

## **EXECUTIVE SUMMARY**



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The Disaster Mitigation Act (DMA) is federal legislation that requires proactive, pre-disaster planning as a prerequisite for some funding available under the Robert T. Stafford Act. The DMA encourages state and local authorities to work together on pre-disaster planning. The enhanced planning network called for by the DMA helps local governments' articulate accurate needs for mitigation, resulting in faster allocation of funding and more cost-effective risk reduction projects.

Hazard mitigation is the use of long- and short-term strategies to reduce or alleviate the loss of life, personal injury, and property damage that can result from a disaster. It involves strategies such as planning, policy changes, programs, projects, and other activities that can mitigate the impacts of hazards. It is impossible to predict exactly when and where disasters will occur or the extent to which they will impact an area, but with careful planning and collaboration among public agencies, stakeholders and citizens, it is possible to minimize losses that disasters can cause. The responsibility for hazard mitigation lies with many, including private property owners; business and industry; and local, state and federal government.

Humboldt County and a partnership of local governments within the County have developed and maintained a hazard mitigation plan to reduce risks from natural disasters and to comply with the DMA. This plan will act, and has acted, as the key to funding under FEMA hazard mitigation grant programs.

## PLAN UPDATE

Federal regulations require monitoring, evaluation and updating of hazard mitigation plans. An update provides an opportunity to reevaluate recommendations, monitor the impacts of actions that have been accomplished, and determine if there is a need to change the focus of mitigation strategies. A jurisdiction covered by a plan that has expired is no longer in compliance with the DMA.

The initial Humboldt County Operational Area Hazard Mitigation Plan was approved by the Federal Emergency Management Agency (FEMA) on January 25, 2008. Since then, the partnership has completed or initiated ongoing action on over 68 percent of the 272 initiatives identified in the initial plan. A comprehensive progress report of the initial plan was prepared as part of the update effort and is included in appendix D of volume 1 of this plan. Highlights of the mitigation success stories from the initial plan include the following:

- Increased participation in the National Fire Protection Association's Firewise program. Six communities in Humboldt County have successfully achieved and maintained Firewise recognition: Bridgeville, Honeydew, Orleans, Petrolia, Upper Jacoby Creek, and Willow Creek.
- Humboldt County has received \$495,000 in grant funds from the U.S. Forest Service to support the Fire-Adapted Landscapes and Safe Homes (FLASH) program. The program encourages property owners to mitigate wildfire hazards through vegetation management by awarding a rebate for the creation of defensible space around homes and strategic fuel breaks along escape routes and high-risk areas.
- The continuation of on-going earthquake and tsunami hazard mitigation programs through The Redwood Coast Tsunami Work Group (RCTWG).
- In response to significant earthquake hazards, many jurisdictions in Humboldt County have taken action in the past five years to mitigate their risk of damage. Ten jurisdictions have

taken steps toward seismic retrofitting critical facilities, such as water storage areas, fire stations, emergency operation centers, and wastewater treatment facilities.

- A Type 2 urban search and rescue (USAR) team has been established within the Humboldt Operational Area after years of planning, supported by significant training efforts, grant funding, and the placement locally of a California Emergency Management Agency (CalEMA) medium-cache USAR trailer. This is an important capacity for this earthquake-prone area that has the potential for being cut off from larger population centers after a large event. Citizens will need to depend on their own resources, and post-earthquake search and rescue in urban areas will be very important.
- The Humboldt Bay Municipal Water District (HBMWD) was successful in obtaining one Hazard Mitigation Grant and is in the process of finalizing the National Environmental Protection Act analysis for a second Hazard Mitigation Grant. Funding in the amount of \$2.85 million was obtained to replace approximately 10,000 feet of HBMWD’s 18-inch Techite pipeline from the Terminal Reservoir on Samoa to the Humboldt Bay Crossing, just before the pipe goes under the bay to the Humboldt Community Services District’s (HCSD) Truesdale Pump Station.
- The City of Fortuna is in the process of finalizing paperwork for a \$453,000 Hazard Mitigation Grant for the City’s Wastewater Treatment Plant Flood Protection Project.
- Humboldt County completed a streambank stabilization project in 2008 along the right bank of the lower Mad River west of McKinleyville with funding from the USDA Natural Resources Conservation Service, the Governor’s Office of Emergency Services, and adjacent landowners.
- Humboldt County completed a bluff stabilization project in 2012 near the end of one of the primary runways at the Arcata-Eureka Airport to remediate cumulative losses of the runway safety area due to erosion and landsliding. Work included mechanically stabilized earth walls up to 70 feet high.

Updating the plan consisted of the following phases:

- **Phase 1, Organize and Review**—A planning team was assembled to provide technical support for the plan update, consisting of key County staff from the Department of Public Works and a technical consultant. The first step in developing the plan update was to re-organize the planning partnership. The initial planning effort covered 26 local governments. This partnership was increased to 34 for the update as shown in Tables ES-1 and ES-2.

A 14-member steering committee was assembled to oversee plan update, consisting of planning partner staff, citizens, and other stakeholders in the planning area. Coordination with other county, state and federal agencies involved in hazard mitigation occurred throughout the plan update process. This phase included a comprehensive review of the existing plan, the California State Hazard Mitigation Plan, and existing programs that may support or enhance hazard mitigation actions.

<b>TABLE ES-1. MUNICIPAL PLANNING PARTNERS</b>			
Humboldt County	Arcata	Blue Lake	Eureka
Ferndale	Fortuna	Rio Del	Trinidad

**TABLE ES-2.  
SPECIAL-PURPOSE DISTRICT PARTNERS**

Humboldt Community Service District	Manila Community Service District
McKinleyville Community Service District	Orick Community Service District
Redway Community Service District	Weott Community Service District
Westhaven Community Service District	Willow Creek Community Service District
Arcata Fire Protection District	Briceland Fire Protection District
Fortuna Fire Protection District	Humboldt Fire Protection District No. 1
Loleta Fire Protection District	Petrolia Fire Protection District
Rio Dell Fire Protection District	Samoa Peninsula Fire Protection District
Willow Creek Fire Protection District	County Service Area #4
Garberville Sanitary District	Humboldt Bay Municipal Water District
Reclamation District #768	Shelter Cove Resort Improvement District No. 1
Humboldt Bay Harbor, Recreation and Conservation District	Southern Humboldt Community Healthcare District

- **Phase 2, Update the Risk Assessment**—Risk assessment is the process of measuring the potential loss of life, personal injury, economic injury, and property damage resulting from natural hazards. This process assesses the vulnerability of people, buildings and infrastructure to natural hazards. All facets of the risk assessment of the plan were re-visited by the planning team and updated with the best available data and technology. The work included the following:
  - Hazard identification and profiling
  - Assessment of the impact of hazards on physical, social and economic assets
  - Vulnerability identification
  - Estimates of the cost of potential damage.

Risk assessment models devolved from the initial planning effort were enhanced with new data and technologies that have become available since 2008. There were some limitations in the modeling due to the lack of data. The need to address these data gaps was identified in some of the mitigation initiatives presented in this plan. The results of the risk assessment were used by the planning partnership to rank risk and to gauge the potential impacts of each hazard of concern on their jurisdiction.

- **Phase 3, Engage the Public**—A public involvement strategy developed by the Steering Committee was implemented by the planning team. It included public meetings to present the risk assessment as well as the draft plan, distribution of a hazard mitigation survey, a County-sponsored website for the plan update, and multiple media releases.
- **Phase 4, Assemble the Updated Plan**—The planning team and Steering Committee assembled key information into a document to meet the DMA requirements for all planning partners. The updated plan contains two volumes. Volume 1 contains components that apply to all partners and the broader planning area. Volume 2 contains all components that are jurisdiction-specific. Each planning partner has a dedicated chapter in Volume 2.

- Phase 5, Plan Adoption/Implementation**—Once pre-adoption approval has been granted by CalEMA and FEMA Region IX, the final adoption phase will begin. Each planning partner will individually adopt the updated plan. The plan maintenance process includes a schedule for monitoring and evaluating the plan’s progress periodically and producing a plan revision every 5 years. This plan maintenance strategy also includes processes for continuing public involvement and integration with other programs that can support or enhance hazard mitigation.

## RISK ASSESSMENT RESULTS

Based on the results of the risk assessment, hazards were ranked as follows for the risk they pose to the overall Humboldt Operational Area (1 represents the greatest risk and 8 the lowest):

- |                   |                 |
|-------------------|-----------------|
| 1. Earthquake     | 5. Landslide    |
| 2. Severe weather | 6. Drought      |
| 3. Flood          | 7. Tsunami      |
| 4. Wildfire       | 8. Dam failure. |

Each participating jurisdiction also ranked risks associated with natural hazards within its boundaries. Table ES-3 summarizes how many participating jurisdictions assigned each risk ranking (1 through 9, for highest risk to lowest risk) to each evaluated hazard of concern.

<b>TABLE ES-3. SUMMARY OF HAZARD RANKING RESULTS</b>										
	Number of Jurisdictions Assigning Ranking to Hazard									
	No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8	No. 9	Not Ranked
Dam Failure	0	0	1	0	4	4	7	10	1	4
Drought	0	0	2	5	1	12	6	5	0	0
Earthquake	24	7	0	0	0	0	0	0	0	0
Flood	0	7	13	4	4	0	0	3	0	0
Landslide	0	0	1	6	12	4	6	2	0	0
Severe Weather	3	15	7	6	0	0	0	0	0	0
Tsunami	2	0	5	3	3	4	3	4	6	1
Wildland Fire	2	2	2	7	7	6	4	1	0	0

The summary of risk ranking results indicates the following general patterns:

- Earthquake, severe weather and flood generally received the highest risk rankings.
- Tsunami and wildfire tended to receive high or low rankings based on the geographic location of each jurisdiction. Tsunami was ranked as a higher risk for coastal communities; wildfire was ranked higher for warmer, drier inland jurisdictions.
- Dam failure, drought and landslide generally were ranked lower than other hazards.

## **MITIGATION GUIDING PRINCIPLE, GOALS AND OBJECTIVES**

The following principle guided the Steering Committee and the planning partnership in selecting the initiatives contained in this plan update:

“Through partnerships and careful planning, identify and reduce the vulnerability to hazards in order to protect the health, safety, quality of life, environment, and economy of the communities within the Humboldt Operational Area.”

The Steering Committee and the planning partnership established the following goals for the plan update:

1. Protect Health and Safety
2. Protect Property
3. Protect the Economy
4. Protect Quality of Life
5. Protect Environment
6. Promote Partnerships in Planning

The following objectives were identified that meet multiple goals, acting as a bridge between the mitigation goals and actions and helping to establish priorities:

1. Eliminate or minimize disruption of local government operations caused by hazards.
2. Increase resilience of (or protect and maintain) infrastructure and critical facilities.
3. Reduce hazard-related risks and vulnerability of the populations in Humboldt County.
4. Sustain reliable local emergency operations and facilities during and after a disaster.
5. Seek to enhance emergency response capabilities within the planning area.
6. Enhance understanding of hazards and the risk they pose through public education that emphasizes awareness, preparation, mitigation, response and recovery alternatives.
7. Continually improve understanding of the location and potential impacts of hazards that impact the planning area utilizing the best available data and science as it becomes available, and share this information with all stakeholders.
8. Establish a partnership among all levels of government and the business community to improve and implement methods to protect property.
9. Develop and implement hazard mitigation strategies that reduce losses to wildlife habitat and protect water supply and quality, while also reducing damage to development.
10. Integrate hazard identification information and mitigation policies into other planning-based processes that direct or impact land uses in the planning area.
11. Enhance building codes and their proper implementations so that new construction can withstand the impacts of hazards and lessen the impact of that development on the environment’s ability to absorb the impact of hazards.
12. Seek to integrate and coordinate all phases of emergency management within the planning area.

## **MITIGATION INITIATIVES**

Mitigation initiatives presented in this update are activities designed to reduce or eliminate losses resulting from natural hazards. The update process resulted in the identification 380 mitigation initiatives for implementation by individual planning partners, as presented in Volume 2 of this plan. In addition, the steering committee and planning partnership identified countywide initiatives benefiting the whole partnership, as listed in Table ES-4.

## **IMPLEMENTATION**

Full implementation of the recommendations of this plan will require time and resources. The measure of the plan's success will be its ability to adapt to the changing climate of planet earth as well as the field of hazard mitigation. Funding resources are always evolving, as are state and federal mandates. Humboldt County and its planning partners will assume responsibility for adopting the recommendations of this plan and committing resources toward implementation. The framework established by this plan commits all planning partners to pursue initiatives when the benefits of a project exceed its costs. The planning partnership developed this plan with extensive public input, and public support of the actions identified in this plan will help ensure the plan's success.

**TABLE ES-4.  
ACTION PLAN—COUNTYWIDE MITIGATION INITIATIVES**

Hazards Addressed	Lead Agency	Possible Funding Sources or Resources	Time Line <sup>a</sup>	Objectives
<b>CW-1</b> —Continue to participate in the planning partnership and, to the extent possible based on available resources, provide coordination and technical assistance in applications for grant funding that include assistance in cost vs. benefit analysis.				
All Hazards	Planning Partners	Grant Funding	Short term, Ongoing	6, 8, 12
<b>CW-2</b> —Encourage the development and implementation of an operational area-wide hazard mitigation public-information strategy that meets the needs of all planning partners.				
All Hazards	Humboldt County, Planning Partners	Cost sharing from the Partnership General fund allocations Cost sharing with stakeholders	Short term, Ongoing	6, 7, 8, 12
<b>CW-3</b> —Coordinate updates to land use and building regulations as they pertain to reducing the impacts of natural hazards, to seek a regulatory cohesiveness within the planning area. This can be accomplished via a commitment from all planning partners to involve each other in their adoption processes, by seeking input and comment during the course of regulatory updates or general planning.				
All Hazards	Governing body of each eligible planning partner.	General funds	Short term, Ongoing	1, 3, 11, 12
<b>CW-4</b> —Sponsor and maintain a natural hazards informational website to include the following types of information: <ul style="list-style-type: none"> <li>• Hazard-specific information such as GIS layers, private property mitigation alternatives, important facts on risk and vulnerability</li> <li>• Pre- and post-disaster information such as notices of grant funding availability</li> <li>• Links to Planning Partners' pages, FEMA, Red Cross, NOAA, USGS and the National Weather Service.</li> <li>• Hazard mitigation plan information such as progress reports, mitigation success stories, update strategies, Steering Committee meetings.</li> </ul>				
All Hazards	Humboldt County	General fund	Short term, Ongoing	6, 7, 8, 12
<b>CW-5</b> —Maintain the Hazard Mitigation Plan Steering Committee as a viable body over time to monitor progress of the plan, provide technical assistance to Planning Partners and oversee the update of the plan according to schedule. This body will continue to operate under the ground rules established at its inception.				
All Hazards	Humboldt County	Existing, ongoing programs	Short term, Ongoing	All
<b>CW-6</b> —Amend or enhance the Humboldt County Operational Area Hazard Mitigation Plan as well as the general Plans for each municipality as needed to comply with state or federal mandates (i.e., CA. Assembly Bill # 2140) as guidance for compliance with these programs become available.				
All Hazards	Humboldt County, each municipal planning partner	General funds	Short term, Ongoing	All
<b>CW-7</b> —Work with the Humboldt County Assessor to begin the capture of general building stock information such as area, date of construction and foundation type, to better support future risk assessments.				
All Hazards	Humboldt County	General fund	Long term, depending on funding	6, 7, 8