WATER & POWER

Serving Central California since 1887

WILDFIRE MITIGATION PLAN

2023

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1.0 OVERVIEW

1.1 POLICY STATEMENT

Senate Bill 901, approved in 2018, amended Public Utilities Code §8387 which requires TID to prepare a wildfire mitigation plan that describes how electrical lines and equipment are constructed, maintained, and operated in a manner that minimizes the risk of wildfire. TID has had standard requirements for design, construction and maintenance in the Fire Zones to reduce wildfire risk. This Wildfire Mitigation Plan (WMP) builds on those requirements and complies with PUC §8387.

1.2 PURPOSE

This Wildfire Mitigation Plan describes programs, policies, and procedures implemented by TID to mitigate the threat of power line-ignited wildfires. This plan is subject to direct supervision by the TID Board of Directors and is implemented by the TID Management Team. Specific roles and responsibilities for the plan are identified in Section 9.1. Every submission of TID's Wildfire Mitigation Plan includes an opportunity for public comment prior to the resolution being adopted. In 2023 TID will be performing a comprehensive update to the Wildfire Mitigation Plan and will request public comment prior to TID Board of Directors adoption of the plan through posting the draft plan on TID's website.

1.2.1 Wildfire Budgeting

TID wildfire budgeting is focused on spending in wildfire zones with vegetation management and capital improvements.

1.3 COMPLIANCE WITH PUC §8387 (b)

Table 1 lists each of the elements required of Public Utilities Code §8387 (SB 901) and references where that information can be found in this plan.

Table 1: Plan Compliance with Public Utilities Code §8387 (b)

b (2) (A)	An accounting of the responsibilities of persons responsible for executing the plan.	9.1
b (2) (B)	The objectives of the wildfire mitigation plan.	2.0
b (2) (C)	A description of the preventive strategies and programs to be adopted by the local publicly owned electric utility or electrical cooperative to minimize the risk of its electrical lines and equipment causing catastrophic wildfires, including consideration of dynamic climate change risks.	6.0
b (2) (D)	A description of the metrics the local publicly owned electric utility or electrical cooperative plans to use to evaluate the wildfire mitigation plan's performance and the assumptions that underlie the use of those metrics.	9.2
b (2) (E)	A discussion of how the application of previously identified metrics to previous wildfire mitigation plan performances has informed the wildfire mitigation plan.	6.3
b (2) (F)	Protocols for disabling reclosers and deenergizing portions of the electrical distribution system that consider the associated impacts on public safety, as well as protocols related to mitigating the public safety impacts of those protocols, including impacts on critical first responders and on health and communication infrastructure.	6.7
b (2) (G)	Appropriate and feasible procedures for notifying a customer who may be impacted by the deenergizing of electrical lines. The procedures shall consider the need to notify, as a priority, critical first responders, health care facilities and operators of telecommunications infrastructure.	7.4
b (2) (H)	Plans for vegetation management.	6.4
b (2) (I)	Plans for inspections of the local publicly owned electric utility's or electrical cooperative's electrical infrastructure.	6.5
b (2) (J)	A list that identifies, describes, and prioritizes all wildfire risks, and drivers for those risks, throughout the local publicly owned electric utility's or electrical cooperative's service territory. The list shall include, but not be limited to both of the following:	4.0
b (2) (J) (i)	Risks and risk drivers associated with design, construction, operation and maintenance of the local publicly owned electric utility's or electrical cooperative's equipment and facilities.	6.3

b (2) (J) (ii)	Particular risks and risk drivers associated with topographic and climatological risk factors throughout the different parts of the local publicly owned electric utility's or electrical cooperative's service territory.	4.3, 4.5
b (2) (K)	Identification of any geographic area in the local publicly owned electric utility's or electrical cooperative's service territory that is a higher wildfire threat than is identified in a commission fire threat map, and identification of where the commission should expand a high fire threat district based on new information or changes to the environment.	5.2
b (2) (L)	A methodology for identifying and presenting enterprise-wide safety risk and wildfire-related risk.	4.1
b (2) (M)	A statement of how the local publicly owned electric utility or electrical cooperative will restore service after a wildfire.	8.0
b (2) (N)	A description of the processes and procedures the local publicly owned electric utility or electrical cooperative shall use to do all of the following:	See below;
b (2) (N) (i)	Monitor and audit the implementation of the wildfire mitigation plan.	9.2
b (2) (N) (ii)	Identify any deficiencies in the wildfire mitigation plan or its implementation and correct those deficiencies.	9.4
b (2) (N) (iii)	Monitor and audit the effectiveness of electrical line and equipment inspections, including inspections performed by contractors that are carried out under the plan, other applicable statutes or commission rules.	9.5
b (3)	The local publicly owned electric utility or electrical cooperative shall present each wildfire mitigation plan in an appropriately noticed public meeting. The local publicly owned electric utility or electrical cooperative shall accept comments on its wildfire mitigation plan from the public, other local and state agencies and interested parties, and shall verify that the wildfire mitigation plan complies with all applicable rules, regulations, and standards as appropriate.	7.3, 1.3

C	The local publicly owned electric utility or electrical cooperative shall contract with a qualified independent evaluator with experience in assessing the safe operation of electrical infrastructure to review and assess the comprehensiveness of its wildfire mitigation plan. The independent evaluator shall issue a report that shall be made available on the internet web site of the local publicly owned electric utility or electrical cooperative and shall present the report at a public meeting of the local publicly owned electric utility's or electrical cooperative's governing board.	10.0

Table 2: Context Setting Information

Utility Name	Turlock Irrigation District	
Service Territory Size	662 square miles	
Owned Assets	(Yes) Transmission (Yes) Distribution (Yes) Generation	
Number of Customers Served	100,000 customer accounts	
Population Within Service Territory	239,815	
Customer Class Makeup	*Number of Accounts*	*Share of Total Load (MWh)*
	71.53% Residential; 1.16% Government; 2.83% Agricultural; 7.10% Small/Medium Business; .84% Commercial/Industrial	37.95% Residential; 6.08% Government; 10.48% Agricultural; 6.22% Small/Medium Business; 37.36% Commercial/Industrial 1.91% Other
Service Territory Location/Topography[1]	56.04% Agriculture .009% Barren/Other 0% Conifer Forest .001% Conifer Woodland 0% Desert .005% Hardwood Forest 9.63 % Hardwood Woodland	

[1] This data shall be based on the California Department of Forestry and Fire Protection, California Multi-Source Vegetation Layer Map, depicting WHR13 Types (Wildlife Habitat Relationship classes grouped into 13 major land cover types) *available at*: https://www.arcgis.com/home/item.html?id=b7ec5d68d8114b1fb2bfbf4665989eb3.

	21.22% Herbaceous 5.46% Shrub 5.55% Urban 1.94% Water
Service Territory Wildland Urban Interface[2] (based on total area)	1.3612% Wildland Urban Interface; .3561% Wildland Urban Intermix;
Percent of Service Territory in CPUC High Fire Threat Districts (based on total area)	**Includes Appendix** Tier 2: 28% Tier 3: 0%
Prevailing Wind Directions & Speeds by Season	☐ Includes maps **Prevailing Wind Direction 1992-2002** Prevailing wind direction is based on the hourly data from 1992-2002 and is defined as the direction with the highest percent of frequency. **Average Wind Speed 1996-2006** Average wind speeds are based on the hourly data from 1996-2006 from automated stations at reporting airports (ASOS) unless otherwise noted. **Source –** Western Regional Climate Center https://wrcc.dri.edu/Climate/wind.php
Miles of Owned Lines Underground and/or Overhead	Overhead Dist.: 1812 miles Overhead Trans.: 441 miles (*Of this, 96 miles is jointly owned.*) Underground Dist.: 495 miles Underground Trans.: 0 miles
Percent of Owned Lines in CPUC High Fire Threat Districts	*Overhead Distribution Lines as % of Total Distribution System* *(Inside and Outside Service Territory)*

Station	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
Modesto Airport	SE	SE	NW	NW	NW	NW	NNW	NNW	NW	NW	NW	SE	NW

Station	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
Modesto Airport	5.0	6.2	7.0	7.8	8.9	9.4	8.6	8.1	6.9	6.0	5.0	5.6	7.0

[2] This data shall be based on the definitions and maps maintained by the United States Department of Agriculture, as most recently assembled in *The 2010 Wildland-Urban Interface of the Conterminous United States*, *available at* https://www.fs.fed.us/nrs/pubs/rmap/rmap_nrs8.pdf.

	Tier 2: 6% Tier 3: 0%
	Overhead Transmission Lines as % of Total Transmission System *(Inside and Outside Service Territory)*
	Tier 2: 10% Tier 3: 0%
	Explanatory Note 4 – *Additional Relevant Context:* [e.g., explain any difference from data reported in WMP due to different numerator used for this form]
Customers have ever lost service due to an IOU PSPS event?	■ Yes ☐ No
Customers have ever been notified of a potential loss of service to due to a forecasted IOU PSPS event?	■ Yes ☐ No
Has developed protocols to pre-emptively shut off electricity in response to elevated wildfire risks?	■ Yes ☐ No
Has previously pre-emptively shut off electricity in response to elevated wildfire risk?	☐ Yes ■ No If yes, then provide the following data for calendar year 2020:

2.0 OBJECTIVES

2.1 MINIMIZE ELECTRICAL SOURCES OF IGNITION

The primary objective of this Wildfire Mitigation Plan is to minimize the probability that TID's electrical facilities may be the origin, or a contributing source, for the ignition of a catastrophic wildfire. TID has created Fire Zones within their service territory that are inclusive of the California Public Utility Commission (CPUC) Tier 2 High Fire Threat District (HFTD) and Cal Fire State Responsibility Areas (SRA). There are no Tier 3 HFTD areas within the TID service Territory. For the purpose of this WMP, TID will apply all wildfire mitigation regulations and standards to electric facilities within their designated Fire Zones. TID's Fire Zone Standard has been updated to comply with CPUC General Orders 95, 128, 165, 174 and Cal Fire's Power Prevention Field Guide. TID continually evaluates prudent and cost-effective improvements to its standards, physical assets, operations, and training that can help meet the objective.

2.2 MAINTAIN RESILIENCY OF THE ELECTRIC GRID

The second goal of this Wildfire Mitigation Plan is to improve the resiliency of the electric grid. Resiliency is the ability for the electric power system to withstand and recover from extreme, damaging conditions, including weather and other natural disasters, as well as cyber and physical attacks. In updating this plan, TID assessed new industry practices and technologies that may reduce the likelihood of an interruption in service and/or improve the restoration of service, and regularly evaluates best practices for possible inclusion in the Plan.

2.3 EVALUATE PLAN PERFORMANCE AND EFFECTIVENESS

The final goal for this Wildfire Mitigation Plan is to measure the effectiveness of wildfire mitigation measures and look for opportunities to improve efficiency. Where a particular action, program component, or protocol is determined to be unnecessary or ineffective, TID will assess whether a modification or replacement is merited. This plan will also help determine if more cost-effective measures would produce the same or improved results.

3.0 TID PROFILE AND SERVICE AREA

3.1 SERVICE TERRITORY

Turlock Irrigation District is a community owned, not-for-profit irrigation water and electric utility formed in 1887. It was the first irrigation district in California. Organized under the Wright Act, TID operates under the provisions of the California Water Code. TID is governed by a five-member Board of Directors.

TID's electric service territory spans 432,887 acres, from the crest of the Coast Range across the Central Valley to the foothills of the Sierra adjacent to Don Pedro Reservoir (Figure 1). TID provides retail electric service in Stanislaus and Tuolumne County, across the cities of Turlock, Ceres, south Modesto, Keyes, Delhi, Hilmar, Patterson, Diablo Grande, Denair, Hickman, Ballico, and La Grange. TID serves approximately 100,000 electric customers. TID's annual peak load average is 557 MW over the last three years, with an all-time peak of 571 MW in August 2020.

TID operates 379 miles of 230 kV, 115 kV, and 69 kV transmission lines, and distributes electricity at 12 kV through above and below-ground lines. TID derives its generation from TID-owned hydroelectric plants, thermal plants, and a wind power plant. It also purchases additional power from various regional resources, including solar, hydro, and thermal power.

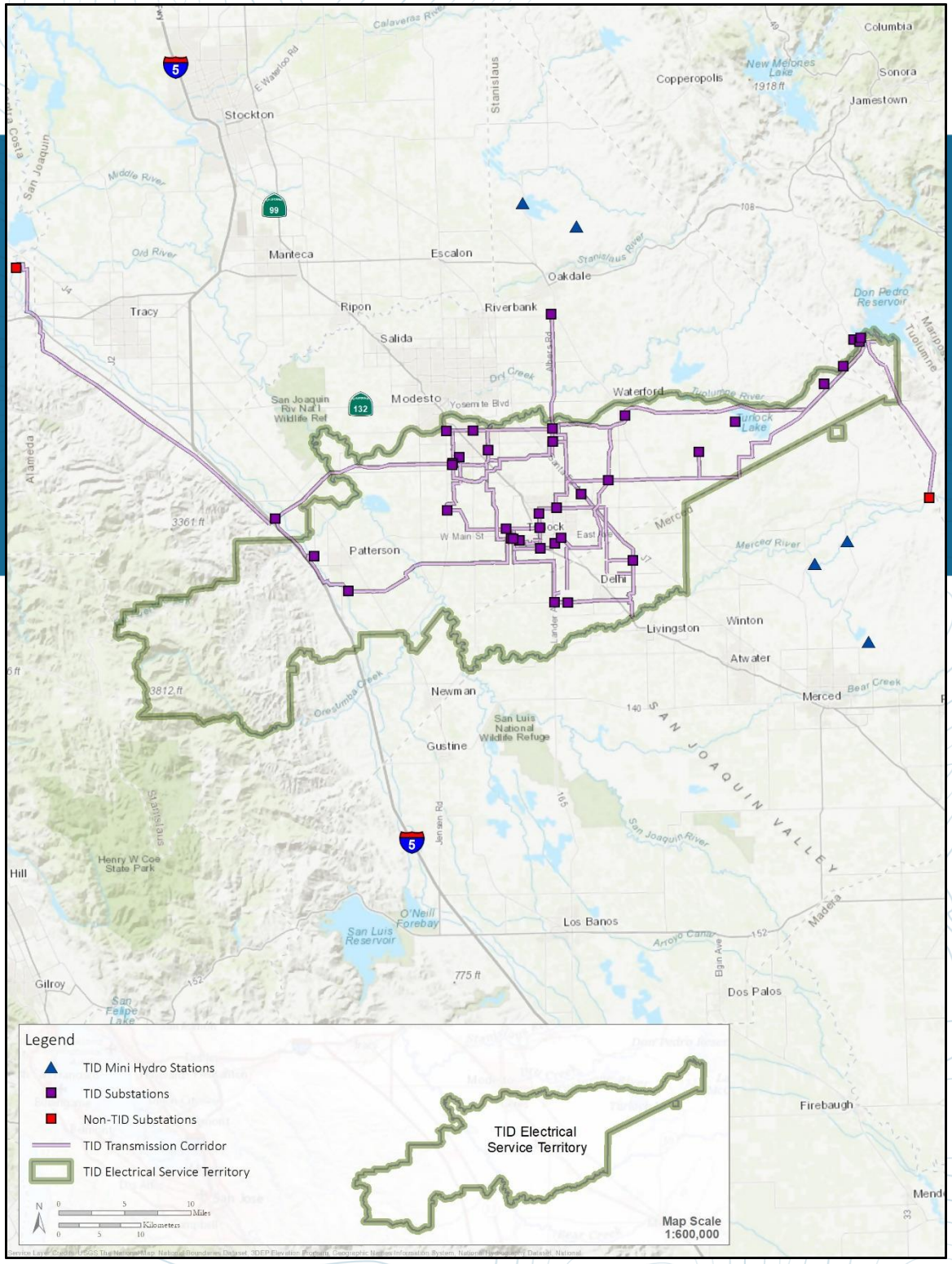


Figure 1: TID Service Territory

3.2 TID PURPOSE AND VISION

Turlock Irrigation District's overarching goal is to provide safe, reliable, and competitively priced irrigation water and electric service to our customers, while being good stewards of our resources and providing a high level of customer satisfaction.

3.3 UTILITY GOVERNANCE STRUCTURE

TID is governed by a five-member locally elected Board of Directors. The Board operates under the provisions of the State of California Water Code as a special district. The Board directs and monitors performance through the General Manager, who in turn directs the actions of the Chief Operating Officer and the Assistant General Managers to achieve TID goals. The Board of Directors is responsible for review and approval of the Wildfire Mitigation Plan.

3.4 WILDFIRE PREVENTION GENERAL PRACTICE

In all of its activities related to electric facility design, maintenance, inspection, and vegetation management, all TID staff adhere to the following principles, goals, and objectives:

- Operate the system in a manner that will minimize potential wildfire risks.
- Take all reasonable and practicable actions to minimize the risk of a catastrophic wildfire caused by TID electric facilities.
- Coordinate with federal, state, and local fire management personnel as necessary or appropriate to implement TID's Wildfire Mitigation Plan.
- Immediately report fires, pursuant to existing TID practices and the requirements of this Wildfire Mitigation Plan.
- Take corrective action when the staff witnesses, or is notified that fire protection measures have not been properly installed or maintained.
- Comply with relevant federal, state, and industry standard requirements, including the industry standards established by the California Public Utilities Commission.
- Collect and maintain wildfire data necessary for the implementation of this Wildfire Mitigation Plan.

- Provide regular training programs for all employees having obligations for implementation of this Wildfire Mitigation Plan.

TID's goal is to prevent electric facilities from starting fires throughout its service territory and wherever its lines are located. Attention is focused toward areas where Cal Fire or the CPUC have identified areas of heightened wildfire risk (e.g., Tier 2 and Tier 3). In these areas, TID complies with Cal Fire's requirements for State Responsibility Areas (SRAs) and CPUC General Order 95 and 165 requirements to reduce risks from electric utilities (Figure 2: Fire Zones in TID Service Territory, Figure 3: East Side Fire Zone including La Grange, Figure 4: West Side Fire Zone including Diablo Grande).

Figure 3 shows that the East Side Fire Zone is in the foothills of the Sierra Nevada and includes riparian vegetation on the south bank of the Tuolumne River. The city of La Grange is located within this area and is crossed by Highway 132. The East Side Fire Zone contains 34 miles of overhead distribution lines and 259 customers (meters). There are 94 customers (meters) within the community of La Grange. There are 35 miles of transmission lines in high fire risk areas on the east side of the District, which includes a line that is not within the TID service territory.

Figure 4 shows the West Side Fire Zone and all TID electric facilities in the West Side Fire Zone. This area runs from the edge of the Central Valley to the crest of the Coast Range. The community of Diablo Grande is located within this area and is crossed by Del Puerto Canyon Road. The West Side Fire Zone contains 77 miles of overhead distribution lines, 18 miles of underground distribution lines, and 721 customers (meters). There are 625 customers (meters) within the community of Diablo Grande.

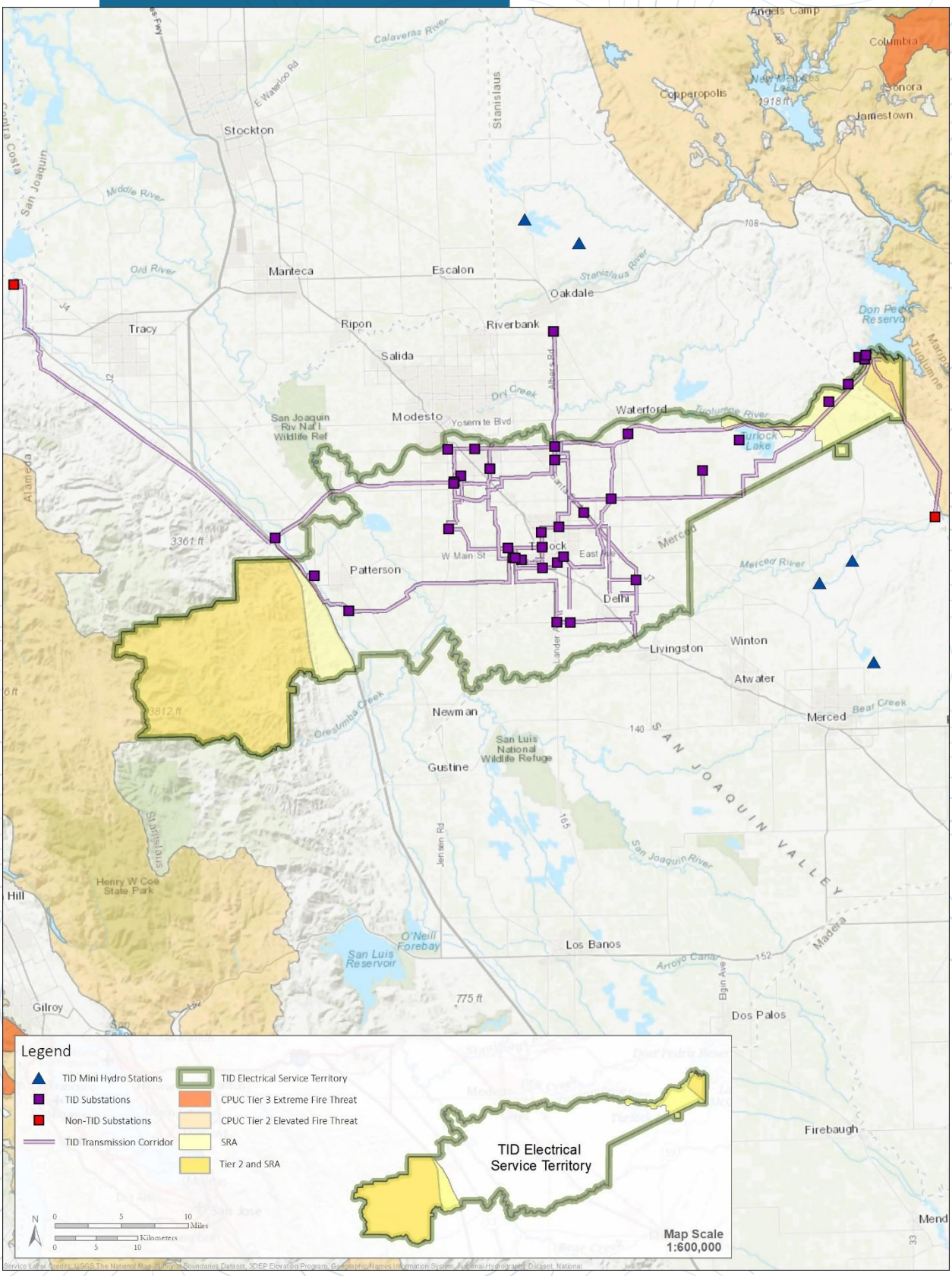


Figure 2: Fire Zones in TID Service Territory

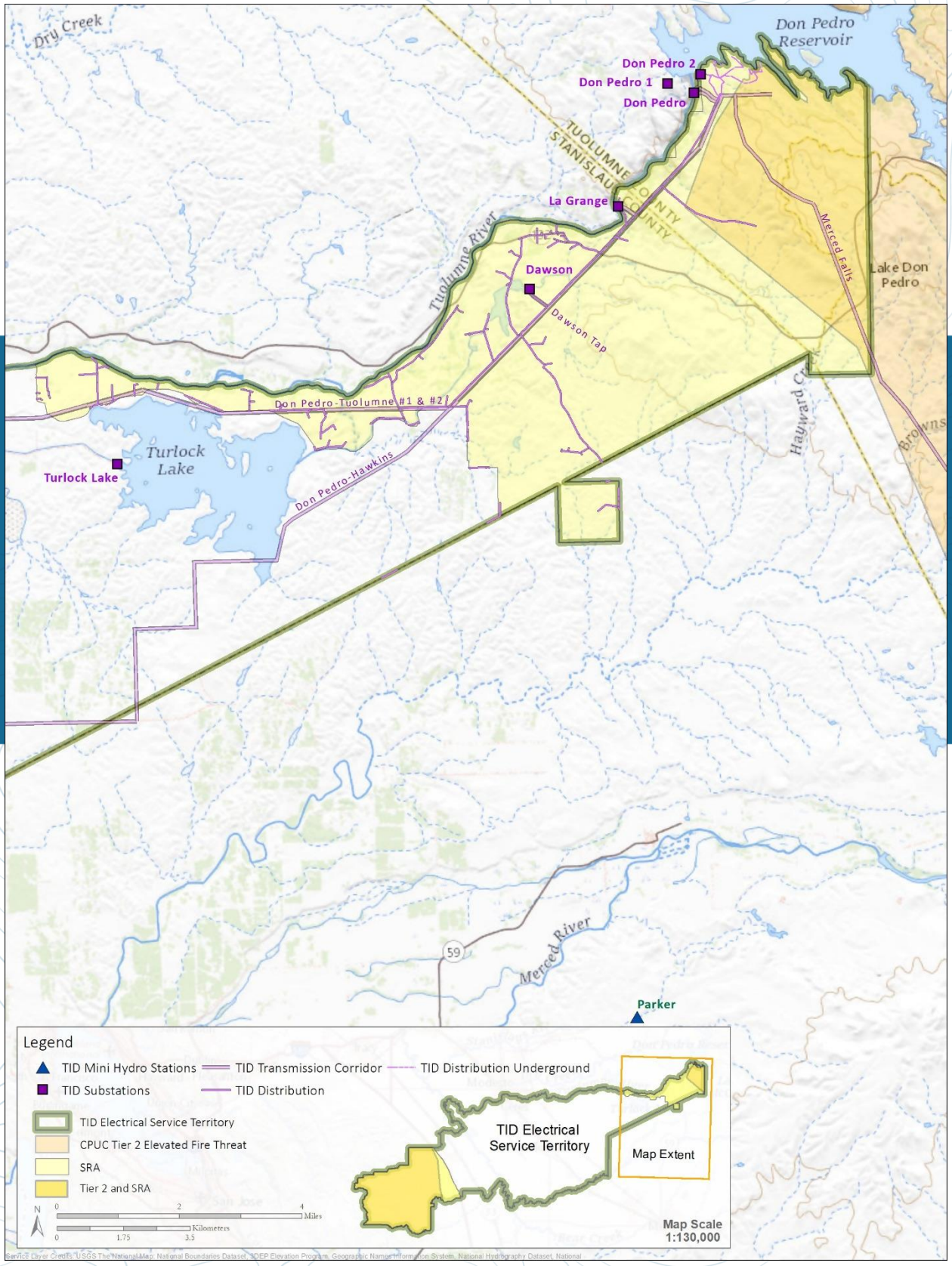


Figure 3: East Side Fire Zone including La Grange

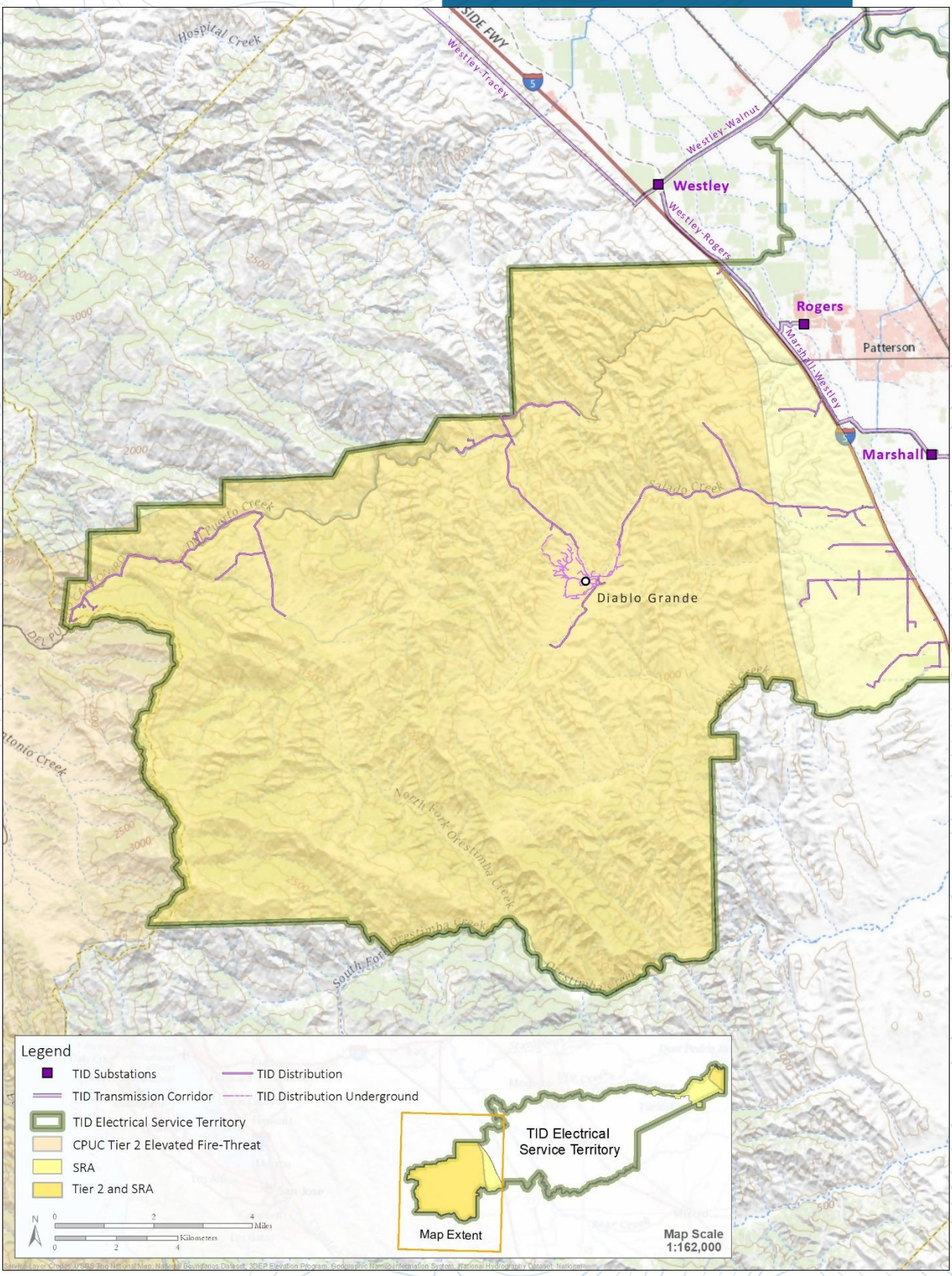


Figure 4: West Side Fire Zone including Diablo Grande

4.0 WILDFIRE RISKS AND DRIVERS

4.1 ENTERPRISE RISK MANAGEMENT

One of TID's Strategic Plan Goals was to develop an Enterprise Risk Management Plan. This plan was completed in early 2021. The operating strategy for Water and Electric Supply and Distribution is to maintain and enhance TID's water and electric resources and customer distribution systems in a sustainable manner. The objective of enterprise risk management is to develop and manage a holistic, portfolio view of the most significant risks to TID's mission of providing reliable and competitively priced water and electric service. TID's Enterprise Risk Management Plan defines risk "as any potential event which could prevent the achievement of an objective, or hinder the performance of key objectives, measured in terms of consequence and likelihood." TID's strategy is to identify, analyze and respond appropriately to enterprise risks. The level of TID's response is determined by the risk appetite and tolerance for identified risks and opportunities. TID's risk appetite is based on the level of risk that TID is willing to take to achieve prospective opportunities that further our goals and strategic imperatives. Risk tolerance is the threshold of risk that TID considers acceptable, balanced with our capabilities to mitigate the identified risks. Risk appetite and tolerance will vary over time according to specific business objectives. Wildfire risk is discussed in other sections of this document.

4.2 FIRE RISK DRIVERS

The primary risk drivers for fire ignitions are

- vegetation contact with wires,
- wire to wire contacts,
- wire down events, and
- electrical equipment failure.

The following contribute to the potential for rapid spread of fire after ignition:

Drought – As the vegetation gets drier, there is a greater risk of fire ignition and rapid spread of fire.

Vegetation Type – The lower elevation of TID's Fire Zone are predominantly grass lands, but as the elevation increases, the vegetation transitions to brush and trees, especially in the Coast Range. If ignited, brush and trees can produce more intense fires.

Vegetation Density – As the elevation increases in TID's Fire Zone, the vegetation density increases, especially in the Coast Range. Greater vegetation density has the potential to produce more intense fires.

Weather – Lack of rain, low humidity, and high temperatures can increase the intensity of fire behavior.

High winds – High winds may increase chances of fire ignition and fire spread.

Terrain – Fire may spread more rapidly uphill, the Coast Range includes terrain that is conducive to the uphill spread of fire. In addition to the Coast Range, there are portions of the Sierra foothills where terrain is conducive to wildfire spread.

Changing Weather Patterns (Climate Change) – As the climate gets drier and/or hotter, conditions in the future may increase fire risk.

4.3 CLIMATE AND CLIMATE CHANGE

The average rainfall in the TID service territory is about 12 inches per year, most of which falls from October through April. Summers are consistently hot and dry. Thus, even in an average or wet year, there is always a heightened risk of fires in the summer and into the fall before the rainy season begins. During dry years, the fire risk can extend into the winter and through the spring. While wet winters can delay the ignition of significant fires later into spring or early summer, they also promote more vegetation growth, and may therefore produce higher fire risk during the inevitable hot, dry, summer season.

The statewide fire experience over the last few years has shown that catastrophic fires can occur anywhere, even in residential subdivisions outside areas of high fire risk. TID is prepared to assist fire agencies with their response to active fires anywhere within its territory. However, TID concurs with the Cal Fire and CPUC risk designations, and sees no reason to change the boundaries that designate the areas that are the highest risk

within the TID territory.

According to experts, climate change is expected to increase the frequency and intensity of wildfires, as well as the extent of wildfires. The severity of wildfires is a function of the type of vegetation, the health of trees, dryness of the combustible vegetation material involved, slope, topography, and weather conditions. Tree stress and mortality, including damage due to insect infestations such as the bark beetle exacerbate fire hazards, causing catastrophic fires.

Fire season has historically extended from early spring through the late fall, but due to drier conditions and increasing urban development in fire-prone areas, fire protection and mitigation is becoming a year-round necessity.

4.4 VEGETATION TYPE

Vegetation types vary across the TID service territory. The Central Valley is dominated by agricultural (i.e. row crops, orchards, vineyards, pasture), and urban development. These vegetation types are considered to be lower fire risk because irrigation and frequent fire breaks minimize the chance for a fire to propagate. By contrast, the Fire Zones identified in the eastern and western portions of the territory have zones dominated by chaparral, shrub and woodland environments. Once fire starts in these vegetation types, the additional fuel load and lack of fire breaks can fuel a very intense fire that moves quickly and is hard to control (Figure 5: East Side Fire Zone Vegetation Map, Figure 6: West Side Fire Zone Vegetation Map).

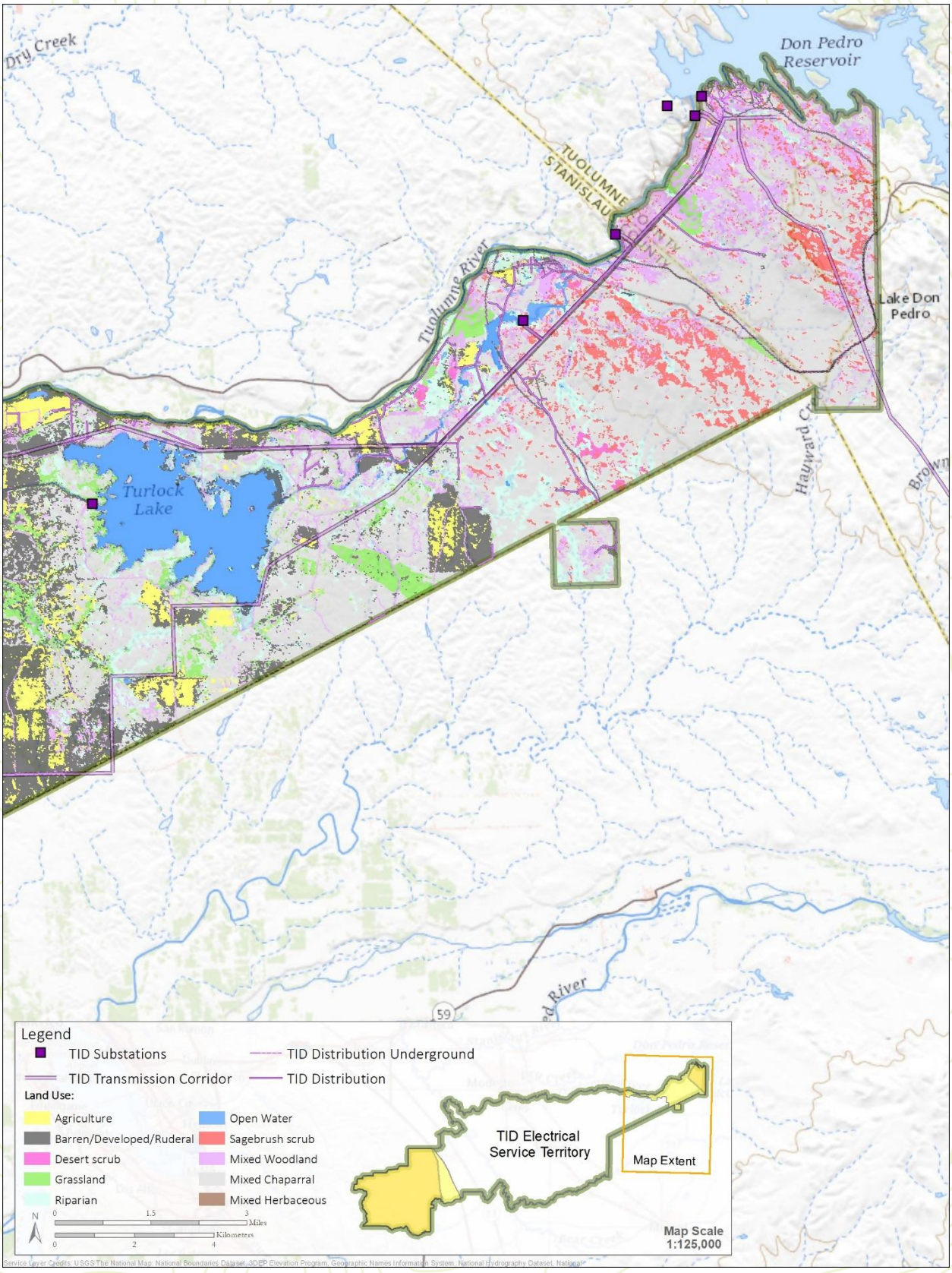


Figure 5: East Side Fire Zone Vegetation Map

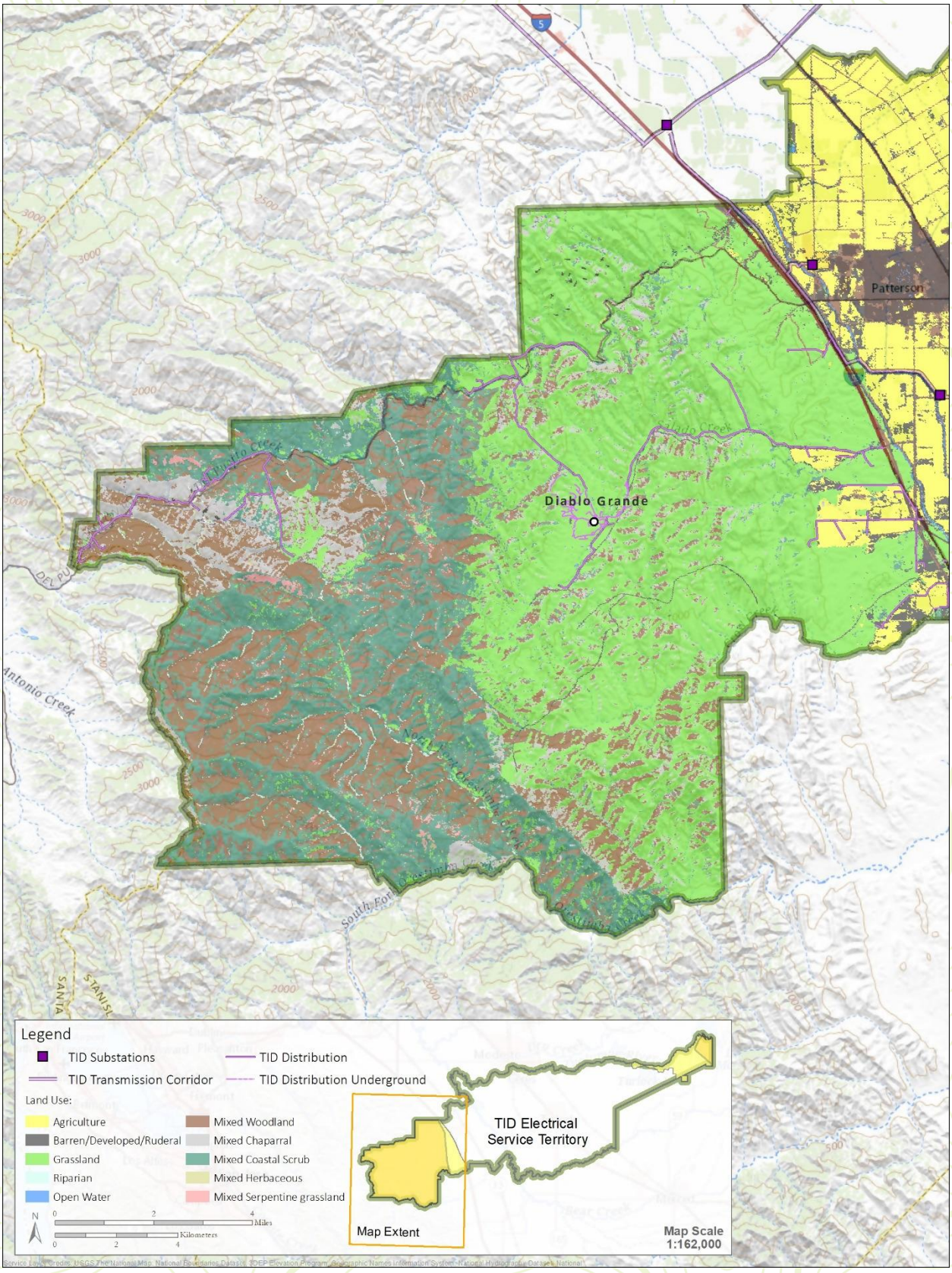


Figure 6: West Side Fire Zone Vegetation Map

4.5 TOPOGRAPHY AND SLOPE

Fires propagate and move faster depending on topography. Flat or moderate slopes (0-5%) generally have slower moving fires, with lower intensity than fires on steeper slopes (10-30%). In the TID service territory, slopes are flat to moderate throughout the Central Valley and become steeper in the East and West Fire Zones. The East zone, near Don Pedro reservoir tends to be more moderate (slopes < 10%), but the West Fire Zone has slopes exceeding 20%. Higher slopes along with chaparral vegetation constitute an area of higher fire hazard (Figure 7: East Side Slopes, Figure 8: West Side Slopes).

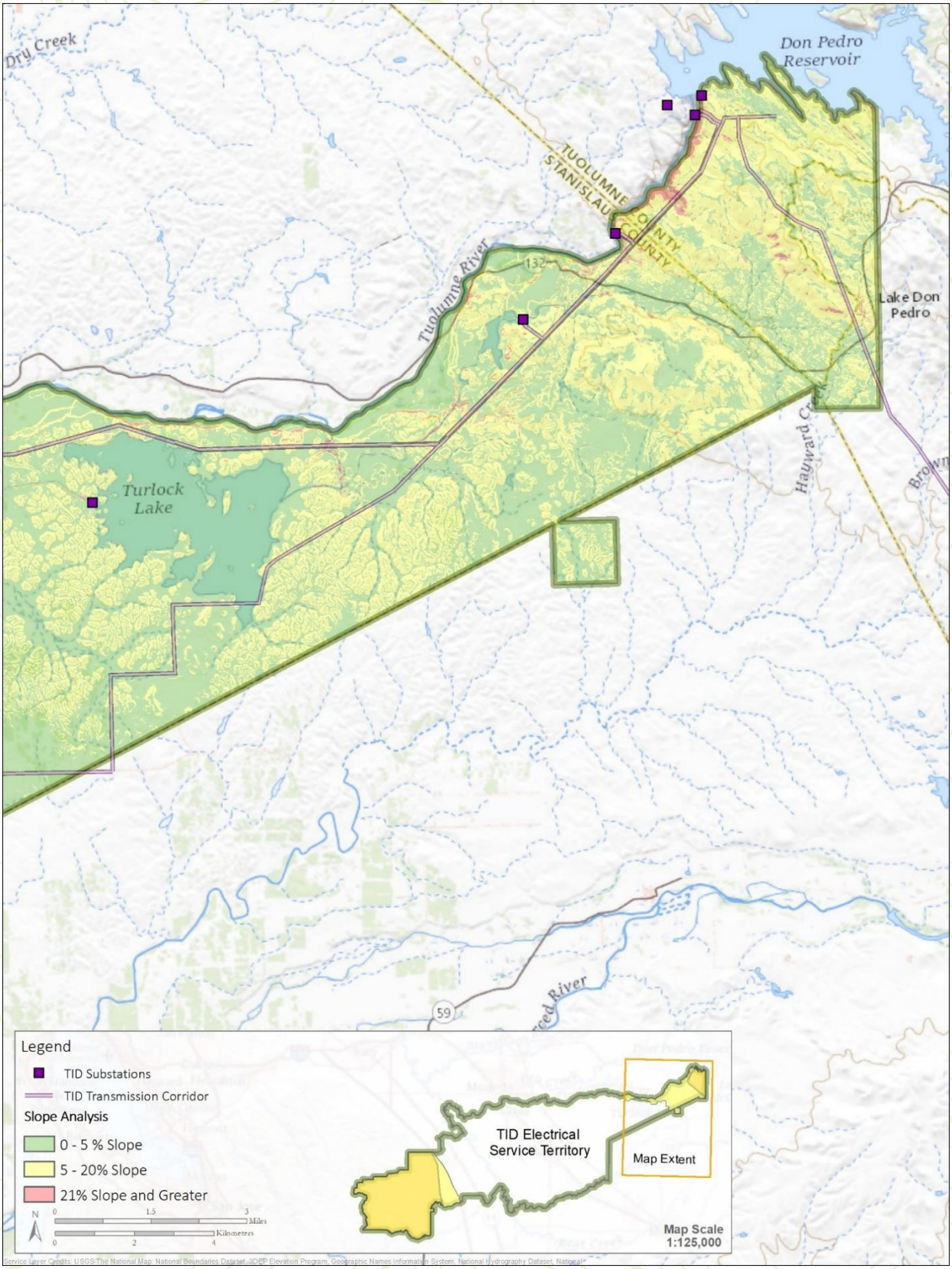


Figure 7: East Side Slopes

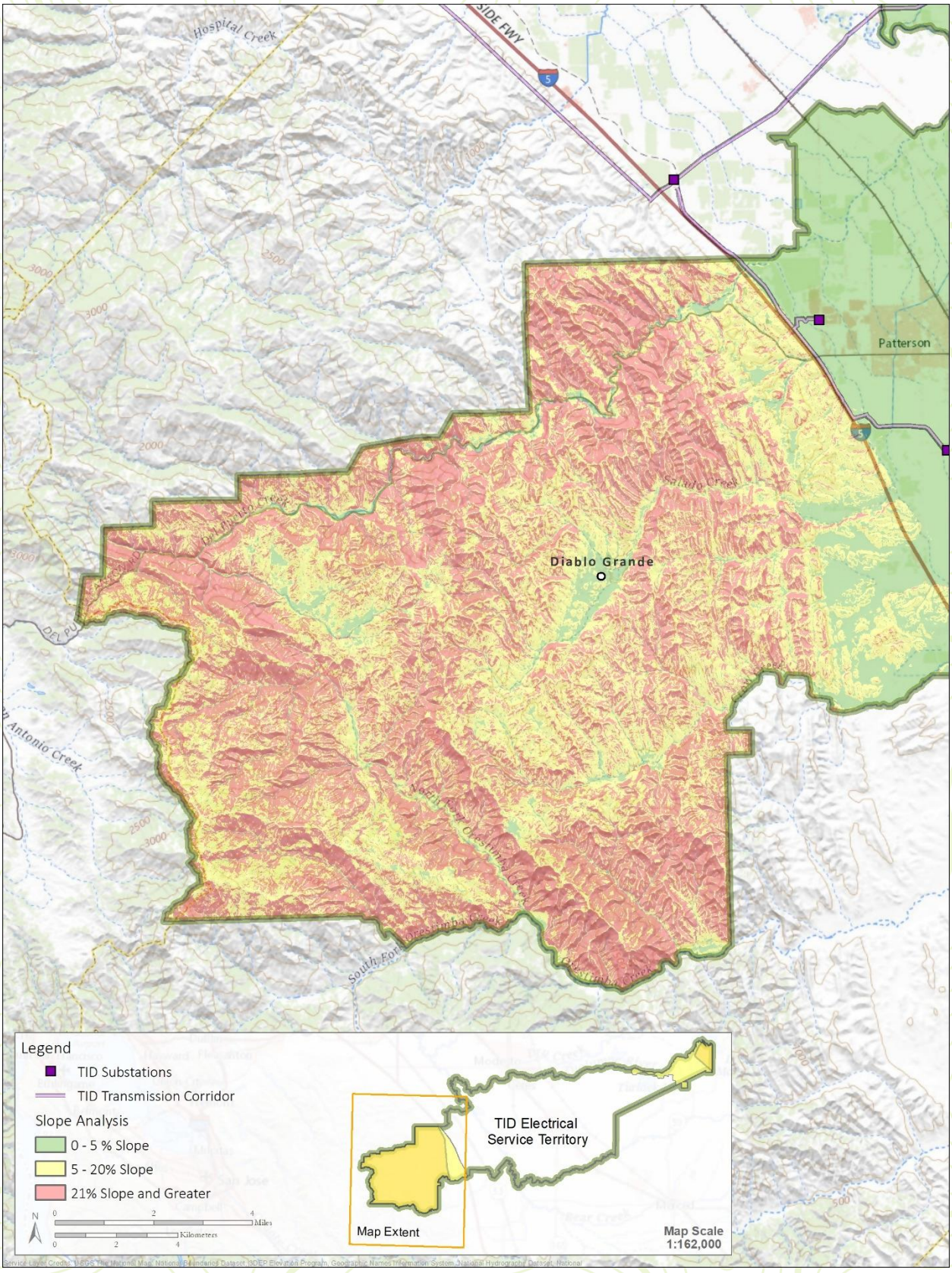


Figure 8: West Side Slopes

5.0 TID ASSETS IN FIRE ZONES

5.1 TID ASSETS

For purposes of risk assessment, TID assets consisting of substations, transmission and distribution electrical lines were considered as potential sources of wildfire ignition.

Table 3: TID Assets in the Fire Zone and Assets in High Fire Districts Outside the Fire Zone

Asset Class	Asset Type	Quantity
Transmission Lines	Transmission structures and switches operating at or above 69 Kilovolts (kV)	29 miles in Fire Zone 32 miles in SRA/Tier 2 outside Fire Zone
Distribution Lines	Overhead and underground lines operating at 12 kV	129 miles in Fire Zones
Substations	Power transformers, voltage regulators, protective devices, relays, open-air structures, switchgear and control houses	4 in East Side Fire Zone
Mini Hydro Plants	Generators, transformers, switches, protective devices, control houses	5 in SRAs outside TID Fire Zone

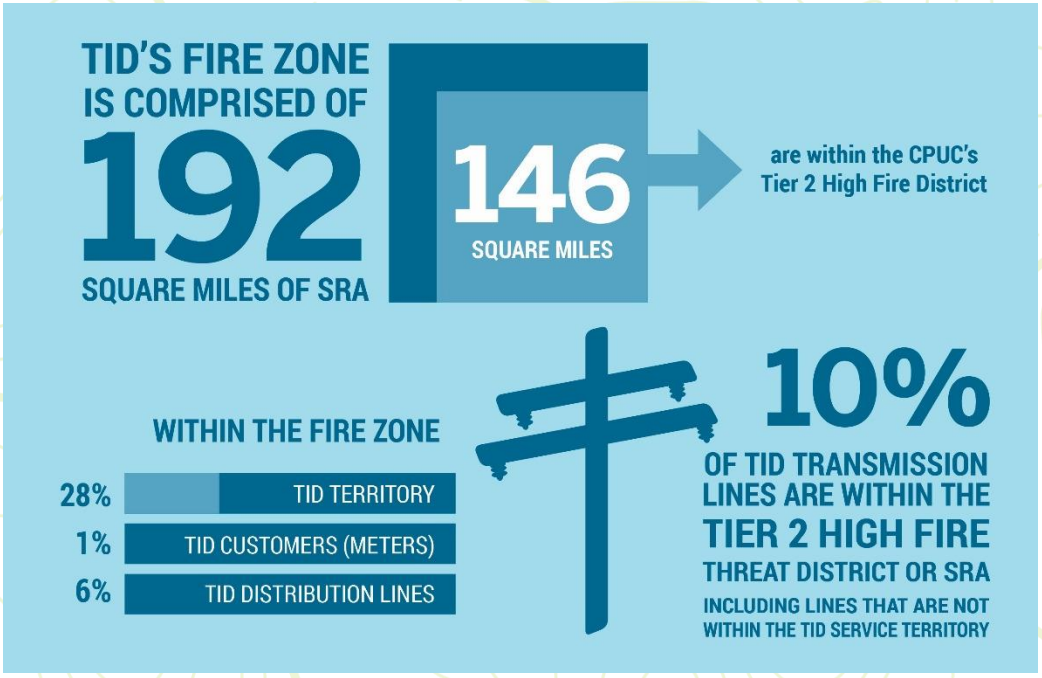
5.2 LOCATIONS OF FIRE ZONES

TID's service territory spans the Central Valley from the foothills of the Sierra (near Don Pedro Reservoir) to the crest of the Coast Range. TID's highest fire risk is at the far west end and far east end of the District (Figure 2). These areas are designated as State Responsibility Areas (SRAs) and Cal Fire standards apply to vegetation clearing and electrical equipment in these areas. Portions of these SRAs are also designated as Tier 2 by the CPUC. TID applies the more stringent of the two standards where overlaps occur. Figure 2 depicts areas where there is an elevated risk of utility associated wildfires. In Tier 2 areas, the CPUC has increased requirements for vegetation clearing and inspections. TID did not identify areas of High Fire Danger in addition to those indicated.

TID's service territory comprises a large area of Central Valley grassland and agricultural lands that are considered relatively low fire threat. To the west of I-5, and between Turlock Lake and Don Pedro Reservoir, vegetation comprises more shrubs and trees that constitute areas of high fire threat (Figure 3; East Side Fire Zone including La Grange, Figure 4: West Side Fire Zone including Diablo Grande). Each of these areas contain SRA and Tier 2 High Fire Threat Districts. TID has developed a Fire Zone Standard that applies to these two areas of increased wildfire risk. The Fire Zone standard requires that fuses, reclosers, and connectors be exempt, or if non-exempt equipment is used, flammable vegetation must be removed for 10 feet around the structure base. The Fire Zone Standard also requires that vegetation clearance at a minimum meet SRA and Tier 2 standards. Vegetation Management is addressed in more detail in Section 6.4 below.

Communities at risk in the TID Fire Zone include Diablo Grande and La Grange. Because of the concentrated population in these communities in the TID Fire Zone, these areas are the highest risk areas to public safety.

The CPUC Fire Map website shows that there is a history of small fires, predominantly in grass lands but also including riparian areas along the Tuolumne River in the east side Fire Zone. TID's west side Fire Zone has an extensive history of large fires due to vegetation and terrain. The fire history does not include fires within La Grange or Diablo Grande (Figure 9: East Side Fire History, Figure 10: West Side Fire History).



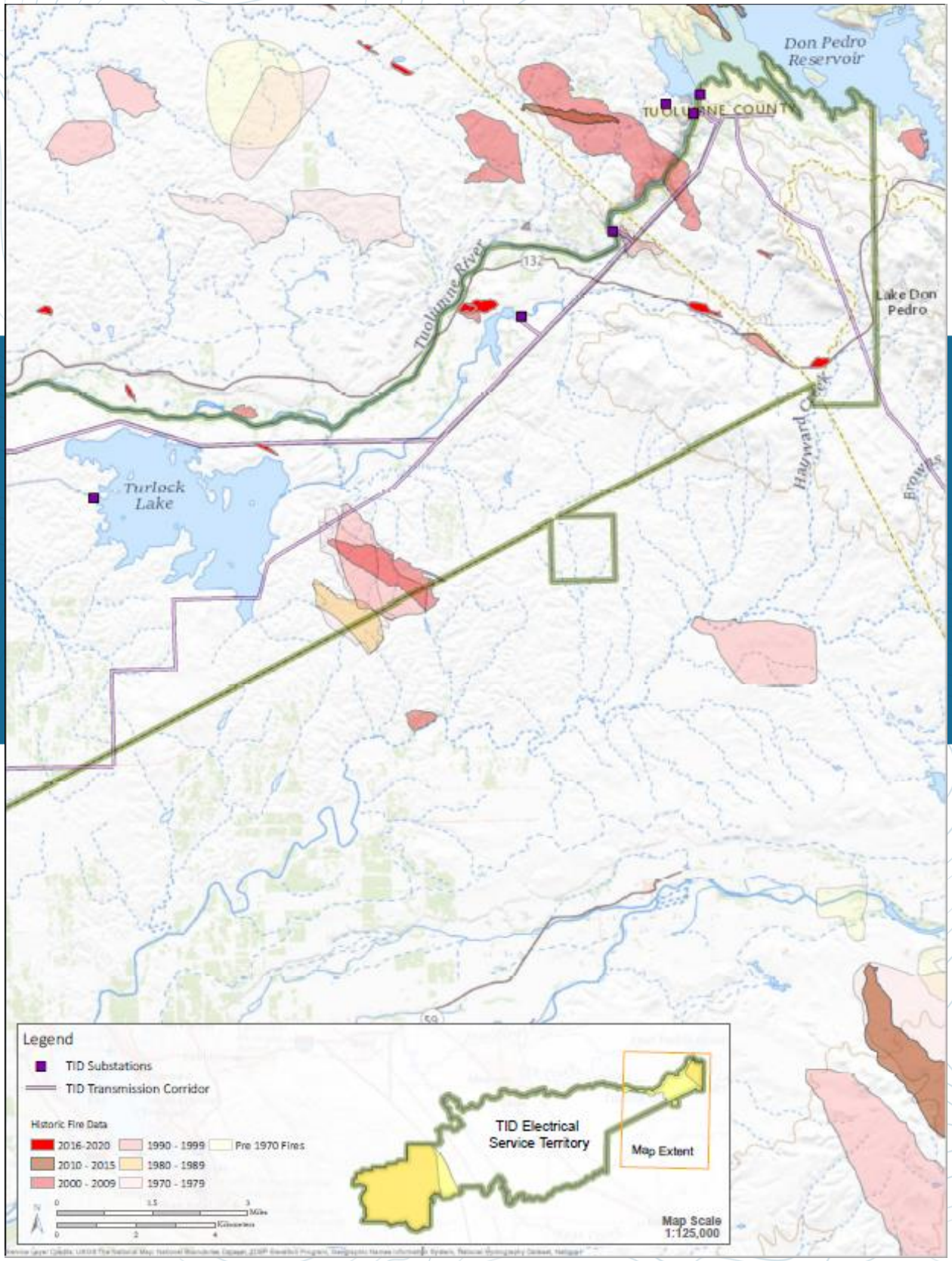


Figure 9: East Side Fire History

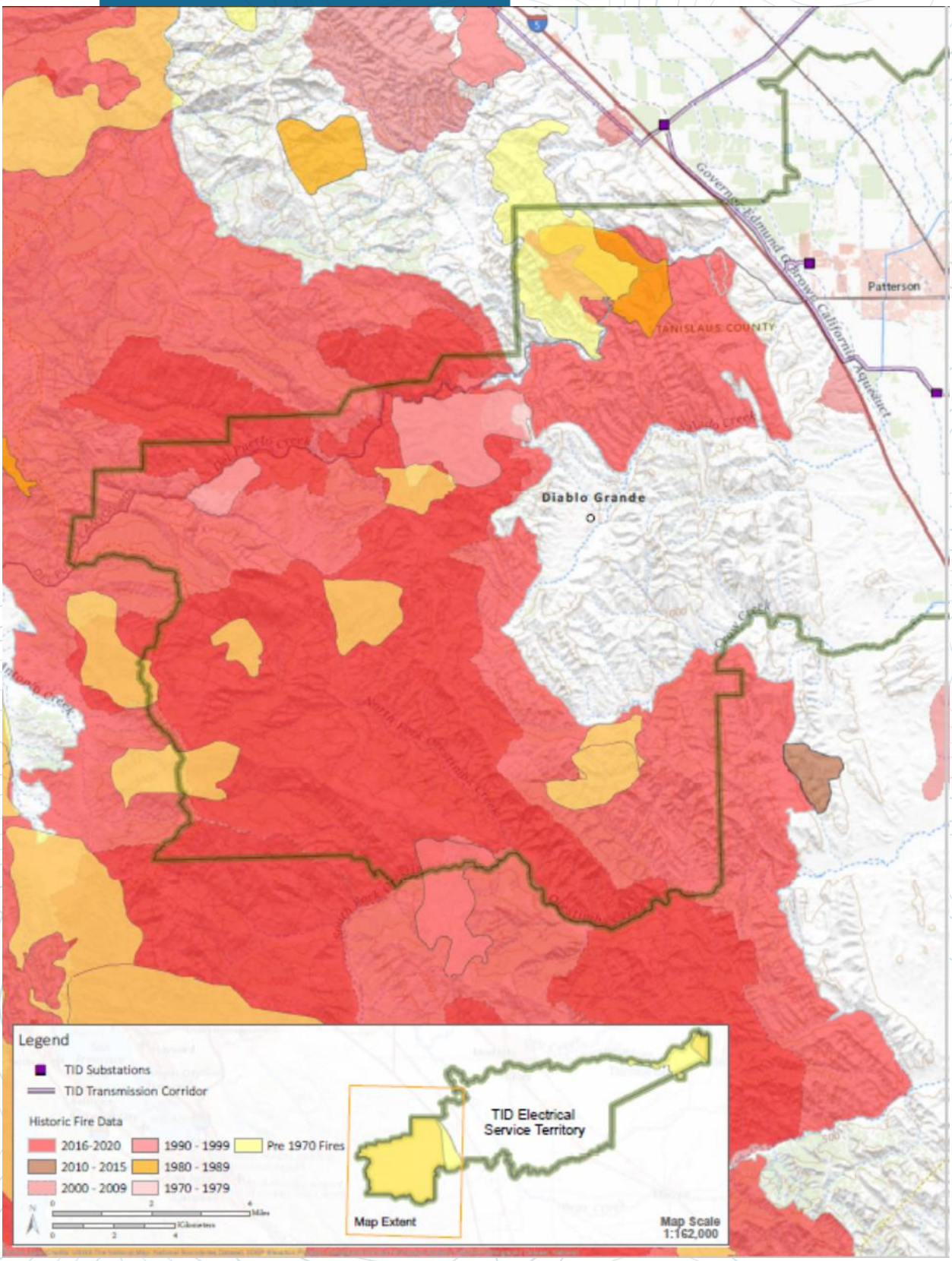


Figure 10: West Side Fire History

6.0 WILDFIRE PREVENTATIVE STRATEGIES

6.1 HIGH FIRE THREAT DISTRICT

TID directly participated in the development of the California Public Utilities Commission' s (CPUC) Fire-Threat Map which designates a High-Fire Threat District. In the map development process, TID served as a territory lead, and worked with utility staff and local fire & government officials to identify the areas of TID service territory that are at an elevated or extreme risk of power line ignited wildfire. TID has incorporated the High Fire Threat District into its construction, inspection, maintenance, repair, and clearance practices, where applicable.

6.2 WEATHER MONITORING

The TID Power Control Center monitors current and forecasted weather data from a variety of sources including:

- United States National Weather Service.
- National Fire Danger Rating System.
- National Interagency Fire Center – Predictive Services for Northern California.
- Local Fire District Warnings.

TID assigns one of two operating conditions based on the relevant weather data and knowledge of local conditions:

Normal: During normal conditions, no changes are made to operations or work policy.

Elevated: This condition is triggered by Red Flag Warnings issued by the National Weather Service. During elevated fire-risk conditions, TID crews and contractors take special precautions to prevent fire ignition and spread, including:

- Any crew working in the Fire Zone is required to carry a 200-gallon water tank.
- All crews are required to carry firefighting equipment, restrict use of tools or work methods that can produce sparks, and restrict vehicle operation in areas of flammable grasses.
- All automatic reclosing on lines that are within the Fire Zone is disabled.

TID is in the process of deploying multiple weather stations in the Diablo Grande region.

The deployment of additional weather stations will further enhance TID's data driven decision making. TID staff will be working to acquire the needed easements to install these weather stations.

6.3 DESIGN AND CONSTRUCTION STANDARDS

TID's electric facilities are designed and constructed to meet or exceed the relevant federal, state, or industry standard. TID treats CPUC General Order (GO) 95 as a key industry standard for design and construction standards for overhead electrical facilities, and TID meets or exceeds all standards in GO 95. TID also monitors and follows the National Electric Safety Code as appropriate. TID ensures any new construction is designed to CPUC GO 95 grade A construction with a safety factor of four.

To reduce the potential for equipment causing wildfire ignition, Cal Fire specifies exempt and non-exempt equipment that can be used on electric facilities in Fire Zones. Exempt equipment is less likely to be a source of ignition and is preferred for Fire Zones. Where non-exempt equipment is used, Cal Fire requires removal of flammable vegetation around the base of structures (poles) to mitigate the potential for wildfire. TID originally tested poles in 2020 and will now be testing again in 2025 instead of 2030. Every pole identified with internal wood decay will be replaced with a fiberglass pole.

TID does maintain pole data height, age and class in our geographic information system (GIS) database. When utilities request to attach to TID poles they are required to provide loading data. TID will assess the loading data provided by the third party and ensure the appropriate mitigation measures are addressed prior to attachment.

TID's Fire Zone mitigation strategy begins with compliance with the SRA and CPUC requirements, but also includes additional actions to harden the electric system. Over the last year, and informed by experiences in the past, TID has increased inspections and upgraded equipment to ensure that design and construction are consistent with mitigating fire hazards. Below is an account of what was accomplished in 2019, 2020 and what is planned and ongoing for 2021 and future years.

2019 Fire Zone Work

- Increased frequency of Fire Zone inspections.
- Coordinate with Cal Fire to review requirements.
- Non-exempt equipment identified and replaced. (Non-exempt equipment not replaced at 3 locations.)
- Lightning arrestors removed.

- Non-exempt switch removed.
- Vegetation removal completed.

TID'S FIRE ZONE STANDARD APPLIES THE MOST CONSERVATIVE FIRE PREVENTION REQUIREMENT (WHETHER FROM CAL FIRE OR THE CPUC) TO ALL LANDS WITHIN ITS FIRE ZONE.

- 2,359 trees trimmed.
- Installed wire guards to protect against abrasion.
- Substation breakers and line reclosers in Fire Zone set to non-reclosing during red flag conditions.
- Notified landowners on their obligation to clear vegetation around low voltage wires that connect to their homes and businesses.
- Constructed communication system for remote control of Fire Zone equipment.

2020 Fire Zone Work

- Completed annual patrols.
- Trim and remove trees, with trimming as needed.
- Pilot test of drone-mounted infrared inspection of critical equipment.
- Initiate intrusive wood pole testing to identify poles that could fail and cause ignition.
    - 469 poles in TID's fire zones; Diablo Grande and La Grange.
    - Percent of failure rate for poles tested was 2.5%.
    - TID replaced all failed poles.
- Trial use of steel or fiberglass poles to replace failed wood poles.
- Replace 12 kV copper conductors in Diablo Grande and La Grange with lower hazard aluminum and steel conductors.
- Increase wire clearance or installed animal guards to prevent animal-caused ignition.

- Began installing transformers with lower fire risk FR 3 vegetable-based fluid.

2021 Fire Zone Work

- TID evaluated undergrounding and tree wire and found these actions to not be warranted at this time.
- Began process to deploy weather station in Diablo Grande region with a targeted 2023 completion date.

2022 Fire Zone Work

- Continued process of deploying multiple weather stations in Diablo Grande region.
- Completed annual patrols in HFTD.
- Installed fault indicators in La Grange HFTD zone.

2023 and Future Years Action Plan

In future years, TID plans to continue efforts to harden its electric equipment in the Fire Zones. New projects will build on lessons learned from each annual submission. TID continually monitors the development of new technology and is prepared to apply these advancements when it encounters appropriate opportunities. The following efforts are being prepared for future plan updates:

- Work with the state to receive grant funding opportunities for alternative generation sources.
- Deploying weather stations in TID service territory.

6.4 VEGETATION MANAGEMENT

TID meets or exceeds the minimum industry standard vegetation management practices. For 230kV transmission-level facilities, TID complies with NERC FAC-003-4, where applicable. For both transmission and distribution level facilities, TID meets:

- Public Resources Code Sections 4292; 4293, 4294, and 4296;
- Title 14 Section 1257 of California Code of Regulation;
- GO 95 Rule 35; and
- GO 95 Appendix E Guidelines to Rule 35.

These standards require significantly increased clearances in the High Fire Threat

District. The recommended time-of-trim guidelines do not establish a mandatory standard, but instead provide useful guidance to utilities. TID uses specific knowledge of growing conditions and tree species to determine the appropriate time of trim clearance in each circumstance. Figure 11 is an excerpt from TID's Fire Zone Standard and provides a graphic presentation of compliance with GO 95.

Fire Zone Ground Vegetation Removal:

In Fire Zone locations where non-exempt Fire Zone equipment must be used, flammable materials, grass, herbaceous and brush vegetation within 10 feet of the base of the pole must be removed. Additionally, within 10 feet of the base of the pole, limbs of living trees up to a height of 8 feet must be removed. Above 8 feet in height and within 10 feet of the pole, dead, diseased and dying limbs and foliage from living sound trees must be removed. Above 8 feet in height and within 10 feet of the pole, dead, diseased or dying trees must be entirely removed.

Removal of ground vegetation can also be accomplished with chemical treatment. Chemical treatments are performed by personnel with a Qualified Applicator License issued by the California Department of Pesticide Regulations.

Poles that require clearing will be marked with a visibility strip located 6 feet above ground.

Ground vegetation does not have to be removed if fire will not propagate, such as planted fields, vineyards, irrigated pasture, orchards, or marsh land.

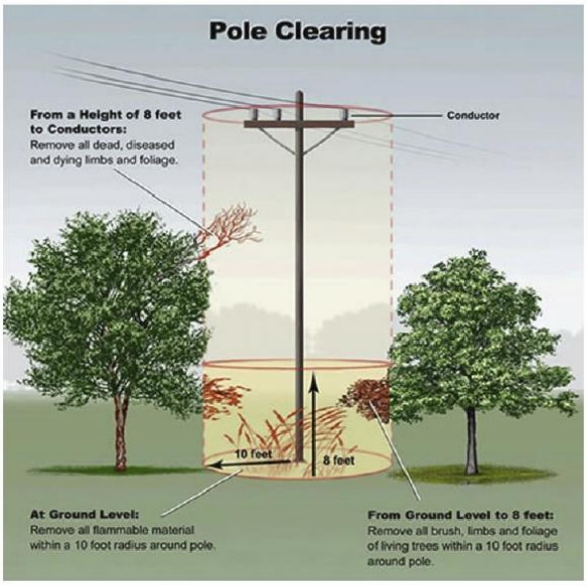


Figure 1

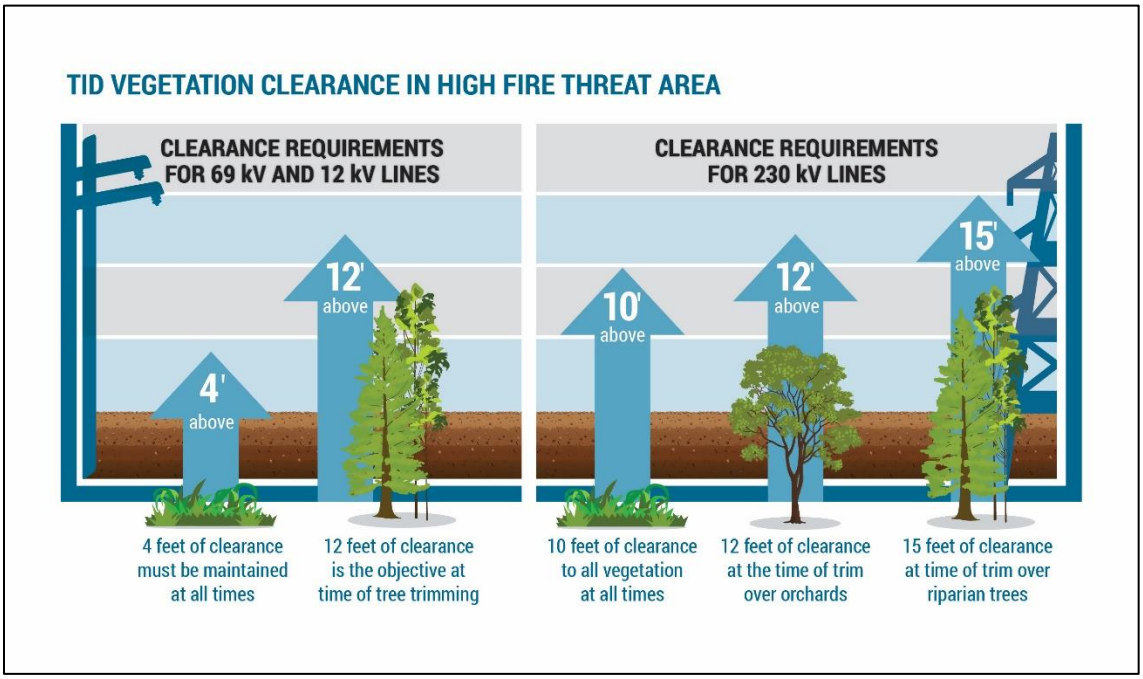
Fire Zone Line Patrols:

GO165 required line patrols will be performed annually in the Fire Zone.

FIRE ZONE	CONSTRUCTION STANDARDS		
	SHEET 3 OF 4	20900 DWG. NO.	A PAGE

Figure 11: Excerpt from TID Fire Zone Standard

Within the Fire Zone, TID performs an annual evaluation of every dangerous tree that has the potential to strike overhead facilities it if were to fail. In cases where dangerous trees (dead, dying, diseased or leaning) could strike the facilities, TID removes the tree or portion of the tree that poses a risk. TID also has a weed abatement program which is budgeted and utilizes herbicides around poles.



All State Responsibility Area requirements are incorporated into TID's Fire Zone Standard. SRA requirements are contained in Section 4292 and 4293 of the California Public Resource Code. Exemptions to the conductor clearance requirements are contained in Sections 4292, 4294, and 4296 of the California Public Resource Code. Exemptions are found in Title 14, Section 1257, of the California Code of Regulations. TID also references the Power Line Fire Prevention Field Guide published by Cal Fire.

The SRA radial clearance requirement between vegetation and electric lines is the same as GO 95 for 12 kV and 69 kV lines. There is no SRA recommended clearance at time of trim. The SRA requires the removal or trimming of trees, or portions of trees, that are dead, rotten, decayed or diseased and which may fall into or onto the line and trees leaning toward the line.

Cal Fire maintains lists of exempt and non-exempt equipment. Operation of non-exempt equipment can create electrical arcs and be a source of fire ignition. Therefore, if non-exempt equipment is used in the SRA, there are additional vegetation removal requirements around the base of the structure for 10 feet in all directions.

Cal Fire has requested a copy of the maps that TID maintains that show the location of

all non-exempt structures in the SRA. While TID has replaced the majority of non-exempt equipment in the SRA, three non-exempt structures remain on the map.

TID owns and/or operates facilities that are outside of the TID service territory. Some of these facilities are in SRA areas and Tier 2 areas. Following is a list of these facilities, and a summary of the status of compliance with Cal Fire and CPUC requirements.

- Westley – Quinto and Westley – Tesla 230 kV Lines. TID is 50% owner of 0.3 miles of this double-circuit line that is west of Interstate 5 in an SRA. TID inspects this line twice a year and maintains the clearances required by NERC Standards.
- Westley – Tracy 230 kV Line. TID is 50% owner of this double-circuit line. 23.5 miles of this line is located in an SRA. MID inspects this line twice a year and maintains the clearance required by NERC Standards.
- Don Pedro – Merced 69 kV Line. TID owns this 14 mile line. 6 miles of this line are in the TID service territory and Fire Zone, 8 miles are outside the TID service territory and in an area designated Tier 2 by the CPUC. This line is not presently in service. Nonetheless, TID is working to ensure that the 4 feet of required clearance is maintained.
- Mini Hydros. TID manages Woodward, Frankenheimer, Canal Creek, Parker, and Fairfield generating plants that interconnect with PG&E distribution lines. These facilities are located in SRAs outside the TID service territory. TID inspects and maintains these facilities in accordance with Cal Fire and CPUC Standards.

6.5 INSPECTIONS

TID Substations are inspected monthly for safety and reliability in compliance with GO 174.

Overhead system patrols and inspections are the responsibility of the Line Division Manager, Service Division. Underground system patrols and inspections are the responsibility of the Line Division Manager, Line Division.

TID inspects its 230 kV transmission lines twice per year. Any problems discovered, including those involving vegetation, are addressed promptly to ensure the safety and reliability of these facilities. Clearances to vegetation are maintained in accordance with NERC FAC-003-4.

Other transmission and distribution facilities, both overhead and underground, are inspected annually in urban areas, and every two years in rural areas, in accordance with the requirements of GO 165. During these inspections, problems are identified, prioritized and corrected. All facilities in the Fire Zone are patrolled annually in compliance with CPUC GO 165. TID staff use their knowledge of the specific environmental and geographic conditions to determine when areas require more frequent inspections. If TID staff discover a facility in need of repair that is owned by an entity other than TID, TID will issue a notice to the facility owner and work to ensure that necessary repairs are completed promptly.

TID is in the seventh year of a 10-year cycle to perform intrusive testing on all of its wood poles. The intrusive test looks for internal wood decay. Poles with insufficient strength to meet the GO 95 strength requirements are replaced. This year TID made a policy change and will now preform intrusive wood pole inspections in the fire zones every five years as opposed to ten. TID originally tested poles in 2020 and will now be testing again in 2025 instead of 2030. Every pole identified with internal wood decay will be replaced with a fiberglass pole.

Vegetation trimming along transmission and distribution lines is done primarily by TID contractors. The contractors are specialists, selected for their knowledge and experience with work near energized electric lines. These contractors also have in-depth

knowledge of various tree species, growth rates, and pruning methods that maintain tree health. Customers and property owners receive a phone call from TID informing them staff will be in the area inspecting and possibly trimming vegetation. TID trims so that minimum required clearances are maintained for a two-year trim cycle. If TID has discovered vegetation that has grown faster than expected staff will trim the trees and trim again if necessary during winter and summer months. In TID's HFTD area inspections begin in late April to avoid rattlesnake season. Staff traversing HFTD areas are equipped with snake proof leggings for safety. The town of La Grange is prioritized by TID due to it being in a HFTD and receives inspections every couple of months.

Detailed inspection and patrols identify problems that need correction. Maintenance tags are issued by the Line Department Manager and assigned to Line Division Managers to correct problems on a prioritized basis. Maintenance work is tracked by the Line Department, from the time problems are identified until corrected. All records of inspections and patrols, problems identified, and corrective actions tags issued and completed are maintained by the Line Department.

6.6 WORKFORCE TRAINING

TID linemen are members of the International Brotherhood of Electrical Workers. Electrical safety is integral to their livelihood and culture, as well as the safety of the public and the customers they serve. Any accident involving energized electrical facilities is a public hazard and a potential source of fire ignition. TID has training and work rules for its workforce to help reduce accidents, which also reduces the likelihood of wildfire ignition. Safely planning work is a daily exercise for linemen.

Lineman apprenticeship programs emphasize safety. Apprentices receive rigorous classroom and on the job training in electrical safety and safe work practices. TID's lineman apprentice program includes a module on vegetation management which includes the components of TID's Fire Zone Standard. Orientation is also provided on TID's 230 KV Transmission Vegetation Management Program which complies with NERC and WECC standards and requirements. TID linemen are also trained yearly on the use of fire extinguishers.

TID uses specialty contractors to trim vegetation from the vicinity of electric lines. TID's contract with the tree trimming contractor requires that employees follow a company safety program and that the equipment they use has spark arresters and is maintained so as to not initiate fires.

TID vehicles and equipment receive regular maintenance to reduce the likelihood of fire

ignition from faulty brakes or metal in contact with the ground.

TID linemen are also trained yearly on the use of fire extinguishers. In the event of a fire TID staff have been known to assist Cal Fire in firefighting efforts.

6.7 RECLOSING POLICY

TID substation breakers can be set in a non-reclosing mode when desired. TID line reclosers can also be set in a non-reclosing mode when desired. This is done when needed for worker safety. TID substation breakers and line reclosers that feed into the Fire Zone are set in a non-reclosing mode during Red Flag Warnings.

6.8 PUBLIC SAFETY POWER SHUTOFF

TID has the authority to preemptively shut off power due to fire-threat conditions. This is referred to as a Public Safety Power Shutoff (PSPS), and this option will only be used in extraordinary circumstances. TID has identified switches that can be operated to shut off power to La Grange and Diablo Grande if the situation were to warrant it. However, there is no historical precedent for a situation in which a preemptive Public Safety Power Shutoff would have previously occurred. Compared to other parts of the state, most of TID's Fire Zone has less fuel and lower population density. Nonetheless, TID will make a case-by-case decision to shut off power based on the following considerations:

- Red Flag Warnings issued by the National Weather Service for fire weather zones that contain TID circuits.
- TID staff assessments of local conditions, including wind speed (sustained and gust), humidity and temperature, fuel moisture, fuel loading and data from weather stations.
- Forecasted wind gusts in excess of 56 miles per hour.
- Real-time information from staff located in areas identified as at risk of being subject to extreme weather conditions.
- Input from fire experts and vegetation experts.
- Input from local and state fire authorities regarding the potential consequences of wildfires in select locations.
- Alternative ways to reroute power to affected areas.
- Awareness of evacuation orders in place.

- Expected impact of de-energizing circuits on essential services.
- Other operational considerations to minimize potential wildfire ignitions, including the blocking of reclosers on the identified circuit(s).
- On-going fire activity throughout TID and California.
- Ability to notify customers, local governments and public officials.
- Potential impacts to communities and customers.

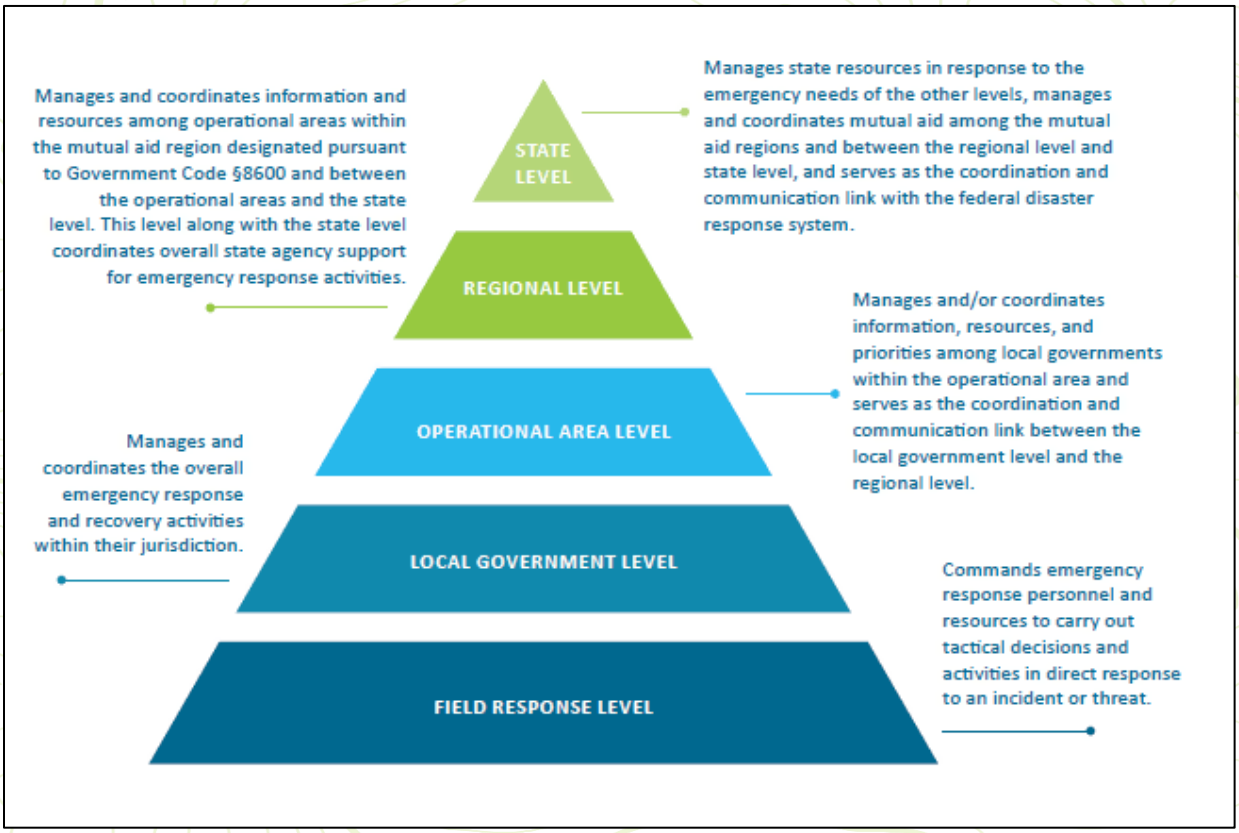
TID serves 36 meters at the far west end of the District along Del Puerto Canyon Road. TID's power for these customers is delivered from a line connected to PG&E that is located in a Tier 2 High Fire Threat District and could be subject to a PSPS. If PG&E notifies TID that they will de-energize these lines due to critical fire weather conditions and a threat to public safety, TID will immediately communicate that information to TID customers that will be affected by PG&E's PSPS.

In 2020 there were two PSPS events that occurred in the Diablo Grande and Del Puerto Canyon area. Both de-energizations resulted in 36 customers losing power and were restored in unison. The first de-energization was prompted due to the SCU Lightning Complex Fire. Customers impacted by the SCU Lightning Complex Fire were de-energized on August 17 and were re-energized on September 4 after restoration efforts concluded. TID was able to communicate timely information to the community of Diablo Grande as they became placed under an evacuation warning due to the collaborative efforts between TID, PG&E and other cooperating agencies. The second Diablo Grande de-energization occurred on October 26 and restoration of power was completed the following day.

7.0 PUBLIC AND AGENCY COMMUNICATION FOR POTENTIAL WILDFIRE OR POWER SHUT OFF

7.1 EMERGENCY PREPAREDNESS AND RESPONSE

Turlock Irrigation District follows and complies with obligations for communication and coordination pursuant to the California Office of Emergency Services' Standardized Emergency Management System ("SEMS") Regulations (Government Code section 8607) for emergency communications and support. The SEMS Regulations specify roles, responsibilities, and structures of communications at five different levels: field response, local government, operational area, regional, and state. Pursuant to this structure, Turlock Irrigation District regularly coordinates and communicates with the relevant safety agencies as well as other relevant local and state agencies.



7.2 PUBLIC AND AGENCY COMMUNICATIONS FOR POTENTIAL WILDFIRE

The Turlock Irrigation District Board of Directors uses the SEMS, NIMS and ICS emergency preparedness protocols. TID's Wildland Fire Response Incident Action Plan (IAP) follows the National Incident Management System (NIMS) in addressing the five mission areas of Presidential Directive #8: prevention, protection, mitigation, response and recovery. TID's Wildland Fire Response IAP lists steps that should be considered if an uncontrolled wildland fire is approaching or occurring inside TID territory and threatening lives, property or District facilities. A copy of the Wildland Fire IAP is available by emailing TID at info@TID.org.

Should the Operational Area become active due to a wildfire, TID's Manager of Security and Emergency Preparedness, in consultation with the General Manager, would activate the Wildland Fire Incident Action Plan (IAP) and coordinate with other emergency responders throughout Stanislaus County, as well as California OES services and emergency personnel. The primary point of contact in a wildfire emergency would be Stanislaus OES.

If TID infrastructure or its ability to serve customers is affected by an incident, the District will respond at the field level first. If the incident cannot be resolved by field personnel, TID would activate the District Operations Center at the appropriate level and if necessary, contact Stanislaus or Merced County to coordinate an Operational Area response, per the SEMS structure.

Under the SEMS structure, and in coordination with public, private, and non-profit organizations, TID has done substantial advance preparation and planning with Stanislaus County. Stanislaus serves as the Operational Area. The Operational Area comprises the members of the Disaster Council as well as American Red Cross, broadcast industry, California Office of Emergency Services, community-based organizations, faith-based organizations, fire districts, hospitals, the Latino Emergency Council (LEC,) law enforcement, Mountain Valley EMSA, National Weather Service, non-governmental organizations, private industry, reclamation districts, the Salvation Army, schools, special districts, Stanislaus County departments, Stanislaus Regional 9-1-1, the United Way, and utility agencies. The Disaster Council includes representatives of the nine incorporated cities, a member of the Board of Supervisors, the County Chief Executive Officer and the County Fire Warden.

Turlock Irrigation District is a member of the California Utility Emergency Association, which plays a key role in ensuring communications between utilities during emergencies. Turlock Irrigation District also participates in the Western Energy

Institute's Western Region Mutual Assistance Agreement, which is a mutual assistance agreement covering utilities across a number of western states.

Additional details about Turlock Irrigation District's direction, control and coordination during an emergency, can be found in Section 7 of the Turlock Irrigation District Emergency Operations Plan.

7.2.1 PUBLIC AND AGENCY COMMUNICATIONS SCU LIGHTNING COMPLEX FIRE

In August 2020 TID activated its Wildland Fire Response IAP due to the SCU Lightning Complex Fire. The fire was caused by lightning strikes in the mountains above Adobe Springs. The District wrote IAPs for every day of the fire, with information capturing TID's efforts following the NIMS structure from mitigation and prevention, to recovery. The SCU Lightning Complex Fire lasted several days and the majority of the burn area in TID's service territory was low intensity. Residents in the community of Diablo Grande and those around the Adobe Springs area were placed under an evacuation warning due to the spread of the fire. TID communicated with customers who were de-energized through our TID Alerts notification system. Customers who were de-energized received continuous updates as TID coordinated communications with other agencies to assure consistent and correct messaging was conveyed throughout the duration of the fire.

District infrastructure in the Adobe Springs area, the Del Puerto Canyon Road lines, along with power poles, wires, transformers and other equipment were damaged as a result of the fire. Customers who were de-energized on August 17, 2020 were re-energized by September 4, 2020. The quick restoration of power for these customers was due to the efforts facilitated by TID staff who responded to the SCU Lightning Complex Fire. Post recovery efforts which include updates to TID's IAP, were included in TID's Hazard Mitigation Plan.

7.3 PUBLIC OUTREACH COMMUNICATIONS

TID has developed and initiated a multi-tiered outreach and public awareness strategy. At a broad level, TID has shared prepared messaging about TID's fire mitigation efforts. This information is available via the District's website (www.TID.org). TID publicized the availability of this information via The Wire, a newsletter distributed to TID electric customers. The District also brought attention to the available information and the TID Fire Mitigation Plan through social media, inviting the public to review and provide comment on the Plan from August 1-31, 2019. The District also held a public workshop for the TID Board of Directors to further discuss the Fire Mitigation Plan and receive

feedback.

Two community meetings were held in September and October of 2019 to address those specific communities (Diablo Grande and La Grange) that are located in the Fire Zone. Stanislaus County Office of Emergency Services and Cal Fire attended the Diablo Grande meeting, and Stanislaus County Office of Emergency Services attended the La Grange Meeting.

TID has continued to keep customers informed throughout 2020 with messaging about TID's fire mitigation efforts. At a November 19, 2020 workshop TID, along with six other utilities, were selected by the Wildfire Safety Advisory Board to present our wildfire mitigation plan. TID was selected due to our efforts towards meeting the objectives set forth by the Wildfire Safety Advisory Board for all publicly owned utilities wildfire mitigation plans. TID shared this development with our customers on the District's social media channels. In October 2021 the TID Water and Power Podcast highlighted measures taken by TID to protect customers from fire risk. For 2023 TID will be posting its wildfire mitigation plan for a public comment period prior to the plan's adoption.

7.4 COMMUNICATIONS PRIOR TO PUBLIC SAFETY POWER SHUTOFFS

In situations of high fire danger (i.e., dry conditions, high winds) the best mitigation to prevent wildfire may be to preemptively de-energize transmission or distribution lines ("Public Safety Power Shutoff"). Before shutting off power, there are significant impacts to public safety that need to be considered, including:

- Customers with electric medical equipment or medication that requires refrigeration needed to support life and health will lose the power needed to sustain these life-supporting measures.
- During a summer heat wave, high internal home temperatures resulting from lack of air conditioning may make homes uninhabitable.
- Communications are compromised. Cell phones cannot be recharged and landlines with battery modules will run out of power. Computers cannot be powered on, preventing use of the internet.
- Power to pump well water or charge public water systems is shut off, resulting in limited or no water.
- Critical service providers, such as police, fire departments, water and sewer utilities, communication utilities, medical facilities, and nursing homes will lose power if they are within the footprint of the area affected by the power shutoff.

- Traffic congestion from home and business owner evacuations may result. This congestion may compromise emergency responders' ability to access the area.
- Local businesses would be forced to cease operations.

TID has developed a system, TID Alerts, to notify customers of record in La Grange and Diablo Grande of Public Safety Power Shutoffs. Based on the historical record, TID does not anticipate that activation of this system for pre-emptive power shut off will be required. Nonetheless, TID will use all available communication methods in the event it foresees the need for a Public Safety Power Shutoff. Customers receiving TID Alerts have provided their contact preferences for use in an emergency. TID will use its automated emergency communication system to notify customers, if required.

To the west of Diablo Grande is a small group of customers within the TID service area adjacent to the west boundary of Stanislaus County that is supplied power via PG&E electrical lines that are located in a High Fire Threat area. If PG&E decides to de-energize these line dues to public safety concerns in the PG&E territory, this would interrupt power to these customers in TID territory. If TID receives notice that these lines will be de-energized, TID will relay this notice to the TID customers that will be affected. To assist these customers in preparing for potential wildfire, the District mailed a letter to each of these customers. The letter asked customers to update contact information with TID to facilitate informing them of potential Public Safety Power Shutoffs. TID will continue the practice of mailing letters to customers whose power is supplied by PG&E electrical lines that are located in a High Fire Threat area when appropriate and will continue communication with these customers through the TID Alerts notification system.

8.0 RESTORATION OF SERVICE

Electrical lines can be de-energized through an unplanned fault in the system, to restore service after a wildfire or similar damage, or as a Public Safety Power Shut Off in the event of high fire danger.

8.1 UNPLANNED FAULT

In the event of a fault in the system, there are four steps to restoring service: Patrol, Repair, Test and Re-energize.

- **Patrol**: The system has to be patrolled to determine where and why an electric fault was detected by the recloser, breaker or fuse that caused the circuit to be de-energized. TID crews must investigate the de-energized line directly to determine if a tree limb, fallen pole or failed insulator resulted in the fault. If the problem can be quickly identified, such as with a vehicle accident in which information is also relayed to the TID Power Control Center through the California Highway Patrol or the local police department, the patrol can be accomplished quickly. However, in cases where the fault is unknown, and there are many miles of line to patrol, patrol may take hours.
- **Repair**: During patrol, crews look for potential damage to the lines and poles. Where equipment damage is found, additional crews are dispatched with new materials to repair or replace damaged equipment. Vegetation management crews may be required to clear downed trees or limbs before restoring service. Once a physical problem is located, repairs typically take between one and eight hours depending on the extent of damage.
- **Test**: Once the lines and poles are safe to operate, crews test the infrastructure by closing the fuse or breaker to re-energize the line segment.
- **Re-Energize**: After repairs are completed and tested, the system is re-energized and customers are alerted through the public communication system.

8.2 RESTORATION AFTER WILDFIRE

Restoration of service after a wildfire requires additional steps to assess the extent of damage, plan and mobilize for rebuilding poles or other infrastructure, and testing before re-energization. Depending on the extent of damage, repairs and restoration can take days to complete.

8.3 RESTORATION AFTER SCU LIGHTNING COMPLEX FIRE

Actions taken after the SCU Lightning Complex Fire in 2020 included re-routing distribution line to run along Del Puerto Canyon Road which, going forward, provides TID staff easy access for maintenance, tree trimming, and fire hardening. TID staff also replaced damaged wood poles with fiber glass poles in hard to access areas. Following the SCU Lighting Complex Fire it made the most sense for TID to reroute distribution line through a major thoroughfare as opposed to undergrounding due to the regions rocky topography.

8.4 RESTORATION AFTER PUBLIC SAFETY POWER SHUT OFF

In situations of high fire danger (i.e., dry conditions, high winds,) the best mitigation to prevent wildfire may be to preemptively de-energize transmission or distribution lines ("power shutoff").

Prior to a pre-emptive power shut off, TID will use all available communication methods in the event it foresees the need for a Public Safety Power Shutoff.

After the high fire danger has passed, all lines would have to be patrolled to ensure nothing is damaged during the outage. If damage was discovered, it would have to be repaired. Depending on the extent of line that was de-energized, this could take a day, or more, to patrol. After the patrol was complete, if no damage was discovered, the system would be tested and restored to service.

Public Safety Power Shutoffs, as they occur, may result in long durations of loss of electric service, lasting at least a few days. If the extreme weather conditions that trigger the power shut off last for multiple days, the patrol takes a day, and repairs take a day, the outage could last multiple days. Public Safety Power Shutoffs will not be a short service interruption. If these become necessary, customers must prepare for multi-day power outages.

9.0 EVALUATING PERFORMANCE

9.1 ROLES AND RESPONSIBILITIES FOR PLAN EXECUTION

This section identifies TID's management responsibilities for overseeing this WMP and includes the operating departments and teams responsible for carrying out the various activities described in the previous chapters. This section also identifies the controllable metrics which are used to demonstrate compliance with this WMP.

TID's Assistant General Manager for Electrical Engineering and Operations has overall responsibility for the WMP. The Assistant General Manager for Water Resources, The Assistant General Manager for Financial Services, and the Manager for External Affairs have responsibility for components of the WMP as follows:

The General Manager is responsible for:

- The General Manager directs the Chief Operating Officer who directs the Assistant General Managers and Assistant General Manager for Electrical Engineering and Operations, the Assistant General Manager for Water Resources, the Assistant General Manager of Financial Services, and the Manager for External Affairs in the development and implementation of the Wildfire Mitigation Plan.

The Assistant General Manager for Electrical Engineering and Operations directs the following:

- Overall Responsibility for Implementation of the WMP.
- Tree trimming to maintain clearances required by TID Standards. Vegetation removal at base of poles in accordance with TID Standards.
- Power Control Center weather monitoring for Red Flag Warnings.
- Power Control Center implementation of non-reclosing for breakers and reclosers during Red Flag Warnings
- Collection and analysis of outage statistics and fire incidents in the TID Fire Zone.

The General Manager or Designee directs:

- Interagency communication and coordination during the occurrence of a wildfire event in accordance with the California Office of Emergency Services' Standardized Emergency Management System ("SEMS") Regulations.

The Manager for External Affairs directs:

- Public communication regarding prevention of wildfire and preparation for a wildfire event.

Table 3 lists Departments and Workgroups that are responsible for various components of the WMP.

Table 4: Accountability of the groups responsible for the Wildfire Management Plan components

WMP Requirement	Responsible Department / Workgroups
Develop Fire Zone Standard	Assistant General Manager, Electrical Engineering and Operations
Vegetation Management	Line Division Manager, Vegetation Management
Substation Inspections	Maintenance and Operations Department Manager
Overhead Line Inspections and Patrols	Line Division Manager, Service Division
Underground Line Inspections and Patrols	Line Division Manager, Line Division
Wood Pole Intrusive Inspection	Electrical Engineering and Operations Department Manager, Line Engineering
Maintenance Tag Work	Line Division Manager, Line Division
Non-reclosing during red flag warnings	Electrical Engineering and Operations Department Manager, Power Control Center Department Manager, Line Division Manager, Service Division
Equipment Standards	Electrical Engineering and Operations Department Manager, Line Engineering
Work Order Preparation for System Hardening	Electrical Engineering and Operations Department Manager, Line Engineering
Implement Work Rules for Red Flag Warnings	Line Department Manager
Planned De-energization	Electrical Engineering and Operations Department Manager, Power Control Center

WMP Requirement	Responsible Department / Workgroups
System Restoration	Electrical Engineering and Operations Department Manager, Power Control Center Line Division Manager
Outage Metric Tracking and Reporting	Electrical Engineering and Operations Department Manager, Reliability, Compliance and Planning
Outage Metric Analysis	Line Department Manager Electrical Engineering and Operations Department Manager, Line Engineering
Emergency Plan Activation	Manager of Security and Emergency Preparedness
Public and Agency Communication	Communications Division Manager

9.2 METRICS FOR MEASURING PLAN PERFORMANCE

The following Tables consist of wildfire metrics TID is tracking which measure the WMP plan performance. TID plans to utilize this data to inform future wildfire mitigation investments.

Table 5: External Risk Metrics

Metric type	External Risk Event	2021	2022	2023	Unit(s)	Comments
1. **Red Flag Warnings**	Red Flags Warning Days* for Weather Zone that includes Utility Service Territory	20	6		#Days	Summation of TID's service area
2. **[Particularly Dangerous Situation (PDS)/Extreme Fire Threats]**	[PDS/Extreme Threat] Days for Weather Zone that includes Utility Service Territory	0	0		#Days	No extreme fire threats reported
2. **Wind Conditions**	High Wind Warning Days* in Weather Zone that includes Utility Service Territory – what is considered high wind warning days. Get with Adam	0	0		#Days	No high wind warning days reported

4. **Increase of Customers/Infrastructure in High-Risk Areas**	Circuit Miles in [high risk area as defined by POU]	0	0		#Miles	

Table 5 Continued: Performance Metrics

Metric type	Progress metric name	Actual 2020	Actual 2021	Actual 2022	Unit(s)	Comments
1.**Distribution Inspections**	Patrol Inspections *Performed*	39.4	39.4	39.4	# circuit miles	
	Intrusive Inspections *Performed*	82 Miles	0	0	# circuit miles	
	Routine Vegetation Management *Performed*	39.4	39.4	78.8	# circuit miles	Circuit miles are doubled in 2022 as line crews went through inspections twice in the year.
2.**Transmission Inspections**	Patrol Inspections *Performed*	66.9	66.9	66.9	# circuit miles	
	Intrusive Inspections *Performed*	4	0	0	# circuit miles	
	Routine Vegetation Management *Performed*	66.9	66.9	133.8	# circuit miles	Circuit miles are doubled in 2022 as line crews went through inspections twice in the year.

Table 5 Continued: Outcome Metrics

Event Category	Cause category	2019 In HFTD	2020 In HFTD	2021 In HFTD	2022 In HFTD	2023 In HFTD	Unit(s)	Comments
	Contact from object - Distribution (non vegetation)	0	0	0	1		# outages	
	Vegetation caused - Distribution	0	0	0	0		# outages	

Outage Event - Distribution	Equipment / facility failure - Distribution	0	2	1	0		# outages	
	Wire-to-wire contact - Distribution	0	0	0	0		# outages	
	Contamination - Distribution	0	2	0	0		# outages	
	Utility work / Operation	0	0	0	0		# outages	
	Vandalism / Theft - Distribution	0	0	0	0		# outages	
	Other-Distribution	0	3	5	3		# outages	
	Unknown-Distribution	0	1	1	1		# outages	
Outage Event - Transmission	Contact from object - Transmission	0	0	0	0		# outages	
	Vegetation caused - Transmission	0	0	0	0		# outages	
	Equipment / facility failure - Transmission	0	0	0	0		# outages	
	Wire-to-wire contact - Transmission	0	1	2	1		# outages	
	Contamination - Transmission	0	3	5	1		# outages	
	Utility work / Operation	0	0	0	0		# outages	
	Vandalism / Theft - Transmission	0	0	0	0		# outages	
	Other-Transmission	0	1	0	2		# outages	
	Unknown-Transmission	4	9	4	6		# outages	
	Contact from object - Distribution	0	0	0	0		# ignitions	
	Vegetation caused - Distribution	0	0	0	0		# ignitions	

Utility-Caused Ignitions Distribution	Equipment / facility failure - Distribution	0	0	0	0		# ignitions	
	Wire-to-wire contact - Distribution	0	0	0	0		# ignitions	
	Contamination - Distribution	0	0	0	0		# ignitions	
	Utility work / Operation	0	0	0	0		# ignitions	
	Vandalism / Theft - Distribution	0	0	0	0		# ignitions	
	Other-Distribution	0	0	0	0		# ignitions	
	Unknown-Distribution	0	0	0	0		# ignitions	
Utility-Caused Ignitions Transmission	Contact from object - Transmission	0	0	0	0		# ignitions	
	Vegetation caused - Transmission	0	0	0	0		# ignitions	
	Equipment / facility failure - Transmission	0	0	0	0		# ignitions	
	Wire-to-wire contact - Transmission	0	0	0	0		# ignitions	
	Contamination - Transmission	0	0	0	0		# ignitions	
	Utility work / Operation	0	0	0	0		# ignitions	
	Vandalism / Theft - Transmission	0	0	0	0		# ignitions	
	Other-Transmission	0	0	0	0		# ignitions	
	Unknown-Transmission	0	0	0	0		# ignitions	
Vegetation Management (No Outage/Ignition)	Offcycle Treatment - Distribution	1585	1585		1585		# poles	Pole base clearing
	Offcycle Treatment - Transmission	79	79	79	79		# poles	Fire break clearing around tower

System wide Information	SAIDI	59	56	75	68	NA	All Events, # minutes/year	2022 Data available Jan '23
	SAIFI	0.59	0.57	0.88	0.5	NA	All Events, # times/year	2022 Data available Jan '23

9.3 IMPACT OF METRICS ON PLAN

TID has always kept records of ignitions and other fire related data. Going forward, more information will be collected specific to the metrics outlined in the data conveyed in Section 9.2. As the data collection history becomes more extensive, TID will be able to identify areas of its operations and service territory that are disproportionately impacted. TID will then evaluate potential improvements to the plan.

9.4 IDENTIFYING AND CORRECTING DEFICIENCIES IN THE PLAN

TID staff are constantly evaluating best wildfire mitigation practices throughout the year. If deficiencies are identified with existing activities, TID Management will direct immediate corrective efforts to improve work activities upon discovery of a deficiency. The annual and comprehensive review, redevelopment, and resubmission of the plan will also result in continual improvement to the Wildfire Mitigation Plan.

9.5 MONITORING THE EFFECTIVENESS OF INSPECTIONS

GO 165 requires detailed inspection for distribution facilities that range from three to five years, and patrols for distribution facilities at intervals that range from one to two years, depending on the type of equipment and location (e.g., rural or urban). TID's patrols for all overhead equipment in the Fire Zone must be conducted annually.

Problems that are identified during inspections are prioritized for correction. TID tracks inspections and resulting maintenance tags throughout the process. Inspection findings will be examined to identify trends and recurring problems. Findings are combined with performance analysis metrics to evaluate changes to design, construction or maintenance standards and practices that could improve overall performance, safety and reliability of the electric system.

10.0 INDEPENDENT EVALUATION

TID has selected a qualified independent auditor to evaluate TID's WMP and present the evaluation at a TID Board of Director's meeting. The independent auditor has been selected through a request for qualification, consistent with TID's current procurement practice to identify the best qualified independent evaluator. TID has made the independent evaluation report available to the public via the District's website (www.tid.org).