

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

**Annex E:
Mi-Wuk Sugar Pine
Fire Protection District**



ANNEX E: MI-WUK SUGAR PINE FIRE PROTECTION DISTRICT

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MI-WUK SUGAR PINE FIRE PROTECTION DISTRICT

I. JURISDICTION PROFILE

The Mi-Wuk Sugar Pine Fire District (hereinafter “MWSP” or “District”) is a 1.16 square mile Special District which provides fire protection related services within its jurisdiction and neighboring jurisdictions. The scope of these services includes structural fire suppression, special and wildland fire suppression, fire protection planning, fire prevention activities, basic life support, vehicle extrication, public assists, public education, as well as various other related services. The Fire District is frequently the first emergency service provider to arrive at the scene of any non-law enforcement type of emergency incident both within the District and within an additional 18 square miles in the jurisdiction of the Tuolumne County Fire Department. The District headquarters is located at 24247 Highway 108, Mi Wuk Village, Tuolumne County, California.

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.



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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.

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

The Fire Chief of the District participated in the Hazard Mitigation Planning Group. The Chief prepared a staff report, which was made available to the public for comment, and was forwarded to the District's 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.

Jurisdiction	Earthquake	Wildland Fire	Extreme Weather	Flood	Volcano	Haz Mat
MWSP Fire Protection District	✓	✓	✓		✓	✓

The District is surrounded on two sides by the Stanislaus National Forest and by privately owned land on the balance of its boundary. It is the epitome of a Wildland / Urban Interface (WUI) community. California State Highway, 108, a major thoroughfare providing access to large portions of the Stanislaus National Forest and the state of Nevada, bifurcates the district in an east/west direction.

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:



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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	N
August 10, 1975	4.0 Magnitude	44.3 Miles	N
August 9, 1983	4.0 Magnitude	40.8 Miles	N

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
September 2004	Tuolumne Fire	750 acres burned and 1 firefighter fatality.
August 1987	Stanislaus Complex	6 major fires burn 145,950 acres, 28 structures, and 1 life was lost.
August 2013	Rim Fire	257,314 acres burned, 11 residences destroyed, 98 out buildings destroyed, 10 injuries

Extreme Weather History

Date	Description	Impacts
January - February 1969	Low elevation, heavy snow fall	Tree damage and transportation issues.
November 2010	Freeze	Significant damage to apple and olive crops



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March 2011	Winter storm	Minor flooding and significant damage to structures caused by tree falls.
January - Februar2017	Winter Storm	Road closed, Roads damaged, Power lines down, major power outage, trees falling into homes

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.

Flood History

Flooding does not occur in this mountain community, consequently the District does not participate in the NFIP. However, the County does.

D. Jurisdiction Specific Hazard Ranking

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

Mi- Wuk/Sugar Pine Fire Protection	Wildfire	Earthquake	Volcano	Extreme Weather	Hazardous Materials
Probability	H	L	L	M	L
Severity	H	H	M	M	L

L = Low, M= Medium, H = High

IV. VULNERABILITY ASSESSMENT

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.



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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).
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.



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D. Jurisdictional Assets at Risk to Applicable Hazards

Since 2004, Mi-Wuk Sugar Pine Fire Protection District has made major improvements to this jurisdiction’s facility and infrastructure. In 2006, the District combined two small fire stations into a centrally located fire station located at 24247 Hwy 108 in Mi-Wuk Village, California. The District purchased a hardware store and with limited funds created a 4,500-square foot fire station with housing for five firefighters and is staffed 24/7. To complement the fire station, a five bay, 3,300 square foot heated, free-standing apparatus building was also constructed.

Critical Facilities and Infrastructure	Address	Building Value	Wildfire	Flood	Earthquake	Landslides/Sinkholes	Volcano	Extreme Weather	Hazardous Materials
Mi-Wuk Sugar Pine Fire Department (4500 square feet with 3,300 square foot bay apparatus)	24247 Hwy 108 Mi Wuk Village, CA 95383	\$1,905,493.00	✓		✓		✓	✓	

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.

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 resulting from wildfires should be calculated at 25% of structural value for those structures located within 300 feet of the wildfire areas. 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.



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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 occur. 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.

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 District is governed by a five-member Board of Directors elected from within the District. The Mi Wuk Village Fire Protection District was organized in 1959 by the Tuolumne County Board of Supervisors; the Sugar Pine area was annexed in 1972 to form the current Mi-Wuk Sugar Pine Fire Protection District. It is organized and governed pursuant to the California Fire Protection District Law of 1987 (CA Health & Safety Code sections 13800 et. seq.)

Land use planning is governed by the County of Tuolumne.

B. Administrative and Technical

The District staffs one fire station located at 24247 Highway 108, Mi Wuk Village, California 95346. Fire protection and other services are provided by:

- 1 full-time paid fire chief
- 3 full-time paid fire fighters (1 per day)
- 6 volunteer reserve fire fighters (2 per day)
- 6 volunteer fire fighters working in an intern capacity (as available)
- 1 volunteer fire fighter (as available)
- 1 full-time Secretary
-



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These limited human resources severely reduce the technical and administrative abilities of the District to manage to hazard mitigation projects without outside assistance.

C. Financial

This District has a limited budget; about one-third from Ad Valorem property taxes, and about two-thirds from a Benefit Assessment approved by property owners in 2010. The District does not have unilateral authority to increase taxes or to levy any supplemental tax or assessment. The District's projected budgets will be insufficient to meet two critical needs: providing sufficient staffing to meet its commitments, and providing resources (fire engines) that are reliable.

The District's budget has benefited from federal, state, and private grants; however, these grants do not address ongoing expenses and increasing costs of basic services. The potential exists to continue obtaining grant funding for special projects that may prove beneficial to the District, but acquiring grant funds is very competitive and always limited to a short duration.

D. Political Will of Community

The District in general has a strong commitment to serving the public and providing excellent and reliable service, and will lead or cooperate in any hazard mitigation activities that are within the means and abilities of the District. The political will of the community is demonstrated by the support of the Mi-Wuk Area Homeowners Alliance, the Word Of Life Fellowship, the Sugar Pine Lake Association, and the Mi-Wuk Sugar Pine Fire Protection District Auxiliary (which annually contributes in excess of 5% of the District's revenue).

E. Physical Assets

This Fire Protection District possesses the equipment it needs to respond to fires and other emergency calls, including:

- 1994 HME Western States Fire Engine
- 1983 Ford / Emergency One Fire Engine
- 2012 Chevrolet Pickup Command Vehicle
- 2005 Ford Expedition Utility Vehicle
- 2007 Ford Expedition Utility Vehicle

These physical assets currently meet the needs of the District to provide the services it is obligated to provide; however, the fleet of fire engines is aging and highly expensive to maintain in reliable condition to meet the emergency service needs of the District. The District needs replacement fire engines that are newer and more reliable while also being less costly to maintain

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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.

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.

B. 2013 Mitigation Action Progress Report

2013 Jurisdiction Specific Mitigation Actions	Progress Made
Educate key stakeholders and the public to increase awareness of hazards and opportunities for mitigating hazards.	Held 8 community meetings during Rim Fire assisted by BOS, USFS, CAL FIRE, ARC, Animal Control, TCSO, etc.; Hold annual community meetings at commencement of Defensible Space Inspections.
Improve existing capabilities to manage emergency situations. Enhance the safety of residents, students and staff within the community and jurisdictions.	Implemented Mutual / Automatic Aid Agreement with Tuolumne Fire District; Implemented County-wide Mutual / Automatic Aid Agreement. Obtained grant funding and conducted roadside brush clearing on all streets within the District to reduce fire hazard.



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<p>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 processes.</p> <p>Enhance collaboration amongst all fire agencies and stakeholders.</p>	<p>Collaborates with CAL FIRE in its VIP Program; established a VIP group that conducts Defensible Space Inspections on every property each year; Received FEMA Fire Prevention & Safety Grant to improve the DSI Program.</p> <p>In collaboration with Mi Wuk Tribe developed an Emergency Response Map that shows only street names, house numbers, fire hydrants, boundaries; Use Avenza Maps to supplement printed Emergency Response Maps; Adopted Active911 emergency dispatch software integrating map with emergency location, fire hydrant locations, known hazard locations, lock combinations, etc.</p> <p>Signatory to most recent county-wide mutual / automatic aid agreement; signatory to independent mutual / automatic aid agreement with Tuolumne Fire District.</p>
<p>Continue public education efforts so as to better prepare the citizens of Tuolumne County from the effects of a significant geological event.</p>	<p>No appreciable progress</p>
<p>Continue efforts to manage the use, sale, distribution and disposal of hazardous materials in Tuolumne County.</p>	<p>No appreciable progress</p>



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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.

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.



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Mitigation Action 3.2J: 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.

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.



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

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

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

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.



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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 prevention 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 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



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- 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
- 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



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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

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

ACTION PLAN FOR TUOLUMNE COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION 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

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

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

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

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

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.

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
MWSP	Mi-Wuk Sugar Pine
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 will be Received Separately