



Chapter 5 Mitigation Strategy

Requirement §201.6(c)(3) and §201.7(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 this Plumas County Local Hazard Mitigation Plan (LHMP) Update. It describes how the County 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 Hazard Mitigation Planning Committee (HMPC) led to the mitigation strategy and mitigation action plan for this LHMP Update. As part of the LHMP Update process, a comprehensive review and update of the mitigation strategy portion of the 2014 LHMP was conducted by the HMPC. Some of the initial goals and objectives from the 2014 Amador County LHMP 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 or progress towards the 2014 actions, the updated risk assessment and the new priorities of this 2020 LHMP Update. To support the new LHMP goals, the mitigation actions from 2014 were reviewed and assessed for their value in reducing risk and vulnerability to the Plumas County Planning Area from identified hazards and evaluated for their inclusion in this LHMP Update (See Chapter 2 What’s New). Section 5.2 below identifies the new goals and objectives of this LHMP 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 Plumas County Planning Area, an emphasis will be placed on continued compliance with the National Flood Insurance Program (NFIP) by all communities. Detailed below is a description of Plumas 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 Update 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.

Plumas County’s Flood Management Program

Plumas County has participated in the Regular Phase of the NFIP since 1984. 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 Community Rating System (CRS) was created in 1990. It is designed to recognize floodplain management activities that go above and beyond the NFIP’s minimum requirements. If a community implements public information, mapping, regulatory, loss reduction and/or flood preparedness activities and submits the appropriate documentation to FEMA, then its residents can qualify for a flood insurance premium rate reduction. The County does not currently participate in the CRS program, but may evaluate the overall value of joining CRS in the future during the implementation phase of this LHMP Update.

Presently, the County manages its floodplains in compliance with NFIP requirements and implements a floodplain management program designed to protect the people and property of the County. Floodplain regulations are a critical element in local floodplain management and are a primary component in the County’s participation in the NFIP. As well, the County’s floodplain management activities apply to existing and new development areas, implementing flood protection measures for structures and maintaining drainage systems to help reduce the potential of flooding within the County.

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 Unincorporated Plumas County NFIP Status

NFIP Topic	Comments
Insurance Summary	
How many NFIP policies are in the community?	140 policies
What is the total premium and coverage?	\$178,103 in annual premiums
	\$32,883,100 in coverage
How many claims have been paid in the community?	59 claims
What is the total amount of paid claims?	\$1,099,373.04 in paid claims
How many of the claims were for substantial damage?	9 substantial damage claims
How many structures are exposed to flood risk within the community?	557 in 1% annual chance floodplain
	88 in 0.2% annual chance floodplain

NFIP Topic	Comments
Number of Repetitive and Severe Repetitive Loss Properties	4 RL structures 0 SRL structures
Describe any areas of flood risk with limited NFIP policy coverage	No areas with limited NFIP policy coverage.
Staff Resources	
Is the Community Floodplain Administrator or NFIP Coordinator certified?	No
Provide an explanation of NFIP administration services (e.g., permit review, GIS, education or outreach, inspections, engineering capability)	Permit review is done
What are the barriers to running an effective NFIP program in the community, if any?	None
Compliance History	
Is the community in good standing with the NFIP?	Y
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)?	9/29/2011CAV
Is a CAV or CAC scheduled or needed?	No
Regulation	
When did the community enter the NFIP?	9/24/1984
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

NFIP Topic	Comments
Provide an explanation of the permitting process.	<p>An application for a development permit for any man-made change to real estate in an area of special flood hazard shall include the following information:</p> <p>The proposed elevation in relation to mean sea level of the lowest floor of all structures; or, if in zone AO, elevation of highest adjacent grade and proposed elevation of lowest floor; (b) The proposed elevation in relation to mean sea level to which any nonresidential structure would be floodproofed if required by Section 8-17.301(c)(2); (c) All appropriate certifications listed in Article 3 of this chapter and Section 9-3.309 of Article 3 of Title 9 of this Code; (d) A description of the extent to which any watercourse will be altered or relocated as a result of the proposed man-made changes to real estate; (e) A proposed method and means, subject to the approval of the Building Official, to verify the location of the man-made change to real estate; (f) And an application for a development permit for any man made change to real estate in a 100-year flood hazard area shall include an engineered analysis based on a uniform procedure prescribed by the County Engineer that has been completed, submitted to the County Engineer, reviewed and approved by the County Engineer, and copies thereof provided to the County Engineer, the Planning Director and the Building Official. The County Engineer, the Building Official, the Director of Environmental Health, and the Planning Director may make interpretations where needed, as to the exact location of the boundaries of the areas of special flood hazard, including where there appears to be a conflict between a mapped boundary and actual field conditions. In an A zone, residential construction, new or substantial improvement, shall have the lowest floor, including basement, elevated at least one foot above the base flood elevation. In an AO zone, residential construction, new or substantial improvement, shall have the lowest floor, including basement, elevated above the highest adjacent grade to a height exceeding the depth number specified in feet on the Flood Insurance Rate Map by at least one foot, or elevated at least three (3') feet above the highest adjacent grade if no depth number is specified. On completion of the structure, the elevation of the lowest floor shall be certified by a registered professional engineer or surveyor, and shall be verified by the Building Official, to be properly elevated. The certification and verification shall be provided to the Building Official and the County Engineer.</p>
Community Rating System (CRS)	
Does the community participate in CRS?	N
What is the community's CRS Class Ranking?	N/A
What categories and activities provide CRS points and how can the class be improved?	N/A
Does the plan include CRS planning requirements?	N/A

Source: FEMA/Plumas County

5.1.2. Integration of Mitigation with Post Disaster Recovery and Mitigation Strategy Funding Opportunities

Hazard Mitigation actions are essential to weaving long-term resiliency into all community recovery efforts so that at-risk infrastructure, development, and other community assets are stronger and more resilient for the next severe hazard event. Mitigation measures to reduce the risk and vulnerability of a community to future disaster losses can be implemented in advance of a disaster event and also as part of post-disaster recovery efforts.

Mitigation applied to recovery helps communities become more resilient and sustainable. It is often most efficient to fund all eligible infrastructure mitigation through FEMA's Public Assistance mitigation program if the asset was damaged in a storm event. Mitigation work can be added to project worksheets if they can be proven to be cost-beneficial.

Integration of mitigation into post disaster recovery efforts should be considered by all communities as part of their post disaster redevelopment and mitigation policies and procedures. As detailed in Section 4.4, the Capability Assessment for the County, post-disaster redevelopment and mitigation policies and procedures are evaluated and updated as part of the Emergency Operations Plan (EOP) updates and other emergency management plans for the County.

These EOP's, through its policies and procedures, seek to mitigate the effects of hazards, prepare for measures to be taken which will preserve life and minimize damage, enhance response during emergencies and provide necessary assistance, and establish a recovery system in order to return the community to their normal state of affairs. Mitigation is emphasized as a major component of recovery efforts.

Mitigation Strategy Funding Opportunities

An understanding of the various funding streams and opportunities will enable the communities to match identified mitigation projects with the grant programs that are most likely to fund them. Additionally, some of the funding opportunities can be utilized together. Mitigation grant funding opportunities available pre- and post- disaster include the following.

FEMA HMA Grants

Cal OES administers three main types of HMA grants: (1) Hazard Mitigation Grant Program, (2) Pre-Disaster Mitigation Program, and (3) Flood Mitigation Assistance Program. Eligible applicants for the HMA include state and local governments, certain private non-profits, and federally recognized Indian tribal governments. While private citizens cannot apply directly for the grant programs, they can benefit from the programs if they are included in an application sponsored by an eligible applicant.

FEMA Public Assistance Section 406 Mitigation

The Robert T. Stafford Disaster Relief and Emergency Assistance Act provides FEMA the authority to fund the restoration of eligible facilities that have sustained damage due to a presidentially declared disaster. The regulations contain a provision for the consideration of funding additional measures that will enhance a facility's ability to resist similar damage in future events.

Community Development Block Grants

The California Department of Housing and Community Development administers the State's Community Development Block Grant (CDBG) program with funding provided by the U.S. Department of Housing and Urban Development. The program is available to all non-entitlement communities that meet applicable threshold requirements. All projects must meet one of the national objectives of the program – projects must benefit 51 percent low- and moderate-income people, aid in the prevention or clearance of slum and blight, or meet an urgent need. Grant funds can generally be used in federally declared disaster areas for CDBG eligible activities including the replacement or repair of infrastructure and housing damaged during, or as a result of, the declared disaster.

Small Business Loans

SBA offers low-interest, fixed-rate loans to disaster victims, enabling them to repair or replace property damaged or destroyed in declared disasters. It also offers such loans to affected small businesses to help them recover from economic injury caused by such disasters. Loans may also be increased up to 20 percent of the total amount of disaster damage to real estate and/or leasehold improvements to make improvements that lessen the risk of property damage by possible future disasters of the same kind.

Increased Cost of Compliance

Increased Cost of Compliance (ICC) coverage is one of several resources for flood insurance policyholders who need additional help rebuilding after a flood. It provides up to \$30,000 to help cover the cost of mitigation measures that will reduce flood risk. ICC coverage is a part of most standard flood insurance policies available under NFIP.

5.2 Goals and Objectives

Requirement §201.6(c)(3)(i) and §201.7(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 HMPC.

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 Plumas 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 2014 LHMP as well as a list of other sample goals to consider. The team was told that they could use, combine, or revise the statements provided or develop new ones, keeping the risk assessment in mind. Each member was asked to provide two goal statements. Goal statements were collected and grouped into similar themes and provided to the HMPC. Some of the statements were determined to be better suited as objectives or actual mitigation actions and were set aside for later use. Edits and refinements to these new goals and resulting objectives were provided by the HMPC until the team came to consensus on the final goals and objectives for this 2020 LHMP Update.

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 Plumas County Planning Area.

Goal #1: Minimize loss of life and injuries and protect property and the environment from natural hazards.

- Minimize loss from priority natural hazards to include wildfire, flood, earthquake, dam failure, drought, landslides, and severe weather hazards
- Minimize impact to existing and future development
- Minimize economic and natural resource impact
- Promote resiliency strategies
- Support mitigation planning and implementation in all County departments and operations

Goal #2: Reduce losses and provide protection for critical facilities, infrastructure, and services from hazard impacts

- Implement critical facility upgrades and mitigation measures to ensure reliability of services
- Update and maintain a GIS database of critical facilities to include: Essential Services, At-Risk Populations, Hazardous Materials Facilities

Goal #3: Minimize the loss of agricultural and natural resource productivity (foundation of rural economy) from natural hazards

- Support education and training of private land managers on hazard mitigation and disaster preparedness
- Promote local research, education, and technical assistance on sustainable agriculture and forestry practices

- Foster agricultural and natural resource resilience to natural hazards through implementation of best management practices and restoration activities
- Provide training, technical assistance, outreach and education to private landowners on tree mortality, identification, management, and prevention strategies

Goal #4: Increase community awareness, education, preparedness, and self-reliance to natural hazards

- Enhance public and stakeholder outreach, education, and preparedness programs to include all hazards of concern
- Increase public and stakeholder knowledge about the risk and vulnerability to identified hazards and how to be more self-reliant in mitigating risks from natural hazards
- Provide public and stakeholder education and outreach specific to evacuation routes, various available emergency communication modes, and roles and responsibilities.

Goal #5: Increase communities' ability to mitigate hazards and be prepared for, respond to, and recover from a disaster event in Plumas County

- Improve community capabilities to mitigate hazards and reduce losses
- Enhance community capabilities by improved coordination of local, state, and federal resources
- Increase capabilities to provide mitigation opportunities and assistance to Plumas County communities
- Increase the capacity to effectively respond to and recover from natural disaster events
- Enhance emergency communication capabilities (e.g., cell phones, radios, sirens, reverse 911, multi-media, etc.)
- Increase capabilities for continuity of government
- Improve community's ability to be competitive/successful with grant funding opportunities from application development to project delivery

Goal #6: Minimize life safety issues, property loss, environmental damages, and economic impacts associated with wildfires, the #1 natural hazard of concern in Plumas County

- Reduce the wildfire risk and vulnerability
- Update, maintain, and implement Community Wildfire Protection Plans
- Develop a Countywide fuels management implementation strategy
- Coordinate comprehensive fire protection strategies among all federal, state, and local agencies and across all property boundaries to implement a fire-adapted community concept approach at broader county-wide geographic and policy scales.
- Increase community education, outreach, and awareness of wildfire mitigation strategies, including those to be undertaken by private property owners
- Continue to seek establishment of Firewise USA sites (communities)
- Promote and develop a tree mortality action plan for monitoring, prevention and mitigation activities
- Promote and enhance fire-fighting capabilities (e.g., access roads, water supply, etc.)
- Improve community infrastructure for wildfire preparedness and response including locating safety zones, augmenting community water supplies, and reducing fire hazard along transportation and power infrastructure.
- Enhance the county wildfire hazard codes, including enforcement capabilities, within areas of high wildfire risk
- Continue land use planning efforts to ensure increased fire safety in new developments

- Develop and implement outreach, education, and technical assistance to encourage “home hardening” and retrofitting of older residences and structures to increase community resilience to wildfire.

Goal #7: Minimize the effects of climate change on natural hazards in Plumas County

- Develop a Climate Action Plan for Plumas County
- Consider and integrate climate change information and issues in future General Plan updates

5.3 Identification and Analysis of Mitigation Actions

Requirement §201.6(c)(3)(ii) and §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 at the completion of the risk assessment as part of the second prioritization process to determine which hazards were priorities for mitigation strategy planning. Only those hazards that were determined to be a priority hazard for the County were considered further in the development of hazard-specific mitigation actions. Those hazards not considered a priority for mitigation strategy development were eliminated from further consideration because the risk of a hazard event in the County is unlikely, the vulnerability of the county is low, or capabilities are already in place to mitigate negative impacts. Further, the resulting mitigation strategy presented in this Chapter focuses on those mitigation actions that the County has the authority, resources, and capacity to consider for implementation over the next 5-years covered by this LHMP Update.

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
- 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

The initial list of mitigation actions from the 2014 LHMP and new actions identified during this planning process were reviewed and prioritized via an LHMP mitigation action voting website for inclusion in this 2020 LHMP Update. The Plumas County mitigation action voting website established at <https://fostermorrison.aweeba.com/> included the list of actions brainstormed during the mitigation strategy meetings and provided a mechanism for everyone to vote on their priority actions for further development as detailed further below. This 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 provided with nine weighted votes, indicating High (worth 5 points), Medium (worth 3 points), and Low (worth 1 point) priorities. The team was asked to use the votes 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 0. 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 LHMP Update.

Recognizing the limitations in prioritizing actions from multiple 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 mitigation action plan for the Plumas County Planning Area.

5.4 Mitigation Action Plan

Requirement §201.6(c)(3)(iii) and §201.7(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 mitigation action plan was developed to present the recommendations developed by the HMPC for how the Plumas 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. This mitigation 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 all mitigation actions to this LHMP Update. For each mitigation action item included in Table 5-2, a detailed mitigation implementation strategy has been developed.

The mitigation action plan detailed below contains both new action items developed for this LHMP Update as well as old actions that were yet to be completed from the 2014 Plan. Table 5-2 indicates whether the action is new or from the 2014 LHMP and Chapter 2 contains the details for each 2014 mitigation action item indicating whether a given action item has been completed, deleted, or deferred.

As described throughout this LHMP Update, Plumas County has many risks and vulnerabilities to identified hazards. Although many possible mitigation actions, as detailed in Appendix C, were brainstormed and prioritized during the mitigation strategy meetings, the resulting mitigation strategy presented in this Chapter 5 of this LHMP focuses only on those mitigation actions that are both reasonable and realistic for the community to consider for implementation over the next 5-years covered by this 2020 Update. Thus, only a portion of the actions identified in Appendix C have been carried forward into the mitigation strategy presented in Table 5-2. Although many good ideas were developed during the mitigation action brainstorming process, the reality of determining which priority actions to develop and include in this LHMP Update came down to the actual priorities of the County, individuals and departments based in part on department direction, staffing, and available funding. The overall value of the mitigation action table in Appendix C is that it represents a wide-range of mitigation actions that can be consulted and developed for this LHMP Update during annual plan reviews and the formal 5-year update process.

It is also important to note that Plumas County and the participating jurisdictions have numerous existing, detailed action descriptions, which include benefit-cost estimates, in other planning documents, such as stormwater and drainage plans, fire 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 County is 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 mitigation categories and criteria contained in Appendix C.

It should be noted that many of the projects included 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. Collectively, this multi-jurisdictional mitigation strategy includes only those actions and projects which reflect the actual priorities and capacity of the County to implement over the next 5-years covered by this Plan.

Table 5-2 Plumas County Planning Area Mitigation Actions

Action Title	New Action/ 2014 Action	Address Current Development	Address Future Development	Continued Compliance with NFIP	Mitigation Type
Multi-Hazard Actions					
Action 1. Integrate Local Hazard Mitigation Plan into Public Health & Safety Element of General Plan	New action	X	X		Prevention
Action 2. Enhance Public Education and Awareness of Natural Hazards and Public Understanding of Disaster Preparedness	New action	X	X	X	Public Information
Action 3. Identify and Implement Bank Stabilization Projects	2014 Action	X	X	X	Property Protection Structural Projects Natural Resource Protection
Action 4. Continue Bridge Replacement Program using Federal Funding Source for Evacuation and Emergency Services Access	New action	X	X	X	Structural Projects Emergency Services
Action 5. Identify and Implement Projects to Address Areas of Landslides Affecting Roadway and Railroad	New action	X	X		Property Protection Structural Projects Natural Resource Protection
Action 6. Evaluate and Implement Wolf Creek Channel Stabilization Projects through Greenville and Indian Valley Areas	New action	X	X	X	Property Protection Structural Projects Natural Resource Protection
Action 7. Companion Animal/Livestock/Horse/Equipment Trailer	New action	X	X		Emergency Services
Action 8. Plumas County General Plan Public Health & Safety Element update to incorporate Senate Bill (SB) 379 requirements	New action	X	X		Prevention
Action 9. Continue Telephone Emergency Notification System (TENS) Capability Enhancements Countywide	New action	X	X		Emergency Services
Action 10. Evacuation Planning, Mapping, and Exercising, to Include Considerations for Shelters, Refuge Areas, Safety Zones, Evacuation Signage, etc.	New action	X	X		Emergency Services
Action 11. Evaluate Coverage and Expansion for Broadband Services. Advance Grants and Projects Accordingly	New action	X	X		Emergency Services

Action Title	New Action/ 2014 Action	Address Current Development	Address Future Development	Continued Compliance with NFIP	Mitigation Type
Action 12. Harden Cell Tower Sites. Increase Cell Service Coverage by Increasing the Number of Cell Towers. Increase the Number of Repeater Sites. Install Backup Generators in Case of Power Failure.	New action	X	X		Property Protection Structural Projects Emergency Services
Action 13. Identify Critical Facilities Requiring Backup Generators	New action	X	X		Property Protection Structural Projects Emergency Services
Action 14. Prepare Emergency Food Access Plan as a Complement to the Plumas County EOP Annex B: Mass Care & Shelter	New action	X	X		Emergency Services
Action 15. Explore establishing a Community Emergency Response Team (CERT)	New action	X	X		Emergency Services
Climate Change Actions (with Drought and Water Shortage)					
Action 16. Develop a Climate Action Plan	New action	X	X	X	Prevention
Action 17. Water Shortage Preparedness and Contingency Planning Pilot Project	New action	X	X		Prevention
Action 18. Water Supply Infrastructure Improvements	New action	X	X		Property Protection Structural Projects
Dam Failure, Flood, Localized Flood, Levee Failure, and Severe Weather Actions					
Action 19. County Wide Stormwater Drainage and Grading Ordinance	New action	X	X	X	Prevention
Action 20. Develop a Countywide Drainage Master Plan	New action	X	X	X	Prevention
Action 21. FEMA Mapping Update	New action	X	X	X	Prevention
Action 22. Evaluate Options to Repair and Maintain Levee Crown for Emergency Access Vehicles (Gates, Crown Repair, Vegetation Maintenance, etc.)	New action	X	X	X	Structural Projects Property Protection Emergency Services Natural Resource Protection
Action 23. Ongoing Implementation of Stream Clearing and Maintenance Programs	New action	X	X	X	Property Protection Natural Resource Protection

Action Title	New Action/ 2014 Action	Address Current Development	Address Future Development	Continued Compliance with NFIP	Mitigation Type
Action 24. Plumas Eureka CSD stream bank flood mitigation	New action	X	X	X	Property Protection Structural Projects Natural Resource Protection
Action 25. Evaluate and Implement Projects to Reduce Flooding in Plumas Eureka CSD	New action	X	X	X	Property Protection Structural Projects Natural Resource Protection
Action 26. Plumas Eureka CSD Sewer Plant Flood Mitigation	New action	X	X	X	Property Protection Structural Projects Natural Resource Protection
Action 27. Evaluate Options for Obtaining 100-year Level of Certification for the Diversion Dam (East and West Chester Levees)	New action	X	X	X	Property Protection Structural Projects Natural Resource Protection
Action 28. Review and Update, as Needed, Title 8 (Building Regulations), Chapter 17 (Flood) of the Plumas County Code re: Floodplain Ordinance and Applicable Title 9 (Planning and Zoning) Sections	New action	X	X	X	Prevention
Earthquake Actions					
Action 29. Conduct a Seismic Risk Evaluation of Critical Facilities and Public Buildings; Prioritize and Implement Seismic Retrofits. PECSO Water Storage Tank Replacement	New action	X	X		Property Protection Structural Projects
Pandemic Actions					
Action 30. Update and Refine Pandemic Plan	New action	X	X		Prevention
Action 31. Seismic Risk Evaluations to Prioritize and Implement Seismic Retrofits	New action	X	X		Property Protection Structural Projects
Wildfire, Drought and Water Shortage, and Tree Mortality Actions					
Action 32. PRC 4290 – Plumas County Code Title 9, Chapter 8. Street Address System. Promote and continue to implement compliant street/address reflective signage for public and private roads and structures	New action	X	X		Property Protection Public Information Emergency Services
Action 33. Ingress/Egress Road Projects to Widen and Improve Roads for Evacuation and Emergency Services Access	2014 action	X	X		Property Protection Emergency Services

Action Title	New Action/ 2014 Action	Address Current Development	Address Future Development	Continued Compliance with NFIP	Mitigation Type
Action 34. Plumas County Agriculture, Forestry, and Natural Resources Resilience	New action	X	X		Prevention Natural Resource Protection
Action 35. Invasive Species Control and Eradication	New action	X	X		Prevention Natural Resource Protection
Action 36. Continue and Promote Defensible space (PRC 4291) Projects Including Assistance Efforts for Senior and Disabled Residents	New action	X	X		Property Protection
Action 37. Establish Additional Firewise USA Sites (communities) and Promote Existing Ones	New action	X	X		Prevention Public Information Property Protection
Action 38. Continue to Evaluate and Track Available Funding Sources for Wildfire Mitigation Projects	New action	X	X		Prevention
Action 39. Develop a Program to Promote and/or Incentivize Home Hardening Retrofitting including: Roofs, Vents, Siding, Windows, etc.	New action	X	X		Prevention Property Protection Structural Projects
Action 40. Identify and Implement Priority Wildfire Risk Reduction Projects from the Plumas County CWPP to Enhance Forest Health Including Detection, Prevention, and Mitigation of Tree Mortality	New action	X	X		Prevention Property Protection Structural Projects Natural Resource Protection
Action 41. Plumas County General Plan Public Health & Safety Element update to address state law requirements for land classified as State Responsibility Areas (SRAs) and within Very High Fire Hazard Severity Zones (VHFHSZs)	New action	X	X		Prevention
Action 42. Local Adoption of State Responsibility Area Fire Safe Regulations	New action	X	X		Prevention
Action 43. Improve Funding and Response Capabilities of Local Fire Protection Districts and Expand Districts in Areas not Covered	New action	X	X		Prevention Property Protection Natural Resource Protection

Multi-Hazard Actions

Action 1. Integrate Local Hazard Mitigation Plan into Public Health & Safety Element of General Plan

Hazards Addressed: Multi-Hazard (Avalanche, Climate Change, Dam Failure, Drought & Water shortage, Earthquake, Floods: 1%/0.2% annual chance, Floods: Localized Stormwater, Landslide, Mudslide, and Debris Flow, Levee Failure, Pandemic, Severe Weather: Extreme Heat, Severe Weather: Heavy Rains and Storms, Severe Weather: High Winds and Tornadoes, Severe Weather: Winter Storms and Freeze, Tree Mortality, and Wildfire)

Goals Addressed: 1, 2, 3, 4, 5, 6, 7

Issue/Background: Local jurisdictional reimbursement for mitigation projects and cost recovery after a disaster is guided by Government Code Section 8685.9 (Assembly Bill (AB) 2140). In 2006, the state adopted AB 2140 which added provisions specifying what is to be included in a Local Hazard Mitigation Plan (LHMP) and requiring a linkage between a local jurisdiction's LHMP and the Safety Element of their General Plan. AB 2140 requires a jurisdiction to adopt the LHMP into the Safety Element of the General Plan in order to be fully eligible for disaster relief funding under the California Disaster Assistance Act. AB 2140 can be met by either including the LHMP language specific to AB 2140 as part of the Safety Element or to incorporate the LHMP by reference into the Safety Element of the General Plan.

Project Description: Specifically, AB 2140 requires that Plumas County adopts this 2020 LHMP Update as part of the Public Health & Safety Element of its General Plan. Adoption of the LHMP into the Public Health & 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: Public Health & Safety Element of General Plan

Responsible Office/Partners: Plumas County Planning Department and County Board of Supervisors

Cost Estimate: County Board of Supervisors/Planning Commission/Planning Department staff time

Potential Funding: County Budgets

Timeline: 2021 – 2022; as soon as possible after FEMA approval of the 2020 LHMP Update

Project Priority (H, M, L): High

Action 2. Enhance Public Education, Awareness, and Outreach of Natural Hazards and Public Understanding of Hazard Mitigation and Disaster Preparedness

Hazards Addressed: Multi-Hazard (Avalanche, Climate Change, Dam Failure, Drought & Water shortage, Earthquake, Floods: 1%/0.2% annual chance, Floods: Localized Stormwater, Landslide,

Mudslide, and Debris Flow, Levee Failure, Pandemic, Severe Weather: Extreme Heat, Severe Weather: Heavy Rains and Storms, Severe Weather: High Winds and Tornadoes, Severe Weather: Winter Storms and Freeze, Tree Mortality, and Wildfire)

Goals Addressed: 1, 2, 3, 4, 5, 6, 7

Issue/Background: Plumas County 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 help mitigate the impacts from natural hazards and how to be better prepared and more self-reliant for the next natural disaster event.

Project Description: A comprehensive multi-hazard education and outreach program will ascertain both broad and targeted educational needs throughout the community. The County 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 4, as well as other goals of this LHMP Update, and will consider:

- Collaboration with other County agencies and groups to ensure consistent messaging and a comprehensive approach to natural hazard education;
- 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 office buildings, libraries, and other public places and events;
- Holding seasonal public education and training events to targeted populations and areas in the County;
- 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 outreach programs will be reviewed for effectiveness and leveraged and expanded upon to include natural hazard mitigation and to reach the broader region.

Responsible Office/Partners: Plumas County OES and other County departments; other public outreach agencies such as the Plumas County Fire Safe Council and others

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 how to be more self-reliant and better prepared. Effective public outreach programs are aimed at protecting lives and reduce damages from natural hazards. An effective public education program can be highly effective and relatively low cost to implement.

Potential Funding: Local budgets, grant funds

Timeline: Ongoing/Annual public awareness campaign

Project Priority (H, M, L): High

Action 3. Identify and Implement Bank Stabilization Projects

Hazards Addressed: Severe Weather: Heavy Rains and Storms, Landslide, Mudslide, and Debris Flow

Goals Addressed: 1, 2, 3, 4, 5, 6, 7

Issue/Background: Plumas County has bank stabilization problems near multiple bridges as follows: Chandler Road Bridge, North Valley Bridge, Mill Creek Erosion, Wapaunsie Creek Erosion, and Stampfli Lane Bridge Erosion. Gravel buildup on Smith Creek Erosion needs to be removed to prevent the creek from overflowing Johnsville-Graeagle bridge.

Project Description: Intent is to provide erosion protection by means of rip rap upstream and downstream of bridges to reduce turbidity of the stream from erosion and remove gravel buildup on Smith Creek.

Other Alternatives: No action

Existing Planning Mechanism(s) through which Action Will Be Implemented: Upper Feather River IRWM and included in the Capital Improvement Program

Responsible Office/Partners: Plumas County Public Works

Cost Estimate: \$3,400,000

Benefits (Losses Avoided): Prevent damage to bridge abutments during high water events.

Potential Funding: IRWM Grant Funding

Timeline: Dependent on funding

Project Priority (H, M, L): High

Action 4. Continue Bridge Replacement Program using Federal Funding Source for Evacuation and Emergency Services Access

Hazards Addressed: Wildfire, Floods: Localized Stormwater

Goals Addressed: 1, 2, 4, 5, 6, 7

Issue/Background: Plumas County owns and maintains 90 bridges with many very old and single lane bridges.

Project Description: Intent is to replace Plumas County bridges that qualify for federal funding. Bridges are required to be replaced with minimum two lane bridge.

Other Alternatives: Maintain existing bridges to ensure continued operation

Existing Planning Mechanism(s) through which Action Will Be Implemented: Bridges that qualify are replaced within the County with Federal funds. Bridges are listed in the Plumas County Capital Improvement Program.

Responsible Office/Partners: Federal Highway Administration (FHWA); Plumas County Public Works

Cost Estimate: \$1,500,000 to \$2,500,000 per bridge

Benefits (Losses Avoided): Increased width for wildfire equipment and evacuation. Bridge replacement funding requires that the bridge be raised above the 100-year flood water elevation.

Potential Funding: Federal Funding through FHWA

Timeline: Frequency of bridge replacement is dependent on Plumas County cash flow.

Project Priority (H, M, L): High

Action 5. Identify and Implement Projects to Address Areas of Landslides Affecting Roadway and Railroad

Hazards Addressed: Floods: Localized Stormwater, Severe Weather: Heavy Rains and Storms, Landslide, Mudslide, and Debris Flow

Goals Addressed: 1, 2, 4, 5, 6, 7

Issue/Background: During heavy rains, County Roadways have historically experienced landslides covering the roadways and slip outs, where the roadway is eroded and undermined on the downslope side. The typical problem for slope stability tends to be lack of extent of right-of-way. The problem of slip outs tends to be waterways shifting during heavy flows and eroding banks below the roadway.

Project Description: Potential areas of landslides can be identified from past problems, but other factors like changing stream location and forest fires affect slope stability. These areas will be identified and prioritized based on potential for damage. Locations that pose a high risk for slides can potentially be stabilized prior to landslides occurring.

Other Alternatives: For reoccurring slides, retaining walls provide another option

Existing Planning Mechanism(s) through which Action Will Be Implemented: None

Responsible Office/Partners: Public Works Public Works/Engineering Department

Cost Estimate: \$50,000 to \$300,000 per landslide repair depending on severity

Benefits (Losses Avoided): Increase efficiency of the Countywide drainage to prevent or minimize flooding during a record storm water event.

Potential Funding: Potentially Grant Funding

Timeline: Within the next five years

Project Priority (H, M, L): High

Action 6. Evaluate and Implement Wolf Creek Channel Stabilization Projects through Greenville and Indian Valley Areas

Hazards Addressed: Severe Weather: Heavy Rains and Storms, Landslide, Mudslide, and Debris Flow

Goals Addressed: 1, 2, 4, 5, 6, 7

Issue/Background: Problems with channel bank stabilization over the years.

Project Description: Intent is to provide erosion protection by means of rip rap or other mitigation methods to prevent stream bank erosion and protect surrounding development.

Other Alternatives: No action

Existing Planning Mechanism(s) through which Action Will Be Implemented: Plumas Corp has studies along with Plumas National Forest

Responsible Office/Partners: Plumas County Public Works

Cost Estimate: To be determined

Benefits (Losses Avoided): Protection of Wolf Creek Channel protects the surrounding areas from flooding during high water flows.

Potential Funding: Grants

Timeline: Dependent on Funding

Project Priority (H, M, L): High

Action 7. Companion Animal/Livestock/Horse/Equipment Trailer

Hazards Addressed: Wildfire, Flood, Evacuation related hazards

Goals Addressed: 1, 2, 3, 4, 5, 6, 7

Issue/Background: Plumas County does not currently own a trailer that can be used for the transport of companion animals, livestock, horses or the emergency equipment required to care for them.

Many people will refuse to evacuate if they cannot move their companion animals, livestock, or horses during a disaster. Others will try to walk their animals out or just turn them loose which creates a major hazard for evacuees and first responders alike. In this area we also have the problem of people either not having transportation for their animals or insufficient transportation for their animals.

Project Description: To purchase a multi-species appropriate bumper pull livestock trailer.

Other Alternatives: Combination horse trailer.

Existing Planning Mechanism(s) through which Action Will Be Implemented: Plumas County Emergency Operations Plan, Local Hazard Mitigation Plan,

Responsible Office/Partners: Plumas-Sierra Department of Agriculture, UC Cooperative Extension, and Plumas County Animal Services

Cost Estimate: \$17,000.00

Benefits (Losses Avoided): Efficient evacuation of people and their companion animals, horses and livestock results in lives saved.

Potential Funding: FEMA grants, Red Rover grant, Humane Society of the United States, International Fund for Animal Welfare grant, local donations, and sponsorships.

Timeline: Urgent

Project Priority (H, M, L): High

Action 8. *Plumas County General Plan Public Health & Safety Element update to incorporate Senate Bill (SB) 379 requirements*

Hazards Addressed: Wildfire, Flood, Severe Weather, and Drought and Water Shortage

Goals Addressed: 1, 2, 3, 4, 5, 6, 7

Issue/Background: The Plumas County General Plan Public Health & Safety Element update is necessary to address SB 379 state law requirements that will lead to improved countywide climate resilience.

Project Description: The County of Plumas General Plan Public Health & Safety Element update focuses on addressing climate resiliency for the unincorporated areas of the County to inform the General Plan and incorporate Senate Bill (SB) 379 requirements. A vulnerability assessment will be prepared and adaptation strategies will be developed. Adaptation goals, policies, and implementation measures will inform an update of the General Plan and reflect recommendations developed through the collaborative process. In particular, because of its environment Plumas County is particularly susceptible to the impacts of changes in climate including:

- Increased incidence of wildfires
- Impacts of localized and regional flooding

- Threats due to severe weather
- Water shortages and drought conditions

The project will address the identified problems and/or deficiencies by first cataloging them in a vulnerability assessment. This critical task will include identifying and evaluating vulnerabilities that exist for Plumas County and its planning areas. An investigation of exposure to climate change, as well as potential impacts and the current capacity for the community to adapt to potential impacts, will be studied. The vulnerability assessment will provide the baseline for current climate change risks that the community faces. Once the vulnerabilities are identified, adaptation strategies will be prepared. The strategies will be carefully evaluated and prioritized based on factors including impact, cost, benefits, and feasibility. An implementation plan will be prepared that includes appropriate updates to the General Plan pursuant to Senate Bill 379 while also providing a platform for local businesses and environmental groups to use recommendations to reduce climate change risks and improve adaptability.

Other Alternatives: No action

Existing Planning Mechanism(s) through which Action Will Be Implemented: Plumas County General Plan Public Health & Safety Element

Responsible Office/Partners: Plumas County Planning Department

Cost Estimate: \$180,000

Benefits (Losses Avoided): People and property

Potential Funding: Grant

Timeline: 2021 – 2022

Project Priority (H, M, L): Medium

Action 9. Continue Telephone Emergency Notification System (TENS) Capability Enhancements Countywide

Hazards Addressed: Multi-Hazard (Avalanche, Climate Change, Dam Failure, Drought & Water shortage, Earthquake, Floods: 1%/0.2% annual chance, Floods: Localized Stormwater, Landslide, Mudslide, and Debris Flow, Levee Failure, Pandemic, Severe Weather: Extreme Heat, Severe Weather: Heavy Rains and Storms, Severe Weather: High Winds and Tornadoes, Severe Weather: Winter Storms and Freeze, Tree Mortality, and Wildfire)

Goals Addressed: 1, 2, 3, 4, 5, 6, 7

Issue/Background: Plumas County has two TENS systems- CodeRED (Everbridge coming soon to replace CodeRED) and IPAWS. Improve capability of contacting the public with emergency alerts.

Project Description: Increase public education for sign up and emergency notification methods. Publications, advertising, media outreach.

Other Alternatives: No action

Existing Planning Mechanism(s) through which Action Will Be Implemented: Plumas County CWPP, Plumas County Emergency Operations Plan

Responsible Office/Partners: Plumas County OES, CALFIRE, Plumas County Fire Districts, Plumas Fire Safe Council

Cost Estimate: \$5,000

Benefits (Losses Avoided): Public education; faster notification of emergency to community; community enhances knowledge of being prepared

Potential Funding: EMPG, State 911 funding

Timeline: Ongoing

Project Priority (H, M, L): Medium

Action 10. Evacuation Planning, Mapping, and Exercising, to Include Considerations for Shelters, Refuge Areas, Safety Zones, Evacuation Signage, etc.

Hazards Addressed: Multi-Hazard (Avalanche, Climate Change, Dam Failure, Drought & Water shortage, Earthquake, Floods: 1%/0.2% annual chance, Floods: Localized Stormwater, Landslide, Mudslide, and Debris Flow, Levee Failure, Pandemic, Severe Weather: Extreme Heat, Severe Weather: Heavy Rains and Storms, Severe Weather: High Winds and Tornadoes, Severe Weather: Winter Storms and Freeze, Tree Mortality, and Wildfire)

Goals Addressed: 1, 2, 3, 4, 5, 6, 7

Issue/Background: In the Wildland Urban Interface. Communities, industrial landowners, along with local, state, and federal agencies should work collaboratively to identify and pursue funding to improve access for evacuations. Access communities for evacuations in and out of the community in the wildland urban interface (WUI) - A number of existing “at risk” communities in Plumas County presently only have “one way” in and out of their community.

Evacuation planning - many of the County’s communities have evacuation plans. Efforts by the County should continue to work towards providing plans to those communities without one. Based upon final evacuation planning efforts, provide alternatives to constructing and or re-purposing existing routes to mitigate wildfire risk to communities. Some communities only have one way in and out in the case of an evacuation. Road surfaces for some main evacuation routes are rocky and will limit the speed residents and visitors could evacuate. Some roads are narrow with no turnouts and in need of annual fuel reduction and mowing of roadsides for fire safety. In case temporary refuge sites need to be used during evacuations as a last resort, not all sites have annual fuel reduction completed. Some designated shelters have no cooling systems to filter smoke for at risk populations.

Project Description: Coordinate with Partners to identify alternate evacuation roads for communities with only one road out of community. Improve existing road surfaces in need of improvement for commonly used primary and secondary routes out of communities. Evacuation roads should have fuel reduction and roadside mowing completed on a regular schedule. Evacuation Interagency Functional Exercises for Plumas County. Evacuation route signing for highest risk communities. Emergency preparedness publications and maps for residents, businesses and visitors. Address Senate Bill 99 (2019, Nielsen) (GC 65302) that requires, upon the next revision of the housing element on or after January 1, 2020, to review and update the safety element to include information identifying residential developments in hazard areas that do not have at least 2 emergency evacuation routes.

Other Alternatives:

Existing Planning Mechanism(s) through which Action Will Be Implemented: Plumas County CWPP, Plumas County Emergency Operations Plans, PG&E Public Safety Power Shutoff plan, Plumas County Hazardous Materials Plan, Hydroelectric Public Safety Plan, Plumas County General Plan

Responsible Office/Partners: County Agencies (Sheriff, OES, Planning, GIS, Road Departments) CALFIRE, Plumas County Fire Districts, Plumas County Community Service Districts (CSD), Plumas Fire Safe Council, Caltrans, USFS

Cost Estimate: Unknown

Benefits (Losses Avoided): Improve emergency preparedness of roads and personal preparation. Improve speed of evacuations out of communities. Improve public safety.

Potential Funding: EMPG, PDM grant

Timeline:

Project Priority (H, M, L): High

Action 11. Evaluate Coverage and Expansion for Broadband Services. Advance Grants and Projects Accordingly

Hazards Addressed: Multi-Hazard (Avalanche, Climate Change, Dam Failure, Drought & Water shortage, Earthquake, Floods: 1%/0.2% annual chance, Floods: Localized Stormwater, Landslide, Mudslide, and Debris Flow, Levee Failure, Pandemic, Severe Weather: Extreme Heat, Severe Weather: Heavy Rains and Storms, Severe Weather: High Winds and Tornadoes, Severe Weather: Winter Storms and Freeze, Tree Mortality, and Wildfire)

Goals Addressed: 1, 2, 3, 4, 5, 6, 7

Issue/Background: Plumas County is a rural county with rugged, canyon and mountainous landscapes making communications challenging and expensive.

Technology and communications infrastructure is outdated with poor to mediocre performances and reliability throughout a majority of the geographic boundaries of the County. ‘Modern’ communications exist mostly in downtown corridors.

Project Description: Projects vary widely, from County outdated and under-maintained emergency communications infrastructure to business and residential communications infrastructure.

This has been a Board priority for some time, but executed slowly with recessions and lack of key staff in place to see funding and projects through.

Improved contracts and updated fees can help the County maintain and improve its communications infrastructure.

The County has enjoyed a beneficial relationship with Plumas-Sierra Rural Electric Cooperative (Plumas-Sierra) to bring the communications infrastructure and services the County does have to date. Currently, the County is collaborating with Plumas-Sierra to evaluate and expand communications services with CARES Act grants.

Other Alternatives: Continue to support and collaborate with Plumas-Sierra Rural Electric Cooperative for communications coverage, expansion, maintenance and improvements

Existing Planning Mechanism(s) through which Action Will Be Implemented: Regular collaboration of board representatives and staff from each party, letters of support for grants, potentially create a committee for communications or fold in to an existing committee

Responsible Office/Partners: County Administrator

Cost Estimate: Varies by project

Benefits (Losses Avoided): Improved communications among communities enable quick responses by first responders, citizens, businesses and all County stakeholders and agencies to minimize loss of infrastructure and life.

Potential Funding: General Fund, tax and/or increases, grants, combination thereof

Timeline: Current and ongoing with rapid development in technology

Project Priority (H, M, L): Medium

Action 12. Harden Cell Tower Sites. Increase Cell Service Coverage by Increasing the Number of Cell Towers. Increase the Number of Repeater Sites. Install Backup Generators in Case of Power Failure.

Hazards Addressed: Multi-Hazard (Avalanche, Climate Change, Dam Failure, Drought & Water shortage, Earthquake, Floods: 1%/0.2% annual chance, Floods: Localized Stormwater, Landslide, Mudslide, and Debris Flow, Levee Failure, Pandemic, Severe Weather: Extreme Heat, Severe Weather:

Heavy Rains and Storms, Severe Weather: High Winds and Tornadoes, Severe Weather: Winter Storms and Freeze, Tree Mortality, and Wildfire)

Goals Addressed: 1, 2, 3, 4, 5, 6, 7

Issue/Background: Loss of communications put the public and emergency responders at risk. Landline numbers are decreasing in Plumas County. 50% of the population in Plumas County uses cell phones as their only phone. Loss of cell towers and areas of no cell coverage will reduce the ability to reach the public in the case of a “Code RED” Telephone Emergency Notification System.

Project Description: Improve fencing. Ensure all sites have backup generators for power. Complete hazardous fuel reduction including yearly maintenance for all sites. Enhance backhaul systems to include wired, fiber optic and wireless components. This project will mobilize portable cell tower “hot spots” when needed.

Other Alternatives: N/A

Existing Planning Mechanism(s) through which Action Will Be Implemented: Tactical Interoperable Communications (for land mobile radios for public safety)

Responsible Office/Partners: Operational Area Public Safety Agency and Wireless carriers

Cost Estimate: Minimum of \$500,000

Benefits (Losses Avoided): Minimize risks and vulnerability of cell tower and repeater sites.

Potential Funding: DHS, FEMA/CALOES

Timeline: Ongoing

Project Priority (H, M, L): High

Action 13. Identify Critical Facilities Requiring Backup Generators

Hazards Addressed: Multi-Hazard (Avalanche, Climate Change, Dam Failure, Drought & Water shortage, Earthquake, Floods: 1%/0.2% annual chance, Floods: Localized Stormwater, Landslide, Mudslide, and Debris Flow, Levee Failure, Pandemic, Severe Weather: Extreme Heat, Severe Weather: Heavy Rains and Storms, Severe Weather: High Winds and Tornadoes, Severe Weather: Winter Storms and Freeze, Tree Mortality, and Wildfire)

Goals Addressed: 1, 2, 3, 4, 5, 6, 7

Issue/Background: During hazard events or times of PSPS, it is imperative for critical facilities to be functional.

Project Description: Critical facilities without existing generator power back up will be reviewed and prioritized for the installation of generators.

Other Alternatives: No action.

Existing Planning Mechanism(s) through which Action Will Be Implemented: Public Health and Safety Element of General Plan

Responsible Office/Partners: Plumas County Facility Services

Cost Estimate: To be determined on a facility by facility basis.

Benefits (Losses Avoided): Reduced risk of critical facility failure.

Potential Funding: FEMA and Cal OES grants; other state grants

Timeline: As funding is available.

Project Priority (H, M, L): Medium

Action 14. Prepare Emergency Food Access Plan as a Complement to the Plumas County EOP Annex B: Mass Care & Shelter

Hazards Addressed: Multi-Hazard (Avalanche, Climate Change, Dam Failure, Drought & Water shortage, Earthquake, Floods: 1%/0.2% annual chance, Floods: Localized Stormwater, Landslide, Mudslide, and Debris Flow, Levee Failure, Pandemic, Severe Weather: Extreme Heat, Severe Weather: Heavy Rains and Storms, Severe Weather: High Winds and Tornadoes, Severe Weather: Winter Storms and Freeze, Tree Mortality, and Wildfire)

Goals Addressed: 1, 2, 3, 4, 5, 6, 7

Issue/Background: During times where hazards occur, access to food may be limited. The Camp Fire in Paradise (nearby Butte County) which took 85 lives, left survivors with little to no access to emergency food supplies due to the absence of an Emergency Food Access plan.

Project Description: The Food Council had identified the need for such a plan as well as support and assistance in formulating such a plan. This project will seek to have food access in the event of a natural hazard.

Other Alternatives: No action.

Existing Planning Mechanism(s) through which Action Will Be Implemented: EOP Annex B

Responsible Office/Partners: Plumas County OES

Cost Estimate: Putting the Plan together will have costs mostly in staff time.

Benefits (Losses Avoided): This will reduce risk to citizens who may be evacuated during times of hazard events.

Potential Funding: Existing budgets.

Timeline: Within 5 years.

Project Priority (H, M, L): Medium

Action 15. Explore Establishing a Community Emergency Response Team (CERT)

Hazards Addressed: Multi-Hazard (Avalanche, Climate Change, Dam Failure, Drought & Water shortage, Earthquake, Floods: 1%/0.2% annual chance, Floods: Localized Stormwater, Landslide, Mudslide, and Debris Flow, Levee Failure, Pandemic, Severe Weather: Extreme Heat, Severe Weather: Heavy Rains and Storms, Severe Weather: High Winds and Tornadoes, Severe Weather: Winter Storms and Freeze, Tree Mortality, and Wildfire)

Goals Addressed: 1, 2, 3, 4, 5, 6, 7

Issue/Background: During hazard events in the County, especially during wildfires, there is a need to have volunteers know what to do before, during, and after the hazards the County and their communities may face.

Project Description: The Community Emergency Response Team (CERT) program educates volunteers about disaster preparedness for the hazards that may impact their area and trains them in basic disaster response skills, such as fire safety, light search and rescue, team organization, and disaster medical operations. CERT offers a consistent, nationwide approach to volunteer training and organization that professional responders can rely on during disaster situations, allowing them to focus on more complex tasks.

Other Alternatives: No action.

Existing Planning Mechanism(s) through which Action Will Be Implemented: There is no existing planning mechanism under which the CERT teams would fall.

Responsible Office/Partners: Plumas County OES

Cost Estimate: Unknown, but due to the nature of the CERT program (being a volunteer organization), costs are not expected to be large.

Benefits (Losses Avoided): Increased readiness and volunteer preparation for hazard events.

Potential Funding: Cal OES and FEMA grants.

Timeline: Within 5 years.

Project Priority (H, M, L): Medium

Climate Change (with Drought and Water Shortage) Actions

Action 16. Develop a Climate Action Plan

Hazards Addressed: Climate Change

Goals Addressed: 1, 2, 3, 4, 5, 6, 7

Issue/Background: Governor Schwarzenegger issued Executive Order S-3-05 in June 2005, setting GHG emission targets for the State to meet, starting with a reduction to 2000 GHG emission levels by 2010, 10% below 1990 levels by 2020 and concluding with a reduction to 80% below 1990 numbers by 2050. In 2006, Governor Schwarzenegger signed AB 32, which established the first set of limits on GHG emissions for the state of California and put into place the regulatory framework needed to reach those targets. AB 32 set the 10% below 1990 GHG emissions level as a target to be achieved by 2020. In order to meet this goal, the California Air Resources Board has developed GHG emissions reporting procedures. In 2008, Governor Schwarzenegger signed SB 375, which sets out planning concepts intended to reduce vehicle travel by promoting more compact development; ideas which are incorporated in this General Plan. A goal of SB 375 is to help curb GHG emissions. Taken together, both S-3-05 and AB 32 set the emission targets that Plumas County will eventually be required to attain. While explicit thresholds and requirements have yet to be developed, various state agencies have begun to examine proposed land use plans and specific projects for their potential GHG impacts. Three important steps in helping to reduce potential climate change impacts are the creation of an inventory of existing GHGs and a plan to reduce these emissions.

Project Description: Prepare a Climate Action Plan that identifies strategies for increasing energy efficiency, carbon sequestration, GHG emissions reductions, and land use and transportation strategies that are consistent with appropriate climate change regulations (i.e., State of California's Global Warming Solution Act). Step 1 – GHG inventory. Step 2 – GHG Reduction Plan. Step 3 – Develop a Strategy for Carbon Sequestration.

Other Alternatives: No action

Existing Planning Mechanism(s) through which Action Will Be Implemented: Plumas County General Plan Conservation and Open Space (COS) Element, 7.10.2 Climate Action Plan

Responsible Office/Partners: Plumas County Planning Department

Cost Estimate: Staff time

Benefits (Losses Avoided): Reduced risk to people and property from climate change.

Potential Funding: Staff time

Timeline: 2022 – 2024

Project Priority (H, M, L): Medium

Action 17. Water Shortage Preparedness and Contingency Planning Pilot Project

Hazards Addressed: Climate Change, Drought & Water Shortage

Goals Addressed: 1, 2, 3, 4, 5, 6, 7

Issue/Background: Sierra Institute is a grantee of the California Department of Water Resources (DWR) Disadvantaged Community Involvement (DACI) grant program, having been awarded funding for the planning and implementation of community assessments and technical assistance provision in the Mountain Counties Funding Area. Sierra Institute, through Proposition 1 funds provided by DWR, is supporting technical assistance efforts by Plumas County for the purposes of assessment, capacity building, and technical assistance to small drinking water systems.

Project Description: The goal of this technical assistance grant project is to develop water shortage preparedness, needs assessment, and contingency planning strategies for the most vulnerable water systems and disadvantaged and Tribal communities in the Upper Feather River (UFR) Integrated Regional Water Management (IRWM) Region. The preparedness and planning efforts will assess water infrastructure related needs including aging infrastructure, drought vulnerabilities, identifying service area boundaries, chemical contaminants, and other problems. A GIS layer will be developed for responding small water systems depicting service area boundaries, well locations, and other notable system infrastructure. Project information, a fact sheet, and findings will be provided to project partners, stakeholders, and others. Meetings with water system partners will be conducted to coordinate planning efforts.

Other Alternatives: N/A

Existing Planning Mechanism(s) through which Action Will Be Implemented: Integrated Regional Water Management (IRWM) Plan

Responsible Office/Partners: Plumas County Planning Department, GIS Department, and Environmental Health Department; Hinman & Associates; and Sierra Institute

Cost Estimate: \$45,000

Benefits (Losses Avoided): Creating contingency planning for the smallest and most vulnerable systems is critical and this project aims to accomplish a Plumas County system-wide level assessment with outcomes to support local planning and preparedness for other UFR region small water systems. Municipal water providers in the UFR region will be able to utilize the water shortage preparedness and contingency planning Plumas County pilot efforts to develop water shortage contingency plans for their own agencies and identify projects to address drought vulnerabilities with the intent of using the information to leverage state and federal funding as it becomes available to address the needs.

Potential Funding: Department of Water Resources (DWR) Proposition 1 Disadvantaged Community Involvement (DACI) grant program

Timeline: 2020 – 2021

Project Priority (H, M, L): High

Action 18. Water Supply Infrastructure Improvements

Hazards Addressed: Climate Change, Drought & Water Shortage

Goals Addressed: 1, 2, 3, 4, 5, 6, 7

Issue/Background: The Upper Feather River (UFR) Integrated Regional Water Management (IRWM) Regional Water Management Group (RWMG) nominated candidates for a DWR IRWM implementation grant focusing on domestic and emergency water storage to address climate change driven changes in supply, availability, and needs. As precipitation and recharge patterns vary with climate change, it is critical that water service providers plan to maximize storage options and identify and develop alternative water sources in response to changing conditions.

Project Description:

1. Project Administration.
2. Sierraville Public Utilities District (SPUD) Alternative Water Source and Development is the development of a pump house/booster pump/onsite power generation.
3. Indian Valley Community Services District (IVCSD) Community/Emergency Water Storage Tank project consists of a new water storage tank to provide additional storage for domestic and emergency purposes to meet peak needs and to allow flexibility for maintenance needs.

Other Alternatives: N/A

Existing Planning Mechanism(s) through which Action Will Be Implemented: Integrated Regional Water Management (IRWM) Plan – the candidate projects fall under the IRWM strategies for regional self-reliance, water supply, and water quality.

Responsible Office/Partners: Plumas County Planning Department, Hinman & Associates, Sierraville Public Utilities District, and Indian Valley Community Services District

Cost Estimate: \$1,002,536

Benefits (Losses Avoided): Provides alternative water sources to create a more reliable source of domestic and emergency water supply, particularly in response to extended periods of drought and in response to the increasing threat of catastrophic wildfire.

Potential Funding: Proposition 1 Round 1 Integrated Regional Water Management (IRWM) Implementation Grant award funded (July 21, 2020 award letter).

Timeline: 2020 – 2023

Project Priority (H, M, L): High

Dam Failure, Flood, Localized Flood, Levee Failure, and Severe Weather Actions

Action 19. County Wide Stormwater Drainage and Grading Ordinance

Hazards Addressed: Floods: Localized Stormwater

Goals Addressed: 1, 2, 3, 4, 5, 6, 7

Issue/Background: Plumas County is in need of a County Wide Stormwater Drainage and Grading Ordinance.

Project Description: Develop County Wide Stormwater Drainage and Grading Ordinance to standardize development related to stormwater and grading issues.

Other Alternatives: No action

Existing Planning Mechanism(s) through which Action Will Be Implemented: This would create a planning mechanism.

Responsible Office/Partners: Plumas County Public Works Department

Cost Estimate: Estimated \$10,000

Benefits (Losses Avoided): With standardized procedure for stormwater drainage and grading, Countywide drainage will be improved.

Potential Funding: Current funding in place

Timeline: Within 1 year

Project Priority (H, M, L): High

Action 20. Develop a Countywide Drainage Master Plan

Hazards Addressed: Dam Failure, Flood: 1% and 0.2% Annual Chance, Floods: Localized Stormwater, Levee Failure, Severe Weather: Heavy Rains and Storms

Goals Addressed: 1, 2, 3, 4, 5, 6, 7

Issue/Background: The drainages across Plumas County have been added and modified over the past 150 to 200 years without any overall plan for moving high flows through multiple developed towns.

Project Description: Intent is to complete a comprehensive drainage master plan for Plumas County. To better plan for future, record storm water events, as well as the accommodations of new, proposed site development, in the County requires a Drainage Hydraulic Study for drainage basins that exist. Drainage Master Plan should focus on higher population density towns within the County where drainage is more complex, particularly in Quincy/East Quincy, Chester, and Greenville.

Other Alternatives: No action

Existing Planning Mechanism(s) through which Action Will Be Implemented: The Drainage Master Plan is listed in the Plumas County Capital Improvement Program.

Responsible Office/Partners: Plumas County Public Works/Engineering Department

Cost Estimate: \$200,000

Benefits (Losses Avoided): Increase efficiency of the Countywide drainage to prevent or minimize flooding during a record storm water event.

Potential Funding: Grant Funding

Timeline: Within the next five years

Project Priority (H, M, L): High

Action 21. FEMA Mapping Update

Hazards Addressed: Floods: 1%/0.2% annual chance, Severe Weather: Heavy Rains and Storms

Goals Addressed: 1, 2, 3, 4, 5, 6, 7

Issue/Background: FEMA Flood Insurance Rate Map (FIRM) maps have not been updated since March 2, 2005

Project Description: There are three primary methods by which a community's flood hazard maps are updated. The first is through a FEMA-initiated study/mapping project and subsequent revision of the effective National Flood Insurance Program (NFIP) flood maps. The second method is through a community-initiated revision under Part 65 of the NFIP regulations. The third is through a study/mapping project undertaken by a participant in the FEMA Cooperating Technical Partners (CTP) Program.

Other Alternatives: Letter of Map Revision (LOMR) is option for specific parcel revisions

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

Responsible Office/Partners: Plumas County Public Works/Engineering Department

Cost Estimate: Unknown

Benefits (Losses Avoided): FEMA mapping update would primarily revise maps for any changes that have occurred in the past 15 years, increasing accuracy for development.

Potential Funding: FEMA and Cal DWR Grants

Timeline: Within 5 years

Project Priority (H, M, L): High

Action 22. Evaluate Options to Repair and Maintain Levee Crown for Emergency Access Vehicles (Gates, Crown Repair, Vegetation Maintenance, etc.)

Hazards Addressed: Levee Failure, Floods: 1%/0.2% annual chance

Goals Addressed: 1, 2, 3, 4, 5, 6, 7

Issue/Background: Plumas County has many levee's that protect residences from flood waters and are owned by individual levee owners, CSD's and Central Valley Flood Control in the case of the Chester Diversion Dam. Plumas County Flood Control is tasked with maintenance responsibility for the Chester Diversion Dam and Levee system only. Other levees within the County are privately owned and maintained.

Project Description: Intent is to evaluate options to repair and maintain levee's including emergency access vehicles, gates, crown repair and vegetation maintenance. Many levees are privately owned and maintained.

Other Alternatives: No action

Existing Planning Mechanism(s) through which Action Will Be Implemented: None

Responsible Office/Partners: Plumas County Flood Control and Water Conservation District

Cost Estimate: Unknown scope County Wide

Benefits (Losses Avoided): Maintain levees to provide access for emergency vehicle and remove vegetation to allow levee inspection and repair during high water flows.

Potential Funding: DWR Flood Maintenance Assistance Program

Timeline: When funding is available

Project Priority (H, M, L): High

Action 23. Ongoing Implementation of Stream Clearing and Maintenance Programs

Hazards Addressed: Floods: Localized Stormwater

Goals Addressed: 1, 2, 3, 4, 5, 6, 7

Issue/Background: Plumas County has many stream channels that require vegetation management and clearing. Public Works maintains storm drainage facilities and water crossing at County Roads extending out to the County right-of-way. Caltrans maintains State Highways in a similar manner. In most cases, responsibility of channel vegetation management beyond the roadway right-of-way falls on adjacent to stream property owners.

Project Description: Plumas County Public Works performs regular routine maintenance of storm drainage facilities and water crossings at approximately 168 locations through the County. Privately owned stream channels require property owner's permission to conduct vegetation management in addition to a funding source.

Other Alternatives: No action

Existing Planning Mechanism(s) through which Action Will Be Implemented: A draft document titled Lake and Streambed Alteration Agreement for County-Wide Routine Maintenance Program for Plumas County. This document, when approved will streamline the process of obtaining permits for routine maintenance of storm drainage facilities and water crossings.

Responsible Office/Partners: Plumas County Public Works/Engineering Department

Cost Estimate: \$500 per mile to manage stream vegetation management based on CalFire Antelope Conservation Camp personnel doing the work.

Benefits (Losses Avoided): Regular vegetation management and stream clearing will reduce the risk of flooding by improving the efficiency of the streams to drain heavy flows.

Potential Funding: To be determined

Timeline: When funding becomes available for privately owned streams

Project Priority (H, M, L): High

Action 24. Plumas Eureka CSD stream bank flood mitigation

Hazards Addressed: Erosion caused by high velocity flood waters

Goals Addressed: 1, 2, 4, 5, 6, 7

Issue/Background: Developed private property within the Plumas Eureka CSD has been damaged by high velocity flood water. Property owners have built walls and other barriers to try to protect property. Other properties are unprotected. The effectiveness of the walls and barriers is yet to be tested.

Project Description: A study to determine if there is an effective approach to reducing erosion at vulnerable properties or determine if property owners will accept a buy out to remove structures from the properties.

Other Alternatives: No action

Existing Planning Mechanism(s) through which Action Will Be Implemented: None

Responsible Office/Partners: Plumas County Flood Control and Water Conservation District

Cost Estimate: \$25,000

Benefits (Losses Avoided): NA

Potential Funding: Unknown

Timeline: When funding is available

Project Priority (H, M, L): High

Action 25. Evaluate and Implement Projects to Reduce Flooding in Plumas Eureka CSD

Hazards Addressed: Flood

Goals Addressed: 1, 2, 4, 5, 6, 7

Issue/Background: Portions of the community within the Plumas Eureka Community Services District have experienced flood damage during 100 year flood events along the Middle Fork of the Feather River. The flooding is from the river and not tributaries.

Project Description: The project would include determining the repetitive flood history of houses in the 100 year flood zone. Using the results of the study determine if the homeowners would be willing to elevate their homes or accept a buyout. If there is interest in elevation or buyout, request grant funds from appropriate FEMA grant programs.

Other Alternatives: No action

Existing Planning Mechanism(s) through which Action Will Be Implemented: None

Responsible Office/Partners: Plumas County Flood Control and Water Conservation District, Homeowners, Plumas Eureka CSD.

Cost Estimate: Unknown

Benefits (Losses Avoided): TBD

Potential Funding: FEMA Flood Mitigation Assistance Grants (FMA) or Hazard Mitigation Grants (HMGP)

Timeline: Within 5 years

Project Priority (H, M, L): Medium

Action 26. Plumas Eureka CSD Sewer Plant Flood Mitigation

Hazards Addressed: Flood

Goals Addressed: 1, 2, 4, 5, 6, 7

Issue/Background: A number of manholes that are components of the Plumas Eureka Community Services District wastewater collection system are within the 100 year floodplain. Flood waters flow into the system and overwhelms the treatment plants. In the 2017 flood event, flooding resulted in damage to pumps and forced the treatment plant to be shut down. Homes in the area were without sewer service for several days.

Project Description: The project would include installing sealed manhole covers in the flood area and improving the capability of the treatment plants to accommodate infiltration of flood waters.

Other Alternatives: Flood walls or levees to protect the area.

Existing Planning Mechanism(s) through which Action Will Be Implemented: None

Responsible Office/Partners: Plumas County Public Works Department, Plumas County Flood Control and Water Conservation District, Plumas Eureka CSD

Cost Estimate: \$50,000

Benefits (Losses Avoided): \$50,000 over 30 years

Potential Funding: HMGP or other grant programs, Capital budget

Timeline: Within the next two years

Project Priority (H, M, L): High\

Action 27. Evaluate Options for Obtaining 100-year Level of Certification for the Diversion Dam (East and West Chester Levees)

Hazards Addressed: Flood

Goals Addressed: 1, 2, 4, 5, 6, 7

Issue/Background: FEMA flood maps show the 100-year floodplain within the East and West Chester Levees.

Project Description: Research options for certifying levees to FEMA standards.

Other Alternatives: No action

Existing Planning Mechanism(s) through which Action Will Be Implemented: No existing planning mechanism currently exists.

Responsible Office/Partners: Plumas County Planning Department and Public Works Department

Cost Estimate: Staff time

Benefits (Losses Avoided): People and property

Potential Funding: Staff time

Timeline: 2021

Project Priority (H, M, L): Medium

Action 28. Review and Update, as Needed, Title 8 (Building Regulations), Chapter 17 (Flood) of the Plumas County Code re: Floodplain Ordinance and Applicable Title 9 (Planning and Zoning) Sections

Hazards Addressed: Flood

Goals Addressed: 1, 2, 4, 5, 6, 7

Issue/Background: The original comprehensive flood plain ordinance was adopted in 1998 and was based on the Model Flood Plain ordinance produced by the Department of Water Resources (DWR). At the last audit conducted by DWR and FEMA in 2011 it was recommended that the ordinance be updated to the latest state/federal Model Flood Plain ordinance.

Project Description: Update Flood Plain Ordinance to the latest December 2006 DWR CA Model Flood Plain Ordinance. Coordinate with Public Works. Conduct Planning Commission workshops. Refer to General Plan policies and implementation measures:

- PHS 6.4.1 Coordination with Federal Emergency Management Agency, United States Army Corps of Engineers and Department of Water Resources Division of Flood Management
- PHS 6.4.2 Development in Floodways and Dam Inundation Areas
- PHS 6.4.4 Floodplain Development Restrictions
- PHS 6.4.7 Limit Surface Runoff
- PHS Implementation Measures 1, 10, 20
- COS 7.2.4 Stream Corridor Development
- W 9.7.2 Downstream Peak Flows

Other Alternatives: No action.

Existing Planning Mechanism(s) through which Action Will Be Implemented: Plumas County Code, Title 8 (Building Regulations), Chapter 17 (Flood) and Plumas County General Plan

Responsible Office/Partners: Plumas County Planning Department and Public Works Department

Cost Estimate: Staff time

Benefits (Losses Avoided): People and property

Potential Funding: Staff time

Timeline: 2021

Project Priority (H, M, L): Medium

Earthquake Actions

Action 29. Conduct a Seismic Risk Evaluation of Critical Facilities and Public Buildings; Prioritize and Implement Seismic Retrofits. PECSD Water Storage Tank Replacement

Hazards Addressed: Earthquake

Goals Addressed: 1, 2, 4, 5, 6, 7

Issue/Background: The Plumas Eureka CSD “Preliminary Engineering Report for the 2015 Water System Improvements” recommended the replacement of the of two water storage tanks due to seismic concerns and existing steel construction.

Project Description: The two tanks would be removed and replaced with two new 300,000-gallon welded steel tank.

Other Alternatives: None known at this time

Existing Planning Mechanism(s) through which Action Will Be Implemented: None

Responsible Office/Partners: Plumas County Building Department, Plumas Eureka CSD

Cost Estimate: \$1,000,000

Benefits (Losses Avoided): \$1,100,000 – the estimate includes the replacement of the tank, the repair of the road leading up to the tank, and unknown damages downstream in the Plumas Eureka community

Potential Funding: HMGP or other appropriate grant programs, SRF loan, or Bond

Timeline: Within the next ten years

Project Priority (H, M, L): High

Action 30. Seismic Risk Evaluations to Prioritize and Implement Seismic Retrofits

Hazards Addressed: Earthquake

Goals Addressed: 1, 2, 4, 5, 6, 7

Issue/Background: Most unreinforced masonry (URM) buildings possess features that can threaten lives during earthquakes. These include unbraced parapets, walls and roofs that are not well attached to each other, and walls that are poorly constructed. When earthquakes occur, inadequate connections in these buildings can allow masonry to fall. Floors and roofs may collapse leaving occupants and passers-by in harm’s way. These risks to life can be significantly reduced with seismic retrofits.

County Building does not have an inventory of URM buildings in the unincorporated area of Plumas.

Project Description: URMs are the primary structures most at risk for seismic events. Conduct an URM inventory of critical facilities and public buildings based on visual field surveys, investigations, and a review of property records to evaluate the risks and potential for the need to conduct seismic retrofits. Note, County to make the assumption that any buildings built before the establishment of the Building Department in 1960, if masonry, is presumed to be of URM construction.

Other Alternatives: No action

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

Responsible Office/Partners: Plumas County Building Department

Cost Estimate: Unknown

Benefits (Losses Avoided): Reduction in damage and loss of property and possibly life should earthquake occur.

Potential Funding: Hazard Mitigation Grant from FEMA and the Cal OES.

Timeline: 5 years

Project Priority (H, M, L): Low

Pandemic Actions

Action 31. Update and Refine Pandemic Plan

Hazards Addressed: Pandemic

Goals Addressed: 1, 2, 4, 5, 6, 7

Issue/Background: Due to the experience with 2020 COVID-19 Pandemic, Plumas County Public Health realized the need to update the existing Pandemic Plan.

Project Description: PCOES will incorporate the Pandemic Plan into the County EOP when finalized and approved by PC Disaster Council.

Other Alternatives: Keep existing Pandemic Plan as is.

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

Responsible Office/Partners: Plumas County OES, Public Health Department

Cost Estimate: Staff Time

Benefits (Losses Avoided): Reduced risk to County when a pandemic occurs.

Potential Funding: Existing budgets

Timeline: 0-3 years

Project Priority (H, M, L): High

Wildfire, Drought and Water Shortage, and Tree Mortality Actions

Action 32. PRC 4290 – Plumas County Code Title 9, Chapter 8. Street Address System. Promote and Continue to Implement Compliant Street/Address Reflective Signage for Public and Private Roads and Structures

Hazards Addressed: Wildfire

Goals Addressed: 1, 2, 4, 5, 6, 7

Issue/Background: Compliant Street/Address reflective signage for public and private roads and structures is critical during wildfires for first responders, evacuation routes, and alternate evacuation routes. Public Resources Code (PRC) 4290 regulations require, “Standards for signs identifying streets, roads, and buildings.” This was an issue during the search, rescue, and evacuations due to the North Complex Fire in August of 2020. Many properties didn’t have address signage that was visible. Plumas County Code Title 9, Chapter 8. Street Address System has been adopted as implementation of the SRA Fire Safe Regulations (PRC 4290).

Project Description: Plumas County Public Works has in house reflective sign making capability for street and address signage. Street signs for Plumas County Roads are updated on an as needed basis. Street signs for private roads and address signs can be purchased from Public Works at cost. Street signs can also be produced for Forest Service Roads for evacuation routes, but a funding source would need to be established. Structural Fire Protection Districts are also primary sources for code compliant addressing signs within the boundaries of their districts

Other Alternatives: Private companies can also produce reflective street and address signs.

Existing Planning Mechanism(s) through which Action Will Be Implemented: Any road or address signage shall be reviewed by Plumas County Planning prior to manufacturing for compliance with existing road names and property addresses on file in the County’s Geographic Information System and 911 Emergency Response system.

Responsible Office/Partners: Plumas County Public Works/Engineering Department; Districts located within Plumas County which provide structural fire protection services.

Cost Estimate: At cost of sign to produce

Benefits (Losses Avoided): Proper reflective signage and street signs help first responders efficiently respond.

Potential Funding: Project funding unknown at this time

Timeline: Ongoing, as needed

Project Priority (H, M, L): High

Action 33. Ingress/Egress Road Projects to Widen and Improve Roads for Evacuation and Emergency Services Access

Hazards Addressed: Wildfires

Goals Addressed: 1, 2, 4, 5, 6, 7

Issue/Background: There are many County, Private and Forest Service Roads within Plumas County that do not have a secondary evacuation route and are not wide enough for two-way traffic. This combination creates a hazard for emergency services access during wildfire evacuation and other evacuations, while residents are evacuating. This situation is compounded when a one-lane bridge must be crossed on the one lane road. This is also a problem on private and Forest Service Roads.

Project Description: Intent is to survey County Roads in Plumas County that have inadequate width for two-way traffic and only one evacuation route. Widen roads to two-way roads when funding source is determined. It would be beneficial for Private Roads and Forest Service Roads with insufficient width for two-way traffic to be surveyed by other agencies.

Other Alternatives: Develop second evacuation route

Existing Planning Mechanism(s) through which Action Will Be Implemented: None

Responsible Office/Partners: Plumas County Public Works/Engineering Department

Cost Estimate: To be determined

Benefits (Losses Avoided): Efficient evacuation of residents while allowing emergency services access.

Potential Funding: CalFire Grants

Timeline: When funding becomes available

Project Priority (H, M, L): High

Action 34. Plumas County Agriculture, Forestry, and Natural Resources Resilience

Hazards Addressed: Climate Change, Drought, Tree Mortality

Goals Addressed: 1, 2, 4, 5, 6, 7

Issue/Background: Well documented climate change trends and projections indicate that Plumas County communities and landscapes will continue to be impacted by climate driven disturbances such as drought, tree mortality and wildfire. Because Plumas county communities and economies are inherently linked to agriculture, forest health, and natural resources there is a need for awareness, capacity building, and technical assistance to promote and implement best management practices to be more resistant and resilient to these disturbances.

Plumas County experienced extreme drought conditions during the 2012-2016 statewide drought. This resulted in:

- Diminished water supply for domestic, agriculture, and forestry use: Agricultural wells were running dry; reduced water supply for surface water irrigation of pasture and hay, lack of sufficient water in the creeks limited water drafting sites for road maintenance and inhibited/delayed forest management activities
- Lack of rangeland forage for both wildlife and livestock production: this results in reductions of agricultural and livestock yields thereby affecting the local agricultural economy.
- Tree mortality events which threatened and damaged homes and road and power infrastructure resulting in large mitigation costs.
- Increased dependence on groundwater. Over pumping of groundwater resulted in cones of depression in the water table in Sierra Valley. This necessitated the deepening of ground water wells and the abandonment of certain wells due to sand intrusion.
- Negative effects on soil health and increased challenges with the management and control of invasive species.

While Plumas County experienced “extreme” drought conditions in the last drought, other parts of the State experienced “exceptional” drought conditions, indicating that the northern sierra could be vulnerable to even more catastrophic drought events. Education and technical assistance regarding best management practices, water conservation measures, and countywide mitigation strategies are needed to prepare for and mitigate impacts of future drought events.

Project Description: This project includes concerted and coordinated efforts to provide outreach, education, and technical assistance to Plumas County landowners and land managers to promote drought prevention and mitigation strategies. As evidenced above, climate change and drought driven disturbances are broad in nature and reach and include but are not limited to reduction in water storage, flow, and utilization, agricultural yields, forest health and tree mortality. Projects that fit within these programs include:

- Continued work with UC Davis to look at crop varieties to reduce dependence on water;
- Identification and implementation of projects to enhance soil health;
- Continue education and training of land managers;
- Develop Countywide drought mitigation strategies;
- Continue and expand tree mortality detection, monitoring, prevention and mitigation strategies;
- Implement programs to increase sprinkler efficiency; and
- Manage, control, and eradicate invasive plant species and pests.

Other Alternatives: None

Existing Planning Mechanism(s) through which Action Will Be Implemented: Plumas-Sierra Agricultural Department and UC Cooperative Extension are skilled staff currently serving agricultural and livestock producers, and forest landowners and managers. The Plumas Fire Safe Council helps to host/Coordinate the County tree mortality group.

Responsible Office/Partners: Critical primary partners and stakeholders include:

- Plumas-Sierra County Department of Agriculture

- UC Cooperative Extension
- Plumas County Fire Safe Council
- Resource Conservation Districts
- Plumas County Public Works Department
- Feather River Resource Conservation District
- Feather River Watershed Group
- Feather River Integrated Regional Watershed Management (IRWM) plan

Cost Estimate: To Be determined. A portion of the costs are currently funded by existing programs; however, this limits the capacity for prevention and mitigation measures. As a result, programs are more reactive to drought-driven issues and events rather than pro-active in terms of prevention and mitigation. Additional funds would be needed to increase existing program capacity to serve the county communities.

Benefits (Losses Avoided): Benefits of these programs include greater economic and community resilience of the county, improved forest health, reduced wildfire risk, and improved sustainability of agriculture and livestock production. Avoided Losses could easily be within the range of millions of dollars considering the dependence of Plumas County communities on natural resources and the contributions of the watershed to the state water project supply.

Potential Funding: Potential funding may be available through the Sierra Nevada Conservancy Watershed Improvement Program, Title II and III RAC grants, CDFA grants for Soil Health, SB1 grants through the IRWM process, and CALFIRE Forest Health grants.

Timeline: Ongoing

Project Priority (H, M, L): High

Action 35. Invasive Species Control and Eradication

Hazards Addressed: Invasive Species, Wildfire, Drought, Climate Change

Goals Addressed: 1, 2, 4, 5, 6, 7

Issue/Background: Aggressive noxious weeds crowd out native vegetation and alter the natural environment and habitat for wildlife species, as well as impacting agricultural efficiency, recreational land values, and increased fire danger.

Project Description: Noxious weed control and eradication on non-federal lands. This will involve mechanical removal, hand removal, chemical (e.g., herbicides), and prescribed fire treatments.

Other Alternatives: Targeted grazing may also be used as a method of control.

Existing Planning Mechanism(s) through which Action Will Be Implemented: Plumas-Sierra Department of Agriculture noxious weed program heads Eradicate Exotic and Detrimental Species (WEEDS) Management Group that plans and coordinates management of noxious weeds.

Responsible Office/Partners: Plumas-Sierra Department of Agriculture, UC Cooperative Extension, and Feather River Resource Conservation District

Cost Estimate: Approximately \$40,000 annually for Department of Agriculture noxious weed management program including 2 employees at \$24.29 per hour at approximately 1,284 hours per year, and \$40,000 annually for projects complimenting the Departments efforts.

Benefits (Losses Avoided): Control of noxious weed species enhance native vegetation and its associated wildlife. Eradication and/or control of these species will help to reduce the number of seeds and/or plant parts that can invade other sensitive resources and habitats, especially forest and riparian habitats. The replacement of native vegetation with noxious weeds increases the risk of severe impacts from drought and wildfire, while also reducing agricultural efficiency and resiliency or value of the landscape as a whole. By managing or eradicating noxious weeds, these impacts can be mitigated.

Potential Funding: RAC grants, CALTRANS grants, CDFA funding, SNC grants, WCB grants

Timeline: Ongoing

Project Priority (H, M, L): High

Action 36. Continue and Promote Defensible space (PRC 4291) Projects Including Assistance Efforts for Senior and Disabled Residents

Hazards Addressed: Wildfire

Goals Addressed: 1, 2, 4, 5, 6, 7

Issue/Background: Plumas County’s communities are entirely within the Wildland Urban Interface (WUI) and are primarily defined as Very High Hazard Severity Zones. In recent years Plumas County residents have been regularly impacted by wildfire in the form of poor air quality, power outages, loss of access to public lands, loss of infrastructure, contamination of water, and, in some cases, personal property losses. A growing number of residents are aware of their responsibility to create defensible space.

The county’s population over 65 years of age is 28.4%, far outpacing the State’s estimated 14.3%. According to the California Census, 15.4% of people under the age of 65 have a disability (as compared with the State’s 6.9%). These populations have been shown to be the most vulnerable in wildfire situations. They are also the least likely to have the physical or financial ability to comply with Public Resources Code (PRC) 4291 hazardous fuel reduction requirements. Recently the CAL FIRE Lassen-Modoc Unit has had difficulty hiring Defensible Space Inspectors, making a locally administered incentive program an even more vital resource to Plumas County residents.

Project Description: For fourteen years the Plumas County Fire Safe Council’s Defensible Space program has been assisting senior and disabled residents to create and maintain defensible space and thereby comply with the public resources code. The program reduces fuels 100 feet surrounding habitable structures and removes litter accumulations on roofs, gutters, and decks. The program manager provides Home Ignition Zone consultations with each participant, sharing additional ways that residents can harden their home. A

licensed and insured defensible space operator is contracted to complete necessary fuel reduction work. Final inspections for PRC 4291 compliance are conducted by the program manager. Every residence treated through the program has passed subsequent CAL FIRE Defensible Space inspections.

In addition, multiple organizations and agencies work to promote defensible space to the general public through site visits, informational workshops, Firewise outreach, and distribution of digital and print materials.

Other Alternatives: Alternatives include:

1) providing an incentive program to all Plumas County residents.

The Fire Safe Council does not currently have the capacity to administer a program available to 18,000+ residents. Additionally, the Council board has on multiple occasions declined to expand the program beyond those with physical and financial limitations.

or 2) not providing an incentive program.

Participation in the existing program continues to grow. Over the past four years the program has more than doubled the number of clients served. Ceasing the program would leave many residences out of compliance with PRC 4291 and at high risk in wildfire situations.

Existing Planning Mechanism(s) through which Action Will Be Implemented: California PRC 4291, California SB 190

Responsible Office/Partners: Plumas County Fire Safe Council (implementation and outreach); CAL FIRE (enforcement and outreach); USDA Forest Service (funding and outreach); Plumas County Office of Emergency Services (outreach)

Cost Estimate: Senior/Disabled Defensible Space Assistance program: \$120,000/year; Outreach: \$10,000-\$100,000/year

Benefits (Losses Avoided): The defensible space assistance program reduces the risk of wildfire by reducing the likelihood that a residential ignition source (such as a pile burn) will lead to a wildfire or threaten a structure. The program reduces the potential impact of wildfire by creating defensible space that allows for more successful suppression efforts as well as reduced potential for fire to carry through a community. In conjunction these factors have the ability to significantly reduce the amount of greenhouse gasses released from wildfires.

Potential Funding: Various grant sources

Timeline: ongoing

Project Priority (H, M, L): High

Action 37. Establish Additional Firewise USA Sites (communities) and Promote Existing Ones

Hazards Addressed: Wildfire

Goals Addressed: 1, 2, 4, 5, 6, 7

Issue/Background: The National Fire Protection Association's (NFPA) Firewise USA Program encourages local solutions for safety by involving homeowners in taking individual responsibility for preparing their homes from the risk of wildfire. Firewise is a key component of Fire Adapted Communities- a collaborative approach that connects all those who play a role in wildfire education, planning and action with comprehensive resources to help reduce risk. The program is co-sponsored by the USDA Forest Service, the US Department of the Interior, and the National Association of State Foresters. To save lives and property from wildfire NFPA's Firewise USA program teaches people how to adapt to living with wildfire and encourages neighbors to work together and take action now to prevent losses.

Project Description: Continue to support funding for the Plumas County Office of Emergency Services' Fire Prevention Specialist position which supports the formation of new Firewise sites by providing information to interested citizens, facilitating community meetings, and coordinating participation from the Plumas County Fire Safe Council, local fire departments, Plumas and Lassen National Forest fire programs, CAL FIRE, and residents.

Ongoing support of Firewise communities is provided through forum at the Plumas County Fire Safe Council meetings and an annual Plumas Firewise meeting. Information about the program and existing sites is maintained on the Fire Safe Council website. Community boundaries are updated and provided to the public by Plumas County GIS.

Other Alternatives: Firewise communities are self-organizing and can continue to operate without coordination. However, assistance from OES with the certification process is responsible for the escalating number of communities attaining national recognition.

Additionally, resource sharing between communities has proven highly valuable. Coordinated information from various agencies provides residents with the information needed to make meaningful steps towards wildfire mitigation and preparedness as Firewise communities.

Existing Planning Mechanism(s) through which Action Will Be Implemented: Plumas County CWPP

Responsible Office/Partners:

- Plumas County Fire Safe Council
- CAL FIRE
- Plumas County Office of Emergency Services
- Plumas County GIS Department

Cost Estimate: To be determined

Benefits (Losses Avoided): Since the first Firewise community received certification in Plumas County in 2010, Firewise communities have reported a total investment of \$5.3 million in fuel reduction and wildfire preparedness activities.

Firewise program benefits from the NFPA website:

Get a framework for action

Meeting the criteria for becoming a Firewise USA® site helps communities get organized and find direction for their wildfire safety efforts. Like the first rungs on a ladder, the criteria help get a community started toward annual, systematic action to reduce their risks from brush, grass and forest fires.

Learn about wildfire

As people go through the process, they learn about wildfire risks in the community and the simple things they can do to reduce them. They connect with experts – local fire fighters, state forestry professionals, and national researchers – to continue to learn about fire and find resources to accomplish fire-safe actions.

Get a peace of mind

People who work with experts to learn about wildfire and take action start to see results quickly. Knowing that they are using the best information available and actually taking steps to reduce the risk of damage from fire helps people start to feel safer in their environment and in their homes. Having a plan for what to do in the event of a fire helps people become calmer and more prepared to act quickly.

Community-building

As neighbors get together to do work, often meeting one another for the first time, they build a stronger bond with each other. Activity can help rally people to a common cause for the good of the neighborhood. This strengthening of community ties can benefit residents in many ways, and is especially helpful during an emergency.

Build citizen pride

While the work can be fun, it isn't always easy. Neighbors work very hard in communities to remove brush and debris, clean up common areas, and dispose of green waste. They are rightly proud when they achieve national recognition for their efforts.

Get publicity

The program provides communities with metal signs, a plaque and other materials that can be presented publicly to honor their status as a Firewise USA® recognition site. These recognition ceremonies are great ways to shine the spotlight on community efforts. News media find this to be a great story to cover, and the national program features community stories regularly on the website and in its publications. All this publicity results not only in satisfaction for the residents involved, but also provides one more way to reach large numbers of people with information about wildfire safety.

Access to funding and assistance

Preference is sometimes given to Firewise USA® sites over other candidates when allocations of grant money are made for wildfire safety or fuel mitigation. The reason is that there are invariably more requests than available funds when grants are available through state or federal agencies. If requests are equally worthy, some officials tend to have more confidence in communities that have demonstrated the foresight of becoming a recognized Firewise USA® site.

Insurance discount for USAA members in certain states

The Department of Insurance in California have approved filings by USAA to give homeowners insurance discounts to USAA members living in communities recognized by the Firewise USA® program.

Potential Funding: Various grant sources

Timeline: ongoing

Project Priority (H, M, L): Medium

Action 38. Continue to Evaluate and Track Available Funding Sources for Wildfire Mitigation Projects

Hazards Addressed: Wildfire

Goals Addressed: 1, 2, 4, 5, 6, 7

Issue/Background: Plumas County land base is primarily under federal ownership, which means that in addition to significant forested area there is limited tax-based income. As a result, Plumas County benefits from grant funds for local initiatives. Grant opportunities come from local, state, federal, and private sources. A publicly available clearinghouse for grant information would benefit local entities seeking funding for wildfire mitigation activities.

Project Description: The Plumas County Fire Safe Council will continue to compile forest health, hazardous fuel reduction, defensible space/home hardening, outreach, and fire department related grant opportunities monthly. The Fire Safe Council will continue to distribute the information via email list and will add the information to plumasfiresafe.org as well as promote the fact that this information is available.

Other Alternatives: There are currently many venues for interested parties to access regional information about grant opportunities. Regular email updates are available from the Sierra Nevada Conservancy, Sierra Business Council, CAL FIRE, California Office of Planning and Research, California Fire Safe Council, and the NFPA, among many others. The alternative is for interested parties to sign up directly for these listservs and to independently evaluate each funding opportunity for relevance.

Existing Planning Mechanism(s) through which Action Will Be Implemented: N/A

Responsible Office/Partners: Plumas County Fire Safe Council in coordination with partners

Cost Estimate: \$1,300 annually

Benefits (Losses Avoided): Plumas County entities will be more likely to take advantage of local, state, federal, and private opportunities for grant funding.

Potential Funding: Existing budgets

Timeline: ongoing

Project Priority (H, M, L): High

Action 39. Develop a Program to Promote and/or Incentivize Home Hardening Retrofitting including: Roofs, Vents, Siding, Windows, etc.

Hazards Addressed: Wildfire

Goals Addressed: 1, 2, 4, 5, 6, 7

Issue/Background: Plumas County has a longstanding history over the last three decades of community awareness of the wildfire threat and working to increase fuel reduction efforts around communities. While fuel reduction efforts mitigate fuels accumulations and fire behavior in the wildland urban interface and intermix (WUI), residential homes and adjacent structures may still be vulnerable to fire ignition and loss. Home ignition in the WUI may still be possible to do ember ignition or ignition from lower severity ground fire if fire resistant design and materials are not in place. This gap in a community wildfire protection strategy may not effectively reduce the risk of home loss unless we address both sides of the equation: fuel reduction and home vulnerability.

Findings from case studies such as the 2010 Fourmile Canyon fire and the 2012 Waldo Creek Fire suggest that homes may burn and be loss even where fuel reduction has mitigated fire behavior near homes, and the primary factor in home loss is structure design, materials, and maintenance – particularly when firefighting resources are not available or insufficient to provide individual home level structure protection and triage.

Many of the homes in Plumas County are in the Wildland urban intermix which poses challenges for wildfire suppression in terms of community fire protection and structure triage. In addition, many of these homes and subdivisions were built prior 2008 when current fire standards were enacted. As a consequence, a large majority of homes in Plumas County may not meet current fire code and may be in need of structure retrofits to improve resistance to fire.

Common home vulnerabilities in Plumas County communities include wood siding, attached wooden decks/structures, non-tempered glass windows, eave and soffit design/screening, lack of sufficient water resources, and outbuilding siting/maintenance/design. As a result, the Plumas County communities may continue to be vulnerable to large scale home and economic loss despite widespread defensible space efforts.

Project Description: The overall goal of this project is to outreach, educate, provide technical assistance, and ultimately support financial assistance through grants to help Plumas County residents with home hardening retrofits. FEMA has funded a variety of hazard mitigation activities including structure

vulnerability retrofits for different natural hazards including wildfire as evidenced by the Big Bear Lake Shake Shingle Roof Replacement in 2010.

The Plumas County Fire Safe Council is well known throughout the county for its public outreach, support of NFPA Firewise USA Sites, and direct fuel reduction assistance programs to landowners – many of which focus on defensible space. This proposal intends to build on existing organizational strengths to add additional capacity to develop technical assistance for home ignition zone assessments and developing home hardening/retrofitting programs as envisioned in State assembly bill AB38. This project would include collaboration between, Plumas County Fire Safe Council, local fire departments, the planning department, and support from UC Cooperative Extension.

This Project proposes two phases of implementation.

The first phase is providing outreach, education, and technical assistance for home ignition zone assessment of homes, commercial structures, and community infrastructure. This includes developing outreach materials about wildfire and the built environment, providing workshops and educational offerings to educate residents about home hardening and preparedness, and developing programs to provide site specific home consultations on the home ignition zone to help residents identify, assess, and prioritize home hardening retrofits to make their home more resistant to wildfire. This outreach effort would be well paired with defensible space programs already being delivered to Plumas county residents

The second phase is to provide home retrofitting assistance program to improve structural resistance to wildfire, or to improve community infrastructure for wildfire preparedness as described in Calif. Assembly Bill AB38. This would include developing and implementing cost-share, grant funded, or incentive based projects and programs to help residents with projects that improve home resistance to fire and enhance community wildfire preparedness and protection. Home retrofit projects may include replacement of out of code structure vents, installing fire resistant roofing, siding or windows, and/or installing snow protectors on propane regulators. Community wildfire preparedness and protection project may include installation of secondary water supplies, developing community water supplies, developing community safety zones or temporary areas of last resort refuge, or improving fire safety of power, communications, and road infrastructure. These implementation efforts would likely need to be implemented in a phased manner.

Other Alternatives: Currently, there are no other alternative programs such that the de facto alternative is not providing residents home hardening support.

Existing Planning Mechanism(s) through which Action Will Be Implemented: State Assembly Bill AB38 provides state level direction and guidance to develop programs to mitigate fire hazard and support communities by delivering programs that improve wildfire preparedness. Home hardening & retrofitting is included in these activities.

Responsible Office/Partners: County Agencies (OES, Building & Planning Departments); Plumas County Fire Safe Council, UC Cooperative Extension, CAL FIRE, Office of State Fire Marshall

Cost Estimate: Phase 1: Outreach, Education, and Technical Assistance with Home Ignition Zone assessment consultations: \$50,000-\$75,000

Phase 2: Home retrofitting programs: Could range from \$1-5 million

Benefits (Losses Avoided): Reduction of the loss of homes in a wildfire event would be the largest benefit (loss avoided).

Potential Funding: AB38 opens potential avenues for funding which still remain to be seen and may be uncertain during current state and federal economy challenges.

Ideally Phase 1 could include: \$150- \$200K to develop the staffing, materials and outreach programs for a two to three year period. This would fund staffing for a Home ignition zone assessment consultation, preferably a candidate with professional forestry or wildland fire fighting skillset who can also assess defensible space as well as the home ignition zone.

Phase 2: First phase of implementation could be \$500K-\$1million as an annual program. This is within the same context and scale as the Big Bear Lake Shake Roof replacement program which was limited in scope and scale to a smaller community. A county wide program offered for 5 years could reach into a \$5 million or greater program.

Timeline: This project should be ongoing considering the need; however for purposes of LHMP planning, a 5 year timeline would be utilized. Considering this, a two to three year timeline would be necessary for phase 1 outreach and development. Implementation of the initial stages of phase 2 (Home retrofitting) could occur in a phased approach anywhere in years 2 to 5 of the five year planning horizon.

Project Priority (H, M, L): High

Action 40. Identify and Implement Priority Wildfire Risk Reduction Projects from the Plumas County CWPP to Enhance Forest Health Including Detection, Prevention, and Mitigation of Tree Mortality

Hazards Addressed: Climate Change/ Drought/ Tree Mortality/ Wildfire

Goals Addressed: 1, 2, 4, 5, 6, 7

Issue/Background: The majority of scientific research concerning climate trends indicates that climate has been changing since the mid-twentieth century. Trends suggest that the northern Sierra Nevada may become generally warmer and wetter, with longer periods of prolonged summer drought. While warmer and wetter weather patterns may increase forest growth and carbon sequestration, warmer temperatures – in combination with longer periods of prolonged summer drought – will likely increase forest insect and disease outbreaks and the occurrence of high severity fire – disturbances which may result in increased carbon losses. Such high severity disturbances could result in type-conversion to shrublands in forested ecosystems that are not adapted to such disturbance patterns – which could drastically alter carbon cycles in the short and long term. High-intensity wildfires, drought, and declining forest health are some effects of climate change that are worsening the threats to forests and reducing forest productivity.

Hotter and drier weather alter forest hydrology and water balance available to forest communities. Increased temperatures alter the timing of snowmelt, affecting the seasonal availability of water with earlier dry

conditions which then provides fuel to earlier and hotter fires from stressed trees and shrubs. Drought also reduces trees' ability to produce sap, which protects them from destructive insects and diseases. Research has found that large trees may be most susceptible to climate driven mortality – which the authors suggested can also be compounded by high stand densities of small trees due to fire suppression. Others suggest that “regional warming and consequent increases in water deficits are likely contributors to the increase in mortality rates,” and suggest that exogenous warming trends may be more of a driver of mortality, particularly in large diameter trees, than increasing stand density. Nonetheless, research indicates that warming climate is driving changes in forest structure.

Battles et al. (2008) evaluated the impacts of climate change on the mixed-conifer region in California and provide insight to forest health concerns and management implications for forest managers. This study and others found that changes in climate could “exacerbate forest health concerns” by increasing weakened tree susceptibility to mortality as a result of fire, disease epidemics and insect outbreaks and potentially enabling forest insects and disease to expand ranges or increase potential for widespread damage. These predictions were realized the following decade in the central and southern Sierra Nevada wherein vast stretches of ponderosa pine forest were decimated in a drought driven epidemic. Other research suggest that landscape level tree mortality may drive extreme fire behavior and high severity of future fire events in these forests. (Stephens et al 2018).

In the State of California, the wildfires that have burned the most acres, caused the most destruction, and ended with the greatest loss of life have been in the last decade, with most of these dubious records set in the last five years. The past five seasons have substantiated the increase in fire behavior that was predicted by climate and fire scientists. Not only have these fires burned more of everything, but firefighters have agreed that wildfire behavior has become more erratic and uncontrollable.

The stakeholders and partners identified in this proposal have a longstanding history of experience promoting and maintaining fuel reduction and forest restoration efforts. The programs these partners offer compliment a growing firewise situational awareness in Plumas county. Organizational collaboration is necessary to strategically coordinate and design efforts on a fire-adapted community scale.

Project Description: Identify: The Plumas County Fire Safe Council including the USDA Forest Service, CAL FIRE, UC Cooperative Extension, and the Feather River Resource Conservation District annually evaluate projects for inclusion in the CWPP. As part of this mitigation action the Fire Safe Council and collaborators will continue to refine the process by which projects are prioritized. Emerging resources include collaborative mapping initiatives that compile data from multiple agencies, organizations, and landowners. Identification of priority projects will also involve evaluation of grant opportunities and aligning funding objectives with project outcomes. This includes continuing county wide efforts for monitoring tree mortality and delivering outreach and education on prevention and coordinating mitigation strategies and efforts.

Implement: Administer and oversee fuel reduction projects across public and private lands that increase the pace and scale by which all implantation entities are undertaking forest health projects. Implementation includes addressing CEQA/NEPA requirements. Project treatments include hand-thinning, chipping, pile burning, broadcast burning, mastication, and removal of timber and biomass.

Other Alternatives: Currently various responsible entities work collaboratively and independently to identify and implement forest health projects.

Alternatives to this mitigation range from:

- 1) No treatment
- 2) Not integrating forest health with fuel reduction projects
- 3) Identifying projects without a framework for prioritization
- 4) Maintaining or reducing the annual number of acres treated or planned

Existing Planning Mechanism(s) through which Action Will Be Implemented: Plumas County CWPP, Plumas National Forest 1988 LRMP and 2004 Sierra Nevada Framework Plan Amendment, CALFIRE Vegetation Treatment Program (VTP) and Calif. Forest improvement Program (CFIP)

Responsible Office/Partners:

- USDA Forest Service: Plumas National Forest and Lassen National Forest
- CAL FIRE
- Plumas County Fire Safe Council
- UC Cooperative Extension
- Feather River Resource Conservation District

Cost Estimate: Identify: \$30,000 annually; Implement: \$400-500 million annually

Benefits (Losses Avoided): Benefits of this project deliverables includes reduction in fuel accumulation and fire severity in Plumas County which enhances community fire protection strategies as well as promoting forest health and natural resource conservation. Plumas County is home to nearly 19,000 residents living in the Wildland Urban Interface, which poses a wildfire risk to their health and lives.

The economic impact that results from catastrophic wildfires is nearly irreversible: homes in the County are estimated at a total value of \$3.7 trillion and the agricultural product value is approximately \$40 million annually (of which nearly half is generated from forest products). Successful and continued implementation may result in innumerable economic benefits in losses avoided in terms of mitigating structure losses to wildfire, but also enhanced ecosystem services.

Potential Funding:

- CAL FIRE CCI Forest Health grant funding
- CAL FIRE CCI Fire Prevention grant funding
- USFS Wyden Authority funding (Stevens)
- Sierra Nevada Conservancy grant funding
- Forest product revenue

Timeline: ongoing

Project Priority (H, M, L): High

Action 41. Plumas County General Plan Public Health & Safety Element update to address state law requirements for land classified as State Responsibility Areas (SRAs) and within Very High Fire Hazard Severity Zones (VHFHSZs)

Hazards Addressed: Wildfire

Goals Addressed: 1, 2, 4, 5, 6, 7

Issue/Background: The Plumas County General Plan Public Health & Safety Element update is necessary to address newly adopted state law requirements for land classified as State Responsibility Areas (SRAs) and within Very High Fire Hazard Severity Zones (VHFHSZs).

Project Description: The Plumas County General Plan Public Health & Safety Element Update includes amending the goals and policies of the Element to fully respond to and address state law requirements for land classified as SRAs and within VHFHSZs to reduce the risk and potential of wildfire in the unincorporated areas of the County and particularly in the WUI. For example, the Public Health & Safety Element is required by state law to include, and will be reviewed and updated, as necessary, to contain the following:

- Fire hazard severity zone maps
- Historical data on wildfires
- Information about wildfire hazard areas
- General location and distribution of existing and planned uses of land in VHFHSZs and SRAs
- Local, state, and federal agencies with responsibility for fire protection, including special districts and local OES

Though the update process, implementation measures may also be developed, including but not limited to, avoiding or minimizing the wildfire hazards associated with new uses of land; locating, when feasible, new essential public facilities outside of high fire risk areas; working cooperatively with public agencies with responsibility for fire protection; and designing adequate infrastructure if new development is located in the SRA or VHFHSZ, including access for emergency response vehicles, visible street signage, and water supplies for fire structural suppression.

Other Alternatives: No action.

Existing Planning Mechanism(s) through which Action Will Be Implemented: Plumas County General Plan Public Health & Safety Element

Responsible Office/Partners: Plumas County Planning Department

Cost Estimate: \$67,200

Benefits (Losses Avoided): The County's 2035 General Plan recognizes that growth has occurred in high fire hazard areas and the combination of population growth and climate change in these fire-prone areas is putting more people and homes at a greater risk from catastrophic wildfire. Public Health & Safety Element

policies in Plumas County mitigate some of the risks by directing new development to be located within existing fire districts or adjacent to areas where fire protection can efficiently be extended. There is a continuing need to develop policies that both address fire safe patterns for new development and address solutions for improving fire safety for existing communities and rural places.

Potential Funding: Grant

Timeline: 2021 – 2022

Project Priority (H, M, L): Medium

Action 42. Local Adoption of State Responsibility Area Fire Safe Regulations

Hazards Addressed: Wildfire

Goals Addressed: 1, 2, 4, 5, 6, 7

Issue/Background: New regulations effective January 1, 2020

Project Description: Review and amend, as needed, Plumas County Code Title 8 (Building Regulations) and Title 9 (Planning and Zoning) sections which implement the State Responsibility Area Fire Safe Regulations

Other Alternatives: No action

Existing Planning Mechanism(s) through which Action Will Be Implemented: Plumas County Code Title 8 (Building Regulations) and Title 9 (Planning and Zoning); Plumas County 2035 General Plan; PHS 6.3 and Implementation Measure 7

Responsible Office/Partners: Plumas County Planning Department

Cost Estimate: Staff time

Benefits (Losses Avoided): People and property

Potential Funding: Staff time

Timeline: 2021 – 2022

Project Priority (H, M, L): Medium

Action 43. Improve Funding and Response Capabilities of Local Fire Protection Districts and Expand Districts in Areas not Covered

Hazards Addressed: Wildfire

Goals Addressed: 1, 2, 4, 5, 6, 7

Issue/Background: Local fire departments are the first in responders to most in units to most incidents in populated areas in the county. Each of these districts is funded by a small share of property taxes, supplemented in some cases by voter-approved special assessments. Limited funding strains the districts' ability to support staffing, state-required updates to firefighter safety gear, station and apparatus maintenance and improvements. Recruiting and retention of volunteers, who make up the majority of the emergency response force, has become increasingly difficult.

Project Description: Assist districts in identifying funding opportunities to supplement tax revenues for improved response capabilities. Assist districts in developing volunteer recruitment and retention strategies to improve response team numbers and stability.

Other Alternatives: No action

Existing Planning Mechanism(s) through which Action Will Be Implemented: Plumas County Fire Chiefs Association Strategic Plan.

Responsible Office/Partners: PCOES, PC Chiefs Association

Cost Estimate: TBD

Benefits (Losses Avoided): Firefighter safety and increased response capability

Potential Funding: CSFA, AFG

Timeline: Ongoing

Project Priority (H, M, L): High