9.3	Moderate
Extreme Cold & Freeze	1.2	1.3	1.3	1.2	5.0	Slight
Extreme Heat	1.8	1.7	1.8	1.5	6.8	Possible
Flash Flood	1.5	1.3	1.2	1.3	5.3	Slight
Hazardous Materials Incident	2.2	2.0	2.0	2.0	8.2	Moderate
Invasive Species	2.2	2.0	1.8	1.7	7.7	Possible
Levee Failure	-	-	-	-	-	-
Localized Stormwater Flooding	2.0	2.0	1.8	1.7	7.5	Possible
Mass Migration	1.8	1.8	2.0	2.0	7.7	Possible
Pandemic	2.7	2.7	2.5	2.5	10.3	Substantial
Riverine Flooding	1.7	1.3	1.7	1.3	6.0	Slight
Sea Level Rise	2.7	3.2	2.5	2.7	11.0	Substantial
Severe Winter Storms	2.0	1.7	2.0	2.2	7.8	Slight
Slope Failure	1.5	1.5	1.7	1.7	6.3	Possible
Targeted Violence	2.0	2.0	2.0	2.0	8.0	Possible
Terrorism	1.5	1.5	1.5	1.5	6.0	Possible
Tsunami	2.0	2.2	2.3	2.3	8.8	Moderate
Utility Interruption/ PSPS	2.7	2.5	2.2	2.2	9.5	Moderate
Water Contamination	2.5	2.0	2.2	2.0	8.7	Moderate
Wildfire	2.8	2.5	2.5	2.7	10.5	Substantial
Windstorms	2.2	2.2	2.2	2.5	9.0	Moderate

G.5.1 AGRICULTURAL EMERGENCIES

There is no agricultural land located within the City, so therefore an agricultural emergency does not pose a direct threat. Since agriculture is a major economic driver in the County, an agricultural emergency could have indirect economic impacts on the City.

G.5.2 COASTAL EROSION

Natural dune erosion from large storm waves is the primary hazard challenging the Marina shoreline. To determine coastal erosion risk, USGS Pacific Coastal and Marine Science Center Coastal Storm Modeling System (CoSMos) shoreline change, and cliff retreat projection data was used. For cliff retreat modeling an end of century (2100) forced sea level rise amount of 200 cm was used based on Ocean Protection Council (OPC) High Risk Aversion Guidance. For shoreline change, winter erosion uncertainty modeling was used to capture the degree of uncertainty associated with future shoreline erosion. Hold the Line scenario modeling was chosen for both types of erosion.

Three sea level rise levels (25 cm, 75 cm, and 200 cm) to represent planning horizons based on OPC Sea Level Rise Projections for the Monterey Tide Gauge. 25 cm of sea level rise represents near term (2030) risk, 75 cm represent mid-term (2060) risk, and 200 cm represent long-term (2100) risk.

Table G-3 summarizes population and property exposure to coastal erosion risk.

Table G-3
Population and Property Exposed to Coastal Erosion Risk in Marina

Sea Level Rise Scenario/ Erosion Type	Population	Residential Property		Non-Residential Property	
		#	Value	#	Value
Cliff Erosion					
Sea Level Rise (25 cm)	0	0	$0	0	$0
Sea Level Rise (75 cm)	0	0	$0	0	$0
Sea Level Rise (200 cm)	0	0	$0	0	$0
Shoreline Erosion					
Sea Level Rise (25 cm)	34	0	$0	20	$45,275,418
Sea Level Rise (75 cm)	34	0	$0	20	$45,275,418
Sea Level Rise (200 cm)	34	0	$0	20	$45,275,418

Coastal dune erosion hazards are the biggest threat to the City of Marina, with potentially up to five 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 and facilities projected to be eroded and damaged include Marina Coast Water District facilities, some portions of the wastewater conveyance system including a sewer pump station and an (aging/ phasing out) water treatment facility, the Sanctuary Beach Resort, one groundwater supply well, and the coastal access and associated parking lot at Marina State Park.

Reduction of erosion rates from the recent cessation of sand mining is expected to reduce the risk of sea level rise and erosion impacts to the City.

G.5.3 DAM AND LEVEE FAILURE

Dam Failure

There is no population or property in the City located in the dam inundation zones of the Los Padres and Forest Lake dams.

Table G-4 summarizes population and property in the City exposed to spillway and dam failure of the Nacimiento and San Antonio dams.

Table G-4
Population and Property Exposed to Dam Failure Risk by Dam and Failure Type in Marina

Dam Failure Scenario	Population	Residential Property		Non-Residential Property	
		#	Value	#	Value
Nacimiento Spillway Failure	5	1	$199,341	2	$87,938
Nacimiento Dam Failure	39	1	$199,341	16	$45,275,418
San Antonio Spillway Failure	5	1	$199,341	1	$0
San Antonio Dam Failure	5	1	$199,341	2	$87,938

Levee Failure

Based on Leveed Area from the US Army Corps of Engineers, National Levee Database, there is no population or property in the City exposed to levee failure risk. Many levees in the County protect important agricultural lands and a significant levee failure could have an indirect economic impact.

G.5.4 DROUGHT AND WATER SHORTAGE

The entire population of the City is vulnerable to drought events. Drought can affect people's health and safety, including health problems related to low water flows, poor water quality, or dust. Other possible impacts include recreational risks; effects on air quality; diminished living conditions related to energy, air quality, and hygiene; compromised food and nutrition; and increased incidence of illness and disease. Water shortages can affect access to safe, affordable water, with substantial impacts on low-income families and communities burdened with environmental pollution.

A prolonged drought could also cause economic impacts. Increased demand for water and electricity may result in shortages and higher costs of these resources. While economic impacts will be most significant on industries that use water or depend on water for their business, cascading economic effects can hurt many sectors of the economy. Agriculture, which will likely be impacted by drought conditions, is a major economic driver in the County, and the City could be impacted economically.

G.5.5 EARTHQUAKE

The entire population of the City is potentially exposed to direct and indirect impacts from earthquakes. Whether directly impacted or indirectly impacted, the entire population will have to deal with the consequences of earthquakes to some degree. Business interruption could keep people from working, road closures could isolate populations, and loss of utilities could impact populations that suffered no direct damage from an event itself. Similarly, all property and critical infrastructure in the City is potentially exposed to earthquake risk.

According to Monterey County Assessor records, there are 4,991 residential and non-residential buildings in the City, with a total value of $2,745,331,711. Since all structures in the City are susceptible to earthquake impacts to varying degrees, this represents the property exposure to seismic events.

Additionally, liquefaction risk was assessed. *Table G-5* summarizes population and property in the City exposed to liquefaction risk.

Table G-5
Population and Property Exposed to Liquefaction Risk in Marina

Liquefaction Risk	Population	Residential Property		Non-Residential Property	
		#	Value	#	Value
High Liquefaction Susceptibility	39	1	$199,341	21	$45,275,418
Moderate Liquefaction Susceptibility	516	16	$9,411,509	29	$57,441,079

G.5.6 FLOODING

FEMA flood zones were used to assess flooding risk. *Table G-6* summarizes population and property in the City in the 100-year and 500-year floodplain.

Table G-6
Population and Property Exposed to Flooding Risk in Marina

FEMA Flood Zone	Population	Residential Property		Non-Residential Property	
		#	Value	#	Value
100-Year Flood Zone	9,496	96	$55,762,807	98	$89,907,734
500-Year Flood Zone	436	0	$0	5	$0

G.5.7 HAZARDOUS MATERIALS INCIDENT

To assess hazardous materials incident risk, buffer distances were used. The chosen buffer distance was based on guidelines in the US Department of Transportation's Emergency Response Guidebook that suggest distances useful to protect people from vapors resulting from spills involving dangerous goods considered toxic if inhaled. The recommended buffer distance referred to in the guide as the "protective action distance" is the area surrounding the incident in which people are at risk of harmful exposure. For purposes of this plan, a buffer distance of one mile was used, but actual buffer distances will vary depending on the nature and quantity of the release, whether the release occurred during the night or daytime, and prevailing weather conditions.

To analyze the risk to a transportation-related hazardous materials release, a one-mile buffer was applied to highways in the US Dept of Transportation, National Transportation Atlas Database. The result is a two-mile buffer zone around each transportation corridor that is used for this analysis. Risk from a fixed facility hazardous materials release, was analyzed using a one-mile buffer was applied facilities identified in the Monterey County 2019 Hazardous Materials Plan. The result was a one-mile buffer zone around each facility.

Table G-7 summarizes population and property that could be exposed to both mobile and fixed hazardous materials incidents.

Table G-7
Population and Property Exposed to Hazardous Materials Incident Risk in Marina

Hazardous Materials Incident Type	Population	Residential Property		Non-Residential Property	
		#	Value	#	Value
Mobile Source	16,292	2,413	$1,483,891,351	1,018	$515,933,364
Fixed Source	443	0	$0	4	$28,649,394

G.5.8 HUMAN-CAUSED HAZARDS

It is often quite difficult to quantify the potential losses from human-caused hazards. While facilities themselves have a tangible dollar value, loss from a human-caused hazard often inflicts an even greater toll on a community, both economically and emotionally. The impact to identified values will vary from event to event and depend on the type, location, and nature of a specific incident.

G.5.9 PUBLIC HEALTH HAZARDS

All citizens in the City could be susceptible to the human health hazards. A large outbreak or epidemic, a pandemic or a use of biological agents as a weapon of mass destruction could have devastating effects on the population. While all of the population is at risk to the human health hazards, the young and the elderly, those with compromised immune systems, and those with special needs are most vulnerable. The introduction of a disease such as influenza or the COVID-19 virus have impacted the whole population of the City, specifically vulnerable populations.

G.5.10 SEVERE WEATHER

All severe weather events profiled in this Plan have the potential to happen anywhere in the City. Vulnerable populations are the elderly, low income or linguistically isolated populations, people with life-threatening illnesses, and residents living in areas that are isolated from major roads. Properties in poor condition or in high-risk locations may be susceptible to the most damage.

All critical facilities in the City likely exposed to severe weather hazards. The most common problems associated with severe weather are loss of utilities and compromised access to roadways. Prolonged periods of extreme heat could result in power outages caused by increased demand for power for cooling.

The FEMA National Risk Index calculates annualized frequency, exposure and annual expected loss of building value and population to some severe weather hazards identified in this Plan. Based on zip code and census tract Countywide data was used to identify annualized frequency, exposure, and annual expected loss in the City from severe weather hazards. Though the entire City is considered vulnerable to these hazards, the FEMA data was used in this risk assessment to provide scale for the potential risk and impacts.

FEMA National Risk Index data from frequency and exposure to severe weather hazards is summarized in *Table G-8.*

Table G-8
Annualized Frequency and Exposure to Severe Weather Events in Marina

Hail		Strong Wind	
Frequency (*Distinct Events)*	0.34	Frequency (*Distinct Events)*	0.09
Exposed Population	15,069	Exposed Population	15,069
Exposed Building Values	$1,244,655,000	Exposed Building Values	$1,244,655,000
Expected Annual Loss of Building Value	$0	Expected Annual Loss of Building Value	$219
Heat Wave		**Tornado**	
Frequency (*Event-Days)*	0.08	Frequency (*Distinct Events)*	1.31
Exposed Population	15,069	Exposed Population	10,187
Exposed Building Values	$1,244,655,000	Exposed Building Values	$749,974,394
Expected Annual Loss of Building Value	$1	Expected Annual Loss of Building Value	$19,235,838
Lightning		**Winter Weather**	
Frequency (*Distinct Events)*	0.42	Frequency (*Event-Days)*	0.00
Exposed Population	15,069	Exposed Population	0
Exposed Building Values	$1,244,655,000	Exposed Building Values	$0
Expected Annual Loss of Building Value	$179	Expected Annual Loss of Building Value	$0

Source: FEMA National Risk Index

G.5.11 SLOPE FAILURE

Based on the FEMA National Risk Index, 1,634 people and $192,621,122in building value in the City is exposed to landslide risk. Additionally, the City is not susceptible earthquake induced to landslides.

G.5.12 TSUNAMI

Population and property in the City located in a mapped tsunami inundation zone is summarized in *Table G-9.*

Table G-9
Population and Property in Tsunami Inundation Zone in Marina

Inundation Zone	Population	Residential Property		Non-Residential Property	
		#	Value	#	Value
Tsunami Inundation Zone	34	0	$0	20	$45,275,418

G.5.13 UTILITY INTERRUPTION

All residents, visitors, and property in the City is exposed and vulnerable to utility interruptions. All critical facilities and infrastructure in the City that is operated by electricity is exposed and vulnerable to utility interruption.

G.5.14 WILDFIRE

For purposes of this analysis CAL FIRE Fire Threat data was used. Fire Threat combines expected fire frequency with potential fire behavior to create 4 threat classes, extreme, very high, high, and moderate.

Table G-10 summarizes population and property in the City in very high, high, and moderate fire threat areas.

Table G-10
Population and Property Exposed to Wildfire Risk in Marina

CAL FIRE Wildfire Threat	Population	Residential Property		Non-Residential Property	
		#	Value	#	Value
Very High Fire Threat	0	0	$0	0	$0
High Fire Threat	3,256	6	$3,505,063	13	$37,060,120
Moderate Fire Threat	13,699	574	$458,626,555	492	$379,314,058

G.5.15 CLIMATE CHANGE AND SEA LEVEL RISE

The effects of climate change are varied and include warmer and more varied weather patterns and temperature changes. Climate change will affect the people, property, economy, and ecosystems in the City and will exacerbate the risk posed by many of the hazards previously profiled in this Plan. Climate change will have a measurable impact on the occurrence and severity of natural hazards. Increasing temperatures and rising sea-levels will have direct impacts on public health and infrastructure. Drought, coastal and inland flooding, and wildfire will likely affect people's livelihoods and the local economy. Changing weather patterns and more extreme conditions are likely to impact tourism and the rural economies, along with changes to agriculture and crops, which are a critical backbone of Monterey County's economic success. There will also be negative impacts to ecosystems, both on land and in the ocean, leading to local extinctions, migrations, and management challenges.

Sea level rise risk exposure in the City was calculated based on the NOAA Office for Coastal Management sea level rise viewer projections. Three sea level rise levels (25 cm, 75 cm, and 200 cm) were chosen to represent planning horizons based on OPC Sea Level Rise Projections for the Monterey Tide Gauge. 25 cm of sea level rise represents near term (2030) risk, 75 cm represent mid-term (2060) risk, and 200 cm represent long-term (2100) risk.

Population and property exposed to sea level rise risk is summarized in *Table G-11*.

Table G-11
Population and Property Exposed to Sea Level Rise in Marina

Sea Level Rise Amount	Population	Residential Property		Non-Residential Property	
		#	Value	#	Value
1 ft Sea Level Rise (2030)	34	0	0	20	$45,275,418
3 ft Sea Level Rise (2060)	34	0	0	20	$45,275,418
7 ft Sea Level Rise (2100)	34	1	$199,341	21	$45,275,418

G.6 CAPABILITY ASSESSMENT

The City of Marina performed an inventory and analysis of existing capabilities, plans, programs, and policies that enhance its ability to implement mitigation strategies. This section summarizes the following findings of the assessment:

- An assessment of planning and regulatory capabilities is presented in *Table G-12*
- An assessment of administrative and technical capabilities is presented in *Table G-13*
- An assessment of fiscal capabilities is presented in *Table G-14*
- An assessment of education and outreach capabilities is presented in *Table G-15*
- Classifications under various community mitigation programs are presented in *Table G-16*
- A summary of participation in and compliance with the National Flood Insurance Program (NFIP) is provided in Section G.6.1 in *Table G-17*
- An overall self-assessment of capability is presented in Section G.6.2 in *Table G-18*

Table G-12
Planning and Regulatory Capability

Document		Department	Comments
Planning Documents			
General Plan	☒	• Community Development	
Capital Improvement Plan	☒	• Public Works	
Floodplain Management Plan	☒	• Public Works	
Open Space Management Plan	☒	• Public Works	Under Development and will be addressed with the General Plan update.
Stormwater Management Plan	☒	• Public Works	
Coastal or Shoreline Management Plan	☒	• Community Development	Being updated to address Sea Level rise and Coastal Hazards, 2019 Existing Conditions and Sea Level Rise Adaptation Report
Local Coastal Program	☒	• Community Development	Certified in 1982, Currently being updated to address Sea Level rise and Coastal Hazards
Climate Action/ Adaptation Plan	☒	• Community Development	Under development, working with AMBAG for final adoption with the General Plan update
Emergency Operations Plan	☒	• Fire Department	Regional EOC
Continuity of Operations Plan	☒	• Fire Department	
Community Wildfire Protection Plan	☒	• Fire Department	County Wide Plan
Evacuation Plan	☒	• Fire Department	County Wide, Local Tsunami
Disaster Recovery Plan	☐	•	
Economic Development Plan	☒	• City Administration	In General Plan

Table G-12
Planning and Regulatory Capability

Document		Department	Comments
Historic Preservation Plan	☒	• Community Development	In General Plan
Transportation Plan	☒	• Public Works	Part of the General Plan and part of TAMC
Codes, Ordinances & Requirements			
Floodplain Ordinance	☒	• Public Works	Ordinance 15.48 – Flood Damage Prevention
Zoning Ordinance	☒	• Community Development	
Subdivision Ordinance	☒	• Community Development	
Site Plan Review Requirements	☒	• Community Development	
Unified Development Ordinance	☐		N/A
Post-Disaster Redevelopment/ Reconstruction Ordinance	☐		N/A
Building Code	☒	• Community Development	
Fire Prevention Code	☒	• Fire Department	
Other Hazard-Specific Ordinances		• Ordinance 8.46 – Urban Storm Water Quality Management and Discharge Control	

Table G-13
Administrative and Technical Capability

Staff/Personnel Resources		Department	Comments
Planner(s) or engineer(s) with knowledge of land development and land management practices	☒	• Community Development • Public Works	
Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure	☒	• Community Development • Public Works	
Planner(s) or engineer(s) with an understanding of manmade or natural hazards	☒	• Community Development • Public Works	
Building Inspector	☒	• Community Development	
Emergency Manager	☒	• City Manager	
Floodplain Manager	☒	• Public Works	Public Works Director
Land Surveyors	☒	• Public Works	Public Works Director
Resource development staff or grant writers	☐		
Public Information Officer	☒	• Police Department	Police Chief
Scientist(s) familiar with the hazards of the community	☐		

Table G-13
Administrative and Technical Capability

Staff/Personnel Resources		Department	Comments
Staff with education or expertise to assess the community's vulnerability to hazards	☒	• All Departments	
Personnel skilled in Geographic Information Systems (GIS)	☐		
Maintenance programs to reduce risk	☒	• Public Works	
Warning systems/services	☒	• Monterey County	
Mutual Aid Agreements	☒	• Fire Department • Public Works	

Table G-14
Fiscal Capability

Fiscal Resources		Department	Comments
General Funds	☒	• Finance	
Capital Improvements Project Funding	☒	• Public Works	
Special Purpose Taxes	☒	• Finance	
Stormwater Utility Fees	☐		
Gas / Electric Utility Fees	☐		
Water / Sewer Fees	☐		
Development Impact Fees	☒	• Community Development	
General Obligation Bonds	☒	• City Manager • Finance	
Special Tax and Revenue Bonds	☒	• City Manager • Finance	
Community Development Block Grants (CDBG)	☐		

Table G-15
Education and Outreach Capability

Educational and Outreach Resources		Department	Comments
Local citizen or non-profit groups focused on environmental protection, emergency preparedness, access and functional needs populations, etc.	☒	• Mayor's Office	
Ongoing public education or information program (e.g.,	☒	• Police Department • Fire Department	All Departments

Table G-15
Education and Outreach Capability

Educational and Outreach Resources		Department	Comments
responsible water use, fire safety, household preparedness, environmental education)		• Public Works • Community Development	
Natural disaster or safety related school programs	☒	• Parks and Recreation	
Public-private partnership initiatives addressing disaster-related issues	☐		

Table G-16
Community Classifications

	Participating?	Classification	Effective Date
Community Rating System (CRS)	No	-	-
ISO Public Protection Classification	Yes	3/3Y	October 1, 2014
StormReady Certification	Yes	-	
TsunamiReady Certification	Yes	-	
Firewise Communities Certification	No	-	-

G.6.1 NATIONAL FLOOD INSURANCE PROGRAM (NFIP) COMPLIANCE

Table G-17
National Flood Insurance Program (NFIP) Compliance

Designated Floodplain Administrator:	Brian McMinn, Public Works Director
NFIP Community Number:	060727
Flood Insurance Policies in Force:	45
Insurance Coverage in Force:	$13,664,400
Written Premium in Force:	$61,833
Total Loss Claims:	0
Total Payments for Losses:	0

Adopted Regulations that meet NFIP Requirements:

- Ordinance 15.48 – Flood Damage Prevention
- Ordinance 8.46 – Urban Storm Water Quality Management and Discharge Control

Date of last NFIP Community Assistance Visit (CAV):

Research indicates the last contact with the CAC was in 2010. There is no evidence of compliance issues from that time.

Higher standards that exceed minimum NFIP requirement:

N/A

Additional floodplain management provisions:

The soils in the City of Marina are mostly sand which lends itself towards flood prevention. On top of the naturally good infiltration rates, the City's storm water standards exceed those of the State with a

design retention for all new development and redevelopment with 100% retention of the 100-year storm event.

Floodplain management activities performed that go beyond FEMA minimum requirements:
The City follows the State requirements for on-site mitigation of storm events. City requirements exceed those of the State with a retention requirement of 100% of all on-site runoff for the 100-year storm event. The Design Engineer of every major project in the City must sign off on a self-certification that they meet the City's requirements for on-site retention. The City's website is updated on an annual basis for training opportunities in post-construction Best Management Practices (BMPs) for stormwater collection and retention. The City also conducts an annual audit of its Municipal Code to confirm the information provided is up to the latest State mandates.

Existing impediments to running an effective NFIP program:
None

Specific actions that are ongoing or considered related to continued compliance with the NFIP:

- Maintain digital FEMA elevation certificates for all construction in the floodplain.
- Encourage or require certain local staff positions to obtain and maintain Certified Floodplain Manager (CFM) certification.
- Hold informative work sessions for newly elected officials and new appointees to planning commissions and appeals/variance boards, to provide an overview of floodplain management, the importance of participating in the NFIP, and the implications of failing to enforce the requirements of the program or failing to properly handle variance requests.
- Obtain FEMA's Substantial Damage Estimator and attend training to be prepared to use it when damage occurs; develop mutual aid agreements with other jurisdictions to augment local inspection personnel after major disasters.
- Maintain supplies of FEMA/NFIP materials to help property owners evaluate measures to reduce potential hazard damage. Make available in public buildings, local library, website, etc. and inform people who they can call to learn more information.

G.6.2 SELF-ASSESSMENT OF CAPABILITY

Table G-18
Self-Assessment of Capability

Capability	Degree of Capability
Planning and Regulatory Capability	Moderate
Administrative and Technical Capability	Moderate
Fiscal Capability	High
Education and Outreach Capability	Moderate
Political Capability	Moderate
Overall Capability	**Moderate**

Staffing is the largest limitation to capability.

G.7 PROBLEM STATEMENTS

Problem Statements are statements of particular interest regarding primary hazards of concern, geographic areas of concern, or vulnerable community assets. As part of the planning process, the City

of Marina Planning Committee identified key vulnerabilities and hazards of concern applicable to their jurisdiction. The Hazard Problem Statements were based on the risk assessment, the vulnerability analysis, and local knowledge.

Hazard Problem Statements helped the Planning Committee identify common issues and weaknesses, determine appropriate mitigation strategies, and understand the realm of resources needed for mitigation. Hazard Problem Statements for the City of Marina are identified below:

- The City continues to grow, with many new development projects underway or scheduled for the former site of Fort Ord but continues to be very concerned with maintaining a sustainable water supply – concerns that have only been exacerbated by the anticipated effects of climate change, including saltwater intrusion. It continues to coordinate and share these concerns the Monterey County Water Resources Agency and the Marina Coast Water District.
- The City experiences coastal storm events in March/April, with extreme winds that have caused significant tree damages and heavy rains that have caused isolated/localized nuisance flooding due to inadequate drainage systems.
- The Sanctuary Beach Resort is one of the only developed parcels in the city located seaward of Highway 1. There is local concern that coastal erosion and sea level rise could have a detrimental impact on the continued use of the property.
- Coastal erosion (potentially up to 5 to 7 feet a year) is a concern for areas such as Marina Coast Water District at 100 Reservation Road and potentially the former Cemex Sandplant site on Lapis Road toward the north of central Marina.
- The City is concerned about the high threat of wildland fire due to existing fuels in combination with large areas of urban/wildland interface and intermix. Areas of concern include former Fort Ord lands, areas on the east end of the City around the airport and near Imjin Road, undeveloped land within the City, and areas near Reservation Road. The City is working to address some of these areas through fuel management practices.
- The City is concerned with limited ingress/egress to the community following major disaster events. Current traffic levels, highway capacity, gridlock, and lack of mass transit options would make a large evacuation difficult and also limit emergency response capabilities.

G.8 MITIGATION GOALS, STRATEGIES, AND ACTIONS

The mitigation strategy is the guidebook to future hazard mitigation administration, capturing the key outcomes of the MJHMP planning process. The mitigation strategy is intended to reduce vulnerabilities outlined in the previous section with a prescription of policies and physical projects. These mitigation actions should be compatible with existing planning mechanisms and should outline specific roles and resources for implementation success.

The City of Marina Planning Team used the same mitigation action prioritization method as described in *Mitigation Strategy* in **Volume 1**, which included a benefit-cost analysis and consideration of mitigation alternatives. Based upon the risk assessment results and the City's planning committee priorities, a list of mitigation actions was developed. The Hazard Mitigation Action Plan Matrix, in *Table G-20* lists each priority mitigation action, identifies time frame, the responsible party, potential funding sources, and prioritization, which meet the requirements of FEMA and DMA 2000.

Status of Previous Plan Actions

All actions from the 2016 Plan were reviewed and updated by the City during the planning process. *Table G-19* includes the status of actions completed or removed from the previous plan. In order to improve the mitigation action plan for this Plan update and align with the countywide Mitigation Action Plan, the City added more specificity and detail to previous plan actions in addition to the new actions added to the Hazard Mitigation Action Plan Matrix.

Table G-19
City of Marina Completed Mitigation Actions from 2016 MJHMP

2016 Action #	Description	Status	Narrative Update
1	Identify hazard-prone critical facilities and infrastructure and carry out acquisition, relocation, and structural and nonstructural retrofitting measures as necessary.	**Completed**	Completed and ongoing as needed. Annual hazardous materials inspections are conducted by Monterey County Environmental Health in conjunction with the Public Works Supervisor at the City Corporation Yard (5th Avenue), the Lake Drive Corporation Yard (3040 Lake Court) and the fuel farm at the Marina Municipal Airport.

Table G-20
City of Marina Hazard Mitigation Action Plan Matrix

Action #	Status/ Timeframe	Description	Ranking / Prioritization	Administering Department	Potential Funding
1	Ongoing/ Continuous	Continue emergency preparedness and hazard mitigation public outreach, including the Annual Safety Night Out, school outreach programs, meeting with community groups, and providing information related to disaster preparedness, Alert Monterey County, and tsunamis, earthquake, fire, and flood safety on the City's website.	Priority / High	Public Safety	General Funds, HMGP and PDM Grants
2	Ongoing/ Continuous	Explore mitigation opportunities for repetitively flooded properties, and if necessary, carry-out acquisition, relocation, elevation, and flood-proofing measures to protect these properties.	Priority / High	Public Works	HMGP and PDM Grants
3	Ongoing/ Continuous	Identify and carry-out minor flood and stormwater management projects that would reduce damage to infrastructure and damage due to local flooding/ inadequate drainage. These include the modification of existing culverts and bridges, upgrading capacity of storm drains, upgrading aging storm drain infrastructure, upgrading corrugated metal pipes, and creation of stormwater retention basins in small watersheds.	Priority / High	Public Works	HMGP and PDM Grants
4	Ongoing	Adopt more prescriptive rules relative to the construction and maintenance of overhead lines.	Priority / High	Community Development, Planning Services	General Funds
5	In Progress	During the next General Plan Update, within the Safety Element, collect background data specific to Marina and consider appropriate goals, policies, and objectives to address hazards identified within the Multi-Jurisdictional Hazard Mitigation Plan.	Priority / Medium	Community Development, Planning Services	General Plan

Table G-20
City of Marina Hazard Mitigation Action Plan Matrix

Action #	Status/ Timeframe	Description	Ranking / Prioritization	Administering Department	Potential Funding
6	In Progress	Continue to collaborate with CSUMB and the City of Seaside to provide resources for the organization, staffing, training, activation, and operation of the joint Regional Emergency Operations Center (EOC).	Priority / High	Fire Department, Administration	Cost share as identified in the MOA & grant opportunities
7	In Progress	Complete Local Coastal Program Update, which address sea level rise and coastal hazards.	Priority / Medium	Community Development, Planning Services	General Plan
8	In Progress	Continue defensible space projects on high hazard areas on the east side of the City and on University of Santa Cruz owned property.	Priority / High	Fire Department, Public Works	General Fund
9	Ongoing/ Continuous	Continue coordination with Monterey County Regional Fire and CAL FIRE BEU on both wildfire mitigation and suppression efforts.	Priority / Medium	Fire Department	General Fund
10	In Progress	Complete study on the Monterey Peninsula Landfill to identify and address odor and the impacts of the industrial facilities on the North end of the City of Marina.	Priority / High	Public Works	General Fund