



Annex S Tahoe City Public Utility District

S.1 Introduction

This Annex details the hazard mitigation planning elements specific to the Tahoe City Public Utility District (Tahoe City PUD), a participating jurisdiction to the Placer County Local Hazard Mitigation Plan (LHMP) Update. This Annex is not intended to be a standalone document, but appends to and supplements the information contained in the base plan document. As such, all sections of the base plan, including the planning process and other procedural requirements apply to and were met by the District. This Annex provides additional information specific to the Tahoe City PUD, with a focus on providing additional details on the risk assessment and mitigation strategy for this special district.

S.2 Planning Process

As described above, the District followed the planning process detailed in Section 3 of the base plan. In addition to providing representation on the Placer County Hazard Mitigation Planning Committee (HMPC), the District formulated their own internal planning team to support the broader planning process requirements. Internal planning participants, their positions, and how they participated in the planning process are shown in Table S-1. Additional details on plan participation and City representatives are included in Appendix A.

Table S-1 District Planning Team

Name	Position/Title	How Participated
Tony Laliotis	Director of Utilities	Attended meetings. Provided hazard identification table. Provided updated assets tables. Provided updated to vulnerability section. Provided capability tables. Provided mitigation actions.
Dan Lewis	Utilities Superintendent	Attended meetings

Coordination with other community planning efforts is paramount to the successful implementation of this plan. This Section provides information on how the District integrated the previously-approved 2010 Plan into existing planning mechanisms and programs. Specifically, the District incorporated into or implemented the 2010 LHMP through other plans and programs shown in Table S-2.

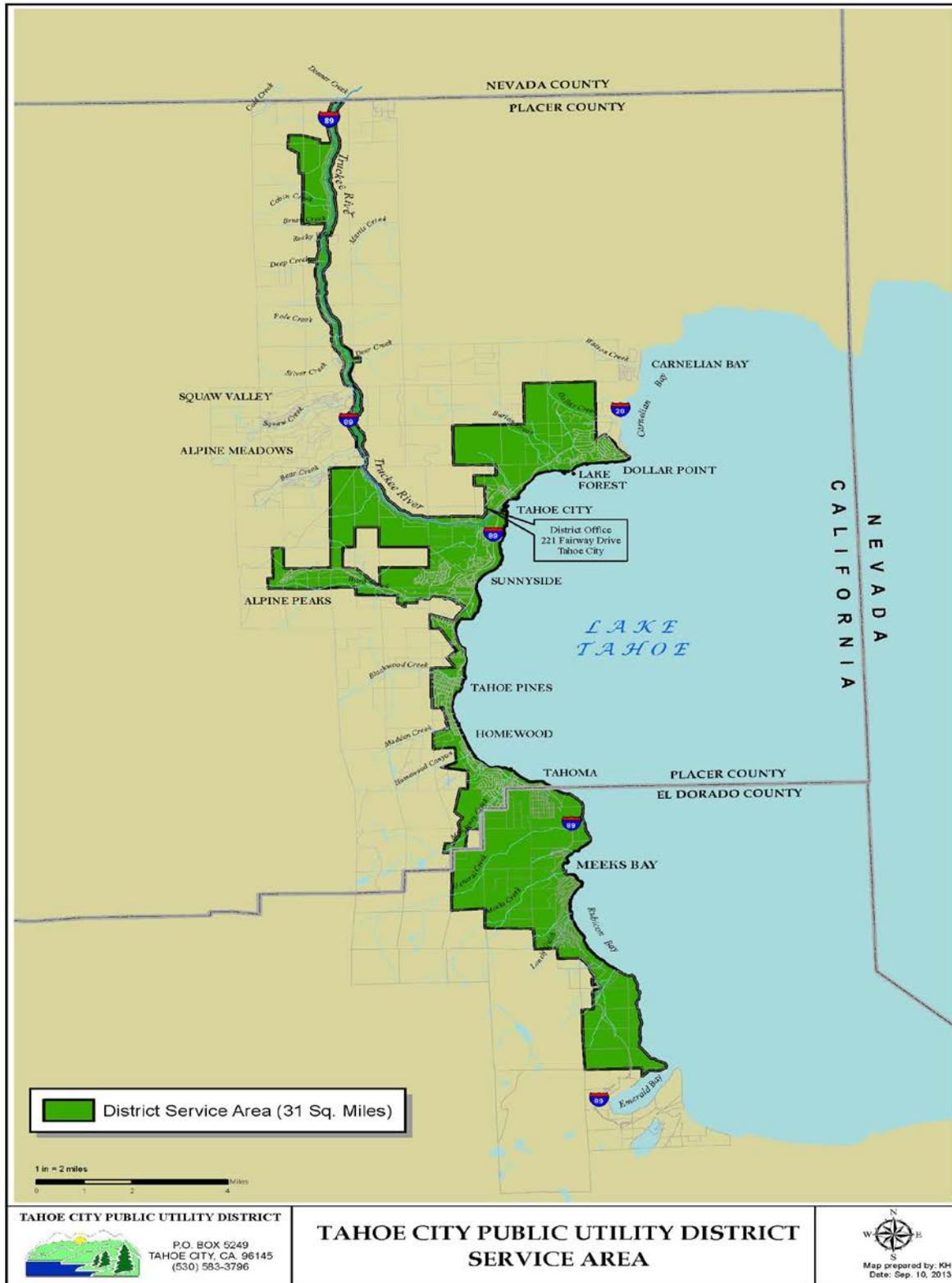
Table S-2 2010 LHMP Incorporation

Jurisdiction	Planning Mechanism 2010 LHMP Was Incorporated/Implemented In. Details?
TCPUD	The LHMP was incorporated into the Capital Improvements Plan for the District.

S.3 District Profile

The District service area is illustrated in Figure S-1.

Figure S-1 Tahoe City PUD Service Area



Source: Tahoe City PUD

S.3.1. District Information and Background

The Tahoe City Public Utility District was founded in 1938 to provide some of the governmental needs of the residents of Tahoe City. It is the oldest local government in the Tahoe Basin and was formed initially to provide public water service to the local community. Established under the State of California's Public Utility District Act, the founders of the District chose a form of government that could provide multiple types of services. The boundaries of the District extend from Emerald Bay to Dollar Hill, and along the Truckee River to the Nevada County line. The service area is very large, encompassing almost 22 square miles.

The TCPUD's provides sewer collection, parks facilities, and recreation services for the entire area of the District. Water service is provided in four separate systems and serves approximately half of the homes and businesses in the District. Water service is provided to approximately 4,000 customer; sewer services to 7,800 customers; and parks and recreation customers total over 500,000.

The Tahoe City area 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.

S.4 Hazard Identification and Summary

The District'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 S-3).

Table S-3 Tahoe City Public Utility District Hazard Identification Table

Hazard	Geographic Extent	Probability of Future Occurrences	Magnitude/Severity	Significance
Agricultural Hazards	Limited	Unlikely	Negligible	Low
Avalanche	Limited	Likely	Critical	High
Dam Failure	Limited	Unlikely	Critical	Medium
Drought and Water Shortage	Significant	Likely	Critical	High
Earthquake	Significant	Occasional	Critical	High
Flood: 100/500 year	Significant	Occasional	Limited	Medium/High
Flood: Localized Stormwater Flooding	Likely	Unlikely	Limited	Low
Landslides and Debris Flows	Limited	Likely	Negligible	Medium/High
Levee Failure	Limited	Unlikely	Limited	Low
Seiche (Lake Tsunami)	Significant	Unlikely	Critical	Low
Severe Weather: Extreme Heat	Limited	Likely	Limited	Low
Severe Weather: Freeze and Snow	Extensive	Unlikely	Critical	Medium
Severe Weather: Fog and Freezing Fog	Extensive	Highly Likely	Limited	Low
Severe Weather: Heavy Rains and Storms (Thunderstorms/Hail, Lightning/Wind/Tornadoes)	Significant	Highly Likely	Critical	Medium
Soil Bank Erosion	Limited	Unlikely	Limited	Low
Subsidence	Limited	Unlikely	Limited	Low
Wildfire	Significant	Highly Likely	Critical	High
Hazardous Materials Transport	Limited	Unlikely	Limited	Low
Geographic Extent Limited: Less than 10% of planning area Significant: 10-50% of planning area Extensive: 50-100% of planning area		Magnitude/Severity Catastrophic—More than 50 percent of property severely damaged; shutdown of facilities for more than 30 days; and/or multiple deaths Critical—25-50 percent of property severely damaged; shutdown of facilities for at least two weeks; and/or injuries and/or illnesses result in permanent disability Limited—10-25 percent of property severely damaged; shutdown of facilities for more than a week; and/or injuries/illnesses treatable do not result in permanent disability Negligible—Less than 10 percent of property severely damaged, shutdown of facilities and services for less than 24 hours; and/or injuries/illnesses treatable with first aid		
Probability of Future Occurrences Highly Likely: Near 100% chance of occurrence in next year, or happens every year. Likely: Between 10 and 100% chance of occurrence in next year, or has a recurrence interval of 10 years or less. Occasional: Between 1 and 10% chance of occurrence in the next year, or has a recurrence interval of 11 to 100 years. Unlikely: Less than 1% chance of occurrence in next 100 years, or has a recurrence interval of greater than every 100 years.		Significance Low: minimal potential impact Medium: moderate potential impact High: widespread potential impact		

S.5 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. This vulnerability assessment analyzes the population, property, and other assets at risk to hazards ranked of medium or high significance that may vary from other parts of the planning area. For more information about how hazards affect the County as a whole, see Chapter 4 Risk Assessment in the main plan.

S.5.1. Assets at Risk

This section considers the District’s assets at risk, specifically critical facilities and infrastructure, natural resources, and growth and development trends. Table S-4 lists particular critical facilities and other community assets identified by the District’s planning team as important to protect in the event of a disaster. The District’s physical assets consist of the flood control and local drainage structures and real property, the operations center, and equipment.

Table S-4 Tahoe City PUD’s Critical Facilities, Infrastructure, and Other District Assets

Name of Asset	Type	Replacement Value	Hazard Specific Info
Fairway Community Center	Community Center	\$1,008,230	
Highland Community Center	Community Center	\$665,130	
Tahoe Community Center	Community Center	\$892,874	
Rideout Community Center	Community Center	Lease	
TCPUD Administration Building	Administration Building	\$2,234,370	
Parks & Rec. Corp. Yard	Corp. Yard	\$1,450,885	
Blackwood	Sewer Pump Station	\$1,500,000	Sewage Release
Coast Guard	Sewer Pump Station	\$1,500,000	Sewage Release
Harbor Master	Sewer Pump Station	\$1,500,000	Sewage Release
Madden	Sewer Pump Station	\$1,500,000	Sewage Release
McKinney	Sewer Pump Station	\$1,100,000	Sewage Release
Meeks Bay	Sewer Pump Station	\$1,100,000	Sewage Release
North Lane	Sewer Pump Station	\$1,100,000	Sewage Release
Rubicon	Sewer Pump Station	\$1,500,000	Sewage Release
Sunnyside	Sewer Pump Station	\$2,000,000	Sewage Release
Bay Vista	Sewer Pump Station	\$800,000	Sewage Release
Dollar 1	Sewer Pump Station	\$800,000	Sewage Release
Dollar 2	Sewer Pump Station	\$800,000	Sewage Release
Glenridge	Sewer Pump Station	\$800,000	Sewage Release
Highway 89	Sewer Pump Station	\$800,000	Sewage Release

Name of Asset	Type	Replacement Value	Hazard Specific Info
Lonely Gulch	Sewer Pump Station	\$800,000	Sewage Release
Marina	Sewer Pump Station	\$800,000	Sewage Release
Park Terrace	Sewer Pump Station	\$800,000	Sewage Release
Rubicon Bch	Sewer Pump Station	\$800,000	Sewage Release
Tahoma	Sewer Pump Station	\$800,000	Sewage Release
Waters Edge	Sewer Pump Station	\$800,000	Sewage Release
Commons Beach	Sewer Pump Station	\$800,000	Sewage Release
Sewer Gravity Line	4-inch Gravity Sewer Line	\$4,449,375	Sewage Release
Sewer Gravity Line	6-inch Gravity Sewer Line	\$24,310,589	Sewage Release
Sewer Gravity Line	6-inch Gravity Sewer Line	\$59,310,067	Sewage Release
Sewer Gravity Line	6-inch Gravity Sewer Line	\$4,864,635	Sewage Release
Sewer Gravity Line	6-inch Gravity Sewer Line	\$936,457	Sewage Release
Sewer Gravity Line	6-inch Gravity Sewer Line	\$401,712	Sewage Release
Sewer Gravity Line	8-inch Gravity Sewer Line	\$2,884,172	Sewage Release
Sewer Gravity Line	8-inch Gravity Sewer Line	\$9,933,772	Sewage Release
Sewer Gravity Line	8-inch Gravity Sewer Line	\$1,160,531	Sewage Release
Sewer Gravity Line	8-inch Gravity Sewer Line	\$631,840	Sewage Release
Sewer Gravity Line	10-inch Gravity Sewer Line	\$1,582,395	Sewage Release
Sewer Gravity Line	10-inch Gravity Sewer Line	\$2,467,070	Sewage Release
Sewer Gravity Line	10-inch Gravity Sewer Line	\$1,924,683	Sewage Release
Sewer Gravity Line	10-inch Gravity Sewer Line	\$350,152	Sewage Release
Sewer Gravity Line	10-inch Gravity Sewer Line	\$122,559	Sewage Release
Sewer Gravity Line	12-inch Gravity Sewer Line	\$676,368	Sewage Release
Sewer Gravity Line	12-inch Gravity Sewer Line	\$1,068,389	Sewage Release
Sewer Gravity Line	12-inch Gravity Sewer Line	\$865,517	Sewage Release
Sewer Gravity Line	15-inch Gravity Sewer Line	\$1,598,464	Sewage Release
Sewer Gravity Line	15-inch Gravity Sewer Line	\$1,045,749	Sewage Release
Sewer Gravity Line	15-inch Gravity Sewer Line	\$694,154	Sewage Release
Sewer Gravity Line	18-inch Gravity Sewer Line	\$449,963	Sewage Release
Sewer Gravity Line	18-inch Gravity Sewer Line	\$2,049,435	Sewage Release
Sewer Gravity Line	18-inch Gravity Sewer Line	\$236,863	Sewage Release
Sewer Gravity Line	21-inch Gravity Sewer Line	\$2,361,980	Sewage Release
Sewer Gravity Line	24-inch Gravity Sewer Line	\$1,643,125	Sewage Release
Sewer Gravity Line	24-inch Gravity Sewer Line	\$108,082	Sewage Release
Sewer Gravity Line	24-inch Gravity Sewer Line	\$191,108	Sewage Release
Sewer Gravity Line	27-inch Gravity Sewer Line	\$42,600	Sewage Release

Name of Asset	Type	Replacement Value	Hazard Specific Info
Sewer Gravity Line	27-inch Gravity Sewer Line	\$825,612	Sewage Release
Sewer Gravity Line	27-inch Gravity Sewer Line	\$335,188	Sewage Release
Sewer Gravity Line	30-inch Gravity Sewer Line	\$179,035	Sewage Release
Sewer Gravity Line	30-inch Gravity Sewer Line	\$3,355,172	Sewage Release
Sewer Gravity Line	30-inch Gravity Sewer Line	\$115,465	Sewage Release
Sewer Gravity Line	33-inch Gravity Sewer Line	\$577,395	Sewage Release
Sewer Gravity Line	33-inch Gravity Sewer Line	\$83,614	Sewage Release
Sewer Gravity Line	33-inch Gravity Sewer Line	\$1,963,259	Sewage Release
Sewer Gravity Line	36-inch Gravity Sewer Line	\$107,060	Sewage Release
Sewer Gravity Line	36-inch Gravity Sewer Line	\$1,747,666	Sewage Release
Sewer Gravity Line	36-inch Gravity Sewer Line	\$2,851,775	Sewage Release
Sewer Gravity Line	36-inch Gravity Sewer Line	\$332,640	Sewage Release
Sewer Gravity Line	36-inch Gravity Sewer Line	\$130,438	Sewage Release
Sewer Gravity Line	48-inch Gravity Sewer Line	\$78,466	Sewage Release
Sewer Force Main	4-inch Force Mains	\$749,400	Sewage Release
Sewer Force Main	6-inch Force Mains	\$857,925	Sewage Release
Sewer Force Main	8-inch Force Mains	\$1,484,297	Sewage Release
Sewer Force Main	10-inch Force Mains	\$479,236	Sewage Release
Sewer Force Main	12-inch Force Mains	\$3,970,050	Sewage Release
Sewer Force Main	18-inch Force Mains	\$531,244	Sewage Release
Sewer Force Main	20-inch Force Mains	\$72,281	Sewage Release
Sewer Laterals	4-inch Service Laterals	\$15,159,900	Sewage Release
Sewer Manholes	Sewer Manhole 5-Feet	\$4,230,000	Sewage Release
Sewer Manholes	Sewer Manhole 10-Feet	\$13,143,000	Sewage Release
Sewer Manholes	Sewer Manhole 15-Feet	\$3,757,500	Sewage Release
Sewer Manholes	Sewer Manhole 20-Feet	\$1,335,000	Sewage Release
Sewer Manholes	Sewer Manhole 25-Feet	\$259,000	Sewage Release
Dollar Point	Lake Intake	\$750,000	Drinking Water Outage, Sodium Hypochlorite Release
Grove Street	Lake Intake	\$1,000,000	Drinking Water Outage, Sodium Hypochlorite Release
Cedar Point	Lake Intake	\$750,000	Drinking Water Outage, Sodium Hypochlorite Release
McKinney	Lake Intake	\$750,000	Drinking Water Outage, Sodium Hypochlorite Release
Chambers Ldg	Lake Intake	\$750,000	Drinking Water Outage, Sodium Hypochlorite Release
Highlands I-III	Booster Pump Station	\$625,000	Drinking Water Outage, Fire Flow Loss

Name of Asset	Type	Replacement Value	Hazard Specific Info
Rocky Ridge I-II	Booster Pump Station	\$625,000	Drinking Water Outage, Fire Flow Loss
Rubicon I-II	Booster Pump Station	\$625,000	Drinking Water Outage, Fire Flow Loss
Tavern I-II	Booster Pump Station	\$625,000	Drinking Water Outage, Fire Flow Loss
Granlibakken	Booster Pump Station	\$625,000	Drinking Water Outage, Fire Flow Loss
Upper Highlands	Booster Pump Station	\$625,000	Drinking Water Outage, Fire Flow Loss
Alpine Peaks	Water Tank	\$700,000	Drinking Water Outage, Fire Flow Loss
Bunker	Water Tank	\$700,000	Drinking Water Outage, Fire Flow Loss
Four Seasons	Water Tank	\$700,000	Drinking Water Outage, Fire Flow Loss
Highlands	Water Tank	\$700,000	Drinking Water Outage, Fire Flow Loss
Upper Highlands	Water Tank	\$1,000,000	Drinking Water Outage, Fire Flow Loss
Rocky Ridge	Water Tank	\$700,000	Drinking Water Outage, Fire Flow Loss
Rubicon II	Water Tank	\$700,000	Drinking Water Outage, Fire Flow Loss
Rubicon III	Water Tank	\$700,000	Drinking Water Outage, Fire Flow Loss
Tahoe Tavern	Water Tank	\$700,000	Drinking Water Outage, Fire Flow Loss
Tahoe Hills	Water Tank	\$700,000	Drinking Water Outage, Fire Flow Loss
Quail	Water Tank	\$700,000	Drinking Water Outage, Fire Flow Loss
Bunker	Water Well	\$412,550	Drinking Water Outage, Fire Flow Loss, Chlorine Release
Tahoe City I	Water Well	\$666,000	Drinking Water Outage, Fire Flow Loss, Chlorine Release
Tahoe City II	Water Well	\$777,000	Drinking Water Outage, Fire Flow Loss, Chlorine Release
Tahoe City III	Water Well	\$777,000	Drinking Water Outage, Fire Flow Loss, Chlorine Release
Highlands A	Water Well	\$1,295,000	Drinking Water Outage, Fire Flow Loss, Chlorine Release
Highlands B	Water Well	\$1,295,000	Drinking Water Outage, Fire Flow Loss, Chlorine Release
Crystal Way	Water Well	\$1,110,000	Drinking Water Outage, Fire Flow Loss, Chlorine Release
Rubicon 1	Water Well	\$610,500	Drinking Water Outage, Fire Flow Loss, Chlorine Release
Rubicon 2	Water Well	\$592,000	Drinking Water Outage, Fire Flow Loss, Chlorine Release
Rubicon 3	Water Well	\$555,000	Drinking Water Outage, Fire Flow Loss, Chlorine Release
Tahoe Tavern	Water Well	\$832,500	Drinking Water Outage, Fire Flow Loss, Chlorine Release
Alpine Peaks	4-Inch Water Dist Line	\$425,000	Drinking Water Outage, Fire Flow Loss
Alpine Peaks	6-Inch Water Dist Line	\$1,725,000	Drinking Water Outage, Fire Flow Loss

Name of Asset	Type	Replacement Value	Hazard Specific Info
Alpine Peaks	8-Inch Water Dist Line	\$1,382,813	Drinking Water Outage, Fire Flow Loss
Alpine Peaks	10-Inch Water Dist Line	\$1,068,281	Drinking Water Outage, Fire Flow Loss
Alpine Peaks	12-Inch Water Dist Line	\$472,500	Drinking Water Outage, Fire Flow Loss
Comstock	4-Inch Water Dist Line	\$900,000	Drinking Water Outage, Fire Flow Loss
Comstock	6-Inch Water Dist Line	\$2,125,000	Drinking Water Outage, Fire Flow Loss
Dollar Point	2.5-Inch Water Dist Line	\$80,000	Drinking Water Outage, Fire Flow Loss
Dollar Point	4-Inch Water Dist Line	\$997,500	Drinking Water Outage, Fire Flow Loss
Dollar Point	6-Inch Water Dist Line	\$5,900,000	Drinking Water Outage, Fire Flow Loss
Dollar Point	8-Inch Water Dist Line	\$996,094	Drinking Water Outage, Fire Flow Loss
Highlands	4-Inch Water Dist Line	\$205,500	Drinking Water Outage, Fire Flow Loss
Highlands	6-Inch Water Dist Line	\$3,905,000	Drinking Water Outage, Fire Flow Loss
Highlands	8-Inch Water Dist Line	\$31,875	Drinking Water Outage, Fire Flow Loss
Highlands	12-Inch Water Dist Line	\$2,346,750	Drinking Water Outage, Fire Flow Loss
Chambers-McK	2.5-Inch Water Dist Line	\$880,000	Drinking Water Outage, Fire Flow Loss
Chambers-McK	4-Inch Water Dist Line	\$4,057,500	Drinking Water Outage, Fire Flow Loss
Chambers-McK	6-Inch Water Dist Line	\$4,930,000	Drinking Water Outage, Fire Flow Loss
Chambers-McK	10-Inch Water Dist Line	\$201,234	Drinking Water Outage, Fire Flow Loss
Chambers-McK	12-Inch Water Dist Line	\$551,250	Drinking Water Outage, Fire Flow Loss
Dollar Condos 1&2	2.5-inch Water Dist Line	\$87,500	Drinking Water Outage, Fire Flow Loss
Dollar Condos 1&2	4-inch Water Dist Line	\$62,500	Drinking Water Outage, Fire Flow Loss
Dollar Condos 1&2	6-inch Water Dist Line	\$87,500	Drinking Water Outage, Fire Flow Loss
Dollar Condos 1&2	12-inch Water Dist Line	\$223,125	Drinking Water Outage, Fire Flow Loss
Granlibakken	4-inch Water Dist Line	\$25,000	Drinking Water Outage, Fire Flow Loss
Granlibakken	6-Inch Water Dist Line	\$125,000	Drinking Water Outage, Fire Flow Loss
Granlibakken	8-Inch Water Dist Line	\$766,406	Drinking Water Outage, Fire Flow Loss
Granlibakken	10-Inch Water Dist Line	\$549,047	Drinking Water Outage, Fire Flow Loss
Granlibakken	12-Inch Water Dist Line	\$454,125	Drinking Water Outage, Fire Flow Loss
Highway 28	12-Inch Water Dist Line	\$3,252,375	Drinking Water Outage, Fire Flow Loss
Highway 89	6-Inch Water Dist Line	\$337,500	Drinking Water Outage, Fire Flow Loss
Highway 89	10-Inch Water Dist Line	\$491,906	Drinking Water Outage, Fire Flow Loss
Highway 89	12-Inch Water Dist Line	\$1,123,500	Drinking Water Outage, Fire Flow Loss
Meeks Bay Vista	2.5-inch Water Dist Line	\$31,250	Drinking Water Outage, Fire Flow Loss
Meeks Bay Vista	6-Inch Water Dist Line	\$1,606,250	Drinking Water Outage, Fire Flow Loss
Panorama	4-inch Water Dist Line	\$260,000	Drinking Water Outage, Fire Flow Loss
Panorama	6-inch Water Dist Line	\$1,947,500	Drinking Water Outage, Fire Flow Loss
Panorama	8-inch Water Dist Line	\$4,688	Drinking Water Outage, Fire Flow Loss

Name of Asset	Type	Replacement Value	Hazard Specific Info
Panorama	12-Inch Water Dist Line	\$826,875	Drinking Water Outage, Fire Flow Loss
Rubicon	2.5-inch Water Dist Line	\$785,000	Drinking Water Outage, Fire Flow Loss
Rubicon	4-inch Water Dist Line	\$362,500	Drinking Water Outage, Fire Flow Loss
Rubicon	6-inch Water Dist Line	\$9,353,750	Drinking Water Outage, Fire Flow Loss
Rubicon	8-inch Water Dist Line	\$278,906	Drinking Water Outage, Fire Flow Loss
Star Harbor & Pomi	2.5-inch Water Dist Line	\$287,500	Drinking Water Outage, Fire Flow Loss
Star Harbor & Pomi	6-Inch Water Dist Line	\$100,000	Drinking Water Outage, Fire Flow Loss
Star Harbor & Pomi	8-Inch Water Dist Line	\$51,563	Drinking Water Outage, Fire Flow Loss
Star Harbor & Pomi	10-Inch Water Dist Line	\$211,172	Drinking Water Outage, Fire Flow Loss
Lake Forest Glen	2.5-inch Water Dist Line	\$500,000	Drinking Water Outage, Fire Flow Loss
Lake Forest Glen	4-inch Water Dist Line	\$112,500	Drinking Water Outage, Fire Flow Loss
Lake Forest Glen	6-inch Water Dist Line	\$575,000	Drinking Water Outage, Fire Flow Loss
Lake Forest Glen	8-inch Water Dist Line	\$539,063	Drinking Water Outage, Fire Flow Loss
N. Shore Condos	8-Inch Water Dist Line	\$445,313	Drinking Water Outage, Fire Flow Loss
N. Shore Condos	10-Inch Water Dist Line	\$397,500	Drinking Water Outage, Fire Flow Loss
N. Shore Condos	12-Inch Water Dist Line	\$157,500	Drinking Water Outage, Fire Flow Loss
Rocky Ridge Condos	2.5-inch Water Dist Line	\$470,000	Drinking Water Outage, Fire Flow Loss
Rocky Ridge Condos	6-inch Water Dist Line	\$147,500	Drinking Water Outage, Fire Flow Loss
Rocky Ridge Condos	8-inch Water Dist Line	\$414,844	Drinking Water Outage, Fire Flow Loss
Rocky Ridge Condos	10-Inch Water Dist Line	\$1,055,859	Drinking Water Outage, Fire Flow Loss
St. Francis Condos	2.5-inch Water Dist Line	\$167,500	Drinking Water Outage, Fire Flow Loss
St. Francis Condos	4-inch Water Dist Line	\$112,500	Drinking Water Outage, Fire Flow Loss
St. Francis Condos	8-inch Water Dist Line	\$539,063	Drinking Water Outage, Fire Flow Loss
St. Francis Condos	12-Inch Water Dist Line	\$341,250	Drinking Water Outage, Fire Flow Loss
Tahoe City	2.5-inch Water Dist Line	\$395,000	Drinking Water Outage, Fire Flow Loss
Tahoe City	4-inch Water Dist Line	\$350,000	Drinking Water Outage, Fire Flow Loss
Tahoe City	6-inch Water Dist Line	\$3,372,500	Drinking Water Outage, Fire Flow Loss
Tahoe City	8-inch Water Dist Line	\$977,344	Drinking Water Outage, Fire Flow Loss
Tahoe City	10-Inch Water Dist Line	\$186,328	Drinking Water Outage, Fire Flow Loss
Tahoe City	12-Inch Water Dist Line	\$1,034,250	Drinking Water Outage, Fire Flow Loss
Tahoe Hills	2.5-inch Water Dist Line	\$275,000	Drinking Water Outage, Fire Flow Loss
Tahoe Hills	4-inch Water Dist Line	\$674,000	Drinking Water Outage, Fire Flow Loss
Tahoe Hills	6-inch Water Dist Line	\$5,430,000	Drinking Water Outage, Fire Flow Loss
Tahoe Tavern Heights	2.5-inch Water Dist Line	\$900,000	Drinking Water Outage, Fire Flow Loss
Tahoe Tavern Heights	4-inch Water Dist Line	\$545,000	Drinking Water Outage, Fire Flow Loss
Tahoe Tavern Heights	6-inch Water Dist Line	\$2,887,500	Drinking Water Outage, Fire Flow Loss

Name of Asset	Type	Replacement Value	Hazard Specific Info
Tahoe Tavern Heights	8-inch Water Dist Line	\$1,858,594	Drinking Water Outage, Fire Flow Loss
Tavern Shores Condo	2.5-inch Water Dist Line	\$200,000	Drinking Water Outage, Fire Flow Loss
Tavern Shores Condo	4-inch Water Dist Line	\$30,000	Drinking Water Outage, Fire Flow Loss
Tavern Shores Condo	6-inch Water Dist Line	\$412,500	Drinking Water Outage, Fire Flow Loss
Villa's Condos	2.5-inch Water Dist Line	\$75,000	Drinking Water Outage, Fire Flow Loss
Villa's Condos	6-inch Water Dist Line	\$95,000	Drinking Water Outage, Fire Flow Loss
Villa's Condos	8-inch Water Dist Line	\$747,656	Drinking Water Outage, Fire Flow Loss
Tahoe Tavern Condos	2.5-inch Water Dist Line	\$375,000	Drinking Water Outage, Fire Flow Loss
Tahoe Tavern Condos	4-inch Water Dist Line	\$50,000	Drinking Water Outage, Fire Flow Loss
Tahoe Tavern Condos	6-inch Water Dist Line	\$650,000	Drinking Water Outage, Fire Flow Loss
Tahoe Tavern Condos	8-inch Water Dist Line	\$421,875	Drinking Water Outage, Fire Flow Loss
Tahoe Tavern Condos	10-Inch Water Dist Line	\$37,266	Drinking Water Outage, Fire Flow Loss
Tamarack MW	6-inch Water Dist Line	\$147,500	Drinking Water Outage, Fire Flow Loss
Tamarack MW	8-inch Water Dist Line	\$1,155,469	Drinking Water Outage, Fire Flow Loss
T-T Forest Track	2.5-inch Water Dist Line	\$200,000	Drinking Water Outage, Fire Flow Loss
T T Forest Track	6-inch Water Dist Line	\$225,000	Drinking Water Outage, Fire Flow Loss
T T Forest Track	8-inch Water Dist Line	\$585,938	Drinking Water Outage, Fire Flow Loss

Source: Tahoe City PUD

Growth and Development Trends

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. This spike in population creates a unique vulnerability to the area, especially in the event highways become impassable due to flooding, landslides, avalanches, heavy snow, or gridlocks due to high volume and extreme weather conditions. This tourist industry continues to grow. 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.

Development since 2010 Plan

Other specific population growth and development trends within TCPUD boundaries are covered in Section 4.3.1 of the main plan.

S.5.2. Estimating Potential Losses

This section provides the vulnerability assessment, including any quantifiable loss estimates, for those hazards identified above in Table S-3 as high or medium significance hazards. Impacts of past events and vulnerability of the District to specific hazards are further discussed below (see Section 4.1 Hazard Identification for more detailed information about these hazards and their impacts on the Placer County Planning Area). Methodologies for calculating loss estimates are the same as those described in Section

4.3 of the base plan. In general, the most vulnerable structures are those located within the floodplain, in the wildland urban interface, unreinforced masonry buildings, and buildings built prior to the introduction of modern building codes.

An estimate of the vulnerability of the District to each identified hazard, in addition to the estimate of risk of future occurrence, is provided in each of the hazard-specific sections that follow. Vulnerability is measured in general, qualitative terms and is a summary of the potential impact based on past occurrences, spatial extent, and damage and casualty potential. It is categorized into the following classifications:

- **Extremely Low**—The occurrence and potential cost of damage to life and property is very minimal to nonexistent.
- **Low**—Minimal potential impact. The occurrence and potential cost of damage to life and property is minimal.
- **Medium**—Moderate potential impact. This ranking carries a moderate threat level to the general population and/or built environment. Here the potential damage is more isolated and less costly than a more widespread disaster.
- **High**—Widespread potential impact. This ranking carries a high threat to the general population and/or built environment. The potential for damage is widespread. Hazards in this category may have occurred in the past.
- **Extremely High**—Very widespread with catastrophic impact.

Avalanche

Likelihood of Future Occurrence—Likely

Vulnerability—High

Historically, avalanches occur within the eastern portion of the county, between the months of December and March following snowstorms. According to the 2004 Placer County EOP, areas where the potential for avalanches to occur are zoned as moderate or high avalanche hazard zones and have been identified using maps available at the Placer County Planning Department. Areas of particular concern within the District include: West shore of Lake Tahoe (Homewood & Ward Creek Tract) and the Truckee River Corridor/Highway 89 Corridor.

There are no known fatalities or significant damage to the built environment due to avalanches occurring within District boundaries. Damages from historic avalanches have primarily involved impacts to roads and damages to trails and other natural areas.

Dam Failure

Likelihood of Future Occurrence—Unlikely

Vulnerability—Medium

A dam failure can range from a small uncontrolled release to a catastrophic failure, caused by prolonged rainfall and flooding. The primary danger associated with dam failure is the high velocity flooding of those properties downstream of the dam. Dam failure flooding varies by area depending on which dam fails and the nature and extent of the dam failure and associated flooding.

Vulnerability to dam failures is generally confined to the areas subject to inundation downstream of the facility. Based on analysis provided in the Placer County General Plan Background Report, only four dams within Placer County have the potential to affect more than 100 persons. Of these four, a failure of the Lake Tahoe Dam (outlet on the Truckee River) could potentially impact areas within the NTFPD. Failure of this dam would be contained within the Truckee River floodway to Nevada County and could impact in excess of 1,000 people

Drought and Water Shortage

Likelihood of Future Occurrence–Likely

Vulnerability–High

The impact of a drought on the District is primarily one of water supply. All water provided by the TCPUD comes from deep groundwater wells located in various locations in the Lake Tahoe Basin. Continued drought can severely compromise the water supply within the district. Most recently, after multiple years of below-average rainfall and very low snow-melt run off, Governor Brown in signed emergency regulations into place in 2015 requiring all of California to reduce water use by 25%. TCPUD has adopted Ordinance 284, Water Conservation and Drought Response Standards since the last LHMP and has been actively working with customers to meet the State mandates.

Earthquake

Likelihood of Future Occurrence–Occasional

Vulnerability–High

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 TCPUD service area. Extreme eastern Placer County borders the Basin and Range province that entails most of Nevada and western Utah. This area is riddled with active faults that are responsible for and form the boundary between each basin or valley and the neighboring mountain range.

In 2003/2004, volcanic magma migrating about 20 miles below the surface of the Sierra Nevada Mountains caused a swarm of about 1,600 small earthquakes. Since February of 2008, more than 600 earthquakes of magnitude greater than 1.0 have been recorded in nearby Reno, Nevada, with the most powerful one recorded at 4.7 magnitude. It is unknown to what extent these earthquakes were felt by residents in the Tahoe area, but clearly the District lies within a seismically active area.

Flood: 100-/500-year

Likelihood of Future Occurrence–Occasional

Vulnerability–Medium

Flooding due to heavy rains and snow runoff has been a historical problem in the Tahoe area. 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. Road closures create difficulties in providing emergency services to areas cut off by flooding and limit the area's ability to evacuate.

Recent, notable flood events impacting the District include the following:

- In late 1996 to early 1997, flooding of the Lower Truckee River occurred along Highway 89. Known damages included those to storm drainage coverts. Bike trails also were washed out along the highway. A federal disaster declaration was declared for these floods.
- Also occurring in 2006 was flooding of the Blackwood Sewer Station. Flooding caused extensive erosion of the river banks. To prevent further damage, sand bags were used and a large snow barrier was built to protect the station and the banks of the river. A federal disaster declaration was also declared for these floods. Currently, the District is working on retrofitting the building and repairing the river banks. Flood mitigation measures have been completed to protect this station in the event of flooding.

Landslides and Debris Flows

Likelihood of Future Occurrence–Likely
Vulnerability–Medium

Given the geology, climate, and terrain of the District, landslides can be a significant concern. During the storms and flooding in December of 2006, land sliding occurred in the Truckee River corridor along Highway 89 and associated bike trail. Damages for repairs were estimated at \$355,000.

Severe Weather: Freeze and Snow

Likelihood of Future Occurrence–Highly Likely
Vulnerability–Medium

Extreme weather events, often accompanied by extreme temperatures happen on an annual basis within the TCPUD boundaries. With altitudes ranging from 6,000 to 10,000 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. Also occurring during the storms of December 2006 was a power outage in the Tahoe Basin affecting both the West and North Shore of Lake Tahoe for 3-5 days. The District was forced to run the generators throughout the District to pump down the sewer stations to prevent spill and water stations to keep the storage tanks full of water. Area schools were closed during the outage. Other water districts were running out of water (meaning negative fire suppression in some areas).

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 TCPUD planning team, major winter storms have routinely cut off transportation routes in the district stranding thousands and causing a major impact to services and supplies.

Severe Weather: Heavy Rains and Storms (Thunderstorms/Hail, Lightning/Wind/Tornadoes)

Likelihood of Future Occurrence–Highly likely

Vulnerability–Medium

Heavy rain, thunderstorm activity, and hail usually occur on an annual basis in the TCPUD service area. Often during these events, the local stormwater drainage system can be impacted. The primary impact to the area within District boundaries is the localized flooding caused by these heavy rains.

Wildfire

Likelihood of Future Occurrence–Highly likely

Vulnerability–High

Over one hundred years of aggressive fire suppression under the national fire suppression policy has rendered wildlands severely overgrown. Much of the private land in the District’s area is in the wildland-urban interface with increasing residential development. The current buildup of fuels within the Tahoe Basin area is at a critical level

Further, many of the communities in the District are limited to one route access and egress in the event of a major wildfire. Historically, these routes are closed during major events, stranding many people, including 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 most notable, recent wildfire to impact the District is the Washoe fire. This fire occurred in the wildland urban interface area of Tahoe Park and Tahoe Woods Subdivision, along the West shore of Lake Tahoe. The fire was caused by a failure of some propane equipment. Although no lives were lost, the fire destroyed 5 residential structures and encompassed 19 acres. Power and gas utilities were incurred damages. There were also losses to timber assets, loss of watershed protection, and loss of the aesthetic value of a scenic corridor. This event caused major disruptions to west shore and Tahoe City traffic and business on a busy summer weekend. Highway 89, West Lake was closed for a period of time.

S.6 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 four sections: regulatory mitigation capabilities; administrative and technical mitigation capabilities; fiscal mitigation capabilities; and mitigation education, outreach, and partnerships.

S.6.1. Regulatory Mitigation Capabilities

Table S-5 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 District.

Table S-5 Tahoe City PUD's Regulatory Mitigation Capabilities

Plans	Y/N Year	Does the plan/program address hazards? Does the plan identify projects to include in the mitigation strategy? Can the plan be used to implement mitigation actions?
Comprehensive/Master Plan	N	
Capital Improvements Plan	Y	
Economic Development Plan	N	
Local Emergency Operations Plan	Y 2013	TCPUD Emergency Response Plan, Jan. 2013
Continuity of Operations Plan		
Transportation Plan	N	
Stormwater Management Plan/Program		
Engineering Studies for Streams	N	
Community Wildfire Protection Plan		
Other special plans (e.g., brownfields redevelopment, disaster recovery, coastal zone management, climate change adaptation)	Y	Sewer System Management Plan, May 2014 Urban Water Management Plan, July 2011
Building Code, Permitting, and Inspections	Y/N	Are codes adequately enforced?
Building Code	N	Version/Year:
Building Code Effectiveness Grading Schedule (BCEGS) Score	N	Score:
Fire department ISO rating:	Y	Rating: \$
Site plan review requirements	N	
Land Use Planning and Ordinances	Y/N	Is the ordinance an effective measure for reducing hazard impacts? Is the ordinance adequately administered and enforced?
Zoning ordinance	N	
Subdivision ordinance	N	
Floodplain ordinance	N	
Natural hazard specific ordinance (stormwater, steep slope, wildfire)	N	
Flood insurance rate maps	N	
Elevation Certificates	N	

Acquisition of land for open space and public recreation uses	N
Erosion or sediment control program	N
Other	
How can these capabilities be expanded and improved to reduce risk?	

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.

Tahoe City Public Utilities District Emergency Response Plan, 2013

The TCPUD Emergency Response Plan serves as a guide for the District’s response to emergencies/disasters within District boundaries, and to coordinate and assist with disaster response in neighboring jurisdictions.

Tahoe City Public Utilities District Sewer System Management Plan, 2014

The TCPUD Sewer System Management Plan serves as a guide for Districts response to emergencies/disasters within District boundaries as it relates to its sewer collection system.

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.

Tahoe City Public Utilities District Ordinances and Permits

TCPUD has enacted several ordinances:

- Water Ordinance 263
- Sewer Ordinance 255

In addition, the District has water and sewer permit requirements specific to:

- New Construction
- Tear Down-Rebuilds and Remodels

S.6.2. Administrative/Technical Mitigation Capabilities

Tahoe City Public Utility District is governed by a five person elected Board of Directors. These Directors determine the policies and set the agenda for the District. The Board appoints a General Manager who oversees the day to day operations of the District. In addition, The Board forms special citizen advisory committees when complicated issues need more community outreach or focused study.

Under the direction of General Manager Cindy Gustafson, forty-one full time employees, and 30 seasonal employees provide the listed services. Employees serve in four departments: Utilities; Parks & Recreation; Engineering; and General & Administrative. Table S-6 identifies the personnel responsible for activities related to mitigation and loss prevention in the District.

Table S-6 Tahoe City PUD's Administrative and Technical Mitigation Capabilities

Administration	Y/N	Describe capability Is coordination effective?
Planning Commission	N	
Mitigation Planning Committee	N	
Maintenance programs to reduce risk (e.g., tree trimming, clearing drainage systems)	Y	TCPUD maintains and implements a preventative maintenance program on all of its facilities. TCPUD maintains a staff, fleet and equipment capable of implementing this maintenance program.
Mutual aid agreements	Y	TCPUD actively participates in a local mutual aid agreement with other agencies
Other		
Staff	Y/N FT/PT	Is staffing adequate to enforce regulations? Is staff trained on hazards and mitigation? Is coordination between agencies and staff effective?
Chief Building Official	N	
Floodplain Administrator	N	
Emergency Manager	Y FT	Utilities/Risk Coordinator is trained on hazards and mitigation.
Community Planner	N	
Civil Engineer	Y FT	Engineering/Senior Civil Engineer is trained on hazards and mitigation.
GIS Coordinator	Y FT	Information Systems and Technology Administrator is trained on hazards and mitigation.
Other		

Technical	Y/N	Describe capability Has capability been used to assess/mitigate risk in the past?
Warning systems/services (Reverse 911, outdoor warning signals)	Y	Fire and Security alarm. Telemetry for the sewer and water stations. Cell phone and radio communications.
Hazard data and information	N	
Grant writing	Y	Grants and Community Information Administrator
Hazus analysis	N	
Other		
How can these capabilities be expanded and improved to reduce risk?		

S.6.3. Fiscal Mitigation Capabilities

Table S-7 identifies financial tools or resources that the District could potentially use to help fund mitigation activities.

Table S-7 Tahoe City PUD's Fiscal Mitigation Capabilities

Funding Resource	Access/ Eligibility (Y/N)	Has the funding resource been used in past and for what type of activities? Could the resource be used to fund future mitigation actions?
Capital improvements project funding	Y	
Authority to levy taxes for specific purposes	Y	
Fees for water, sewer, gas, or electric services	Y	
Impact fees for new development	Y	
Storm water utility fee	N	
Incur debt through general obligation bonds and/or special tax bonds	Y	
Incur debt through private activities	N	
Community Development Block Grant	N	
Other federal funding programs	Y	Both the Lake Tahoe Restoration Act and USFS Omnibus Funding have been used for Fuels Thinning and Water System Improvements to enhance fire protection capabilities. Future funding may be available pending approval of a new Lake Tahoe Restoration Act.

Funding Resource	Access/ Eligibility (Y/N)	Has the funding resource been used in past and for what type of activities? Could the resource be used to fund future mitigation actions?
State funding programs	Y	Funding sources from Propositions 50 and 84 and the State Revolving Fund have been used for water and sewer system improvements improving fire protection capacity of the water system and sewer storage and pumping capacity of the sewer system. Future funding may be available in future Propositions as well as State Revolving Funds pending approval of submitted projects.
Other		
How can these capabilities be expanded and improved to reduce risk?		

S.6.4. Mitigation Outreach and Partnerships

Table S-8 identifies education and outreach programs and methods already in place that could be/or are used to implement mitigation activities and communicate hazard-related information. More information can be found below the table.

Table S-8 Tahoe City PUD’s Mitigation Education, Outreach, and Partnerships

Program/Organization	Yes/No	Describe program/organization and how relates to disaster resilience and mitigation. Could the program/organization help implement future mitigation activities?
Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access and functional needs populations, etc.	Yes	Truckee River Basin Working Group, Red Cross, Truckee River Watershed Council
Ongoing public education or information program (e.g., responsible water use, fire safety, household preparedness, environmental education)	Yes	TCPUD water conservation programs. See http://conservation.tcpud.org/
Natural disaster or safety related school programs	No	
StormReady certification	No	
Firewise Communities certification	No	
Public-private partnership initiatives addressing disaster-related issues	Yes	Work with Red Cross on storage of their emergency response equipment for local use.
Other		
How can these capabilities be expanded and improved to reduce risk?		

S.6.5. Other Mitigation Efforts

The District is involved in a variety of mitigation activities including public outreach and project activities. These mitigation activities include:

- Staff educated in the Safety Program
- Website and Quarterly Newsletters to the general public
- Upgrading generators at all pump stations
- Retro fit stations (fire proofing, flood proofing, etc.)
- Fuel Reduction around facilities
- Staff training

Water System, Fire Protection Improvements

Also in the aftermath of the Angora fire in 2007, TCPUD has completed a full analysis of its water systems and is prioritizing the capital improvements necessary to increase fire protection capabilities. Since a significant amount of the District's sub-regional water systems are more than 40 years old and were acquired at various times from developers or other companies, extensive infrastructure work is necessary to meet current standards. TCPUD has successfully worked with the local fire departments, state and federal legislators, and officials to help secure the millions of funding needed to implement recommended improvements. Since 2008, the District has received over \$5,000,000 in funding from various sources for water system improvements.

2007 Phase 1 – Highlands Fuel Reduction

Fuel reduction, mastication and track chipping on 25 acres of District owned open space. This property is bounded by North Tahoe High School and single family homes. The fire potential was considered high. This work was completed in 2010.

2008 Blackwood Pump Station Storm Damage

1996 Blackwood Creek overflow flood damage to the Blackwood sewer pump station. F.E.M.A. repair assistance received in the amount of \$46,645.00. The T.C.P.U.D. funded a complete retrofit of the pump station at an additional cost of \$108,000.00. This retrofit protects the pump station from future flooding and the potential for a large sewage spill into Lake Tahoe. The project was completed in 2008.

2009 Fuel Reduction Program – Chambers Foothills and Quail Lake

Chambers Foothills and Quail Lake Fuel Reduction program, mechanical & hand treatment on 70 acres. Project funded by Nevada and California Fire Safe Council and T.C.P.U.D. participation funding. Grant funding not to exceed \$175,000. District participation will be \$56,000. The property is bounded by single family homes and commercial business property.

Seismic Stability Study and Retrofit

The District owns eleven (11) water storage tanks. The seismic stability of these tanks was last analyzed in a report prepared by Nolte Associates dated January 2006 and September 2010. Of the 11 analyzed tanks:

- One (1) was built in 2005 and is seismically stable and requires no retrofits (Upper Highlands).
- One (1) is seismically unstable and requires a major foundation and shell retrofit or requires a change in its operational water level (Lower Highlands).
- One (1) is seismically unstable and due to its age and material requires a complete replacement (Bunker).
- Eight (8) are seismically stable with minor improvements recommended.

S.7 Mitigation Strategy

S.7.1. Mitigation Goals and Objectives

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

S.7.2. Mitigation Actions

The planning team for the District identified and prioritized the following mitigation action 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.

Action 1. Bunker Water Tank Replacement

Hazards Addressed: Earthquake and Wildfire

Issue/Background: As identified in the Seismic Stability Study, the Bunker Tank is seismically unstable and due to its age and material and requires a complete replacement. The District's 5-year water capital plan includes \$2,300,000 for 2016-2017 to complete this replacement. It is also constructed of Redwood and susceptible to wildfire.

Other Alternatives: No action

Responsible Office: T.C.P.U.D. Engineering Department/c.o. Jon LeRoy

Priority (High, Medium, Low): High

Cost Estimate: \$2,300,000

Benefits (Avoided Losses): Prevent essential water service loss to community.

Potential funding: No funding, other than TCPUD internal sources have been identified.

Schedule: 2016-2017

Action 2. *West Lake Tahoe Regional Water Treatment Plant*

Hazards Addressed: Drought and Wildfire

Issue/Background: Long term reliability of groundwater supplies is decreasing due to drought conditions and subsequent lack of snowpack. Utilizing Lake Tahoe as a source of drinking water and fire protection water offers a clear long term source solution to the west shore region of Lake Tahoe. However, all surface water requires treatment and a plant capable of treating Lake Tahoe water will need to be constructed to accomplish this change of source water. A regional plant will be capable of serving multiple water purveyors and service areas.

Other Alternatives: Dramatic reductions in outdoor watering and water use in general.

Responsible Office: T.C.P.U.D. Engineering Department/c.o. Matt Homolka

Priority (High, Medium, Low): High

Cost Estimate: \$9,500,000

Benefits (Avoided Losses): Prevent essential water service loss and negative economic impacts to community.

Potential funding: State Revolving Fund and State Propositions

Schedule: 2017

Action 3. *Tahoe Main Emergency Water Supply*

Hazards Addressed: Drought and Wildfire

Issue/Background: Long term reliability of groundwater supplies is decreasing due to drought conditions and subsequent lack of snowpack. Utilizing Lake Tahoe as a source of drinking water and fire protection water offers a clear long term source solution to the north shore region of Lake Tahoe. However, all surface water requires treatment and a plant capable of treating Lake Tahoe water will need to be constructed to accomplish this change of source water. This project will convey untreated lake water to a specific location to be treated or distributed.

Other Alternatives: No action

Responsible Office: T.C.P.U.D. Engineering Department/c.o. Matt Homolka

Priority (High, Medium, Low): High

Cost Estimate: \$500,000

Benefits (Avoided Losses): Prevent essential water service loss to community.

Potential funding: No funding, other than TCPUD internal sources have been identified.

Schedule: 2016-2017