



## Executive Summary

The purpose of hazard mitigation is to reduce or eliminate long-term risk to people and property from hazards. The City of Petaluma developed this Local Hazard Mitigation Plan (LHMP) update to make the City and its residents less vulnerable and more resilient to future hazard events. This plan was prepared pursuant to the requirements of the Disaster Mitigation Act of 2000 so that Petaluma would be eligible for the Federal Emergency Management Agency's (FEMA) Pre-Disaster Mitigation and Hazard Mitigation Grant programs.

The City followed a planning process prescribed by FEMA, which began with the formation of a hazard mitigation planning committee (HMPC) comprised of key City representatives, and other regional stakeholders. The HMPC conducted a risk assessment that identified and profiled hazards that pose a risk to the City of Petaluma, assessed the City's vulnerability to these hazards, and examined the capabilities in place to mitigate them. The City is vulnerable to several hazards that are identified, profiled, and analyzed in this plan. Floods, wildfires, severe weather, and earthquake hazards are among the hazards that can have a significant impact on the City.

Based on the risk assessment review and goal setting process, the HMPC identified the following four goals, which provide the direction for reducing future hazard-related losses within the City of Petaluma Planning Area:

- **Goal 1:** Minimize loss of life and property damage and protect people and property from hazards
- **Goal 2:** Preserve and protect Petaluma's environment as an efficient resources to build;
  - community resilience against natural hazards;
- **Goal 3:** Educate and build community awareness on natural hazard risks and the importance of resiliency and emergency preparedness;
- **Goal 4:** Enhance City staff coordination, training, and response during disasters and ensure City facilities and infrastructure are operational and provide safe places for the community to shelter during hazard events; and
- **Goal 5:** Implement the LHMP as an integrated planning mechanism to prepare the City for natural and human-caused hazards.

To meet identified goals, the plan recommends 34 mitigation actions, which are summarized in the table that follows. This plan has been formally adopted by the City and will be updated every five years at a minimum.





**Table ES.1: Mitigation Action Summary Table**

Mitigation Action Title	Priority	Addresses Current Development	Addresses Future Development
<b>Dam Incidents</b>			
Assess downstream impacts associated with dam incidents	Low	X	X
<b>Drought</b>			
Groundwater supply augmentation for drought resiliency	Medium	X	X
Sustainable Groundwater Management Planning	Low	X	X
<b>Cyber Threats</b>			
Develop a Water Infrastructure Vulnerability Risk and Resilience Plan and Emergency Response Plan that addresses cyber sufficiency	Low	X	X
<b>Earthquake</b>			
Implement Seismic Retrofits at Petaluma Historic Library and Museum	Medium	X	
Seismic Retrofit Analysis of City buildings	High	X	
<b>Flooding</b>			
Enhance structural flood mitigation projects to reduce near annual floods on north end of City	Medium	X	X
Floodplain property protection, acquisition, and relocation	Low	X	
Continue annual stream and creek channel maintenance	Low	X	X
Higher Regulatory Standards for Flood Protection	Medium	X	X
Improve National Flood Insurance Program Community Rating System Class Rating	Medium	X	X
<b>Hazardous Material Releases</b>			
Evacuation Planning	High	X	X
<b>Sea Level Rise</b>			
Explore natural protection with wetland enhancement, marshland protection, and restoration project implementation in the Petaluma River and San Pablo Bay transition zone	Low	X	X
Continue Petaluma River Dredging Program to enhance flood resiliency	Medium	X	X
Open space preservation in areas prone to sea level rise along the Petaluma River	Medium	X	X





Mitigation Action Title	Priority	Addresses Current Development	Addresses Future Development
Map and assess vulnerability to sea level rise and integrate the information with the City GIS mapping capabilities to educate the community and help them gain awareness of the potential impacts and actions the City is taking to plan and adapt	Medium	X	X
Assess sea level rise modelling for use in the LHMP and how those projections can be routinely re-evaluated in subsequent climate adaptation planning efforts	Low	X	X
Update City Implementing Zoning Ordinance (IZO) to manage development in high risk areas	Low	X	X
<b>Severe Weather: Heavy Rains/Thunderstorms/Hail/Lightning/Dense Fog</b>			
Replace aging generator and plan for severe weather by obtaining backup generators at City critical facilities, including the Communications Center	Medium	X	
<b>Severe Weather: Extreme Heat</b>			
Establish cooling centers at City Community Center to be used during severe weather events involving heat waves	Low	X	X
<b>Severe Weather: High Wind</b>			
Enhance local building code to incorporate wind-resistant design features that address high wind hazards	Low	X	X
Develop a PSPS toolkit for local businesses	Low	X	X
<b>Wildfire</b>			
Defensible space funding program	Medium	X	X
Develop a City-wide Fire Suppression Master Plan	Medium	X	X
Evaluate the WUI Zone in the City Limits	Medium	X	X
Install Fire Protection System in all City facilities	Medium	X	
Wildland Urban Interface Pre-Fire Plan	Low	X	X
<b>Multi-Hazard</b>			
Evacuation Alert and Warning System and Periodic Testing	High	X	X
Periodically assess the need for new or relocated fire or police stations and other emergency facilities, changes in staffing levels, and need for supplies, equipment, technologies, and in-service training classes	Low	X	
Develop and maintain a system of interoperable communications for first responders from local, state, and federal agencies	High	X	X





<b>Mitigation Action Title</b>	<b>Priority</b>	<b>Addresses Current Development</b>	<b>Addresses Future Development</b>
Update the City Emergency Operations Plan	High	X	X
Emergency Operations Center replacement and upgrades	Low	X	X
Expand Community Emergency Pre Program	Low	X	X
Community Emergency Preparedness Webpage	Low	X	X





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## Appendices

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Appendix A: Planning Process

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Appendix D: Adoption Resolution





## Acronyms

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ABAG	Association of Bay Area Governments
APG	Adaptation Planning Guide
ASCE	American Society of Civil Engineers
AWIA	America Water Infrastructure Act
BAAQMD	Bay Area Air Quality Management District
BCM	Basin Characterization Model
BFE	Base Flood Elevation
CalARP	California Accidental Release Prevention Program
Cal FIRE	California Department of Forestry and Fire Protection
Cal OES	California Office of Emergency Services
CBC	California Building Code
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CDPH	California Department of Public Health
CEQA	California Environmental Quality Act
CERT	Community Emergency Response Team
CIS	Community Information System
COPE	Citizens Organized to Prepare for Emergencies
CoSMoS	Coastal Storm Modelling System
CRHR	California Registry of Historic Resources
CUPA	Certified Unified Program Agency
CWD	Climate Water Deficit
CWPP	Community Wildfire Protection Plan
DHS	Department of Health Services
DOF	Department of Finance
DOT	Department of Transportation
DTSC	Department of Toxic Substances Control
DWR	Department of Water Resources
EAP	Emergency Action Plan
EIR	Environmental Impact Report
EOC	Emergency Operations Center





EOP	Emergency Operations Plan
ERP	Emergency Response Plan
FEMA	Federal Emergency Management Agency
FHSZ	Fire Hazard Severity Zone
FIRM	Flood Insurance Rate Map
FIS	Flood Insurance Study
FMP	Floodplain Management Plan
FRAP	Fire and Resource Assessment Program
GCM	Global Climate Model
GIS	Geographic Information Systems
GSA	Groundwater Sustainability Agency
GSP	Groundwater Sustainability Plan
HMBP	Hazardous Materials Business Plan
HMPC	Hazard Mitigation Planning Committee
HSC	Health and Safety Code
IBC	International Building Council
ICC	International Code Council
IPCC	Intergovernmental Panel on Climate Change
IVT	Integrated Water Vapor Transport
IZO	Implementing Zoning Ordinance
LAL	Lightning Activity Level
LHMP	Local Hazard Mitigation Plan
LOMA	Letter of Map Amendment
LOMR	Letter of Map Revision
LRA	Local Responsibility Area
MDD	Maximum Daily Demand
NBRP	North Bay Reuse Program
NEPA	National Environmental Policy Act
NFIP	National Flood Insurance Program
NFHL	National Flood Hazard Layer
NOAA	National Oceanic Atmospheric Association
NPMS	National Pipeline Mapping System





NRC	National Response Center
NRHP	National Registry of Historic Places
NWS	National Weather Service
OPC	Ocean Protection Council
OSHA	Occupational Safety and Health Administration
PG&E	Pacific Gas and Electric
PRC	Public Resources Code
PSPS	Public Safety Power Shutoff
RCPA	Regional Climate Protection Authority
RCRA	Resource Conservation and Recovery Act
RGMS	Residential Growth Management System
RMP	Risk Management Plan
RTK NET	Right-to-Know Network
SBA	Small Business Administration
SCAPOSD	Sonoma County Agricultural Preservation and Open Space District
SFHA	Special Flood Hazard Area
SGMA	Sustainable Groundwater Management Agency
SHMP	State Hazard Mitigation Plan
SLR	Sea Level Rise
SRA	State Responsibility Area
STAPLEE	Social, Technical, Administrative, Political, Legal, Economic, Environmental
UGB	Urban Growth Boundary
URM	Unreinforced Masonry
USDA	U.S. Department of Agriculture
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UWMP	Urban Water Management Plan
WERC	Western Ecological Research Center
WRCC	Western Regional Climate Center
WRFPP	Water Recycling Funding Program
WSCP	Water Shortage Contingency Plan





WUI

Wildland Urban Interface







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