TURLOCK IRRIGATION DISTRICT
WILDFIRE MITIGATION PLAN
2021 INFORMATIONAL RESPONSE

RESPONSES TO WILDFIRE SAFETY ADVISORY BOARD'S 2021 GUIDANCE ADVISORY OPINION

June 1, 2021

I. PURPOSE OF THIS 2021 INFORMATIONAL RESPONSE

The California Wildfire Safety Advisory Board (WSAB) issued the *Guidance Advisory Opinion for the 2021 Wildfire Mitigation Plans of Electric Publicly Owned Utilities and Cooperatives* ("2021 WSAB Guidance Advisory Opinion") on December 15, 2020. TID provides this document to the WSAB in order to respond to each of the recommendations included in the 2021 WSAB Guidance Advisory Opinion. TID will provide a narrative response and/or a cross reference to the location in TID's Wildfire Mitigation Plan (WMP) where the topic is addressed. Where the recommendation is not applicable to TID, the response will provide a brief description supporting this conclusion.

II. CONTEXT SETTING INFORMATION

WSAB requested that POUs provide an informational table to assist the Staff and Board member in understanding the unique characteristics of each POU.

Table 1: 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	276,213	
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	

[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.

<table>
<tr><td></td><td>9.63 % Hardwood Woodland
21.22% Herbaceous
5.46% Shrub
5.55% Urban
1.94% Water</td></tr>
<tr><td>Service Territory Wildland Urban Interface[2] (based on total area)</td><td>1.3612% Wildland Urban Interface;
.3561% Wildland Urban Intermix;</td></tr>
<tr><td>Percent of Service Territory in CPUC High Fire Threat Districts (based on total area)</td><td>Includes Appendix
Tier 2: 28%
Tier 3: 0%</td></tr>
<tr><td>Prevailing Wind Directions & Speeds by Season</td><td>☐ 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.
<table>
<tr><th>Station</th><th>JAN</th><th>FEB</th><th>MAR</th><th>APR</th><th>MAY</th><th>JUN</th><th>JUL</th><th>AUG</th><th>SEP</th><th>OCT</th><th>NOV</th><th>DEC</th><th>ANN</th></tr>
<tr><td>Modesto Airport</td><td>SE</td><td>SE</td><td>NW</td><td>NW</td><td>NW</td><td>NW</td><td>NNW</td><td>NNW</td><td>NW</td><td>NW</td><td>NW</td><td>SE</td><td>NW</td></tr>
</table>
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.
<table>
<tr><th>Station</th><th>JAN</th><th>FEB</th><th>MAR</th><th>APR</th><th>MAY</th><th>JUN</th><th>JUL</th><th>AUG</th><th>SEP</th><th>OCT</th><th>NOV</th><th>DEC</th><th>ANN</th></tr>
<tr><td>Modesto Airport</td><td>5.0</td><td>6.2</td><td>7.0</td><td>7.8</td><td>8.9</td><td>9.4</td><td>8.6</td><td>8.1</td><td>6.9</td><td>6.0</td><td>5.0</td><td>5.6</td><td>7.0</td></tr>
</table>
Source – Western Regional Climate Center
https://wrcc.dri.edu/Climate/wind.php</td></tr>
<tr><td>Miles of Owned Lines Underground and/or Overhead</td><td>Overhead Dist.: 1812 miles
Overhead Trans.: 441 miles (Of this, 96 miles is jointly owned.)
Underground Dist.: 495 miles
Underground Trans.: 0 miles</td></tr>
<tr><td rowspan="4">Percent of Owned Lines in CPUC High Fire Threat Districts</td><td>Overhead Distribution Lines as % of Total Distribution System
(Inside and Outside Service Territory)</td></tr>
<tr><td>Tier 2: 6%
Tier 3: 0%</td></tr>
<tr><td>Overhead Transmission Lines as % of Total Transmission System
(Inside and Outside Service Territory)</td></tr>
<tr><td>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]</td></tr>
<tr><td>Customers have ever lost service due to an IOU PSPS event?</td><td>■ Yes ☐ No</td></tr>
</table>

[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.

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:

III. CROSS REFERENCE TO STATUTORY REQUIREMENTS

WSAB requested that POUs provide a clear roadmap as to where each statutory requirement is addressed within the POU WMP.

Table 2: Cross References to Statutory Requirements

Requirement	Statutory Language	Location in WMP
Persons Responsible	**PUC § 8387(b)(2)(A):** An accounting of the **responsibilities of persons** responsible for executing the plan.	Section 9.1
Objectives of the Plan	**PUC § 8387(b)(2)(B):** The **objectives** of the wildfire mitigation plan.	Section 2.0
Preventive Strategies	**PUC § 8387(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.	Section 6.0
Evaluation Metrics	**PUC § 8387(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.	Section 9.2
Impact of Metrics	**PUC § 8387(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.	Section 6.3
Deenergization Protocols	**PUC § 8387(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	Section 6.7

	those protocols, including impacts on critical first responders and on health and communication infrastructure.	
Customer Notification Procedures	**PUC § 8387(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.	Section 7.4
Vegetation Management	**PUC § 8387(b)(2)(H):** Plans for vegetation management.	Section 6.4
Inspections	**PUC § 8387(b)(2)(I): Plans for inspections** of the local publicly owned electric utility's or electrical cooperative's electrical infrastructure.	Section 6.5
Prioritization of Wildfire Risks	**PUC § 8387(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: **(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. **(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.	Section 4.3, 4.5, 6.3
CPUC Fire Threat Map Adjustments	**PUC § 8387(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.	Section 5.2
Enterprise wide Risks	**PUC § 8387(b)(2)(L):** A methodology for identifying and presenting **enterprise wide** safety risk and wildfire-related risk.	Section 4.1
Restoration of Service	**PUC § 8387(b)(2)(M):** A statement of how the local publicly owned electric utility or electrical cooperative will **restore service after a wildfire**.	Section 8.0
Monitor and Audit	**PUC § 8387(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 (i) **Monitor and audit** the implementation of the wildfire mitigation plan.	Section 9.2, 9.4, 9.5

	(ii) **Identify any deficiencies** in the wildfire mitigation plan or its implementation, and correct those deficiencies. (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.	
Qualified Independent Evaluator	**PUC § 8387(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.	Section 10.0

IV. WSAB GUIDANCE ADVISORY OPINION RECOMMENDATIONS

The WSAB Guidance Advisory Opinion identifies 14 specific recommendations that POUs are requested to address in their 2021 WMPs. As specified in Public Utilities Code § 8387(b)(1), each POU is required to perform a comprehensive revision to the POU's WMP at least once every three years. Pursuant to this guidance, the POUs will be updating their WMPs based on the direction of their local governing boards within this 3-year cycle. Because the WSAB's recommendations have been provided after the initial WMP submission, the POUs will have varying capacities to fully address each recommendation in their 2021 WMP. This Section IV restates each of the WSAB recommendations and provides an opportunity for each POU to do one or more of the following: (1) provide a narrative response to the recommendation; (2) provide a cross refence to where in the POU's WMP this topic is addressed; (3) describe why the recommendation is not applicable to the POU; or (4) inform the WSAB of the POU's intent to address the recommendation at the point of the POU's next comprehensive revision, occurring in either the 2022 or 2023 WMP.

A. Plan Structure

WSAB Recommendation #1: Provide context-setting information about the POU and provide a simple guide to where the statutory requirements are addressed within the WMP.

TID Response: See Sections II and III above.

WSAB Recommendation #2: Provide a short description of the POU's public review and approval (if required) for the WMP. This description may also include a brief explanation of the funding mechanisms for wildfire mitigation efforts.

> ***TID Response:*** Per section 3.3 in TID's wildfire mitigation plan, the District 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 Assistant General Managers to achieve TID goals. The Board of Directors is responsible for review and approval of the Wildfire Mitigation Plan.

WSAB Recommendation #3: Identify where the POU has posted the most recent Independent Evaluator (IE) Report and if your POU plans to enhance future IE reports, please summarize in what ways.

> ***TID Response:*** TID's most recent Independent Evaluator (IE) report can be accessed by the public at TID's wildfire mitigation webpage. TID will continue to utilize its IE report to help update best practices and integrate emerging technologies as appropriate into our wildfire mitigation plan.

WSAB Recommendation #4: Develop, in collaboration with POU industry associations, WMP guidelines for future WMPs, understanding that it may take multiple cycles for POUs to integrate these recommendations into the WMPs.

> ***TID Response:*** This document is intended to include, as appropriate, responses to the recommendations in the WSAB's Guidance Advisory Opinion for the POUs' 2021 WMP. This document also represents the combined effort of the POU industry associations to further the development of a template to respond to the WSAB's Guidance Advisory Opinion in a future reporting WMP cycle.

B. Customer Impacts

WSAB Recommendation #5: Describe the potential impact investor-owned utilities (IOU) public safety power shutoff (PSPS) events could have on POU customers and how the POU manages these impacts. For POUs that are also balancing authorities, describe the criteria for wildfire related de-energizations. Responses shall only provide aggregated information that does not provide customer-specific information or other potentially sensitive data.

> ***TID Response:*** The majority of TID customers would not be impacted by a potential PG&E public safety power shutoff (PSPS). Per Section 6.8 in TID's wildfire mitigation

plan, the District has identified switches that can be operated to shut off power to La Grange and Diablo Grande if the situation were to warrant such action. Further criteria the District would employ for wildfire related de-energizations can be found under Section 6.8 in TID's wildfire mitigation plan. For the 36 customers located in the Tier 2 High Fire Threat District at the far west end of the District along Del Puerto Canyon Road, who could be subject to a de-energization event due to power being delivered from a line connected to PG&E, TID has developed a notification system in which those customers would be alerted to a PG&E PSPS prior to the occurrence.

WSAB Recommendation #6: Describe the utility customer communication plans with respect to wildfires and PSPS, and in particular describe the methods, content and timing used to communicate with the most vulnerable customers, such as Access and Functional Needs (AFN) customers, medical baseline customers, non-English speakers, and those at risk of losing water or telecommunications service.

TID Response: Per section 7.4 in TID's wildfire mitigation plan, the District has established a system to notify all customers, including most vulnerable customers, prior to a PSPS.

C. The Grid

WSAB Recommendation #7: Provide details on each POU's system hardening and grid design programs, including: (1) the goals of the programs and the risk any particular program is designed to mitigate; (2) approach to PSPS mitigation and prevention; and (3) identify any resource shortages.

TID Response: TID's approach to grid hardening starts with its Fire Zone mitigation strategy meeting the compliance standards of State Responsibility Areas (SRAs) and CPUC requirements at both the far west and far east end of the District. These areas in TID's service territory are designated as SRAs and Cal Fire standards apply to vegetation clearing and electrical equipment. As it relates to PSPS mitigation and prevention, TID has applied and both CPUC and SRA standards towards the construction, inspection, maintenance, repair, and clearance practices associated with mitigation where applicable. At this time the District has not identified resource shortages negatively impacting PSPS mitigation and prevention.

WSAB Recommendation #8: Describe annual visual patrols on potentially impacted circuits and the risks the POU is inspecting for. Describe whether and how system inspections lead to system improvements. Describe line patrols before, during, and/or after a critical fire weather

event, such as a Red Flag Warning with strong winds, or following a fire that burned in areas where electric facilities are or could have been impacted.

> ***TID Response:*** TID does an annual inspection consisting of a visual patrol, for potentially impacted circuits within the boundaries of our fire zone areas. During a Red Flag Warning when TID staff inspect a tripped feeder, the employee will verify there is no potential fire hazard before proceeding with the restoration of power for impacted customers.

WSAB Recommendation #9: Describe options considered by POU (including through the joint efforts of the POU associations) to identify previously unidentified risks that could lead to catastrophic wildfires.

> ***TID Response:*** As a general practice, TID coordinate's all activities related to electric facility design, maintenance, inspection, and vegetation management with appropriate federal, state, and local fire management personnel as necessary when updating our wildfire mitigation plan and all associated wildfire prevention practices. More information regarding TID wildfire prevention general practices can be found at Section 3.4 in our wildfire mitigation plan.
>
> The California Municipal Utilities Association (CMUA) will be holding a special meeting of its Wildfire Preparedness, Response, and Recovery Working Group this fall, which will be focused on risk drivers for power-line caused catastrophic wildfires and innovative mitigation options. CMUA plans to invite a broad range of utility staff, state agency staff (including the WSAB), industry experts, and academics to participate in this discussion. As part of this meeting, the working group will discuss unidentified wildfire risk drivers and mitigation measures that could address these risks. Based on the input provided during this meeting, CMUA will produce a publicly-available, post-meeting report that summarizes the group's conclusions and recommendations. TID's staff will participate in CMUA's meeting and will discuss any changes that TID has made to its operations in response to the conclusions and recommendations of the working group in a future WMP.

D. Risk Assessment

WSAB Recommendation #10: Describe the particular wildfire risks associated with system design and construction such as topography and location near the HFTD areas of another utility's service territory. Describe any G.O. 95 exempt assets and possible updates to G.O. 95 that could facilitate more resilient utility transmission and distribution assets.

TID Response: TID's assessment of wildfire risks is discussed in Section 6.3 of the District's wildfire mitigation plan. Per Section 6.3, TID's electric facilities are designed and constructed to meet or exceed the relevant federal, state, or industry standards. 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.

E. SITUATIONAL AWARENESS TECHNOLOGY

WSAB Recommendation #11: Provide context-setting information about the prevailing wind directions and speeds, differentiated by season, along with average weather conditions by season. Describe how and why situational awareness technology is installed, and where on the system. Describe the decision-making process regarding the installation of situational awareness technology, including constraints such as budgets, availability of equipment, knowledge to effectively deploy, or qualified personnel to install and monitor effectively. Identify any other agencies, utilities, or fire professionals that the data from these devices is shared with.

TID Response: TID is committed to integrating cost-effective measures to help improve wildfire mitigation efforts and that may reduce the likelihood of an interruption in service and/or improve the restoration of service. Having information regarding prevailing wind directions and speeds, differentiated by season, along with average weather conditions by seasons is important to TID as we assess fire risk in our service territory. A future project for TID will involve deploying weather stations in our high fire risk areas. Having weather stations that are able to capture weather data and forecasts, will help TID make the best possible decisions to keep our customers, service territory, employees, and infrastructure safe.

Per Section 5.2 of TID's wildfire mitigation plan, highest fire risk in our service territory is at the far west end and far east end of the District. These regions in our service territory have been designated as State Responsibility Areas (SRAs) and Cal Fire standards apply to vegetation clearing and electrical equipment. 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.

The following paragraph taken from the Cal Fire 2020 Tuolumne-Calaveras-San Joaquin-Stanislaus Unit Fire Plan, captures weather conditions at the far east end of TID's service territory.

Weather: Typically fire season temperatures range from the lows in the upper 50's to highs in the 90's. Periods of temperatures in the triple digits are not uncommon and can last for several days. Relative humidity runs in the mid-teens to mid-twenties during the daylight hours, often with poor recovery in the overnight hours. Periods of extreme heat are occasionally accompanied by single digit humidity. Prevailing winds are out of the northwest in the lower elevations below Highway 120 and are affected by topography in the upper elevations and are also greatly influenced by the Tuolumne river drainage. Above 3,000 feet the temperatures are often a few degrees cooler and lag the delta influence the lower elevations receive. During late August and September, the upper reaches of the battalion are subject to thunderstorm activity in the afternoons. This type of summer weather is ideal for wildland fire.[3]

Further weather context-setting weather information on the SCU Lightening Complex Fire can be found on the following page.

[3] This information shall be based on unit fire plans maintained and updated by the California Department of Forestry and Fire Protection, as most recently assembled in the *2020 Tuolumne-Calaveras-San Joaquin-Stanislaus Unit Fire Plan available at*, 2020 Tuolumne-Calaveras-San Joaquin-Stanislaus Unit Fire Plan.

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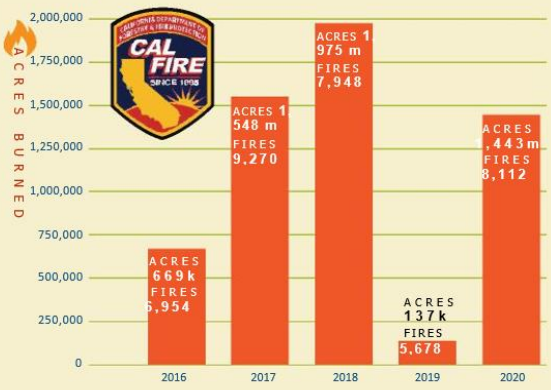
AUGUST 2020

EXTREME FIRE CONDITIONS

SCU LIGHTNING COMPLEX FIRE DATA

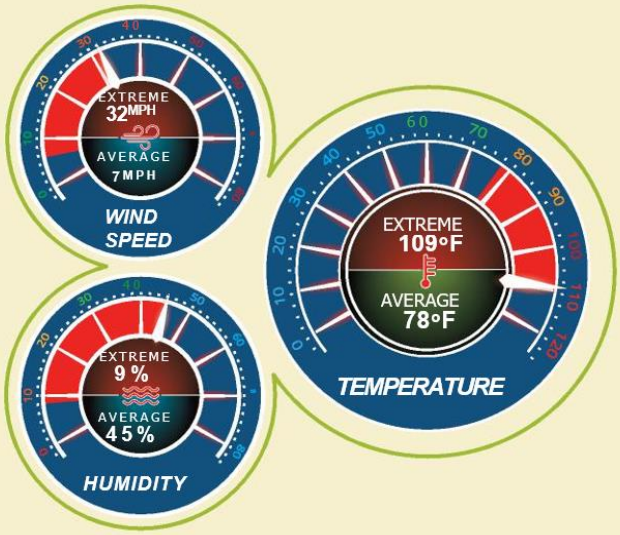
- **Date Started:** 08/18/2020
- **Date Contained:** 10/01/2020
- **Acres Burned:** 396,624 acres
- **Location:** Multiple locations throughout Santa Clara County, Alameda County, Contra Costa County, San Joaquin County, Merced and Stanislaus County

WILDFIRE STATS PER CALENDAR YEAR 2016-2020



CLIMATE CHARACTERISTICS

Dry fuels and low moisture combined with high winds and extreme heat drastically increase fire severity. These extreme fire conditions are becoming more common, and fire season is extending from a few months to year-around.



EXTREME FIRE CONDITIONS | AUGUST 2020

F. VEGETATION MANAGEMENT

WSAB Recommendation #12: Describe treatment plans for all types of vegetation associated with utility infrastructure, from the ground to the sky, which includes vegetation above and below electrical lines.

> ***TID Response:*** TID's vegetation management program is discussed in Section 6.4 of the District's wildfire mitigation plan. Per Section 6.4, 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.

WSAB Recommendation #13: List the qualifications of any experts relied upon, such as scientific experts in ecology, fire ecology, fire behavior, geology, and meteorology. Specify the level of expertise of the POU staff that manages the contractors performing vegetation management. Describe measures each POU takes to ensure that POU staff and contractors comply with or verify compliance with Cal/OSHA standards on Minimum Approach Distances (MAD).

> ***TID Response:*** All TID tree trimming contracts are executed with contractors who adhere to all Cal/OSHA standards on Minimum Approach Distances (MAD).

WSAB Recommendation #14: Describe whether the POU has considered innovative and alternative approaches to vegetation management.

> ***TID Response:*** TID has executed a contract with a GIS vendor for a software platform that will allow utility staff to monitor all tree trimming practices. Furthermore, this service will provide the District with electronic information concerning the species of tree, location, how often trimming will be required, and will increase public awareness prior to utility tree trimming. This software will also allow the public to submit a ticket for a tree trimming request, increasing public engagement concerning TID's vegetation management efforts.