

**PART 3 —
MITIGATION STRATEGY**

CHAPTER 18. MITIGATION ALTERNATIVES

To support each planning partner's development of a mitigation action plan, catalogs of hazard mitigation alternatives were developed that present a broad range of alternatives to consider, in compliance with 44 CFR (Section 201.6(c)(3)(ii)). One catalog was developed for each hazard of concern evaluated in this plan. The basis for the catalogs was a facilitated session with the Steering Committee looking at strengths, weaknesses, obstacles and opportunities within the planning area. The catalogs for each hazard are listed in Table 18-1 through Table 18-8. The catalogs present alternatives that are categorized in two ways:

- By what the alternative would do:
 - Manipulate a hazard
 - Reduce exposure to a hazard
 - Reduce vulnerability to a hazard
 - Increase the ability to respond to or be prepared for a hazard
- By who would have responsibility for implementation:
 - Individuals
 - Businesses
 - Government.

Many hazard mitigation initiatives recommended in this plan were selected from among the alternatives presented in the catalogs. The catalogs provide a baseline of mitigation alternatives that are backed by a planning process, are consistent with the planning partners' goals and objectives, and are within the capabilities of the partners to implement. However, not all the alternatives meet all the planning partners' selection criteria. These catalogs represent the comprehensive range of alternatives considered by each planning partner.

**TABLE 18-1.
CATALOG OF MITIGATION ALTERNATIVES—DAM FAILURE**

Personal Scale	Corporate Scale	Government Scale
Manipulate Hazard		
<ul style="list-style-type: none"> • None 	<ol style="list-style-type: none"> 1. Remove dams 2. Remove levees 3. Harden dams 	<ol style="list-style-type: none"> 1. Remove dams 2. Remove levees 3. Harden dams
Reduce Exposure		
<ul style="list-style-type: none"> • Relocate out of dam failure inundation areas. 	<ul style="list-style-type: none"> • Replace earthen dams with hardened structures 	<ol style="list-style-type: none"> 1. Replace earthen dams with hardened structures 2. Relocate critical facilities out of dam failure inundation areas. 3. Consider open space land use in designated dam failure inundation areas.
Reduce Vulnerability		
<ul style="list-style-type: none"> • Elevate home to appropriate levels. 	<ul style="list-style-type: none"> • Flood-proof facilities within dam failure inundation areas 	<ol style="list-style-type: none"> 1. Adopt higher regulatory floodplain standards in mapped dam failure inundation areas. 2. Retrofit critical facilities within dam failure inundation areas.
Increase Preparation or Response Capability		
<ol style="list-style-type: none"> 1. Learn about risk reduction for the dam failure hazard. 2. Learn the evacuation routes for a dam failure event. 3. Educate yourself on early warning systems and the dissemination of warnings. 	<ol style="list-style-type: none"> 1. Educate employees on the probable impacts of a dam failure. 2. Develop a continuity of operations plan. 	<ol style="list-style-type: none"> 1. Map dam failure inundation areas. 2. Enhance emergency operations plan to include a dam failure component. 3. Institute monthly communications checks with dam operators. 4. Inform the public on risk reduction techniques 5. Adopt real-estate disclosure requirements for the re-sale of property located within dam failure inundation areas. 6. Consider the probable impacts of climate in assessing the risk associated with the dam failure hazard. 7. Establish early warning capability downstream of listed high hazard dams. 8. Consider the residual risk associated with protection provided by dams in future land use decisions.

**TABLE 18-2.
CATALOG OF MITIGATION ALTERNATIVES—DROUGHT**

Personal Scale	Corporate Scale	Government Scale
Manipulate Hazard		
None	None	Groundwater recharge through stormwater management
Reduce Exposure		
None	None	Identify and create groundwater backup sources
Reduce Vulnerability		
1. Drought-resistant landscapes	1. Drought-resistant landscapes	1. Water use conflict regulations
2. Reduce water system losses	2. Reduce private water system losses	2. Reduce water system losses
3. Modify plumbing systems (through water saving kits)		3. Distribute water saving kits
Increase Preparation or Response Capability		
<ul style="list-style-type: none"> • Practice active water conservation 	<ul style="list-style-type: none"> • Practice active water conservation 	<ol style="list-style-type: none"> 1. Public education on drought resistance 2. Identify alternative water supplies for times of drought; mutual aid agreements with alternative suppliers 3. Develop drought contingency plan 4. Develop criteria “triggers” for drought-related actions 5. Improve accuracy of water supply forecasts 6. Modify rate structure to influence active water conservation techniques

**TABLE 18-3.
CATALOG OF MITIGATION ALTERNATIVES—EARTHQUAKE**

Personal Scale	Corporate Scale	Government Scale
Manipulate Hazard		
None	None	None
Reduce Exposure		
<ul style="list-style-type: none"> Locate outside of hazard area (off soft soils) 	<ul style="list-style-type: none"> Locate or relocate mission-critical functions outside hazard area where possible 	<ul style="list-style-type: none"> Locate critical facilities or functions outside hazard area where possible
Reduce Vulnerability		
<ol style="list-style-type: none"> Retrofit structure (anchor house structure to foundation) Secure household items that can cause injury or damage (such as water heaters, bookcases, and other appliances) Build to higher design 	<ol style="list-style-type: none"> Build redundancy for critical functions and facilities Retrofit critical buildings and areas housing mission-critical functions 	<ol style="list-style-type: none"> Harden infrastructure Provide redundancy for critical functions Adopt higher regulatory standards
Increase Preparation or Response Capability		
<ol style="list-style-type: none"> Practice “drop, cover, and hold” Develop household mitigation plan, such as creating a retrofit savings account, communication capability with outside, 72-hour self-sufficiency during an event Keep cash reserves for reconstruction Become informed on the hazard and risk reduction alternatives available. Develop a post-disaster action plan for your household 	<ol style="list-style-type: none"> Adopt higher standard for new construction; consider “performance-based design” when building new structures Keep cash reserves for reconstruction Inform your employees on the possible impacts of earthquake and how to deal with them at your work facility. Develop a continuity of operations plan 	<ol style="list-style-type: none"> Provide better hazard maps Provide technical information and guidance Enact tools to help manage development in hazard areas (e.g., tax incentives, information) Include retrofitting and replacement of critical system elements in capital improvement plan Develop strategy to take advantage of post-disaster opportunities Warehouse critical infrastructure components such as pipe, power line, and road repair materials Develop and adopt a continuity of operations plan Initiate triggers guiding improvements (such as <50% substantial damage or improvements) Further enhance seismic risk assessment to target high hazard buildings for mitigation opportunities. Develop a post-disaster action plan that includes grant funding and debris removal components.

**TABLE 18-4.
CATALOG OF MITIGATION ALTERNATIVES—FLOOD**

Personal Scale	Corporate Scale	Government Scale
Manipulate Hazard		
<ol style="list-style-type: none"> 1. Clear stormwater drains and culverts 2. Institute low-impact development techniques on property 	<ol style="list-style-type: none"> 1. Clear stormwater drains and culverts 2. Institute low-impact development techniques on property 	<ol style="list-style-type: none"> 1. Maintain drainage system 2. Institute low-impact development techniques on property 3. Dredging, levee construction, and providing regional retention areas 4. Structural flood control, levees, channelization, or revetments. 5. Stormwater management regulations and master planning 6. Acquire vacant land or promote open space uses in developing watersheds to control increases in runoff
Reduce Exposure		
<ol style="list-style-type: none"> 1. Locate outside of hazard area 2. Elevate utilities above base flood elevation 3. Institute low impact development techniques on property 	<ol style="list-style-type: none"> 1. Locate business critical facilities or functions outside hazard area 2. Institute low impact development techniques on property 	<ol style="list-style-type: none"> 1. Locate or relocate critical facilities outside of hazard area 2. Acquire or relocate identified repetitive loss properties 3. Promote open space uses in identified high hazard areas via techniques such as: planned unit developments, easements, setbacks, greenways, sensitive area tracks. 4. Adopt land development criteria such as planned unit developments, density transfers, clustering 5. Institute low impact development techniques on property 6. Acquire vacant land or promote open space uses in developing watersheds to control increases in runoff
Reduce Vulnerability		
<ol style="list-style-type: none"> 1. Retrofit structures (elevate structures above base flood elevation) 2. Elevate items within house above base flood elevation 3. Build new homes above base flood elevation 4. Flood-proof existing structures 	<ol style="list-style-type: none"> 1. Build redundancy for critical functions or retrofit critical buildings 2. Provide flood-proofing measures when new critical infrastructure must be located in floodplains 	<ol style="list-style-type: none"> 1. Harden infrastructure, bridge replacement program 2. Provide redundancy for critical functions and infrastructure 3. Adopt appropriate regulatory standards, such as: increased freeboard standards, cumulative substantial improvement or damage, lower substantial damage threshold; compensatory storage, non-conversion deed restrictions. 4. Stormwater management regulations and master planning. 5. Adopt “no-adverse impact” floodplain management policies that strive to not increase the flood risk on downstream communities.

**TABLE 18-4.
CATALOG OF MITIGATION ALTERNATIVES—FLOOD**

Personal Scale	Corporate Scale	Government Scale
Increase Preparation or Response Capability		
<ol style="list-style-type: none"> 1. Buy flood insurance 2. Develop household mitigation plan, such as retrofit savings, communication capability with outside, 72-hour self-sufficiency during and after an event 	<ol style="list-style-type: none"> 1. Keep cash reserves for reconstruction 2. Support and implement hazard disclosure for the sale/re-sale of property in identified risk zones. 3. Solicit cost-sharing through partnerships with other stakeholders on projects with multiple benefits. 	<ol style="list-style-type: none"> 1. Produce better hazard maps 2. Provide technical information and guidance 3. Enact tools to help manage development in hazard areas (stronger controls, tax incentives, and information) 4. Incorporate retrofitting or replacement of critical system elements in capital improvement plan 5. Develop strategy to take advantage of post-disaster opportunities 6. Warehouse critical infrastructure components 7. Develop and adopt a continuity of operations plan 8. Consider participation in the Community Rating System 9. Maintain existing data and gather new data needed to define risks and vulnerability 10. Train emergency responders 11. Create a building and elevation inventory of structures in the floodplain 12. Develop and implement a public information strategy 13. Charge a hazard mitigation fee 14. Integrate floodplain management policies into other planning mechanisms within the planning area. 15. Consider the probable impacts of climate change on the risk associated with the flood hazard 16. Consider the residual risk associated with structural flood control in future land use decisions 17. Enforce National Flood Insurance Program 18. Adopt a Stormwater Management Master Plan

**TABLE 18-5.
CATALOG OF MITIGATION ALTERNATIVES—LANDSLIDE**

Personal Scale	Corporate Scale	Government Scale
Manipulate Hazard		
<ol style="list-style-type: none"> 1. Stabilize slope (dewater, armor toe) 2. Reduce weight on top of slope 3. Minimize vegetation removal and the addition of impervious surfaces. 	<ol style="list-style-type: none"> 1. Stabilize slope (dewater, armor toe) 2. Reduce weight on top of slope 	<ol style="list-style-type: none"> 1. Stabilize slope (dewater, armor toe) 2. Reduce weight on top of slope
Reduce Exposure		
<ul style="list-style-type: none"> • Locate structures outside of hazard area (off unstable land and away from slide-run out area) 	<ul style="list-style-type: none"> • Locate structures outside of hazard area (off unstable land and away from slide-run out area) 	<ol style="list-style-type: none"> 1. Acquire properties in high-risk landslide areas. 2. Adopt land use policies that prohibit the placement of habitable structures in high-risk landslide areas.
Reduce Vulnerability		
<ul style="list-style-type: none"> • Retrofit home. 	<ul style="list-style-type: none"> • Retrofit at-risk facilities. 	<ol style="list-style-type: none"> 1. Adopt higher regulatory standards for new development within unstable slope areas. 2. Armor/retrofit critical infrastructure against the impact of landslides.
Increase Preparation or Response Capability		
<ol style="list-style-type: none"> 1. Institute warning system, and develop evacuation plan 2. Keep cash reserves for reconstruction 3. Educate yourself on risk reduction techniques for landslide hazards. 	<ol style="list-style-type: none"> 1. Institute warning system, and develop evacuation plan 2. Keep cash reserves for reconstruction 3. Develop a continuity of operations plan 4. Educate employees on the potential exposure to landslide hazards and emergency response protocol. 	<ol style="list-style-type: none"> 1. Produce better hazard maps 2. Provide technical information and guidance 3. Enact tools to help manage development in hazard areas: better land controls, tax incentives, information 4. Develop strategy to take advantage of post-disaster opportunities 5. Warehouse critical infrastructure components 6. Develop and adopt a continuity of operations plan 7. Educate the public on the landslide hazard and appropriate risk reduction alternatives.

**TABLE 18-6.
CATALOG OF MITIGATION ALTERNATIVES—SEVERE WEATHER**

Personal Scale	Corporate Scale	Government Scale
Manipulate Hazard		
None	None	None
Reduce Exposure		
None	None	None
Reduce Vulnerability		
<ol style="list-style-type: none"> 1. Insulate house 2. Provide redundant heat and power 3. Insulate structure 4. Plant appropriate trees near home and power lines (“Right tree, right place” National Arbor Day Foundation Program) 	<ol style="list-style-type: none"> 1. Relocate critical infrastructure (such as power lines) underground 2. Reinforce or relocate critical infrastructure such as power lines to meet performance expectations 3. Install tree wire 	<ol style="list-style-type: none"> 1. Harden infrastructure such as locating utilities underground 2. Trim trees back from power lines 3. Designate snow routes and strengthen critical road sections and bridges
Increase Preparation or Response Capability		
<ol style="list-style-type: none"> 1. Trim or remove trees that could affect power lines 2. Promote 72-hour self-sufficiency 3. Obtain a NOAA weather radio. 4. Obtain an emergency generator. 	<ol style="list-style-type: none"> 1. Trim or remove trees that could affect power lines 2. Create redundancy 3. Equip facilities with a NOAA weather radio 4. Equip vital facilities with emergency power sources. 	<ol style="list-style-type: none"> 1. Support programs such as “Tree Watch” that proactively manage problem areas through use of selective removal of hazardous trees, tree replacement, etc. 2. Establish and enforce building codes that require all roofs to withstand snow loads 3. Increase communication alternatives 4. Modify land use and environmental regulations to support vegetation management activities that improve reliability in utility corridors. 5. Modify landscape and other ordinances to encourage appropriate planting near overhead power, cable, and phone lines 6. Provide NOAA weather radios to the public

**TABLE 18-7.
CATALOG OF MITIGATION ALTERNATIVES—TSUNAMI**

Personal Scale	Corporate Scale	Government Scale
Manipulate Hazard		
<ul style="list-style-type: none"> • None 	<ul style="list-style-type: none"> • None 	<ul style="list-style-type: none"> • Build wave abatement structures (e.g. the “Jacks” looking structure designed by the Japanese)
Reduce Exposure		
<ul style="list-style-type: none"> • Locate outside of hazard area 	<ul style="list-style-type: none"> • Locate structure or mission critical functions outside of hazard area whenever possible. 	<ol style="list-style-type: none"> 1. Locate structure or functions outside of hazard area whenever possible. 2. Harden infrastructure for tsunami impacts. 3. Relocate identified critical facilities located in tsunami high hazard areas.
Reduce Vulnerability		
<ul style="list-style-type: none"> • Apply personal property mitigation techniques to your home such as anchoring your foundation and foundation openings to allow flow through. 	<ul style="list-style-type: none"> • Mitigate personal property for the impacts of tsunami 	<ol style="list-style-type: none"> 1. Adopt higher regulatory standards that will provide higher levels of protection to structures built in a tsunami inundation area. 2. Utilize tsunami mapping once available, to guide development away from high risk areas through land use planning.
Increase Preparation or Response Capability		
<ol style="list-style-type: none"> 1. Develop and practice a household evacuation plan. 2. Support/participate in the Redwood Coast Tsunami Working Group. 3. Educate yourself on the risk exposure from the tsunami hazard and ways to minimize that risk. 	<ol style="list-style-type: none"> 1. Develop and practice a corporate evacuation plan. 2. Support/participate in the Redwood Coast Tsunami Working Group. 3. Educate employees on the risk exposure from the tsunami hazard and ways to minimize that risk. 	<ol style="list-style-type: none"> 1. Create a probabilistic tsunami map for the planning area. 2. Provide incentives to guide development away from hazard areas. 3. Develop a tsunami warning and response system. 4. Provide residents with tsunami inundation maps 5. Join NOAA’s Tsunami Ready program 6. Develop and communicate evacuation routes 7. Enhance the public information program to include risk reduction options for the tsunami hazard

**TABLE 18-8.
CATALOG OF MITIGATION ALTERNATIVES—WILDFIRE**

Personal Scale	Corporate Scale	Government Scale
Manipulate Hazard		
<ul style="list-style-type: none"> • Clear potential fuels on property such as dry overgrown underbrush and diseased trees 	<ul style="list-style-type: none"> • Clear potential fuels on property such as dry underbrush and diseased trees 	<ol style="list-style-type: none"> 1. Clear potential fuels on property such as dry underbrush and diseased trees 2. Implement best management practices on public lands.
Reduce Exposure		
<ol style="list-style-type: none"> 1. Create and maintain defensible space around structures 2. Locate outside of hazard area 3. Mow regularly 	<ol style="list-style-type: none"> 1. Create and maintain defensible space around structures and infrastructure 2. Locate outside of hazard area 	<ol style="list-style-type: none"> 1. Create and maintain defensible space around structures and infrastructure 2. Locate outside of hazard area 3. Enhance building code to include use of fire resistant materials in high hazard area.
Reduce Vulnerability		
<ol style="list-style-type: none"> 1. Create and maintain defensible space around structures and provide water on site 2. Use fire-retardant building materials 3. Create defensible spaces around home 	<ol style="list-style-type: none"> 1. Create and maintain defensible space around structures and infrastructure and provide water on site 2. Use fire-retardant building materials 3. Use fire-resistant plantings in buffer areas of high wildfire threat. 	<ol style="list-style-type: none"> 1. Create and maintain defensible space around structures and infrastructure 2. Use fire-retardant building materials 3. Use fire-resistant plantings in buffer areas of high wildfire threat. 4. Consider higher regulatory standards (such as Class A roofing) 5. Establish biomass reclamation initiatives
Increase Preparation or Response Capability		
<ol style="list-style-type: none"> 1. Employ techniques from the National Fire Protection Association’s Firewise Communities program to safeguard home 2. Identify alternative water supplies for fire fighting 3. Install/replace roofing material with non-combustible roofing materials. 	<ol style="list-style-type: none"> 1. Support Firewise community initiatives. 2. Create /establish stored water supplies to be utilized for firefighting. 	<ol style="list-style-type: none"> 1. More public outreach and education efforts, including an active Firewise program 2. Possible weapons of mass destruction funds available to enhance fire capability in high-risk areas 3. Identify fire response and alternative evacuation routes 4. Seek alternative water supplies 5. Become a Firewise community 6. Use academia to study impacts/solutions to wildfire risk 7. Establish/maintain mutual aid agreements between fire service agencies. 8. Create/implement fire plans 9. Consider the probable impacts of climate change on the risk associated with the wildfire hazard in future land use decisions

CHAPTER 19.

AREA-WIDE MITIGATION INITIATIVES AND IMPLEMENTATION

19.1 SELECTED COUNTY-WIDE MITIGATION INITIATIVES

The planning partners and the Steering Committee determined that some initiatives from the mitigation catalogs could be implemented to provide hazard mitigation benefits countywide. Table 19-1 lists the recommended countywide initiatives, the lead agency for each, and the proposed timeline. The parameters for the timeline are as follows:

- Short Term = to be completed in 1 to 5 years
- Long Term = to be completed in greater than 5 years
- Ongoing = currently being funded and implemented under existing programs.

19.2 BENEFIT/COST REVIEW

The action plan must be prioritized according to a benefit/cost analysis of the proposed projects and their associated costs (44 CFR, Section 201.6(c)(3)(iii)). The benefits of proposed projects were weighed against estimated costs as part of the project prioritization process. The benefit/cost analysis was not of the detailed variety required by FEMA for project grant eligibility under the Hazard Mitigation Grant Program (HMGP) and Pre-Disaster Mitigation (PDM) grant program. A less formal approach was used because some projects may not be implemented for up to 10 years, and associated costs and benefits could change dramatically in that time. Therefore, a review of the apparent benefits versus the apparent cost of each project was performed. Parameters were established for assigning subjective ratings (high, medium, and low) to the costs and benefits of these projects.

Cost ratings were defined as follows:

- **High**—Existing funding will not cover the cost of the project; implementation would require new revenue through an alternative source (for example, bonds, grants, and fee increases).
- **Medium**—The project could be implemented with existing funding but would require a re-apportionment of the budget or a budget amendment, or the cost of the project would have to be spread over multiple years.
- **Low**—The project could be funded under the existing budget. The project is part of or can be part of an ongoing existing program.

Benefit ratings were defined as follows:

- **High**—Project will provide an immediate reduction of risk exposure for life and property.
- **Medium**—Project will have a long-term impact on the reduction of risk exposure for life and property, or project will provide an immediate reduction in the risk exposure for property.
- **Low**—Long-term benefits of the project are difficult to quantify in the short term.

**TABLE 19-1.
ACTION PLAN—COUNTYWIDE MITIGATION INITIATIVES**

Hazards Addressed	Lead Agency	Possible Funding Sources or Resources	Time Line ^a	Objectives
CW-1 —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
CW-2 —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
CW-3 —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
CW-4 —Sponsor and maintain a natural hazards informational website to include the following types of information:				
<ul style="list-style-type: none"> • Hazard-specific information such as GIS layers, private property mitigation alternatives, important facts on risk and vulnerability • Pre- and post-disaster information such as notices of grant funding availability • Links to Planning Partners’ pages, FEMA, Red Cross, NOAA, USGS and the National Weather Service. • Hazard mitigation plan information such as progress reports, mitigation success stories, update strategies, Steering Committee meetings. 				
All Hazards	Humboldt County	General fund	Short term, Ongoing	6, 7, 8, 12
CW-5 —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
CW-6 —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
CW-7 —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

Using this approach, projects with positive benefit versus cost ratios (such as high over high, high over medium, medium over low, etc.) are considered cost-beneficial and are prioritized accordingly.

For many of the strategies identified in this action plan, the partners may seek financial assistance under the HMGP or PDM programs, both of which require detailed benefit/cost analyses. These analyses will be performed on projects at the time of application using the FEMA benefit-cost model. For projects not seeking financial assistance from grant programs that require detailed analysis, the partners reserve the right to define “benefits” according to parameters that meet the goals and objectives of this plan.

19.3 COUNTY-WIDE ACTION PLAN PRIORITIZATION

Table 19-2 lists the priority of each countywide initiative, using the same parameters used by each of the planning partners in selecting their initiatives. A qualitative benefit-cost review was performed for each of these initiatives. The priorities are defined as follows:

- **High Priority**—A project that meets multiple objectives (i.e., multiple hazards), has benefits that exceed cost, has funding secured or is an ongoing project and meets eligibility requirements for the HMGP or PDM grant program. High priority projects can be completed in the short term (1 to 5 years).
- **Medium Priority**—A project that meets goals and objectives, that has benefits that exceed costs, and for which funding has not been secured but that is grant eligible under HMGP, PDM or other grant programs. Project can be completed in the short term, once funding is secured. Medium priority projects will become high priority projects once funding is secured.
- **Low Priority**—A project that will mitigate the risk of a hazard, that has benefits that do not exceed the costs or are difficult to quantify, for which funding has not been secured, that is not eligible for HMGP or PDM grant funding, and for which the time line for completion is long term (1 to 10 years). Low priority projects may be eligible for other sources of grant funding from other programs.

**TABLE 19-2.
PRIORITIZATION OF COUNTYWIDE MITIGATION INITIATIVES**

Initiative #	# of Objectives Met			Do Benefits equal or exceed Costs?	Is project Grant eligible?	Can Project be funded under existing programs/ budgets?	Priority (High, Med., Low)
		Benefits	Costs				
CW-1	3	Medium	Low	Yes	Yes	Yes	High
CW-2	4	Low	Low	Yes	Yes	Yes	High
CW-3	4	Low	Low	Yes	No	Yes	High
CW-4	4	Medium	Medium	Yes	Yes	No	Medium
CW-5	12	Low	Low	Yes	No	Yes	High
CW-6	12	Low	Low	Yes	No	Yes	High
CW-7	3	Medium	Low	Yes	Yes	No	Medium

19.4 PLAN ADOPTION

A hazard mitigation plan must document that it has been formally adopted by the governing body of the jurisdiction requesting federal approval of the plan (44 CFR Section 201.6(c)(5)). For multi-jurisdictional

plans, each jurisdiction requesting approval must document that it has been formally adopted. This plan will be submitted for a pre-adoption review to CalEMA prior to adoption. Once pre-adoption approval has been provided, all planning partners will formally adopt the plan. All partners understand that DMA compliance and its benefits cannot be achieved until the plan is adopted. Copies of the resolutions adopting this plan for all planning partners can be found in Appendix E of this volume.

19.5 PLAN MAINTENANCE STRATEGY

A hazard mitigation plan must present a plan maintenance process that includes the following (44 CFR Section 201.6(c)(4)):

- A section describing the method and schedule of monitoring, evaluating, and updating the mitigation plan over a 5-year cycle
- A process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms, such as general or capital improvement plans, when appropriate
- A discussion on how the community will continue public participation in the plan maintenance process.

This chapter details the formal process that will ensure that the Humboldt Operation Area Hazard Mitigation Plan remains an active and relevant document and that the planning partners maintain their eligibility for applicable funding sources. The plan maintenance process includes a process for monitoring and evaluating the plan and producing an updated plan every five years. This chapter also describes how public participation will be integrated throughout the plan maintenance and implementation process. It also explains how the mitigation strategies outlined in this plan will be incorporated into existing planning mechanisms and programs, such as comprehensive land-use planning processes, capital improvement planning, and building code enforcement and implementation. The Plan's format allows sections to be reviewed and updated when new data become available, resulting in a plan that will remain current and relevant.

19.5.1 Plan Maintenance Oversight

Oversight of this plan maintenance strategy will be led by the Humboldt County Department of Public Works with support from Humboldt County Office of Emergency Services. The principle point of contact is:

Cybelle Immitt, Senior Planner
County of Humboldt Public Works
1106 Second Street
Eureka, CA 95501
Phone: (707) 445-7652
FAX: (707) 443-7388
Email: CImmitt@co.humboldt.ca.us

19.5.2 Plan Implementation

The effectiveness of the hazard mitigation plan depends on its implementation and incorporation of its action items into partner jurisdictions' existing plans, policies and programs. Together, the action items in the plan provide a framework for activities that the Partnership can implement over the next 5 years. The planning team and the Steering Committee have established goals and objectives and have prioritized mitigation actions that will be implemented through existing plans, policies, and programs.

Humboldt County will have lead responsibility for overseeing the plan implementation and maintenance strategy. Plan implementation and evaluation will be a shared responsibility among all planning partnership members and agencies identified as lead agencies in the mitigation action plans (see planning partner annexes in Volume 2 of this plan).

19.5.3 Steering Committee

The Steering Committee is a total volunteer body that oversaw the development of the plan and made recommendations on key elements of the plan, including the maintenance strategy. It was the Steering Committee's position that an oversight committee with representation similar to the initial Steering Committee should have an active role in the plan maintenance strategy. Therefore, it is recommended that a steering committee remain a viable body involved in key elements of the plan maintenance strategy. The new steering committee should strive to include representation from the planning partners, as well as other stakeholders in the planning area.

The principal role of the steering committee in this plan maintenance strategy will be as a resource available to consult on implementing mitigation measures, coordinating grants among planning partners and other aspects of plan implementation and maintenance. Future plan updates will be overseen by a steering committee similar to the one that participated in this plan update process, so keeping an interim steering committee intact will provide a head start on future updates. Completion of the performance period progress report is the responsibility of each planning partner, not the responsibility of the steering committee. The steering committee will review the progress report to identify issues needing to be addressed in future plan updates.

19.5.4 Performance Period Progress Report

During this plan update process, the Steering Committee determined that completion of an annual progress report as prescribed under the initial plan was not feasible for the Humboldt Operational Area planning partnership. The 5-year performance period progress report completed for this plan update was an effective tool in the plan update process. The Steering Committee directed that the plan maintenance strategy be revised to replace annual progress reporting with performance-period progress reporting. Any trigger of a comprehensive update to the Humboldt Operational Area Hazard Mitigation Plan, as described in Section 20.5.4, will require completion of a performance period progress report. The minimum task of each planning partner will be to evaluate the progress of its individual action plan during the 5-year performance period. This review will include the following:

- Summary of any hazard events that occurred during the performance period and the impact these events had on the planning area
- Review of mitigation success stories
- Review of continuing public involvement
- Brief discussion about why targeted strategies were not completed
- Re-evaluation of the action plan to determine if the timeline for identified projects needs to be amended (such as changing a long-term project to a short-term one because of new funding)
- Recommendations for new projects
- Changes in or potential for new funding options (grant opportunities)
- Impact of any other planning programs or initiatives that involve hazard mitigation.

The progress report conducted for this plan update is included in Appendix D and may be used as a template to guide the planning partners in preparing future performance period progress reports. The plan

maintenance steering committee will provide feedback to the planning team on items to be included in the progress report. The planning team will then prepare a formal report on the progress of the plan. This report should be used as follows:

- Posted on the Humboldt Operational Area hazard mitigation home page dedicated to the hazard mitigation plan
- Provided to the local media through a press release
- Presented to planning partner governing bodies to inform them of the progress of actions implemented during the reporting period

Uses of the progress report will be at the discretion of each planning partner. Progress reporting is not a requirement specified under 44 CFR. However, it may enhance the planning partnership's opportunities for funding. While failure to implement this component of the plan maintenance strategy will not jeopardize a planning partner's compliance under the DMA, it may jeopardize its opportunity to partner and leverage funding opportunities with the other partners. Each planning partner was informed of these protocols at the beginning of this planning process (in the "Planning Partner Expectations" package provided at the start of the process), and each partner acknowledged these expectations with submittal of a letter of intent to participate in this process.

Although annual progress reporting has been removed from this plan maintenance strategy, the larger jurisdictional partners (Humboldt County and larger cities and special service districts) will continue to coordinate as needed with planning partners and the Steering Committee. These planning partners are fully committed to coordinating grant opportunities and leveraging available resources within the operational area to support implementation and maintenance of this plan. At a minimum, the County will communicate with the partnership on an annual basis to review the plan and its availability on the County web site; provide updates on plan implementation; discuss potential collaboration opportunities; and confirm contact information.

19.5.5 Plan Update

Local hazard mitigation plans must be reviewed, revised if appropriate, and resubmitted for approval in order to remain eligible for benefits under the DMA (44 CFR, Section 201.6(d)(3)). The Humboldt County partnership intends to update the hazard mitigation plan on a 5-year cycle from the date of initial plan adoption. This cycle may be accelerated to less than 5 years based on the following triggers:

- A presidential disaster declaration that impacts the planning area
- A hazard event that causes loss of life
- A comprehensive update of the County or participating city's general plan

It will not be the intent of future updates to develop a complete new hazard mitigation plan for the planning area. The update will, at a minimum, include the following elements:

- The update process will be convened through a steering committee.
- The hazard risk assessment will be reviewed and, if necessary, updated using best available information and technologies.
- The action plans will be reviewed and revised to account for any initiatives completed, dropped, or changed and to account for changes in the risk assessment or new partnership policies identified under other planning mechanisms (such as the general plan).
- The draft update will be sent to appropriate agencies and organizations for comment.

- The public will be given an opportunity to comment on the update prior to adoption.
- The partnership governing bodies will adopt their respective portions of the updated plan.

19.5.6 Continuing Public Involvement

The public will continue to be apprised of the plan's progress through the Humboldt Operational Area Hazard Mitigation website and by copies of performance period progress reports provided to the media. Each planning partner has agreed to provide links to the County hazard mitigation plan website on their individual jurisdictional websites to increase avenues of public access to the plan. The Humboldt County Natural Resources Planning Division has agreed to maintain the hazard mitigation plan website. This site will not only house the final plan, it will become the one-stop shop for information regarding the plan, the partnership and plan implementation. Copies of the plan will be distributed to the Humboldt County Library system. Upon initiation of future update processes, a new public involvement strategy will be initiated based on guidance from a new steering committee. This strategy will be based on the needs and capabilities of the planning partnership at the time of the update. At a minimum, this strategy will include the use of local media outlets within the planning area.

As planning partners apply for grants, components of those grant applications will require outreach to the public. These grant applications will provide an opportunity to inform the public about this plan and provide them the opportunity to provide feedback to the partnership.

19.5.7 Incorporation Into Other Planning Mechanisms

The information on hazard, risk, vulnerability, and mitigation contained in this plan is based on the best science and technology available at the time this plan was prepared. The Humboldt County General Plan and the general plans of the partner cities are considered to be integral parts of this plan. The County and partner cities, through adoption of general plans and zoning ordinances, have planned for the impact of natural hazards. All municipal planning partners have committed to creating linkage between their general plans and this hazard mitigation plan as prescribed under CA Assembly Bill 2140. The plan development process provided the County and the cities with the opportunity to review and expand on policies contained within these planning mechanisms. The planning partners used their general plans and the hazard mitigation plan as complementary documents that work together to achieve the goal of reducing risk exposure to the citizens of the planning area. An update to a general plan may trigger an update to the hazard mitigation plan.

All municipal planning partners are committed to creating a linkage between the hazard mitigation plan and their individual general plans by identifying a mitigation initiative as such and giving that initiative a high priority. Other planning processes and programs to be coordinated with the recommendations of the hazard mitigation plan include the following:

- Partners' emergency response plans
- Capital improvement programs
- Municipal codes
- Community design guidelines
- Water-efficient landscape design guidelines
- Stormwater management programs
- Integrated regional watershed management plans pursuant to Proposition 84
- Water system vulnerability assessments

- Master fire protection plans (Community Wildfire Protection Plans)
- Energy assurance plans.

Some action items do not need to be implemented through regulation. Instead, these items can be implemented through the creation of new educational programs, continued interagency coordination, or improved public participation. As information becomes available from other planning mechanisms that can enhance this plan, that information will be incorporated via the update process.