CITY OF PACIFIC GROVE

300 Forest Avenue, Pacific Grove, California 93950

AGENDA REPORT

TO:	Honorable Mayor and Members of City Council
FROM:	Jocelyn Francis, Administrative Services Manager, Police Department Anastazia Aziz, AICP, Senior Planner, Community and Economic Development
MEETING DATE:	May 4, 2016
SUBJECT:	Adopt the 2015 Monterey County Multi-Jurisdictional Hazard Mitigation Plan
CEQA:	Does not Constitute a "Project" per California Environmental Quality Act (CEQA) Guidelines

RECOMMENDATION

Approve a resolution adopting the 2015 Monterey County Multi-Jurisdictional Hazard Mitigation Plan.

DISCUSSION

A local hazard mitigation plan establishes a broad local vision and guiding principles for reducing hazard risk and proposes specific mitigation actions to eliminate or reduce identified vulnerabilities. Mitigation activities might include local plans and regulations, infrastructure projects, natural system protections, and awareness programs.

Hazard Mitigation Plans help to protect life and property; minimize economic losses; enhance community resiliency and sustainability; reduce burden on local governments and taxpayers; break the cycle of repetitive disaster damages; speed disaster recovery and redevelopment; as well as integrate hazard mitigation with other local planning and decision-making activities.

In addition, the Disaster Mitigation Act of 2000 amends the Stafford Disaster Relief and Emergency Assistance Act and requires local hazard mitigation plans be prepared and updated in order to remain eligible for certain types of disaster assistance.

In 2007 Monterey County and the local jurisdictions approved the County's first Hazard Mitigation Plan. The 2007 plan identifies existing hazards to include coastal erosion, dam failure, earthquake, flood, hazardous materials events, landslides, tsunami, wildland fire, and windstorms.

The 2015 plan updates those existing identified hazards by adding agricultural emergencies, climate change/sea level rise, and drought. Other changes include integrating the climate change/sea level rise into the risk assessment, enhancing the mitigation strategy to include specific and achievable hazard mitigation actions, improving plan maintenance procedures to ensure hazard mitigation is continuously integrated and updated, and conduct widespread public outreach and stakeholder involvement to support successful implementation.

On May 6, 2015 Council received a presentation on the Monterey County Multi-Jurisdictional Hazard Mitigation Plan from Sherrie Collins, Emergency Services Manager with Monterey County.

The major topics covered include the Planning Process, Planning Area Profile, Hazard Analysis, Vulnerability Analysis, Capability Assessment, Mitigation Strategy, and Plan Maintenance Procedures.

The mission of the plan is to:

Protect the public health, safety, quality of life, environment, and economy of Monterey County by reducing the long-term risk of damage and loss to known hazards through coordinated planning, partnerships, capacity building, and implementation of effective risk reduction measures.

Specific problem statements identified for Pacific Grove include:

- Ocean View Boulevard and Sunset Drive at risk for wave attack, coastal flooding, erosion and scouring.
- Limited ingress/egress to the community following major disaster events.
- Minor localized flooding following major rainfall events.
- Widespread power outages following winter storms and downed trees.
- Wildland fire hazards, particularly in the forested "Retreat" area with a combination of dying trees and surrounding residential construction.
- Public water supply, in particularly with regard to the supply available during major fires.
- Monterey Interceptor pipeline, which transports untreated sewage from Monterey and Pacific Grove to the MRWPCA Regional Treatment Plan, affected by costal erosion and sea level rise between the Seaside Pump Station and Monterey Beach Resort.

The Pacific Grove Mitigation Action Plan includes:

- Public Outreach Programs – City utilizes the website, social media, AlertMontereyCounty, the City Manager Weekly Summary, and a host of other print material to improve public awareness.
- Tsunami Ready Program – City participates in the program by educating the public about local tsunami inundation areas, and utilizing National Weather Service tools.
- Update & Add GIS Data – City continues to add inventory to the GIS system, which helps to calculate and document areas vulnerable to various hazards, including buildings and City infrastructure.
- Adopt Local Coastal Plan – City is currently in the process of writing the LCP, which will allow the City to protect, stabilize, and mitigate identified coastal hazards.
- Establish Watershed-Based Planning – City received grant funding to identify watershed flaws in addressing flood, sea level rise potential, and storm water runoff, and encourage techniques to reduce rainwater run off to prevent erosion and flooding.

In order to continue to work on mitigating potential hazards and improving resiliency, Staff recommends adoption of the 2015 Monterey County Multi-Jurisdictional Hazard Mitigation Plan. To review a copy of the final plan go to http://www.cityofpacificgrove.org/public-safety/emergency-preparednessThe Plan will be updated no less than every 5 years.

FISCAL IMPACT

The action plan includes previously budgeted programs and approved regional resources.

ATTACHMENT

1. Resolution
2. Executive Summary
   3. Appendix P - City of Pacific Grove

RESPECTFULLY SUBMITTED:

Jocelyn Francis
Administrative Services Manager

Anastazia Aziz, AICP, Senior Planner
CEDD

REVIEWED BY:

Ben Harvey

Ben Harvey
City Manager

RESOLUTION NO. 16-____

ADOPT THE 2015 MONTEREY COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN

FINDINGS

1. The City of Pacific Grove (City) has historically experienced damage from natural and human-caused hazards such as drought, flooding, severe wind, transportation accidents, wildfire, and winter storms. These hazards may continue to occur, possibly resulting in loss of property and life, economic hardship and threats to public health and safety; and

2. The 2015 Monterey County Multi-Jurisdictional Hazard Mitigation Plan has been developed after gathering information, review data, and conducting research with the assistance of AECOM Corporation, and updated work by the City in association and cooperation with the County of Monterey and State of California Office of Emergency Services in accordance with the Disaster Mitigation Act of 2000; and

3. The Plan specifically addresses hazard vulnerabilities, mitigation strategies and plan maintenance procedures for the City; and

4. The City is a local unit of government that has afforded the citizens an opportunity to comment and provide input in the Plan and the actions in the Plan; and

5. The City has reviewed the 2015 Monterey County Multi-Hazard Mitigation Plan and affirms that the Plan will be updated no less than every 5 years; and

6. This action is not a project under section 15378 of the CEQA Guidelines, set forth in California Administrative Code, Title 14, Section 15000, *et seq.*

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF PACIFIC GROVE:

1. The 2015 Monterey County Multi-Hazard Mitigation Plan is hereby adopted as an official plan of the City.

2. The 2015 Monterey County Multi-Hazard Mitigation Plan shall be implemented, monitored, and maintained by the staff designated in the Plan for a period of five (5) years with the full support of this resolution.

3. This Resolution shall become effective immediately following passage and adoption hereof.

PASSED AND ADOPTED BY THE COUNCIL OF THE CITY OF PACIFIC GROVE this 4th, day of May, 2016, by the following vote:

AYES:

NOES:

ABSENT:

APPROVED:

_____
BILL KAMPE, Mayor

ATTEST:

_____
SANDRA KANDELL, Deputy City Clerk

APPROVED AS TO FORM:

_____
DAVID C. LAREDO, City Attorney

_____
WILLIAM KAMPE, Mayor

ATTEST:

_____
ANN CAMEL, Interim City Clerk

APPROVED AS TO FORM:

_____
DAVID C. LAREDO, City Attorney

Executive Summary

What is Hazard Mitigation?

Monterey County is potentially vulnerable to a wide range of natural and manmade hazards. These hazards can threaten the life and safety of residents and visitors, and have the potential to damage or destroy both public and private property and disrupt the local economy and overall quality of life.

While the threats from hazard events may never be fully eliminated, there is much we can do to lessen their potential impact on our communities. By minimizing the damaging impacts of hazards upon our built environment, we can prevent such events from resulting in disasters. ***The concept and practice of reducing risks to people and property from known hazards is called hazard mitigation.***

FEMA Definition of Hazard Mitigation

"Sustained action taken to reduce or eliminate long-term risk to people and their property from hazards."

Hazard mitigation activities include a variety of different actions. Structural related measures include activities such as strengthening or protecting buildings and infrastructure from the destructive forces of potential hazards, or in some cases, such as flood control, physically altering the natural course of the potential hazard itself to attempt to minimize the potential impact. Non-structural related measures include activities such as the adoption of sound land use or floodplain management policies and the implementation of public awareness programs.

What is a Hazard Mitigation Plan?

One of the most effective means that a community can use to implement a comprehensive approach to hazard mitigation is to develop, adopt, and update as needed, a local hazard mitigation plan. ***A mitigation plan establishes the broad local vision and guiding principles for reducing hazard risk, and proposes specific mitigation actions to eliminate or reduce identified vulnerabilities.***

The Monterey County Multi-Jurisdictional Hazard Mitigation Plan is an effective approach to facilitate incorporation of hazard mitigation principles and practices into routine government activities and functions of the County and the 12 municipalities participating in this Plan.

Disaster Mitigation Act of 2000

In an effort to reduce the nation's mounting natural disaster losses, the U.S. Congress passed the Disaster Mitigation Act of 2000 to amend the Robert T. Stafford Disaster Relief and Emergency Assistance Act by invoking new and revitalized approaches to hazard mitigation planning. Section 322 of the Act emphasizes the need for state and local government entities to closely coordinate on hazard mitigation planning activities, and makes the development of a hazard mitigation plan a specific eligibility requirement for any local government applying for federal mitigation grant funds. ***Communities with an adopted and federally-approved hazard mitigation plan are eligible to receive certain types of mitigation funds before and after future disaster declarations, and, in some ways, are "pre-positioned" or "pre-qualified" for this funding.***

To implement the new Stafford Act provisions, the Federal Emergency Management Agency (FEMA) published requirements and procedures for local hazard mitigation plans in the Code of Federal Regulations (CFR) at Title 44, Chapter 1, Part 201.6. These regulations specify minimum standards for developing, updating, and submitting local hazard mitigation plans for FEMA review and approval at least once every five years.

This Plan was prepared in coordination with FEMA and the California Office of Emergency Services (COES) to ensure that it meets all applicable federal and state requirements. This includes conformance with FEMA's latest *Local Mitigation Planning Handbook* (released March 2013) and *Local Mitigation Plan Review Guide* (released October 2011).

Purpose and Mission Statement

The general purpose of this Monterey County Multi-Jurisdictional Hazard Mitigation Plan is:

- To protect life and property by reducing the potential for future damages and economic losses that result from known hazards;
- To qualify for additional grant funding, in both the pre-disaster and post-disaster environment;
- To speed recovery and redevelopment following future disaster events;
- To sustain and enhance existing governmental coordination throughout Monterey County and demonstrate a firm local commitment to hazard mitigation principles; and
- To comply with federal and state requirements for local hazard mitigation plans.

The following Mission Statement was created and agreed upon by the participants to represent the overall intended outcome of the Plan:

Protect the public health, safety, quality of life, environment, and economy of Monterey County by reducing the long-term risk of damage and loss to known hazards through coordinated planning, partnerships, capacity building, and implementation of effective risk reduction measures.

Scope and Authority

The geographic scope (i.e., the "planning area") for the Plan includes all incorporated and unincorporated areas of Monterey County. This includes Monterey County and the City of Carmel-by-the-Sea, City of Del Rey Oaks, City of Gonzales, City of Greenfield, City of King City, City of Marina, City of Monterey, City of Pacific Grove, City of Salinas, City of Sand City, City of Seaside, and the City of Soledad.

The Plan addresses those hazards determined to be of primary or secondary concern to each jurisdiction, as documented in the risk assessment portion of this Plan. Other hazards that pose a low risk or are otherwise omitted from this Plan will continue to be evaluated during future plan updates, but they may not be fully addressed until they are determined to be of primary or secondary concern to Monterey County. Individual entities are still able to, and are encouraged to, continue to address and plan for those other hazards as may be appropriate within their jurisdictions.

This Plan must be adopted by all participating jurisdictions in accordance with the authority and police powers granted to local governments under Article 11 of the California Constitution.

This Plan was developed in accordance with current federal rules and regulations governing local hazard mitigation plans. The Plan shall be monitored and updated on a routine basis to maintain compliance with the following legislation:

- Section 322, Mitigation Planning, of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, as enacted by Section 104 of the Disaster Mitigation Act of 2000 (Public Law 106-390) and by FEMA's Interim Final Rule published in the Federal Register on February 26, 2002, at 44 CFR Part 201.

Plan Overview

The Plan is divided into nine (9) major sections, each of which is described briefly below. The Plan also includes numerous appendices for additional items not included in the main body of the Plan, including detailed vulnerability analyses, capability assessments, and mitigation action plans for all participating jurisdictions; copies of local adoption resolutions; public participation survey results; and a completed *Local Mitigation Plan Review Tool*.

Planning Process
Section 2 describes the planning process used to update the Plan and identifies the Planning Team members, the meetings held as part of the planning process, the consultants who supported the update, and key stakeholders within the county and surrounding region. In addition, this section documents public outreach activities and the review and incorporation of relevant plans, reports, and other appropriate information.

Planning Area Profile
Section 3 provides a general history and background of Monterey County and each participating community, including historical trends for population and the demographic and economic conditions that have shaped the area. Trends in land use and development are also discussed.

Hazard Analysis
Section 4 describes the process through which the Planning Team identified and compiled relevant data on all potential hazards that threaten the county. Information collected includes historical data on hazard events that have occurred in and around the county and how these events impacted the area and people. The descriptions of hazards that could affect the county are based on historical occurrences and best available data from agencies such as FEMA, the U.S. Geological Survey (USGS), the California Geologic Survey (CGS), and the National Weather Service (NWS). Detailed hazard profiles include information on the frequency, magnitude, location, and impact of each hazard as well as probabilities for future hazard events. Map figures are included to identify known hazard areas and locations of previous hazard occurrences.

Vulnerability Analysis
Section 5 identifies potentially vulnerable assets—people, residential dwelling units, critical facilities, infrastructure and lifelines, hazardous materials facilities, and nonresidential facilities—within the entire county. This data was compiled by assessing the potential impacts from each hazard using Geographic Information System (GIS) information. Also featured as part of the vulnerability analysis and overall risk assessment is the NOAA Digital Coast platform and associated data, tools, and resources. The resulting information identifies the full range of hazards

that the county could face and potential social impacts, damages, and economic losses that could arise.

Capability Assessment
Section 6 provides a comprehensive examination of each participating jurisdiction's capacity to implement meaningful mitigation strategies and identifies existing opportunities to increase and enhance that capacity. Specific capabilities addressed in this section include planning and regulatory capability, staff and organizational (administrative) capability, technical capability, fiscal capability, and political capability. The purpose of this assessment is to identify any existing gaps, weaknesses, or conflicts in programs or activities that may hinder mitigation efforts, and to identify those activities that should be built upon in establishing a successful and sustainable community hazard mitigation program.

Mitigation Strategy
Section 7 provides a blueprint for reducing the potential losses identified in the vulnerability analysis. For the countywide mitigation strategy, the Planning Team developed a list of mitigation goals and actions based upon the *Planning Area Profile*, *Hazard Analysis, Vulnerability Analysis*, and *Capability Assessment*. Based upon this background information and other criteria, the Planning Team reviewed and prioritized a comprehensive range of appropriate mitigation actions to address the risks facing the county. Such measures include local plans and regulations, structure and infrastructure projects, natural systems protection, education and awareness programs, and other activities.

Plan Maintenance Procedures
Section 8 describes the Planning Team's formal plan maintenance process to ensure that the Plan remains an active and applicable document. The process includes monitoring, evaluating, and updating the Plan; implementation through existing planning mechanisms; integration with other planning efforts; and continued public involvement.

Appendix P
City of Pacific Grove

Table P-1
City of Pacific Grove Estimated Population and Building Inventory

Population	Residential Buildings		Nonresidential Buildings	
2000 Census Population Count*	Total Building Count	Total Value of Buildings **- (x$1000)	Total Building Count	Total Value of Buildings*** (x$1000)
15,522	5,121	900,367	490	191,208

Source: Monterey County (residential and nonresidential buildings) and U.S. Census 2000 population data.
* Population count using census blocks within the city limits.
** Tax Assessor records.
*** Tax Assessor records.

Table P-2
City of Pacific Grove Critical Facilities and Infrastructure

Category	Facility	Address	Estimated Insured Structural Value (x$1000)
Government	City Hall	300 Forest Ave.	6,659
Emergency Response	Police Department	580 Pine St.	907
	Fire Department	600 Pine Ave.	96
Care	Pacific Grove Convalescent Hospital	200 Lighthouse Ave.	802
	Del Monte Assisted Residential Care	1229 David Ave.	802
	Forest Hill Manor	551 Gibson St.	802
	Canterbury Woods	651 Sinex Ave.	802
	Gateway Center	850 Congress Ave.	802
Educational	Forest Grove Elementary School	1065 Congress Ave.	590
	Robert H. Down Elementary School	485 Pine St.	590
	Pacific Grove Middle School	835 Forest Ave.	590
	Pacific Grove High School	615 Sunset Dr.	590
	Monterey Bay Charter School	1004-B David Ave.	590
	Pacific Grove Community School	1004-A David Ave.	590
	Educational Pacific Grove Adult School*	1025 Lighthouse Ave.	590
	Peninsula Christian Preschool	520 Pine Ave.	214

Table P-2
City of Pacific Grove Critical Facilities and Infrastructure

Category	Facility	Address	Estimated Insured Structural Value (x$1000)
	St. Angela's Children Center	136 8th St.	246
Marine, Environmental, and Community	Community Shelter Pacific Grove Youth Center*	302 16th St.	590
	Community Shelter Pacific Grove Community Center*	515 Junipero Ave.	590
	Hopkins Marine Station of Stanford University	120 Ocean View Blvd.	78,269
	Pacific Fisheries Environmental Laboratory of NOAA	1352 Lighthouse Ave.	78,269
	Asilomar Conference Grounds	800 Asilomar Ave.	150,000
	Monterey Bay Aquarium	886 Cannery Row.	200,000

Source: FEMA HAZUS-MH (estimated values) and Monterey County data
* Facilities not included in vulnerability analysis (as of March 1, 2007).

Table P-3
City of Pacific Grove Potential Hazard Vulnerability Analysis – Population and Buildings

		Population	SoVI	Buildings			
				Residential		Nonresidential	
Hazard Type	**Methodology**	**Number**	**Score**	**Number**	**Value ($)[1]**	**Number**	**Value ($)[1]**
Agricultural Emergency	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Coastal Erosion	100-year erosion zone	440		238	55,023	14	25,514
Dam Failure	Inundation area	377		174	36,598	11	12,181
Earthquake	Extreme	0		0	0	0	0
	High	2,431		953	210,327	36	57,184
	Moderate	13,044		5,243	1,151,762	198	321,130
Flood	100-year flood zone	5		3	2,282	4	9,061
Hazardous Materials Event	1-mile buffer transport corridor	N/A	N/A	N/A	N/A	N/A	N/A
	1-mile buffer fixed site	N/A	N/A	N/A	N/A	N/A	N/A
Landslide	High	N/A	N/A	N/A	N/A	N/A	N/A
	Moderate	N/A	N/A	N/A	N/A	N/A	N/A
Sea Level Rise	Inundation area	16	0.33	0	0	0	0
Tsunami	Inundation area	251	0.82	56	16,509	2	15,628
Wildland Fire	Very high	116	0.64	56	26,292	2	930
	High	22	1.22	19	6,304	1	30
	Moderate	15,030	0.48	5,034	876,721	486	190,247
Windstorm	Prevailing wind zone	N/A		N/A	N/A	N/A	N/A

[1] Value = Building value based on Tax Assessor records (x1000)
N/A = Not Applicable

Table P-4
City of Pacific Grove Potential Hazard Vulnerability Analysis – Critical Facilities

		Government		Emergency Response		Lifeline Utilities		Care		Educational		Marine, Environmental, and Community		Total	
Hazard	**Methodology**	**No.**	**Value ($)[1]**	**No.**	**Value ($)[1]**	**No.**	**Value ($)[1]**	**No.**	**Value ($)[1]**	**No.**	**Value ($)[1]**	**No.**	**Value ($)[1]**	**No.**	**Value ($)[1]**
Agricultural Emergency	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Coastal Erosion	100-year erosion zone	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dam Failure	Inundation area	0	0	0	0	0	0	1	0	2	214	0	0	3	214
Earthquake	Extreme	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	High	0	0	2	1,003	0	0	5	0	8	459	1	78,269	16	79,731
	Moderate	1	6,659	0	0	0	0	0	0	0	0	1	78,269	2	84,928
Flood	100-year flood zone	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hazardous Materials Event	1-mile buffer transport corridor	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	1-mile buffer fixed site	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Landslide	High	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Moderate	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sea Level Rise	Inundation area	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tsunami	Inundation area	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Wildland Fire	Very high	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	High	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Moderate	1	6,659	2	1,003	0	0	5	0	8	459	2	156,538	18	164,659
Windstorm	Prevailing wind zone	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

[1] Value = Building value based on Tax Assessor records (x1000)
N/A = Not Applicable

Table P-5
City of Pacific Grove Potential Hazard Vulnerability Analysis – Critical Infrastructure

		Highways		Railroads		Bridges		Airports	
Hazard	**Methodology**	**Miles**	**Value ($)[1]**	**Miles**	**Value ($)[1]**	**Number**	**Value ($)[1]**	**Number**	**Value ($)[1]**
Agricultural Emergency	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Coastal Erosion	100-year erosion zone	>0.1	116	0.0	0	0	0	N/A	N/A
Dam Failure	Inundation area	0.0	0	0.0	0	0	0	N/A	N/A
Earthquake	Extreme	0.0	0	0.0	0	0	0	N/A	N/A
	High	0.2	942	0.0	0	0	0	N/A	N/A
	Moderate	3.1	16,163	0.0	0	0	0	N/A	N/A
Flood	100-year flood zone	0.0	0	0.0	0	0	0	N/A	N/A
Hazardous Materials Event	1-mile buffer transport corridor	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	1-mile buffer fixed site	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Landslide	High	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Moderate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sea Level Rise	Inundation area	0.0	0	0.0	0	0	0	0	0
Tsunami	Inundation area	0.0	0	0.0	0	0	0	0	0
Wildland Fire	Very high	0.0	0	0.0	0	0	0	0	0
	High	0.0	0	0.0	0	0	0	0	0
	Moderate	0.0	0	0.0	0	0	0	0	0
Windstorm	Prevailing wind zone	N/A	N/A	N/A	N/A	N/A	N/A	0	0

[1] Value = Estimated value (x1000)
N/A = Not Applicable

Coastal Erosion

Pacific Grove is susceptible to both dune and cliff erosion. While the average dune erosion rate is approximately 2.6 feet per year, the rocky cliffs only erode at 2-4 inches annually. Therefore, using a 100-year projection to determine areas at risk to coastal erosion, approximately 440 people, 238 residential buildings (worth $55.0 million), and 14 nonresidential buildings (worth $25.5 million) are located in this hazard area. Less than 0.1 mile of highway is located in this area.

Dam Failure

Failure of the Pacific Grove Dam poses a risk to the northeast portion of the city. Exposed within the inundation zone are 377 people, 174 residential buildings (worth $36.6 million), and 11 nonresidential buildings (worth $12.2 million).

Earthquake

There are no people, buildings, or facilities located in an extreme shaking hazard area. Approximately 15 percent of the population is exposed to a high shaking hazard area. Within this area are 2,431 people, 953 residential buildings (worth $210.3 million), 36 nonresidential buildings (worth $57.2 million), and 16 critical facilities (worth $79.7 million). There is 0.2 miles of highway exposed to high shaking.

The remaining 85 percent of the city's population is located in a moderate shaking hazard area. As such, exposed within this hazard area are 13,044 people, 5,234 residential buildings (worth $1.2 billion), 198 nonresidential buildings (worth $321.1 million), and 2 critical facilities (worth $85.0 million). There are 3.1 miles of highway exposed to moderate shaking.

Flood

Wave attack from the Pacific Ocean makes up the SFHA in Pacific Grove. Exposed within this hazard area are 5 people, 3 residential buildings (worth $2.3 million), and 4 nonresidential buildings (worth $9.1 million).

Sea Level Rise

The potential for sea level rise is present along the entire coast of Monterey County. However, less than 1 percent of the city's population (16 people) reside in this hazard zone. No buildings, critical facilities, or critical infrastructure are located in this hazard area.

Tsunami

Using the New Tsunami Inundation Map data, approximately 2 percent of Pacific Grove's population is vulnerable to this hazard. This includes 251 people, 56 residential buildings (worth $16.5 million), 2 nonresidential buildings (worth $15.6 million), and 0 critical facilities.

Wildland Fire

Using the California FRAP model, nearly 97 percent of the city's population is located in a moderate wildland fire hazard area. Within the area of moderate exposure are 15,030 people, 5,034 residential buildings (worth $876.7 million), 486 nonresidential buildings (worth $190.2 million), and 18 critical facilities (worth $164.7 million).

The remaining three percent of the population, which includes 138 residents, 75 residential structures, 3 nonresidential buildings, and 0 critical facilities are located in the high and very high wildland fire hazard areas.

Table P-6
City of Pacific Grove Legal and Regulatory Resources Available for Hazard Mitigation

Regulatory Tool	Chapter or Section	Effect on Hazard Mitigation
Plans and Ordinances	1994 Pacific Grove General Plan Health and Safety Chapter	Establishes policies that will minimize the potential of human injury and property damage to the following natural hazards: seismic and geologic hazards, erosion, wildland and urban fires, and flooding.
	1989 Local Coastal Program Land Use Plan	A separate document, but an element of the General Plan. Describes the kinds, location, and intensity of land use and applicable resource protection and development policies within the Coastal Zone
	Hazard Mitigation Plan	Presently covered under countywide multi-jurisdictional plan. Plan is currently being updated and is anticipated to be completed and re-adopted in late 2014.
	2010 Emergency Operations Plan	Updated in 2012. Establishes organizational and policy guidance for use during an emergency or disaster based on contemporary standards and serves as an operational reference3 for training and indoctrination of City employees. Additionally, the plan contains germane emergency reference material.
	Historic Preservation Ordinance	Currently under development. A section of the Municipal Code to protect, enhance, and perpetuate structures and neighborhoods of historical and architectural significance throughout the City.
	Historic Context Statement	An overview of Pacific Grove's history with a specific emphasis on describing the historic themes and patterns that contributed to Pacific Grove's development.
	Community Floodplain Management Ordinance	A section of the Municipal Code (§ 11.97) to promote the public health, safety and general welfare uniformly throughout the community and to minimize public and private losses due to flood conditions in specific areas.
	Housing Element	Adopted in 2011. An element of the General Plan to address housing needs and demands and implement land use plans and regulatory systems to provide opportunities for housing development.
	Zoning Ordinance	Title 23 of the City of Pacific Grove Municipal Code.
Programs	National Flood Insurance Program (NFIP)	Makes affordable flood insurance available to homeowners, business owners, and renters in participating communities. In exchange, those communities must adopt and enforce minimum floodplain management regulations to reduce the risk of damage from future floods.
	Monterey Regional Storm Water Management Program	Reduce pollution from storm water discharge and runoff with regard to the EPA's Phase II Storm Water National Pollutant Discharge Elimination System requirements. It is a collective effort and implementation of area-wide activities designed to benefit all participating entities.

Table P-6
City of Pacific Grove Legal and Regulatory Resources Available for Hazard Mitigation

Regulatory Tool	Chapter or Section		Effect on Hazard Mitigation
	Seismic Hazards Identification Program		Promotes public safety by identifying those buildings in Pacific Grove which exhibit structural deficiencies and by accurately determining the severity and extent of those deficiencies in relation to their potential for causing loss of life or injury.
	Local Coastal Program		Establishes the kinds, location, and intensity of land use and applicable resource protection and development policies within the Coastal Zone.
Policies (Municipal Code)	Title 11 Health, Safety and Environment	Chapter 11.97 Community Floodplain	Specifies areas of special flood hazard as delineated by FEMA, properties within such areas shall be subject to the development permit requirements.
	Title 12 Trees and Vegetation	Chapter 12.12 Weed and Rubbish Abatement	Permits the City to regulate weeds on private property which may attain such large growth as to become, when dry, a fire menace to adjacent improved property.
	Title 18 Buildings and Construction	Chapter 18.04 Building Codes	Adopts the Uniform Building Code, 1997 Edition, including requirements in Seismic Zones 3 and 4.
		Chapter 18.32 Fire Prevention	Adopts the Uniform Fire Code, 1997 Edition.
		Chapter 18.40 Seismic Hazards Identification Program	Promotes public safety by identifying those buildings in Pacific Grove which exhibit structural deficiencies and by accurately determining the severity and extent of those deficiencies in relation to their potential for causing loss of life or injury.

Table P-7
City of Pacific Grove Administrative and Technical Resources for Hazard Mitigation

Staff/Personnel Resources	Department/Division Position
Planner(s) or engineer(s) with knowledge of land development and land management practices	Community and Economic Development
Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure	Community and Economic Development/Public Works
Planner(s) or engineer(s) with an understanding of manmade or natural hazards	Community and Economic Development/Public Works
Building inspector	Community and Economic Development
Resource development staff or grant writers	Community and Economic Development/Public Works
Public information officer(s)	City Attorney
Staff with education or expertise to assess the community's vulnerability to hazards	Community and Economic Development/Public Works
Personnel skilled in GIS and/or HAZUS-MH	Community and Economic Development
Maintenance programs to reduce risk	Fire/Public Works
Warning systems/services	Police/Fire/Public Works
Mutual Aid Agreements	Police/Fire/Public Works

Table P-8
City of Pacific Grove Financial Resources for Hazard Mitigation

Financial Resources	Effect on Hazard Mitigation
General funds	If funding is available, can be used for hazard mitigation activities.
Capital improvements project funding	Capital improvements resources can be used to upgrade, restore, and retrofit existing and new structures.
Water/sewer fees	Water and Sewer fees allow for a fund to update the underground services throughout the city.
Authority to levy taxes for specific purposes	Can be used for any hazard mitigation activity with voter approval.
Incur debt through general obligation bonds	Revenue Bonds can be issued through the City with voter approval.
Incur debt through special tax and revenue bonds	Can be used for any hazard mitigation activity without voter approval.
FEMA HMGP and PDM grants	HMGP grant funding is available to local communities after a Presidentially-declared disaster. It can be used to fund both pre- and post-disaster mitigation plans and projects. PDM funding is available on an annual basis. This grant can only be used to fund pre-disaster mitigation plans and projects only.
Community Development Block Grants (CDBG)	The Community Development Block Grant (CDBG) program is a flexible program that provides communities with resources to address a wide range of unique community development needs.
United States Fire Administration (USFA) Grants	The purpose of these grants is to assist state, regional, national, or local organizations to address fire prevention and safety. The primary goal is to reach high-risk target groups including children, seniors, and firefighters.

Table P-9
City of Pacific Grove Education and Outreach Resources for Hazard Mitigation

Education and Outreach Resources	Effect on Hazard Mitigation
Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access and functional needs populations, etc.	Includes CERT program through Monterey Fire; Sustainable Pacific Grove.
Ongoing public education or information program (e.g., responsible water use, fire safety, household preparedness, environmental education)	In partnership with other local agencies (e.g., Monterey Peninsula Water Management District, Monterey Regional Water Pollution Control Agency).

Problem Statements are statements of particular interest with regard to primary hazards of concern, geographic areas of concern, or vulnerable community assets. These statements were primarily derived from local community site visits and discussion with local staff and officials from each community during Individual Jurisdiction Meetings, in combination with a review of the Safety Elements of local General Plans and GIS analysis using best available data in support of updates to the vulnerability analysis for each jurisdiction. They were developed to assist in the identification and analysis of potential hazard mitigation actions for the City of Pacific Grove.

- Ocean View Boulevard and Sunset Drive are considered at long-term risk to wave attack, coastal flooding, erosion and scouring (particularly on the north end of peninsula), but fortunately few structures are located on the seaward side of the roadways. Two single-family residences, two restaurants, one recreational swimming pool, and two environmental institutions (Hopkins Marine Station and the Monterey Bay Aquarium) are located on the seaward side of Ocean View Boulevard. The city's priorities are for roadway improvements and protection of vital transportation infrastructure from future coastal events.

- The city is concerned with limited ingress/egress to the community following major disaster events, and continues to review and update designated evacuation routes through its emergency operations plan (currently being updated). A related concern is the narrow design of many city streets, which will make mobility and evacuation difficult during major events.

- The city experiences minor localized flooding following major rainfall events, all caused by either inadequate or clogged drainage facilities, but no structures have been damaged. The city is currently encouraging on-site storm water retention through various different means.

- City planning staff believes that the wildland fire hazard area for their jurisdiction is more expansive than previously mapped through FRAS and shown in the current plan. There are lots of dead or dying trees in the heavily forested "Retreat" area which leads to higher risks, especially when combined with the fact that most surrounding residential construction is wood frame with Class C roofs (more combustible/ flammable).

- The public water supply is deemed a critical local issue for the city (and entire peninsula), particularly with regard to the supply available during future major fires. The city has seen hydrant pressure drops during past events.

- The Monterey Interceptor pipeline, which transports all of the untreated sewage from the City of Monterey and Pacific Grove to the MRWPCA Regional Treatment Plant in Marina, is a critical facility deemed at risk to the long-term effects of coastal erosion and sea level rise, particularly between the Seaside Pump Station and Monterey Beach Resort.

- Widespread power outages are a concern for the city following major winter storms, mostly which are caused by downed trees.

Table P-10
City of Pacific Grove Mitigation Action Plan Matrix

Action Number	Description	Ranking / Prioritization	Administering Department	Potential Funding	Timeframe	Benefit-Costs	Status	Narrative Update/Explanation
1	Develop a sustained public outreach program that encourages consistent hazard mitigation content and improves public awareness and knowledge regarding all types of hazards, preparedness and mitigation measures. For example, consider publishing interactive information on the city website on topics such as tsunami inundation zones, wildland fire defensible spaces, and safe handling/disposal of hazardous waste and chemicals.	Priority / High	Disaster Planning, Community Development	General Funds, HMGP, and PDM Grants	1-2 years	A mitigation outreach program will help build and support local capacity to enable the public to prepare for, respond to, and recover from disasters.	In progress	The public outreach program is an ongoing program that the city will continue to pursue. The City currently keeps an updated webpage providing information to members of the public, as well as providing information through other outlets such as providing fliers in the City Hall and publishing on social media sites.
2	Develop audience-specific hazard mitigation outreach efforts. Audiences include the elderly, children, tourists, non-English speaking residents, and home and business owners.	Priority / High	Fire / CERT	HMPG and PDM Grants	1-2 years	A mitigation outreach program will help build and support local capacity to enable the public to prepare for, respond to, and recover from disasters.	In progress	In conjunction with Action Item 1, the City continues to provide outreach through various different mediums. Signs throughout the city provide photos and information about the potential of specific hazards.
3	Develop an unreinforced masonry grant program that	Priority / High	Community Development	General Funds,	5 years	The identification and mitigation of	Deferred	The City has ensured proper training on

Table P-10
City of Pacific Grove Mitigation Action Plan Matrix

Action Number	Description	Ranking / Prioritization	Administering Department	Potential Funding	Timeframe	Benefit-Costs	Status	Narrative Update/Explanation
	helps correct earthquake-risk nonmasonry building problems, including chimney bracing and anchoring water heaters. Additionally, ensure proper training on seismic codes for all buildings inspectors and encourage measures to reduce earthquake damage risk.			HMGP, and PDM Grants		unreinforced nonmasonry buildings, as well as the education of pertinent staff members, will reduce potential losses due to earthquakes.		seismic codes for all building inspectors and encourages measures to reduce earthquake damage risk.
4	Participate in the NOAA TsunamiReady Program. This new program, sponsored by the National Weather Service, is designed to provide communities with incentives to reduce their tsunami risks.	Priority / High	Disaster Planning	General Funds	1-2 years	This effort is both a mitigation outreach effort and an emergency preparedness effort. This action will help reduce the possibility of future damage and losses by educating the public about local tsunami inundation areas. In addition, it will also educate the public on where and how to evacuate, if necessary.	In progress	The City is currently participating in the Tsunami Ready Program. Multiple "Tsunami Warning" signs are posted throughout the city and staff is familiar with the tsunami inundation zone.
5	Continue to conduct current fuel management programs and investigate and apply new and emerging fuel management techniques.	Priority / High	Fire Prevention	General Funds	Ongoing	The probability of future damage from wildland fires could be high if this mitigation action is not	Deleted	

Table P-10
City of Pacific Grove Mitigation Action Plan Matrix

Action Number	Description	Ranking / Prioritization	Administering Department	Potential Funding	Timeframe	Benefit-Costs	Status	Narrative Update/Explanation
						implemented.		
6	Develop and provide funding and/or incentives for defensible space measures (e.g., free chipping day, free collection day for tree limbs).	Priority / High	Fire Prevention / Public Works	General Funds, HMGP, and PDM Grants	Ongoing	The potential cost of this mitigation action seems reasonable for the size of the problem and its likely benefits.	Deleted	
7	Use GIS to regularly calculate and document vulnerable areas such as: flood-prone areas, sea level rise, tsunami inundation zones, coastal erosion zones, wildland fire areas, and areas affected by dam failure. Additionally, this information shall be used to create an inventory of especially vulnerable zones, buildings, properties, and infrastructure.	Moderate	Public Works, Community and Economic Development	General Funds	2 years	The minimal costs of GIS services will allow for a large benefit and service for both emergency planning and post-emergency reconstruction. The benefit of having this information saved in the City's server will greatly affect post-hazard reconstruction.	In Progress	The City currently contracts GIS services and will continue to add to the inventory of maps saved on the City's server.
8	Adopt a Local Coastal Plan with the implementation of dune protection, stabilization, and nourishment to provide floodplain protection in the coastal areas. Additionally, wildlife safety should be linked with other environmental strategies	High	Community and Economic Development	California Coastal Commis-sion Grants	1-2 years	A certified Local Coastal Plan Land Use Plan will allow the City to protect, stabilize, and nourish the areas around the coast, as well as implement hazard mitigation. The areas around the coast are	In progress	The City is currently in the process of rewriting the LCP with the implementation of hazard mitigation elements throughout the Coastal Zone. The LCP is scheduled to be completed by the

Table P-10
City of Pacific Grove Mitigation Action Plan Matrix

Action Number	Description	Ranking / Prioritization	Administering Department	Potential Funding	Timeframe	Benefit-Costs	Status	Narrative Update/Explanation
	throughout the Local Coastal Plan.					subject to various different hazards and require specific protection against disasters.		end of 2015.
9	Establish watershed-based planning to address flood hazards, sea level rise potentials and stormwater runoff problems and encourage techniques to reduces rainwater runoff, which can prevent flooding and erosion. Specifically, encourage major land alteration projects to include the use of pervious surfaces and rainwater collection technology.	High	Community and Economic Development	Grant Money, General Funds	1-2 years	A majority of Pacific Grove is located within an Area of Special Biological Significance Watershed zone. Incorporating watershed measures will not only protect the marine sanctuary, but it will also encourage the alleviation of flood hazards, sea level rise potentials, and stormwater runoff issues.	In progress	The City has recently received grant money to fund watershed flaws throughout the city and the City is in the process of implementing this.