

**Tuolumne County
Multi-Jurisdictional
Hazard Mitigation Plan
2018**

**Annex F: Tuolumne
Utilities District**



ANNEX F: TUOLUMNE UTILITIES DISTRICT

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TUOLUMNE UTILITIES DISTRICT

I. JURISDICTION PROFILE

Tuolumne Utilities District (TUD) is a water and wastewater utility serving nearly 44,000 residents in Northern California’s Tuolumne County. TUD was organized under California’s County Water District Law on July 1, 1992 in response to a voter initiative requiring the consolidation of two local public water systems, the Tuolumne Regional Water District (previously known as Tuolumne County Water District No. 2) and the Tuolumne Water System. Through its history, the water system, which is now operated by TUD, has changed from a utility serving mainly mining operations to one that serves the residential, commercial and industrial sectors of Tuolumne.

TUD provides drinking water for homes, schools and businesses and recycled water from their wastewater treatment plant to irrigate prime agricultural lands near Jamestown. TUD strives to meet or exceed federal and state standards for water and wastewater quality, environmental protection and wildlife habitat.



Photo: Lyons Reservoir and the South Fork Stanislaus River



PG&E Flume (Main Canal)

Tuolumne Utilities District provides the following services:

WATER SUPPLY

The topography of Tuolumne County varies greatly from gently rolling terrain at the lower elevations, to steep hilly uplands deeply traversed by streams and tributaries that drain south to the Tuolumne River or north to the Stanislaus River. The majority of TUD customers reside in or near the community of Sonora which is at about elevation 2,000 feet. TUD also serves customers in several communities to the east up to about elevation 6,000 feet in the Sierras and west of Jamestown at an elevation of less





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than 1,500 feet. The water system has changed from a utility serving mainly gold rush mining operations to one that serves the 21st century vibrant and diverse residential, commercial and industrial sectors of Tuolumne County.

TUD has a contract with Pacific Gas and Electric Company (PG&E) which provides for perpetual water supply for TUD from the South Fork Stanislaus River. This water is stored in Pinecrest Lake, Lyons Reservoir, Phoenix Lake and other small reservoirs on the TUD ditch system. PG&E owns Lyons Reservoir and the 15.7-mile Main Canal that leads to its Phoenix powerhouse. Although this Plan does not address the risks associated with PG&E's Main Canal, all risks identified in the TUD system are applicable. From the Main Canal, TUD's water splits into three branches – one serves Twain Harte, Soulsbyville and Tuolumne; and another feeds TUD's network of ditches, pipelines and treatment plants that serve Crystal Falls, Big Hill and Columbia. The remainder goes into Phoenix Reservoir to serve Phoenix Lake, East Sonora, Sonora and Jamestown.

TUD Water System summary:

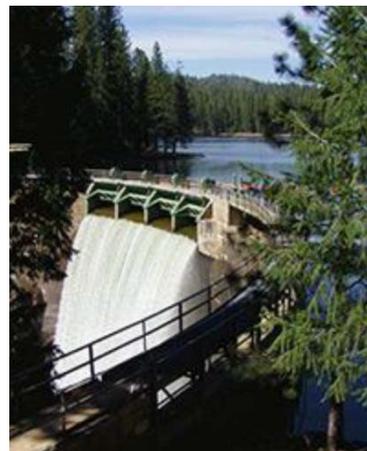
- Water Connections – 14,105 households
- Delivered 1.480 million gallons of treated water in 2016
- Operates 15 Water Treatment Plants
- 78 Treated Water Storage Tanks
- 57 miles of open ditches (most built in 1850s), and approximately 71 miles total
- The ditch system serves approximately 600 raw water customers
- Maintains 330 miles of treated water pipeline

The most important factor in water quality is its source. Tuolumne Utilities District's water process starts when the snow from the Sierra Nevada melts and runs through the South Fork Stanislaus River filling first the Pinecrest Reservoir and then the Lyons Reservoir. Rain is also an important factor to help fill the reservoirs.

Lyons Reservoir

Once full, Pinecrest Reservoir's main function is to store water to supply it to Lyons Reservoir when needed, this generally happens between the months of July and December. Tuolumne Utilities District (TUD) main water supply is the Lyons Reservoir, the water flows through canals, pipes, and open ditches until it reaches the water treatment plants. While traveling the 71 miles of ditches, a portion of this raw water is used for agricultural purposes. When the water arrives at the treatment plants it goes through a rigorous treatment process that will turn raw water into drinking water. This water can then be distributed through the

population. In the dry season, the water that remains in the reservoirs along with the 77 treated water storage tanks can supply our community for an average of five months.





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Water can also be extracted from wells. This water is being constantly tested according to state regulations and it will be distributed to our community along with the treated surface water. TUD has the mission “to provide our community with reliable, high quality water”. This water is constituted of surface water that originates from rainfall and runoff from snowpack in the Sierra Nevada Mountains which accounts for 95% of TUD water and from 23 active ground water wells that makeup the balance. However, TUD has no independent water rights. PG&E owns and operates Pinecrest and Lyons Reservoirs, and 15.7 miles of the Main Canal. Water from Lyons Reservoir and a portion of the water from Pinecrest Reservoir is free of charge. When in necessity, TUD purchases water for approximately \$250 per Acre Feet.

DITCH SYSTEM

A key component of the Tuolumne Utilities District’s (TUD) water supply infrastructure is the ditch system. The original ditch system was conceived and constructed by a group of energetic and resourceful miners in the early 1850’s to deliver water to the communities and miners in Sonora, Jamestown and Columbia.

TUD’s ditch system consists of 57 miles of open channels and 14 miles of flumes and pipes that start at Section 4 near Twain Harte. This system has many uses before it reaches the 15 water treatment plants. These uses include 600 connections for irrigation and agriculture, a reliable source for fighting fires due to its easy accessibility, and its location through multiple communities.

The Tuolumne Utilities District Ditch Sustainability Project Historic Resource Evaluation Report prepared in 2011 of the Tuolumne County Water Company Ditch and Flume System (TUD Ditch System), found that the system does appear to be eligible for listing on the National Register of Historic Places under Criteria A and C at the statewide level of significance.



Segment of the TUD historic ditch exhibiting drywall masonry (Photo: Courtesy of Barbara Balen)



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WATER TREATMENT PLANTS

The raw water from open ditches is exposed to direct wet weather runoff and to the atmosphere, therefore it is more easily contaminated. Consequently, water needs to be treated in order to meet federal and state regulations for safe drinking water. TUD currently owns and operates 15 water treatment plants, scattered throughout the county, that are essential to achieve high standards of water. Accordingly, the average daily miles driven by the water department for inspection purposes, is approximately 480 miles.

Five of those water treatment plants intake water directly from the ditch system and the remaining draw raw water from small reservoirs. Once the raw water reaches these treatment plants, chemicals such as polymer and aluminum sulfate are added to take the dirt particles from the water, followed by mixing, coagulation, flocculation, and sedimentation prior to being filtered. This water then enters into one of TUD's 15 clearwell storage tanks that store water and allow time for water to be in contact with liquid chlorine for disinfection before it's released to customers.

Additionally, four of TUD's surface water treatment plants have treatment systems with alternative technology. This technology combines mixing, coagulation, clarification, sludge removal, and filtration. Moreover, it is more cost effective and efficient than conventional water plants.



(Photo: Monte Grande Water Treatment Plant)



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WASTEWATER SYSTEM

The sewer collection, treatment and disposal system (collectively the Sonora Regional Wastewater Treatment Facility) includes a network of gravity and force main lines, 30 lift stations, five major interceptors, two sewer treatment plants, a holding reservoir and a network of piping collectively known as the reclamation system. The total interceptor length is approximately 28 miles. The reclamation system includes approximately 10 miles of effluent pipeline in addition to the Quartz Reservoir and related piping and valves. The District also owns 140 acres of land off Algerine Road (West Ranch) which will be utilized for additional storage and disposal of recycled water and 80 acres off of Jacksonville Road.

The overall system directly serves approximately 6,075 individual, residential, commercial and industrial customers. In addition about 3000 connections are served through subscriber community systems (Jamestown and Twain Harte).

Two Wastewater Treatment Plants:

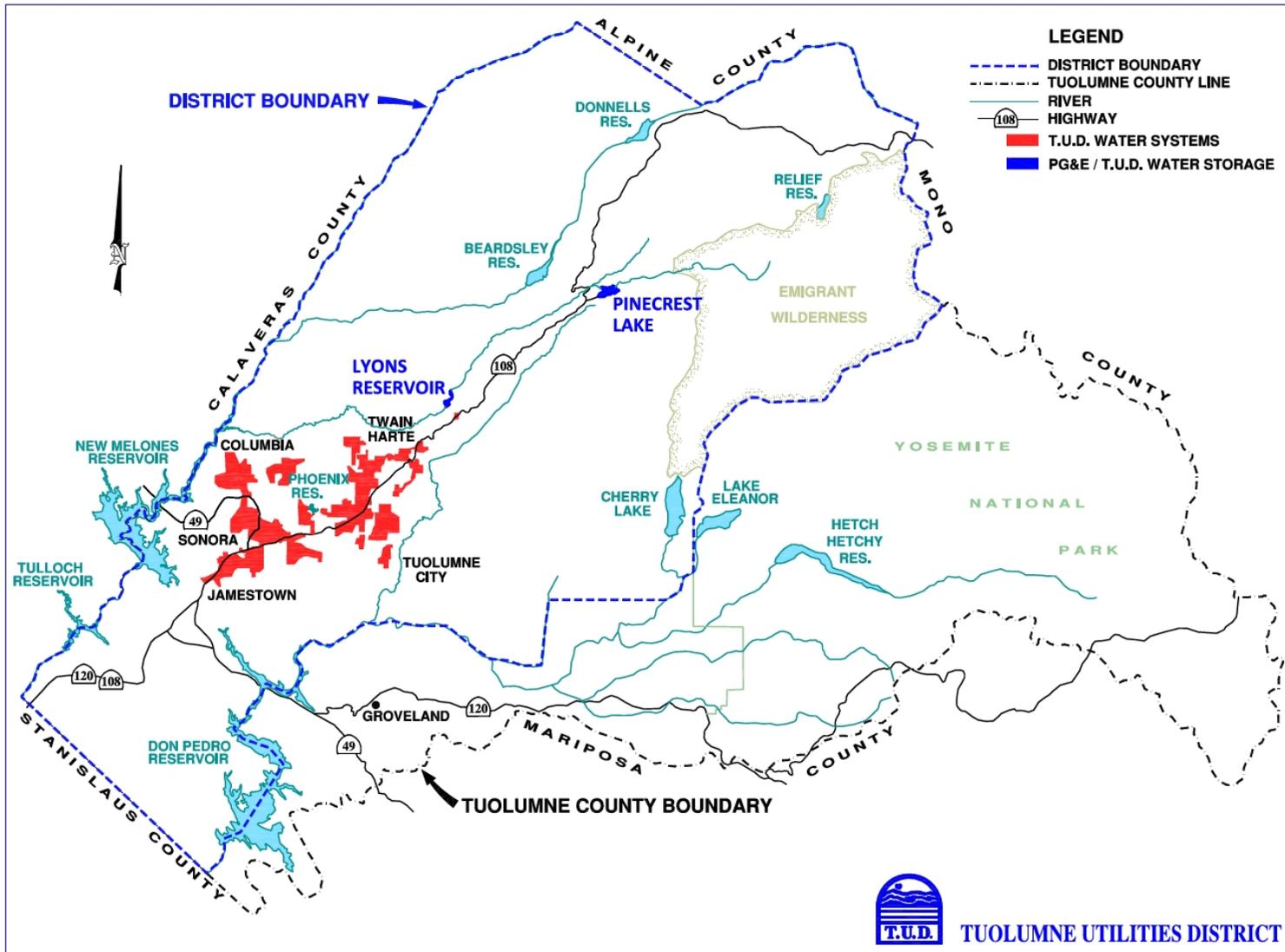
Sonora Regional – Secondary & disinfectant treatment, 2.6 MGD dry weather capacity, four major interceptors: Sonora, Columbia, East Sonora and Rancho Poquitos.

Twain Harte – Primary treatment only, 0.5 MGD capacity includes the Twain Harte Interceptor which terminates at the Mono Village Interceptor and which in turn becomes the East Sonora Interceptor, terminating at the Sonora Regional Wastewater Treatment Plant.



Regional Wastewater Treatment Plant

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LEGEND
 WATER TREATMENT PLANT
 RAIN WATER COLLECTION

- PUBLIC- T, U.O.,**
- AP91.EVALLEV SYSTEM
- 810 H L SYSTEM CEDAR
- RboESYSTEM COLUMBIA
- ~~CIBBS SYSTEM~~
- CRYSTALFAIIS SYSTEM
- CUCSTA...LAMBCRT LAKES SYSTEM
- EAST SONORA SYSTEM MONO VL
- LAGE SVSTOI t.0ONTEORANDE-
- QURTIS CREEK PE.ACEFULPNE S
- SVST&I
- PHOENIX LAKE PARK (PLP) SYSTEM
- PHOEROSA SYSTEM
- SONOVUE SYSTEM
- SOHONA -JAWESTOWHWSYSTEM
- TUOLUMNE CITY SYSTEM
- UPPER BASIN SYSTOI
- IIIARDS FERRY RANCHES SYSTEU
- PRIVATE**
- COID SPRINGS WATER PANY
- ONUN - STRAWBEARY WATES SYSTEM
- LONG BARN PROPERTY OWNERS SYSTEM
- NORTHSHORE MPROVEMENT COMPANY
- OOFFELLOYS SIERRA WATER COMPANY
- RNECREST PERMITTEES ASSOCIATION
- SL DEINN WATER CO&IPANY
- SHO BOWL WATER COMPANY
- SONORA WATER COMPANY

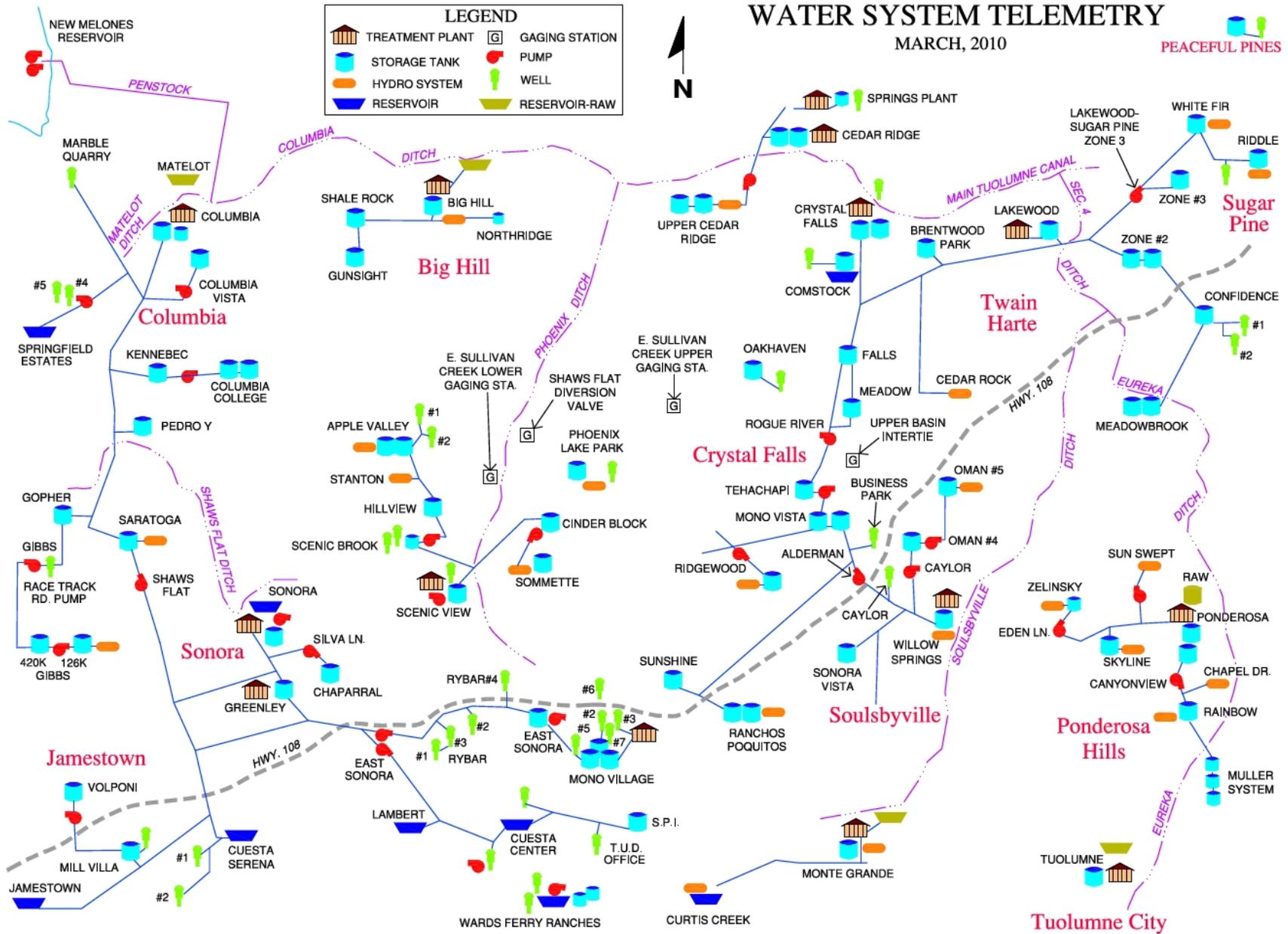
MUTUAL

- AU&NE ACRES MUTUAL WATER CC.
- BELLEVIEW OAKS MUTUAL WATER CO.
- BLUEBELL VALL'Y MUTUAL WATER CC.
- LEISURE P NES MUTUAL WATER CO.
- IAI WIK HEGKTS MUTUAL WATER CO.
- WIWIK VILLAGE WATER CO.
- LIJULLER MUTUAL WATER CO.
- PHOENIX LAKE COUNTRY CLUB ESTATES
- SIERRA VILLAGE MUTUAL WATER CO.
- SONORA MEADOWS MUTUAL WATER CO.
- TWAIN HARTLEY AUEY MUTUAL WATER CO.

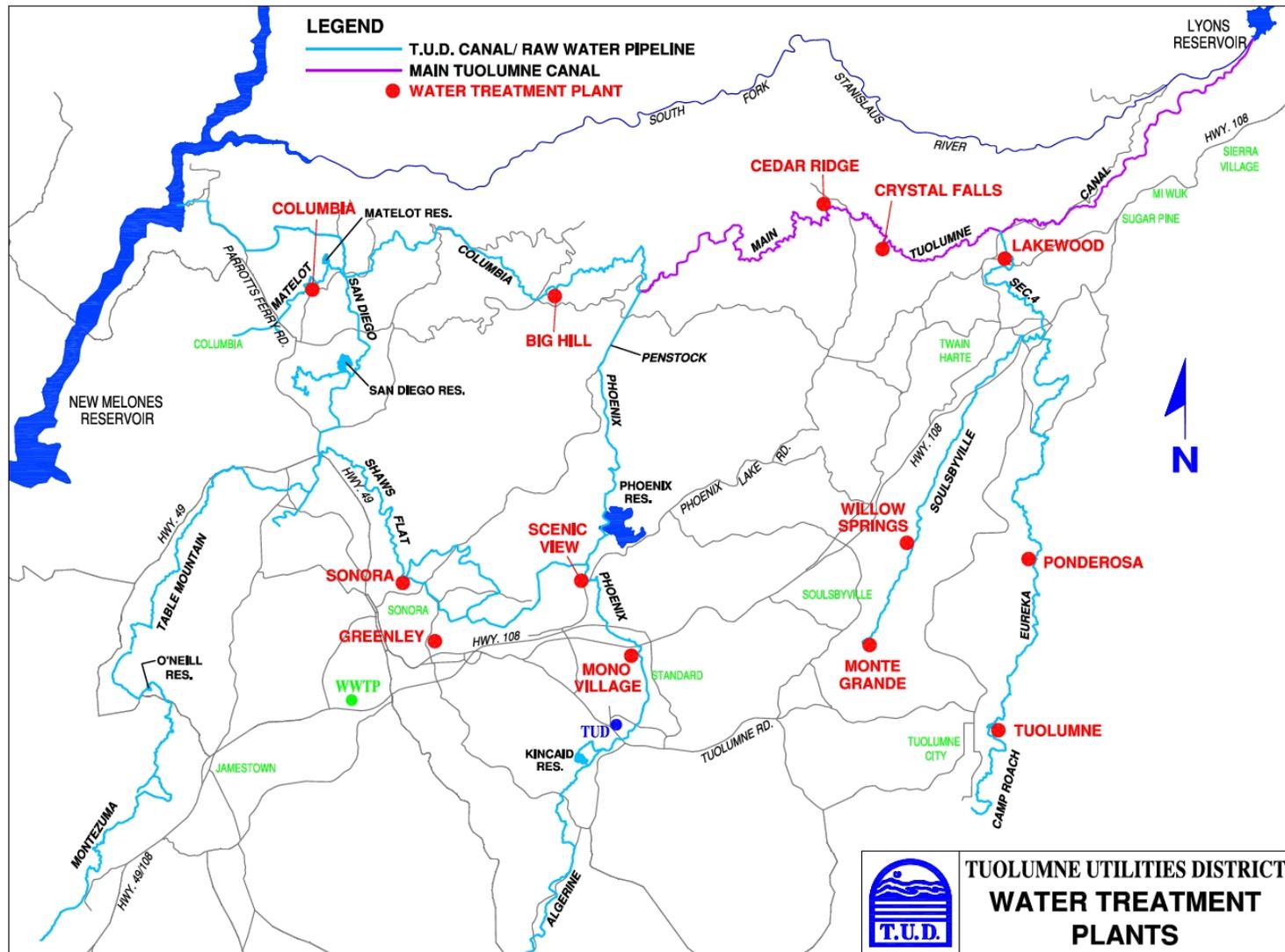
PUBLIC- OTHER

- LELAND MEADOWS WATER DISTRICT
- TWAIN HARTLEY COMMUNITY SERVICES DIST.

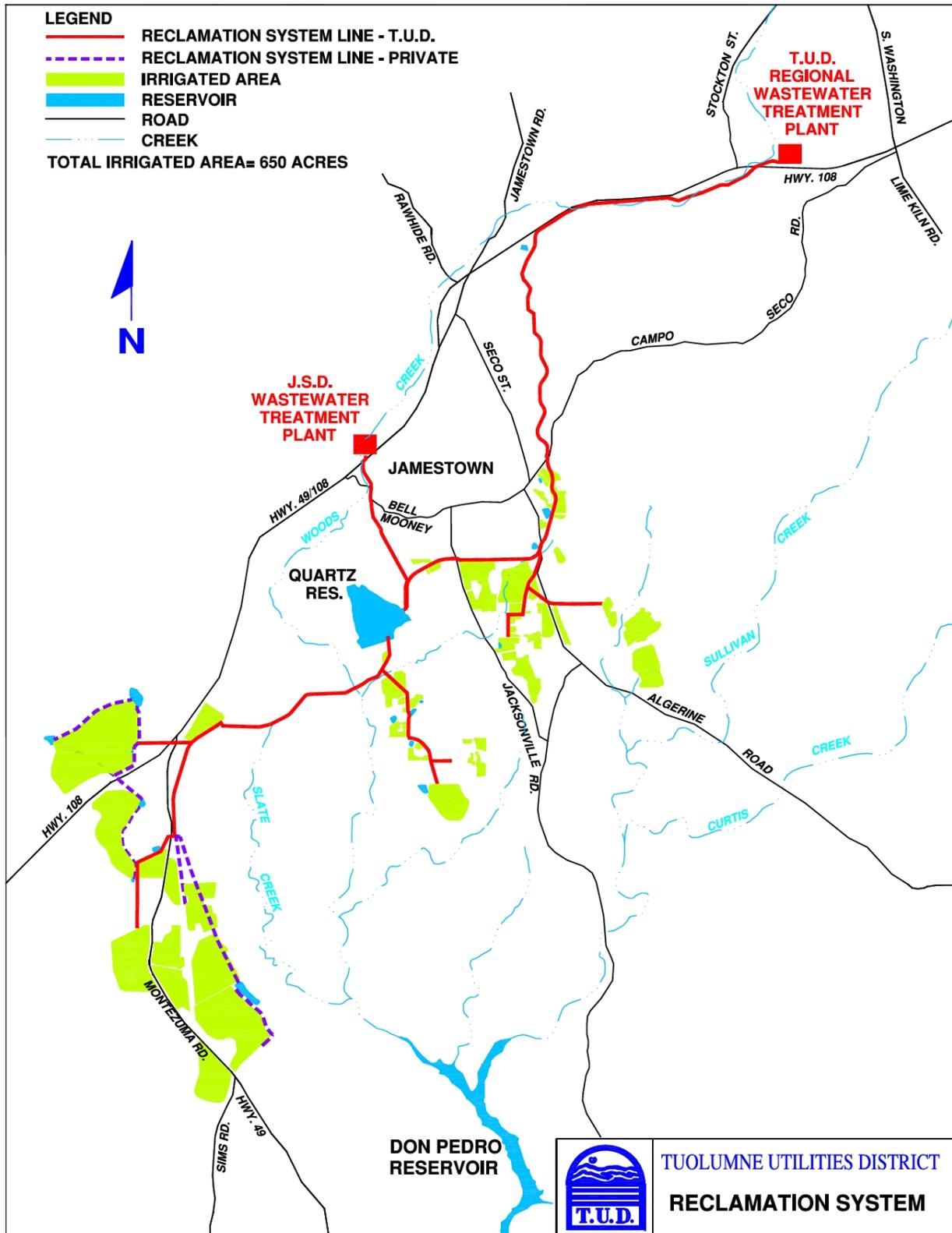
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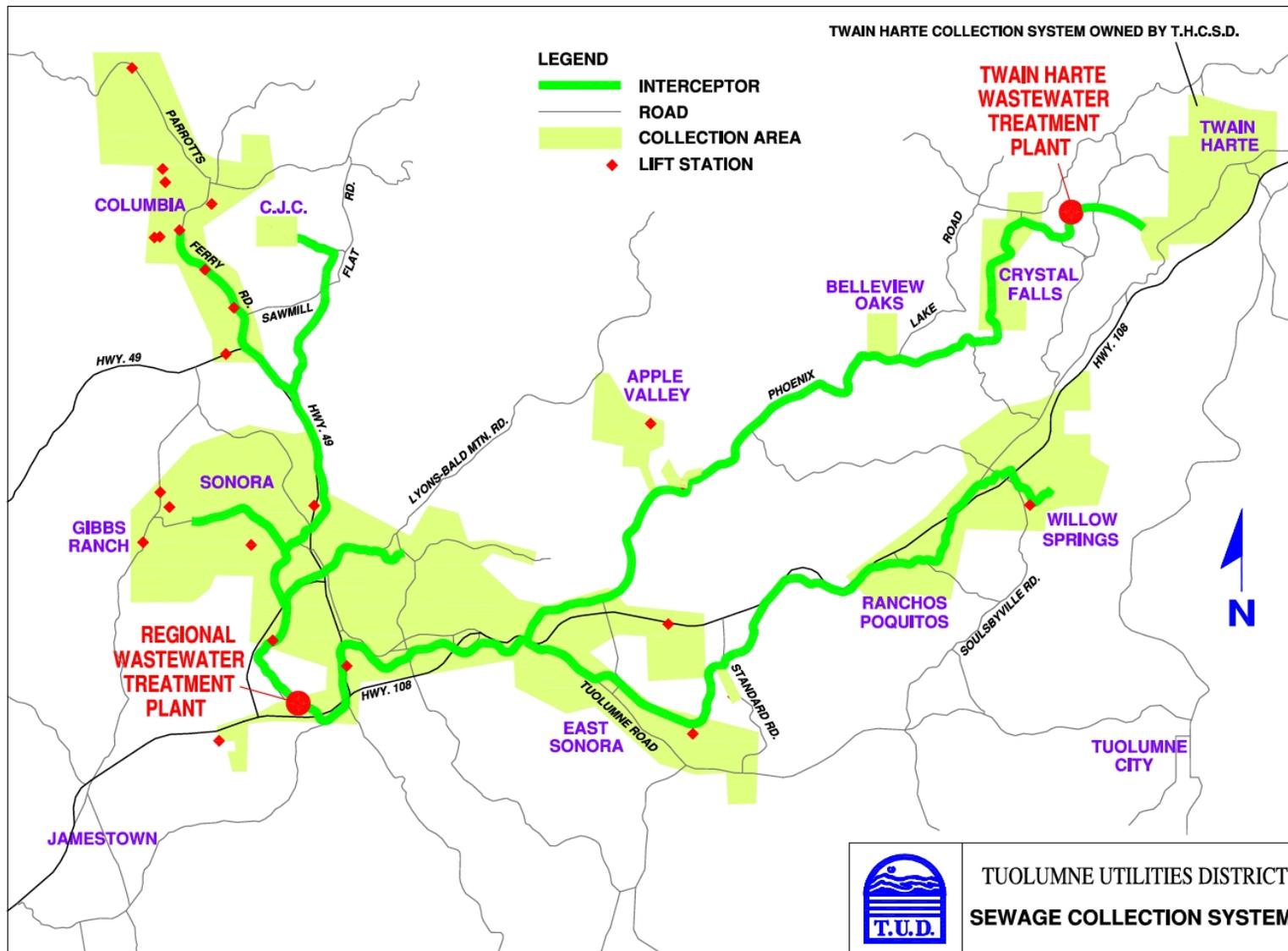
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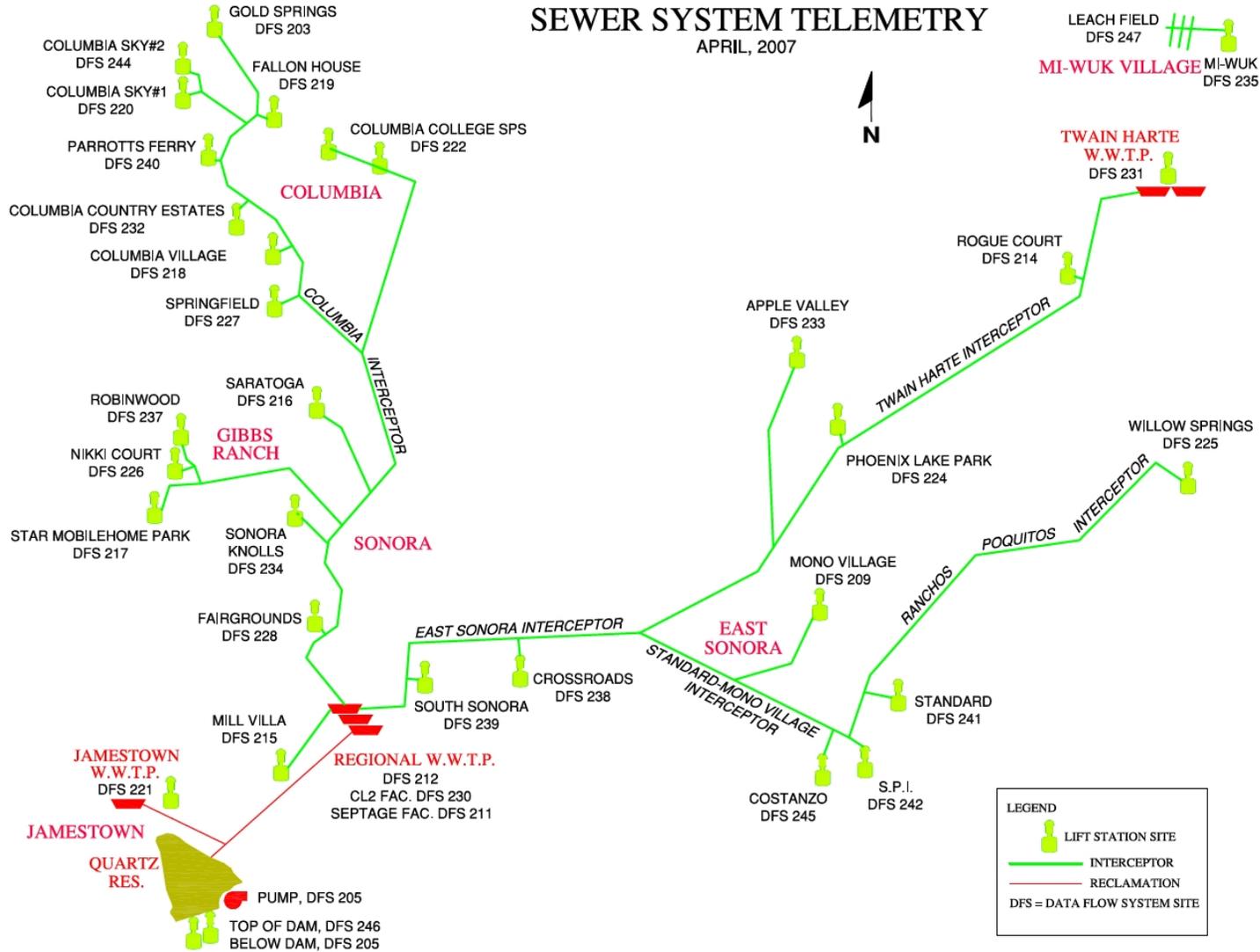
Revised insert:

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SEWER SYSTEM TELEMETRY

APRIL, 2007





II. PLANNING PROCESS

A. DMA 2000 Requirements

DMA Requirements §201.6(b) and §201.6(c)(1):

An open public involvement process is essential to the development of an effective plan. In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process shall include:

- (1) An opportunity for the public to comment on the plan during the drafting stage and prior to plan approval;
- (2) An opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development, as well as businesses, academia and other private and non-profit interests to be involved in the planning process; and
- (3) Review and incorporation, if appropriate, of existing plans, studies, reports, and technical information.

The plan shall document the planning process used to develop the plan, including how it was prepared, who was involved in the process, and how the public was involved.

B. Plan Development and Public Input Process/Countywide Elements

Volume 1 is the master planning document which contains all elements applicable to the County of Tuolumne and each of the 22 individual jurisdictions. Plan development commenced with a review and revision of the updated 2013 Hazard Mitigation Plan. Each of the participating jurisdictions participated fully in the mitigation plan update.

A news release was developed and issued and informative letters were sent out to community groups and neighboring jurisdictions inviting public participation. A Hazard Mitigation Planning Group was constructed with representatives from all involved jurisdictions and community stakeholders. Planning group meetings were held which explained the process that was going to be taken to construct the new plan, reviewed hazards of concern and hazard rankings, and explained the risks and vulnerability to the communities' people, buildings and infrastructure. Mitigation goals, objectives and actions were discussed and reviewed thoroughly with all planning group members until concurrence was reached. A capability assessment and action plan were developed to ensure mitigation actions were realistic and attainable and to assign funding sources and responsibility for each proposed activity.

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After the MJHMP Planning Group Members, their respective jurisdictions, and Tuolumne County Office of Emergency Services were all satisfied with the newly updated draft plan and its mitigation goal, objectives and actions, a noticed public hearing occurred at the County Board of Supervisor Chambers. This meeting was widely advertised both locally and in neighboring counties to provide an opportunity for the general public, bordering communities and regional agencies involved in hazard mitigation activities to participate in the planning process. Notice of the public hearing was posted, two weeks in advance, on the County website, community bulletin boards and through a press release. Notification letters were sent to Office of Emergency Services managers in all neighboring Counties. Several weeks prior to the hearing, the newly constructed Plan was posted on the County website to enable the public and stakeholders ample time to read and evaluate it. A Power Point presentation was developed that provided a detailed explanation of the risks and vulnerabilities the community faced.

The mitigation goals, objectives and actions were explained in detail as were the resources that would be used to help mitigate these hazards. In addition, the general public had an opportunity to ask questions and comment on the proposed plan and each of the annexes as they moved through the approval process for Tuolumne County and each of the participating jurisdictions. All comments were reviewed with the stakeholder group and incorporated into the plan as appropriate.

C. Jurisdiction Specific Planning and Approval Process

Tuolumne Utilities District had several staff members who participated in the Hazard Mitigation Planning Group. These representatives brought the Planning Group findings to the General Manager who reviewed the findings with special attention being paid to the issues of wildland fire, earthquake, extreme weather, and flooding mitigations. The General Manager's input was incorporated into both draft and final documents, and reviewed by District staff. A staff report was prepared and made available to the general public for comment and was eventually forwarded to the Tuolumne Utilities District Board of Directors. A public meeting was held within the jurisdiction; input was received from the general public and incorporated into the final approved agency specific plan.

Adoption by the District demonstrates the jurisdiction's commitment to fulfilling the hazard mitigation goals and actions outlined in the plan. Adoption legitimizes the plan and authorizes the District to execute its responsibilities.

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III. RISK ASSESSMENT

A. DMA 2000 Requirements

- DMA Requirement §201.6(c)(2)(i):** The risk assessment shall include a description of the type of all natural hazards that can affect the jurisdiction.
- DMA Requirement §201.6(c)(2)(i):** The risk assessment shall include a description of the location and extent of all natural hazards that can affect the jurisdiction. The plan shall include information on previous occurrences of hazard events and on the probability of future hazard events.
- DMA Requirement §201.6(c)(2)(iii):** For multi-jurisdictional plans, the risk assessment must assess each jurisdiction’s risks where they vary from the risks facing the entire planning area.

B. Jurisdiction Specific Risks

While a detailed hazard description and analysis can be found in the individual hazard profiles found in Volume 1 of this plan, as outlined below the District is susceptible to the following hazards. It should be noted that the District relies on the County, which is an NFIP participant, to regulate flood control issues.

Jurisdiction	Earthquake	Wildfire	Extreme Weather	Flood	Volcano	Haz Mat	Sinkholes
Tuolumne Utilities District	✓	✓	✓	✓	✓	✓	✓

Tuolumne Utilities District has the following unique risks:

- **Water Quality:** Biological, chemical, traffic and erosion problems generate boil water notices and delivery interruption
- **Wastewater System Failure:** Overflows into creeks give rise to polluted surface waters and subsequent fines
- **Water Distribution Failure:** Pipes and tank problems lead to sanitation and fire protection issues.
- **Dam Failure:** Quartz Reservoir and Phoenix Lake dam failures lead to inundation.

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- **Source Water Supply:** Flume and ditch failure resulting in termination of raw water supply to water treatment plants.

C. Jurisdiction Specific Hazard Event History

While a detailed hazard history can be found in the individual hazard profiles found in Volume 1 of this plan, the following events are specific to the District or have occurred in close proximity:

Earthquake History

Historically, earthquake activity in Tuolumne County is significantly below the California state average. In fact, it has one of the lowest earthquake risks in the State. As outlined below, a total of 5 historical earthquake events with recorded magnitudes of 3.5 or greater occurred in or near (50 Miles) Tuolumne County this past century.

Date	Description	Distance from Sonora	Impacts
March 26, 1872	7.6 – 8.0 Magnitude	Epicenter Unknown	Unknown
June 25, 1933	6.1 Magnitude	49.6 Miles	Unknown
June 10, 1965	3.5 Magnitude	42.6 Miles	None
August 10, 1975	4.0 Magnitude	44.3 Miles	None
August 9, 1983	4.0 Magnitude	40.8 Miles	None

Wildfire History

Numerous small fires occur on an annual basis in and around the District. The weather, topography and fuels in the area make fire a constant threat for typically 6 months a year. While a detailed fire history for the entire county can be found in Volume 1 of this plan the following is a sample of fires that have occurred in this general vicinity and share similar fuel types, weather, and topography.

Date	Description	Impacts
August, 1987	Stanislaus Complex	6 major fires burn 145,950 acres, 28 structures, and 1 life was lost.
August 6, 2004	Copper Fire	3,445 acres burned and 1 home destroyed
September, 2004	Tuolumne Fire	750 acres burned and 1 firefighter fatality.

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2010	Vernon Fire	909 acres burned
2012	Seven Fire	840 acres burned
2013	Power Fire	1,070 acres burned
2013	Rim Fire	257,314 acres burned. The fire was caused by an illegal campfire. The fire is the third largest wildfire in history.
2016	Marshes Fire	1,080 acres burned. The cause of the fire was a vehicle.

Extreme Weather History

Many types of extreme weather impact the District, including but not limited to, drought, heavy rainfall, thunderstorms, heavy snow and windstorms. The following is a sample of some of the specific extreme weather events in and near the District.

Date	Description	Impacts
January - February 1969	Low elevation, heavy snow fall	Tree damage, transportation issues and power outages.
November 2010	Freeze	Significant damage to apple and olive crops
March 2011	Winter storm	Minor flooding, significant damage to structures caused by tree falls, and power outages.
January-February 2017	Winter Storms	Storms caused significant damage to roads, culverts, and resulted in several local landslides

Flood History

Date	Description	Impacts
December 1964	Winter Storm	Board of Supervisors declares a Local Emergency based on flooding throughout the County.



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Winter 1969	Winter Storm	Board of Supervisors declares a Local Emergency based on flooding throughout the County.
February 1986	Winter storm results in Sonora Creek overbanking.	A number of buildings at the Mother Lode Fairgrounds were flooded.
March 1995	Spring Storm	Board of Supervisors declares a Local Emergency based on flooding throughout the

Volcanic History

There is no history of volcanic activity in recorded history. The proximity to volcanic active areas does present a remote threat of ash fall and the associated respiratory illnesses.

Hazardous Materials

While there is not a significant history of hazardous material spills or releases in the immediate area the number of commercial occupancies and a state highway transecting the District make this threat a distinct possibility.

Sinkholes

There is a poorly documented history of small sinkholes and subsidence as a result of mining activity and the occurrence below ground of carbonated rock formations. There are no recorded events of significance.

D. Jurisdiction Specific Hazard Ranking

Given the past history, the current conditions, and the overall life and property threat the Tuolumne Utilities District the Planning Committee has deemed the probability and severity of each hazard as follows:

Tuolumne Utilities District	Wildfire	Extreme Weather	Earthquake	Flood	Volcano	Haz Mat	Sinkholes
Probability	H	M	L	M	L	L	L
Severity	H	M	H	M	L	M	L

L = Low, M= Medium, H = High

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A. Overview

The vulnerability assessment is a summary of the hazard's impact to the community's vulnerable structures. Community assets and development trends will be identified and assessed with respect to the developed hazard profiles to ascertain the potential amount of damage that could ensue from each identified hazard. This section will include: 1) A description of the critical buildings and infrastructure within the study areas including future building and land use decisions. 2) A general description of the extent of each hazard's impacts to these vulnerable structures, 3) An estimate of the potential dollar losses to vulnerable structures.

B. DMA 2000 Requirements

DMA Requirement §201.6(c)(2)(ii):	The risk assessment shall include a description of the jurisdiction's vulnerability to the hazards described in paragraph (c)(2)(i) of this section. This description shall include an overall summary of each hazard and its impact on the community.
DMA Requirement §201.6(c)(2)(ii)(A):	The plan should describe vulnerability in terms of the types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard areas.
DMA Requirement §201.6(c)(2)(ii)(B):	[The plan should describe vulnerability in terms of an] estimate of the potential dollar losses to vulnerable structures identified in paragraph (c)(2)(i)(A) of this section and a description of the methodology used to prepare the estimate
DMA Requirement §201.6(c)(2)(ii)(C):	The plan should describe vulnerability in terms of providing a general description of land uses and development trends within the community so that mitigation options can be considered in future land decisions.
DMA Requirement §201.6(c)(2)(iii):	For multi-jurisdictional plans, the risk assessment must assess each jurisdiction's risks where they vary from the risks facing the entire planning area.

C. Critical Facilities and Infrastructure

Critical facilities and infrastructure are those systems within each community whose incapacity or destruction would have a debilitating effect on the community's ability to recover subsequent to a major disaster. The following critical facility and infrastructure are categorized as follows:

1. **Emergency Services** for the health and welfare of the whole population (e.g., hospitals, police, fire stations, emergency operations centers, evacuation shelters, schools).

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2. **Lifeline Utility Systems** such as potable water, wastewater, oil, natural gas, electric power and communications systems.
3. **Transportation Systems** including railways, highways, waterways, airways and city streets to enable effective movement of services, goods and people.
4. **High Potential Loss Facilities** such as power plants, dams and levees.



D. Jurisdictional Assets at Risk to Applicable Hazards

TUOLUMNE UTILITIES DISTRICT

Critical Facilities: – 2017-2018

TUOLUMNE UTILITIES DISTRICT CRITICAL FACILITIES LIST: 2017-2018											
Description	Address Line 1	City	Building Value	Content Value	Wildfire	Flood	Earthquake	Landslide/Sinkholes	Volcano	Extreme Weather	Hazardous Materials
Administration Office Complex	18885 Nugget Boulevard	Sonora	\$ 5,200,000	\$ 1,393,685	X	X	X	X	X	X	X
Apple Valley Oneto Hydro Pump Station	21099 Oneto Ridge Road	Sonora	\$ 3,000	\$ 10,000	X	X	X	X	X	X	X
Apple Valley Raw Water Air Injection	20531 Meadow Brook Dr.	Sonora	\$ 5,000	\$ 10,000	X	X	X	X	X	X	X
Booster Station - Alderman	17180 Alderman Road	Sonora	\$ 3,000	\$ 1,000	X		X	X	X	X	X
Booster Station - Apple Valley Stanton Circle	13999 Stanton Circle	Sonora	\$ 5,000	\$ 13,500	X	X	X	X	X	X	X
Booster Station - Big Hill	13930 Grey Fox	Sonora	\$ 15,000	\$ 25,000	X		X	X	X	X	X
Booster Station - Big Hill Gunsight	22900 Gunsight Rd	Sonora	\$ 78,000	\$ 112,000	X		X	X	X	X	X
Booster Station - Big Hill Raw Water	13930 Grey Fox	Sonora	\$ 25,000	\$ 35,000	X	X	X	X	X	X	X
Booster Station - Canyon View	20215 Canyon View Dr.	Tuolumne	\$ 10,000	\$ 10,000	X		X	X	X	X	X
Booster Station - Caylor	20840 Caylor Dr.	Sonora	\$ 5,000	\$ 4,000	X		X	X	X	X	X
Booster Station - Cedar Ridge	23830 Buck Board Court	Sonora	\$ 10,000	\$ 25,000	X		X	X	X	X	X
Booster Station - Cedar Ridge Hitching Post	24008 Hitching Post Road	Sonora	\$ 3,000	\$ 7,000	X		X	X	X	X	X
Booster Station - Cedar Rock	22040 Thunderbolt Road	Sonora	\$ 6,000	\$ 7,000	X		X	X	X	X	X
Booster Station - Chapel Hill	20115 Chapel Dr.	Tuolumne	\$ 2,000	\$ 5,500	X		X	X	X	X	X
Booster Station - East Sonora	13649 Tuolumne Road	Sonora	\$ 50,000	\$ 28,500	X		X	X	X	X	X
Booster Station - East Sonora /Mono Village	14429 Mono Way	Sonora	\$ 15,000	\$ 15,000	X		X	X	X	X	X
Booster Station - Eden Lane	20601 Eden Lane	Tuolumne	\$ 5,000	\$ 5,000	X		X	X	X	X	X
Booster Station - Kennebec	11211 Forest Park Dr	Sonora	\$ 10,000	\$ 30,000	X		X	X	X	X	X
Booster Station - Mono Vista	21069 Dulce Lane	Sonora	\$ 30,000	\$ 150,000	X		X	X	X	X	X
Booster Station - New Melones	24140 Marble Quarry Road	Columbia	\$ 225,000	\$ 803,500	X		X	X	X	X	X
Booster Station - Oman #5	21356 Oman Dr.	Soulsbyville	\$ 20,000	\$ 5,500	X		X	X	X	X	X
Booster Station - Ponderosa Lower Pond	20660 Ponderosa Way	Tuolumne	\$ 10,000	\$ 23,000	X	X	X	X	X	X	X
Booster Station - Ponderosa Rainbow Rd	18980 Rainbow Road	Sonora	\$ -	\$ 57,500	X		X	X	X	X	X
Booster Station - Rancho Poquitos	16314 Corte del Cielo	Sonora	\$ 3,000	\$ 16,600	X		X	X	X	X	X
Booster Station - Ridgewood	16599 Crestridge	Sonora	\$ 25,000	\$ 7,000	X		X	X	X	X	X
Booster Station - Ridgewood (lower)	16592 Woodcrest Way	Sonora	\$ 5,000	\$ 2,500	X		X	X	X	X	X
Booster Station - Rogue River	21706 Rogue River Dr.	Sonora	\$ 45,000	\$ 25,000	X		X	X	X	X	X

Tuolumne County Multi-Jurisdictional Hazard Mitigation Plan



TUOLUMNE UTILITIES DISTRICT CRITICAL FACILITIES LIST: 2017-2018						Wildfire	Flood	Earthquake	Landslide/Sinkholes	Volcano	Extreme Weather	Hazardous Materials
Description	Address Line 1	City	Building Value	Content Value								
Booster Station - Saratoga and Tank	345 Reservoir Road	Sonora	\$ 25,000	\$ 78,500	X		X	X	X	X	X	X
Booster Station - Shaws Flat Road	945 Shaws Flat Road	Sonora	\$ -	\$ 10,000	X		X	X	X	X	X	X
Booster Station - Skyline Road	20421 Skyline Rd	Sonora	\$ 5,000	\$ 5,000	X		X	X	X	X	X	X
Booster Station - Zone 3-4	19451 Middle Camp Sugar Pine Road	Sonora	\$ 5,000	\$ 7,000	X		X	X	X	X	X	X
Booster Station - Sugar Pine Fire House	24134 Pine Lake Dr.	Sonora	\$ 5,000	\$ -	X		X	X	X	X	X	X
Booster Station - Sugar Pine White Fir	24302 White Fir Dr. North	Sonora	\$ 5,000	\$ 13,500	X		X	X	X	X	X	X
Booster Station - Sunswept Dr.	20839 Sunswept Dr.	Tuolumne	\$ 15,000	\$ 7,000	X		X	X	X	X	X	X
Booster Station - Sylva Lane (Cabezut)	12900 Sylva Lane	Sonora	\$ 5,000	\$ 23,500	X		X	X	X	X	X	X
Booster Station - Tehachapi	16942 Oak Tree Lane	Sonora	\$ 5,000	\$ 15,000	X		X	X	X	X	X	X
Booster Station - Volponi Acres	11299 McKibbon Dr.	Sonora	\$ 5,000	\$ 13,500	X		X	X	X	X	X	X
Booster Station - Zelinsky Court & Tank	18035 Zelinsky Court	Sonora	\$ 2,000	\$ 17,500	X		X	X	X	X	X	X
Iron Manganese Filter - Mono Village	Susan Way / Stone Lane	Sonora	\$ 75,000	\$ 25,000	X		X	X	X	X	X	X
Meter Bldg. - Shaws Flat Pipeline	End of Meadow Brook Dr.	Sonora	\$ 5,000	\$ 10,000	X		X	X	X	X	X	X
PR Station - Columbia Vista	22920 Columbia Vista Dr.	Columbia	\$ 5,000	\$ 15,000	X		X	X	X	X	X	X
Reservoir - Comstock	17435 Highgrade Lane	Sonora	\$ 563,000	\$ 10,000	X	X	X	X	X	X	X	X
Reservoir - Cuesta Center	14210 Kelly Loop	Sonora	\$ 100,000	\$ 3,500	X		X	X	X	X	X	X
Reservoir - Cuesta Serena	18415 Avenida Benica North	Sonora	\$ 105,000	\$ -	X		X	X	X	X	X	X
Reservoir - Curtis Creek Ranches	19454 Mt Echo Court	Sonora	\$ 200,000	\$ 20,000	X		X	X	X	X	X	X
Reservoir - Jamestown	15150 Golden Oaks Dr.	Sonora	\$ 530,000	\$ 65,000	X		X	X	X	X	X	X
Reservoir - Lambert Lake	13808 Florence Way	Sonora	\$ 75,000	\$ 3,500	X		X	X	X	X	X	X
Reservoir - Ponderosa Lower Pond	20660 Ponderosa Way	Tuolumne	\$ 700,000	\$ -	X	X	X	X	X	X	X	X
Reservoir - Sonora WTP #1	20270 Bald Mountain Road	Sonora	\$ 1,000,000	\$ -	X		X	X	X	X	X	X
Reservoir - Springfield Estates	22435 Lakeview Heights	Sonora	\$ 150,000	\$ 3,500	X		X	X	X	X	X	X
Reservoir - Wards Ferry Ranches	17560 Uplands Dr.	Sonora	\$ 200,000	\$ -	X		X	X	X	X	X	X
SCADA - Meadowbrook	21844 Confidence Road	Sonora	\$ -	\$ 5,000	X		X	X	X	X	X	X
Tank - Apple Valley #2	21099 Oneto Ridge Rd	Sonora	\$ 125,000	\$ -	X		X	X	X	X	X	X
Tank - Big Hill Backwash	13930 Grey Fox	Sonora	\$ 100,000	\$ -	X	X	X	X	X	X	X	X
Tank - Big Hill Clearwell	13930 Grey Fox	Sonora	\$ 410,000	\$ -	X		X	X	X	X	X	X
Tank - Big Hill Poly Storage	14330 Northridge	Sonora	\$ 10,000	\$ -	X		X	X	X	X	X	X
Tank - Big Hill Shale Rock	13283 Shale Rock Road	Sonora	\$ 365,000	\$ -	X		X	X	X	X	X	X
Tank - Brentwood (Upper Basin)	23358 Tanager Dr.	Sonora	\$ 169,000	\$ -	X		X	X	X	X	X	X

Tuolumne County Multi-Jurisdictional Hazard Mitigation Plan



TUOLUMNE UTILITIES DISTRICT CRITICAL FACILITIES LIST: 2017-2018											
Description	Address Line 1	City	Building Value	Content Value	Wildfire	Flood	Earthquake	Landslide/Sinkholes	Volcano	Extreme Weather	Hazardous Materials
Tank - Camp Sunshine Site	20230 Jack Rabbit Trail	Sonora	\$ 110,000	\$ 3,500	X		X	X	X	X	X
Tank - Cedar Ridge Clearwell	24229 Awahanee Road	Sonora	\$ 100,000	\$ -	X		X	X	X	X	X
Tank - Cedar Ridge Springs Clearwell	17125 East Brookside Dr.	Sonora	\$ 25,000	\$ -	X		X	X	X	X	X
Tank - Cedar Ridge Upper #1	23830 Buck Board Court	Sonora	\$ 100,000	\$ -	X		X	X	X	X	X
Tank - Cedar Ridge Upper #2	23831 Buck Board Court	Sonora	\$ 100,000	\$ -	X		X	X	X	X	X
Tank - Chapparal	13054 Chapparal	Sonora	\$ 801,500	\$ -	X		X	X	X	X	X
Tank - Columbia Clearwell #1	23310 Pine Log Road	Columbia	\$ 500,000	\$ 12,000	X		X	X	X	X	X
Tank - Columbia Clearwell #2	23310 Pine Log Road	Columbia	\$ 150,000	\$ -	X		X	X	X	X	X
Tank - Columbia Vista	23119 Columbia Vista Road	Columbia	\$ 25,000	\$ -	X		X	X	X	X	X
Tank - Confidence	23085 Confidence Road	Sonora	\$ 250,000	\$ 5,000	X		X	X	X	X	X
Tank - Crystal Falls "Falls"	22280 South Colorado River Dr.	Sonora	\$ 110,000	\$ 10,000	X		X	X	X	X	X
Tank - Crystal Falls "Meadow"	21869 Feather River Dr.	Sonora	\$ 75,000	\$ 5,000	X		X	X	X	X	X
Tank - Crystal Falls Clarifier	17571 Mt Elizabeth Dr.	Sonora	\$ 75,000	\$ -	X		X	X	X	X	X
Tank - Crystal Falls WTP Clearwell #1	17571 Mt Elizabeth Dr.	Sonora	\$ 410,000	\$ -	X		X	X	X	X	X
Tank - Crystal Falls WTP Clearwell #2	17571 Mt Elizabeth Dr.	Sonora	\$ 210,000	\$ -	X		X	X	X	X	X
Tank - Gibbs - Gopher Tank 106	20700 Keeley Dr.	Sonora	\$ 100,000	\$ 3,500	X		X	X	X	X	X
Tank - Gibbs - Lower Tank 420k	19866 Villa Dr.	Sonora	\$ 505,000	\$ 3,500	X		X	X	X	X	X
Tank - Gibbs - Upper Tank 126k	19850 Villa Dr.	Sonora	\$ 110,000	\$ 3,500	X		X	X	X	X	X
Tank - Greenley Road Backwash	19757 Greenley Rd.	Sonora	\$ 75,000	\$ 153,500	X		X	X	X	X	X
Tank - Greenley Road Clearwell	19757 Greenley Rd.	Sonora	\$ 2,500,000	\$ -	X		X	X	X	X	X
Tank - High Road Pressure	High Road	Sonora	\$ 500	\$ 2,000	X		X	X	X	X	X
Tank - Kennebec	11211 Forest Park Dr	Sonora	\$ 525,000	\$ -	X		X	X	X	X	X
Tank - Lakewood Clearwell	18820 Middle Camp Road	Twain Harte	\$ 283,500	\$ -	X		X	X	X	X	X
Tank - Lakewood Park Zone #3	19617 Michigan Dr.	Sonora	\$ 125,000	\$ -	X		X	X	X	X	X
Tank - Lakewood Zone 2, # 1	13905 Michigan Dr.	Twain Harte	\$ 420,000	\$ -	X		X	X	X	X	X
Tank - Lakewood Zone 2, #1	19305 Michigan Dr.	Twain Harte	\$ 600,000	\$ -	X		X	X	X	X	X
Tank - Lakewood Zone 2, #2	19305 Michigan Avenue	Twain Harte	\$ 450,000	\$ -	X		X	X	X	X	X
Tank - Mono Village A	19276 Industrial Dr.	Sonora	\$ 50,000	\$ 3,000	X		X	X	X	X	X
Tank - Mono Village B	19276 Industrial Dr.	Sonora	\$ 100,000	\$ 3,000	X		X	X	X	X	X
Tank - Mono Village C	19276 Industrial Dr.	Sonora	\$ 100,000	\$ 3,000	X		X	X	X	X	X
Tank - Mono Vista #1	17029 Oak Tree Lane	Sonora	\$ 125,000	\$ -	X		X	X	X	X	X
Tank - Mono Vista #2	17029 Oak Tree Lane	Sonora	\$ 435,500	\$ -	X		X	X	X	X	X

Tuolumne County Multi-Jurisdictional Hazard Mitigation Plan



TUOLUMNE UTILITIES DISTRICT CRITICAL FACILITIES LIST: 2017-2018						Wildfire	Flood	Earthquake	Landslide/Sinkholes	Volcano	Extreme Weather	Hazardous Materials
Description	Address Line 1	City	Building Value	Content Value								
Tank - Monte Grande Backwash	17210 Monte Grande Dr.	Sonora	\$ 100,000	\$ -	X	X	X	X	X	X	X	X
Tank - Monte Grande Clearwell	17210 Monte Grande Dr.	Sonora	\$ 600,000	\$ -	X	X	X	X	X	X	X	X
Tank - Oakhaven	16666 Oakhaven Lane	Sonora	\$ 53,500	\$ 5,000	X		X	X	X	X	X	X
Tank - Oman #4 & Booster Pump	21080 Oman Dr.	Soulsbyville	\$ 23,000	\$ -	X		X	X	X	X	X	X
Tank - Oman #5 (Redwood)	21356 Oman Dr.	Soulsbyville	\$ 40,000	\$ -	X		X	X	X	X	X	X
Tank - Peaceful Pines	25587 Highway 108	Sonora	\$ 50,000	\$ -	X		X	X	X	X	X	X
Tank - Pedro "Y" (Springfield Tank)	21555 Hwy 49	Sonora	\$ 500,000	\$ 3,500	X		X	X	X	X	X	X
Tank - Phoenix Lake Park	20656 Resort Road	Sonora	\$ 75,000	\$ -	X		X	X	X	X	X	X
Tank - Ponderosa Clearwell #1	20425 Old Buchanan Mine Rd.	Tuolumne	\$ 150,000	\$ -	X		X	X	X	X	X	X
Tank - Ponderosa Clearwell #2	20425 Old Buchanan Mine Rd	Sonora	\$ 150,000	\$ -	X		X	X	X	X	X	X
Tank - Rancho Poquitos #1	16314 Corte del Cielo	Sonora	\$ 84,000	\$ -	X		X	X	X	X	X	X
Tank - Rancho Poquitos #2	16314 Corte del Cielo	Sonora	\$ 42,000	\$ -	X		X	X	X	X	X	X
Tank - Ridgewood	16599 Crestridge	Sonora	\$ 118,000	\$ -	X		X	X	X	X	X	X
Tank - S P I	15050 Camage	Sonora	\$ 310,000	\$ 5,000	X		X	X	X	X	X	X
Tank - Scenic View Cinder Block	20471 Sommette Dr.	Sonora	\$ -	\$ 50,000	X		X	X	X	X	X	X
Tank - Scenic View Hillview	20662 Upper Hillview Dr.	Sonora	\$ 103,500	\$ -	X		X	X	X	X	X	X
Tank - Scenic View Sommette	20275 Sommette Dr.	Sonora	\$ 125,000	\$ -	X		X	X	X	X	X	X
Tank - Scenic View/Scenic Brook	20292 Meadow Brook Dr.	Sonora	\$ 70,000	\$ -	X		X	X	X	X	X	X
Tank - Skyline	20421 Skyline Rd	Tuolumne	\$ 450,000	\$ -	X		X	X	X	X	X	X
Tank - Sonora Vista	17050 Upper Starr King Dr.	Sonora	\$ 113,500	\$ -	X		X	X	X	X	X	X
Tank - Sonora WTP #2	20270 Bald Mountain Road	Sonora	\$ 1,000,000	\$ -	X		X	X	X	X	X	X
Tank - Sugar Pine Riddle	23971 Yellow Pine Road	Sonora	\$ 150,000	\$ 3,500	X		X	X	X	X	X	X
Tank - Sugar Pine White Fir	24302 White Fir Dr. North	Sonora	\$ 300,000	\$ -	X		X	X	X	X	X	X
Tank - Tuolumne Clearwell	18685 Cedar Street	Sonora	\$ 1,000,000	\$ -	X		X	X	X	X	X	X
Tank - Volponi	18980 Golden Dove Lane	Sonora	\$ 75,000	\$ -	X		X	X	X	X	X	X
Tank - Wards Ferry #1	17535 Uplands Dr.	Sonora	\$ 50,000	\$ -	X		X	X	X	X	X	X
Tank - Wards Ferry #2	17535 Uplands Dr.	Sonora	\$ 50,000	\$ -	X		X	X	X	X	X	X
Tank - Willow Springs Clearwell	20613 Steven Court	Sonora	\$ 200,000	\$ -	X		X	X	X	X	X	X
Well - Apple Valley #1	14191 Barlupi Circle	Sonora	\$ 5,000	\$ 2,500	X		X	X	X	X	X	X
Well - Apple Valley Well Bldg #2	21091 Christopher Circle	Sonora	\$ 5,000	\$ 2,500	X		X	X	X	X	X	X
Well - Apple Valley Well Bldg #3	Summers Lane	Sonora	\$ 20,000	\$ 10,000	X		X	X	X	X	X	X
Well - Caylor	20794 Caylor Dr.	Sonora	\$ 15,000	\$ 6,500	X		X	X	X	X	X	X

Tuolumne County Multi-Jurisdictional Hazard Mitigation Plan



TUOLUMNE UTILITIES DISTRICT CRITICAL FACILITIES LIST: 2017-2018					Wildfire	Flood	Earthquake	Landslide/Sinkholes	Volcano	Extreme Weather	Hazardous Materials
Description	Address Line 1	City	Building Value	Content Value							
Well - Columbia Country Estates Well & Pump	11275 McKellar Dr.	Sonora	\$ -	\$ 5,000	X		X	X	X	X	X
Well - Confidence #1	19965 Forest Vista Dr.	Sonora	\$ 5,000	\$ 2,500	X		X	X	X	X	X
Well - Confidence #2	20073 Forest Vista Dr.	Sonora	\$ 5,000	\$ 2,500	X		X	X	X	X	X
Well - Crystal Falls Business Park	21097 Longeway Road	Sonora	\$ 3,000	\$ 6,000	X		X	X	X	X	X
Well - Crystal Falls Plant	17571 Mt Elizabeth Dr	Sonora	\$ 3,000	\$ 10,000	X		X	X	X	X	X
Well - Cuesta Serena #2	18318 Avenita Bonita	Sonora	\$ 6,000	\$ 11,500	X		X	X	X	X	X
Well - Gibbs Racetrack Facility	11225 Race Track Road	Sonora	\$ 10,000	\$ 15,000	X		X	X	X	X	X
Well - Lambert Lake #1	18495 Lambert Lake Road	Sonora	\$ 5,000	\$ 15,800	X		X	X	X	X	X
Well - Marble Quarry	23461 Parrots Ferry Road	Sonora	\$ 5,000	\$ 24,500	X		X	X	X	X	X
Well - Mill Villa	18757 Mill Villa Road	Sonora	\$ 10,000	\$ 50,000	X		X	X	X	X	X
Well - Mono Village #2	19421 Village Dr.	Sonora	\$ 2,000	\$ 10,000	X		X	X	X	X	X
Well - Mono Village #3	19421 Village Dr.	Sonora	\$ 2,000	\$ 10,000	X		X	X	X	X	X
Well - Mono Village #5	19501 Industrial Way	Sonora	\$ 2,000	\$ 10,000	X		X	X	X	X	X
Well - Mono Village #7	19338 Industrial Way	Sonora	\$ 2,000	\$ 15,000	X		X	X	X	X	X
Well - Oakhaven	16680 Oakhaven Lane	Sonora	\$ -	\$ 5,000	X		X	X	X	X	X
Well - Oakridge Ranch	22855 Meadow Lane	Sonora	\$ 5,000	\$ 2,000	X		X	X	X	X	X
Well - Peaceful Pines	25466 Rebekah Road	Long Barn	\$ 5,000	\$ 11,500	X		X	X	X	X	X
Well - Phoenix Lake Park	14610 Deon Dr.	Sonora	\$ 15,000	\$ 26,000	X		X	X	X	X	X
Well - Rybar #1 Junction Shopping Center	13767 Mono Way	Sonora	\$ 5,000	\$ 13,500	X		X	X	X	X	X
Well - Rybar #2 Boulder Plaza	13949 Mono Way	Sonora	\$ 5,000	\$ 27,500	X		X	X	X	X	X
Well - Rybar #3 Junction Shopping Center	13777-C Mono Way	Sonora	\$ 5,000	\$ 12,000	X		X	X	X	X	X
Well - Rybar #4 Aladdin Motor Inn	14274 Mono Way	Sonora	\$ 5,000	\$ 13,000	X		X	X	X	X	X
Well - Scenic Brook #1	20271 Brook Dr.	Sonora	\$ -	\$ 5,000	X		X	X	X	X	X
Well - Scenic Brook #2	20269 Brook Dr.	Sonora	\$ -	\$ 5,000	X		X	X	X	X	X
Well - Springfield Estates #4 #5	10271 Chile Gulch Road	Sonora	\$ 21,000	\$ 25,000	X		X	X	X	X	X
Well - Wards Ferry #1	17457 Murphy Road	Sonora	\$ 15,000	\$ -	X		X	X	X	X	X
Well - Cuesta Center #1	14395 Cuesta Court	Sonora	\$ 5,000	\$ 17,000	X		X	X	X	X	X
WTP - Big Hill	13930 Grey Fox	Sonora	\$ 75,000	\$ 440,000	X		X	X	X	X	X
WTP - Brentwood	23358 Tanager Dr.	Sonora	\$ 30,000	\$ 126,500	X		X	X	X	X	X

Tuolumne County Multi-Jurisdictional Hazard Mitigation Plan



TUOLUMNE UTILITIES DISTRICT CRITICAL FACILITIES LIST: 2017-2018						Wildfire	Flood	Earthquake	Landslide/Sinkholes	Volcano	Extreme Weather	Hazardous Materials
Description	Address Line 1	City	Building Value	Content Value								
WTP - Cedar Ridge	24229 Awahanee Road	Sonora	\$ 75,000	\$ 150,000	X		X	X	X	X	X	X
WTP - Cedar Ridge Springs	17125 East Brookside Dr.	Sonora	\$ 15,000	\$ 30,000	X		X	X	X	X	X	X
WTP - Columbia	23310 Pine Log Road	Columbia	\$ 320,000	\$ 826,846	X		X	X	X	X	X	X
WTP - Crystal Falls (Lower)	17571 Mt Elizabeth Dr	Sonora	\$ 160,000	\$ 125,000	X	X	X	X	X	X	X	X
WTP - Crystal Falls (Upper)	17571 Mt Elizabeth Dr	Sonora	\$ 35,000	\$ 6,900	X	X	X	X	X	X	X	X
WTP - Greenley	19757 Greenley Rd	Sonora	\$ 150,000	\$ 300,000	X		X	X	X	X	X	X
WTP - Lakewood	18850 Middle Camp Road	Sonora	\$ 500,000	\$ 540,000	X		X	X	X	X	X	X
WTP - Mill Villa	18755 Mill Villa Road	Sonora	\$ 450,000	\$ 75,000	X		X	X	X	X	X	X
WTP - Mono Village	19501 Industrial Way	Sonora	\$ 75,000	\$ 25,000	X		X	X	X	X	X	X
WTP - Monte Grande	17210 Monte Grande Dr	Sonora	\$ 200,000	\$ 1,000,000	X	X	X	X	X	X	X	X
WTP - Phoenix Lake Park	20656 Resort Road	Sonora	\$ 15,000	\$ 37,700	X		X	X	X	X	X	X
WTP - Ponderosa	20425 Old Buchanan Mine Rd	Tuolumne	\$ 100,000	\$ 831,500	X	X	X	X	X	X	X	X
WTP - Scenic View/Scenic Brook	20292 Meadow Brook Dr.	Sonora	\$ 100,000	\$ 100,000	X		X	X	X	X	X	X
WTP - Sonora & Backwash Tank	20270 Bald Mountain Road	Sonora	\$ 550,000	\$ 275,000	X		X	X	X	X	X	X
WTP - Tuolumne & Booster Station	18685 Cedar Street	Sonora	\$ 50,000	\$ 75,000	X		X	X	X	X	X	X
WTP - Tuolumne Filter Building	18685 Cedar Street	Sonora	\$ 500,000	\$ 300,000	X		X	X	X	X	X	X
WTP - Willow Springs	20613 Steven Court	Sonora	\$ 75,000	\$ 150,000	X		X	X	X	X	X	X
WTP - Columbia - Old	23310 Pine Log Road	Columbia	\$ 10,000	\$ -	X		X	X	X	X	X	X
WW - Larson Pump Station	10670 Campo Seco Rd	Jamestown	\$ 5,000	\$ 5,000	X		X	X	X	X	X	X
WW - Apple Valley SLS	20979 Christopher Circle	Sonora	\$ 14,000	\$ 28,000	X		X	X	X	X	X	X
WW - Columbia College Lower Sewer Lift Station (SLS)	11711 Saw Mill Flat Road	Sonora	\$ 3,600	\$ 18,500	X		X	X	X	X	X	X
WW - Columbia College Upper SLS	11700 Saw Mill Flat Road	Sonora	\$ 1,600	\$ 9,300	X		X	X	X	X	X	X
WW - Columbia Country Estates SLS	22176 Parrots Ferry Road	Sonora	\$ 6,400	\$ 50,000	X		X	X	X	X	X	X
WW - Columbia Sky SLS #1	10890 Sky Way Space 83	Sonora	\$ 25,000	\$ 20,000	X		X	X	X	X	X	X
WW - Columbia Sky SLS #2	10898 Sky Way Space 247	Sonora	\$ -	\$ 7,000	X		X	X	X	X	X	X
WW - Columbia Village SLS	21910 Parrotts Ferry Road	Sonora	\$ 4,800	\$ 50,000	X		X	X	X	X	X	X
WW - Costanzo Ind Park SLS	14439 Tuolumne Road	Sonora	\$ 15,000	\$ 50,000	X	X	X	X	X	X	X	X
WW - Crossroad Shopping Ctr. SLS	1033 Sanguinetti Road	Sonora	\$ 10,000	\$ 50,000	X		X	X	X	X	X	X
WW - Egan Ranch Property	15850 Egan Road	Sonora	\$ 100,000	\$ 32,000	X		X	X	X	X	X	X
WW - Fairgrounds SLS	220 Southgate Dr.	Sonora	\$ 30,000	\$ 50,000	X		X	X	X	X	X	X
WW - Fallon House SLS	11175 Washington Street	Columbia	\$ 4,800	\$ 11,200	X		X	X	X	X	X	X



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Description	Address Line 1	City	Building Value	Content Value							
WW - Gardella Spray Field	Karlee Lane & Jacksonville Rd	Jamestown	\$ -	\$ 30,000	X		X	X	X	X	X
WW - Gibbs SLS #1	20112 Jamestown Road	Sonora	\$ 25,000	\$ 50,000	X		X	X	X	X	X
WW - Gibbs SLS #2 Rob	20535 Jamestown Road	Sonora	\$ 35,000	\$ 50,000	X		X	X	X	X	X
WW - Gibbs SLS #3 Nik	20425 Nikki Court	Sonora	\$ 35,000	\$ 45,000	X		X	X	X	X	X
WW - Gold Springs SLS	23648 Parrotts Ferry Road	Sonora	\$ 20,000	\$ 75,500	X		X	X	X	X	X
WW - Jamestown SLS	17600 Highway 108	Sonora	\$ 30,000	\$ 50,000	X		X	X	X	X	X
WW - Law & Justice Center SLS	Law and Justice Center	Sonora	\$ 100,000	\$ 75,000	X		X	X	X	X	X
WW - Mi Wuk Community Leach Field	24550 Tramway Road	Sonora	\$ 15,000	\$ 25,000	X		X	X	X	X	X
WW - Mi Wuk SLS	24379 Pela Road	Sonora	\$ 15,000	\$ 59,500	X		X	X	X	X	X
WW - Mill Villa SLS	18717 Mill Villa Road	Sonora	\$ 25,000	\$ 50,500	X		X	X	X	X	X
WW - Mono Village SLS	Mono Way & Hillsdale Dr	Sonora	\$ 10,000	\$ 50,000	X		X	X	X	X	X
WW - Parrotts Ferry SLS	22476 Parrotts Ferry Road	Sonora	\$ 31,400	\$ 75,000	X		X	X	X	X	X
WW - Phoenix Lake Park SLS	20565 Lori Lane	Sonora	\$ 12,000	\$ 40,000	X		X	X	X	X	X
WW - Quartz Balancing Pond	10100 Karlee Lane	Jamestown	\$ -	\$ 30,000	X		X	X	X	X	X
WW - Quartz Floating Pump Station Control Bldg	10100 Karlee Lane	Jamestown	\$ 15,000	\$ 200,000	X		X	X	X	X	X
WW - Quartz Reservoir Lower Pump Station	10100 Karlee Lane	Jamestown	\$ 7,200	\$ 150,000	X		X	X	X	X	X
WW - Quartz Reservoir Upper Pump Station	10100 Karlee Lane	Jamestown	\$ 6,000	\$ 6,000	X		X	X	X	X	X
WW - Rouge River SLS	21706 Rouge River Ct	Sonora	\$ -	\$ 3,500	X		X	X	X	X	X
WW - S P I SLS	14950 Camage	Sonora	\$ 15,000	\$ 50,000	X		X	X	X	X	X
WW - Saratoga SLS	20869 Saratoga Road	Sonora	\$ 12,000	\$ 12,500	X		X	X	X	X	X
WW - Sonora (South) SLS	995 South Washington	Sonora	\$ 15,000	\$ 50,000	X		X	X	X	X	X
WW - Sonora Knolls SLS	395 Arbona Circle	Sonora	\$ 8,000	\$ 11,500	X		X	X	X	X	X
WW - Sonora Regional Wastewater Treatment Plant	1400 Southgate Dr.	Sonora	\$ 780,000	\$ 2,609,800	X		X	X	X	X	X
WW - Springfield Center SLS	23648 Parrotts Ferry Road	Sonora	\$ 6,400	\$ 10,000	X		X	X	X	X	X
WW - Standard SLS	19080 Standard Road	Sonora	\$ -	\$ 13,000	X		X	X	X	X	X
WW - Standard Telemetry Panel	19070 Standard Road (next to)	Sonora	\$ -	\$ 3,500	X		X	X	X	X	X
WW - Twain Harte Wastewater Treatment Plant	22363 Longeway Road	Sonora	\$ 75,000	\$ 200,000	X		X	X	X	X	X

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TUOLUMNE UTILITIES DISTRICT CRITICAL FACILITIES LIST: 2017-2018											
Description	Address Line 1	City	Building Value	Content Value	Wildfire	Flood	Earthquake	Landslide/Sinkholes	Volcano	Extreme Weather	Hazardous Materials
WW - Willow Springs SLS	17267 Livermore Court	Sonora	\$ 25,000	\$ 84,500	X		X	X	X	X	X
TOTAL			\$ 31,519,700.00	\$ 13,733,331.00							



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Specific Critical Facilities at Risk

Ditches

Given that many of those Gold Rush-era ditches still serve the District today emphasizes their vulnerability. TUD's open ditch system is susceptible to damage or serious failure due to wildfire, erosion, fallen trees, rocks, mud, and snow. In the winter, TUD's ditch tenders and other crews physically break up the snow and ice through bitter conditions so that water can consistently reach the community. TUD's crews constantly make sure that ice, snow, and other natural elements do not affect their service. Due to the ongoing need for maintenance, as well as regular inspections for water flow, TUD assigns ditch tenders to regularly inspect and maintain the ditch system.

Taking this into consideration, there is still resistance to the replacement of the ditches because of its cultural and historic nature, opportunity for tourism, trail recreation and ecosystem service. Another impediment to the replacement of the ditches is the cost.

The ditch system is essential and helps TUD provide the community with reliable, high quality water. Without water coming from the ditches, the only water available is what remains in the storage tanks and wells, hardly enough for drinking, sanitary use and fire protection for a few days. Due to its importance, improvements to the ditch system are ongoing and each year TUD repairs and performs annual scheduled maintenance.

Water Treatment

The District has identified storage tanks that need to be rehabilitated. The District has put in place a Treated Water Storage Optimization Plan in order to identify and track water storage facility condition and prioritize maintenance, rehabilitation and/or replacement. The Plan will improve water quality. The District undertakes an annual maintenance program that includes tank cleaning, inspections, and upgrades or replacements as needed.

A capital improvement budget is needed in order to upgrade or replace the water treatment plants, storage tanks, distribution systems and other infrastructure. The cost to maintain the existing water treatment plants as well as the testing for contaminants and State permits has and will continue to increase every year.

E. Methodology Used

To determine the number of critical structures and infrastructure at risk, a combination of field surveys, aerial photos, GIS maps, and Google Earth software were used. The methodology used in preparing the Vulnerability Estimate consisted of determining the value of critical buildings and facilities from insurance property schedules. Critical infrastructure values were established by using actual replacement costs which were determined by recent comparable replacement projects.



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F. Loss Estimations

Dollar losses to buildings and infrastructure vary depending upon the natural hazard occurring and the severity of the hazard. In general, earthquakes can extensively damage a wide area therefore critical structure and infrastructure losses should be estimated at a 100% value. Destruction from flooding takes place in specific areas and the damage is historically less severe than that of an earthquake.

Thus, the estimated loss as a result of flooding should be calculated at the 50% level. Damage to residential structures resulting from wildfires should be calculated at 25% of structural value for those structures located within 300 feet of the wildfire areas. Fire damage to exposed critical infrastructure should be calculated at 100%. Extreme weather could impact any portion of the jurisdiction. Historical data indicates that these events are extremely localized and a 10% loss should be anticipated.

G. Development Trend Analysis

While the population of Tuolumne County is not expected to grow significantly in the next five years, there are Land Use policies and elements within the County General Plan to help assure orderly development when it does. No significant development changes have occurred since the initial Plan was developed.

In addition, the Local Agency Formation Commission (LAFCO) of Tuolumne County is tasked with the mission to provide an orderly pattern of growth that reconciles the varied needs of the County. One of the fundamental principles of LAFCO is to ensure the establishment of an appropriate and logical municipal government structure for the distribution of efficient and appropriate public services. LAFCO Land Use Objectives include:

- The discouragement of urban sprawl
- Preservation of the physical and economic integrity of agricultural lands
- Preservation of open space within urban development patterns
- Orderly formation and development of agencies by shaping local agency boundaries
- The minimization of agencies providing services to a given area
- Utilization of Spheres of Influence to guide future development of agency boundaries.



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V. CAPABILITY ASSESSMENT

The following resources are available to the jurisdiction in order to mitigate the effects of the identified hazards:

A. Legal and Regulatory

The Tuolumne Utilities District Board of Directors will be required to approve the mitigation actions proposed concurrently with their approval of the Hazard Mitigation Plan.

TUD will consider the environmental impacts associated with each project as they do for all projects. If federal funds or grant programs are used to pay for the project, then the environmental review would include not only those State requirements, but could also be subject to federal environmental protection and historic preservation laws and requirements.

Federal Environmental Protection & Historic Preservation Laws:

National Environmental Policy Act (NEPA)

NEPA is the federal environmental law that is applied when there is a federal undertaking such as grant funding. Since FEMA provides funding for the hazard mitigation program, they are also the lead agency for ensuring NEPA compliance. In this capacity, FEMA examines each proposed hazard mitigation project and determines how NEPA should be applied and, if required, the type of NEPA environmental document that must be prepared. The County or the other jurisdictions can assist FEMA in this process, when they requested, by providing environmental data or additional information about their projects or, by setting up and participating in site visits.

Executive Order 11990 Wetland Protection

If a project may affect wetlands, the proposal will be subject to Executive Order 12898 Wetland Protection. The project will be subject to the 8-step process outlined in 44 Code of Federal Regulations (CFR) Part 9.

Executive Order 11988 Floodplain Management

If a project may affect a floodplain, the proposal will be subject to Executive Order 11988 Floodplain Management. The project will be subject to the 8-step process outlined in 44CFR Part 9.

Clean Water Act (Section 404)

If the project site is located within the Waters of the United States defined by the Army Corps of Engineers or contains wetlands that fall under the jurisdiction of the Army Corps of Engineers, the County or jurisdiction acting as the project proponent will be responsible for



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complying with the Clean Water Act (Section 404) and will be responsible for obtaining the necessary permits.

Clean Water Act (Section 401)

If the project requires permitting by the Army Corps of Engineers the County or jurisdiction acting as project proponent will also need a certification or waiver from the Regional Water Quality Control Board under Section 401 of the Clean Water Act.

Executive Order 12898 Environmental Justice

Projects that may have a disproportionate adverse effects on or disproportionate benefits to low-income or minority groups, will need to comply with Executive Order 12898 Environmental Justice. Information regarding socioeconomic characteristics of the affected community or communities can be found on the United States Census “American Factfinder” Website.

Wild and Scenic Rivers Act

The Tuolumne River has been determined to be a Wild and Scenic River. A project in the watershed area of the Tuolumne River would have to be analyzed to determine if the project has any impacts on the river.

National Historic Preservation Act

Tuolumne County has a rich heritage of prehistoric and historic properties. If a project may affect properties on or eligible for listing on the National Register of Historic Places, a Section 106 Consultation with the State Historic Preservation Office (SHPO) will be required.

Endangered Species Act

If federally endangered or threatened species may be affected by a project then the County or the jurisdiction acting as project proponent will have to enter into a Section 7 Consultation with the US Fish and Wildlife Service (USFWS).

California Environmental Quality Act (CEQA)

All counties, cities, special districts and other local government entities in California are subject to the CEQA in their normal course of business, and projects generated as a result of this plan would not be any different. As the lead agency under CEQA, the County or the jurisdiction acting as project proponent must evaluate their projects and determine how CEQA applies and how they will comply with those requirements. All local government agencies in California have these responsibilities, so processing a project for hazard mitigation would be subject to the same CEQA process as any other capital improvement or other project being considered. Tuolumne County has adopted Guidelines for the Implementation of CEQA, and



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would follow these for any project that would be an outcome of this plan. Tuolumne Utilities District would have similar processes that would apply.

B. Administrative and Technical

TUD is governed by a five-member Board of Directors, elected at large. The Board of Directors shall establish policies for the operation of the District. The District relies on the County for legal authority in Land Use and Planning matters. The Board of Directors shall approve the selected mitigation actions and the TUD component of the Hazard Mitigation Plan. Mitigation Actions will be implemented through the delegation of assignments by the General Manager.

TUD has the technical expertise and resources to carry out all proposed mitigation actions.

C. Financial

Although all mitigation techniques will ultimately save money by preventing or minimizing losses, many projects are costly to implement. Due to limited budgets, Tuolumne Utilities District will continue to seek outside funding assistance for mitigation projects in both the pre- and post-disaster environment. This portion of the Plan identifies the primary Federal and State grant programs to consider, and also briefly discusses local and non-governmental funding sources.

FEDERAL FUNDING SOURCES

The following federal grant programs have been identified as funding sources which specifically target hazard mitigation projects:

Title: Pre-Disaster Mitigation Program
Agency: Federal Emergency Management Agency

Through the Disaster Mitigation Act of 2000, Congress approved the creation of a national program to provide a funding mechanism that is not dependent on a Presidential disaster declaration. The Pre-Disaster Mitigation (PDM) Program provides funding to states and communities for cost-effective hazard mitigation activities that complement a comprehensive mitigation program, and reduce injuries, loss of life, and damage and destruction of property.

The funding is based upon a 75 percent Federal share, 25 percent non-Federal share. The non-Federal match can be fully in-kind or cash, or a combination. Special accommodations will be made for "small and impoverished communities", who will be eligible for 90% Federal share, 10% non-Federal.



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FEMA provides PDM grants to states that, in turn, can provide sub-grants to local governments for accomplishing the following eligible mitigation activities:

- State and local hazard mitigation planning
- Technical assistance [e.g. risk assessments, project development]
- Mitigation Projects
- Acquisition or relocation of vulnerable properties
- Hazard retrofits
- Minor structural hazard control or protection projects
- Community outreach and education [up to 10% of State allocation]

Title: Flood Mitigation Assistance Program

Agency: Federal Emergency Management Agency

FEMA's Flood Mitigation Assistance program (FMA) provides funding to assist states and communities in implementing measures to reduce or eliminate the long-term risk of flood damage to buildings, manufactured homes, and other structures insurable under the National Flood Insurance Program (NFIP). FMA was created as part of the National Flood Insurance Reform Act of 1994 (42 U.S.C. 4101) with the goal of reducing or eliminating claims under the NFIP.

FMA is a pre-disaster grant program, and is made available to states on an annual basis. This funding is available for mitigation planning and implementation of mitigation measures only, and is based upon a 75 percent Federal share, 25 percent non-Federal share. States administer the FMA program and are responsible for selecting projects for funding from the applicants submitted by all communities within the state. The state then forwards selected applications to FEMA for an eligibility determination. Although individuals cannot apply directly for FMA funds, their local government may submit an application on their behalf.

Title: Hazard Mitigation Grant Program

Agency: Federal Emergency Management Agency

The Hazard Mitigation Grant Program (HMGP) was created in November 1988 through Section 404 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act. The HMGP assists states and local communities in implementing long-term mitigation measures following a Presidential disaster declaration.

To meet these objectives, FEMA can fund up to 75 percent of the eligible costs of each project. The state or local cost-share match does not need to be cash; in kind services or materials may also be used. With the passage of the Hazard Mitigation and Relocation



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Assistance Act of 1993, federal funding under the HMGP is now based on 15 percent of the federal funds spent on the Public and Individual Assistance programs (minus administrative expenses) for each disaster.

The HMGP can be used to fund projects to protect either public or private property, so long as the projects in question fit within the state and local government's overall mitigation strategy for the disaster area, and comply with program guidelines. Examples of projects that may be funded include the acquisition or relocation of structures from hazard-prone areas, the retrofitting of existing structures to protect them from future damages; and the development of state or local standards designed to protect buildings from future damages.

Eligibility for funding under the HMGP is limited to state and local governments, certain private nonprofit organizations or institutions that serve a public function, Indian tribes and authorized tribal organizations. These organizations must apply for HMGP project funding on behalf of their citizens. In turn, applicants must work through their state, since the state is responsible for setting priorities for funding and administering the program.

Title: Public Assistance (Infrastructure) Program, Section 406
Agency: Federal Emergency Management Agency

FEMA's Public Assistance Program, through Section 406 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, provides funding to local governments following a Presidential disaster declaration for mitigation measures in conjunction with the repair of damaged public facilities and infrastructure. The mitigation measures must be related to eligible disaster-related damages and must directly reduce the potential of future, similar disaster damages to the eligible facility. These opportunities usually present themselves during the repair/replacement efforts.

Proposed projects must be approved by FEMA prior to funding. They will be evaluated for cost effectiveness, technical feasibility, and compliance with statutory, regulatory and executive order requirements. In addition, the evaluation must ensure that the mitigation measures do not negatively impact a facility's operation or risk from another hazard.

Public facilities are operated by state and local governments, Indian tribes or authorized tribal organizations and include:

- Roads, bridges and culverts
- Draining and irrigation channels
- Schools, city halls and other buildings
- Water, power and sanitary systems
- Airports and parks



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Title: Rural Development Fund
Agency: U.S. Department of Agriculture

The USDA provides low-interest loans to utility companies. The loans target utilities to repair or replace infrastructure owned/operated by the utility, including real estate, machinery and equipment, inventory and supplies.

USDA loans can be utilized by their recipients to incorporate mitigation techniques into the repair and restoration of the District's infrastructure.

Title: Community Development Block Grants
Agency: U.S. Department of Housing and Urban Development

The Community Development Block Grant (CDBG) program provides grants to local governments for community and economic development projects that primarily benefit low- and moderate-income people. The CDBG program also provides grants for post-disaster hazard mitigation and recovery following a Presidential disaster declaration. Funds can be used for activities such as acquisition, rehabilitation or reconstruction of damaged properties and facilities and for the redevelopment of disaster areas.

STATE FUNDING SOURCES

Title: Homeland Security Grant Program
Agency: Governor's Office of Emergency Services

The federal Department of Homeland Security consolidated the administration of three programs within one application package and California OES has followed suit. Applications can be submitted through OES for three distinct programs: the State Homeland Security Program (SHSP), the new Law Enforcement Terrorism Prevention (LETPP), and the Citizen Corps programs (CCP). Although the goal and intent of the Homeland Security Grant Program is to avoid, prevent, or respond to an act of terrorism, some of the possible uses of the Grant program could also have application to a disaster that may occur that has natural causes. In addition, some of the "natural" hazards addressed in this plan could occur as a result of a terrorist act. For example, a wildfire could be caused by terrorists, as could an intentional dam failure. Therefore, the Homeland Security Grant Program is included in this discussion.



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LOCAL FUNDING SOURCES

Most of the District's primary revenue sources are the fees for connections and metered service. These fees are set by the Board of Directors and are based on actual costs to provide the service and maintain the infrastructure. There is seldom extra revenue in the budgets to fund significant projects that could result in extra levels of protection against natural hazards, so the District's ability to finance identified improvements is limited without access to some sort of outside grant source.

A minor additional source of revenue is the property tax collected and apportioned to the District. These taxes are typically used to finance services that must be available and delivered on a routine and regular basis to the general public. If not earmarked for other projects, these funds could be used to match Federal or State grant programs when required for large-scale projects.

NON-GOVERNMENTAL SOURCES

Another potential source of revenue for implementing local mitigation projects are monetary contributions from non-governmental organizations, such as private sector companies, churches, charities, community relief funds, the Red Cross, hospitals, Land Trusts and other non-profit organizations.

D. Political Will

The District's Board of Directors recognizes the need for promoting, planning and implementing hazard mitigation strategies. The reduction in potential effects from a natural disaster will prove to be a tangible result of such planning. Efforts to secure funding for large-scale hazard mitigation projects are supported by the Board of Directors.

VI. MITIGATION STRATEGY

A. DMA 2000 Requirements

DMA Requirement §201.6(c)(3)(i):	The hazard mitigation strategy shall include a description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards.
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DMA Requirement §201.6(c)(3)(ii):	The mitigation strategy shall include a section that identifies and analyzes a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing buildings and infrastructure.
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B. 2013 Mitigation Action Progress Report

2013 Jurisdiction Specific Mitigation Actions	Progress Made
Joined the County's Hazard Mitigation Steering Committee	Completed in 2012
Joined the Water/Wastewater Agency Response Network (WARN) to support and promote mutual assistance in times of emergency.	Completed
Continuity of Operations Plan	Ongoing
Additional Water Storage Facilities	Ongoing 1. Replaced tanks 2. Added more volume in fewer tanks 3. Increased water storage by adding to Matelot Reservoir 4. Phoenix Lake restoration project in progress
Inspection of Dams	Occurs Annually
Portable Filtration Plant (Groveland CSD has a portable unit they agreed TUD could use)	If needed and available
Inspection of older buildings and structures	Ongoing
Water Conservation	Ongoing
Establish inter-connections for water systems	Ongoing
Establish a program to inspect and monitor sewer lines (SSMP)	Completed
Fire Hazard Reduction: 1. Increase main line size 2. Install more hydrants 3. Flume/fuel reduction	Ongoing/Completed



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C. Goals, Objectives and Mitigation Actions 2018

Goal 1 **Promote understanding and support for hazard mitigation by key stakeholders and the public within Tuolumne County.**

Applies to: All jurisdictions

Objective 1 Educate key stakeholders and the public to increase awareness of hazards and opportunities for mitigating hazards.

Mitigation Action 1A: Through newsletters, advertisements, speaking engagements and other public contacts, educate the general public and key stakeholders on the issues, responsibilities, and current efforts and successes in the area of disaster preparedness as they impact each agency.

Mitigation Action 1B: Conduct periodic workshops and promotion of the Emergency Notification Systems available to the public to ensure familiarity of the public to warning applications.

Goal 2 **Ensure that future development is protected from natural disasters.**

Applies to: Tuolumne County, City of Sonora, Tuolumne Band of Me-Wuk Indians, and the Tuolumne Utilities District.

Objective 2 Limit new development in hazardous areas, and as permissible, build to standards that will prevent or reduce damage.

Mitigation Action 2A: Educate the County and City planning staffs, administrative staffs and elected officials on the importance of keeping current on trends and developments in disaster preparedness.

Mitigation Action 2B: Encourage planning staffs to attend seminars and lectures on naturally occurring hazards so that they may better assist the appropriate governing bodies as they process future developments.

Mitigation Action 2C: In order to better protect life and property, continue to develop a more accurate and comprehensive series of countywide GIS geology, fire, and flood maps and data sets.

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Goal 3 **Build and support local capacity and commitment to minimize the jurisdictions within Tuolumne County's vulnerability to potential hazards.**

Applies to: All jurisdictions

Objective 3.1 Improve existing capabilities to manage emergency situations.

Objective 3.2 Enhance the safety of residents, students and staff within the community and jurisdictions.

Objective 3.3: Enhance the communications between agencies to support emergency response

Mitigation Action 3.1A: In order to ensure that employees are available to assist during a major emergency, develop and adopt a Family Support Plan for all jurisdictions and County agencies.

Mitigation Action 3.1B: Review and when necessary, update the jurisdiction's Emergency Operations Plans and supporting documents

Mitigation Action 3.1C: Assist with Public Health Emergency Preparedness to plan and prepare for medical and healthcare impacts which would result from all hazards within the County

Mitigation Action 3.2A: Review the initial planning requirements and research the development of standard operating procedures which would minimize helicopter operations over Sonora Elementary School as they utilize the helistop at Sonora Regional Medical Center

Mitigation Action 3.2B: Support the efforts of the Tuolumne Utilities District to better protect public health by initiating a Watershed Sanitary Survey

Mitigation Action 3.2C: Work with Fire Safe Councils and the County to identify opportunities for additional evacuation routes within single-access areas

Mitigation Action 3.2D: TUD will study and seek funding to increase the raw water storage or establish a secure conveyance from Lyons Reservoir to ensure service for both domestic consumption and urban fire protection

Mitigation Action 3.2E: Make improvements to wastewater systems by replacing or relining collection pipes so as to reduce sewer overflows and limit inflow and infiltration subsequently reducing the public health threat.



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Mitigation Action 3.2F: Develop a program that would, in emergency situations, enable water districts and water companies to share water resources through interconnections

Mitigation Action 3.2G: Develop a program to secure water rights for Tuolumne County

Mitigation Action 3.2 H: Promote a county-wide sewer connection to reduce septic failure impacts and improve water quality.

Mitigation Action 3.2I: Promote land use recommendations that new developments occur adjacent to public water and wastewater facilities.

Mitigation Action 3.3: Build and maintain communications between County agencies, Special Districts, and the Tuolumne Band of Me-Wuk Indians to assist in the response to emergencies

Goal 4 **Minimize the level of damage and losses to people, existing and future critical facilities and infrastructure due to flooding.**

Applies to: Tuolumne County, City of Sonora, Curtis Creek School District, Belleview School District

Objective 4 Enhance the ability of community assets, particularly critical facilities, located in the 100-year floodplain to handle existing and projected flood levels

Mitigation Action 4A Work to improve localized flood prone areas through a combination of Vegetation management and storm drain improvements. (i.e. Sonora, Curtis, Sullivan, and Woods Creeks)

Mitigation Action 4B: Maintain compliance with the National Flood Insurance Program (NFIP) requirements.

Mitigation Action 4C: Through the Development Process Review Team, restrict construction of essential service facilities in the 100-year flood plain.

Mitigation Action 4D: In order to better protect life and property, record a notice on properties located in flood zones utilizing FIRM maps and notify property owners of said action.

Mitigation Action 4E: Continue to work cooperatively with the state and federal flood related agencies for funding improvements through grant and agency programs.



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- Mitigation Action 4F: Seek funding sources for and initiate watershed improvement projects for the County.
- Mitigation Action 4G: Study ways to improve drainage to prevent erosion on the steep slopes of the Curtis Creek campus and seek funding sources for mitigation.
- Mitigation Action 4H: Study ways to improve drainage to prevent erosion on the steep slopes of the Belleview School campus and seek funding sources for mitigation.
- Mitigation Action 4I: Work with Belleview School to identify and evaluate opportunities to create additional evacuation routes within the single-access areas in the district.

Goal 5 **Minimize the level of damage and losses to people, existing and future critical facilities and infrastructure due to wildland fires.**

Applies to: All Jurisdictions

Objective 5.1 Continue the comprehensive approach to reducing the level of damage and losses due to wildland fires through vegetation management, code enforcement, GIS mapping, and planning process.

Objective 5.2 Enhance collaboration amongst all fire agencies and stakeholders.

Mitigation Action 5.1A: In order to assist fire prevention efforts and to better manage large fires when they occur, continue to improve GIS mapping and tracking efforts by gathering and maintaining relevant GIS data layers and imagery and utilizing the best available mapping applications and software.

Mitigation Action 5.1B: Continue to work with the Hwy 108 Fire Safe Council, Yosemite Foothills FireSafe Council, and SWIFT to initiate fuel thinning and chipping projects in high priority areas. Collaborate with property owners and regulatory agencies in order to utilize prescribed fire on private and state owned lands in the county.

Mitigation Action 5.1C: Fire Safe Council, Yosemite Foothills Fire Safe Council, and SWIFT to update as needed the Community Wildfire Protection Plans for the County so that they will continue to:

- Assess the fire hazard in the County
- Prioritize treatment areas



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- Enhance collaboration amongst all fire agencies and stakeholders
- Streamline environmental review processes

Mitigation Action 5.1D: Develop a wildfire evacuation plan which includes sheltering in place at Curtis Creek School.

Mitigation Action 5.1E: Improve water supply and storage for firefighting use at the Curtis Creek Campus.

Mitigation Action 5.1F: Work with the Tuolumne Utilities District to improve fire flow, system reliability and redundancy, and increased water supply in their responsibility areas.

Mitigation Action 5.1G: Protect water conveyance system by reducing fuels adjacent to wooden flumes.

Mitigation Action 5.1H: Develop a County Fire Agency GIS layer showing fire water draft locations.

Mitigation Action 5.1I: Work with the Lake Don Pedro Community Services District to improve system reliability and redundancy, and increased water supply in their responsibility areas.

Mitigation Action 5.1J: Work with the Lake Don Pedro Community Services District and PG&E to improve the reliability of the electrical grid in Don Pedro and provide for emergency backup power supply to be used during power outages at critical water system facilities.

Mitigation Action 5.2A: Encourage participation of all Fire Agencies in the monthly Fire Chief Association meetings and support, when possible, efforts by the Association to improve fire protection and preventions efforts in the County.

Mitigation Action 5.2B: Encourage participation in cooperative automatic and mutual aid agreements between Districts, the County and the City of Sonora.

Goal 6 **Minimize the level of damage and losses to people, existing and future critical facilities and infrastructure due to geological events (earthquakes, volcanoes, landslides, and sinkholes)**

Applies to: All jurisdictions

Objective 6 Continue public education efforts so as to better prepare the citizens of Tuolumne County from the effects of a significant



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geological event

Mitigation Action 6A: Working with Cal OES, increase participation in earthquake preparedness activities such as the annual Great California Shake-Out drill

Mitigation Action 6B: Continue to support the work of utility districts in replacing sewer and water lines and portions of the flume that are the most vulnerable to an earthquake or landslide

Goal 7 **Limit risk to, and impacts from hazardous materials spills, intentional discharges, illegal disposals, transportation accidents, or system failures**

Applies to: All Jurisdictions

Objective 7.1 Continue efforts to manage the use, sale, distribution and disposal of hazardous materials in Tuolumne County

Objective 7.2 Improve emergency response efforts in the control and clean-up of accidental spills and releases

Mitigation Action 7.1A: Educate community members on the dangers associated with household hazardous materials including proper storage techniques

Mitigation Action 7.1B: Continue efforts to educate applicable employees on the handling, use, storage and disposal of hazardous materials utilized in the workplace

Mitigation Action 7.2A: In coordination with the Environmental Health Director, develop procedures to enhance the response to Hazardous Material Incidents

Goal 8 **Minimize the level of damage and losses to people, existing and future infrastructure, and critical facilities due to extreme weather**

Applies to: All Jurisdictions

Objective 8.1 Continue the comprehensive approach to reducing the level of damage and losses due to extreme weather and drought through GIS mapping, planning process, and the removal of dead and dying trees.

Mitigation Action 8.1A: Analyze and remove hazards that threaten public safety due to the cascading effects of drought such as dry wells and tree mortality



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Mitigation Action 8.1B: Encourage water agencies to conduct water supply evaluations for each public water system to determine the effect of drought on community water supply

Mitigation Action 8.1C: Work with the Lake Don Pedro Community Services District to improve the availability and reliability of Lake McClure pumping capacities at lower water surface elevations

Mitigation Action 8.1D: Work with the Lake Don Pedro Community Services District to increase groundwater supply and/or identify other alternate water sources to be used when drought and related reservoir operational requirements diminish the water supply available from Lake McClure

D. How Mitigation Goals Address Existing and New Buildings and Infrastructure

The following tables demonstrate how the proposed mitigation goals take into account both existing and new buildings and infrastructure.

MITIGATION GOALS	EXISTING BUILDINGS AND INFRASTRUCTURE						
	Electrical and Power Infrastructure	Dams and Water Management	Communication Facilities	Critical Roads and Bridges	Essential Service Facilities (Fire, Law, Hospitals)	Agricultural Infrastructure	Public Structures
Goal 1-General Mitigation: Promote understanding and support for hazard mitigation by key stakeholders and the public within the County of Tuolumne.	X	X	X	X	X	X	X
Goal 2-General Mitigation: Ensure that future development is protected from natural disasters.	X	X	X	X	X	X	X
Goal 3-General Mitigation: Build and support local capacity and commitment to minimize the County of Tuolumne’s vulnerability to potential hazards.		X		X	X	X	X
Goal 4-Flood: Minimize the level of damage and losses to people, existing and future critical facilities and infrastructure due to flooding.	X	X	X	X	X	X	X



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<p>Goal 5-Wildfire: Minimize the level of damage and losses to people, existing and future critical facilities and infrastructure due to wildfire.</p>	X	X	X	X	X	X	X
<p>Goal 6-Earthquake: Minimize the level of damage and losses to people, existing and future critical facilities and infrastructure due to earthquake, landslide and sinkholes.</p>	X	X	X	X	X	X	X
<p>Goal 7- Hazardous Materials: Limit risk to, and impacts from hazardous materials spills, intentional discharges, illegal disposals, transportation accidents, or system failures</p>		X			X	X	X
<p>Goal 8- Extreme Weather: Minimize the level of damage and losses to people, existing and future critical facilities, and infrastructure due to extreme weather.</p>	X	X		X	X		X



MITIGATION GOALS	NEW PROJECTS/BUILDINGS AND INFRASTRUCTURE					
	Residential Subdivisions	Various mixed use projects (residential and commercial)	Ag Clusters (residential, open space, and Ag uses)	Commercial and Industrial Projects	Essential Service Facilities	Public Structures
Goal 1-General Mitigation: Promote understanding and support for hazard mitigation by key stakeholders and the public within the County of Tuolumne.	X	X	X	X	X	X
Goal 2-General Mitigation: Ensure that future development is protected from natural disasters.	X	X	X	X	X	X
Goal 3-General Mitigation: Build and support local capacity and commitment to minimize the County of Tuolumne's vulnerability to potential hazards.	X	X	X	X	X	X
Goal 4-Flood: Minimize the level of damage and losses to people, existing and future critical facilities and infrastructure due to flooding.	X	X	X	X	X	X

<p>Goal 5-Wildfire: Minimize the level of damage and losses to people, existing and future critical facilities and infrastructure due to wildfire.</p>	X	X	X	X	X	X
<p>Goal 6-Earthquake: Minimize the level of damage and losses to people, existing and future critical facilities and infrastructure due to earthquake, landslide and sinkholes.</p>	X	X	X	X	X	X
<p>Goal 7- Hazardous Materials: Limit risk to, and impacts from hazardous materials spills, intentional discharges, illegal disposals, transportation accidents, or system failures</p>	X	X	X	X	X	X
<p>Goal 8- Extreme Weather: Minimize the level of damage and losses to people, existing and future critical facilities, and infrastructure due to extreme weather.</p>	X	X			X	X





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VII. MITIGATION ACTION IMPLEMENTATION

A. DMA 2000 Requirements:

DMA Requirement §201.6(c)(4)(i):	The plan maintenance process shall include a section describing the method and schedule of monitoring, evaluating, and updating the mitigation plan within a five-year cycle.
DMA Requirement §201.6(c)(4)(ii):	The plan shall include a process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms such as comprehensive or capital improvement plans, when appropriate.
DMA Requirement §201.6(c)(3)(iii):	The mitigation strategy section shall include an action plan describing how the actions identified in section (c)(3)(ii) will be prioritized, implemented, and administered by the local jurisdiction. Prioritization shall include a special emphasis on the extent to which benefits are maximized according to a cost benefit review of the proposed projects and their associated costs.
DMA Requirement §201.6(c)(3)(iv):	For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan.

B. Prioritization of Mitigation Actions

The Mitigation actions were prioritized using a system which is outlined below. This system factored in the following components: 1) Probability of Occurrence 2) Effectiveness of Mitigation Actions, 3) Practicality of mitigation action for the jurisdiction based on the STAPLE+E criteria of Social, Technical, Administrative, Political, Legal, Economic and Environmental components. This gave rise to the development of an overall relative risk value that resulted in ratings of HIGH, MEDIUM and LOW for each of the mitigation actions. The resultant prioritization was presented to key stakeholders and lengthy discussions were held to ensure that the results were indeed applicable to the priorities and capabilities of the jurisdictions' served.





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Sample Mitigation Action Prioritization Worksheet

Mitigation Action	Probability of Associated Threat Occurrence Low=1 Med.=2 High=3	Effectiveness of Mitigation Action Minimal=1 Moderate=2 High=3	Practicality (based on STAPLE+E criteria) Low=1 Medium=2 High=3	Relative Risk (Product of Risk Components)
1.A	3	2	3	18

In assessing and evaluating each strategy, the following factors were considered:

- The benefit justified the cost
- The availability of financial resources
- The availability of staff resources
- Impact on County department functions
- Strategies reflect the goals and objectives

C. Action Plan

Once the MJHMP has received formal adoption by the Board of Supervisors and the various governing bodies the following action plan, agreed upon by Hazard Mitigation Planning Group, will be used to ensure the Plan is implemented and remains an active and relevant document. Actual implementation may be dependent upon funding availability.



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ACTION PLAN FOR TUOLUMNE COUNTY MULTI-JURISDICTIONAL PLAN

MITIGATION ACTION		IMPLEMENTATION STRATEGY			
ID	DESCRIPTION	RESPONSIBLE DEPARTMENT	FUNDING SOURCES	TIME TO COMPLETE	PRIORITY
1.A	Educate Public and Stakeholders	OES – lead All support	General Funds	Ongoing	Medium
1.B	Promote Everbridge	OES- lead All Support	None Required	Ongoing	Low
2.A	Educate Staff	OES – lead All support	None Required	Ongoing	Medium
2.B	Continuing Education	OES –lead All support	General Funds	Ongoing	Medium
2.C	Improve GIS Capabilities	County CRA, City of Sonora & CAL Fire	General Funds	36 Months	Medium
3.1A	Develop/ Adopt Family Support Plan	All agencies OES support	General Funds	12 Months	Medium
3.1B	Emergency Operations Plans	All agencies OES support	None Required	12 Months	Medium
3.1C	Medical Preparedness	Public Health- Lead	None Required	Ongoing	Medium
3.2A	Helicopter Operations	OES	None Required	Ongoing	Low
3.2B	Watershed Survey	TUD	Grant	12 Months	Medium
3.2C	Single Access Routes	Fire Safe Council and Community Resources	Grant and General Fund	36 Months	Medium
3.2D	Raw Water Storage	TUD	Grant	24 Months	Medium
3.2E	Wastewater System Improvements	TUD	General Fund & Grants	24 Months	High
3.2F	Water Interconnections	All water agencies	None Required	36 Months	Medium



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3.2G	Water Rights	All water agencies	Grants & General Funds	Ongoing	Medium
3.2H	Promote Sewer Connection	Water Agencies with support of all agencies	None Required	Ongoing	Low
3.2I	Promote Development adjacent water facilities	Water Agencies with support of all agencies	None Required	Ongoing	Low
3.3	Maintain Communications	All agencies	None Required	Ongoing	Medium
4.A	Creek/Storm Drain Management	County CRA and City of Sonora	General Fund	Fall of each year	Low
4.B	NFIP Requirements	County CRA and City of Sonora	General Fund	Ongoing	Medium
4.C	Development Review	County CRA and City of Sonora	General Fund	Ongoing	Medium
4.D	Notice Property Owners	County CRA and City of Sonora	General Fund	24 Months	Medium
4.E	Storm Drain Improvements	County CRA and City of Sonora	Grants	Ongoing	Medium
4.F	County Watershed Projects	County CRA	Grants	36 Months	Medium
4.G	Drainage	Curtis Creek School District	Grants	24 Months	Medium
4.H	Drainage	Bellevue School District	Grants	24 Months	Medium
4.I	Single Access Routes	Bellevue School	Grants	24 Months	Medium
5.1A	Improve GIS Mapping and Tracking	CAL Fire-County Fire	General Fund	36 Months	Medium
5.1B	Fuel Thinning and Chipping Projects	All fire agencies	Grants	Ongoing	High
5.1C	Community Wildfire Protection Plan Update	CAL Fire-County Fire	General Fund	12 Months	Medium
5.1D	Improve Water Supply/ Storage at Curtis Creek School	Curtis Creek School District	Grants	24 Months	High



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5.1E	Evacuation Plans for Curtis Creek	District Superintendent with fire agencies supporting	None Required	12 Months	High
5.1F	Water Supply/Fire Flow	TUD, with fire agencies supporting	General Funds and Grants	36 Months	High
5.1G	Protect Flumes	TUD, with fire agencies supporting	General Funds and Grants	Ongoing	Medium
5.1H	County Fire GIS Layer	County GIS- Lead OES- Support	General Funds	36 Months	Low
5.1I	Increase Water Supply for Lake Don Pedro CSD	Lake Don Pedro CSD- Lead OES-Support	General Funds and Grants	36 Months	Medium
5.1J	Increase Alternate Power Source for Lake Don Pedro	Lake Don Pedro CSD- Lead OES-Support	General Funds and Grants	24 Months	Medium
5.2A	Fire Chiefs Association	All fire agencies	None Required	Ongoing	Medium
5.2B	Mutual/Auto Aid	All fire agencies	None Required	Ongoing	Medium
6.A	Earthquake Preparedness Exercises	OES – lead All support	None Required	Fall of Each Year	Medium
6.B	Replace Vulnerable Water/Sewer Lines	TUD	General Fund	24 Months	Medium
7.1A	Educate Community on Hazardous Materials	OES – lead All support	None Required	Ongoing	Medium
7.1B	Educate Staff on Hazardous Materials	OES – lead All support	None Required	Ongoing	Medium



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7.2A	Improve Response Capabilities	Environmental Health– lead fire agencies support	None Required	Ongoing	Medium
8.1A	Removal of safety hazards caused by dry wells and Tree Mortality	All Agencies	Grant	36 Months	High
8.1B	Water Supply Evaluation at Lake McClure	Lake Don Pedro CSD- Lead OES Support	Grant and General Fund	24 Months	Medium
8.1C	Improve Pumping Capacity at Lake McClure	Lake Don Pedro CSD- Lead OES Support	Grant and General Fund	24 Months	Medium
8.1D	Alternate Water Sources to Lake McClure	Lake Don Pedro CSD- Lead OES Support	Grant and General Fund	36 Months	Medium



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D. Implementation through Existing Plans and Programs

The general administrative oversight of this MJHMP rests with the Tuolumne County Office of Emergency Services. Tuolumne County currently uses comprehensive land use planning, capital improvements planning, and building codes to guide and control development within the County. This MJHMP will be provided to those responsible for the County's General Plan development mechanisms to ensure that consistency is maintained. The same holds true whenever substantive changes are made.

Specific Mitigation Actions have been assigned to this jurisdiction. These individual actions will fall under the general administrative oversight of the local governing body and will be incorporated into the existing Plans and Programs. Should technical expertise not be available in these agencies, the County Office of Emergency Services is committed to, when possible, coordinating the resources of the County to assist with implementation of the mitigation actions.

E. Continued Public Involvement

Tuolumne County and the District understand the importance of involving the public in the ongoing Hazard Mitigation Plan review and updating process. Resultantly, the following actions will be taken:

- A copy of the MJHMP will be posted on the County website and will direct the public on how to make suggestions to the County Office of Emergency Services for future plan edits.
- Hard copies of the Plan will be available at the County Office of Emergency Services and the County Library





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F. Plan Monitoring, Evaluating and Updating

DMA Requirement §201.6(d)(3): A local jurisdiction must review and revise its plan to reflect changes in development, progress in local mitigation efforts, and changes in priorities and resubmit if for approval within 5 years in order to continue to be eligible for mitigation project grant funding.

In order to continue to be an effective representation of each jurisdiction's overall strategy for reducing its risks from natural hazards, the mitigation plan must reflect current conditions. Monitoring and evaluating the plan will occur annually to make certain that the goals and objectives for the County and participating jurisdictions are current and mitigation activities are being carried out.

To ensure that regular review and update of this Multi-Jurisdictional Hazard Mitigation Plan takes place, the County Office of Emergency Services will communicate with the MJHMP Planning Group members annually to see if their plan components are up-to-date and meet current realities.

The MJHMP Planning Group will review each goal and objective to evaluate its:

- Relevance to current and evolving situations in Tuolumne County
- Consistency with changes in local, state and federal policy

The planning group will review the risk assessment component of the plan to ascertain if the information needs to be updated or modified. Each jurisdiction will report on:

- Current status of their mitigation actions
- How coordination efforts are proceeding
- Implementation processes that worked well
- Any difficulties encountered
- Any strategies in need of revision

If the plan review leads the Hazard Mitigation Planning Group to determine that modifications are necessary, then the County or the applicable jurisdiction can initiate a plan amendment.

Tuolumne County Multi-Jurisdictional Hazard Mitigation Plan



ACRONYMS

Acronym	Definition
CGS	California Geological Survey
Cal EPA	California Environmental Protection Agency
Caltrans	California Department of Transportation
CAL Fire	California Department of Forestry and Fire Protection
CDF	California Department of Forestry and Fire Protection
CDHS	California Department of Health Services
CFR	Code of Federal Regulations
CGS	California Geological Survey
CISN	California Integrated Seismic Network
CSSC	California Seismic Safety Commission
DFG	State Department of Fish and Game
DHS	Department of Homeland Security
DWR	Department of Water Resources
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FMA	Flood Mitigation Assistance
FMP	Floodplain Management Plan
FRAP	Fire and Resource Assessment Program
GIS	Geographic Information System
HMGP	Hazard Mitigation Grant Program
LHMP	Local Hazard Mitigation Plan
NFIP	National Flood Insurance Program
NOAA	National Oceanic and Atmospheric Administration
NPS	National Park Services
OES	Governor's Office of Emergency Services
SEMS	Standardized Emergency Management System
SFHA	Special Flood Hazard Area
USDA	U.S. Department of Agriculture
USGS	U.S. Geological Survey



Tuolumne County Multi-Jurisdictional Hazard Mitigation Plan

RESOLUTION NO. 27-17

TUOLUMNE UTILITIES DISTRICT ADOPTING AN UPDATED MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION PLAN

WHEREAS, mounting costs of disaster recovery in the nation over the past decade has promoted interest in providing effective ways to minimize our country's hazard vulnerability; and

WHEREAS, the Disaster Mitigation Act (DMA) of 2000, also commonly known as "The 2000 Stafford Act Amendments," constitutes an effort by the Federal government to reduce the rising cost of disasters; and

WHEREAS, the Disaster Mitigation Act of 2000 (the Act) requires local governments to develop and submit mitigation plans in order to qualify for the Hazard Mitigation Grant Program (HMGP) project funds; and

WHEREAS, the purpose of the Disaster Mitigation Act of 2000 was to establish a national program for pre-disaster mitigation, streamline administration of disaster relief at both the federal and state levels, and control federal costs of disaster assistance; and

WHEREAS, the District in conjunction with Tuolumne County concluded a planning process and have developed a multi-jurisdictional Hazard Mitigation Plan that meets the needs established by the Act.

NOW, THEREFORE, BE IT RESOLVED that Tuolumne Utilities District Board of Directors hereby accepts the Tuolumne County Multi-Jurisdiction Hazard Mitigation Plan as an official plan; and hereby adopts the Tuolumne Utilities District Hazard Mitigation Plan to be included as an annex to the County Plan.

BE IT FURTHER RESOLVED that a copy of this Resolution and a copy of the Multi-Jurisdictional Hazard Mitigation Plan will be forwarded to the Governor's Office of Emergency Services and the Federal Emergency Management Agency.

PASSED AND ADOPTED by the Board of Directors of the Tuolumne Utilities District on December 12, 2017, by the following vote:

AYES: Balen, Grinnell, Kopf, Ringen, Rucker

NOES: None

ABSENT: None

ABSTAINED: None



Ronald D. Kopf, President
Board of Directors

ATTEST:


Melissa McMullen
Executive Secretary/Board Clerk

