

5 MITIGATION STRATEGY

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

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

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

5.1 Mitigation Strategy: Overview

The results of the planning process, the risk assessment, the goal setting, the identification of mitigation actions, and the hard work of the HMPC led to the action plan in Section 5.4 Mitigation Action Plan. Taking all of the above into consideration, the HMPC developed the following overall mitigation strategy:

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

5.1.1 Continued Compliance with NFIP

Given the flood hazard in the planning area, an emphasis will be placed on continued compliance with the National Flood Insurance Program (NFIP) and participation by all communities, as appropriate, in the Community Rating System. A description of Placer County's flood management program is detailed below. Also included in this section is a description of future activities to ensure continued compliance with the NFIP.

Placer County's Flood Management Program: Existing Activities

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

The Community Rating System (CRS) was created in 1990. It is designed to recognize floodplain management activities that are 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 the FEMA, then its residents can qualify for a flood insurance premium rate reduction. Placer County has been in the CRS since 1991 and is currently a Class 5.

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

- Enhanced public safety;
- A reduction in damage to property and public infrastructure;
- Avoidance of economic disruption and losses;
- Reduction of human suffering; and
- Protection of the environment.

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

- <u>Activity 310 Elevation Certificates:</u> The Engineering and Surveying Department maintains elevation certificates for new and substantially improved buildings. Copies of elevation certificates are made available upon request. Certificates are also kept for post-FIRM buildings.
- <u>Activity 320 Map Information Service:</u> Credit is provided for furnishing inquirers with flood zone information from the community's latest Flood Insurance Rate Map (FIRM), publicizing the service annually and maintaining records.
- <u>Activity 340 Hazard Disclosure:</u> Credit is provided for the local real estate agents disclosure of flood hazards to prospective buyers. Credit is also provided for state and community regulations requiring disclosure of flood hazards.
- <u>Activity 350 Flood Protection Information:</u> Documents relating to floodplain management are available in the reference section of the Placer County Library. Credit is also provided for floodplain information displayed on the community's website.
- <u>Activity 410 Additional Flood Data</u>: Credit is provided for conducting and adopting flood studies for areas not included on the flood insurance rate maps and that exceed minimum mapping standards. Credit is also provided for a cooperating technical partnership agreement with FEMA.

- <u>Activity 420 Open Space Preservation:</u> Credit is provided for preserving approximately 5 acres in the Special Flood Hazard Area (SFHA) as open space.
- Activity 430 Higher Regulatory Standards: Credit is provided for enforcing regulations that require freeboard for new and substantial improvement construction, foundation protection, cumulative substantial improvement, lower substantial improvement, natural and beneficial functions, other higher regulatory standards, and state mandated regulatory standards. Credit is also provided for staff education and certification as a floodplain manager.
- Activity 440 Flood Data Maintenance: Credit is provided for maintaining and using digitized maps in the day-to-day management of the floodplain. Credit is also provided for establishing and maintaining a system of elevation reference marks and maintaining copies of all previous FIRMs and Flood Insurance Study Reports.
- <u>Activity 450 Stormwater Management:</u> The community enforces regulations for stormwater management, freeboard in non-SFHA zones, soil and erosion control, and water quality. Credit is also provided for stormwater management master planning.
- <u>Section 502 Repetitive Loss Category:</u> Based on the updates made to the NFIP Report of Repetitive Losses as of July 31, 2006, Placer County has eight repetitive loss properties and is a Category B community for CRS purposes. All requirements for a Category B community have been met. Credit is provided for the adoption and implementation of the Floodplain Management Plan.
- <u>Activity 530 Flood Protection</u>: Credit is provided for buildings that have been elevated to protect them from flood damage.
- <u>Activity 540 Drainage System Maintenance:</u> Credit is provided for enforcing regulations prohibiting dumping in the community's drainage system.
- <u>Activity 630 Dam Safety:</u> All California communities currently receive CRS credit for the State's dam safety program

Placer County's Flood Management Program: Future Activities

In addition to continuing with the flood management program as described above,

This is great as to what has been done, But:

What recent activities resulted in the County moving from a Class 6 (in old plan) to a Class 5?

And, are their certain program areas/goals that the County intends to focus on over the next few years to ensure compliance with the NFIP and the current CRS class? And are their additional goals activities planned that will further increase the County's class and enhance the County's floodplain management program?

5.2 Goals and Objectives

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

Up to this point in the planning process, the HMPC has organized resources, assessed hazards and risks, and documented mitigation capabilities. The resulting goals, objectives, and mitigation actions were developed based on these tasks. The HMPC held a series of meetings and exercises designed to achieve a collaborative mitigation strategy as described further throughout this section.

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

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

- Represent basic desires of the community;
- Encompass all aspects of community, public and private;
- Are nonspecific, in that they refer to the quality (not the quantity) of the outcome;
- Are future-oriented, in that they are achievable in the future; and
- Are 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 2005 plan as well as a list of other sample goals to consider. They were told that they could use, combine, or revise the statements provided or develop new ones, keeping the risk assessment in mind. Each member was given three index cards and asked to write a goal statement on each. Goal statements were collected and grouped into similar themes and displayed on the wall of the meeting room. The goal statements were then grouped into similar topics. New goals from the HMPC were discussed until the team came to consensus. Some of the statements were determined to be better suited as objectives or actual mitigation actions and were set aside for later use. Next, the HMPC developed objectives that summarized strategies to achieve each goal.

Based on the risk assessment review and goal setting process, the HMPC identified the following goals and objectives, which provide the direction for reducing future hazard-related losses within the Placer County planning area. In some instances, participating jurisdictions chose to modify the countywide goals to better reflect the desires specific to their communities. Modified goals are included in the jurisdictional annexes to this plan. Jurisdictions may modify these goals in their annexes.

Goal 1: Prevent Future Hazard Related Losses of Life and Property

- **Objective 1.1**: Provide protection, to the extent possible, for existing and future development.
- Objective 1.2: Provide protection for critical public facilities, utilities, and services
- **Objective 1.3**: Promote/maintain coordination and inter-operability among all Placer County public agencies.
- **Objective 1.4**: Promote agricultural planning and animal health.
- **Objective 1.5**: Provide protection for natural/cultural resources to the extent possible.
- **Objective 1.6**: Leverage/use technology to reduce or mitigate natural hazards (e.g., GIS, emergency notification systems, WebEOC).

Goal 2: Increase Public Awareness/Action of Vulnerability to Hazards

- **Objective 2.1**: Inform and educate residents and businesses about the types of hazards they are exposed to, where they occur, and what they can do to mitigate exposure or damages. Emphasize preparedness and self responsibility. Develop outreach program/provide educational resources for all hazards included in plan.
- **Objective 2.2**: Create a multi-hazard Public Outreach Strategy according to CRS guidance (CRS Activity 330, include all hazards discussed in plan; coordinate with existing efforts underway).

Goal 3: Improve Community Emergency Services/Management Capability

- **Objective 3.1**: Improve internal management capabilities in compliance with NIMS and essential services standards.
- **Objective 3.2**: Continue to coordinate jurisdictional responsibilities to various hazards in accordance with County and Community Disaster/Emergency Response Plans.
- **Objective 3.3**: Develop/Improve warning and evacuation procedures and information for residents and businesses.
- **Objective 3.4**: Update Business Continuity Plans

Objective 3.5: Maintain/Enhance the flood warning system, SCADA system, and other WARN systems.

Objective 3.6: Continue to assess emergency service response times, and work to identify and fix conditions that result in repeated delays where possible.

Objective 3.7: Improve interagency communications systems

Goal 4: Implement and complete identified high priority projects listed in the plan

Objective 4.1: Monitor and report on implementation of previous goals, priorities, and projects

Objective 4.2: Collect and review lessons learned, results of applicable research, and other scientific, technical data and knowledge to strengthen mitigation

Goal 5: Pursue Multi-Objective Opportunities "MOM" Whenever Possible

Objective 5.1: Strengthen Intergovernmental and Interagency partnerships to achieve "MOM"

Goal 6: Maintain FEMA Eligibility/Position Jurisdictions for Grant Funding

Objective 6.1: Monitor and communicate available grant programs, timelines, and processes to all communities.

5.3 Identification and Analysis of Mitigation Actions

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

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

These priority hazards (in alphabetical order) are:

- Agricultural Hazards
- Dam Failure
- Drought
- Earthquake
- Flood
- Landslide
- Seiche

- Severe Weather
 - Extreme Temperatures
 - Heavy Rain/Thunderstorm/Hail/Lightning/Wind
 - Snow
- Wildfire

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

- Avalanche
- Human Health Hazards
 - Epidemic/Pandemic
 - West Nile Virus
- Severe Weather
 - Fog
 - Tornado
- Soil Hazards
 - Erosion
- Land Subsidence
- Volcano

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

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

- Prevention
- Property protection
- Structural projects
- Natural resource protection
- Emergency services
- Public information

The HMPC was also provided with examples of potential mitigation actions for each of the above categories. A facilitated discussion then took place to examine and analyze the options.

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:

- Does the action address hazards or areas with the highest risk?
- Does the action protect lives?
- Does the action protect infrastructure, community assets or critical facilities?
- Does the action meet multiple objectives (Multiple Objective Management)?
- What will the action cost?
- What is the timing of available funding?

The mitigation categories, multi-hazard actions, and criteria are included in Appendix C: Mitigation Categories, Alternatives, and Selection Criteria.

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

The process of identification and analysis of mitigation alternatives allowed the HMPC to come to consensus and to prioritize recommended mitigation actions. During the voting process, emphasis was placed on the importance of a benefit-cost review in determining project priority; however, this was not a quantitative analysis. After completing the prioritization exercise, some team members expressed concern that prioritizing all the actions as a group is not very effective, since many of the actions are jurisdiction- or department-specific. However, the team agreed that prioritizing the actions collectively enabled the actions to be ranked in order of relative importance and helped steer the development of additional actions that meet the more important objectives while eliminating some of the actions which did not garner much support.

Benefit-cost was also considered in greater detail in the development of the Mitigation Action Plan detailed below in Section 5.3. Specifically, each action developed for this plan contains a description of the problem and proposed project, the entity with primary responsibility for implementation, any other alternatives considered, a cost estimate, expected project benefits, potential funding sources, and a schedule for implementation. Development of these project details for each action led to the determination of a High, Medium, or Low priority for each.

Recognizing the limitations in prioritizing actions from multiple jurisdictions and departments and the regulatory requirement to prioritize by benefit-cost to ensure cost-effectiveness, the HMPC decided to pursue:

- mitigation action strategy development and implementation according to the nature and extent of damages;
- the level of protection and benefits each action provides;
- political support;
- project cost;
- available funding; and
- individual jurisdiction and department priority.

This process drove the development of a prioritized action plan for the Placer County planning area. Cost-effectiveness will be considered in greater detail during the benefit-cost project prioritization and training task conducted as part of LHMP development (further described below) as well as when seeking FEMA mitigation grant funding for eligible actions associated with this plan.

Benefit-Cost Prioritization

As part of the mitigation action prioritization process, AMEC worked with the HMPC to identify a candidate list of approximately 15 new projects that would be further evaluated using FEMA's Benefit-Cost Analysis (BCA) Very Limited Data Module. Projects identified will include high priority projects with sufficient data to effectively run the analysis and likely to result in a good benefit-cost ratio. The results will provide a quick screening of the projects' cost-effectiveness. The Very Limited Data Module will be used as a screening tool to prioritize projects for use in a

BCA Training/Work Session conducted for the HMPC. Utilizing the results of the Very Limited Data Module runs conducted on the 15 projects, it is estimated that approximately 6-8 of these will be recommended for further evaluation using the software's more exhaustive Full Data Module. As part of this effort, AMEC will train the HMPC on how to perform BCAs using existing projects as training materials. Based on the results of this BCA task, adjustments will be made to project priorities as appropriate.

5.4 Mitigation Action Plan

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

This action plan was developed to present the recommendations developed by the HMPC for how the Placer County planning area can reduce the risk and vulnerability of people, property, infrastructure, and natural and cultural resources to future disaster losses. The action plan summarizes who is responsible for implementing each of the prioritized actions as well as when and how the actions will be implemented. Each action summary also includes a discussion of the benefit-cost review conducted to meet the regulatory requirements of the Disaster Mitigation Act. Table 5.1 identifies the mitigation actions and lead jurisdiction for each action. Only those actions where the County is the lead jurisdiction are detailed further in this section. Actions specific to other participating jurisdictions, or where other jurisdictions are taking the lead, are detailed in the jurisdictional annexes.

It is important to note that Placer County and the participating jurisdictions have numerous existing, detailed action descriptions, which include benefit-cost estimates, in other planning documents, such as community wildfire protection plans, stormwater plans and capital improvement budgets and reports. These actions are considered to be part of this plan, and the details, to avoid duplication, should be referenced in their original source document. The Placer County 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.

Table 5.1 Placer County Planning Area's Mitigation Actions

Action	Lead Jurisdiction	New Action/2005 Action
Multi-Hazard Mitigation Actions		
Integrate Local Hazard Mitigation Plan into Safety Element of General Plan	Placer County All Incorporated Communities	New
Replacement of the Alpine Meadows Road Bridge over the Truckee River	Placer County	New

Action	Lead Jurisdiction	New Action/2005 Action
Inspection of Bridges Less than 20 Ft in Length	Placer County	New
Replacement of the Walerga Road Bridge over Dry Creek	Placer County	New
Replacement of Yankee Jims Road Bridge over the North Fork of the American River	Placer County	New
Generators for Sewer Pump Stations	Placer County	New
SCADA Systems	Placer County	New
Develop and Conduct a Multi-Hazard Seasonal Public Awareness Program	Placer County	2005
GIS Based Mapping of Pertinent Information that can be Used by all Agencies in the Development of Plans and During Emergency Incidents	City of Auburn	2005
Portable Generator Project	Nevada Irrigation District	New
FCC P-25 Interoperability Radio Systems	North Tahoe Fire Protection District	New
District GIS Technology, Equipment, Database and Mapping Improvements	North Tahoe Fire Protection District	New
Emergency Radio Transmitters and Information Systems	North Tahoe Fire Protection District	New
Evacuation Shelter Improvements	North Tahoe Fire Protection District	New
East Booster Emergency Power	Squaw Valley Public Service District	New
Easement Abatement/Maintenance of Emergency Access	Squaw Valley Public Service District	New
Develop a Community-Wide Emergency Notification System	Squaw Valley Public Service District	2005
School Site and Community Education of Procedures Related to Safety and Emergency Situations. Improvement of District Wide Emergency Communication and Alert Systems	Tahoe Truckee Unified School District	New
Agricultural Hazards Mitigation Actions		
Continue and Maintain Noxious Weed Eradication Program	Placer County	2005
Drought Mitigation Actions		
Water & Sewer System GPS Project	Squaw Valley Public Service District	New
SVPSD/Mutual Water Company Inter-tie Hazards	Squaw Valley Public Service District	New
Earthquake Mitigation Actions		
Identify Un-Reinforced Masonry Buildings in the City	City of Colfax	New
North Tahoe Fire Protection District Critical Facility Infrastructure Improvements	North Tahoe Fire Protection District	New

Action	Lead Jurisdiction	New Action/2005 Action
North Tahoe Fire Protection District Headquarters Station Relocation and North Tahoe Command Center Development	North Tahoe Fire Protection District	New
Water Tank Earthquake Retrofit Project	Squaw Valley Public Service District	New
Flood Mitigation Actions		
Placer County Low Intensity Development Program	Placer County Community Development Resource Agency	New
Elevate Remaining 95 Homes in the Dry Creek Watershed	Placer County/PCFCWCD	2005
Pursue Detention and Retention Projects within the Dry Creek and Cross Canal Watersheds.	Placer County/PCFCWCD	2005
Implementation of Identified Bridge and Culvert Replacement Projects.	Placer County/PCFCWCD	2005
Elevate Highway 89, Lake Tahoe Area, in Two Places	Placer County/PCFCWCD	2005
Upgrade of Flood Warning System to Include Additional Gage Locations and Flood Forecasting Capabilities	Placer County/PCFCWCD	2005
Update Hydrology and Hydraulic Models within the Critical Dry Creek and Cross Canal Watersheds.	Placer County/PCFCWCD	2005
Squaw Creek Restoration & Drainage Enhancement Project	Placer County/ PCFCWCD	New
GIS Mapping of Flood Zones within the City.	City of Auburn	New
Lincoln Basin (Downtown) Drainage Infrastructure	City of Auburn	New
Creek and Stream Cleaning and Maintenance Program	City of Auburn	New
Implementation of Storm Water Treatment Plan	City of Auburn	2005
Electric Street Diversion Project	City of Auburn	2005
Old Town Auburn Storm Drain System	City of Auburn	2005
Flood Warning System	City of Lincoln	2005
State Route 65: Auburn Ravine Bridge – Reconstruct Bridge	City of Lincoln	2005
State Route 193: Auburn Ravine Bridge – Additional 110' Span	City of Lincoln	2005
Lakeview Farms Regional Volumetric Mitigation Improvements – Phase 1	City of Lincoln	2005
Gladding Parkway, State Route 65, McCourtney Road Stream Restoration and Culvert Improvements.	City of Lincoln	2005
"O" Street Drainage Improvements.	City of Lincoln	2005
7 th Street Drainage Improvements.	City of Lincoln	2005
Auburn Ravine at State Route 193 Bridge.	City of Lincoln	2005
Auburn Ravine at State Route 65 Bridge.	City of Lincoln	2005

Action	Lead Jurisdiction	New Action/2005 Action
Ingram Slough – Orchard Creek return channel	City of Lincoln	2005
Markham Ravine – Updated FEMA Analysis and Mapping.	City of Lincoln	2005
Markham Ravine Drainage Improvements – Union Pacific Railroad and State Route 65 crossings.	City of Lincoln	2005
Auburn Ravine Stream Restoration Projects (analysis and repairs).	City of Lincoln	2005
Markham Ravine Streambed Restoration Projects (analysis only).	City of Lincoln	2005
Coon Creek Streambed Restoration Projects (analysis only).	City of Lincoln	2005
Delmar Avenue Headwall Reconstruction Project	Town of Loomis	New
Creek Maintenance Secret Ravine & Antelope Creek	Town of Loomis	New
Reconstruction of Brace Bridge at Secret Ravine	Town of Loomis	New
Canal Culvert Replacement Program	Nevada Irrigation District	New
Reservoir Cleaning	Nevada Irrigation District	New
Flood Control	Tahoe Truckee Unified School District	New
Seiche		
Sieche Wave Warning Systems, Signs and Public Education	North Tahoe Fire Protection District	New
Severe Weather		
HVAC Control Upgrades	Tahoe Truckee Unified School District	New
Wildfire Mitigation Actions		
Firewise Communities/USA Educational Outreach	Placer County	New
Establish the "Rural Lincoln Fire Safe Council"	Placer County	New
Hazardous Vegetation Abatement Program	Placer County	New
Shaded Fuel Break Establishment and Maintenance	Placer County	New
Biomass Removal Projects	Placer County	New
Provide Fire Protection Water Source in Sheridan (Emergency Services)	Placer County	New
Develop a Community Wildfire Prevention Plan (CWPP) for Western Placer	Placer County	2005
Maintenance of Shaded Fuel Breaks and Demonstration Fuel Breaks	Placer County	2005
Annual Defensible Space Inspections Program in the Unincorporated County	Placer County	2005

Action	Lead Jurisdiction	New Action/2005 Action
Establish Additional Fire Safe Councils on the Western Slope	Placer County	2005
Placer County Chipper Program Operational Funds	Placer County	2005
Enhance Enforcement Of County Building Codes to Increase Compliance with SB 1369 Defensible Space and Other Fire Safe Requirements in the Unincorporated County.	Placer County	2005
Acquisition and Implementation of an Additional Command Frequency for Fire Dispatch on the Western Slope.	Placer County Fire Chief's Association	2005
Annual Multi-Agency Wildland Fire Drill.	Placer County Fire Chief's Association	2005
Cooperative Fire Service Response Agreement for The Western Side of all Placer County Fire Agencies.	Placer County Fire Chief's Association	2005
Establish the "Rural Lincoln Fire Safe Council"	Placer County Fire Safe Alliance/Placer County Fire Agencies	New
Foresthill Biomass Project	Placer County/Foresthill Fire Protection District	2005
Community Education on Wildfire	City of Auburn	New
American River Canyon Shaded Fuel Break Maintenance	City of Auburn	New
American River Canyon Shaded Fuel Break	City of Auburn	New
Residential Home Inspections for Compliance of Fire Safe Standards; Defensible Space	City of Auburn	2005
Completion Of The Private Lands Portion (Within The City Of Auburn) Of A Multi-Jurisdiction Shaded Fuel Break On Public/Private Lands Along The Interface Of The American River Canyon And The City Of Auburn	City of Auburn	2005
Public Education of the Results of Wildfire in a Community and What Can be Done by Citizens in Developing Safeguards	City of Auburn	2005
Maintenance of the Private Lands Portion of the Shaded Fuel Break Along the Rim of the American River Canyon and the Auburn State Recreation Area (ASRA)	City of Auburn	2005
Evaluate the Need and Feasibility of Improving Fire Prevention for The Historic Business District	City Of Colfax	2005
Funding For Residential The Protection	City of Colfax	2005
Fire Prevention and Fuels Management Plan	City of Lincoln	New
Open Space Fire Prevention & Vegetation Management Prescribed Grazing	City of Rocklin	New
Alpine Meadows Consolidated Defensible Space Project	Alpine Springs County Water District	New

Action	Lead Jurisdiction	New Action/2005 Action
Completion of Fuels Management Projects Within the Foresthill / Iowa Hill Fire Safe Council, Greater Auburn Area Fire Safe Council and Placer Sierra Fire Safe Council Areas of the Western Slope of Placer County	Foresthill Fire Protection District	New
Assess And Enhance Foresthill Fire Protection District (FFPD) New Subdivision, Hazard Fuels Clearing And Maintenance Ordinance. Put Programs In Place With Homeowners Associations In CC&R's And Maintenance Contracts	Foresthill Fire Protection District	2005
Todd Valley Shaded Fuel Break	Foresthill Fire Protection District	2005
Completion of Fuels Management Projects within Identified Areas of the Western Slope of Placer County	Foresthill/Iowa Hill Fires Safe Council/ Greater Auburn Area Fire Safe Council/ Placer Sierra Fire Safe Council/ Placer County Fire Safe Alliance	New
Community Wildfire Protection Plan (CWPP) projects	North Tahoe Fire Protection District	New
Defensible Space Inspection, Tree Marking, Chipping Program, and Public Education	North Tahoe Fire Protection District	New
Hazardous Wood Roof Replacement Program	North Tahoe Fire Protection District	New
Regional Water System Fire Protection Upgrades and Interoperability	North Tahoe Fire Protection District	New
Skid Steer Loader with Transport Trailer, Fuels Reduction Masticator Attachment and Snow Blower Attachment	North Tahoe Fire Protection District	New
Hydrant Risers, Replacements and Markers	North Tahoe Fire Protection District	New
Completion of Fuels Management Projects on Various Parcels in the North Tahoe Fire Protection District, as Outlined in the North Tahoe Community Fire Protection Plan	North Tahoe Fire Protection District	2005
Maintain and Enhance Canal Systems by Converting Earthen Canals to Gunite-Lined Canals in Critical Areas	Placer County Water Agency	2005
Replace Wooden Flume Structures with Steel Structures	Placer County Water Agency	2005
De-Silt Reservoirs	Placer County Water Agency	2005
Annual Defensible Space Inspections Program for the Placer Hills Fire Protection District (PHFPD)	Placer Hills Fire Protection	2005
Assess and Enhance Placer Hills Fire Protection District (PHFPD) Onsite Water Requirements for Minor Lot Splits	Placer Hills Fire Protection	2005
Forest Thinning Around Lake Area Schools	Tahoe Truckee Unified School District	New

Action	Lead Jurisdiction	New Action/2005 Action
Severe Weather: Snow	-	
Structural Upgrades of Roofs at School Sites to Support Higher Snow Loads.	Tahoe Truckee Unified School District	New

Multi-Hazard Mitigation Actions

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

Issue/Background: Local jurisdiction reimbursement for mitigation projects and cost recovery after a disaster is guided, in part, by AB 2140. Specifically, this bill requires that each jurisdiction adopt a local hazard mitigation plan (LHMP) in accordance with the federal Disaster Mitigation Act of 2000 as part of the safety element of its general plan. Adoption into the safety element of the general plan may be by reference or incorporation.

Other Alternatives: No action

Responsible Office: Placer County OES, Planning Departments for each incorporated

jurisdiction

Priority (High, Medium, Low): High

Cost Estimate: Staff time

Potential Funding: County and jurisdictional budgets

Benefits (avoided Losses): Adoption and coordination of planning documents will help

jurisdictions maximize potential for state reimbursement

Schedule: As soon as possible

2. Replacement of the Alpine Meadows Road Bridge over the Truckee River

Hazards Addressed: Avoid the potential isolation of the community of Alpine Meadows

Issue/Background: Currently, County staff is working on replacing the existing bridge on Alpine Meadows Road over the Truckee River. Funding for 88.53 percent of the project will come from the Federal Highway Bridge Program (HBP) and the remaining 11.47 percent will need to be provided by other sources. The existing structure is damaged and deteriorated due to the harsh winter environment and proximity to the Truckee River. The proposed project could end up costing approximately \$10,000,000 and the County is seeking funding for the 11.47 percent local match to the HBP funding.

Existing Planning Mechanism(s) through which Action Will Be Implemented: Placer County DPW Roadway and Bridge Engineering Group – Federal HBP Program.

Responsible Office: Placer County Department of Public Works

Cost Estimate: \$10,000,000 (Requesting \$1,147,000)

Benefits (Losses Avoided): Isolation of the community of Alpine Meadows (including utilities currently attached to existing bridge structure)

Potential Funding: HBP – 88.53 percent

Schedule: 7 years – Currently beginning environmental process – Subject to environmental regulations of the Lake Tahoe Basin

3. Inspection of Bridges Less than 20 Ft in Length

Hazards Addressed: Potential unsafe roads for fire equipment / heavy vehicles

Issue/Background: Currently, a bridge is officially defined as having a span of equal to or greater than 20 feet. All bridges throughout the State are inspected on a regular basis in conformance with federal and state laws. However, bridges that are less than 20 feet in length are not inspected or evaluated for structural integrity and hydraulic activity. Placer County currently has an unknown number of small bridges that are less than 20 feet in length that we do not have the funding or resources to evaluate. We have estimated the number of these structures to be around 250, but it is only a rough guess. Without a database or inspection of these structures, we truly don't know if these are capable of supporting the loads that are often imposed on them by fire equipment when responding to emergencies. If we receive funding for the inspection of these structures along with the preparation of a database that identifies them, it would help to identify deficiencies and avoid a possible collapse.

Existing Planning Mechanism(s) through which Action Will Be Implemented: Placer County DPW Roadway and Bridge Engineering Division

Responsible Office: Placer County Department of Public Works

Cost Estimate: \$1,000,000

Benefits (Losses Avoided): Life, Possible delayed fire response resulting in additional property loss.

Potential Funding: None

Schedule: 3 years to complete all investigations and database.

4. Replacement of the Walerga Road Bridge over Dry Creek

Hazards Addressed: Flooding – Potential loss of life – Delayed response of emergency personnel during a flood event.

Issue/Background: County staff is currently beginning the final design phase for the replacement of the Walerga Road Bridge over Dry Creek. The existing structure is subject to floods and has been the location of a water rescue in the recent past where a citizen tried to drive

through rising waters and was washed downstream. The existing structure is structurally sound and does not qualify for Federal Highway Bridge Program Funding. The design has been performed utilizing funding from a federal earmark along with a traffic impact fees from the City of Roseville and Placer County.

Existing Planning Mechanism(s) through which Action Will Be Implemented: Placer County DPW Roadway and Bridge Engineering Group – Federal HBP Program.

Responsible Office: Placer County Department of Public Works

Cost Estimate: \$18,000,000

Benefits (Losses Avoided): Isolation of the community of Alpine Meadows (Including utilities currently attached to existing bridge structure)

Potential Funding: Local Traffic Fees – up to \$6,000,000

Schedule: 2 years with funding.

5. Replacement of Yankee Jims Road Bridge over the North Fork of the American River

Hazards Addressed: Emergency access for fire personnel and evacuation of the Foresthill Divide.

Issue/Background: Currently, the bridge on Yankee Jims Road over the North Fork of the American River has the worst rating in the State of California. It has a load limit of 3 tons and is considered a historical structure. During recent fires, it has been apparent that this bridge provides a vital link for fire fighting personnel and also serves as an emergency evacuation route for the Community of Foresthill. The nature of the roadway and the lack of regular heavy traffic preclude the replacement of this structure from being eligible under the Federal Highway Bridge Program. In addition, the area is rich in gold rush era archaeological artifacts. The bridge is a 210 foot span over the North Fork of the American River in a remote canyon between the communities of Colfax and Foresthill. All of these considerations have precluded the replacement of the structure, however, its replacement could prove vital to the preservation of life and property during a wildfire event on the Foresthill Divide.

Existing Planning Mechanism(s) through which Action Will Be Implemented: Placer County DPW Roadway and Bridge Engineering Group.

Responsible Office: Placer County Department of Public Works

Cost Estimate: \$7,000,000

Benefits (Losses Avoided): Life, Property, Forest

Potential Funding: None

Schedule: 10 years (Due to anticipated lengthy environmental process including archaeological investigation)

6. Generators for Sewer Pump Stations

Issue/Background: Placer County sewer pump stations are designed to be operated by a back-up generator in the event of a power failure. Additionally, the sewer pump stations are equipped with alarm systems to alert appropriate staff in the event of power failures. Only some facilities (including the three largest wastewater treatment plants) have dedicated back-up generators on site. The remaining facilities can be operated by portable generators; however, the County only has 3 portable generators to cover the 34 pump stations without dedicated generators.

Proposed project includes purchasing additional generators (portable or permanent).

Other Alternatives: Portable generators can be brought to the sites on a rotating basis. Some of the pump stations do not have enough wastewater storage to accommodate long periods without power. Failure to provide electrical power in sufficient time would result in sewage overflowing at the pump station and pose a potential risk to human health and the environment.

Responsible Office: Placer County Facilities Services.

Priority (High, Medium, Low): Medium

Cost Estimate: Generators at approximately \$65,000.00 each

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

Potential funding: None identified at this time.

Schedule: None

7. SCADA Systems

Issue/Background: The County owns and operates 42 sewer lift stations. All of these lift stations are currently equipped with alarm systems that notify Utilities staff when wastewater levels reach the point that a sewer spill is likely. These alarms do not provide additional information as to the reason for the high wastewater level alarm or the ability to control the lift station remotely. Instead, staff must go to the lift station to determine the cause of the alarm and take appropriate action.

The proposed project includes installing SCADA computer monitoring and control systems. The enhanced capabilities of the SCADA (Supervisory Control and Data Acquisition) computer

monitoring and control systems would allow for improved response time and provide staff with more information when they respond to an alarm. This would enable them to identify the problem sooner and respond more efficiently. In addition, staff can operate, monitor, and control certain processes remotely, allowing them to circumvent a potential spill much quicker.

Other Alternatives: Continue to send staff out to the lift station to determine the cause of the alarm. This alternative is very costly as the lift stations are spread out across the County.

Responsible Office: Placer County Facilities Services.

Priority (High, Medium, Low): Medium

Cost Estimate: \$3 Million to \$5 Million

Benefits (avoided Losses): Reduced likelihood of sewer overflows caused by lift station failures and reduced manpower needed to respond to lift station emergencies. Potential fines for sewage overflows are estimated at \$10 per gallon. Depending on the magnitude of a spill, this could result in fines in excess of \$100,000. In addition to the fines, additional resources would be needed for spill response and clean up.

Potential funding: None

Schedule: None

8. Develop and Conduct a Multi-Hazard Seasonal Public Awareness Program

Issue/Background: Placer County is subject to several natural hazards. Each poses a different degree of risk and associated vulnerability. Some hazards have a combination of attributes, including a high likelihood of occurrence, a specific location that would likely be impacted, and proven approaches that could reduce the impact. For other hazards, where either the likelihood of occurrence is very low, the area of likely impact is not specifically known, or there is very little that can be done to reduce the impacts, the HMPC has determined that the best approach is public awareness. People should have information describing historical events and losses, the likelihood of future occurrences, the range of possible impacts, appropriate actions to save lives and minimize property damage, and where additional information can be found. Any information provided through this effort should be accurate, specific, timely, and consistent with current and accepted local emergency management procedures as promoted by the California Emergency Management Agency (CAL EMA) and the American Red Cross. This public outreach effort should be conducted annually and should include:

- Using a variety of information outlets, including local news media;
- Creating and printing (where applicable) brochures, leaflets, water bill inserts, websites, and public service announcements;
- Displaying current brochures and flyers in County and City office buildings, libraries, and other public places; and

• Developing public-private partnerships and incentives to support public education activities.

Other Alternatives: Continue public information activities currently in place

Responsible Office: Placer County Office of Emergency Services, Planning Department, Placer County Public Information Office, Placer County Chamber of Commerce, American Red Cross, and Placer County Office of Economic Development.

Priority (High, Medium, Low): High

Cost Estimate: \$5,000-20,000 annually, depending on printing and mailing costs, level of volunteer participation, and scope and frequency of events

Potential Funding: FEMA's Hazard Mitigation Grant Program, Placer County funds, other available grants

Benefits (Avoided Losses): Life safety, reduction in property losses, relatively low cost

Schedule: Part of seasonal multi-hazard public awareness campaign

Agricultural Hazards Mitigation Actions

1. Continue and Maintain Noxious Weed Eradication Program

Issue/Background: Occurrences of noxious weeds along highway shoulders and private lands within the project area were detected and treated in Placer County from 2001 thru 2003. The survey and eradication project targeted Spotted Knapweed, Perennial Peppercress, and Yellow Starthistle. After three seasons of survey and eradication work, the populations along key roads leading to Lake Tahoe have been significantly reduced, and eradication is still deemed possible. A comprehensive eradication project will require the continuation of a thorough program including delimitation, monitoring, treatments, and prevention components.

In general, eradication of noxious weeds in some areas is obtainable, however, it can often become a protracted effort. Therefore, a rapid response is necessary to achieve the eradication objective. In California, history shows us the degree of eradication is proportional to the degree of "Emergency Status" given to the project. Currently this project has funding through 2005. It is recommended this project continued to be supported as an emergency project through 200?????

Responsible Office: Placer County Agricultural Commission

Priority (H, M, L): High

Cost Estimate: \$85,000/year

Benefit: Unpalatable to livestock, these weeds will out-compete native vegetation quickly, eventually creating a monoculture that negatively impacts wild areas, rangeland, national forests, hay crops and other assets of economic and natural importance. A comprehensive eradication program will benefit counties and national forests in California. In the bigger picture, long-term success in California will depend on it.

Potential Funding: PDM, HMGP

Schedule: Within one year

Flood Mitigation Actions

1. Placer County Low Intensity Development Program

Issue/Background: Placer County has a high risk of flooding in the eastern and western portion of the County. Between 19.55 and 2002, the County has experienced nine federally declared storm or flood disasters. Placer County also has a mandate to improve the water quality of its urban runoff in order to satisfy state and federal regulations. The Low Intensity Development uses decentralized, site based planning and design strategies to manage the quantity and quality of stomwater runoff. Examples of Low Intensity Development planning techniques include: minimizing paved areas, minimizing soil compaction, preserving natural open space areas including trees and natural drainage channels, clustering of development on compacted soils, and locating open space areas to absorb overflows. Placer County, in conjunction with Sierra Business Council, will prepare a set of Guidelines to incorporate Low Impact Development planning techniques to fit the unique hydrologic and climate characteristics associated with Placer County

Other Alternatives: The other alternative is to continue with the current site planning/development techniques which include constructing detention basins for larger projects and implementing Best Management Practices. These practices are neither as efficient nor effective at managing the runoff on-site.

Existing Planning Mechanism(s) through which project will be implemented: The Low Impact Development Guidelines will be implemented during the County's land development process.

Responsible Office: Placer County Community Development Resource Agency

Priority (High, Medium, Low): Medium

Cost Estimate: Project implementation costs will vary according to the type of development costs. Cost may be as low as \$1,000 for incorporating additional landscape features to significantly more if additional land is required and/or a reduced scaled project is required to implement the guidelines

Benefits (avoided Losses): A more effective and efficient control of surface runoff, reduce water pollution, reduces warming of environment by decreasing the use of pavement and increases groundwater recharge.

Potential funding: Placer County has received a grant from the Sierra Nevada Conservancy for \$45,000

Schedule: The Low Impact Design Guidelines should be completed by January 2010

2. Elevate Remaining 95 Homes in the Dry Creek Watershed

Issue/Background: Historically, flooding in the Dry Creek watershed has been a major concern. The February 1986 flood caused widespread damage in most of the Dry Creek watershed. Nearly all bridges and culverts were overtopped, with 30 sustaining embankment damages and one crossing washing out; two bridges over Dry Creek were damaged, street cave ins occurred at a number of locations, and over 125 homes flooded. Of the 145 homes subject to historical flooding within the Watershed, 95 structures remain non-elevated. Of these 95 remaining homes, 25-30 declined initial grant money for elevation as did the three repetitive loss structures. Placer County is not only concerned with existing flooding problems, but with future problems resulting from increased growth and development in the area. According to the 1992 Dry Creek Watershed, Flood Control Plan, substantial flood damages will occur with the 100 year flood under existing conditions. Areas with the most extensive and frequent damages include areas in the location of the 95 homes. The report indicates that some of these areas are susceptible to flooding from storms as frequent as the 10-year storm. Elevating the remaining 95 homes will reduce future flood-related losses.

Other Alternatives: No Action

Responsible Office: Placer County Flood Control and Water Conservation District, in conjunction with its member agencies including the cities of Rocklin, Loomis, and Roseville.

Priority (H, M, L): Medium

Cost Estimate: The cost to elevate is estimated at \$40 per square foot. Homes need to be elevated anywhere from one to six feet. Of the 95 homes where elevating is feasible, it is estimated to cost \$6 million or \$50 to \$60 K per home.

Benefit: Life Safety; Reduction in Property Loss.

Potential Funding: HMGP, PDM, Dry Creek Trust Fund

Schedule: Within three years

3. Pursue Regional Detention and Retention Projects within the Dry Creek and Cross Canal Watersheds

Issue/Background: Historically, flooding in the Dry Creek and Cross Canal watersheds has been a major concern. Placer County is not only concerned with existing flooding problems, but with future problems resulting from increased growth and development in the area. Specifically, this action recommends a plan be developed for regional retention project identification and funding within the Cross Canal watershed. Implementation of specific regional floodplain restoration sites along Secret Ravine in the Dry Creek Watershed is also recommended. These sites are identified within the August 2003 feasibility study prepared for the Placer County Flood Control and Water Conservation District. One such notable project is the Scilacci Farms project which is detailed further in Section J.4.5, Annex J, Placer County Flood Control and Water Conservation District. Implementation of regional detention and retention projects will reduce future flood-related losses.

Other Alternatives: No Action

Responsible Office: Placer County Flood Control and Water Conservation District, in conjunction with its member agencies.

Priority (H, M, L): High

Cost Estimate: \$20 million +

Benefit: Life Safety; Reduction in Property Loss.

Potential Funding: HMGP, PDM, Dry Creek Trust Fund, Grant (federal, state)

Schedule: Within five years

4. Implementation of Identified Bridge and Culvert Replacement Projects. These Projects Include:

- 1) Lake Tahoe Area Culvert And Crossing Restoration And Improvements \$1,210,000.
- 2) Western Placer County Culvert Improvements (7 Locations) \$2,140,000.
- 3) Cavitt-Stallman Road @ Miners Ravine Bridge Improvements \$300,000.
- 4) Auburn/Bowman Area Drainage Improvements (26 Locations) \$1,800,000.
- 5) Horseshoe Bar Road Drainage Improvements \$370,000.
- 6) Leibinger Lane @ Miners Ravine Drainage Improvements \$450,000.
- 7) Placer Hills Road @ Meadow Lane Drainage Improvements \$1,000,000.
- 8) Creekhaven Road Culvert Improvements \$890,000.
- All Culverts Beneath Western Pacific Railroad At Major Cross Canal Watershed Drainage Crossings.

- 10) Bridges To Be Replaced Include 16 Bridges Identified In Jmm 1992 Dry Creek Watershed Flood Control Plan In Table 4-2. High Priority: Watt Ave At Dry Creek; Cook Riolo Ave At Dry Creek; Barton Road At Miners Ravine; Walerga Ave At Dry Creek.
- 11) Recommend Planning Study Of Specific Bridges And Culverts To Be Replaced In Cross Canal Watershed.

Issue/Background: Historically, flooding throughout Placer County has been a major concern. Past floods have caused widespread damage to infrastructure located in these flood-prone areas. Various restoration, drainage, and culvert improvement projects have been identified to minimize future impacts associated with specific areas of concern.

Other Alternatives: No Action

Responsible Office: Placer County Department of Public Works in conjunction with Placer County Flood Control and Water Conservation District and its member agencies

Priority (H, M, L): High

Cost Estimate: See above

Benefit: Life Safety; Reduction in Property Loss.

Potential Funding: HMGP, PDM,

Schedule: Within one year

5. Elevate Highway 89, Lake Tahoe Area, in Two Places

Issue/Background: Highway 89 in the Lake Tahoe area became an issue during the January 1997 Floods. The 1997 flooding, which may have been greater than a 100-year flood event, may have been compounded by undersized and blocked culverts. According to the HMPC, two publicly-owned areas along Highway 89 continue to experience flooding problems during large storms. During the 1997 storm, Highway 89 was underwater in the Truckee River south of Alpine Meadows Road. During periods of flooding, access to residents and emergency vehicles is cut off or severely limited.

Other Alternatives: Culvert replacement; Improved maintenance

Responsible Office: CAL Trans

Priority (H, M, L): Low

Cost Estimate: High

Benefit: Life Safety; Reduction in property loss. This also is an emergency management issue as the road becomes impassable due to flooding issues.

Potential Funding: HMGP, PDM

Schedule: Within five years

6. Upgrade of Flood Warning System to Include Additional Gage Locations and Flood Forecasting Capabilities

Issue/Background: The Placer County Flood Control District, in conjunction with OES, has installed an Alert flood warning system in the County. The existing system, including alert gages owned and operated by the City of Roseville and Sacramento County, consists of approximately 28 rain gages and 22 stream gages. Additionally, the district monitors several rain and stream gages in the Truckee River Watershed. These alert gages provide the district with real-time rainfall amounts and stream level data. An upgraded system that includes real time flood warning gages and flood forecasting capabilities for flood-prone areas would increase the warning time for implementation of effective mitigation measures and necessary evacuations.

Other Alternatives: No Action

Responsible Office: Placer County Flood Control District (and Placer County)

Priority (H, M, L): Medium

Cost Estimate: \$100,000

Benefit: Life-safety, Reduction in property loss, Improved warning, increased lead time.

Potential Funding: PDM, HMGP, Flood Control District Reserves

Schedule: Within two years

7. Update Hydrology and Hydraulic Models within the Critical Dry Creek and Cross Canal Watersheds

Issue/Background: Base hydrology models for both the Dry Creek and Cross Canal watersheds are outdated having been performed in 1992 and 1993 respectively. Rapid urbanization within these watersheds has occurred and is projected to continue with significant impacts to creeks within the watershed due to increasing amounts of impervious surfaces and altered land uses. Updated hydrology and hydraulic models, including base topography for over 90 miles of creeks are proposed for both flood control and land-use planning purposes.

Other Alternatives: Continue to review urbanization projects with outdated models.

Responsible Office: Placer County Flood Control and Water Conservation and its member agencies

Priority (H, M, L): High

Cost Estimate: \$800,000.

Benefit: Improved flood control and land use planning capabilities throughout southwestern

Placer County.

Potential Funding: PDM, Flood Control District Reserves

Schedule: Immediate and ongoing.

8. Squaw Creek Restoration & Drainage Enhancement Project

Hazards Addressed: Prevention/Storm Water Management & and Natural Resource Protection/ Adsorption of Flood Energy

Issue/Background: During the flood of 1997 many of the small peripheral drainages in Squaw Valley were swollen with mud and sediment that clogged storm drains blocking residential streets and Squaw Valley Road the main artery in Squaw Valley. Residents were cut off from their homes some for more than a week.

Sediment from storm discharges entering Squaw Creek cause severe damage to the ecosystem and is largely responsible for Squaw Creek's being listed on EPA's 303 list as an impaired waterway. Recent studies, Desert Research Institute 2002, Phillip Williams & Associates 2007, indicate Squaw Creek is suffering from a variety of human sources including channel straightening, impervious surfaces, grading of the meadow/ flood plain, and logging among others. Roads, storm drains and impervious surfaces all contribute to increased velocity of storm water, which in turn contributes to scouring and sediment loading.

The project or a series of projects is needed over time to restore and repair the Squaw Creek Watershed. Restoration of peripheral drainages may include water quality ponds, velocity breaks or "check dams", and infiltration trenches to mitigate water flow from impervious surfaces. Similar work has been ongoing in the Lake Tahoe watershed for decades.

Responsible Office: Placer County Planning Department, Placer County Flood Control District; Squaw Valley Public Services District.

Cost Estimate: \$5,000,000

Benefits (Losses Avoided): Property Protection, Natural Resource Protection, Erosion and Sediment Control

Potential Funding: Grants or a series of grants/ Resort at Squaw Creek Mitigation fund

Schedule: Pending.

Wildfire Mitigation Actions

1. Placer County Chipper Program Operational

Issues/background: Since 1998, Placer County has provided a free chipping service to local residents. This program provides the mechanism for residents to process tree trimming and clippings products from pruning and defensible space projects on their property.

Placer County owns four chippers and tow vehicles, purchased through a corporate settlement and supplemented through a Prop 204 grant. The equipment is maintained by CAL FIRE. The ongoing annual cost for the four crew managers and chipper operators is approximately \$315,000

Response for this program continues to grow. 2500 requests for services occurred in 2004, 3005 in 2006, and the program is expected to exceed 4000 requests in 2009.

Other Alternatives: No action – If the Chipper program is discontinued there is a risk of reduced compliance with county defensible space requirements. This may result in reduced defensible space work resulting in higher risk of catastrophic wildfire. Additional open burning may also become the process of choice for property owners resulting in additional air pollution and control burn escapes.

Responsible Office: Placer County and CAL FIRE.

Priority (H, M, L): High

Cost Estimate: The total cost to operate this program for three years is approximately \$950,000 at an average cost of \$76 per parcel.

Benefits (losses Avoided): Reduced risk or personal injury, catastrophic wildfire and air pollution. A cost of \$76 per parcel is a significant cost reduction over the replacement value of a \$270,000 home.

Potential Funding: Grants and County funding.

Schedule: This project would be ongoing through the performance period of this document. Grant funding is generally available through yearly cycles and would be sought annually for this program.

2. Firewise Communities/USA Educational Outreach

Hazards Addressed: Eliminate fuels and maintain defensible spaces in the near home ignition zone for the purposes of life safety and structural protection.

Issue/Background: Every year Placer County has wildfires that can be a potential threat to thousands of homes. This problem is becoming increasingly dangerous to public safety within Placer County for several reasons: 1.) population and development in the foothills and

mountains—the population in the Sierra Nevada is expected to triple to 1.5 million people over the next 20-40 years, 2.) landscape changes to forest structure, composition, and resiliency to fire, and 3.) a lack of knowledge of the actions needed in the Home Ignition Zone to increase the survivability of homes and communities. Defensible space and home construction is the single most important action that can be taken by individual homeowners to protect homes from wildland fire. It is also one of the most critical aspects of protecting the wildland from fire that originates in the community.

The Firewise Communities/USA program is a nationally recognized program that was developed in response to large catastrophic fires that destroy communities and lives. The National Fire Protection Agency collaborated with state and federal entities to start this program as a proactive approach for communities to become part of the solution. Currently, Sierra Forest Legacy has been working in Placer County successfully guiding two communities through the Firewise recognition process. These communities are Alpine Meadows and Walden Woods Homeowners Association in Granite Bay.

Existing Planning Mechanism(s) through which Action Will Be Implemented: Sierra Forest Legacy along with the local fire safe councils have identified several at-risk communities within Placer County including: Alpine Meadows Subdivision, Cape Horn, Monte Verde Estates, and Sky View Terrace. Sierra Forest Legacy will help guide these communities through the Firewise process that will include a community wildfire assessment focusing on how homes ignite from wildfires and ways for the homeowners to increase the chance of their home surviving by focusing on the Home Ignition Zone and the surrounding 100-200 feet of landscaping. This assessment will teach homeowners about the proper construction features and landscaping techniques designed to protect the home.

Responsible Office: Sierra Forest Legacy; Placer County Fire Safe Councils

Cost Estimate: \$10,000

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Benefits (Losses Avoided): Public Safety, Property Loss, and Resource Loss

Potential Funding: Federal Funding and Foundation Grants

Schedule: Ongoing.

3. Establish the "Rural Lincoln Fire Safe Council"

Issues/background: On September 1, 2008, the "Gladding Fire" demonstrated the effects of wildfire in the rural Lincoln area. This fire burned 960 acres, destroyed six homes, ten outbuildings, numerous vehicles, and farm equipment. This was the largest and most devastating fire in the rural Lincoln area in the past 20 years. The diverse fuel types and topography in this area that includes both LRA and SRA areas can benefit greatly by a Fire Safe Council structure. This structure would be made up of individuals from the four rural areas that surround the city of Lincoln.

Other Alternatives: Continue to educate the public and private landowners on the need to take mitigation measures to prevent catastrophic wildfires. The limited individual efforts may help some, but the need to educate the public on how to provide defensible space and make their property fire safe is critical.

Responsible Office: Placer County Fire Safe Alliance and Placer County Fire agencies

Priority (H, M, L): High

Cost Estimate: The total cost to establish and maintain the FSC for the first year is approximately \$25,000. A yearly cost of \$10,000 to fund ongoing public education projects and fire mitigation planning would be needed.

Benefits (losses Avoided): Using the unincorporated areas of Placer County as an example, there are 624 parcels in the Very High category of "Values at Risk", and over 56,000 properties in the "High", "Values at Risk" category. With a Median home value of \$270,000 in the Lincoln area, the loss of 10 homes plus suppression cost would significantly surpass the cost of the planned Fire Safe Council projects.

Potential Funding: Grants and existing budgets

Schedule: The establishment of the Fire Safe Council would occur over the first year of the program. Fire safe projects would be ongoing through the period of this document. Grant funding is generally available through yearly cycles and would be sought for specific public education projects prioritized by the Fire Safe Council.

4. Hazardous Vegetation Abatement Program

Issue/Background: The Placer County BOS approved a Pilot Ordinance in 2007 for unimproved parcels that to allows the Fire Warden to abate hazardous vegetation that is within 100 feet of an improved parcel within the County. This would allow CA State law PRC4291 to be fully enforced and provide basic fire mitigation of defensible space for each structure. The abatement process provides parcel owners the opportunity to clear their land and if not done, it will be cleared for them with an accompanying bill for abatement services and administrative costs. Currently all upfront costs are borne by the County general fund. Within 5 years the County could recoup the costs for the abatement and part of the administrative costs but none of the inspection costs. To date this program has been highly effective but has been fully subsidized by the County.

Other Alternatives: Parcel Owners of improved and unimproved lots clearing all defensible space

Existing Planning Mechanism(s) through which project will be implemented: The Placer County Fire Warden office (staff support from OES and Code enforcement) will work with all

local fire jurisdictions to focus on the highest fire sensitive areas in which to perform the program.

Responsible Office: Placer County Fire Warden.

Priority (High, Medium, Low): High

Cost Estimate: Annual costs are estimated to be \$150,000 for inspections and \$250,000 in abatement costs. Total costs \$400,000 annually.

Benefits (avoided Losses): The initial project area (in the Lake Tahoe Basin) indicates that spending roughly \$100,000 for the project protects over \$100 million in homes an incredible cost benefit. The rest of the County may not show as high of a benefit but certainly the costs are low for providing basic fire protection. The insurance industry has shown interest in the viability of this program.

Potential funding: Private, Local, State and Federal

Schedule: Ongoing

5. Shaded Fuel Break Establishment and Maintenance in Hidden Falls Regional Park

Issue/Background: Placer County owns and manages over 1500 acres of open space property largely in rolling to steep terrain predominated by mixed oak and conifer woodland. The largest contiguous open space area managed by Placer County is the 1,181-acre Hidden Falls Regional Park. In addition, the County manages numerous smaller open space parcels from the lower Sierra Nevada Foothills in the west to the Tahoe Basin in the east. The Parks and Grounds Division of Placer County has developed a working fuels management plan calling for the initial creation of approximately 120 acres of access clearing and shaded fuel breaks among other fire risk reduction strategies. Work began on establishment of the access corridors and shaded fuel breaks in 2006. Initial establishment is expected to be complete in 2010. Beginning in 2009, follow up maintenance and establishment of additional shaded fuel breaks and access corridors will be needed on an annual rotating basis. The Parks Division has been successful in securing grant funds to obtain a masticator unit, chipper attachment, and self leveling field mower for the purpose of establishment and maintenance of open space areas. Funds are needed for labor and equipment maintenance.

Other Alternatives: No action.

Existing Planning Mechanism(s) through which project will be implemented: Placer County Parks and Grounds Division, Fuels Management Plan

Responsible Office: Placer County Department of Facility Services, Parks and Grounds Division

Priority (High, Medium, Low): HIGH

Cost Estimate: \$125,000 annually

Benefits (avoided Losses): Life, safety, and property loss prevention

Potential funding: Federal, State, and Local funds

Schedule: Begin 2009, ongoing

6. Biomass Removal Projects

Issue/Background: the Placer County BOS approved a Strategic plan for Wildfire Protection and Biomass Utilization in 2007 to ensure that the County takes necessary actions to keep the area fire safe and to look for alternatives of woody biomass disposal other than open burning. The impact of the pollutants into the air from open burning has become critical to the health of our citizens. Several projects have already been successful including various biomass removal programs which turn the material into alternative electricity and the development of a small "biomass to energy" facility in the Lake Tahoe Basin.

Other Alternatives: Alternatives include open burning, mastication and chipping.

Existing Planning Mechanism(s) through which project will be implemented: The Biomass Program Manager works with all regional fire protection organizations, private, state and federal land owners, air pollution control staff and the Placer County Biomass Policy Team to determine priority projects and programs .

Responsible Office: Placer County CEO

Priority (High, Medium, Low): High

Cost Estimate: Annual costs are estimated to climb to \$250,000 for the removal programs and another \$150,000 in staff costs. Total costs \$400,000 annually. Ultimately the economics of this program should allow the County subsidy to be removed once a biomass facility is built in the County.

Benefits (avoided Losses): In addition to protecting homes and business, which shows great advantage in cost/benefit analyses, the benefits of producing thousands of megawatts of electricity from a non-fossil fuel source and the removal of thousands of tons of air pollution have allowed the County to reach goals and move forward with new projects that reduce the amount of air pollution. It would also allow for alternative energy to be created and would lower the risk of catastrophic wildfire in the region.

Potential funding: Private, local, state, and federal.

Schedule: Ongoing

7. Provide Fire Protection Water Source in Sheridan(

Issue/Background: The Sheridan water system needs to be upsized to allow for greater water pressure when providing fire flows. During the hot summer months, water pressure in the public water system drops to a minimum. This condition is further exacerbated when fire flows are needed.

The proposed water system improvements may include additional wells and/or a water storage tank to supply the needed water for fire suppression. In addition to the increased water supply, construction of larger water pipelines may be required to accommodate higher water flow rates for fire suppression.

Other Alternatives: No Action

Responsible Office: Placer County Capital Improvements Division

Priority (High, Medium, Low): Medium

Cost Estimate: \$5 million to \$10 million

Benefits (avoided Losses): Reduction in property loss and loss of lives.

Potential funding: None

Schedule: None

8. Develop a Community Wildfire Prevention Plan (CWPP) for West Placer County

Issue/Background: Fuels/vegetation management is ongoing. The HMPC agreed that ongoing vegetation management is THE most important factor in reducing the wildfire hazard in Placer County.

The Placer County Fire Safe Alliance ("the Alliance"), with its open partnership that includes the various fire safe councils and major landowners and managers, is uniquely situated to assist with the coordination for and prioritization of resources.

Recent efforts of these groups resulted in the completion of a CWPP for the West Slope of the Sierra Nevada in Placer County. The CWPP included various fuels management projects to benefit the lands and stakeholders on the west slope of the Sierra Nevada in the County. A similar CWPP is needed for West Placer County.

Vegetation management projects will result in ongoing fuels/vegetation reduction and management on public and private lands; implementation and enforcement of defensible space requirements on private land for both existing properties and new development; and development of criteria for on-going maintenance of the fuels management and defensible space program.

The plan will be consistent with the document "Preparing a Community Wildfire Protection Plan: A Handbook for Wildland-Urban Interface Communities" at http://www.stateforesters.org/pubs/cwpphandbook.pdf.

Given how closely inter-related the communities are on the Western Slope, defining a CWFPP at the individual Fire Safe Council level is not the most effective methodology. Instead, the Alliance partners plan to develop the CWFPP for the Western Slope in phases. Phase 1, already in process, focuses on the foothills communities which are represented by the following Fire Safe Councils:

- Iowa Hill/Foresthill FSC
- Ponderosa FSC (City of Colfax, Weimar-Applegate-Colfax Municipal Advisory Council and Meadow Vista Municipal Advisory Council)
- Greater Auburn (City of Auburn, North Auburn/Ophir Fire, Bowman, and Christian Valley)

Subsequent phases will be developed once Phase 1 is completed.

As required, the CWPP will be updated every two years and new priorities and projects will be identified and implemented. This project incorporates by reference the projects to be included in CWPP for the West Placer County.

Other Alternatives: Continue to implement programs at the local level, without an overall system of risk assessment and resource prioritization.

Responsible Office: Placer County Fire Safe Alliance partners, including the various Fire Safe Councils, fire agencies, Placer County Office of Emergency Services

Priority (H, M, L): High

Cost Estimate: The plan will be developed, implemented and updated as part of existing agency workloads. Funding for public meetings and review copies of the plan may be needed, but the cost will be minimal.

Benefit: Coordinated projects with a broader impact than individual efforts by the County, agencies, groups, businesses, and individual landowners.

Potential Funding: National Fire Plan, Healthy Forest Initiative; WUI Grant; local financing, private foundations, grants from state bond acts, Sierra Conservancy, and Title III funds from the Secure Rural Schools & Community Self-Determination Act of 2000 (AKA "HR 2389 Timber Tax") payments to Placer County, PILT (Payment in Lieu of Taxes).

Schedule: Development of CWPP to be initiated in 2010. Implementation of projects is ongoing; updates will occur every two years as required.

9. Maintenance on Shaded Fuel Breaks and Demonstration Fuel Breaks.

Issue/Background: Several roadside shaded fuel breaks and demonstration fuel breaks were created from 1998 to 2002 using a grant from Proposition 204 funds and other sources. In order for these fuel breaks to continue to be effective, maintenance must be done on a periodic basis.

The fuel breaks are primarily on private property, and the property owners are expected to perform the maintenance with some cost-share assistance. The fuel break locations, size, and resources protected are listed in the following table:

Location	# Acres	# Homes Protected	Value*
Aeolia Heights demo SFB	20		Educational
Alta demo SFB	<mark>20</mark>		Educational
Foresthill School demo SFB	25		Educational
Maidu demo SFB	<mark>20</mark>		Educational
Foresthill Divide Rd. (Todd Valley)	<mark>36</mark>	1,500	391,500,000
Michigan Bluff	<mark>43</mark>	14	3,654,000
Boole Road	11	100	26,100,000
Cerro Vista	<mark>16</mark>	100	26,100,000
Ponderosa Road	21	100	26,100,000
Spring Garden Road	25	100	26,100,000
Yankee Jims Road	<mark>55</mark>	<mark>50</mark>	13,050,000
TOTALS	312	1,964	512,604,000

*The value is based on the average home value for the unincorporated County from the Assessor's Roll values. The number of homes is approximate.

Other Alternatives: Taking no action will result in the continued re-growth of vegetation and the disappearance of the fuel breaks.

Responsible Office: Placer County Resource Conservation District

Priority (H, M, L): Medium

Cost Estimate: Estimated cost is \$500 per Acre for a total of \$156,000.

Benefit: The roadside fuel breaks protect homes valued at approximately \$512,604,000, and also shield evacuation routes and firefighter access. The demonstration fuel breaks educate and encourage homeowners to create and maintain defensible space. The cost of \$156,000 is 0.03 percent of the values protected.

Potential Funding: The roadside fuel breaks are on private property. This project would fund staff to provide follow up recommendations. Costs could be reduced by sharing costs with private property owners.

In general, the cost of maintenance is about \$500 per acre, depending on the method used. The cost share for the project is estimated to be \$78,000, with the property owners contributing an equal amount of their own funds and/or labor. The County Chipper Program will be used to help reduce the overall cost. The costs include funds for staff time and project management.

The responsibility for maintenance of the demonstration fuel breaks varies. The Aeloia Heights fuel break is on public and private lands; Alta's is managed by the Alta Fire Safe Council; the one at Foresthill School is maintained by the school; and the Maidu project is on private property within the Auburn Fuel Break and will be maintained as part of that project (described separately). This project would offer staff to provide follow-up recommendations plus cost-share funds for the private lands portions of the Aeloia Heights and Alta fuel breaks.

Possible source of funding are National Fire Plan, the Healthy Forests Initiative, CalFed grants, and EQIP.

Schedule: Every 3-5 years, if funding is available, which started in the spring of 2005 or 2006.

10. Annual Defensible Space Inspections Program in the Unincorporated County

Issue/Background: Defensible space is recognized by CAL FIRE as the single most important action that a homeowner can take to increase the chances that homes and other structures survive a wildfire. Defensible space also helps to protect wildlands from a structure fire. Another benefit of defensible space is that it provides firefighters with a safe place to work while defending a home from fire.

When SB 1369 takes effect on January 1, 2005, the minimum defensible space requirement will increase from 30 feet to 100 feet.

Many homeowners are not aware of the requirements of defensible space, especially new residents who move to the County from highly urban areas where it is normal to expect a fire engine, or even multiple engines, to be dedicated to fighting a structure fire. However, during a wildfire, this is not feasible. Homes and other structures must be able to withstand an approaching wildfire with no assistance from firefighters. Also, fire fighters will not defend a home unless they can do so safely.

Regular inspections, based on the requirements of California Law as specified in Public Resources Code 4291, can help ensure that homeowners create and maintain adequate defensible space. The inspection process is also an opportunity to educate and motivate the homeowners to take action to improve their wildfire safety.

While CAL FIRE has the legislative mandate to perform these inspections, in reality budgets do not provide for sufficient staffing to do this beyond the occasional inspection requested by a homeowner. Since 1998, PRC 4291 inspections in Placer County have been funded by grants from: (1) Proposition 204, Safe Clean, Reliable Water Supply Act; (2) the Community-Based Wildfire Protection Program through the California Fire Safe Council and BLM; and (3) Title III funds from the Secure Rural Schools & Community Self-Determination Act of 2000 (AKA "HR 2389 Timber Tax") payments to Placer County.

Future programs need to expand to include the south County, especially the South Placer Fire Protection District and the Loomis Fire Protection District.

Other Alternatives: Taking no action will result in less compliance with defensible space requirements.

Responsible Office: Placer County Fire Safe Alliance partners, including fire agencies

Priority (H, M, L): High

Cost Estimate: Inspections cost approximately \$10.50 for the inspector's time and insurance, mileage, and a manager. Adding administrative overhead brings the cost to about \$11.50. (These are 2001 dollars.) An additional cost is for literature to handout. The most important handout is the Homeowner's Checklist, which can be downloaded http://www.fire.ca.gov/communications/downloads/fact_sheets/Checklist.pdf.

The most recent grant for Defensible Space Inspections was for \$79,746.67 with an in-kind match for literature and other support by CAL FIRE for \$13,236.50. These inspections focused on the foothills communities of Foresthill, Iowa Hill, Weimar, Meadow Vista, Applegate, the Colfax area, etc. There are approximately 7,000 homes in this area. Inspections cost approximately \$10.50 for the inspector's time and insurance, mileage, and a manager. Adding administrative overhead brings the cost to about \$11.50. An additional cost is for literature to handout. The most important handout is the Homeowner's Checklist, available at http://www.fire.ca.gov/communications/downloads/fact_sheets/Checklist.pdf or from CAL FIRE. Color copies of this document cost from \$1.50 to \$2.00 depending on the number of copies.

Benefit: Life Safety; Reduced property Loss. A cost of \$13.00 per home inspected (\$11.50 + \$1.50) is about 0.005 percent of the average Assessor's Roll Value of about \$260,000 per home (which is far below actual replacement value).

Potential Funding: Potential sources of funding include: National Fire Plan, Healthy Forests Initiative, and Title III funds from the Secure Rural Schools & Community Self-Determination Act of 2000 (AKA "HR 2389 Timber Tax") payments to Placer County.

Schedule: Annually, as funding permits. Since not every property needs to be inspected every year, doing inspections on a rolling basis would allow smaller annual grant amounts to be needed.

11. Enhance Enforcement of County Building Codes to Increase Compliance with SB 1369 Defensible Space and Other Fire Safe Requirements in the Unincorporated County

Issue/Background: When SB 1369 takes effect on January 1, 2005, the minimum defensible space distance is increased from 30 feet to 100 feet (or to the property line). Further, for new or replacement construction, SB 1369 requires that the owner shall obtain a certification from the local building official that the dwelling or structure, as proposed to be built, complies with all applicable state and local building standards, as well as upon completion of the construction or rebuilding, the owner shall obtain from the local building official, a copy of the final inspection report that demonstrates that the dwelling or structure was constructed in compliance with all applicable state and local building standards.

The building inspection process is an excellent time to initiate compliance with SB 1369. For example, if the creation of the minimum 100 feet (or to the property line) defensible space area was required before the building is started to be built, it is a lot more likely to be maintained after construction. This would also be a good time to enforce the PRC 4290 requirements for house and road signage installation.

Specific details of the process would be worked out among the responsible parties listed below.

Other Alternatives: No action continues to leave defensible space creation up to the good will of the homeowner.

Responsible Office: Placer County Building Department, Placer County Fire Safe Alliance partners, including CAL FIRE and local Fire Agencies

Priority (H, M, L): Medium

Cost Estimate: There is no cost involved to the responsible parties since the existing building inspection process would be used. (The cost for implementing the certification process required by the legislation is outside the scope of this project since it has to be done anyway.)

Benefit: Life Safety; Reduce property loss - with a zero cost project...

Potential Funding: Existing Budgets

Schedule: Ongoing

12. Implementation of an Additional Command Frequency for Fire Dispatch on the Western Slope.

Issue/Background: Except for the cities of Roseville, Lincoln, and Rocklin, Placer County fire agencies are dispatched either by the County PSAP (the fire districts), or by the CAL FIRE dispatch center in Grass Valley. Valuable time can be lost when an incident requires responses from resources controlled by both dispatch centers. Also, the current dispatch frequency can be overwhelmed when there are multiple simultaneous incidents in progress because of the number of resources needing to make communication with the dispatch center. The new command frequency will be dedicated to use by all responding resources and both dispatch centers as an additional frequency during emergency incidents. This in turn will free-up valuable and critical dispatch time on primary frequencies for additional incidents.

Other Alternatives: No action would potentially result in crucial radio traffic not being able to get through due to the overloading of the current command channel.

Responsible Office: Placer County Fire Chiefs Association

Priority (H, M, L): High

Cost Estimate: The frequency has been acquired. Some cost for testing is pending.

Cost Benefit: Life safety; protection of property

Potential Funding: The pending cost for testing will come from the operational budgets of the County PSAP, CAL FIRE, and participating fire agencies.

Schedule: While the frequency has been acquired, implementation was postponed until after the 2004 fire season. The project is targeted for completion by no later than Spring 2005.

13. Annual Multi-Agency Wildland Fire Drill.

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

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

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

Priority (H, M, L): High

Cost Estimate: The cost for such an exercise has been running about \$5000.00 annually.

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

Potential Funding: The first year was funded by the Auburn Fire Department. A grant from the Bureau of Land Management was utilized for the 2004 event and a request has been made to fund the 2005 event.

Schedule: Successfully conducted in 2003 and 2004, the objective is to do this annually, assuming funding is available.

14. Cooperative Fire Service Response Agreement for the Western Side of All Placer County Fire Agencies.

Issue/Background: The Placer County Fire Chief's Association is developing Cooperative Fire Service Response Agreement that will implement auto-aid based on the closest available resources for fire and medical emergencies within western Placer County. This agreement will include a comprehensive operating plan on how this will be implemented.

Other Alternatives: No Action

Responsible Office: Placer County Fire Chiefs Association, executive board.

Priority (H, M, L): High

Cost Estimate: All costs to date are borne through each participating agency.

Cost Benefit: Enhancement of the delivery of emergency services without significant cost increase to citizens, which ensures that the closest available resource(s) responds to an emergency, thus reducing response time and improving coverage. This agreement also helps to offset potential delays due to multiple fire dispatch centers in the County.

Without medical intervention, certain death can occur in persons with heart attack, severe bleeding, and respiratory ailments in as little as four to six minutes. Structure fires attacked within 10 minutes of ignition have the greatest chance of rapid extinguishment, and thus a decrease in potential life and property loss as well as reducing the chances that a house fire will spread to the wildlands or vice-versa.

It is impossible to quantify the resources protected by this agreement as they are essentially all of the resident and traveling population, all homes and businesses, and all wildlands.

Potential Funding: Unknown

Schedule: The agreement is in the process of being finalized with a target for completion of January 2005. Additional plans will be developed as needed to fully execute the agreement.

15. Establish the "Rural Lincoln Fire Safe Council"

Issues/background: On September 1st 2008 the "Gladding Fire" demonstrated the effects of wildfire in the rural Lincoln area. This fire burned 960 acre, destroyed six homes, ten outbuilding, numerous vehicles, and farm equipment. This was the largest and most devastating fire in the rural Lincoln area in the past 20 years. The diverse fuel types and topography in this area that includes both LRA and SRA areas can benefit greatly by a Fire Safe Council structure. This structure would be made up of individuals from the four rural areas that surround the city of Lincoln.

Other Alternatives: Continue to educate the public and private landowners on the need to take mitigation measures to prevent catastrophic wildfires from occurring in their area. The limited individual efforts may help some, but the need to educate the public on how to provide defensible space and make there property fire safe is critical.

Responsible Office: Placer County Fire Safe Alliance and Placer County Fire agencies

Priority (H, M, L): High

Cost Estimate: The total cost to establish and maintain the FSC for the first year is approximately \$25,000. A yearly cost of \$10,000 to fund ongoing public education projects and fire mitigation planning would be needed.

Benefits (losses Avoided): Using the unincorporated areas of Placer County as an example, there are 624 parcels in the Very High category of "Values at Risk", and over 56,000 properties in the "High", "Values At Risk" category. With a Median home value of \$270,000 in the Lincoln area, the loss of 10 homes plus suppression cost would significantly surpass the cost of the planned Fire Safe Council projects.

Potential Funding: Grants and existing budgets

Schedule: The establishment and developments would occur over the first year of the program. Fire safe projects would be ongoing through the period of this document. Grant funding is generally available through yearly cycles and would be sought for specific public education projects prioritized by the Fire Safe Council.

16. Maintain and Enhance Canal Systems by Converting Earthen Canals to Gunite-Lined Canals in Critical Areas.

Issue/Background: Wildfires present significant hazards to Placer County. CAL FIRE and most rural Fire Departments depend on canal systems operated by either public or private entities to be a source of water for firefighting.

Other Alternatives: No action

Responsible Office: Placer County Water Agency, PG&E, and other canal operators

Priority (H, M, L): High

Cost Estimate: \$500,000 to \$600,000 per year

Cost Benefit: Improves reliability of canal systems for Life Safety, reduction in property loss

and public water supply.

Potential Funding: HGMP, PDM, FEMA, PG&E, PCWA, others

Schedule: Immediate and ongoing

17. Replace Wooden Flume Structures with Steel Structures.

Issue/Background: Historically flumes allow a gravity flow canal system to cross canyons; valleys and other low spots without going into them so that pumping stations are not necessary. The support structures for flumes are made of wood and therefore vulnerable to fires.

Other Alternatives: No action; substitute concrete materials for structural steel.

Responsible Office: Placer County Water Agency

Priority (H, M, L): High

Cost Estimate: Estimate from \$50,000 to \$150,000 per flume.

Cost Benefit: By replacing wood with steel, the flume supports would not be vulnerable to fires, allowing water to be available to support life safety and for property protection and water consumption.

Potential Funding: HGMP, PDM, FEMA, PCWA.

Schedule: Ongoing

18. De-Silt Reservoirs.

Issue/Background: Reservoirs are untreated water storage areas and are used to regulate the flow of water in canals for treated water production, agriculture use and as a water source in fire suppression.

Other Alternatives: No action

Responsible Office: Placer County Water Agency and private property owners.

Priority (H, M, L): Medium

Cost Estimate: Estimate from \$200,000 to \$4.6 million depending on size and amount of silt in reservoir.

Cost Benefit: Silt and other debris is continually accumulating into canals and deposited into reservoirs. As silt levels increases over the years, it decreases storage capacity in the reservoir. Periodic de-silting improves the life safety and operational value of the reservoirs.

Potential Funding: HGMP, PDM, PCWA.

Schedule: Ongoing