

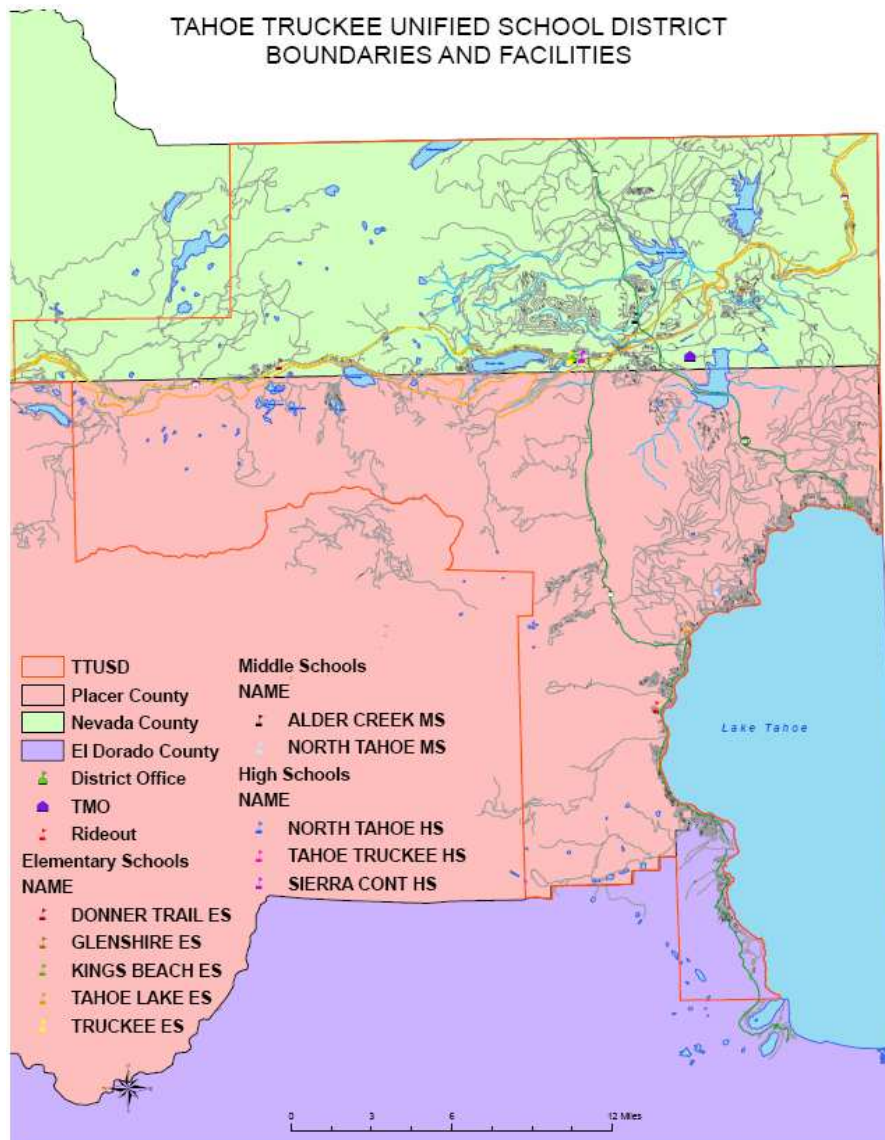


# ANNEX O: TAHOE – TRUCKEE UNIFIED SCHOOL DISTRICT

## O.1 District Profile

Figure O.1 shows the boundaries of the Tahoe – Truckee Unified School District (TTUSD).

**Figure O.1. Tahoe –Truckee Unified School District**



Source: Tahoe Truckee USD

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The Tahoe Truckee Unified School District (TTUSD) is located in the Sierra Nevada mountain range, 100 miles northeast of Sacramento. The TTUSD serves approximately 4,200 students in Nevada, Placer and El Dorado Counties. The District offices are located in Truckee, California and the school facilities are located in both Placer and Nevada Counties. Although TTUSD is comprised of portions of three (3) counties, the District falls under the jurisdiction of the Placer County Office of Education. The District boundaries stretch from the Sierra County line, twenty-seven miles North of Truckee, to Emerald Bay, near South Lake Tahoe; and from Cisco Grove, twenty miles to the west, to the Nevada state line, ten miles to the east. TTUSD's Eastern Boundary follows nearly the entire length of the Western shore of Lake Tahoe. The District encompasses more than 720 square miles. Within this vast geographic area are many different communities, severe climate zones, and three County jurisdictions, all of which create unique planning challenges. See map of TTUSD Boundaries and facilities Figure O.1.

### **O.1.1 School District Facility Composition**

The Tahoe Truckee Unified School District currently owns/operates fourteen facilities: one comprehensive high school, one middle school/high school, one continuation high school, one middle school, one facility used for District personnel and community programs, six elementary schools, a District Office, and a Transportation Maintenance and Operations building. The respective attendance areas of the active schools are divided between the Truckee area (facilities in Nevada County) and the Lake area schools (facilities in Placer County).

In the Tahoe area there are two active elementary schools - Kings Beach and Tahoe Lake - that create two elementary school attendance areas. A third elementary facility, Rideout Elementary School, is currently being used as a Community Center. The two elementary schools feed into the area middle school, North Tahoe Middle School and the middle school feeds into the area high school, North Tahoe High School.

The Truckee area schools also have one high school, Truckee High School, one continuation high school, Sierra Continuation High School, and one middle school, Alder Creek Middle School, that serve all of the students in the area. The middle school is fed by three K-5 elementary schools - Donner Trail, Glenshire and Truckee Elementary. Donner trail is a magnet K-5 and draws students from other attendance areas, but also has its own attendance area. The Truckee Area is also home to Sierra Mountain Middle school which is currently being utilized by District Administrative staff, State and Federal preschool programs, and other community programs. The main District Office is also located in Truckee.

### **O.1.2 District Mission**

The primary mission of the District is to provide education to all children within the boundaries of the District. TTUSD is often seen as the hub of the community and our facilities are open to all members of public. Many meetings, sporting events, and community enrichment activities are held at District facilities. In collaboration with local law enforcement and public safety agencies,

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our facilities also act as emergency operations centers, shelters, and staging areas during emergency and disaster situations. Due to the importance of our facilities to the community during these situations, our facilities are considered Critical Facilities.

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.

## **O.2 Hazard Identification and Summary**

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The TTUSD'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 O.1).

**Table O.1. TTUSD—Hazard Summaries**

<b>Hazard</b>	<b>Probability of Occurrence</b>	<b>Spatial Extent</b>	<b>Potential Magnitude</b>	<b>Significance</b>
Agricultural Hazards	Unlikely	Limited	Negligible	Low
Avalanche	Likely	Limited	Limited	Low
Dam Failure	Occasional	Limited	Negligible	Low
Drought	Likely	Extensive	Critical	High
Earthquake	Likely	Extensive	Critical	Medium
Flood (100-year)	Occasional	Limited	Limited	Low
Flood (stormwater)	Likely	Extensive	Critical	Medium
<b>Human Health Hazards:</b>				
West Nile Virus	Occasional	Significant	Negligible	Low
Pandemic/Epidemic				
Landslide	Likely	Significant	Critical	Low
<b>Severe Weather:</b>				
Extreme Temperatures	Highly Likely	Extensive	Critical	Medium
Fog	Occasional	Significant	Negligible	Low
Heavy Rain/ Thunderstorm/Hail/ Lightning/Wind	Highly Likely	Extensive	Catastrophic	High
Snow (as Winter Storm)	Highly Likely	Extensive	Catastrophic	High
Tornado	Unlikely	Limited	Negligible	Low
<b>Soil Hazards:</b>				
Erosion	Likely	Significant	Limited	Low
Expansive Soils				
Volcano				
Wildfire	Likely	Extensive	Catastrophic	Medium

**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: Tahoe Truckee Unified School 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).

## O.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.

### O.3.1 Assets at Risk

This section considers the District’s assets at risk. All facilities owned by the District would be categorized as critical facilities. Damage to these facilities would have a large impact on students, personnel, and members of the community. In addition to the social costs associated with the identified hazard, there is potential for extremely high monetary costs as well. Damage as a result of a natural hazard can range from minor repairs that can be performed with minimal maintenance staff time to catastrophic, requiring major repair, replacement, and reconstruction of buildings and their components. These costs can range from minimal staff salary expenditures to entire building replacement.

Table O.2 lists District assets identified by representatives from the TTUSD as important to protect in the event of a disaster.

**Table O.2. TTUSD—Critical Facilities and Other District Assets**

Name of Asset	Type	Replacement Value	Displacement Cost	Occupancy/ Capacity#	Hazard Specific Info
Kings Beach Elementary School	High Potential Loss Facility	\$15 M		550	
Rideout Elementary School	High Potential Loss Facility	\$6 M		200	
Tahoe Lake Elementary School	High Potential Loss Facility	\$24 M		350	
North Tahoe Middle/High School	High Potential Loss Facility	\$100 M		1,220	
Donner Trail Elementary School	High Potential Loss Facility	\$2.5 M		80	
Glenshire Elementary School	High Potential Loss Facility	\$35 M		550	
Truckee Elementary School	High Potential Loss Facility	\$40 M		700	
Sierra Mountain Community Education Center	High Potential Loss Facility	\$35 M		500	
Alder Creek Middle School	High Potential Loss Facility	\$51 M		850	
Truckee High School	High Potential Loss Facility	\$138 M		950	

Name of Asset	Type	Replacement Value	Displacement Cost	Occupancy/Capacity#	Hazard Specific Info
Sierra High School	High Potential Loss Facility	\$1 M		75	
Transportation, Maintenance, Operations Building	High Potential Loss Facility	\$13 M		150	
District Office	High Potential Loss Facility	\$15 M		100	

Source: Tahoe Truckee USD

It is important to reiterate that our buildings and equipment are utilized by the community during disasters and severe weather. For example, in 2007, one of our campuses was used as a shelter for travelers when Interstate 80 was closed due to heavy snow. The importance of maintaining the facilities and providing a safe environment goes far beyond our students, personnel, and community.

## 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 O.3.

**Table O.3 Species of Concern in TTUSD**

Common Name	Scientific Name	Federal Status	State Status

Source: Tahoe Truckee USD

## Growth and Development Trends

There has been considerable development and population growth within the boundaries of TTUSD over the last 10 years. As growth continues, the number of students at the various facilities is expected to increase. The increase in new students may require additional school facilities and/or expansion of existing facilities. This would increase the number and value of District-owned assets and potentially, the vulnerability of District facilities, students and staff.

### O.3.2 Estimating Potential Losses

The hazards and risks experienced by TTUSD are consistent with those described in the Plan. However, the degree to which the hazards occur and impact the District may differ from the remainder of the County. The purpose of this section is to provide detail on hazards and risks which are specific to TTUSD.

## Drought

The impact of a drought on the District is primarily one of water supply. A multiple year drought can severely compromise the water supply within the District. Most recently, after 2

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years of below-average rainfall and very low snow-melt run off, Governor Schwarzenegger in June of 2008 declared a state of emergency for drought conditions statewide. The final California Department of Water Resources showed snowpack water content at only 67 percent of normal. With the unknowns of drought and globally changing climate conditions, the TTUSD continues to be vulnerable to the affects of drought.

Restrictions in water use could affect the ability of the District to provide sufficient water to students, operate lunch programs, maintain clean facilities, and maintain playing fields and landscaping at school sites. This could impact the health and safety of children and result in significant costs to the District.

## **Earthquake**

As indicated 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 within the TTUSD boundaries. 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. According to the District, none of its facilities have incurred any substantial damage during past earthquake events. However, several of the District's schools were built as many as 50 years ago and have never been structurally retrofitted to withstand large scale earthquakes. These older schools include: Tahoe Lake Elementary School, Kings Beach Elementary School, Truckee Elementary School, Donner Trail Elementary School, and Truckee High School.

## **Flood**

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 close proximity to the Truckee River Watershed, numerous streams and creeks, and snow melt run-off make TTUSD vulnerable to flooding. Flooding caused by heavy rains and storm drain overflow can damage facilities and block transportation routes, severely diminishing the District's ability to operate.

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

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- 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.

## **Seiche**

It has been documented that a major seismic event could trigger seiche waves in Lake Tahoe. The tsunami could generate waves as high as 10 meters and could cause substantial destruction along the shoreline. TTUSD structures such as Tahoe Lake Elementary, located near the west shore of Lake Tahoe would be at risk. In addition the flooding of roadways surrounding the lake would make transportation nearly impossible.

## **Severe Weather**

All areas within TTUSD are located above an elevation of 5,800 feet. At this elevation, TTUSD regularly experiences drastic climate and weather changes to include thunderstorms/lightning and heavy rain, extreme cold temperatures, heavy snow storms, and high winds. Severe weather occurs during all seasons and often can be unexpected and fast moving, significantly impacting the operating capability of the District.

### ***Extreme Temperatures***

The District experiences mild temperatures during the summer months with average highs of 80 and average lows of 42. Temperatures during winter months can drop very low with average highs of 42 and average lows of 18. On the extreme side, the temperature has been known to drop as low as -39 degrees Fahrenheit. These extreme temperatures during the winter have created many problems for the District over the years such as frozen water pipes in the building as well as underground. The frozen pipes can lead to flooding and water damage but also limit the water supply of the building. In addition, the extreme cold has also frozen and damaged heating coils which has caused flooding and affected the heating of the school site. The cold temperatures can also cause building materials and equipment to break down at a more rapid pace.

### **Severe Weather: Heavy Rain/Thunderstorm/Hail**

Severe rain/thunderstorms can occur within the District during all seasons. These thunderstorms often produce high winds and lightning which can damage District structures and cause power outages. Heavy rains can also create flooding of creeks or drains which can also damage structures and impede the transportation of students. In addition, lightning can ignite forest and structure fires which can cause damage to buildings and endanger the lives of students and personnel. The impacts associated with heavy rains/thunderstorms can potentially affect the District's ability to operate and carry out their mission.

TTUSD has experienced significant damages from heavy rain and thunderstorms over the years. TTUSD sustained over \$300,000 in damages ranging from pothole repair and replacing walls



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and insulation to a major oil/fuel spill from underground tanks as a result of the 1997 Floods. In addition, TTUSD experiences regular power and gas outages caused by storms. These power and gas outages can be lengthy and can impact the ability to heat the building and operate the school.

### **Severe Weather: Snow**

Extreme winter weather events are a major concern to the District. Between the months of November and April, most precipitation occurring within TTUSD falls in the form of snow. However, snowfall has occurred even during the summer months. Depending on the location of the District, snowfall can average from just less than 200 inches to over 400 inches per year. Heavy Snowfall can be associated with high winds (blizzard conditions), extreme temperatures, avalanches, and dangerous traveling conditions. Snow and ice falling from roofs and slippery surfaces are just some of the dangers to our students and staff. Snowfall has caused numerous school closures and power outages throughout the history of the District. Snow accumulation can also create obstacles involving the safe transportation of students and stress the structural integrity of building and infrastructure. The District spends approximately \$125,000 to \$225,000 on snow removal annually to reduce the risks of injury to the community and damage to structures.

#### ***Damage to Structures***

Heavy snowfall from fast moving storms can test the structural integrity of school buildings (specifically the roof strength), thus directly impacting the safety of children and employees of the District. Recognizing the inherent structural dangers to buildings during snowstorms, local building departments have increased the snow load requirements for roofs extensively over the last fifty years. New schools constructed within the District must meet or exceed roof snow loads ranging from 166 to 260 pounds per square foot according to current local building codes. Most of the school buildings within the District were built under old building codes and therefore do not meet the new snow load requirements. Some facilities have snow loads as low as 40 pounds per square foot in certain areas of the building. It is not uncommon for District personnel (or hired crews) to shovel off the roofs at these sites after or during a storm to bring the snow load below its recommended threshold and prevent damage to the structure. This is a regular task during heavy winters and can be extremely costly to the District. It also can present a danger to the staff or crews who are performing the snow removal from the rooftops.

The District experienced the collapse of a DOH classroom in 1996 because shoveling crews were unable to keep up with a major storm. Although shoveling is often needed to mitigate the potential hazard of roof collapse, the action also creates a new hazard for the personnel performing these duties. The act of shoveling the roof can also cause an imbalance in the live load of the roof making it more susceptible to collapse. In addition, snow covered buildings deficient in the snow load requirement would also be more vulnerable to collapse during an earthquake.

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### ***Snow/Ice Fall***

Snow and ice falling from roofs can also create a danger to students and others at ground level and inside buildings. It can also potentially block emergency exits and damage building and building systems as well as neighboring structures and property (e.g., broken windows, torn roofs, etc.).

### ***Infrastructure***

Snow and ice buildup on structures can cause building system failures and ventilation blockage which can affect the health and safety of students and personnel.

### ***Power Outages***

As mentioned before, power and utility outages often occur due to winter storms. The outages are usually minor but on occasion have lasted as long as one week at some school sites.

### ***Vehicle Damage***

A large portion of our maintenance vehicles and buses are not housed in covered areas, exposing them to the harsh elements. Not only does this contribute to wear and tear and ultimately reduce the useful life of these vehicles, but it also can affect the performance of the vehicles. There is great potential for the freezing of vehicle fluids and ice buildup on mechanical components which could inhibit the normal operation of these vehicles. This in conjunction with operating the vehicles in harsh weather conditions during student transport increases the hazard to students and personnel. There is also an increase risk of vehicle accidents during these storms.

### ***Wildfire***

All areas of the Sierra Nevada are surrounded by forest and are prone to major wild fires. Over one hundred years of aggressive fire suppression under the national fire suppression policy has rendered wildlands severely overgrown. The District has school facilities in areas that are heavily wooded and could be at risk during a major forest fire. Rideout Elementary School and North Tahoe Middle/High School, located in Tahoe City, are two school sites that are surrounded by forest. In addition, there is only one major in/out access road for both sites increasing the risk to students in the event an evacuation was required during a major wildfire.

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.

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## Other Hazards

While of lower planning significance to the District relative to other hazards, the following information about avalanche, landslides, should still be noted:

### ***Avalanche***

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.

There have been many avalanches recorded within the boundaries of the District. However, there are no District Facilities located within what would be considered an active avalanche zone. Should an avalanche occur in the area, it could significantly hinder the transportation of students to and from scheduled stops.

### ***Landslides***

Landslides have occurred within TTUSD but have not damaged any District Facilities. Landslides occurring on major access roads or highways (e.g., Highway 89) can affect accessibility to school sites and hinder transportation of students.

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## O.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.

### **O.4.1 Regulatory Mitigation Capabilities**

Table O.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 TTUSD.

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**Table O.4. TTUSD's Regulatory Mitigation Capabilities**

<b>Regulatory Tool (ordinances, codes, plans)</b>	<b>Y/N</b>	<b>Comments</b>
General plan	N	TTUSD has a Facilities Master Plan. All General Plans are under the jurisdiction of Town of Truckee and Counties of Placer, Nevada, and El Dorado
Zoning ordinance	N	Jurisdiction of Town of Truckee and Counties of Placer, Nevada, and El Dorado

<b>Regulatory Tool (ordinances, codes, plans)</b>	<b>Y/N</b>	<b>Comments</b>
Subdivision ordinance	N	Jurisdiction of Town of Truckee and Counties of Placer, Nevada, and El Dorado
Growth management ordinance	N	Jurisdiction of Town of Truckee and Counties of Placer, Nevada, and El Dorado
Floodplain ordinance	N	Jurisdiction of Town of Truckee and Counties of Placer, Nevada, and El Dorado
Other special purpose ordinance (stormwater, steep slope, wildfire)	N	Lahontan Regional Water Control Board
Building code	N	Jurisdiction of Town of Truckee and Counties of Placer, Nevada, and El Dorado
BCEGS Rating	N	
Fire department ISO rating	N	Truckee Donner Fire District, North Tahoe Fire District
Erosion or sediment control program	N	
Stormwater management program	N	Lahontan Regional Water District
Site plan review requirements	N	Jurisdiction of Town of Truckee and Counties of Placer, Nevada, El Dorado, Division of the State Architect, and the California Department of Education
Capital improvements plan	Y	TTUSD Facilities Master Plan
Economic development plan	N	Jurisdiction of Town of Truckee and Counties of Placer, Nevada, and El Dorado
Local emergency operations plan	Y	School Site Safety Plan, Coordination with Emergency Services
Other special plans		
Flood insurance study or other engineering study for streams	N	
Elevation certificates	N	
Other		

Source: Tahoe Truckee USD

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-Truckee Unified School District Facilities Master Plan, August 22, 2007**

The Tahoe Truckee Unified School District Facilities Master Plan was adopted on August 22, 2007. It is a comprehensive plan that addresses the current and future facility needs of the District. The plan includes information on student demographics, existing school facilities and condition assessments, short range and long range facility planning issues, and the routine and deferred maintenance plan for facilities in the District. This plan is considered a living document and will be updated as conditions in the District change.

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## **Tahoe-Truckee Unified School District School Site Safety Plan, April 8, 2009**

TTUSD has prepared a comprehensive School Safety Plan that includes all school and administrative/support sites. The most recent update of the School Safety Plan was adopted on April 8, 2009. The Comprehensive School Safety Plan created and enforces policies that promote a safe, caring, and disciplined environment for students and staff. The plan includes: and Emergency Operations Plan for school emergencies and disasters, action guides, individual Safe School Plans for each site, ingress/egress plans, and evacuation and emergency response procedures.

### **O.4.2 Administrative/Technical Mitigation Capabilities**

TTUSD is governed by a Board of Trustees consisting of five members. Each member is elected by the public for a four year term and represents a specific constituency of the District.

Table O.5 identifies the personnel responsible for activities related to mitigation and loss prevention in TTUSD.

**Table O.5. TTUSD’s Administrative and Technical Mitigation Capabilities**

Personnel Resources	Yes/No	Department/Position	Comments
Planner/Engineer with knowledge of land development/land management practices	No	Planning Department	Town of Truckee and Counties of Placer, Nevada, and El Dorado
Engineer/Professional trained in construction practices related to buildings and/or infrastructure	No	Public Works, Planning Departments	Town of Truckee and Counties of Placer, Nevada, and El Dorado
Planner/Engineer/Scientist with an understanding of natural hazards	No	Public Works, Planning Departments	Town of Truckee and Counties of Placer, Nevada, and El Dorado
Personnel skilled in GIS	Yes	Facilities Planner	
Full time building official	No	Building Department	Town of Truckee and Counties of Placer, Nevada, and El Dorado
Floodplain Manager	No		
Emergency Manager	No		
Grant writer	No		
Other personnel	Yes	Director of Facilities for TTUSD	
GIS Data – Hazard areas	No		
GIS Data - Critical facilities	Yes		Map of School Facilities
GIS Data – Building footprints	No		
GIS Data – Land use	No		
GIS Data – Links to Assessor’s data	Yes		Partial Data Available
Warning Systems/Services (Reverse 9-11, cable override, outdoor warning signals)	Yes		All sites have warning systems and communications devices
Other			

Source: Tahoe Truckee USD

### O.4.3 Fiscal Mitigation Capabilities

Table O.6 identifies financial tools or resources that the District could potentially use to help fund mitigation activities.

**Table O.6. TTUSD’s Fiscal Mitigation Capabilities**

Financial Resources	Accessible/Eligible to Use (Yes/No)	Comments
Community Development Block Grants	No	

<b>Financial Resources</b>	<b>Accessible/Eligible to Use (Yes/No)</b>	<b>Comments</b>
Capital Improvements project funding	Yes	State School Building Program, FEMA Disaster Funding and Assistance (PDM, etc.) CAL Trans/Federal Safe Routes to School, general fund, developer impact fees
Authority to levy taxes for specific purposes	Yes	
Fees for water, sewer, gas, or electric services		
Impact fees for new development	Yes	Residential and Commercial Developer Fees (Restricted Uses)
Incur debt through general obligation bonds	Yes	
Incur debt through special tax bonds	Yes	
Incur debt through private activities	No	
Withhold spending in hazard prone areas	No	

Source: Tahoe City Public Utilities District

#### **O.4.4 Mitigation Outreach and Partnerships**

TTUSD has partnered with many other public agencies, emergency service organizations, and local districts to either prevent and/or minimize loss of life and property in the event of emergencies and natural disasters. TTUSD has partnered with North Tahoe Fire District in conjunction with Nevada Fire Safe Council to increase the defensible space surrounding lake area school sites. We have also established partnerships with CAL FIRE, U.S. Forest Service, and local fire crews to provide housing and central command facilities on our sites for firefighters during wildland fires. In addition to fire crew housing, TTUSD has also established school facilities as safety shelters for civilians, law enforcement, other emergency service and public personnel in the event of natural disasters and emergencies such as storm and road closures. TTUSD also works in close cooperation with local hospitals and county health departments to inform our students, staff, and community members during epidemiological outbreaks and other student concerns.

#### **O.4.5. Other Mitigation Efforts**

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

##### **Emergency and Safety Education Programs at School Sites**

TTUSD's Comprehensive School Safety Plan details how the school district will operate during critical incidents affecting students, faculty, staff, or facilities. The Emergency Operations section of the plan provides guidance for personnel who discover or are notified of an emergency situation. The Emergency Operations Plan is based on the nationally recognized Incident Command System (ICS). ICS establishes common standards and procedures consistent with local emergency service agencies. This allows for quicker reaction time and better

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communication with emergency services which will lower the risk of life and property loss during a natural disaster.

## **Flood**

The District has experienced damage to its facilities during major floods. However, the damages were caused by conditions exceeding the capability of minor on-site mitigation actions (e.g. stormwater drain backup). All major mitigation actions to prevent flooding of school site would fall under the responsibility of other jurisdictions. The District will continue to comply with local storm water control requirements and implement any mitigation measures that the responsible authorities see fit in order to prevent damage to existing and future facilities.

## **O.5 Mitigation Strategy**

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### **O.5.1 Mitigation Goals and Objectives**

The Tahoe-Truckee Unified School District adopts the hazard mitigation goals and objectives developed by the HMPC and described in Chapter 5 Mitigation Strategy.

### **O.5.2 Mitigation Actions**

The planning team for the TTUSD 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. School Site and Community Education of Procedures Related to Safety and Emergency Situations. Improvement of District Wide Emergency Communication and Alert Systems.***

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**Hazards Addressed:** All

**Issue/Background:** TTUSD is in the process of creating a District wide safety plan which documents safety and emergency procedures and for students and teachers. Selected representatives from each school site have attended special training sessions highlighting these procedures and the proper actions to take during an emergency. In addition TTUSD is standardizing the emergency communications equipment. All sites have received Nextel two-way cellular phones which will operate in any region of the District. These devices enable all sites to notify the administration and emergency services in the event of an emergency. The District believes that proper safety training of personnel, in addition to an efficient alert system will significantly reduce the risks of serious injury or death in the event of an emergency or natural disaster. The training can also reduce the potential for physical damage to buildings and property. Since this mitigation project is currently being implemented and will become part of the District's administrative policy, it has not been rated as a prioritized mitigation action.



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**Existing Planning Mechanism(s) through which Action Will Be Implemented:** This project is partially complete and will be an ongoing activity. Safety, and emergency training meeting will occur regularly and plans will be updated annually.

**Responsible Office:** Facilities Department

**Cost Estimate:** \$50,000

**Benefits (Losses Avoided):** Life Safety, property loss

**Potential Funding:** Federal and State Safety Grants and TTUSD General Fund

**Schedule:** DW safety training, production of training materials and emergency clip boards. Issuing of emergency cell phone/2 way radios at each site for the purpose of emergency notification.

## ***2. Structural Upgrades of Roofs at School Sites to Support Higher Snow Loads.***

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**Hazards Addressed:** Winter Storms

**Issue/Background:** Most of the school buildings within the District were built under old building codes and therefore do not meet the new snow load requirements. Some sites have snow loads as low as 40 pounds per square foot. The District would like bring all buildings in the District up to the snow loads required by current local building codes. The District would first concentrate on the most vulnerable areas of the school buildings and then move onto other areas if economically efficient to do so. The most vulnerable buildings would be those with large span areas (e.g., gyms, multi-use rooms, etc.). This task would include structural retrofits and upgrades to the roofs on selected buildings at Donner Trail Elementary School, Kings Beach Elementary School, Tahoe Lake Elementary School, Truckee Elementary School, and Truckee High School. Snow fall from any one storm is very unlikely to exceed the snow loads prescribed by the current building codes, this project would significantly mitigate the hazard of roof cave-ins and the structural collapse of school buildings, and as a result, increase the margin of safety for school children and personnel. In addition, this project would also reduce the frequency of shoveling snow on District Roofs, which would decrease the likelihood of injury to both personnel and bystanders and operating costs of the District.

**Existing Planning Mechanism(s) through which Action Will Be Implemented:** Pre-planning for this project is currently underway. However, project will be performed as funding becomes available.

**Responsible Office:** TTUD Facilities Department Cost Estimate: \$1,500,000 to \$2,000,000

**Benefits (Losses Avoided):** Decreasing the risk of structural collapse and reconstruction of school buildings. Decrease in frequency of roof snow shoveling which can cost as much as \$5,000 per occurrence at each site.

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**Potential Funding:** FEMA PDM Funding, Deferred Maintenance, Other Federal and State Programs

**Schedule:** Work to be performed in summer months. Expected timeline for all projects once funding is available is 18 months

### ***3. Forest Thinning Around Lake Area Schools***

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**Hazards Addressed:** Wild Fire

**Issue/Background:** TTUSD is planning on performing a joint project with the California Department of Forestry to thin out the forest and create defensible space around school sites in the Lake Area of the District. This project will reduce the risk of loss of life and structural damage during a wildfire.

**Existing Planning Mechanism(s) through which Action Will Be Implemented:** Coordination with local Fire Agencies

**Responsible Office:** Facilities Department Cost Estimate: \$50,000

**Benefits (Losses Avoided):** This project will reduce the risk of loss of life and structural damage during a wildfire.

**Potential Funding:** CDF Schedule:

### ***4. HVAC Control Upgrades***

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**Hazards Addressed:** Severe Weather

**Issue/Background:** Extreme temperature drops can damage heating coils, plumbing, and HVAC operating systems. Often this damage can be prevented if control systems are triggered to increase the building heat. Upgrades to the central HVAC operating system controls can shorten the response time in heating the buildings and prevent further damage caused by freezing temperatures. In addition, the upgraded building controls would have the capacity to control the building ventilation and could shut down the ventilation system in the event of a localized HAZMAT or chemical spill near the site.

**Existing Planning Mechanism(s) through which Action Will Be Implemented:** Responsible Office: Facilities Department

**Cost Estimate:** \$20,000 to \$100,000

**Benefits (Losses Avoided):** reduction in property loss, life safety

**Potential Funding:** Unknown

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**Schedule:**

**5. Flood Control**

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**Hazards Addressed:**

**Issue/Background:** The District has experienced damage to its facilities during major floods. However, the damages were caused by conditions exceeding the capability of minor on-site mitigation actions (e.g. stormwater drain backup). All major mitigation actions to prevent flooding of a school site would fall under the responsibility of other jurisdictions. The District will continue to comply with local storm water control requirements and implement any mitigation measures that the responsible authorities see fit in order to prevent damage to existing and future facilities.

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

**Responsible Office:**

**Cost Estimate:**

**Benefits (Losses Avoided):**

**Potential Funding:**

**Schedule:**