Appendix C: Mitigation Strategy

Categories of Mitigation Measures Considered

The following categories are based on the Community Rating System. To accommodate other hazards, multi-hazard examples were added:

Prevention

- Planning and zoning
- Open space preservation
- Land development regulations
- Stormwater management
- Fuels management

Property Protection

- Firewise construction
- Defensible space/fuels modification
- Water supply
- Flood protection

Natural Resource Protection

- Erosion and sediment control
- Wetlands protection
- Threatened and endangered species protection
- Fuels management

Emergency Services

- Warning and evacuation
- Communications
- Critical facilities protection
- Lifeline utilities protection
- Health and safety maintenance

Structural Projects

- Detention/retention structures
- Sediment basins/low-head weirs

- Channel modifications
- Culvert resizing/replacement/maintenance
- Floodwalls

Public Information

- Hazard maps
- Outreach programs (mailings, media, web, speakers bureau)
- Education program (children/adults)

Alternative Mitigation Measures per Category

Prevention

Preventive measures are designed to keep the problem from occurring or getting worse. Their objective is to ensure that future development is not exposed to damage and does not increase damage to other properties.

- Planning
- Zoning
- Open space preservation
- Land development regulations
  - Subdivision regulations
  - Floodplain development regulations
- Stormwater management
- Fuels management, fire breaks
- Building codes
  - Firewise construction
- (also see Property Protection)

Emergency Services

Emergency services protect people during and after a disaster. A good emergency services program addresses all hazards. Measures include:

- Warning (floods, tornadoes, ice storms, hail storms, dam failures)
  - NOAA weather radio all hazards
  - Sirens
  - Reverse 911
- Evacuation and sheltering
- Communications
- Emergency planning

  - Activating the emergency operations room (emergency management)
  - Closing streets or bridges (police or public works)
  - Shutting off power to threatened areas (utility company)
  - Holding children at school/releasing children from school (school district)
  - Passing out sand and sandbags (public works)
  - Ordering an evacuation (mayor)
  - Opening evacuation shelters (red cross)
  - Monitoring water levels (engineering)
  - Security and other protection measures (police)
- Monitoring of conditions (dams)
- Critical facilities protection (buildings or locations vital to the response and recovery effort, such as police/fire stations, hospitals, sewage treatment plants/lift stations, power substations)
  - Buildings or locations that, if damaged, would create secondary disasters, such as hazardous materials facilities and nursing homes
  - Lifeline utilities protection
  - Health and safety maintenance

Property Protection

Property protection measures are used to modify buildings subject to damage rather than to keep the hazard away. A community may find these to be inexpensive measures because often they are implemented by or cost-shared with property owners. Many of the measures do not affect the appearance or use of a building, which makes them particularly appropriate for historical sites and landmarks.

- Retrofitting/disaster proofing
  - Floods
    - Wet/dry floodproofing (barriers, shields, backflow valves)
    - Relocation
    - Acquisition
  - Tornadoes
    - Safe rooms
    - Securing roofs and foundations with fasteners and tie-downs
    - Strengthening garage doors and other large openings
  - Drought
    - Improve water supply (transport/storage/conservation)
    - Remove moisture competitive plants (tamarisk/salt cedar)
    - Water restrictions/water saver sprinklers/appliances
    - Grazing on CRP lands (no overgrazing—see noxious weeds)
    - Create incentives to consolidate/connect water services
    - Recycled wastewater on golf courses

- Earthquakes
  - Removing masonry overhangs, bracing, and other parts
  - Tying down appliances, water heaters, bookcases, and fragile furniture so they will not fall over during a quake.
  - Installing flexible utility connections that will not break during shaking (pipelines, too)
- Wildland fire
  - Replacing building components with fireproof materials (roofing, screening)
  - Creating "defensible space"
  - Installing spark arrestors
  - Fuels modification
- Noxious weeds/insects
  - Mowing
  - Spraying
  - Replacement planting
  - Stop overgrazing
  - Introduce natural predators

- Insurance

Natural Resource Protection

Natural resource protection activities are generally aimed at preserving (or in some cases restoring) natural areas. In so doing, these activities enable the naturally beneficial functions of floodplains and watersheds to be better realized. These natural and beneficial floodplain functions include the following:

- Storage of floodwaters
- Absorption of flood energy
- Reduction in flood scour
- Infiltration that absorbs overland flood flow
- Groundwater recharge
- Removal/filtering of excess nutrients, pollutants, and sediments from floodwaters
- Habitat for flora and fauna
- Recreational and aesthetic opportunities

Methods of protecting natural resources include:

- Erosion and sediment control
- Wetlands protection
- Riparian area/habitat protection
- Threatened and endangered species protection
- Fuels management
- Set-back regulations/buffers

- Best management practices—Best management practices ("BMPs") are measures that reduce nonpoint source pollutants that enter the waterways. Nonpoint source pollutants come from non-specific locations. Examples of nonpoint source pollutants are lawn fertilizers, pesticides, and other farm chemicals, animal wastes, oils from street surfaces and industrial areas and sediment from agriculture, construction, mining and forestry. These pollutants are washed off the ground's surface by stormwater and flushed into receiving storm sewers, ditches and streams. BMPs can be implemented during construction and as part of a project's design to permanently address nonpoint source pollutants. There are three general categories of BMPs:
  - Avoidance—Setting construction projects back from the stream.
  - Reduction—Preventing runoff that conveys sediment and other water-borne pollutants, such as planting proper vegetation and conservation tillage.
  - Cleanse—Stopping pollutants after they are en route to a stream, such as using grass drainageways that filter the water and retention and detention basins that let pollutants settle to the bottom before they are drained
- Dumping regulations
- Water use restrictions
- Weather modification
- Landscape management

Structural Projects

Structural projects have traditionally been used by communities to control flows and water surface elevations. Structural projects keep flood waters away from an area. They are usually designed by engineers and managed or maintained by public works staff. These measures are popular with many because they "stop" flooding problems. However, structural projects have several important shortcomings that need to be kept in mind when considering them for flood hazard mitigation:

- They are expensive, sometimes requiring capital bond issues and/or cost sharing with Federal agencies, such as the U.S. Army Corps of Engineers or the Natural Resources Conservation Service.
- They disturb the land and disrupt natural water flows, often destroying habitats.
- They are built to a certain flood protection level that can be exceeded by a larger flood, causing extensive damage.
- They can create a false sense of security when people protected by a structure believe that no flood can ever reach them.
- They require regular maintenance to ensure that they continue to provide their design protection level.

Structural measures include:

- Detention/retention structures
- Erosion and sediment control

- Basins/low-head weirs
- Channel modifications
- Culvert resizing/replacement/maintenance
- Levees and floodwalls
- Fencing (for snow, sand, wind)
- Drainage system maintenance
- Reservoirs (for flood control, water storage, recreation, agriculture)
- Diversions
- Storm sewers

Public Information

A successful hazard mitigation program involves both the public and private sectors. Public information activities advise property owners, renters, businesses, and local officials about hazards and ways to protect people and property from these hazards. These activities can motivate people to take protection

- Hazard maps and data
- Outreach projects (mailings, media, web, speakers bureau)
- Library resources
- Real estate disclosure
- Environmental education
- Technical assistance

Mitigation Alternative Selection Criteria

The following criteria were used to select and prioritize proposed mitigation measures:

STAPLE/E

- **Social**—Does the measure treat people fairly? (different groups, different generations)
- **Technical**—Will it work? (Does it solve the problem? Is it feasible?)
- **Administrative**—Do you have the capacity to implement and manage project?
- **Political**—Who are the stakeholders? Did they get to participate? Is there public support? Is political leadership willing to support?
- **Legal**—Does your organization have the authority to implement? Is it legal? Are there liability implications?
- **Economic**—Is it cost-beneficial? Is there funding? Does it contribute to the local economy or economic development?
- **Environmental**—Does it comply with environmental regulations?

Sustainable Disaster Recovery

- Quality of life
- Social equity
- Hazard mitigation
- Economic development
- Environmental protection/enhancement
- Community participation

Smart Growth Principles

- Infill versus sprawl
- Efficient use of land resources
- Full use of urban resources
- Mixed uses of land
- Transportation options
- Detailed, human-scale design

Other

- Does measure address area with highest risk?
- Does measure protect …
  - The largest # of people exposed to risk?
  - The largest # of buildings?
  - The largest # of jobs?
  - The largest tax income?
  - The largest average annual loss potential?
  - The area impacted most frequently?
  - Critical infrastructure (access, power, water, gas, telecommunications)?
- What is timing of available funding?
- What is visibility of project?
- Community credibility

Placer County Local Hazard Mitigation Plan

Mitigation Actions List

Initial Prioritization Process

HMPC #5

10/3/08

Jurisdiction/ Responsible Party	Mitigation Action Title	Hazards Addressed	Points/ Worksheet Status
North Tahoe Fire Protection District			
	Community Wildfire Protection Plan (CWPP) Projects	Wildfire	32/Complete
	Defensible Space Inspection, Free Chipping Program and Public Education	Wildfire	29/Complete
	Hazardous Wood Roof Replacement Program	Wildfire	1/Complete
	Regional Water System Fire Protection Upgrades and Interoperability	Wildfire	6/Complete
	North Tahoe Fire Protection District Critical Facility Infrastructure Improvements	Earthquake Seiche	3/Complete
	North Tahoe Fire Protection District Headquarters Station Relocation and EOC Development	Earthquake Multi-Hazard	0/Complete
	FCC P-25 Interoperability Radio Systems	Multi-Hazard	27/Complete
	Skid Steer Loader with Transport Trailer, Fuels Reduction Masticator Attachment and Snow Blower Attachment	Multi-Hazard	0/Complete
	District GIS Technology, Equipment, Database and Mapping Improvements	Multi-Hazard	21/Complete
	Emergency Radio Transmitters and Information Systems	Multi-Hazard	12/Complete
	Hydrant Risers, Replacements and Markers	Multi-Hazard	3/Complete
	Sieche Wave Warning Systems, Signs and Public Education	Earthquake Seiche	0/Complete
	Evacuation Shelter Improvements	Multi-Hazard	0/Complete
City of Colfax			
	Identify Un-Reinforced Masonry Buildings in the City.	Earthquake	0/Complete
	Funding for Residential Fire Protection	Wildfire	0/Complete
Town of Loomis			
	Delmar Avenue Headwall Reconstruction	Multi-Hazard	5/Complete
	Creek Maintenance Secret Ravine & Antelope Creek	Flood	8/Complete
	Reconstruction of Brace Bridge @ Secret Ravine	Multi-Hazard	0/Complete

Jurisdiction/ Responsible Party	Mitigation Action Title	Hazards Addressed	Points/ Worksheet Status
Sierra Community College District			
	Fire Prevention at SC-Nevada County Campus	Wildfire	0/Complete
Tahoe Truckee Unified School District			
	School Site and Community Education of Procedures Related to Safety and Emergency Situations. Improvements of District-Wide Emergency Communication and Alert Systems.	Multi-Hazard	0/Complete
	Structural Upgrades of Roofs at School Sites to Support Higher Snow Loads.	Winter Storm	6/Complete
	Forest Thinning Around Lake Area Schools	Wildfire	0/Complete
	HVAC Control Upgrades	Severe Weather	0/Complete
	Flood Control	Flood	3/Complete
Squaw Valley Public Service District			
	East Booster Emergency Power	Multi-Hazard	0/Complete
	Water & Sewer System CPS Project	Drought	22/Complete
	SVPSD/Mutual Water Company Inter-Tie	Drought	0/Complete
	Easement Abatement/Maintenance of Emergency Access	Multi-Hazard	0/Complete
	Water Tank Earthquake Retrofit Project	Earthquake	7/Complete
	Portable Generator Projects	Multi-Hazard	0/
	Squaw Creek Restoration & Drainage Enhancement Project	Flood	8/Complete
ForestHill Fire Protection District			
	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	Wildfire	27/Complete
	Develop Ordinance for Defensible Space with Maintenance Component and Built-in Funding Mechanism	Wildfire	11/
Nevada Irrigation District			
	Portable Generator Project	Multi-Hazard	0/Complete
	Canal Culvert Replacement Program	Flood	3/Complete
	Reservoir Cleaning	Multi-Hazard	0/Complete
Alpine Springs County Water District			
	Alpine Meadows Consolidated Defensible Space Project		0/Complete
City of Auburn			
	Lincoln Basin (Downtown) Drainage Infrastructure	Flood	16/Complete
	GIS enhancement of floodplains	Flood	8/Complete
	Creek and Stream Cleaning & Maintenance Program	Flood	New/Complete
	GAAFSC Public Education	Multi-Hazard	New/Complete

Jurisdiction/ Responsible Party	Mitigation Action Title	Hazards Addressed	Points/ Worksheet Status
	GIS Citywide	Multi-Hazard	New/Complete
	Residential Inspections	Wildfire	New/Complete
	Shaded Fuel Break Shaded Fuel Break	Wildfire	New/Complete
	Shaded Fuel Break Maintenance	Wildfire	New/Complete
Placer County			
	Continuation of Chipper Program (CAL FIRE)	Wildfire	37/
	Continuation of Biomass Program	Wildfire	5/
	Improve access issues (Ingress/Egress) on county property	Multi-Hazard	16/
	Improve access issues (Ingress/Egress) on private property – Hwy. 89 Bridges.		0/
Open Space	Maintenance of shaded fuel breaks and access corridors	Wildfire	11/Complete
OEM	Sheltering in Place (facilities/generators)	Multi-Hazard/ EM	8/Complete
OEM	NIMs Compliance	Multi-Hazard/ EM	18/Complete
OEM/ Planning	Adoption of LHMP into Safety Element	Multi-Hazard/ EM	0/
	Web EOC Upgrades	Multi-Hazard/ EM	18/Complete
Public Works	Ophir Road	Landslide	5/
Public Works	Yankee Jim/Iowa Hill/Foresthill Roads	Landslide	0/
Public Works	Highway 89	Landslide	0/
Public Works	Update Landslide maps	Landslide	0/
Public Works/ Planning	Cottonwood Dam Removal	Dam Failure	0/
PCFCWCD? BOR	Raising Dikes and improving to 200+ level	Dam Failure	0/
	Multi-Hazard Outreach Program	Multi-Hazard	11/
City of Lincoln			
	Fuels Management Program	Wildfire	4/
	Establish and Maintain Access (Ingress/Egress) on city property	Multi-Hazard	10/
	Weed Abatement Program	Wildfire	2/
	Public works to provide projects		1/
	Creek Maintenance	Flood	4/
South Placer Fire Protection District			
	Maintenance of shaded fuel breaks and access corridors	Wildfire	6/
Tahoe City Public Utility District			

Jurisdiction/ Responsible Party	Mitigation Action Title	Hazards Addressed	Points/ Worksheet Status
	Floodproofing critical facilities	Flood	11/
TCPUD/ TCFPD	Fuels management (and maintenance) projects: Highlands area and others	Wildfire	14/
Placer County Flood Control and Water Conservation District			
	Salachi Farms Easement	Flood	3/
	Dry Creek Projects	Flood	17/

* indicates that mitigation action identified was addressed to some extent in the final Mitigation Action Strategy portion of the LHMP.

Benefit Cost Prioritization and Workshop

Initial List of Projects for BCA Workshop

Memo

To	**Rod Rodriguez**	File no	
From	**Jeanine Foster**	cc	**Jeff Brislawn**
Date	**July 29, 2009**		

Subject **Benefit-Cost Analysis**

Rod,

As requested, I am providing you with an initial list of projects to be considered for the Benefit-Cost Analysis (BCA) Training Task in support of the LHMP project. Below is a brief overview to assist you and other participating jurisdictions in selecting projects for further BCA consideration, followed by the initial list of projects.

BCA Considerations

To be eligible for Federal funding assistance, a mitigation project must be considered cost-effective. The FEMA BCA is the method used to determine the cost-effectiveness of a proposed mitigation project. The Benefit-Cost Ratio (BCR) is a numerical expression of the cost-effectiveness of a project and is calculated as: total project benefits divided by total project cost. Projects with BCRs of 1.0 or greater have more benefits than costs, and are therefore considered cost-effective.

Cost effectiveness is a requirement of all the FEMA mitigation grant programs and a BCA must be submitted to demonstrate that project benefits exceed project costs. The higher the frequency and severity, the higher the risk associated with a hazard. Projects that effectively mitigate high-risk situations are usually cost effective. These issues are directly related to the engineering component of the project, which should describe the level of protection provided by the project.

The answers to the following questions should be determined prior to entering data into the FEMA BCA:

- How frequent are the losses being avoided?
- How severe are the losses being avoided?
- How effective is the project at reducing losses?

- What kinds of losses will be avoided?
- What does the project cost?

Proper documentation is also critical to the BCA process. FEMA will only consider project subapplications that include a legible, complete, and well documented BCA.

Documentation must be accurate and sufficiently detailed in order for FEMA to thoroughly review the development of the BCR. Documentation that shows how values for each data input were derived must be provided so that the credibility and validity can be evaluated. If FEMA standard values are used, no documentation is required. Documentation can include copies of Web pages, copies of data from FISs, or engineering reports. FEMA recommends obtaining information from credible technical sources, including engineering studies such as an FIS, technical Web sites (e.g., USGS and NOAA), and academic organizations and State agencies.

Some mitigation activities may reduce future losses for more than one hazard. In these cases, all benefits resulting from the mitigation activity may be combined to determine the BCR.

Further information on the BCA process can be accessed at: www.bchelpline.com

As a starting point, the following projects may be good candidates for cost effective projects based on the type and nature of the project. Whether or not a project is likely to have a good BCR will depend on many factors including those listed above as well as the availability of good documentation to support the BCA process. This list will need to be further reduced to the top 15 for further cost effectiveness evaluation per our scope of work. Please share this with the HMPC so they can assist in the identification of the top 15 projects. Once the top 15 projects have been identified, we will proceed with an initial evaluation of cost effectiveness in order to further reduce the number of projects to be addressed during the upcoming BCA training course on October 1, 2009.

Placer County LHMP Mitigation Actions: Initial List for BCA Consideration

Action	Lead Jurisdiction	New Action/2005 Action
Multi-Hazard Mitigation Actions		
Replacement of the Alpine Meadows Road Bridge over the Truckee River	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
Earthquake Mitigation Actions		
North Tahoe Fire Protection District Critical Facility Infrastructure Improvements	North Tahoe Fire Protection District	New
North Tahoe Fire Protection District Headquarters Station Relocation and North Tahoe Command Center Development	North Tahoe Fire Protection District	New

Action	Lead Jurisdiction	New Action/2005 Action
Water Tank Earthquake Retrofit Project	Squaw Valley Public Service District	New
Flood Mitigation Actions		
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
Squaw Creek Restoration & Drainage Enhancement Project	Placer County/ PCFCWCD	New
Lincoln Basin (Downtown) Drainage Infrastructure	City of Auburn	New
Electric Street Diversion Project	City of Auburn	2005
Old Town Auburn Storm Drain System	City of Auburn	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
7th 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
Ingram Slough – Orchard Creek return channel	City of Lincoln	2005
Markham Ravine Drainage Improvements – Union Pacific Railroad and State Route 65 crossings.	City of Lincoln	2005
Delmar Avenue Headwall Reconstruction Project	Town of Loomis	New
Reconstruction of Brace Bridge at Secret Ravine	Town of Loomis	New
Canal Culvert Replacement Program	Nevada Irrigation District	New
Wildfire Mitigation Actions		
Shaded Fuel Break Establishment and Maintenance	Placer County	New
American River Canyon Shaded Fuel Break	City of Auburn	New
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

Action	Lead Jurisdiction	New Action/2005 Action
Alpine Meadows Consolidated Defensible Space Project	Alpine Springs County Water District	New
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
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
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
Forest Thinning Around Lake Area Schools	Tahoe Truckee Unified School District	New
Severe Weather: Snow		
Structural Upgrades of Roofs at School Sites to Support Higher Snow Loads.	Tahoe Truckee Unified School District	New

Interim Short List of Projects for BCA Workshop

Action	Lead Jurisdiction	New Action/2005 Action
Multi-Hazard Mitigation Actions		
Replacement of the Alpine Meadows Road Bridge over the Truckee River	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
Earthquake Mitigation Actions		
North Tahoe Fire Protection District Critical Facility Infrastructure Improvements	North Tahoe Fire Protection District	New
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
North Tahoe Fire Protection District Critical Facility Infrastructure Improvements	North Tahoe Fire Protection District	New
North Tahoe Fire Protection District Headquarters Station Relocation and North Tahoe Command Center Development	North Tahoe Fire Protection District	New
Flood Mitigation Actions		
Elevation/buyout of 2 properties near Dry Creek Road	Placer County	Not yet submitted
Dam Leak: Private Retention Pond	Placer County	Not yet submitted
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
Squaw Creek Restoration & Drainage Enhancement Project	Placer County/ PCFCWCD	New
Lincoln Basin (Downtown) Drainage Infrastructure	City of Auburn	New
Electric Street Diversion Project	City of Auburn	2005
Old Town Auburn Storm Drain System	City of Auburn	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

Action	Lead Jurisdiction	New Action/2005 Action
Gladding Parkway, State Route 65, McCourtney Road Stream Restoration and Culvert Improvements.	City of Lincoln	2005
"O" Street Drainage Improvements.	City of Lincoln	2005
7th 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
Ingram Slough – Orchard Creek return channel	City of Lincoln	2005
Markham Ravine Drainage Improvements – Union Pacific Railroad and State Route 65 crossings.	City of Lincoln	2005
Delmar Avenue Headwall Reconstruction Project	Town of Loomis	New
Reconstruction of Brace Bridge at Secret Ravine	Town of Loomis	New
Sewerline Protection Project/Slope Stabilization (NOI Submitted)	Alpine Springs County Water District	New
Canal Culvert Replacement Program	Nevada Irrigation District	New
Wildfire Mitigation Actions		
Shaded Fuel Break Establishment and Maintenance	Placer County	New
American River Canyon Shaded Fuel Break	City of Auburn	New
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
Alpine Meadows Consolidated Defensible Space Project	Alpine Springs County Water District	New
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
Todd Valley Shaded Fuel Break (Phase I near completion; Phase II have not started and is not currently funded)	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
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

Action	Lead Jurisdiction	New Action/2005 Action
Forest Thinning Around Lake Area Schools (on going with CalFire & local Fire Dept)	Tahoe Truckee Unified School District	New
Severe Weather: Snow		
Structural Upgrades of Roofs at School Sites to Support Higher Snow Loads. (Submitted NOI for PDM10)	Tahoe Truckee Unified School District	New

GREEN=BCA Project
Yellow=Possible BCA Project

Selected Example Projects for BCA Workshop

Action (New or 2005 Action)	Lead Jurisdiction	Point of Contact
Multi-Hazard Mitigation Actions		
Replacement of Yankee Jims Bridge over the North Fork of the American River	Placer County/DPW	Jeff Apps (530) 745-7562 JApps@placer.ca.gov
Flood Mitigation Actions		
Elevate Remaining 95 Homes in the Dry Creek Watershed (2005)	Placer County/PCFCWCD	Brian Keating (530) 745-7592 BKeating@placer.ca.gov
Lincoln Basin (Downtown) Drainage Infrastructure (New)	City of Auburn	Fire Chief Mark D'Ambrogi (530) 823-4265 X-172 mdambrogi@auburn.ca.gov
Conduct engineering geology, geotechnical engineering mapping, and slope stabilization for sanitary sewer lines (New)	Alpine Springs County Water District	John Collins 530.583.2342 X12 john@alpinesprings.org
Wildfire Mitigation Actions		
Community Wildfire Protection Plan (CWPP) projects (New)	North Tahoe Fire Protection District	Captain Steve Simons (530) 583-6911 simons@ntfire.net
Todd Valley Shaded Fuel Break (2005)	Foresthill Fire Protection District	Asst. Fire Chief Luana Dowling (530) 367-2465 ldowling@foresthillfiredept.org