ANNEX M: SQUAW VALLEY PUBLIC SERVICE DISTRICT

M.1 District Profile

Figure M.1 shows the area covered by the Squaw Valley Public Service District (SVPSD).

Figure M.1. Squaw Valley Public Service District

NEED FIGURE

The Squaw Valley Public Service District (SVPSD) serves the community of Squaw Valley in providing water, maintaining sewer Lines, contracting garbage service, and providing fire protection services to the community. The SVPSD encompasses approximately 5,350 acres within the Olympic Valley. Elevations within the District boundaries range from 6,100 to 9,000feet above mean sea level.

The SVPSD serves a population of approximately 924 year-round residents, with a maximum overnight population of approximately 6,573. Both resident and visiting populations are housed in approximately 663 residential unit, 1,180 condominiums, and approximately 20 commercial entities consisting of private residences, ski resorts, hotels and supporting businesses.

The Olympic Valley is characterized by mild summers and cool, wet winters, with an average high temperature in July of 82 and 42 in January. Annual precipitation in the watershed varies from an average of 65 inches in the west to approximately 40 inches per year in the east. The majority of precipitation occurs as snowfall during the winter months. A relatively small amount of precipitation occurs as rain during the spring and summer months.

M.2 Hazard Identification and Summary

The SVPSD's planning team identified the hazards that affect the District and summarized their frequency of occurrence, spatial extent, potential magnitude, and significance specific to the District (see Table M.1).

Table M.1. SVPSD—Hazard Summaries

Hazard	Probability of Occurrence	Spatial Extent	Potential Magnitude	Significance
Agricultural Hazards	Unlikely			
Avalanche	Likely	Limited	Limited	Medium
Dam Failure	Unlikely			
Drought	Highly Likely	Significant	Limited	Medium
Earthquake	Likely	Limited t	Limited	High
Flood	Likely	Limited	Limited	Medium
Human Health Hazards:				
West Nile Virus	Occasional			
Landslide	Likely	Limited	Limited	High
Severe Weather:				
Extreme Temperatures	Likely	Limited	Negligible	Medium
Fog	Occasional			
Heavy Rain/ Thunderstorm/Hail/ Lightning/Wind	Likely	Limited	Limited	Low
Snow (was Winter Storm)	Highly Likely	Significant	Limited	Medium
Tornado	Unlikely			
Soil Hazards:				
Erosion	Likely	Limited	Limited	Medium
Volcano	Unlikely			
Wildfire	Likely	Significant	Critical	High

Guidelines for Hazard Rankings

Frequency of Occurrence:
Highly Likely—Near 100 percent probability in next year
Likely—Between 10 and 100 percent probability in next year or at least one chance in ten years
Occasional—Between 1 and 10 percent probability in next year or at least one chance in next 100 years
Unlikely—Less than 1 percent probability in next 100 years

Spatial Extent:
Limited—Less than 10 percent of planning area
Significant—10-50 percent of planning area
Extensive—50-100 percent of planning area
Source: Squaw Valley Public Service District

Potential Magnitude:
Catastrophic—More than 50 percent of area affected
Critical—25 to 50 percent
Limited—10 to 25 percent
Negligible—Less than 10 percent

Significance (subjective):
Low, Medium, High

Impacts of past events and vulnerability to specific hazards are discussed below (see Section 4.1 Hazard Identification for more detailed information about these hazards and their impacts on Placer County).

M.3 Vulnerability Assessment

The intent of this section is to assess the District's vulnerability separate from that of the planning area as a whole, which has already been assessed in Section 4.3 Vulnerability

Assessment in the main plan. For more information about how hazards affect the County as a whole, see Chapter 4 Risk Assessment in the main plan.

M.3.1 Assets at Risk

This section considers the District's assets at risk. Table M.2 lists District assets identified by representatives from the SVPSD as important to protect in the event of a disaster.

Table M.2. SRCD—Critical Facilities and Other District Assets

Name of Asset	Type	Replacement Value	Displacement Cost	Occupancy/ Capacity#	Hazard Specific Info
Fire Station & Administrative Center	Essential	$9 million	$1 million	35	Earthquake, Landslide, Wildfire
Headquarters & Utility/Fire Station	Essential	$5 million	$1 million	50	Flood, Earthquake, Landslide
Main Well #2	Lifeline	$1.5 million	$.5 million	N/A	Earthquake, Flood
Well #5	Lifeline	$1 million	$.4 million	N/A	Earthquake, Flood
Well #3	Lifeline	$.7 million	$.3 million	N/A	Earthquake, Flood
Well #1	Lifeline	$.7 million	$.3 million	N/A	Earthquake, Flood
Squaw Valley USA Resort	High Potential Loss	$200 million	$10 million	Varies – up to 20,000/day	Wildfire, Avalanche, Earthquake, Landslide
Resort at Squaw Creek	High Potential Loss	$80 million	$4 million	1,000	Wildfire, Landslide, Earthquake
State Route 89	Transportation	Unknown	Unknown	Unknown	Avalanche, Landslide, Flood
Midway Bridge	Transportation	Unknown	Unknown	Unknown	Earthquake, Flood
SVPSD Water Distribution System	Lifeline	$25 million	$1 million	N/A	Earthquake, Flood, Landslide
SVPSD Sewer Collection System	Lifeline	$25 million	$1 million	N/A	Earthquake, Flood, Landslide
Squaw Valley Mutual Water Company	Lifeline	$10 million	$1 million	N/A	Earthquake, Flood, Landslide

Source: Placer Hills Fire Protection District

Natural Resources

Several state or federally listed species may be found within the District boundary. These are identified, along with other species of concern found in the District, in Table M.3.

Table M.3. Species of Concern in Squaw Valley Public Service District

Common Name	Scientific Name	Federal Status	State Status
American (=pine) marten	*Martes Americana*		

Common Name	Scientific Name	Federal Status	State Status
Bald eagle	*Haliaeetus leucocephalus*	Threatened	Endangered
Boggs Lake hedge-hyssop	*Gratiola heterosepala*		Endangered
Burrowing owl	*Athene cunicularia*		
California horned lark	*Eremophila alpestris actia*		
California linderiella	*Linderiella occindentalis*		
California tiger salamander	*Ambystoma californiense*	Proposed Threatened	
Dry Creek cliff strider bug	*Oravalia pege*		
Elongate copper-moss	*Mielichhoferia elongate*		
Foothill yellow- legged frog	*Rana boylii*		
Fresno kangaroo rat	*Dipodomys nitratoides exilis*	Endangered	Endangered
Golden eagle	*Aquila chrysaetos*		

Sensitive habitats in the District include the following:

- Central Valley drainage hardhead/squawfish stream
- Great Valley mixed riparian forest
- Northern basalt flow vernal pool
- Northern claypan vernal pool
- Northern hardpan vernal pool
- Sycamore alluvial woodland

The above are examples from others NEED Natural Resources Specific to the District

Growth and Development Trends

Population growth and development within the SVPSD boundaries continues to increase in the Squaw Valley area, but is constrained by several issues. These issues include the availability of developable land, limited water supply, and lack of sufficient water and sewer infrastructure.

Much of the developable land in Squaw Valley is zoned High Density and may be located adjacent to or in close proximity to Squaw Creek and the 100-year floodplain. Availability of land coupled with high property values is driving residential development onto steeper slopes and areas of minimal access that may be subject to wildfire, earthquake, landslides, or avalanche.

Unique to this part of Placer County is not the growth of full time residents, but the influx of visitors and tourists to the area, especially during the peak summer and winter seasons. While this area is home to only about 924 full time residents, during high season, some 6,500 people, on any given day, may be enjoying the recreational and tourist opportunities. This spike in population creates a unique vulnerability to the area, especially in the event highways become

impassable due to flooding, landslides, avalanches or gridlocks due to high volume and extreme weather conditions. Even during the off-season, the lack of multiple transportation routes, if closed, can leave the resident population cut off from necessary and potentially life-saving services.

It is important to note that given the high cost of housing due to the resort nature of the area, much of the work force resides outside of Squaw Valley. With limited access roads to the area, the work force may be isolated when most needed for disaster response.

M.3.2 Estimating Potential Losses

Please provide additional hazard data: past occurrences and District impacts and assets at risk from identified hazards to below sections.

Avalanche

Ski resorts, due to their steep slopes, abundant snow, snowpack, and the presence of people moving throughout the area, are prone to avalanches. The 2004 Placer EOP identities the Squaw Valley area as vulnerable to avalanche activity. In 2001 during a winter storm generating 20 inches of fresh snow, a Class II avalanche occurred resulting in two fatalities. Other avalanches occur throughout each winter ski season, with most of these confined to out-of-bounds areas where damages are limited.

Drought

The impact of a drought on the District is primarily one of water supply. All domestic, municipal, and irrigation water in the Olympic Valley is derived from local groundwater sources. According to a recent 2007, Olympic Valley Groundwater Management Plan, water levels are generally recharged to maximum levels every winter and spring, but water levels in late summer and fall are dependent on the amount of snowmelt that flows through Squaw Creek during the spring and summer.

A multiple year drought can severely compromise the water supply within the District. The District has been exploring additional water availability in the Olympic Valley Groundwater Basin and has concluded that there is not enough to meet the demands of the Squaw Valley General Plan. In addition, new infrastructure would be required to develop any new water supply sources. The District is currently exploring receiving imported water to meet future demands. While the impacts of a drought to the existing community have been manageable in the past, unless additional water supply can be identified, the affects of drought on future development could be severe.

Earthquake

As indicted on the Earthquake Shaking Map in Section 4.2.11 of the main plan, the shaking potential is greatest in the eastern portion of the County, including the SVPSD service area. The 2008, Draft Supplemental Environmental Impact Report for Water and Sewer Service Agreement for the resort at Squaw Creek: Phase II, indicates that six north-northwest, trending north-northeast dipping faults are located in the Olympic Valley watershed, four of which cross the valley floor. Of the four faults, only one has documented evidence of recent movement. However, because of the limited development in the area, and lack of UMC buildings, compared to a more urban setting, the SVPSD service area would likely be of moderate vulnerability to damage from severe ground shaking.

Flood

The Olympic Valley watershed is a small subalpine and alpine watershed covering an area of approximately 8.2 square miles. It is characterized by steep, mountainous slopes draining to and through the limited valley area. The watershed includes the drainages of the North Fork, the South Fork, and the main stem of Squaw Creek. Watershed elevations range from approximately 6,200 feet on the valley floor up to 9,000 feet on the highest peaks adjacent to the valley. Squaw Creek and its tributaries are the only significant surface water bodies in Olympic Valley. The two main forks converge in an area known as the confluence at the western end of the valley. The confluence is a wide gravel-filled portion of Squaw Creek that has been altered due to gravel mining. The primary source of Squaw Creek's annual flow is snowmelt. The snowmelt peaks in the spring and often continues through July and August, when it starts to dry up.

Areas impacted by flooding include, squaw creek, near ?????? and ?????????

Flooding and soil erosion due to heavy rains and snow runoff have been a historical problem. Abundant snowfall in the mountains combined with rain and steep terrain can mean rapid runoff and flooding. Water flow can be high in peak runoff periods with historical downstream flooding**.** The primary impacts from flooding within the District include damage to roads, utilities, bridges; and flooding of homes, businesses and critical facilities. Historically, mud slides and wash outs associated with flooding caused the most damages within the District. The south fork of the Squaw Creek is generally impacted the most. Road closures create difficulties in providing emergency services to areas cut off by flooding and limit the area's ability to evacuate.

A recent flood event impacting the District is flooding occurring in January of 2006. Heavy rains (estimated at over 10 inches in three day) were the primary cause of this flood event. This flooding of Squaw Creek (estimated as a 50-year event), caused erosion, inflow to sewer system, power failures, road closures (from mudslides), and impacts to local businesses cut off by the flooding. Unlike the 1997 flood, there was no damage to the District's facilities or infrastructure.

Landslides

Given the geology, climate, and terrain of the District, landslides can be a significant concern. Notable landslides of record include the landslides occurring along the Truckee River, Squaw Creek and Bear Creek rivers associated with the 1997 flood event. These include the Wayne Road, Sandy Way, and Navajo Court landslides discussed in detail in Section 4.2.15 of the main plan. See Figure 4.23 for a map depicting these landslide areas.

Severe Weather: Extreme Temperatures

Extreme weather events, often accompanied by extreme temperatures happen on an annual basis within the SVPSD boundaries. With altitudes ranging from 6,000 to 9,000 feet above msl, extreme cold/freezing temperatures can create significant problems. Of particular concern to the District is the vulnerability of the area to broken utilities and power failures during extreme weather events.

Severe Weather: Snow

Extreme winter weather events are a major concern to the District. Snow and winter weather conditions regularly result in utility outages and the closure of major transportation routes. According to the NTFPD planning team, major winter storms have routinely cut off transportation routes in the District for hours (as resent as March 2007) to over a week (back in the 1950s), stranding thousands and causing a major impact to services and supplies.

Soil Hazards: Erosion

Soil erosion on steep slopes and in areas affected by snow runoff and heavy rains is a continual problem within the Squaw Valley area. New construction in the valley can also leave the area more vulnerable to erosion problems, especially from wind and water, and siltation of local drainages. Mitigation measures implemented during construction activities should minimize the impact.

Wildfire

The community, (what is it called??) served by Squaw Valley Public Service District is listed on the National Fire Plan's "Communities at Risk" list as set forth in Section 4.3.2 of the main plan.

Over one hundred years of aggressive fire suppression under the national fire suppression policy has rendered wildland severely overgrown. All of the private land in the District's service area is in the wildland urban interface with residential development throughout.

As more people live in the area on a full-time basis and recreational uses and accompanying impacts increase, there will be more human-caused wildfire starts each year. Even more concerning, the increased number and value of homes developed within the WUI areas of the

District adds greatly to the complexity and cost of fighting these fires – the 'values at risk' continue to escalate.

Squaw Valley has only one means of ingress and egress – because of the configuration of the Valley, this will never change. Furthermore, a single road connects Squaw Valley to adjoining communities - California State Route 89 - this can never change because of the configuration of the Truckee River canyon. Evacuating the community or getting a large number of fire suppression resources to the Valley over a single road clogged with panicked residents trying to flee a wildland fire of significant size would be a daunting challenge indeed. Because of the steep terrain and dense forest immediately adjacent to the roadway, it is likely that these routes would have to be closed during a major event, stranding many people - including many visitors - away from their families and homes. So far there has been no loss of life attributed to the limited evacuation routes, but it is likely only a matter of time before people are cut off and trapped by a major fire event. The Valley has been isolated for days at a time by simultaneous avalanche and mudslide events on State Route 89.

Forest overgrowth due to the efficiency of modern firefighting techniques and to society's current election to limit forest thinning and harvesting is a serious problem. If wildfire does not impact the forest first, native insects will eventually kill millions of trees. Explosions in insect populations usually start during a drought, when the lack of water combined with too many trees per acre render the trees to weak to fight off the insect attacks. Without a change in management practices on public lands, there is little hope of avoiding significant tree mortality similar to that experienced in other mountain environments in Southern California and Colorado.

The most notable, recent wildfires to impact the District were the Angora and Washoe Fires in 2007, in which about 265 homes were lost. These are only two examples of wildfire events in the Lake Tahoe Basin and eastern Placer County.

M.4 Capability Assessment

Capabilities are the programs and policies currently in use to reduce hazard impacts or that could be used to implement hazard mitigation activities. This capabilities assessment is divided into five sections: regulatory mitigation capabilities, administrative and technical mitigation capabilities, fiscal mitigation capabilities, mitigation outreach and partnerships, and other mitigation efforts.

M.4.1 Regulatory Mitigation Capabilities

Table M.4 lists regulatory mitigation capabilities, including planning and land management tools, typically used by local jurisdictions to implement hazard mitigation activities and indicates those that are in place in the SVPSD.

Table M.4. SVPSD's Regulatory Mitigation Capabilities

Regulatory Tool	Yes/No	Comments
General plan	Yes	
Zoning ordinance	Yes	
Subdivision ordinance	No	
Site plan review requirements	Yes	
Growth management ordinance	No	
Floodplain ordinance	No	See Placer County
Other special purpose ordinance (stormwater, water conservation, wildfire)	Yes	Residential Sprinkler Ordinance
Building code	Yes	Version: Placer County Building Code (2001 California Building Code)
Fire Department ISO Rating	Yes	Rating 5 in Hydranted areas; 8 elsewhere
Erosion or sediment control program		
Storm water management program		
Capital improvements plan	Yes	
Economic development plan		
Local emergency operations plan	Yes	
Other special plans		
Flood Insurance Study or other engineering study for streams	No	See Placer County

Source: Squaw Valley Public Service District

As indicated above, the District has several programs, plans, policies, and codes and ordinances that guide hazard mitigation. Some of these are described in more detail below.

Olympic Valley Groundwater Management Plan, 2007

The Olympic Valley Groundwater Management Plan summarizes the plan process, existing groundwater and surfacewater conditions, and explores options for providing a sustainable water supply for current and future beneficial uses.

Codes and Ordinances

Avalanche

Placer County's avalanche management program defines Potential Avalanche Hazard Areas (PAHAs) where the minimum probability of avalanche occurrence is 1 in 100 per year or where avalanche damage has already occurred. According to the Placer County Avalanche Ordinance the following information must be disclosed in PAHAs:

- Identification that a structure is within a PAHA
- A warning that avalanche control work is conducted in the area and avalanche warnings will be provided as feasible
- Identification of sources that provide weather information and general information on avalanches

In addition, the County limits construction as necessary in PAHAs and will not issue a building permit for construction in a PAHA without certifying that the structure will be safe under the anticipated snow loads and conditions of an avalanche.

Squaw Valley Public Service District Codes and Permits

SVPSD has enacted several codes:

- Water Code
- Sanitary Sewer Code
- Fire Prevention Code
- In addition, the District has permit requirements specific to:
- Residential Construction
- Commercial Construction
- Multiple Dwelling Units
- Temporary Discharge into Sewer
- Temporary Fire Hydrant Connection

M.4.2 Administrative/Technical Mitigation Capabilities

The District is governed by a five-member Board of Directors elected to four-year terms. Registered voters within District boundaries are eligible to run for office. The Board of Directors approves District codes and policies.

Placer County provides the District with the resources of a planner/engineer with knowledge of land development and management practices. The District also utilizes the services of a building official and GIS staff from Placer County.

The District also participates in the County's teleminder system for people residing with District boundaries.

M.4.3 Fiscal Mitigation Capabilities

Table M.5 identifies financial tools or resources that the District could potentially use to help fund mitigation activities.

Table M.5. SVPSD's Fiscal Mitigation Capabilities

Financial Resources	Accessible/Eligible to Use (Yes/No)	Comments
Community Development Block Grants	Maybe	
Authority to levy taxes for specific purposes		
Fees for water, sewer, gas, or electric services		
Impact fees for new development		
Incur debt through general obligation bonds		
Incur debt through special tax bonds		
Incur debt through private activities		
Withhold spending in hazard prone areas		

Source: Squaw Valley Public Service District

M.4.4 Mitigation Outreach and Partnerships

Any?????????

M.4.5. Other Mitigation Efforts

The District is involved in a variety of mitigation activities including:

Squaw Creek Embankment Reinforcement Project: As a result of bank erosion from a 1986 flood event, the Squaw Valley sewer export line that runs adjacent to Squaw Creek was being threatened. In 1989, the bank was reinforced using Boulder Rip Rap. In 2000, the District completed a $400,000 plus project to armor a 400 foot reach of Squaw Creek where the 1997 flood threatened the Squaw Valley Interceptor sewer main, a pipeline that carries 100 percent of the valley's effluent.

South Fork of Squaw Creek Restoration Project

Reinforcement of two creek crossings on the South Fork of Squaw Creek

Defensible Space Program

M.5 Mitigation Strategy

M.5.1 Mitigation Goals and Objectives

The Squaw Valley Public Services District adopts the hazard mitigation goals and objectives developed by the HMPC and described in Chapter 5 Mitigation Strategy.

M.5.2 Mitigation Actions

The planning team for the SVPSD identified and prioritized the following mitigation actions based on the risk assessment. Background information and information on how each action will be implemented and administered, such as ideas for implementation, responsible office, partners, potential funding, estimated cost, and schedule are included.

1. East Booster Emergency Power

Hazards Addressed: Emergency Services/ Lifeline

Issue Background: The East Booster serves water to the Resort at Squaw Creek, a 400 room hotel with restaurants and convention center. It also serves the Homesites at Squaw Creek subdivision. The East Booster is located approximately 250 feet from the SVPSD Fire Station and Administrative Center (Center). The Center houses a 200 KW emergency generator. During construction of the center provisions were made in sizing the generator and the main electrical panel to include the addition of the East Booster at a future date. The project entails installing underground conduit from the Center to the East Booster along with electrical cabling and switching gear. Upon completion the East Booster will supply up to 200 gallons a minute of water supply to the Resort during power outages.

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

Responsible Office:

Cost Estimate: $80,000 to $100,000

Benefits (Losses Avoided): Loss of water supply to a major resort can result in mass relocation of people, which may be difficult or impossible during disaster response. If critical infrastructure were to remain intact this facility can house up to 1,000 or more people.

Potential Funding: Funding for the project may come from grants, low interest loan, or from District reserves.

Schedule: Preliminary design and permitting are currently being pursued

2. Water & Sewer System GPS Project

Hazards Addressed: Prevention/ Planning

Issue/Background: At elevation 6,200 feet Squaw Valley is subject to heavy winter snows, rainfall, and high winds. Critical infrastructure may be lost or damaged in the event of earthquake, landslide, land subsidence, flood, and extreme temperatures. Often locating water valves and/or sewer manholes entails moving large snow piles or working underwater. Emergency personnel may utilize maps, metal locaters, heavy equipment, and hand shovels

sometimes expending hours to locate these facilities under adverse conditions. Emergency response time can be greatly increased by having GPS coordinates and equipment.

The District embarked on such a project in 2004 having set coordinates of most sewer system manholes. Lacking funding, manpower, and adequate equipment the project has since stalemated.

This project would entail hiring a consultant or engineering firm to set GPS coordinates on all valves, water meters, sewer cleanouts, and manholes and to upgrade District GPS equipment to current standards.

Cost Estimate: $100,000 to $125,000

Benefits (Losses Avoided): Faster response time in maintaining lifeline services. May avoid loss of pressure in water system, which is critical to maintaining water quality. Increases planning capability and efficiency in design of infrastructure replacement and may be used to update mapping capability

Potential Funding: Funding for the project may come from grants, low interest loan, or from District reserves when available.

Schedule: 2008 to 2010 pending funding

3. SVPSD/ Mutual Water Company Inter-tie

Hazards Addressed: Prevention/ Planning/ Critical Infrastructure/ Lifeline

Issue/Background: There are two water companies in Squaw Valley, the Squaw Valley Public Service District and the Squaw Valley Mutual Water Company. The two entities have a mutual interest in providing emergency service during critical periods. Pipelines of the two entities are close together in several locations but do not connect. The California Department of Public Health recommends that water utilities develop emergency connections for backup emergency supply purposes.

This project would entail installing the underground pipes and pressure reducing valve to enter-tie the systems and an above ground booster station to supply water from the SVPSD to the Mutual Water Company, the higher pressure zone.

Cost Estimate: $150,000 to $200,000

Benefits (Losses Avoided): Pre Disaster Planning/ Avoids loss of lifeline services

Potential Funding: Funding for the project may come from grants, low interest loan, or from District and Mutual Water Company reserves if or when available.

Schedule: None

4. Easement Abatement/ Maintenance of Emergency Access

Hazards Addressed: Prevention Planning/ Fuels Management! Lifeline Services

Issue/Background: Approximately 30 percent of the Public Service District's water distribution and sewer collection systems are located in easements. A survey of residential lots in Squaw Valley found that 240 homes had one or more utility easements for water or sewer pipelines. In many cases homeowners have place obstacles on the easement that prevent access to critical infrastructure. Examples of these encroachments include fences, sheds, propane tanks, trees, brush, and landscaping. Additionally many easements are simply overgrown with Manzanita, trees, and brush. Almost all easements are located on side and rear property lines. Maintaining access to easements is necessary to maintain lifeline facilities or respond to system failures during a disaster. Removal of trees and brush from residential property lines will reduce fuels and increase defensible space. Reduction in fuels and increased defensible space will help to prevent wild land fires and prevent fire from spreading from one structure to the next. During the 1997 flood significant losses of infrastructure occurred in easement areas leaving residents without lifeline services for extended periods.

This project entails four components:

1) Public Education & Outreach
2) Ordinance Development & Implementation
3) Property Inspections & Enforcement Actions
4) Clearing & Grubbing coupled with Re-vegetation & Erosion Control

The District began work on item 1 in 2006 by posting articles in our semi-annual newsletter. In 2007 the District mailed informational letters to all residents with easements on their property.

Phases 3 & 4 of the project will require significant effort by the District in manpower allocation and contracted services.

Cost Estimate: $80,000 to $120,000

Benefits (Losses Avoided): Avoid structural losses from fire and loss of lifeline services

Potential Funding: Funding for the project may come from grants, low interest loan, or from District reserves when available.

Schedule: The next phase will be to evaluate laws and regulations and to review and potentially modify District Ordinances. Pending manpower requirements and project funding Property Inspections and Enforcement Actions will move forward in 2008. Easement clearing & restoration in 2008 or 2009 if funding can be secured

5. Water Tank Earthquake Retrofit Project

Hazards Addressed: Property Protection, Geologic Hazards

Issue/Background: The Squaw Valley Public Service District owns three water storage tanks, the East Tank, West Tank, and Zone III Tank. The Mutual Water Company owns the Steel Tank and the Redwood Tank.

The Public Service District's Zone III Tank is small (135,000 gallon) and does not pose an immediate threat to property due to location. The Districts' West Tank (1,132,000 gal) was constructed to withstand earthquake and wind shear. The Districts East Tank (500,000 gal) was constructed in 1980 and is designed to withstand snow loads but not lateral stress from a substantial earthquake. The East tank is located up gradient from several multi-million dollar homes. The Mutual Water Company Steel Tank (300,000 gal) is located adjacent to a wash that sustained mud flows in the 1997 flood that caused significant erosion of the tanks earth foundation pad. The Mutual Water Company Redwood Tank (97,000 gal) is very old and should probably be abandoned or replaced. Both Mutual Water Company Tanks are located up gradient from numerous single family homes that would be heavily impacted due to a tank failure.

The project would entail a seismic analysis by a qualified geotechnical firm of the Mutual water tanks and the Districts East Tank. Seismic retro-fit would be designed and employed of deemed necessary.

Cost Estimate: $50,000 to $250,000 depending on scope

Benefits (Losses Avoided): Property protection and loss of lifeline services due to earthquake or land subsidence which could result in catastrophic tank failure

Potential Funding: Funding for the project may come from grants, low interest loan, or from District and Mutual Water Company reserves if or when available.

Schedule: 2010 or beyond

6. Develop a Community-Wide Emergency Notification System Capable of Providing Information to Both Residents And Visitors by Utilizing Permanent, Roadside Changeable Message Boards and a Low-Power Radio Transmitter.

Issue/Background: Squaw Valley has a number of potential hazards that can impact both residents and visitors. Natural hazards include an avalanche hazard area affecting a significant number of homes and a mudslide that affects a smaller number. Both residences and businesses have been affected by flooding. The Granite Chief wilderness area to the west of the Valley poses the threat of wildland fire. During periods of heavy snow, the Valley can be essentially paralyzed until side roads are plowed. Human-caused hazards include frequent periods of very heavy traffic during winter months and occasional, but equally paralyzing traffic during the summer.

The population of Squaw Valley can increase more than ten-fold over the course of several hours on a Saturday morning. Presently, there is no way of effectively alerting residents and visitors of a hazard and the actions to be taken in response.

A community-wide emergency notification system could be implemented with relative ease and cost-efficiency in a compact area like Squaw Valley. Permanent, changeable message boards located along Squaw Valley Road at the west and east ends of the Valley could be used to alert residents and visitors of a hazard and refer them to the frequency for a low-power FM transmitter that would transmit more detailed information and recommended courses of action.

Other Alternatives:

1) No action
2) Emergency siren/air horn
3) Teleminder (already in place at the County level)

Other alternatives have been considered and/or tried at one time or another. The emergency siren/air horn was in place until the mid-1980s, but was ineffective at providing information – residents might know that there was an emergency, but not what to do; visitors were simply bewildered. The Teleminder system is in place, but notifies only residents in their homes and only the population for which a valid telephone number is available.

Responsible Office: Peter A. Bansen, Fire Chief

Priority (H, M, L): High

Cost Estimate: Approximately $70,000.

Cost Benefit: This is a highly effective way of reaching a large number of people at a very low 'per capita' cost. Once installed, the changeable message boards should be very low maintenance and will cost very little to program and operate. The low-power radio transmitter should be even less costly to install and operate. The two components are both necessary – without the radio transmitter the message boards can provide only minimal information; without the message boards, no one will know to turn their radio to the low power transmitter.

Potential Funding: Potentially funded by a grant or combination of grants.

Schedule: One year or less, depending on permitting and product availability.