



Tuolumne County Fire Safety Report

Are We Ready?

June 30, 2020



Tuolumne County Fire in Cooperation with Cal Fire & USFS Photo: Tuolumne County Website



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Summary

It is not a question of will we have a catastrophic fire in Tuolumne County, but of when. That is the prevailing sentiment the Grand Jury heard from local experts and stakeholders.

As Tuolumne County has been settled, the activities of gold mining, livestock grazing, logging, recreation and tourism have shaped the economy and the likelihood of a devastating fire that threatens lives, livelihood and our natural resources upon which the community depends.

Tuolumne County is not a wealthy county and has struggled to adequately fund county fire services. To survive a truly disastrous event, fire protection and fire readiness must be a continued priority for visitors and residents of Tuolumne County and these priorities need to be at the forefront of the agendas of all elected officials.

Tuolumne County faces unprecedented danger to life and property from wildfire. The Grand Jury reviewed the conditions that make us vulnerable, examined the status of current fire protection resources and made recommendations on how elected officials and the community can prepare for and survive the inevitable destructive fire.

This report focuses on four areas of concern with findings and recommendations for improvement.

1. Fire Service Delivery
2. Lessons Learned from the Camp Fire, Evacuations, Public Service Announcements
3. How Individuals Can Prepare
4. Animal Evacuations

The Grand Jury understands the scope of this report does not cover the vast universe of fire safety in Tuolumne County. The scope of this report is limited to a general background; however, as this Grand Jury has the unique opportunity with its extended term, this subject may be revisited later in a subsequent report.

Glossary

BLM Bureau of Land Management: an agency within the United States Department of the Interior responsible for administering public lands

Fire Safe Council	Organization that helps California residents to acquire knowledge and resources to better prepare for wildfires
Firewise	Program with resources to help neighborhoods prepare their homes for fire safety
Human-Animal Bond	The relationship between people, animals, and their environment.
MOU	Memorandum of Understanding: a type of agreement between two or more parties, indicating an intended common line of action
Matrix Report	First Responder and EMS Study prepared by the Matrix Consulting Group, and presented to the Tuolumne County Board of Supervisors, June 2019
PSA	Public Service Announcement
Type 1 & 2 Fire Engines	Built for structural fire fighting
Type 3 Fire Engine	Built for mountainous and remote areas. Typically, 4-wheel drive
Type 6 Fire Engine	Wildland Fire vehicle designed to assist in transporting firefighters along with a limited amount of water & other equipment
USFS	United States Forest Service
WUI	Wildland Urban Interface: a zone of transition between unoccupied land and human development

Methodology

The Grand Jury conducted interviews of local officials, stakeholders, and officials involved with the Camp Fire including:

- ▶ U.S. First Congressional District Office
- ▶ Butte County Supervisor, District 4

The Grand Jury reviewed documents and resources noted in the Bibliography.

Background

Tuolumne County is 2,274 square miles or 1.45 million acres, 77% of which is under the jurisdiction of a government agency: The United States Forest Service, the National Park Service, the Bureau of Land Management, and the State of California. Most residents, over 53,000 people, live on or near Highway 108, Highway 120, or Highway 49. These are mostly two-lane roads and on an average day can handle traffic adequately.

Researchers estimate that California forests historically burned at intervals of about 25 years, prior to European settlement. Due to growth and low-density development in our community and the lack of regular burning to reduce fuel buildup (as was the practice of Native Americans and ranchers), the local landscape is even more susceptible to a destructive fire. The prevalence of homes in the mixed conifer forests and chaparral/oak woodlands makes the need to suppress any fires of primary importance. Many residences have been built at the wildland-urban interface which adds to the imminent danger of a disastrous fire.

Of the 20 most destructive fires in California's history, 10 have happened within the last four years. According to Stanford University School of Earth, Energy, and Environmental Sciences, in the last 50 years, summer temperatures have increased by 2.5 degrees and extended periods of drought have become normal. As weather patterns continue to change, attitudes about wildfire need to change as well and actions need to be directed at protecting the community in ways that are unprecedented.

Recent wildfire events in Tuolumne County include the 2013 Rim Fire that burned more than 257,000 acres over 68 days from mid-August until late October but was not declared officially out until November 2014 after mild winter rains failed to completely extinguish it. In 2018 a total of almost 1,900,000 acres burned in California making it the most devastating fire season in history. These fires caused at least 88 deaths primarily in the town of Paradise during the Camp Fire.

A mass evacuation will always be difficult on neighborhood roads that are two lanes, winding, and easily blocked by one fallen tree, power poles, or abandoned vehicles across a road. In addition, on holiday weekends or during large-scale events, highways and roads can quickly become dangerously congested. If an evacuation occurs before Sonora and Tioga passes are open, most traffic will have to pass through Sonora and Jamestown or Columbia. When the passes are open, people may be able to evacuate using the mountain passes, as was done during the Donnell Fire in 2018.

Tuolumne County is crisscrossed by thousands of miles of Pacific Gas & Electric Company (PG&E) lines transmitting electrical power which carry significant potential fire risk. Many of these power lines are not easily accessible by ground; if wind and other fire-related conditions are unfavorable, they are not accessible by air thus making fire suppression difficult, or impossible as observed in the early stages of the Camp Fire. It should be noted that PG&E is not responsible for all fires which started in Tuolumne County, with some of our most devastating fires caused by lightning or human actions.

Discussion

Each individual fire department or district in the County is responsible for managing its own financial resources and operations, and by law must adhere to annual spending limitations requiring a balanced budget (Government Code §7900). Each department must spend within their financial limitations. Revenues for fire departments and districts are not adequate for operational expenses and equipment replacement. Specifically, limitations occur because the apportionment of tax revenue is inadequate to fund fire protection services in Tuolumne County.

Fire Service Delivery

The First Responder and EMS Study prepared by the Matrix Consulting Group (Matrix Report) and presented to the Tuolumne County Board of Supervisors on June 11, 2019, discusses the interdependent nature of Tuolumne County's fire service delivery. This extensive report offers options to maximize fire and first responder coverage and response times, as well as efficient use of fire and first responder resources. Options are also offered to provide for long-term financial stability of both the fire service delivery and first responder systems. The current fire protection system in Tuolumne County consists of:

- ▶ Fire Districts
- ▶ Community Service Districts
- ▶ City Fire Department
- ▶ Tribal Fire Department
- ▶ County Service Areas
- ▶ United States Forest Service
- ▶ CAL FIRE

Four fire service models were explored in the Matrix Report:

1. Modified Status Quo - operating fire service as it exists today with some modifications to boundaries in the north part of the County, Ponderosa Service Area, and the Columbia Fire Department
2. Forming a Countywide Fire Department/District – A Countywide Fire Service as either a stand-alone county fire department; expansion of fire districts, or expansion of the Tuolumne County Fire Department utilizing CAL FIRE
3. Expanding Fire Districts – expanding existing fire district boundaries to include all unincorporated areas of the county currently covered under contract with CAL FIRE
4. Expanding CAL FIRE contract services

The study participants and stakeholders did not agree on which service model would provide the best service delivery for the cost. However, the Matrix Report ultimately recommends the creation of a countywide fire district. The County would determine service levels and consider tax assessments to fund the newly formed countywide fire district.

According to the Matrix Report the 2017-2018 expenditures exceeded revenues by \$1,586,957. The projected shortfalls continue to grow with a projected shortfall of \$2,077,554 by fiscal year 2022/2023. It is important to note that these projections do not include replacing aging equipment and fire apparatus.

Tuolumne County currently contracts with CAL FIRE for firefighting services including dispatch. CAL FIRE is the largest fire department in the state of California, and therefore can offer smaller fire departments coverage as needed.

Aging Equipment

Tuolumne County currently has the following fire apparatus:

- ▶ Type 1 engines — 15, Built for structural fire fighting
- ▶ Type 2 engines — 16, Built for structural fire fighting
- ▶ Type 3 engines — 9, Typically 4-wheel drive, rural & mountainous areas
- ▶ Type 6 engines — 3, Wildland Fire vehicles designed to assist in transporting firefighters along with a limited amount of water & other equipment
- ▶ Water Tenders — 5
- ▶ Aerial Ladder — 1, (Sonora City Fire Department)
- ▶ Squad Vehicles — 2, (not including command vehicles or pick-ups)

Per the Matrix Report, fire apparatus older than 15 years, that have been properly maintained and are still in a serviceable condition, have been assigned to reserve status.

There are five fire engines which are 35+ years old and an additional 10 fire engines which are 25+ years old. Projected replacement cost is \$500,000 to \$650,000 per fire engine depending on the manufacturer and the configuration of the vehicle. The longer replacement is postponed, the more expensive the equipment becomes. It is estimated to be well over \$7,500,000 for the County to replace 15 of the oldest engines over a two-year period.

There are several ways to pay for this equipment. Some service districts have implemented special assessments for property owners in their district. Another option for funding would be sales taxes dedicated to funding for equipment replacement, maintenance, wages, and benefits for firefighters. Recent efforts to increase the sales tax were not approved by the voters of Tuolumne County; however, a parcel tax could be explored as a possible solution.

In 2019 Tuolumne County purchased a Type 1 Fire Engine to replace the current fire engine that is in use at the Tuolumne County Fire Department (TCFD) Station 76 in Jamestown. It is currently being built at Hi-Tech Emergency Vehicle Services in Oakdale, CA. TCFD will take possession of the new fire engine when construction is complete. The cost of this fire engine is \$683,841.

Additionally, Tuolumne County invested \$98,535 in equipment to provide strategic fuel breaks that aid in defending the community from wildfire. The purchased equipment is a skid steer loader which is a piece of equipment that is used for fuels reduction. The attached masticating head allows this equipment to be used to grind brush.

Lessons Learned from the Camp Fire Public Service Announcements Evacuations

Butte County had an extensive evacuation plan in place when the Camp Fire ignited near the town of Paradise, California on November 8, 2018, at 6:45 am. It only took 90 minutes for the fire to burn seven miles. By 10:45 the fire had grown to 20,000 acres and consumed the town of Paradise. This is an extreme example, but one that provides important lessons.

Excessive winds funneling through Jarbo Gap were the cause of the rapid rate of spread, but the start of the fire was a spark from a downed electrical line.

As a result of the destruction of the town of Paradise, a change in the Town Code Chapter 8.58 - *Defensible Space and Hazardous Fuel Management* was updated. The ordinance states that:

The Town Council of the Town of Paradise declares that the uncontrolled growth and accumulation of weeds, grasses, hazardous vegetation and combustible materials or obstructions on lands or lots within the town are dangerous or injurious to neighboring property and the health, safety and welfare of the citizens, residents and visitors of the Town of Paradise community. Such growth and accumulation create fire hazards, reduce the value of private property, and create a hazard to the health, safety, and general welfare of the public.

In Tuolumne County, there is no rule about fuel hazard reduction on vacant properties, nor is there any rule to require a ten-foot clearance along roads and driveways, or that the Fire Marshall can require clearances beyond 100 ft. The Town of Paradise ordained these rules because of the devastation of their town.

The Sheriff's Department has tools to use in the event of a major fire. Some of these include reverse 911 calls, patrol units using a public address system, the local radio stations, the Emergency Broadcast System and Everbridge. Everbridge is an App that can be downloaded for free on a smartphone and it sends, at no cost, alerts to subscribers. Unfortunately, not everyone has a smart phone or cellular service where they live and must rely on other ways of receiving vital messages.

Every single household should have an evacuation plan and supplies at the ready to respond immediately when an order to evacuate is given. It is also important to know your neighborhood and be aware of all entrances and exits from your neighborhood or place of employment. If children or young adults are attending school, it is important to know the emergency evacuation plans for their schools and practice what to do if evacuations are ordered. Know the call numbers of the local radio stations (93.5 KKBN, 93.1 KFBK, 102.7 KVML, AM 1450 KVML, and 92.7 KZSQ).

Residents and visitors to Tuolumne County must follow evacuation orders or risk their own and other's loss of life.

Fire Safe Councils

Fire Safe Councils are often created in response to a recent fire or a group of neighbors eager to spread a fire-safe message which, if embraced by the community, can empower the residents to allow their community to effectively respond to fires.

Fire Safe Councils throughout California educate homeowners about community wildfire preparedness activities, while working with local fire officials to design and implement projects that increase the wildfire survivability of their communities. Many Fire Safe Councils have successfully implemented such projects as hazardous fuel reduction, community wildfire protection planning, and homeowner training.

Tuolumne County does not participate in the Fire Safe Councils program but does collaborate with the Highway 108 and Yosemite Fire Safe councils.

Firewise USA

Firewise USA is a voluntary program that provides a framework to help neighbors get organized, find direction, and take action to increase the ignition resistance of their homes and the community. The Firewise USA program is co-sponsored by the Department of the Interior and the National Association of State Foresters.

To become a Firewise USA neighborhood, it is necessary to form a board/committee that is composed of residents and local fire departments. In addition, state forestry agencies, elected officials, emergency managers, property owners/managers all participate. This group collaborates on identifying the Firewise site's boundary and size. Firewise sites need to have a minimum of 8 individual single-family dwelling units and are limited to a maximum of 2,500.

There are currently seven certified Firewise communities in Tuolumne County:

- ▶ Gold Springs Ranch, Columbia
- ▶ Ridgewood 108, Sonora
- ▶ Cedarview, Twain Harte
- ▶ Tuolumne Drive, Twain Harte
- ▶ Mira Monte, Tuolumne
- ▶ TELLARA, Sonora
- ▶ Mark Twain-Sierra, Twain Harte

The County's goal is to have at least 20 communities (neighborhoods, subdivisions, etc.) established. The NFPA website offers a full listing of Firewise communities in California.

<https://www.nfpa.org/>

Animal Evacuations

Tuolumne County residents watched in horror as the town of Paradise burned, knowing that Tuolumne County could be in the same situation. In the aftermath of the Camp Fire, which claimed the lives of 88 people, many have assumed that Butte County was surprised and unprepared for such a catastrophe. This is not an entirely justified assumption. The 2008 Butte County Grand Jury Report warned of such an event ten years earlier and recommended specific actions to be taken for the improvement of evacuation routes deemed inadequate. Additionally, the fire officials in Paradise divided the city into fourteen districts for sequential evacuation. All such efforts proved to be futile during the rapidly expanding inferno.

According to Butte County officials, their unpreparedness in dealing with animal evacuations added to the congestion and resulted in chaos significantly increasing the threat to human life. They believe that the human-animal bond causes people to refuse to evacuate at a time when seconds count as they face leaving their animals behind. Also, they found that people who are not at home when the disaster strikes will often try to get through emergency lines to rescue their animals.

According to those Butte County officials, citizen anger and hysteria increased dramatically with the realization that their animals were in imminent danger. Within hours, in desperation, elected county officials realized that they would have to begin an animal rescue operation. They reversed previous decisions to not use outside resources, such as Cowboy 911 and North Valley Animal Disaster Group. Once enlisted, these organizations brought their trained members with their own equipment to mount an effective rescue effort.

Bringing in outside help was not without problems. It initially caused resentment and conflict with existing local private and government organizations which caused unfortunate, but temporary, delays. However, in the end, the outside help proved instrumental in saving countless animal lives. The volunteer force rescued over 5,000 animals and cared for 5,000 more behind emergency lines, thereby reducing risk to the lives of their owners. Tuolumne County Animal Control does have some temporary facilities available for limited evacuations. A copy of an animal evacuation plan was requested by the Grand Jury, and as of this writing it has not been received. This lack of documentation has led the Grand Jury to conclude that Tuolumne County does not have an established plan.

Findings

- F1.** The Matrix Report gives conflicting information when explaining different options for the improvement of Tuolumne County's fire protection delivery system. There is disagreement among those who had input into the Matrix Report regarding its findings and recommendations.
- F2.** Most of the fire engines and equipment in the county are old and becoming obsolete. There are no comprehensive plans or consistent budget allocations for replacement.
- F3.** The Grand Jury identified an overall lack of evacuation preparedness in the county, especially relating to dissemination of information to the public.
- F4.** Tuolumne County, with its large animal population, is comparable to Butte County in its unpreparedness to mount an effective full-scale animal evacuation in the event of a widespread disaster.
- F5.** Tuolumne County officials have demonstrated indifference to the issues relating to large-scale animal rescue by not having an animal evacuation plan in place.
- F6.** During a widespread disaster small, local animal evacuation volunteer groups will be inadequate and often completely unavailable, as they struggle to deal with their own evacuation issues.
- F7.** Tuolumne County code regarding defensible space and fuel modification is not adequate to protect residents, property owners, and natural resources, because it does not address fuels on vacant property, or require fuel reduction along neighborhood roads to maintain a safe clearance.

Recommendations

- R1.** The Grand Jury recommends that all stakeholders, including the public, conduct a peer review of the recommendations on the state of Tuolumne County's fire departments with emphasis on cost and plausibility of implementation prior to deciding on recommendations made in the Matrix Report. It is essential that all communities be represented in any deliberation and decisions. (F1)

- R2.** The Grand Jury recommends that Tuolumne County create and implement an ongoing plan for replacement of aging fire engines and equipment, including a dedicated revenue source. (F2)
- R3.** The Grand Jury recommends that Tuolumne County create and implement a saturation of public service messages now, before there is an imminent threat to the community. The public needs to be made aware of evacuation plans. Public service announcements should direct the public to where the plans can be reviewed. (F3)
- R4.** The Grand Jury recommends that preparedness for animal rescue become the responsibility at a higher level in county government rather than the small, understaffed Animal Control Department. Butte County's experience should serve as an example to those at the top of emergency response teams that they need to be actively involved in the issues of animal evacuation. (F4)
- R5.** The Grand Jury recommends that Tuolumne County plan for multiple animal-holding evacuation centers to mitigate various blocked evacuation routes. Corresponding sources of feed and care must be addressed as part of an evacuation plan. (F5)
- R6.** The Grand Jury recommends that Tuolumne County enter a Memorandum of Understanding for animal evacuation with outside organizations such as Cowboy 911, or other non-profit groups with experienced personnel to provide training upon request. This should be done with the cooperation and participation of local animal control groups to avoid unnecessary conflicts and delays. (F6)
- R7.** The Grand Jury recommends that Tuolumne County review and update current policy on Defensible Space and Fuels Management to ensure maximum protection of Tuolumne County citizens, animals, and natural resources. (F7)

Request for Responses

The following responses are required, pursuant to California Penal Code §933 and §933.05, no later than 90 days after the Grand Jury submits a final report on the operations of any public agency subject to the reviewing authority, the governing body of the public agency shall comment to the presiding judge of the superior court on the findings and recommendations pertaining to matters under the control of the governing body and every elected or appointed county official or agency head for which the Grand Jury has jurisdiction shall comment within 90 days to the presiding judge of the superior court.

- ▶ The Tuolumne County Board of Supervisors respond to R1, R2, R6, R7

Comment within 60 days to the presiding judge of the superior court:

- ▶ The Tuolumne County Administrator is requested to respond to R2 and R3.
- ▶ The Tuolumne County Director of Animal Control R4, R5, and R6.

Bibliography

2008 Butte County Grand Jury Report

2019 Marin County Grand Jury Fire Report

California Fire Safe Councils <https://cafiresafecouncil.org/>
California Government Code

California State Constitution

California Special District Association Website

Cowboy 911 <https://www.facebook.com/groups/270203390408097/>

First Responder and EMS Study prepared by the Matrix Consulting Group
https://tuolumneco.granicus.com/MetaViewer.php?view_id=5&clip_id=353&meta_id=54651

Fresno County Fire Protection District Website

Firewise USA <http://www.nfpa.org/Public-Education/Fire-causes-and-risks/Wildfire/Firewise-USA>

Institute for Local Government Budgeting for Local Governments

KAAD-LP Community Public Radio, Equestrian Arts

National Fire Protection Association

North Valley Animal Disaster Group

PBS Documentary: Frontline Fire in Paradise, 2019
https://r.search.yahoo.com/_ylt=Awr9DRVsG7NeE1cALaBXNyoA;_ylu=X3oDMTEydWlqdWlwBGNvbG8DZ3ExBHBvcwMyBHZ0aWQDQjk4NDdfMQRzZWMDc3I-/RV=2/RE=1588825068/RO=10/RU=https%3a%2f%2fwww.pbs.org%2fvideo%2ffire-in-paradise-ncamrn%2f/RK=2/RS=A4epfuXBC5cRRAIYs6bU3W4Cqiw-

Stanford University School of Earth, Energy, & Environmental Sciences

Tuolumne County Board of Supervisors Meeting Agenda Materials, June 11, 2019

Tuolumne County population, income, and land size

Tuolumne County Code 15.20.060
<https://www.tuolumnecounty.ca.gov/DocumentCenter/View/2690/Chapter-1520---Fire-Safety-Standards?bidId=>

Town of Paradise Municipal Code Chapter 8.58 Defensible Space.
https://library.municode.com/ca/paradise/codes/code_of_ordinances?nodeId=TIT8HESA_CH8.58DESPHAFUMA

Visual observations while traveling throughout Tuolumne County

U.S. Census

Reports issued by the grand jury do not identify the individuals who have been interviewed. Penal Code §929 requires that reports of the grand jury not contain the name of any person or facts leading to the identity of any person who provides information to the grand jury.