

## Chapter 5 Mitigation Strategy

**Requirement §201.6(c)(3): [The plan shall include] a mitigation strategy that provides the jurisdiction’s blueprint for reducing the potential losses identified in the risk assessment, based on existing authorities, policies, programs and resources, and its ability to expand on and improve these existing tools.**

This section describes the mitigation strategy process and mitigation action plan for the Placer County Local Hazard Mitigation Plan Update. It describes how the County and participating jurisdictions met the following requirements from the 10-step planning process:

- Planning Step 6: Set Goals
- Planning Step 7: Review Possible Activities
- Planning Step 8: Draft an Action Plan

### 5.1 Mitigation Strategy: Overview

The results of the planning process, the risk assessment, the goal setting, the identification of mitigation actions, and the hard work of the HMPC led to the mitigation strategy and mitigation action plan for this LHMP Update. As part of the plan update process, a comprehensive review and update of the mitigation strategy portion of the plan was conducted by the HMPC. Some of the initial goals and objectives from the 2010 plan were refined and reaffirmed, some goals were deleted, and others were added. The end result was a new set of goals, reorganized to reflect the completion of 2010 actions, the updated risk assessment and the new priorities of this Plan Update. To support the new LHMP goals, the mitigation actions from 2010 were reviewed and assessed for their value in reducing risk and vulnerability to the planning area from identified hazards and evaluated for their inclusion in this Plan Update (See Chapter 2 What’s New). Section 5.2 below identifies the new goals and objectives of this Plan Update and Section 5.4 details the new mitigation action plan.

Taking all of the above into consideration, the HMPC developed the following umbrella mitigation strategy for this LHMP Update:

- Communicate the hazard information collected and analyzed through this planning process as well as HMPC success stories so that the community better understands what can happen where and what they themselves can do to be better prepared.
- Implement the action plan recommendations of this plan.
- Use existing rules, regulations, policies, and procedures already in existence.
- Monitor multi-objective management opportunities so that funding opportunities may be shared and packaged and broader constituent support may be garnered.

#### 5.1.1. Continued Compliance with NFIP

Given the flood hazard in the planning area, an emphasis will be placed on continued compliance with the National Flood Insurance Program (NFIP) by all communities and participation by Placer County and others, as appropriate, in the Community Rating System (CRS). Detailed below is a description of Placer

County’s flood management program to ensure continued compliance with the NFIP. Also to be considered are the numerous flood mitigation actions contained in this LHMP that support the ongoing efforts by the county to minimize the risk and vulnerability of the community to the flood hazard and to enhance their overall floodplain management program. A summary of the flood management programs and continued compliance with the NFIP for the incorporated communities are detailed in their jurisdictional annexes.

### *Placer County’s Flood Management Program*

Placer County has participated in the Regular Phase of the NFIP since 1983. Since then, the County has administered floodplain management regulations that meet the minimum requirements of the NFIP. Under that arrangement, residents and businesses paid the same flood insurance premium rates as most other communities in the country.

The County will continue to manage their floodplains in continued compliance with the NFIP. An overview of the County’s NFIP status and floodplain management program are discussed on Table 5-1.

*Table 5-1 Placer County NFIP Status*

NFIP Topic	Comments
<b>Insurance Summary</b>	
How many NFIP policies are in the community? What is the total premium and coverage?	568 policies with \$163,034,100 of insurance in force. Premiums of \$386,421.
How many claims have been paid in the community? What is the total amount of paid claims? How many of the claims were for substantial damage?	167 closed paid losses totaling \$4,154,874.85; 161 of these were for residential properties and 6 were nonresidential. Of these 167 paid losses, 86 were parcels in A zones and 79 parcels were in B, C, & X zones. Information was not provided on the other 2 claims. Of the 167 claims, 133 claims were associated with pre-FIRM structures and 32 with post-FIRM structures; 2 claims unknown. There have been 16 substantial damage claims since 1978.
How many structures are exposed to flood risk within the community?	1,118 parcels in the SFHA
Describe any areas of flood risk with limited NFIP policy coverage	Unincorporated Placer County has significant assets at risk to the 100-year and greater floods. Of the 1,118 improved parcels within the 100-year floodplain, only 201 (or 18 percent) of those parcels maintain flood insurance.
Is the Community Floodplain Administrator or NFIP Coordinator certified?	Yes

NFIP Topic	Comments
Provide an explanation of NFIP administration services (e.g., permit review, GIS, education or outreach, inspections, engineering capability)	Placer County's Floodplain management group provides the full suite of administrative services necessary to achieve and maintain a CRS Class 5, including all of those identified in the example provided.
What are the barriers to running an effective NFIP program in the community, if any?	None
<b>Compliance History</b>	
Is the community in good standing with the NFIP?	Yes
Are there any outstanding compliance issues (i.e., current violations)?	No
When was the most recent Community Assistance Visit (CAV) or Community Assistance Contact (CAC)?	October 22-23, 2014
Is a CAV or CAC scheduled or needed?	No
<b>Regulation</b>	
When did the community enter the NFIP?	4/18/1983
Are the FIRMs digital or paper?	Digital
Do floodplain development regulations meet or exceed FEMA or State minimum requirements? If so, in what ways?	Meet and Exceed: See Appendix C for Details
Provide an explanation of the permitting process.	Clearly outlined in the floodplain ordinance. This process is strictly enforced.
<b>Community Rating System</b>	
Does the community participate in CRS?	Yes
What is the community's CRS Class Ranking?	5
What categories and activities provide CRS points and how can the class be improved?	See discussion in below table.
Does the plan include CRS planning requirements?	Yes, in accordance with the CRS Activity 510 requirements of the 2013 CRS Coordinator's Manual

Source: FEMA/Placer County

The Community Rating System (CRS) was created in 1990. Placer County has been in the CRS program since 1991. The program is designed to recognize floodplain management activities that are above and beyond the NFIP's minimum requirements. CRS is designed to reward a community for implementing public information, mapping, regulatory, loss reduction and/or flood preparedness activities. On a scale of 10 to 1, Placer County is currently ranked Class 5 community, which gives a 25% premium discount to individuals in the Placer County Special Flood Hazard Area (SFHA), and a 10% discount to policyholders outside the SFHA.

The activities credited by the CRS provide direct benefits to Placer County and its residents, including:

- Enhanced public safety;
- A reduction in damage to property and public infrastructure;

- Avoidance of economic disruption and losses;
- Reduction of human suffering; and
- Protection of the environment.

The activities that Placer County implements and receives CRS credits include:

- **Activity 310 – Elevation Certificates:** The Public Works and Facilities Department, Floodplain Management Division maintains elevation certificates for new and substantially improved buildings. Copies of elevation certificates are made available upon request. Certificates are also kept for post-FIRM buildings in computer format. Elevation Certificates, plans, regulations and other records are maintained in a secure location away from the permit office.
- **Activity 320 – Map Information Service:** Credit is provided for furnishing inquirers with flood zone information from the community’s latest Flood Insurance Rate Map (FIRM), publicizing the service annually and maintaining records.
- **Activity 330 – Outreach Projects:** An outreach brochure and floodplain management updated is mailed annually to all properties in the community's Special Flood Hazard Area (SFHA). The community also provides flood information through displays at public buildings and community events, as well as on their website.
- **Activity 340 – Hazard Disclosure:** Credit is provided for the local real estate agents disclosure of flood hazards to prospective buyers. An outreach brochure is mailed by the County annually to real estate agents and lenders in the community. Credit is also provided for state and community regulations requiring disclosure of flood hazards.
- **Activity 350 – Flood Protection Information:** Documents relating to floodplain management are available in the reference section of the Placer County Library. Credit is also provided for floodplain information displayed on the community’s website.
- **Activity 360 – Flood Protection Assistance:** The community provides technical advice and assistance to interested property owners and annually publicizes the service.
- **Activity 410 – Floodplain Mapping:** Credit is provided for conducting and adopting flood studies for areas not included on the flood insurance rate maps and that exceed minimum mapping standards. Credit is also provided for a cooperating technical partnership agreement with FEMA.
- **Activity 420 – Open Space Preservation:** Park land and other such uses located in the floodplain are credited as open space preservation.
- **Activity 430 – Higher Regulatory Standards:** Credit is provided for enforcing regulations that require freeboard for new and substantial improvement construction, protection of floodplain storage capacity, natural and beneficial functions, enclosure limits, other higher regulatory standards, land development criteria and state mandated regulatory standards. Credit is also provided for a Building Code Effectiveness Grading Schedule (BCEGS) Classification of 2/2 for certification as a floodplain manager and the adoption of the International Building Codes.
- **Activity 440 – Flood Data Maintenance:** Credit is provided for maintaining and using digitized maps in the day-to-day management of the floodplain. Credit is also provided for establishing and maintaining a system of elevation reference marks and maintaining copies of all previous FIRMs and Flood Insurance Study Reports.
- **Activity 450 – Stormwater Management:** The community enforces regulations for stormwater management, freeboard in non-SFHA zones, soil and erosion control, and water quality. Credit is also provided for stormwater management master planning.
- **Section 501 – Repetitive Loss Category:** Based on the updates made to the NFIP Report of Repetitive Losses as of December 31, 2014, Placer County has nine repetitive loss properties and is a Category B community for CRS purposes. All requirements for a Category B community have been met. Credit is provided for the adoption and implementation of the Floodplain Management Plan. The community also sends letters to owners of repetitive loss structures.

- **Activity 510 – Floodplain Management Planning:** Credit is provided for the adoption and implementation of the County’s current Floodplain Management Plan. In addition, as detailed in the Section 3.0, Planning Process, this LHMP Update is being developed to maximize CRS credits for Activity 510.
- **Activity 530 – Flood Protection:** Credit is provided for buildings that have been elevated to protect them from flood damage.
- **Activity 540 – Drainage System Maintenance:** Portions of the community's drainage system are inspected throughout the year and maintenance is performed as needed. Additionally, the Placer County Flood Control District has an annual stream clearing program in the high flood risk areas. Records are being maintained for both inspections and required maintenance. Credit is also provided for an ongoing Capital Improvements Program. Credit is also provided for enforcing regulations prohibiting dumping in the community’s drainage system.
- **Activity 610 – Flood Warning Program:** Credit is provided for a program that provides timely identification of impending flood threats, disseminates warnings to appropriate floodplain residents, and coordinates flood response activities.
- **Activity 630 – Dam Safety:** All California communities currently receive CRS credit for the State’s dam safety program

## 5.2 Goals and Objectives

**Requirement §201.6(c)(3)(i): [The hazard mitigation strategy shall include a] description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards.**

Up to this point in the planning process, the HMPC has organized resources, assessed hazards and risks, and documented mitigation capabilities. The resulting goals, objectives, and mitigation actions were developed based on these tasks. The HMPC held a series of meetings and exercises designed to achieve a collaborative mitigation strategy as described further throughout this section. Appendix C documents the information covered in these mitigation strategy meetings, including information on the goals development and the identification and prioritization of mitigation alternatives by the LHMP Update Steering Committee and HMPC working group.

During the initial goal-setting meeting, the HMPC reviewed the results of the hazard identification, vulnerability assessment, and capability assessment. This analysis of the risk assessment identified areas where improvements could be made and provided the framework for the HMPC to formulate planning goals and objectives and to develop the mitigation strategy for the Placer County Planning Area.

Goals were defined for the purpose of this mitigation plan as broad-based public policy statements that:

- Represent basic desires of the community;
- Encompass all aspects of community, public and private;
- Are nonspecific, in that they refer to the quality (not the quantity) of the outcome;
- Are future-oriented, in that they are achievable in the future; and
- A time-independent, in that they are not scheduled events.

Goals are stated without regard to implementation. Implementation cost, schedule, and means are not considered. Goals are defined before considering how to accomplish them so that they are not dependent on the means of achievement. Goal statements form the basis for objectives and actions that will be used

as means to achieve the goals. Objectives define strategies to attain the goals and are more specific and measurable.

HMPC members were provided with the list of goals from the 2010 plan as well as a list of other sample goals to consider. They were told that they could use, combine, or revise the statements provided or develop new ones, keeping the risk assessment in mind. Each member was given three index cards and asked to write a goal statement on each. Goal statements were collected and grouped into similar themes and displayed on the wall of the meeting room. The goal statements were then grouped into similar topics. New goals from the HMPC were discussed until the team came to consensus. Some of the statements were determined to be better suited as objectives or actual mitigation actions and were set aside for later use. Next, the HMPC developed objectives that summarized strategies to achieve each goal.

Based on the risk assessment review and goal setting process, the HMPC identified the following goals and objectives, which provide the direction for reducing future hazard-related losses within the Placer County Planning Area.

***Goal 1: Minimize risk and vulnerability of Placer County to the impacts of natural hazards and protect lives and reduce damages and losses to property, economy, public health and safety, and the environment.***

- Minimize economic and resource impacts and promote long-term viability and sustainability of County resources
- Minimize impacts to both existing and future development from all hazards (through well-planned communities)
- Minimize impacts to natural and cultural resources
- Minimize impacts from climate change
- Minimize impacts to watersheds/Promote watershed health
- Prevent and reduce wildland fire risk and related losses
- Prevent and reduce flood risk and related damages, with a focus on repetitive loss structures and infrastructure

***Goal 2: Provide protection for critical facilities, infrastructure, utilities and services from hazard impacts.***

- Provide protection for critical infrastructure from the wildland fires, floods, and severe storms/weather (e.g., repeaters, cell towers, water tanks, utilities)
- Improve infrastructure/system reliability for critical lifeline utilities, including stormwater systems, roadways (evacuation routes, emergency services and supplies); rail lines, and pipelines.
- Minimize risk of loss of life and injury to At-risk Populations

***Goal 3: Improve public awareness, education, and preparedness for all hazards.***

- Enhance public outreach, education, and preparedness program to include all hazards of concern (e.g. fire restrictions, water conservation measures, hazardous vegetation, air and water quality issues)
- Increase public knowledge of the risk and vulnerability to identified hazards and their recommended responses to disaster events to reduce losses
- Educate general public on evacuation planning and sheltering options for all hazard types and to encompass all groups (e.g., residents, visitors, second homeowners, vulnerable populations, animals)

- Increase community awareness and participation in hazard mitigation activities to include defensible space, hazardous vegetation abatement projects, and forest management projects and practices to reduce flood risk on private property
- Utilize multiple public outreach avenues such as schools, new technologies, and social media
- Coordination with other regional jurisdictions to facilitate (consistent/coordinated) public information function prior to, during and after an event (e.g., facebook, twitter, everbridge, web, tv, radio)

*Goal 4: Increase communities' capabilities to mitigate losses and to be prepared for, respond to, and recover from a disaster event.*

- Continued enhancements to Emergency Services capabilities integrating new technologies to reduce losses and save lives
- Improve interagency (local, state, federal) emergency coordination, planning, training, exercising, and communication to ensure effective community preparedness, response and recovery
- Improve interagency coordination with respect to implementation of mitigation activities such as fuels reduction and other multi-jurisdictional wildland fire projects
- Enhance the use of shared resources/Develop a strong mutual aid support system
- Maintain current service levels/provide for enhanced service levels
- Increase first responders awareness of vulnerable populations and other priority needs during a hazard event;(use of technology to pre-identify and communicate)
- Utilize lessons learned (debriefing) to improve response capabilities
- Promote efficient recovery from incidents to minimize impacts to lives, environment, and economy

*Goal 5: Maintain FEMA Eligibility/Position the communities for grant funding.*

- Continued compliance with the NFIP/enhancement of floodplain management program through participation in the NFIP's Community Rating System (CRS) where feasible.

### 5.3 Identification and Analysis of Mitigation Actions

**Requirement §201.6(c)(3)(ii): [The mitigation strategy shall include a] section that identifies and analyzes a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing buildings and infrastructure.**

In order to identify and select mitigation actions to support the mitigation goals, each hazard identified in Section 4.1 was evaluated. Only those hazards that were determined to be a priority hazard were considered further in the development of hazard-specific mitigation actions.

These priority hazards (in alphabetical order) are:

- Agricultural Hazards
- Dam Failure
- Drought and Water Shortage
- Earthquake
- Flood: 100/500 year
- Flood: Localized Stormwater Flooding
- Seiche (Lake Tsunami)
- Severe Weather: Freeze and Snow
- Severe Weather: Heavy Rains and Storms (Thunderstorms/Hail, Lightning/Wind/Tornadoes)

- Wildfire
- Hazardous Materials Transport

The HMPC eliminated the hazards identified below from further consideration in the development of mitigation actions because the risk of a hazard event in the County is unlikely or nonexistent, the vulnerability of the County is low, or capabilities are already in place to mitigate negative impacts. The eliminated hazards are:

- Avalanche
- Landslides and Debris Flows
- Levee Failure
- Severe Weather: Extreme Heat
- Severe Weather: Fog and Freezing Fog
- Soil Bank Erosion
- Subsidence

It is important to note, however, that all the hazards addressed in this plan are included in the countywide multi-hazard public awareness mitigation action as well as in other multi-hazard, emergency management actions.

Once it was determined which hazards warranted the development of specific mitigation actions, the HMPC analyzed viable mitigation options that supported the identified goals and objectives. The HMPC was provided with the following list of categories of mitigation actions, which originate from the Community Rating System:

- Prevention (required to be evaluated)
- Property protection
- Structural projects
- Natural resource protection
- Emergency services
- Public information

The HMPC was provided with examples of potential mitigation actions for each of the above categories. The HMPC was also instructed to consider both future and existing buildings in considering possible mitigation actions. A facilitated discussion then took place to examine and analyze the options. Appendix C provides a detailed review and discussion of the six mitigation categories to assist in the review and identification of possible mitigation activities or projects. Also utilized in the review of possible mitigation measures is FEMA's publication on Mitigation Ideas, by hazard type. Prevention type mitigation alternatives were discussed for each of the priority hazards. This was followed by a brainstorming session that generated a list of preferred mitigation actions by hazard.

### **5.3.1. Prioritization Process**

Once the mitigation actions were identified, the HMPC was provided with several decision-making tools, including FEMA's recommended prioritization criteria, STAPLEE sustainable disaster recovery criteria; Smart Growth principles; and others, to assist in deciding why one recommended action might be more

important, more effective, or more likely to be implemented than another. STAPLEE stands for the following:

- Social: Does the measure treat people fairly? (e.g., different groups, different generations)
- Technical: Is the action technically feasible? Does it solve the problem?
- Administrative: Are there adequate staffing, funding, and other capabilities to implement the project?
- Political: Who are the stakeholders? Will there be adequate political and public support for the project?
- Legal: Does the jurisdiction have the legal authority to implement the action? Is it legal?
- Economic: Is the action cost-beneficial? Is there funding available? Will the action contribute to the local economy?
- Environmental: Does the action comply with environmental regulations? Will there be negative environmental consequences from the action?

In accordance with the DMA requirements, an emphasis was placed on the importance of a benefit-cost analysis in determining action priority. Other criteria used to assist in evaluating the benefit-cost of a mitigation action includes:

- Contribution of the action to save life or property
- Availability of funding and perceived cost-effectiveness
- Available resources for implementation
- Ability of the action to address the problem

In addition to reviewing and incorporating the actions from the 2010 plan, the committee also considered and defined several new actions. A comprehensive review of mitigation measures was performed using the criteria (alternatives and selection criteria) in Appendix C.

With these criteria in mind, HMPC members were each given a set of nine colored dots, three each of red, blue, and green. The dots were assigned red for high priority (worth five points), blue for medium priority (worth three points), and green for low priority (worth one point). The team was asked to use the dots to prioritize actions with the above criteria in mind. The point score for each action was totaled. Appendix C contains the total score given to each identified mitigation action.

The process of identification and analysis of mitigation alternatives allowed the HMPC to come to consensus and to prioritize recommended mitigation actions. During the voting process, emphasis was placed on the importance of a benefit-cost review in determining project priority; however, this was not a quantitative analysis. The team agreed that prioritizing the actions collectively enabled the actions to be ranked in order of relative importance and helped steer the development of additional actions that meet the more important objectives while eliminating some of the actions which did not garner much support.

Benefit-cost was also considered in greater detail in the development of the Mitigation Action Plan detailed below in Section 5.4. The cost-effectiveness of any mitigation alternative will be considered in greater detail through performing benefit-cost project analyses when seeking FEMA mitigation grant funding for eligible actions associated with this plan.

Recognizing the limitations in prioritizing actions from multiple jurisdictions and departments and the regulatory requirement to prioritize by benefit-cost to ensure cost-effectiveness, the HMPC decided to pursue actions that contributed to saving lives and property as first and foremost, with additional

consideration given to the benefit-cost aspect of a project. This process drove the development of a determination of a high, medium, or low priority for each mitigation action, and a comprehensive prioritized action plan for the Placer County Planning Area.

## 5.4 Mitigation Action Plan

**Requirement §201.6(c)(3)(iii): [The mitigation strategy section shall include] an action plan describing how the actions identified in section (c)(3)(ii) will be prioritized, implemented, and administered by the local jurisdiction. Prioritization shall include a special emphasis on the extent to which benefits are maximized according to a cost benefit review of the proposed projects and their associated costs.**

This action plan was developed to present the recommendations developed by the HMPC for how the Placer County Planning Area can reduce the risk and vulnerability of people, property, infrastructure, and natural and cultural resources to future disaster losses. Emphasis was placed on both future and existing development. The action plan summarizes who is responsible for implementing each of the prioritized actions as well as when and how the actions will be implemented. Each action summary also includes a discussion of the benefit-cost review conducted to meet the regulatory requirements of the Disaster Mitigation Act.

Table 5-2 identifies the mitigation actions and lead jurisdiction for each action. Only those actions where the County is the lead jurisdiction are detailed further in this section. Actions specific to other participating jurisdictions, or where other jurisdictions are taking the lead, are detailed in each respective jurisdictional annex to this plan.

The action plan detailed below contains both new action items developed for this Plan Update as well as old actions that were yet to be completed from the 2010 plan. Table 5-2 indicates whether the action is new or from the 2010 plan and Chapter 2 contains the details for each 2010 mitigation action item indicating whether a given action item has been completed, deleted, or deferred.

It is important to note that Placer County and the participating jurisdictions have numerous existing, detailed action descriptions, which include benefit-cost estimates, in other planning documents, such as community wildfire protection plans/fire plans, stormwater plans and capital improvement budgets and reports. These actions are considered to be part of this plan, and the details, to avoid duplication, should be referenced in their original source document. The HMPC also realizes that new needs and priorities may arise as a result of a disaster or other circumstances and reserves the right to support new actions, as necessary, as long as they conform to the overall goals of this plan.

Further, it should be clarified that the actions included in this mitigation strategy are subject to further review and refinement; alternatives analyses; and reprioritization due to funding availability and/or other criteria. The participating communities are not obligated by this document to implement any or all of these projects. Rather this mitigation strategy represents the desires of the community to mitigate the risks and vulnerabilities from identified hazards. The actual selection, prioritization, and implementation of these actions will also be further evaluated in accordance with the CRS mitigation categories and criteria contained in Appendix C.

It should be noted that the projects submitted by each jurisdiction in Table 5-2 benefit all jurisdictions whether or not they are the lead agency. Further, many of these mitigation efforts are collaborative efforts among multiple local, state, and federal agencies. In addition, the public outreach action, as well as many of the emergency services actions, apply to all hazards regardless of hazard priority.

*Table 5-2 Placer County Planning Area's Mitigation Actions*

Action Title	Lead Jurisdiction	New Action/ 2010 Action	Address Current Development	Address Future Development	Continued Compliance with NFIP	CRS Category
<b>Placer County</b>						
<b>Multi-Hazard Actions</b>						
Integrate Local Hazard Mitigation Plan into Safety Element of General Plan	Placer County	New action	X	X		Prevention Public Information
Enhance Public Education and Awareness of Natural Hazards and Public Understanding of Disaster Preparedness	Placer County and all jurisdictions	New Action	X	X	X	Public Information
Trail System Way Finding and Directional Signage	Placer County	New action	X	X		Emergency Services
Disaster Debris Management Plan	Placer County	New action	X	X	X	Prevention Emergency Services,
<b>Agricultural Actions</b>						
Pest Detection Programs	Placer County	New Action	X	X		Prevention Natural Resource Protection
Noxious Weed Eradication Programs	Placer County	2010 Action	X	X		Prevention Natural Resource Protection
<b>Dam Failure Actions</b>						
Cottonwood Dam Restoration	Placer County	New action	X	X	X	Prevention Natural Resource Protection Structural
<b>Drought Actions</b>						
Retrofit of High Water Use Landscape & Irrigation	Placer County	New action	X	X		Property Protection Natural Resource Protection
Drought Public Education and Outreach	Placer County	New action	X	X		Public Information

Action Title	Lead Jurisdiction	New Action/ 2010 Action	Address Current Development	Address Future Development	Continued Compliance with NFIP	CRS Category
<b>Erosion Actions</b>						
Bear Creek Bank Restoration	Placer County	New action	X	X	X	Property Protection Natural Resource Protection
Lake Tahoe Basin Environmental Improvement Program (EIP)	Placer County	New action	X	X	X	Prevention Natural Resource Protection
<b>Earthquake Actions</b>						
Fire Station Seismic Upgrade	Placer County	New action	X	X		Emergency Services Property Protection
Dewitt Demolition	Placer County	New action	X	X		Prevention Property Protection
Health Care Facility Seismic Resiliency	Placer County	New action	X	X		Emergency Services Property Protection
<b>Flood Actions</b>						
Community Rating System (CRS) Maintain and Enhance	Placer County	New action	X	X	X	Prevention Public Information
Stream Channel Clearing – Western Placer County	Placer County	New action	X	X	X	Property Protection Natural Resource Protection
Van Norden Dam Lowering and Meadow Restoration	Placer County	New action	X	X	X	Structural Natural Resource Protection
Miners Ravine Sewer Pipeline Repair	Placer County	New action	X	X		Prevention Property Protection, Natural Resource Protection Structural
Sewer System Management Plan Updates	Placer County	New action	X	X	X	Prevention

Action Title	Lead Jurisdiction	New Action/ 2010 Action	Address Current Development	Address Future Development	Continued Compliance with NFIP	CRS Category
Stormwater Drainage Improvements	Placer County	New action	X	X	X	Prevention Property Protection, Natural Resource Protection Structural
Bridge and Culvert replacement and drainage improvements	Placer County	New action	X	X	X	Property Protection Structural
Urban Level of Flood Protection Mapping	Placer County	New action	X	X	X	Prevention Public Information
Elevate Remaining 95 Homes in the Dry Creek Watershed	Placer County	2010 action	X	X	X	Property Protection
Elevate Repetitive Loss Structures in 100-year Floodplain	Placer County	2010 action	X	X	X	Property Protection
<b>Hazardous Material Actions</b>						
Natural Hazard Minimization Evaluation focusing on top 5 facilities in Placer County producing large quantities of hazardous waste/storage of such hazardous materials	Placer County	New action	X	X		Prevention
<b>Wildfire Actions</b>						
Large Strategic Fuel Break	Placer County	New action	X	X		Prevention Property Protection Natural Resource Protection
Fuel Breaks in the Wildland Urban Interface (WUI)	Placer County	New action	X	X		Prevention Property Protection Natural Resource Protection
Wildfire Public Education	Placer County	New action	X	X		Public Information
Natural Systems Protection / Education and Awareness Programs – Placer County Wildland Urban Interface (WUI) Strategic Planning	Placer County	New action	X	X		Prevention Property Protection Natural Resource Protection Public Information

Action Title	Lead Jurisdiction	New Action/ 2010 Action	Address Current Development	Address Future Development	Continued Compliance with NFIP	CRS Category
North Fork American River Fuel Break	Placer County	New action	X	X		Prevention Property Protection Natural Resource Protection
Defensible Space Programs	Placer County	2010 action	X	X		Prevention Property Protection
Project that focus on Open Space/Defensible Space	Placer County	2010 action	X	X		Prevention Property Protection Natural Resource Protection
Annual Multi-Agency Wildland Fire Drill	Placer County	2010 Action	X	X		Prevention Property Protection Natural Resource Protection
Vegetation Management – Ongoing Maintenance of Fuel Breaks	Placer County	2010 action	X	X		Prevention Property Protection Natural Resource Protection
<b>City of Auburn</b>						
Integrate Local Hazard Mitigation Plan into Safety Element of General Plan	City of Auburn	New action	X	X		Prevention Public Information
Lincoln Basin (Downtown) Drainage Infrastructure	City of Auburn	2010 Action	X	X	X	Property Protection Structural
Creek and Stream Cleaning and Maintenance Program	City of Auburn	2010 Action	X	X	X	Prevention Property Protection Natural Resource Protection
Implementation of Storm Water Treatment Plan	City of Auburn	2010 Action	X	X	X	Prevention Property Protection Natural Resource Protection

Action Title	Lead Jurisdiction	New Action/ 2010 Action	Address Current Development	Address Future Development	Continued Compliance with NFIP	CRS Category
Electric Street Diversion Project	City of Auburn	2010 Action	X	X	X	Property Protection Structural
Old Town Auburn Storm Drain System	City of Auburn	2010 Action	X	X	X	Prevention Property Protection Natural Resource Protection
American River Canyon Shaded Fuel Break	City of Auburn	2010 Action	X	X		Prevention Property Protection Natural Resource Protection
Community Education on Wildfire	City of Auburn	2010 Action	X	X		Public Information
Residential Home Inspections for Compliance of Fire Safe Standards; Defensible Space.	City of Auburn	2010 Action	X	X		Prevention Property Protection Public Information
Maintenance of the Private Lands Portion of the Shaded Fuel Break Along the Rim of the American River Canyon and the Auburn State Recreation Area (ASRA)	City of Auburn	2010 Action	X	X		Prevention Property Protection Natural Resource Protection Public Information
<b>City of Colfax</b>						
Integrate Local Hazard Mitigation Plan into Safety Element of General Plan	City of Colfax	New action	X	X		Prevention Public Information
Continue Annual Weed Abatement Ordinance	City of Colfax	New Action	X	X		Prevention Property Protection Natural Resource Protection
Colfax Schools Evacuation Site Shaded Fuel Break	City of Colfax	New Action	X	X		Prevention Property Protection

Action Title	Lead Jurisdiction	New Action/ 2010 Action	Address Current Development	Address Future Development	Continued Compliance with NFIP	CRS Category
Evaluate the Need and Feasibility of Improving Fire Prevention for the Historic Business District	City of Colfax	2010 Action	X	X		Prevention Property Protection Natural Resource Protection
<b>City of Lincoln</b>						
Integrate Local Hazard Mitigation Plan into Safety Element of General Plan	City of Lincoln	New action	X	X		Prevention Public Information
Lincoln Boulevard: Auburn Ravine Bridge – Reconstruct Bridge	City of Lincoln	2010 Action	X	X		Structural
McBean Park Drive: Auburn Ravine Bridge – Additional 110' Span	City of Lincoln	2010 Action	X	X		Structural
Lakeview Farms Regional Volumetric Mitigation Facility	City of Lincoln	2010 Action	X	X		Property Protection Structural
Gladding Parkway, Lincoln Boulevard, McCourtney Road – Stream Restoration And Culvert Improvement	City of Lincoln	2010 Action	X	X	X	Property Protection Natural Resource Protection Structural
"O" Street Drainage Improvements	City of Lincoln	2010 Action	X	X	X	Property Protection Natural Resource Protection Structural
7th Street Drainage Improvements	City of Lincoln	2010 Action	X	X	X	Property Protection Natural Resource Protection Structural
Auburn Ravine at State Route 193 Bridge	City of Lincoln	2010 Action	X	X	X	Property Protection Structural
Auburn Ravine at State Route 65 Bridge	City of Lincoln	2010 Action	X	X	X	Property Protection Structural
Ingram Slough – Orchard Creek Return Channel	City of Lincoln	2010 Action	X	X	X	Property Protection Structural

Action Title	Lead Jurisdiction	New Action/ 2010 Action	Address Current Development	Address Future Development	Continued Compliance with NFIP	CRS Category
Markham Ravine – Updated FEMA Analysis And Mapping	City of Lincoln	2010 Action	X	X	X	Prevention Public Information
Markham Ravine Drainage Improvements – Union Pacific Railroad & State Route 65 Crossings	City of Lincoln	2010 Action	X	X	X	Property Protection Natural Resource Protection Structural
Auburn Ravine Stream Restoration Projects (Analysis and Repairs)	City of Lincoln	2010 Action	X	X	X	Natural Resource Protection
Markham Ravine Streambed Restoration Projects (Analysis Only)	City of Lincoln	2010 Action	X	X	X	Prevention Natural Resource Protection
Coon Creek Streambed Restoration Projects (Analysis Only)	City of Lincoln	2010 Action	X	X	X	Prevention Natural Resource Protection
Fire Prevention and Fuels Management Plan	City of Lincoln	2010 Action	X	X		Prevention
<b>City of Rocklin</b>						
Integrate Local Hazard Mitigation Plan into Safety Element of General Plan	City of Rocklin	New action	X	X		Prevention Public Information
Federal Emergency Management Agency (FEMA) Floodplain/Community Rating System (CRS)	City of Rocklin	New action	X	X	X	Prevention Public Information
Creek Channel and Drainage Way Clearing and Maintenance	City of Rocklin	New action	X	X	X	Prevention Natural Resource Protection
High Water Use Landscape and Irrigation Retrofit	City of Rocklin	New action	X	X		Natural Resource Protection
Open Space Fire Prevention & Vegetation Management Prescribed Grazing	City of Rocklin	2010 Action	X	X		Prevention Property Protection Natural Resource Protection

Action Title	Lead Jurisdiction	New Action/ 2010 Action	Address Current Development	Address Future Development	Continued Compliance with NFIP	CRS Category
GIS Based Mapping of Pertinent Information that can be used by All Agencies in the Development of Plans and During Emergency Incidents	City of Rocklin	2010 Action	X	X	X	Prevention Emergency Services Public Information
<b>Town of Loomis</b>						
Integrate Local Hazard Mitigation Plan into Safety Element of General Plan	Town of Loomis	New action	X	X		Prevention Public Information
Local Bridges Evaluation Program	Town of Loomis	New Action	X	X		Prevention Emergency Services
Address signage for property addresses	Town of Loomis	2010 Action	X	X		Emergency Services
Delmar Avenue Headwall Reconstruction Project	Town of Loomis	2010 Action	X	X	X	Property Protection Structural
Creek Maintenance Secret Ravine & Antelope Creek	Town of Loomis	2010 Action	X	X	X	Property Protection Natural Resource Protection
Reconstruction of Brace Bridge at Secret Ravine	Town of Loomis	2010 Action	X	X	X	Structural
Raise Flood-Prone Houses Along Loomis Creeks	Town of Loomis	2010 Action	X	X	X	Property Protection
<b>Alta Fire Protection District</b>						
Apparatus Water Fill & Drafting Location Improvements	AFPD	New Action	X	X		Emergency Services Property Protection
Evacuation / Reunification Center Improvements	AFPD	New Action	X	X		Emergency Services Structural
Natural Systems Protection / Education and Awareness Programs and Community Fuel Breaks	AFPD	New Action	X	X		Emergency Services Property Protection Natural Resource Protection Public Information

Action Title	Lead Jurisdiction	New Action/ 2010 Action	Address Current Development	Address Future Development	Continued Compliance with NFIP	CRS Category
Natural Systems Protection / Education and Awareness Programs	AFPD	New Action	X	X		Emergency Services Natural Resource Protection Public Information
Emergency Communications and Information System Improvements.	AFPD	New Action	X	X		Emergency Services
Alta Fire Protection District CERT Team	AFPD	New Action	X	X		Emergency Services
Reflective Addressing	AFPD	New Action	X	X		Emergency Services Property Protection
<b>Alpine Springs County Water District</b>						
Emergency Electrical Generator Replacement Project	ASCWD	New Action	X	X		Emergency Services
Water Storage Tank Replacement Project	ASCWD	New Action	X	X		Structural
Mineral Springs Soil Bank Stabilization Project	ASCWD	2010 Action	X	X	X	Property Protection Natural Resource Protection
Alpine Meadows Consolidated Defensible Space Continuation Project	ASCWD	2010 Action	X	X		Property Protection Natural Resource Protection
<b>Foresthills Fire Protection District</b>						
Completion of Fuels Management Projects within the Foresthill/Iowa Hill Fire Safe Council, Greater Auburn Area Fire Safe Council and Placer Sierra Fire Safe Council Areas of the Western Slope of Placer County.	FFPD	2010 Action	X	X		Prevention Property Protection Natural Resource Protection
Foresthill Biomass Project	FFPD	2010 Action	X	X		Prevention Property Protection Natural Resource Protection

Action Title	Lead Jurisdiction	New Action/ 2010 Action	Address Current Development	Address Future Development	Continued Compliance with NFIP	CRS Category
Assess and Enhance Foresthill Fire Protection District (FFPD) New Subdivision, Hazard Fuels Clearing and Maintenance Ordinance. Put Programs in Place with Homeowners Associations in CC&R's and Maintenance Contracts.	FFPD	2010 Action	X	X		Prevention Public Information
Todd Valley Shaded Fuel Break	FFPD	2010 Action	X	X		Prevention Property Protection Natural Resource Protection
Completion of Fuels Management Projects within the Foresthill/Iowa Hill Fire Safe Council, Greater Auburn Area Fire Safe Council and Placer Sierra Fire Safe Council Areas of the Western Slope of Placer County.	FFPD	2010 Action	X	X		Prevention Property Protection Natural Resource Protection
<b>Loomis Fire Protection District</b>						
Identify and inspect ALL bridges in LFPD	Loomis FPD	New Action	X	X		Emergency Services
Vegetation Management for Open Areas	Loomis FPD	New Action	X	X		Prevention Property Protection Natural Resource Protection
Address Signs for Rural Residences	Loomis FPD	New Action	X	X		Emergency Services
Adopt 2016 CFC, CBC, and local standards	Loomis FPD	New Action	X	X		Prevention
<b>Nevada Irrigation District</b>						
Combie Phase 1 Replacement	NID	New Action	X	X		Emergency Services Structural
Centennial Water Storage and Power Supply Project	NID	New Action	X	X		Emergency Services Structural
Water Service Auburn Valley CSD	NID	New Action	X	X		Prevention Emergency Services
NID Headquarters Office Generator	NID	New Action	X	X		Emergency Services

Action Title	Lead Jurisdiction	New Action/ 2010 Action	Address Current Development	Address Future Development	Continued Compliance with NFIP	CRS Category
Orr Creek Diversion	NID	New Action	X	X		Property Protection Structural
Reservoir Cleaning	NID	2010 Action	X	X		Property Protection Natural Resource Protection
Canal Culvert Replacement Program	NID	2010 Action	X	X		Property Protection Structural
<b>Northstar Community Services District</b>						
Martis Landing Drainage Swales and Catch Basins	North Star CSD	New Action	X	X	X	Property Protection Natural Resource Protection
Continue Easement Access Road Water Bar Maintenance and Replacement Program	North Star CSD	New Action	X	X		Emergency Services Structural
Fuels Reduction @ Sawmill Reservoir	North Star CSD	New Action	X	X		Prevention Property Protection Natural Resource Protection
Fuels Reduction Program	North Star CSD	New Action	X	X		Prevention Property Protection Natural Resource Protection
Storm Water Drainage Inlet Maintenance	North Star CSD	New Action	X	X	X	Prevention Property Protection Natural Resource Protection
Siphon Line	North Star CSD	New Action	X	X		Natural Resource Protection Structural
Provide Power from Mobile Generator	North Star CSD	New Action	X	X		Emergency Services

Action Title	Lead Jurisdiction	New Action/ 2010 Action	Address Current Development	Address Future Development	Continued Compliance with NFIP	CRS Category
Green Waste Recycling Program	North Star CSD	New Action	X	X		Prevention Public Information
Enhance our current Defensible Space Program by seeking funding to hire a part-time employee to assist the Fire Prevention department in running this program	North Star CSD	New Action	X	X		Property Protection Public Information
District Water Conservation Program	North Star CSD	New Action	X	X		Prevention Property Protection Public Information
<b>North Tahoe Fire Protection District</b>						
FCC P-25 Interoperability Radio Systems	NTFPD	2010 Action	X	X		Emergency Services
District GIS Technology, Equipment, Database and Mapping Improvements	NTFPD	2010 Action	X	X	X	Emergency Service
North Tahoe Fire Protection District Critical Facility Infrastructure Improvements	NTFPD	2010 Action	X	X	X	Emergency Services Structural
Seiche Wave Warning Systems, Signs and Public Education	NTFPD	2010 Action	X	X	X	Emergency Services Public Information
Defensible Space Inspection, Tree Marking, Chipping Program, and Public Education	NTFPD	2010 Action	X	X		Property Protection Public Information
Hazardous Wood Roof Replacement Program	NTFPD	2010 Action	X	X		Property Protection Public Information
Regional Water System Fire Protection Upgrades and Interoperability	NTFPD	2010 Action	X	X		Emergency Services Property Protection
Skid Steer Loader with Transport Trailer, Fuels Reduction Masticator Attachment and Snow Blower Attachment	NTFPD	2010 Action	X	X		Prevention Emergency Services Property Protection
Hydrant Risers, Replacements and Markers	NTFPD	2010 Action	X	X		Emergency Services Property Protection
<b>North Tahoe Public Utility District</b>						
Update SCADA Equipment and Telecommunications Infrastructure	NTPUD	New Action	X	X	X	Emergency Services

Action Title	Lead Jurisdiction	New Action/ 2010 Action	Address Current Development	Address Future Development	Continued Compliance with NFIP	CRS Category
IT and Telecommunications Improvements for Disaster Preparedness	NTPUD	New Action	X	X	X	Emergency Services
Update Emergency Response Plan	NTPUD	New Action	X	X	X	Prevention Emergency Services
Backup Generator Installation at Critical Facilities	NTPUD	New Action	X	X	X	Emergency Services
Fuels Reduction around Critical Infrastructure and North Tahoe Regional Park	NTPUD	New Action	X	X		Prevention Property Protection Natural Resource Protection
Kingswood West Subdivision Emergency Evacuation Access	NTPUD	New Action	X	X		Emergency Services
North Tahoe Regional Park Road Improvements for Emergency Access	NTPUD	New Action	X	X		Emergency Services
Seismic Study and Retrofit of Critical Infrastructure	NTPUD	New Action	X	X		Emergency Services Structural
Sewer Main Replacements in Shorezone of Lake Tahoe	NTPUD	New Action	X	X		Property Protection Structural
Water Booster Pump Station Rehabilitation/Replacement	NTPUD	New Action	X	X		Emergency Services Structural
Increased Storage Capacity for Dollar Cove Water System	NTPUD	New Action	X	X		Emergency Services Structural
Water System Interties	NTPUD	New Action	X	X		Emergency Services Structural
<b>Placer County Flood Control District</b>						
FEMA CTP DFIRM Mapping Study	PCFCWCD	New Action	X	X	X	Prevention Public Information
Pursue Regional Detention and Retention Projects within the Dry Creek and Cross Canal Watersheds	PCFCWCD	2010 Action	X	X	X	Structural
Update Hydrology and Hydraulic Models within the Cross Canal Watershed	PCFCWCD	2010 Action	X	X	X	Prevention

Action Title	Lead Jurisdiction	New Action/ 2010 Action	Address Current Development	Address Future Development	Continued Compliance with NFIP	CRS Category
Upgrade of Flood Warning System to Include Additional Gage Locations and Flood Forecasting Capabilities	PCFCWCD	2010 Action	X	X	X	Emergency Services
<b>Placer County Water Agency</b>						
Hillside Slope Stabilization	PCWA	New Action	X	X		Natural Resource Protection Structural
LL Anderson Dam Spill Way Modification	PCWA	New Action	X	X	X	Structural
Water System Interties	PCWA	New Action	X	X		Emergency Services Structural
Vegetation Management and Brushing	PCWA	New Action	X	X		Natural Resource Protection
Enhance Canals by Converting Earthen Canals to Gunite-Lined Canals in Critical Areas	PCWA	2010 Action	X	X		Emergency Services Structural
Replace Wooden Flume Structures	PCWA	2010 Action	X	X		Emergency Services Structural
De-Silt Reservoirs.	PCWA	2010 Action	X	X		Property Protection Structural
<b>Placer Hills Fire Protection District</b>						
Assess And Enhance Placer Hills Fire Protection District (PHFPD) Onsite Water Requirements For Minor Lot Splits	Placer Hills Fire Protection District	2010 Action	X	X		Prevention
<b>South Placer Fire Protection District</b>						
Vegetation Management for Open Areas	SPFPD	New Action	X	X		Prevention Property Protection Natural Resource Protection
Address Signs for Rural Residences	SPFPD	New Action	X	X		Emergency Services
Adopt 2016 CFC, CBC, and local standards	SPFPD	New Action	X	X		Prevention

Action Title	Lead Jurisdiction	New Action/ 2010 Action	Address Current Development	Address Future Development	Continued Compliance with NFIP	CRS Category
<b>Squaw Valley Public Service District</b>						
Emergency Water Supply Interconnection to Martis Valley	SVPSD	New Action	X	X		Emergency Services Structural
Truckee River Siphon	SVPSD	New Action	X	X		Natural Resource Protection Structural
Squaw Creek Siphon	SVPSD	New Action	X	X		Natural Resource Protection Structural
Easement Abatement/Maintenance of Emergency Access	SVPSD	2010 Action	X	X		Prevention Property Protection
Develop a Community-Wide Emergency Notification System Capable of Providing Information to Both Residents and Visitors by Utilizing Permanent, Roadside Changeable Message Boards and a Low-Power Radio Transmitter	SVPSD	2010 Action	X	X	X	Emergency Services Public Information
SVPSD/Mutual Water Company Inter-tie	SVPSD	2010 Action	X	X		Emergency Services Structural
Water Tank Earthquake Retrofit Project	SVPSD	2010 Action	X	X		Emergency Services Structural
<b>Tahoe City Public Utility District</b>						
Bunker Water Tank Replacement	TCPUD	New Action	X	X		Emergency Services Structural
West Lake Tahoe Regional Water Treatment Plant	TCPUD	New Action	X	X		Emergency Services Structural
Tahoe Main Emergency Water Supply	TCPUD	New Action	X	X		Emergency Services Structural
<b>Tahoe Truckee Unified School District</b>						
North Tahoe High School and Middle School, Tahoe Lake Elementary School Emergency Generators.	TTUSD	New Action	X	X		Emergency Services

Action Title	Lead Jurisdiction	New Action/ 2010 Action	Address Current Development	Address Future Development	Continued Compliance with NFIP	CRS Category
School Site and Community Education of Procedures Related to Safety and Emergency Situations. Improvement of District Wide Emergency Communication and Alert Systems.	TTUSD	2010 Action	X	X	X	Emergency Services Public Information
HVAC Control Upgrades	TTUSD	2010 Action	X	X		Prevention Structural
<b>Truckee Fire Protection District</b>						
Community Wildfire Protection Plan	TFPD	New Action	X	X		Prevention Public Information
Severe Winter Weather and Propane Issues Mainly in Serene Lakes	TFPD	New Action	X	X		Property Protection

## *Multi-Hazard Actions*

### *Action 1. Integrate Local Hazard Mitigation Plan into Safety Element of General Plan*

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**Hazards Addressed:** All hazards

**Goals Addressed:** 1, 2, 3, 4, 5

**Issue/Background:** Local jurisdictional reimbursement for mitigation projects and cost recovery after a disaster is guided by Government Code Section 8685.9 (AB 2140). Specifically, this section requires that each jurisdiction adopt a local hazard mitigation plan (LHMP) in accordance with the federal Disaster Mitigation Act of 2000 as part of the Safety Element of its General Plan. Adoption of the LHMP into the Safety Element of the General Plan may be by reference or incorporation.

**Other Alternatives:** No action

**Existing Planning Mechanisms through which Action will be Implemented:** Safety Element of General Plan

**Responsible Office:** Placer County Planning Department

**Priority (H, M, L):** High

**Cost Estimate:** Jurisdictional board/staff time

**Potential Funding:** Local budgets

**Benefits (avoided Losses):** Incorporation of an adopted LHMP into the Safety Element of the General Plan will help jurisdictions maximize the cost recovery potential following a disaster.

**Schedule:** As soon as possible

### *Action 2. Enhance Public Education and Awareness of Natural Hazards and Public Understanding of Disaster Preparedness*

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**Hazards Addressed:** All (priority and non-priority) hazards

**Goals Addressed:** 1, 2, 3, 4, 5

**Issue/Background:** Placer County, its incorporated jurisdictions, and special districts are participating jurisdictions to the Placer County Local Hazard Mitigation Plan Update. Each jurisdiction plays a key role in public outreach/education efforts to communicate the potential risk and vulnerability of their community to the effects of natural hazards. A comprehensive multi-hazard public education program will better inform the community of natural hazards of concern and actions the public can take to be better prepared for the next natural disaster event.

**Project Description:** A comprehensive multi-hazard outreach program will ascertain both broad and targeted educational needs throughout the community. The County, cities, and special districts will work with other agencies as appropriate to develop timely and consistent annual outreach messages in order to communicate the risk and vulnerability of natural hazards of concern to the community. This includes measures the public can take to be better prepared and to reduce the damages and other impacts from a hazard event. The public outreach effort will leverage and build upon existing mechanisms, will include elements to meet the objectives of Goal 3 of this LHMP Update, and will consider:

- Using a variety of information outlets, including websites, local radio stations, news media, schools, and local, public sponsored events;
- Creating and distributing (where applicable) brochures, leaflets, water bill inserts, websites, and public service announcements;
- Displaying public outreach information in County and City office buildings, libraries, and other public places and events;
- Developing public-private partnerships and incentives to support public education activities.

**Other Alternatives:** Continue public information activities currently in place.

**Existing Planning Mechanism(s) through which Action Will Be Implemented:** Existing County, City, and other special district outreach programs will be reviewed for effectiveness and leveraged and expanded upon to reach the broader region.

**Responsible Office:** Placer County, Cities, and all other participating jurisdictions

**Priority (H, M, L):** High

**Cost Estimate:** Annual costs to be determined, and will depend on the scope and frequency of activities and events as well as volunteer participation

**Benefits (Losses Avoided):** Increase residents' knowledge of potential hazards and activities required to mitigate hazards and be better prepared. Protect lives and reduce damages, relatively low cost to implement.

**Potential Funding:** Local budgets, grant funds

**Schedule:** Ongoing/Annual public awareness campaign

### ***Action 3. Trail System Way Finding and Directional Signage***

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**Hazards Addressed:** Multi Hazard (Search and Rescue)

**Goals Addressed:** 1, 2, 4

**Issue/Background:** Placer County has one of the nation's most extensive recreational trail networks with over 500 miles of public trails located on County, State, and Federally owned property. A need has arisen to improve way finding and directional signage. Many trails are currently non-descript of landmarks for miles on end, and this creates delay in emergency response along trails. Signage will include mile markers along remote trails to aid reporting parties in describing the location of incidents along trails to first

responders. Directional and interpretive signage will also alert trail users of hazards and preparedness planning.

**Other Alternatives:** Close trails to the public if delay in emergency response increases hazards to unacceptable levels.

**Existing Planning Mechanism(s) through which Action Will Be Implemented:** A pilot program of mile marking signage has been implemented in the Dry Creek West Placer Area of Placer County. A Park and Trail Master Plan will be undertaken by Placer County beginning in 2015. The Master Plan will identify trail safety signage standards.

**Responsible Office/Partners:** Placer County Department of Public Works and Facilities, State Parks, U.S. Forest Service/Bureau of Land Management/Bureau of Reclamation, local Land Trusts.

**Project Priority:** High

**Cost Estimate:** \$125,000

**Benefits (Losses Avoided):** Decrease emergency response time in public open space areas. Educate trail users in hazard avoidance and readiness planning.

**Potential Funding:** Grants, Development Fees, other

**Timeline:** 2015 through 2020

***Action 4. Disaster Debris Management Plan (Prevention, Emergency Services, Property Protection)***

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**Hazard Addressed:** Multi-Hazard

**Goals Addressed:** 1, 2, 3, 4

**Issue/Background:** The project would involve developing a Disaster Debris Management Plan to aid in the advance planning for debris management and diversion during and after a disaster. The plan may identify topics such as tasks to be undertaken, team and management roles, government agency coordination, pre-disaster assessment, temporary storage sites, waste diversion opportunities, permanent disposal sites, waste hauling considerations, hazardous wastes, funding and mutual aid, and public outreach.

**Other Alternatives:** No plan in place; relying on in-the-moment decision making which could delay response and result in improper handling of debris.

**Responsible Office:** Placer County – Environmental Engineering and Utilities Division / Office of Emergency Services

**Priority (High, Medium, Low):** Medium

**Cost Estimate:** \$25,000 - \$35,000

**Benefits (avoided Losses):** Reduces risks associated with slow response and/or improper management of potentially hazardous debris waste.

**Potential funding:** Currently unidentified; potential solid waste enterprise funds.

**Schedule:** Within 5 years

## *Agricultural Actions*

### *Action 5. Pest Detection Programs*

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**Hazard Addressed:** Agricultural

**Goals Addressed:** 1, 2, 4

**Issue/Background:** The Pest Detection Programs looks for exotic insect pests like Mediterranean Fruit Fly, Oriental Fruit Fly, Melon Fly, Gypsy Moth, Japanese Beetle, Glassy-winged Sharpshooter, Light Brown Apple Moth, and Asian Citrus Psyllid. Over 1,300 insect traps are placed throughout the county to detect infestations of these economically significant pests. These traps are relocated to new sites approximately every six weeks to increase the monitoring area. These detection traps are typically deployed through the summer season and are inspected/serviced at two week intervals.

**Other Alternatives:** Establishment of these pests would lead to costly agricultural quarantines.

**Existing Planning Mechanism(s) through which Action Will Be Implemented:** Contracts with the California Department of Food and Agriculture (CDFA) specify scope of work.

**Responsible Office:** Placer County Agriculture Department, CA Department Food and Agriculture

**Priority (High, Medium, Low):** High

**Cost Estimate:** \$174,738

**Benefits (avoided Losses):** Early detection of pests allow eradication efforts to begin before pests multiply and spread, becoming economically and technically impossible to control. Thus, costly agricultural quarantines are avoided and/or reduced.

**Potential funding:** Contracts with CA Department of Food and Agriculture

**Schedule:** Continuous/Seasonal (every year, primarily May-October)

### *Action 6. Noxious Weed Eradication Programs*

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**Hazard Addressed:** Agricultural

**Goals Addressed:** 1, 2, 4

**Issue/Background:** The Noxious Weed Eradication Programs concentrate on the removal of incipient populations of noxious weeds. These noxious weeds have the potential to replace native habitat and lead to increased fire potential/occurrence/severity.

**Other Alternatives:** Establishment of these weeds may lead to loss of native habitat and increase wildfire risk.

**Existing Planning Mechanism(s) through which Action Will Be Implemented:** Contracts with US Forest Service (USFS), California Department of Food and Agriculture (CDFA), and Weed Management Areas (WMA's) specify scope of work.

**Responsible Office:** Placer County Agriculture Department, USFS, CDFA, WMA's

**Priority (High, Medium, Low):** High

**Cost Estimate:** \$90,991

**Benefits (avoided Losses):** Retention of native habitat, reduced fire potential/occurrence/severity.

**Potential funding:** Contracts with USFS, CDFA, Grants through WMA's

**Schedule:** Continuous/Seasonal (every year, primarily April-October)

## *Dam Actions*

### *Action 7. Cottonwood Dam Restoration*

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**Hazards Addressed:** Dam failure

**Goals Addressed:** 1, 2, 4

**Issue/Background:** This project includes the removal of an existing dam and fish barrier across Miners Ravine in Granite Bay and subsequent restoration of the creek corridor. Designs will address flood control concerns through improved floodplain storage upstream of the current dam. Water quality concerns will be addressed through removal of accumulated sediments upstream of the dam. Fisheries habitat improvements will also be included.

**Other Alternatives:** No action.

**Existing Planning Mechanism(s) through which Action Will Be Implemented:**

**Responsible Office/Partners:** Placer County Planning Department; Placer County Flood Control and Water Conservation District

**Project Priority:** High

**Cost Estimate:** \$1,500,000.00

**Benefits (Losses Avoided):**

**Potential Funding:** To be determined.

**Timeline:** As soon as possible.

## *Drought Actions*

### **Action 8.      *Retrofit of High Water Use Landscape & Irrigation***

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**Hazards Addressed:** Drought, Fire risk

**Goals Addressed:** 1, 2, 4

**Issue/Background:** Placer County maintains over 160 acres of landscaped grounds in addition to playable turf areas. Approximately 1/3 of that acreage consists of ornamental lawn and other high water use plantings or outdated inefficient irrigation. Retrofit of these areas will be prioritized and completed on a site by site basis as funding becomes available. Other local agencies and districts within Placer County face a similar water usage situation.

**Other Alternatives:** Continue unsightly ‘brown-out’ conditions of existing landscape (leading to increased fire risk) during drought conditions. Currently implementing low water landscape standards for all new development.

**Existing Planning Mechanism(s) through which Action Will Be Implemented:** A selection process for an irrigation and landscape retrofit development team has been completed. A pilot program of irrigation and landscape retrofit at the Placer County Government Center in Auburn will begin in 2016 using County general funds.

**Responsible Office/Partners:** Placer County Department of Public Works and Facilities, Incorporated Cities, Special Districts who maintain landscape areas

**Project Priority:** High

**Cost Estimate:** \$15,000,000

**Benefits (Losses Avoided):** Decreased water usage. Fire risk reduction during drought.

**Potential Funding:** Grants, General Funds, Assessments, other

**Timeline:** 2015 through 2020

### **Action 9.      *Drought Public Education and Outreach (Public Information)***

---

**Hazard Addressed:** Drought

**Goals Addressed:** 1, 3, 4

**Issue/Background:** The project involves public outreach and education to customers of the County’s Sheridan Public Water System that serves the small community of Sheridan, CA which is served by three groundwater wells. The ongoing drought has had numerous impacts on the County. In addition, the state is in a State of Emergency due to the drought. One key method to conserve groundwater is to reduce water uses in homes and landscaping.

**Other Alternatives:** No outreach and education to water customers on how to conserve.

**Responsible Office:** Placer County – Environmental Engineering and Utilities Division

**Priority (High, Medium, Low):** High

**Cost Estimate:** \$5,000 – 10,000 annually during drought years

**Benefits (avoided Losses):** Reduces the environmental and economic impacts of drought.

**Potential funding:** Currently unidentified.

**Schedule:** Annually during drought years.

## *Erosion Actions*

### **Action 10. Bear Creek Bank Restoration**

---

**Hazards Addressed:** Creek erosion that is exposing underground utilities and destabilizing public road.

**Goals Addressed:** 1, 2, 4

**Issue/Background:** Bear Creek located in the unincorporated area of Alpine Meadows has a section in a bend with extensive bank erosion that has exposed a water utility and if continued unabated could impact the stability of a nearby public road.

**Other Alternatives:** Continue to respond to events in a piecemeal fashion.

**Existing Planning Mechanism(s) through which Action Will Be Implemented:** As funding allows, finalize bank restoration plans and bid out plans for implementation.

**Responsible Office/Partners:** Alpine Springs Water District and Placer County Public Works & Facilities Department

**Project Priority:** Low to medium

**Cost Estimate:** \$1,000,000 for improvements

**Benefits (Losses Avoided):** Protect underground utilities and public road.

**Potential Funding:** County Road Fund or competitive grant funding for flood control measures

**Timeline:** Implement project by 2020

### **Action 11. Lake Tahoe Basin Environmental Improvement Program (EIP)**

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**Hazards Addressed:** Erosion areas that cause flooding and significant sediment discharge during high precipitation events in the unincorporated Placer County portion of the Lake Tahoe Basin (from Tahoma along west shore to Kings Beach along north shore).

**Goals Addressed:** 1, 2, 4

**Issue/Background:** In 1997, the Tahoe Regional Planning Agency initiated the EIP with federal funding to address the water clarity and quality of Lake Tahoe. Multiple federal, state and local jurisdictions have implemented numerous erosion control projects since then. Even though many of the high erosive and flooding prone areas have been addressed, future erosion control efforts are still needed.

**Other Alternatives:** Continue to respond to events in a piecemeal fashion.

**Existing Planning Mechanism(s) through which Action Will Be Implemented:** As funding allows, identify and plan future erosion control projects.

**Responsible Office/Partners:** Placer County Public Works & Facilities Department

**Project Priority:** Medium

**Cost Estimate:** \$10,000,000 for future improvements

**Benefits (Losses Avoided):** Minimize flooding and erosion, and maintain water clarity and quality of Lake Tahoe and its drainage ways.

**Potential Funding:** Competitive federal and grant funding

**Timeline:** Implement all projects between now and 2025

## *Earthquake Actions*

### *Action 12. Fire Station Seismic Upgrades*

---

**Hazards Addressed:** Earthquake/Wildfire

**Goals Addressed:** 1, 2, 4,

**Issue/Background:** Many existing Placer County Fire Stations and critical structures necessary in an emergency were constructed under older seismic and wind standards and are in need of upgrading of their lateral reinforcing structures.

**Other Alternatives:** Construct new buildings at a much higher cost.

**Existing Planning Mechanism(s) through which Action Will Be Implemented:** Existing condition assessments.

**Responsible Office/Partners:** Placer County, Cal FIRE

**Project Priority:** Medium

**Cost Estimate:** \$8,000,000 to \$15,000,000

**Benefits (Losses Avoided):** Critical infrastructure is able to be used in an emergency.

**Potential Funding:** Unidentified.

**Timeline:** 1-10 years

### *Action 13. Dewitt Demolition*

---

**Hazards Addressed:** Earthquake

**Goals Addressed:** 1, 2, 4

**Issue/Background:** Removal/demolition of existing unreinforced masonry building at the Placer County Government Center (Dewitt) to prevent loss of life and property as a result of a moderate to major earthquake. The original 1942 buildings at Dewitt were built as temporary structures and not built to modern seismic codes.

**Other Alternatives:** Reinforce/upgrade to code.

**Existing Planning Mechanism(s) through which Action Will Be Implemented:** Placer County Facility Master Plan.

**Responsible Office/Partners:** Placer County Facility Services.

**Project Priority:** High.

**Cost Estimate:** \$6,000,000

**Benefits (Losses Avoided):** Reduce loss of life, building loss, and loss of services in an emergency.

**Potential Funding:** Placer County General Fund.

**Timeline:** 1-5 years.

***Action 14. Health Care Facility Seismic Resiliency***

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**Hazards Addressed:** Earthquake

**Goals Addressed:** 1, 2, 4

**Issue/Background:** Healthcare facilities were evaluated for seismic stability under the 1973 Alfred E. Alquist Facility Seismic Safety Act. Currently, Placer County has several health care facilities that would benefit from upgrades. There are two categories: structural and internal stability (i.e. shelving, oxygen tank lines, etc.): [http://www.oshpd.ca.gov/fdd/seismic\\_compliance/SB1953/SPCNPCList.pdf](http://www.oshpd.ca.gov/fdd/seismic_compliance/SB1953/SPCNPCList.pdf).

**Other Alternatives:** No action.

**Existing Planning Mechanism(s) through which Action Will Be Implemented:**

**Responsible Office/Partners:**

**Project Priority:** Medium

**Cost Estimate:** To be determined.

**Benefits (Losses Avoided):** Benefits: increase stability of health care facilities from two perspectives: (county and individuals). The county benefits by having hospitals viable, in the event of an earthquake, that are able to continue to treat patients/residents, become a potential staging area due to limited damage(s), a command center to help triage affected citizens quickly so that they may return to their families/homes/communities to begin the rebuilding process. The individuals benefit by having immediate access to hospital services due to the building (internal and external) being “safe” post-earthquake to continue treatment rather than having to transport injured citizens outside of the county to access competent medical care.

**Potential Funding:** To be determined.

**Timeline:** Within 5 years.

## *Flood Actions*

### **Action 15. Community Rating System (CRS) Maintain and Enhance**

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**Hazards Addressed:** Flood

**Goals Addressed:** 1, 2, 3, 4, 5

**Issue/Background:** Under the CRS, flood insurance premium rates are adjusted to reflect the reduced flood risk resulting from community activities that meet the three goals of the CRS:

- Reduce flood losses;
- Facilitate accurate insurance rating; and
- Promote the awareness of flood insurance

**Other Alternatives:** Stop participation in the CRS and leave home owners uninformed about flood risks.

**Existing Planning Mechanism(s) through which Action Will Be Implemented:** Community Outreach through implementation of the CRS program. Currently a Class 5 community. Enhancement of program would require establishment of freeboard.

**Responsible Office/Partners:** Placer County Department of Public Works and Facilities

**Project Priority:** Medium

**Cost Estimate:** \$60,000 per year to maintain rating

**Benefits (Losses Avoided):** Reduce flood losses and create a safer community

**Potential Funding:** County General Funds

**Timeline:** Ongoing

### **Action 16. Stream Channel Clearing – Western Placer County**

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**Hazards Addressed:** Flooding

**Goals Addressed:** 1, 2, 4, 5

**Issue/Background:** The Dry Creek watershed and its tributaries run through populated areas throughout Western Placer County including the communities of Granite Bay, Loomis, Roseville, and Dry Creek. The Dry Creek watershed has been responsible for major property damage due to flooding. The soil conditions and topography make Dry Creek and its tributaries prone to vegetation overgrowth including invasive species establishment. Ongoing regular vegetation control is necessary to protect the property within the flood plain of the Dry Creek Watershed. Placer County owns numerous parcels along Dry Creek in Granite Bay and Dry Creek / West Placer.

**Other Alternatives:** Continue vegetation management in phases as funding becomes available.

**Existing Planning Mechanism(s) through which Action Will Be Implemented:** The Placer County Flood Control and Water Conservation District obtains permitting and funding on a limited basis to perform strategic stream clearing on an annual basis. Placer County Department of Public Works and Facilities clears vegetation on stream channels within County owned property as resources permit.

**Responsible Office/Partners:** Placer County Department of Public Works and Facilities, Placer County Flood Control and Water Conservation District

**Project Priority:** High

**Cost Estimate:** \$250,000 annually

**Benefits (Losses Avoided):** Flood protection within the Dry Creek watershed

**Potential Funding:** Grants, general funds, assessments, other

**Timeline:** Ongoing

***Action 17. Van Norden Dam Lowering and Meadow Restoration***

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**Hazards Addressed:** Flood protection, erosion, and degradation of high value habitat

**Goals Addressed:** 1, 2, 4, 5

**Issue/Background:** Lake Van Norden sits at the headwaters of the South Fork Yuba River Drainage. The property of Lake Van Norden has been purchased for conservation through a partnership of the Truckee Donner Land Trust, US Forest Service, Placer County and others. A retrofit plan to lower the dam at the outlet of Lake Van Norden will provide flood protection for property owners along the Yuba River and allow for restoration of the historic Van Norden Meadows that will support unique alpine biodiversity and water quality for the Yuba River watershed. While the physical location of the dam is in Nevada County, much of the resources and property to be protected is in Placer County. The US Forest Service will take ownership of Van Norden Meadows in 2015/16. The acquisition and protection of Van Norden Meadows and watershed has been ranked as the #2 acquisition priority for the US Forest Service nationally.

**Other Alternatives:** Continue erosion and head cutting into Lake Van Norden and associated non-native vegetation growth patterns. Status quo flood risk along the South Yuba River drainage. The project would be undertaken in phases as funding becomes available.

**Existing Planning Mechanism(s) through which Action Will Be Implemented:** A portion of the dam retrofit project will be funded through private donations raised by the Truckee Donner Land Trust. Placer County has contributed \$300,000 toward the permanent conservation of the Van Norden Lake and Meadows.

**Responsible Office/Partners:** Placer County Department of Public Works and Facilities, Truckee Donner Land Trust, US Forest Service, Nevada County

**Project Priority:** Medium for Placer County involvement, High for US Forest Service and Truckee Donner Land Trust

**Cost Estimate:** \$2,500,000 for dam retrofit and meadow restoration

**Benefits (Losses Avoided):** Flood protection along the South Yuba River. .

**Potential Funding:** Grants, private donations, other

**Timeline:** 2015 through 2018

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**Action 18. *Miners Ravine Sewer Pipeline Repair (Prevention, Property Protection, Natural Resource Protection, Structural)***

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**Hazards Addressed:** Flood/Erosion

**Goals Addressed:** 1, 2, 4, 5

**Issue/Background:** The project would involve replacement of one sewage pipeline abutment in Miners Ravine that has become severely structurally compromised due to erosion around the abutment. The current abutment is expected to move in the event of high flows or storm surge through the channel, resulting in a rupture of the suspended pipeline and a sewage spill into Miners Ravine.

**Other Alternatives:** A temporary cable to hold the pipe in suspension until a permanent repair can be made.

**Responsible Office:** Placer County – Environmental Engineering and Utilities Division

**Priority (High, Medium, Low):** High

**Cost Estimate:** \$100,000 estimate

**Benefits (avoided Losses):** Avoidance of potential fines for sewage overflows are estimated at \$10 per gallon. Project would protect natural resources by reducing the potential for a spill of untreated wastewater into the Ravine.

**Potential funding:** Local sewer district funds.

**Schedule:** 2015 / 2016

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**Action 19. *Sewer System Management Plan Updates (Prevention, Structural, Natural Resources Protection, Property Protection)***

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**Hazards Addressed:** Flooding/Localized Flooding

**Goals Addressed:** 1, 2, 4, 5

**Issue/Background:** This project involves the routine updating and implementation of Sewer System Management Plans (SSMPs) required by the State Water Resources Control Board waste discharge requirements to ensure proper maintenance of the County's 283+ miles of sewer pipeline in nine sewer collection systems. The SSMPs identifies system-wide operations, management and maintenance plans to reduce the risk of sewer overflows that could impact natural resources and damage sewer facilities. Components of the SSMPs include, but are not limited to Preventative Maintenance Plans, condition assessments, Overflow Emergency Response Plans, Rehabilitation and Replacement Plans, and System Evaluation and Capacity Assurance Plans.

**Other Alternatives:** No procedures in place.

**Responsible Office:** Placer County – Environmental Engineering and Utilities Division

**Priority (High, Medium, Low):** Medium

**Cost Estimate:** Ongoing labor costs.

**Benefits (avoided Losses):** Potential fines for sewage overflows are estimated at \$10 per gallon. Additional fines for violating discharge permits. Depending on the magnitude, this could result in fines in excess of \$100,000 during a significant event. In addition to the fines, additional resources would be needed for spill response and clean up, and potential infrastructure repair. Project would protect natural resources by reducing the potential for spills of untreated wastewater into waterways.

**Potential funding:** Sewer district funds for County labor.

**Schedule:** Ongoing

#### ***Action 20. Stormwater Drainage Improvements***

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**Hazards Addressed:** Flooding and erosion in developed areas of unincorporated area of Olympic Valley

**Goals Addressed:** 1, 2, 4, 5

**Issue/Background:** County roads developed on the north side of Olympic Valley for residential development have antiquated drainage infrastructure and the area is at the base of historic and ongoing hazards including mudslides, erosive drainage flows, and avalanches.

**Other Alternatives:** Continue to respond to events in a piecemeal fashion.

**Existing Planning Mechanism(s) through which Action Will Be Implemented:** As funding allows, map existing drainage infrastructure to identify where improvements are needed.

**Responsible Office/Partners:** Placer County Public Works & Facilities Department

**Project Priority:** Low to medium

**Cost Estimate:** \$100,000 for plan; \$1,000,000 for improvements

**Benefits (Losses Avoided):** Minimize flood damage to public roads and private property.

**Potential Funding:** County Road Fund or competitive grant funding for flood control measures

**Timeline:** Complete plan by 2020

***Action 21. Bridge and Culvert replacement and drainage improvements***

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**Hazards Addressed:** Flood

**Goals Addressed:** 1, 2, 4

**Issue/Background:** Continue to review and identify bridge, culverts and drainage improvements

**Other Alternatives:** Continue to respond to events in a piecemeal fashion.

**Existing Planning Mechanism(s) through which Action Will Be Implemented:** Funding thru Federal or State grants and road funds.

**Responsible Office/Partners:** Placer County Department of Public Works and Facilities

**Project Priority:** Medium

**Cost Estimate:** Cost dependent on project. \$50,000 - \$10,000,000

**Benefits (Losses Avoided):** Reduce flood losses and maintain safe public roads

**Potential Funding:** Grant Programs

**Timeline:** 2-10 years

***Action 22. Urban Level of Flood Protection Mapping***

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**Hazards Addressed:** Flood

**Goals Addressed:** 1, 2, 4, 5

**Issue/Background:** The project is proposed in accordance with the Flood General Plan Amendment, adopted in November 2015, and consistent with the requirements of SB 5 and its subsequent amendments, which requires cities and counties to amend their general plans to strengthen the linkage between local land use planning and flood protection.

**Other Alternatives:**

**Existing Planning Mechanism(s) through which Action Will Be Implemented:** Flood General Plan Amendment, update to Safety Element (Implementation Program 8.23)

**Responsible Office/Partners:** Department of Public Works, CDRA Engineering and Surveying Division, Flood Control and Water Conservation District

**Project Priority:** High

**Cost Estimate:** \$15,000-20,000

**Benefits (Losses Avoided):** Avoidance of property damage and loss

**Potential Funding:** Grant sources TBD, General Fund

**Timeline:** Commenced August 2012

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**Action 23. *Elevate Remaining 95 Homes in the Dry Creek Watershed***

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**Hazards Addressed:** Flood

**Goals Addressed:** 1, 2, 4, 5

**Issue/Background:** Homes in the Dry Creek Watershed have a history of flooding. These 95 homes could benefit from being elevated above flood levels.

**Other Alternatives:** Other than elevating the structure, alternatives include; acquisitions/relocations, dry flood proofing of non-residential structures, minor localized flood control projects, and demolition of NFIP-insured structures on acquired or restricted real property.

**Existing Planning Mechanism(s) through which Action Will Be Implemented:** Available funding and homeowner cost sharing where possible. Funding thru Federal or State grant sources if available.

**Responsible Office/Partners:** Placer County Department of Public Works and Facilities

**Project Priority:** Medium

**Cost Estimate:** Elevation is estimated at \$100,000 to \$150,000 per structure.

**Benefits (Losses Avoided):** Reduce flood losses and create a safer community

**Potential Funding:** Potential Grant Programs

**Timeline:** 2-10 years

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**Action 24. *Elevate Repetitive Loss Structures in 100-year Floodplain***

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**Hazards Addressed:** Flood

**Goals Addressed:** 1, 2, 4, 5

**Issue/Background:** Placer County is a participant in the National Flood Insurance Program Community Rating System. As a participant in the CRS program, Placer County reviews the Repetitive Loss (RL) properties within its jurisdiction and annually notifies surrounding property owners of the RL property. In order to mitigate for RL properties, the structures can be elevated such that the finish floor is elevated above the 100-year flood elevation. RL properties include but are not limited to the following:

- 2 RL properties in Granite Bay
- 1 RL property in Loomis
- 1 RL property in Newcastle
- 1 RL property in Lincoln
- 1 RL property in Soda Springs
- 1 RL property in Olympic Valley
- 1 RL property in Tahoe City
- 1 RL property in Homewood

**Other Alternatives:** Other than elevating the structure, alternatives include; acquisitions/relocations, dry flood proofing of non-residential structures, minor localized flood control projects, and demolition of NFIP-insured structures on acquired or restricted real property.

**Existing Planning Mechanism(s) through which Action Will Be Implemented:** Elevate RL structures using grants when available.

**Responsible Office/Partners:** Placer County Department of Public Works and Facilities

**Cost Estimate:** Elevation is estimated at \$100,000 to \$150,000 per structure.

**Benefits (Losses Avoided):** Reduce flood losses and create a safer community

**Potential Funding:** Potential Grant Programs

**Timeline:** 2-10 years

**Project Priority:** Medium

## *Hazardous Materials Actions*

### **Action 25. Natural Hazard Minimization Evaluation focusing on top 5 facilities in Placer County producing large quantities of hazardous waste/storage of such hazardous materials**

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**Hazards Addressed:** Hazardous Materials/Flood/Earthquake

**Goals Addressed:** 1, 2, 4

**Issue/Background:** Evaluate/identify/repair/strengthened barriers to minimize release/exposure of hazardous materials into county that may occur due to a natural disasters

**Other Alternatives:** No action

**Existing Planning Mechanism(s) through which Action Will Be Implemented:**

**Responsible Office/Partners:** LEPC

**Project Priority:** Medium

**Cost Estimate:** To be determined.

**Benefits (Losses Avoided):** Benefits: increase stability of the five facilities identified in the EPA's Toxic Release Inventory (EPA's TRI Factsheet for Placer County, CA): [http://isapub.epa.gov/triexplorer/tri\\_factsheet](http://isapub.epa.gov/triexplorer/tri_factsheet). These industrial facilities should be evaluated from a natural disaster mitigation perspective (if not already done so in the past) for modifications/enhancements/barriers that could be available in the event of either an earthquake or flood. For example, in the event of an earthquake is there secondary barriers in place to minimize spreading? In the event of a flood, are back-up generators available in the event the electrical systems is rendered useless? Back-up floodlights available in case natural disaster occurs at nighttime and visibility is key to determining extent of damage, if any, to the facility in question.

**Potential Funding:** To be determined

**Timeline:** Within 5 years.

## *Wildfire Actions*

### **Action 26.     *Large Strategic Fuel Break***

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**Hazards Addressed:** Wildfire

**Goals Addressed:** 1, 2, 4

**Issue/Background:** Large Strategic Fuel Break projects will provide landscape scale community protection in our area. When complete, these projects will help protect the communities identified as “Communities at Risk from Wildfire” listed in the National Fire Plan.

This practice applies to all communities where protection from wildfire is needed. These Strategic Fuel breaks are planned and located on the landscape as part of a conservation management system for a land unit where there is a need to control the risk of the spread of fire into our communities as well as to protect watersheds, critical infrastructure, and commerce traveling on our freeways and railways. Typically, they break up large, continuous tracts of dense natural fuels, thus limiting uncontrolled spread of fire, and are commonly associated with firebreaks (permanent or temporary strips of bare or vegetated land planned to retard fire). For our purposes, a strategic fuel break is typically placed to protect the communities identified in the Western Slope CWPP for that specific Fire Safe Council area.

The Placer County Fire Safe Alliance and Fire Safe Councils have worked with County, State, and Federal agencies to identify areas within their jurisdictions to develop large strategic fuel breaks to protect specific communities and watersheds within the County.

**Other Alternatives:** Rely on the individual property owner or land managers to develop strategic fuel breaks to protect resources and assets that may be outside of their ownership or responsibility.

**Existing Planning Mechanism(s) through which Action Will Be Implemented:** Work with the current property owner or land manager to implement strategic fuel breaks identified in the Western Slope CWPP. Apply for local, State, or Federal funding to implement these plans.

**Priority (High, Medium, Low):** High

**Responsible Office:** Placer County OES

**Cost Estimate:** The cost for the individual projects is identified in the Western Slope CWPP Project Planning Worksheets.

**Benefits (Losses Avoided):** Reduced risk of loss of life and property from catastrophic wildfire in developed communities, towns, and city’s within the County.

**Potential Funding:** County, State, and Federal funding

**Schedule:** These projects are ongoing. Each project within the Western Slope CWPP is reviewed annually and updated as needed or removed if completed.

**Action 27. Fuel Breaks in the Wildland Urban Interface (WUI)**

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**Hazards Addressed:** Wildfire

**Goals Addressed:** 1, 2, 4,

**Issue/Background:** The purpose of a Shaded Fuel Break within the WUI is to minimize destruction to communities from wildfire and to protect and enhance natural resources, watershed and habitat of western Placer County. When complete, these projects will help protect the community's identified as "Communities at Risk from Wildfire" and identified as communities with the WUI, listed in the CWPP.

This practice applies to all communities within the WUI where protection from wildfire is needed. These Shaded Fuel breaks are planned thinning of dense vegetation in an area approximately 300 feet wide where fire does not easily move from the ground into the overhead tree canopy and to allow fire resources to utilize such a location to increase probability of success during fire suppression activities. Fuel break width will be dependent upon the fuels and topography in any given area.

For our purposes, a strategic fuel break is typically placed to protect the communities identified in the Western Slope CWPP WUI, for that specific Fire Safe Council.

The Placer County Fire Safe Alliance and Fire Safe Councils have worked with County, State, and Federal agencies to identify areas within their jurisdictions to develop shaded fuel breaks to protect specific communities and watersheds within the WUI.

**Other Alternatives:** Rely on the individual property owner or land managers within the WUI to develop fuel breaks to protect resources and assets from fire that may spread from the wildland into urban areas.

**Existing Planning Mechanism(s) through which Action Will Be Implemented:** Work with the current property owner or land manager to implement shaded fuel breaks identified in the Western Slope CWPP WUI area. Apply for local, State, or Federal funding to implement these plans.

**Priority (High, Medium, Low):** High

**Responsible Office:** Placer County OES

**Cost Estimate:** The costs for the individual projects are identified in the Western Slope CWPP Project Planning Worksheets.

**Benefits (Losses Avoided):** Reduced risk of loss of life and property from catastrophic wildfire in developed communities, towns, and city's within the County.

**Potential Funding:** County, State, and Federal funding

**Schedule:** These projects are ongoing. Each project within the Western Slope CWPP is reviewed annually and updated as needed or removed if completed.

**Hazards Addressed:** Wildfire

**Goals Addressed:** 3

**Issue/Background:** Public education through community outreach is a must in Placer County. We have 23 individual high risk communities in the County ranging from 200 to 2500 residents each. Each Fire Safe Council, Firewise Community, and the Fire Safe Alliance attempts to meet with as many of these residents as possible to provide information on defensible space and Firewise requirements. Most is done through attending Municipal Advisory Council, HOA, community events, and local community group meetings. Each FSC would develop an annual calendar defining the meetings and events to attend. These events range from 15 minute presentation to local and government groups as well as multiple day events (i.e. local fair and seasonal home shows).

There are approximately 36,000 habitable structures in the Western Placer County SRA (four FSC's) boundaries. This is the fourth largest density of parcels with habitable structure in the state SRA areas. The goal of each Fire Safe Council and the Fire Alliance is consistent with the CAL FIRE communications goal of "To provide information and education to people of all ages, in public forums, through the media and worldwide web, and the distribution and display of printed material". Having consistent, quality education material will help us educate the public on "THEIR" roll to manage their defensible space and prevent the spread of wildfire into and out of their communities. While the majority of habitable structures are within the 23 communities at risk, education sessions will take place inside and outside of the communities. Outside meaning local fairs, seasonal home shows, Municipal Advisory Council meetings and other public events.

**Other Alternatives:** Each property owner or land manager needs to manage properties and infrastructure within their responsibility. While public service messages and media helps tell the public of their responsibility for defensible space and fire mitigation, specific and direct communications and training information increases the chance of reaching the public.

**Existing Planning Mechanism(s) through which Action Will Be Implemented:** Work with the current property owner or land manager to implement fuels management and fire prevention projects identified in the Western Slope CWPP WUI area. Apply for local, State, or Federal funding to implement these plans.

**Priority (High, Medium, Low):** High

**Responsible Office:** Placer County OES

**Cost Estimate:** Previous assessment shows a first year cost of \$31,000 and an annual cost of \$4,000 per year, after year one.

**Benefits (Losses Avoided):** This program would provide the tools and resources to develop, purchase, and maintain needed public education material to educate Placer County residents on wildfire prevention and Firewise Community techniques.

**Potential Funding:** County, State, and Federal funding.

**Schedule:** These projects are ongoing. Each project within the Western Slope CWPP is reviewed annually and updated as needed or removed if completed.

*Action 29. Natural Systems Protection / Education and Awareness Programs – Placer County Wildland Urban Interface (WUI) Strategic Planning*

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**Hazards Addressed:** Wildfire

**Goals Addressed:** 1, 2, 3, 4

**Issue/Background:** Pre-incident assessments of the fire environment and resources at risk allow first responders to focus on responding versus reacting. Residential development in fire dependent ecosystem has created hazardous firefighting and life safety considerations for first responders. Many of these WUI communities within Placer County are bound by steep, deep inaccessible topography with poor access, steep slopes, heavy fuels, and recurring fire occurrence.

This project will result in multiple cooperators sharing knowledge and involving the community in a fire safety planning project that will establish a strategic knowledge base for incident management and fuel management applications. Inventoried elements include structure locations, defensible space, road systems, emergency vehicle access, community closure points, water sources, at-risk assets and potential incident related locations.

These elements are all input into Geographic Information System (GIS) for development of planning area maps with a written pre-attack plan and made available to all emergency responders within Placer County.

This project includes residential education that stresses the importance of fire awareness, defensible space and evacuation procedures and preparation as part of the planning process.

The long term measurable outcomes of this project are reduction of risk of death and injuries, reduced property loss and devastation from wildfire, flood or other hazard.

Placer County Fire, CAL FIRE, Placer OES and multiple local fire districts have worked together to identify strategies and resources that will reduce risk from wildfire and improve the management of emergency incidents within the developed wildland urban interface (WUI) throughout Placer County.

**Other Alternatives:** Do nothing. Rely on local knowledge being available at the time of emergency.

**Existing Planning Mechanism(s) through which Action Will Be Implemented:** This project is a permanent component of the local CAL FIRE Fire Plan. It originated as a grass roots effort of various public safety and resource conservation cooperators. The pre-planning component will be a product that will be carried by local engines, Placer County OES, Placer County Sheriffs and input into the Emergency Command Center CAD dispatch program.

**Responsible Office/Partners:** Placer County Fire / CAL FIRE Nevada Yuba Placer Unit

**Project Priority:** High

**Cost Estimate:** Moderate costs, (<\$100,000), return on investment estimated in millions of dollars in lessened impacts from wildfire.

**Benefits (Losses Avoided):** Reduced risk of loss of life and property, injury to first responders throughout the wildland urban interface communities within Placer County.

**Potential Funding:** County, State and Federal funding.

**Timeline:** Long term, 5 year intensive for data development, continuous for updates.

***Action 30. North Fork American River Fuel Break***

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**Hazards Addressed:** Wildfire

**Goals Addressed:** 1, 2, 4

**Issue/Background:** The North Fork American River Fuel Break project area is a critical point of intersection between the wild land of the rugged North Fork American River canyon and the densely populated WUI areas throughout the Interstate 80 corridor.

Extension of the existing Auburn shaded fuel break north, protecting the at risk communities that line the North Fork of the American River. The North Fork is federally listed as a Wild and Scenic River and has numerous management and suppression restrictions on it in case of a fire. The North Fork American River is a primary source of domestic water from Auburn, downstream to the San Francisco Bay Area. Wildfire threat is constant and continual thereby justifying the investment in protection of these vital resources.

Extension will involve crossing the communities of Auburn, Applegate, Meadow Vista, Weimar and Colfax that line Interstate 80. A conservative estimate of structures that would derive benefit from this fuel break is +/- 5,500, worth an approximate value of \$1.925 Billion.

The area has an active large fire history, encompassing the communities impacted by the 2014 Applegate fire, 2012 Robbers fire, 2009 49 fire, 2004 Stephens fire and the Ponderosa fire in 2001.

Potential economic impact from closure of the economic corridor of Highway 80 has been estimated at 1 million dollars per closure hour of lost revenue to the economy of the state. The transcontinental railroad also weaves throughout these communities and project area. Closure of that system can equal 1 million dollars per minute of lost revenue to the economy.

**Other Alternatives:** Rely on the individual property owner or land manager to develop strategic fuel breaks to protect resources and assets that may be outside of their ownership or responsibility. This is the current practice which has led to a disjointed arrangement of small fuel treatments that make strategic utilization difficult.

**Existing Planning Mechanism(s) through which Action Will Be Implemented:** This project is a permanent component of the local CAL FIRE Fire Plan. CEQA compliance for the fuel break is currently

being funded through CAL FIRE SRA Fee grant to be completed by 2017. Continued development of funding opportunities and on the ground implementation will be completed through an interagency partnership fostered by the Placer County Fire Alliance that will cross multiple fire districts.

**Responsible Office/Partners:** Placer County Fire / CAL FIRE Nevada Yuba Placer Unit / Placer County RCD / Placer OES

**Project Priority:** High

**Cost Estimate:** High

**Benefits (Losses Avoided):** Reduced risk of loss of life and property from catastrophic wildfire in developed communities along the North Fork American River.

**Potential Funding:** County, State and Federal funding.

**Timeline:** This project is active. CEQA compliance will be completed by early 2017. On the ground work could begin immediately after CEQA completion.

### *Action 31. Defensible Space Programs*

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**Hazards Addressed:** Wildfire

**Goals Addressed:** 1, 2, 3, 4

**Issue/Background:** These projects address the ongoing need to manage fuels in and around privately owned homes, businesses and communities, freeways and roadways, and “Assets at Risk” in Placer County. Small communities, individual property owners and infrastructure assets can be impacted by roadside fire starts and fire starts moving into or out of private property.

When complete, these projects will protect Assets at Risk and projects the communities have identified in the CWPP.

The Placer County Fire Safe Alliance and Fire Safe Councils have worked with County, State, and individual property owners to identify areas within their jurisdictions to provide fuels management projects to reduce the risk of wildfire starts and spread along roadways and into or out of individual properties.

**Other Alternatives:** Each property owner or land manager needs to manage properties and infrastructure within their responsibility. Spread from fire starts within their property can only be prevented or contained by the fire prevention and fuel management work done by the owner.

**Existing Planning Mechanism(s) through which Action Will Be Implemented:** Work with the current property owner or land manager to implement fuels management and fire prevention projects identified in the Western Slope CWPP WUI area. Apply for local, State, or Federal funding to implement these plans.

**Priority (High, Medium, Low):** High

**Responsible Office:** Placer County OES

**Cost Estimate:** The cost for the individual projects is identified in the Western Slope CWPP Project Planning Worksheets.

**Benefits (Losses Avoided):** Reduced risk of loss of life and property from catastrophic wildfire in developed communities, towns, and city's within the County. Loss of assets at risk can have significant impact on those outside of the County. Communication links and interstate transportation can be significantly impact by wildfire along the Interstate 80 corridor.

**Potential Funding:** County, State, and Federal funding

**Schedule:** These projects are ongoing. Each project within the Western Slope CWPP is reviewed annually and updated as needed or removed if completed.

***Action 32. Project that focus on Open Space/Defensible Space***

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**Hazards Addressed:** These projects address the ongoing need to manage fuels in and around small communities, individual properties, freeways and roadways, and Assets at Risk in Placer County. Small communities, individual property owners and infrastructure assets can be impacted by roadside fire starts and fire starts moving into or out of private property.

When complete, these projects will help protect Assets at Risk and projects the community's identified in the Western Slope CWPP.

Shaded Fuel Break prescription, individual defensible space rules, and roadside fuels management treatment processes can be used to prevent wildfire within the identified areas for that specific Fire Safe Council.

**Goals Addressed:** 1, 2, 3, 4

**Issue/Background:** The Placer County Fire Safe Alliance and Fire Safe Councils have worked with County, State, and individual property owners to identify areas within their jurisdictions to provide fuels management projects to reduce the risk of wildfire starts that spread along roadways and into or out of individual properties.

**Other Alternatives:** Each property owner or land manager needs to manage properties and infrastructure within their responsibility. Spread from fire starts within their property can only be contained through the fire prevention and fuels management work done by the owner.

**Existing Planning Mechanism(s) through which Action Will Be Implemented:** Work with the current property owner or land manager to implement fuels management and fire prevention projects are identified in the Western Slope CWPP WUI area. Apply for local, State, or Federal funding to implement these plans.

**Priority (High, Medium, Low):** High

**Responsible Office:** Placer County OES

**Cost Estimate:** The cost for the individual projects is identified in the Western Slope CWPP Project Planning Worksheets.

**Benefits (Losses Avoided):** Reduced risk of loss of life and property from catastrophic wildfire in developed communities, towns, and city's within the County. Loss of assets at risk can have significant impact on those outside of the County. Communication links and interstate transportation can be significantly impacted by wildfire along the Interstate 80 corridor.

**Potential Funding:** County, State, and Federal funding

**Schedule:** These projects are ongoing. Each project within the Western Slope CWPP is reviewed annually and updated as needed or removed if completed.

***Action 33. Annual Multi-Agency Wildland Fire Drill***

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**Hazards Addressed:** Wildfire

**Goals Addressed:** 1, 2, 3, 4

**Issue/Background:** The Placer County Fire Chiefs Association and Training Officers Association have developed an annual training exercise that provides training and education at all levels. This is a one-day event that simulates a large wildland incident requiring a sizeable number of resources. Average participation in such an exercise has been around 135 personnel from all different agencies. Some include: the planning and development stages of the exercise utilize the "team" concept of various Incident Command System (ICS) positions that individuals may complete required training for; engine company personnel conduct "hands on" performance based training to enhance wildland fire skills; overhead ICS positions interface with political dignitaries of jurisdictions as to what occurs and the needs during such an event.

**Other Alternatives:** Not having these annual drills means that when a large incident occurs, the response to and management of the incident may be less than ideal.

**Existing Planning Mechanism(s) through which Action Will Be Implemented:**

**Responsible Office:** Placer County Fire Chiefs Association and Training Officers Association

**Priority (H, M, L):** High

**Cost Estimate:** The cost for such an exercise has been running about \$5,000.00 annually.

**Benefits (Losses Avoided):** Excellent realistic training for all personnel at all levels, and the cooperative effort and training among various fire agencies and local government on a regional basis, leads to a more effective response to real incidents without a significant cost factor. The value of this drill was illustrated on the 2004 Stevens Fire near Colfax where over a thousand personnel and several hundred engines from multiple fire agencies worked together in partnership.

**Potential Funding:** To be determined

**Schedule:** Ongoing

**Action 34. *Vegetation Management – Ongoing Maintenance of Fuel Breaks***

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**Hazards Addressed:** Wildfire

**Goals Addressed:** 1, 2, 3, 4

**Issue/Background:** Placer County owns over 300 parcels of land with over 1,500 acres of open space that requires establishment and maintenance of shaded fuel breaks. Since 2010, Placer County has successfully established over 150 acres of shaded fuel breaks in cooperation with the Cal Fire. The inventory of shaded fuel breaks is expected to rise as additional open space is dedicated to Placer County and its partner agencies and land trusts. A maintenance program is needed to keep the shaded fuel breaks from reverting to overgrowth.

**Other Alternatives:** Continue vegetation maintenance in phases as funding becomes available.

**Existing Planning Mechanism(s) through which Action Will Be Implemented:** Placer County and its partner agencies, districts, and land trusts perform vegetation maintenance in phases as funding becomes available. Methods include mechanical thinning and grazing.

**Responsible Office/Partners:** Placer County Department of Public Works and Facilities, adjacent cities, districts, and land trusts.

**Project Priority:** High

**Cost Estimate:** \$150,000 annually for Placer County property. Additional funding needed as inventory increases through acquisition of open space. Does not include funding for outside agencies and land trusts.

**Benefits (Losses Avoided):** Catastrophic wildfire risk reduction

**Potential Funding:** Grants, general funds, assessments, other

**Timeline:** Ongoing