Turlock Irrigation District Local Hazard Mitigation Plan

Prologue

This document, dated October 13, 2025, constitutes the draft version of the Turlock Irrigation District (TID) Local Hazard Mitigation Plan ("Draft Plan"). The Draft Plan is disseminated for the purpose of facilitating review and input from partners, assisting and cooperating agencies, and members of the general public.

It is expressly noted that this Draft Plan contains certain incomplete or provisional information. Such content will be updated or finalized as necessary prior to the publication of the final version of the Plan ("Final Plan").

TID is committed to a transparent and inclusive process and, accordingly, welcomes comments and suggestions regarding the Draft Plan. TID will evaluate all comments received; however, the District explicitly reserves the right to determine, at its sole discretion, whether any particular comment or suggestion will be incorporated into the Final Plan.

The release of this Draft Plan does not constitute an endorsement, adoption, or commitment to any specific course of action, policy, or program contained herein. Furthermore, TID shall not be held liable for any errors, omissions, or reliance upon the Draft Plan prior to its finalization.

All comments must be submitted in accordance with the instructions provided and within the timeline established for public review and comment.

By making the Draft Plan available, TID seeks to foster collaboration and ensure that the Final Plan reflects comprehensive input while maintaining adherence to applicable laws, regulations, and procedural standards.

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Plan Adoption

This plan represents a full rewrite of TID's previously adopted 2020 Local Hazard Mitigation Plan.

In accordance with the requirements set forth in the Code of Federal Regulations, Title 44, Section 201.6(c)(5), Local Hazard Mitigation Plans (LHMPs) must be formally adopted by the governing body of the jurisdiction seeking Federal Emergency Management Agency (FEMA) approval.

To meet this requirement efficiently, the Turlock Irrigation District (TID) is utilizing FEMA's "Approvable Pending Adoption" process. This approach allows TID to submit the final draft LHMP to the California Governor's Office of Emergency Services (Cal OES) and FEMA for review prior to formal adoption. This process expedites plan approval by identifying any required revisions before the plan is presented to TID's Board of Directors for adoption at a public meeting.

If the submitted LHMP meets all federal and state criteria, FEMA will issue an "Approvable Pending Adoption" notification. Upon receipt of this notification, TID will bring the LHMP before the Board of Directors for formal adoption during a public meeting. Following adoption, TID will submit the signed resolution to FEMA to finalize the approval process.

Once FEMA issues a formal approval letter, the signed adoption resolution will be included in this plan as Appendix A on page ##.

Plan Expiration Date

This plan will expire five years from the date of FEMA's "Approvable Pending Adoption" notification letter to TID.

Executive Summary

TO BE DEVELOPED

I. Introduction

Purpose of the LHMP

Natural disasters are a recurring reality in California, causing widespread damage to infrastructure, disrupting services, impacting the economy, and threatening public safety. While not all hazards can be eliminated, understanding the risks they pose—combined with proactive planning and targeted mitigation actions—can significantly reduce their long-term impacts.

Under Section 322 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended by the Disaster Mitigation Act of 2000 (DMA 2000), local governments are required to develop and maintain a FEMA-approved Local Hazard Mitigation Plan (LHMP) to remain eligible for certain non-emergency disaster assistance programs, including Hazard Mitigation Assistance (HMA) grants.

As a Special District in the State of California, TID is required to maintain a current, adopted LHMP in compliance with Title 44 of the Code of Federal Regulations (44 CFR § 201.6) and the updated FEMA Local Mitigation Planning Policy Guide (FP-206-21-0002), which became effective April 11, 2025. This guidance establishes consistent standards for plan content, review, and approval, and reinforces the use of mitigation planning as the foundation for risk-informed investment decisions.

This document serves as a full update to TID's previously approved 2020 LHMP. It reflects current hazard conditions, updates to TID's facilities and operations, and incorporates new planning requirements introduced in the 2025 FEMA Policy Guide (FP-206-21-0002).

The Benefits of Hazard Mitigation Planning

FEMA recognizes a critical link between hazard mitigation planning and long-term community sustainability. By taking proactive steps to understand and reduce hazard risk, TID enhances its ability to protect lives, property, and essential services—and to recover more quickly after disasters occur.

FEMA defines hazard mitigation as any sustained action taken to reduce or eliminate long-term risk to human life and property from hazards. Mitigation planning serves as the foundation for identifying those actions and prioritizing investments that build resilience. By preparing and adopting this LHMP, TID is taking deliberate, forward-thinking steps to reduce the impact of future hazard events.

This plan allows TID to:

- Learn from past disaster events
- Coordinate effectively across departments and stakeholders
- Identify cost-effective strategies to protect infrastructure, services, and people
- Maintain eligibility for critical federal and state funding programs

In addition to reducing risk, hazard mitigation planning provides a significant financial return. According to the National Institute of Building Sciences, every dollar invested in mitigation saves an average of six dollars in future disaster-related costs. These savings stem from reduced damage, faster recovery, and minimized disruption to services and the local economy [(1)].

1. National Institute of Building Sciences. Natural Hazard Mitigation Saves: 2019 Report. Washington, D.C., 2019.

Direct Benefits of Hazard Mitigation Planning

- Reduced loss of life and injury
- Reduced property damage and service disruption
- Lower economic losses and reconstruction costs

- Shorter recovery timelines
- Improved eligibility and access to post-disaster funding
- Enhanced interagency coordination and public engagement

Indirect Benefits

- Stronger disaster resilience
- Preservation of environmental and natural resources
- Increased economic stability and investment readiness
- Improved quality of life for the communities TID serves

Through this 2025 LHMP update, TID reaffirms its commitment to reducing long-term risk, protecting critical assets, and building a safer, more resilient future for its employees, customers, and communities.

2025 Local Hazard Mitigation Planning Requirements

FEMA's Local Mitigation Planning Policy Guide (FP-206-21-0002), effective April 11, 2025, reaffirms that jurisdictions must maintain a current, approved LHMP to remain eligible for key federal mitigation funding programs. Similarly, Cal OES requires an approved LHMP for eligibility under state programs.

Although FEMA guidance no longer requires explicit DEI considerations, it emphasizes whole-community participation, social vulnerability, and climate impacts. These principles remain central to California's requirements and are strongly encouraged as part of inclusive and equitable risk reduction efforts.

Recognizing that disadvantaged and vulnerable populations are often disproportionately affected by disasters, TID has incorporated these considerations into its 2025 LHMP update as a responsible and forward-thinking planning practice. This approach supports long-term community resilience and ensures alignment with both federal and state guidance.

Scope

The purpose of hazard mitigation planning is to identify and implement policies, actions, and strategies that reduce long-term risks to life, property, and operations from future hazard events. Effective mitigation planning requires a collaborative process that engages community leaders, businesses, residents, and other stakeholders to assess potential hazards, evaluate vulnerabilities, and prioritize investments that enhance resilience. The most effective mitigation efforts are rooted in proactive, forward-looking plans developed well before a disaster strikes.

This 2025 Local Hazard Mitigation Plan (LHMP) is a full update of Turlock Irrigation District's (TID) previously approved 2020 LHMP. As part of the update process, the TID Planning Team reviewed the natural hazards identified in the 2020 plan to determine their continued relevance. To inform this evaluation, subject matter experts from across TID participated in an internal online survey. Six staff members responded, and results showed strong consensus for retaining all seven previously identified natural hazards in the updated plan. These hazards are:

- Aquatic Invasive Species
- Dam Failure
- Drought
- Earthquake
- Extreme Weather (including Damaging Winds, Tornadoes, Extreme Temperatures, Localized Extreme Rainfall, and Poor Air Quality)
- Flooding
- Landslide

- Public Health Emergency
- Wildland Fire

Survey results confirmed that these hazards continue to pose a credible risk to TID's infrastructure, operations, and service delivery. The full results of the survey are included in Appendix B- Meeting Documentation.

To meet these statutory requirements and ensure a comprehensive approach, TID developed this Local Hazard Mitigation Plan through a structured and inclusive planning process. This process brought together internal staff, external partners, and community stakeholders to identify hazards, assess risks, and develop strategies for reducing long-term vulnerability.

Section II describes the planning process, including how TID organized planning teams, engaged stakeholders, conducted public outreach, and incorporated feedback from partner agencies and the whole community. Together, these efforts ensure the LHMP is both technically sound and reflective of the needs and priorities of TID and its service area.

See Section II beginning on page 22.

District and Service Area Profile

The Turlock Irrigation District was established on June 6, 1887, as the first irrigation district formed in California under the Wright Act of 1887, a landmark law that enabled local communities to create publicly governed irrigation districts to manage and distribute water resources. Operating under California Water Code Division 11, TID has evolved into a multi-service special district providing both irrigation water and retail electric service. TID's irrigation service area encompasses approximately 196,499 acres in southern Stanislaus and northern Merced counties. Each year, TID delivers surface water to approximately 150,000 acres of active farmland, supporting one of the most productive agricultural regions in the state. Its electric service area spans about 423,500 acres, supplying electricity to residential, commercial, and industrial customers.

Figure 1- TID Service Area Map

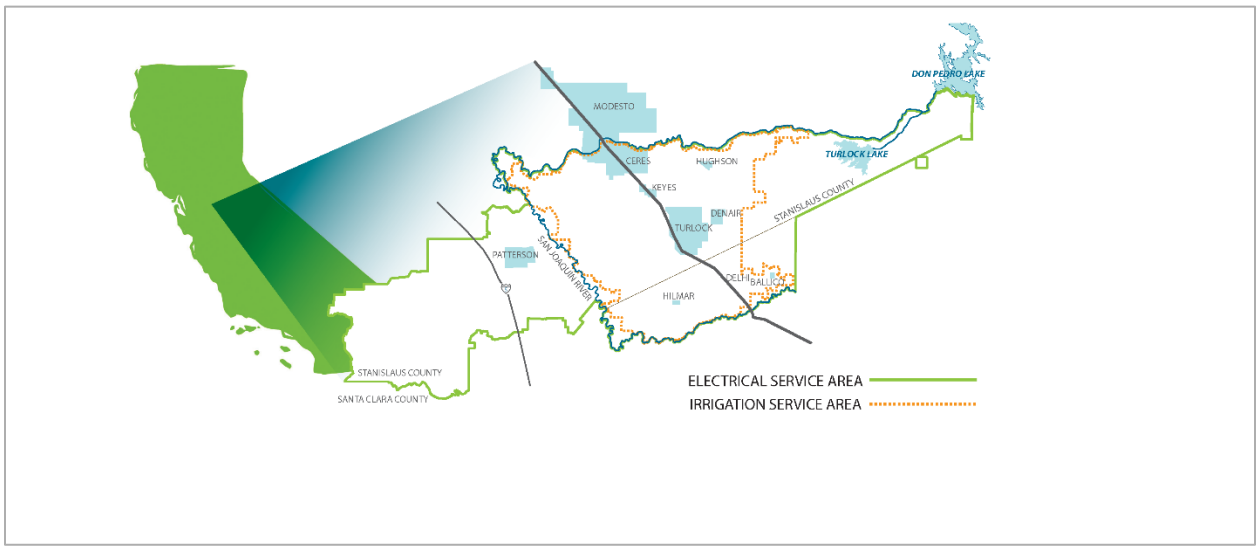
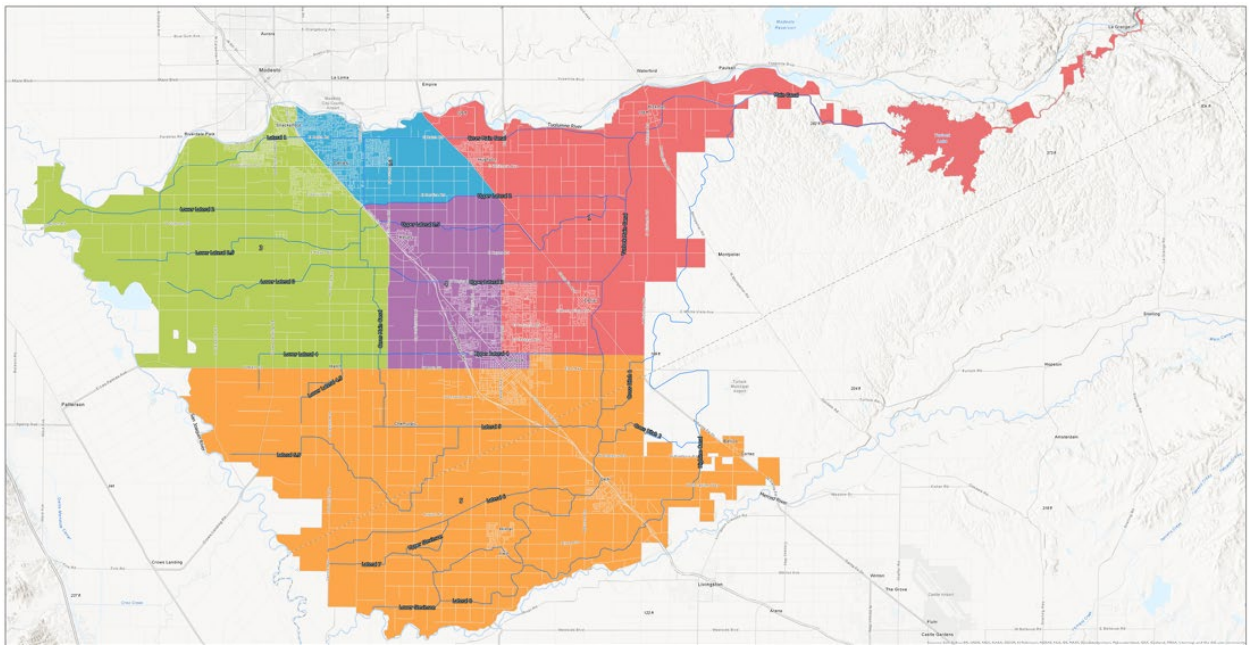


Figure 2-TID Board of Directors Map



Communities in TID's Electric Service Area

TID provides retail electric service to a diverse range of communities within its 662-square-mile service area, encompassing portions of Stanislaus, Merced, Tuolumne, and Mariposa counties. TID's electric service area includes the following cities, towns, and unincorporated communities:

Cities: Turlock, Ceres, Hughson, Patterson, and parts of Modesto

Census-Designated Places (CDPs): Ballico, Diablo Grande, Delhi, Denair, Hickman, Hilmar, Keyes, and La Grange

TID serves approximately 100,000 electric customers across this region, delivering power through an integrated system of generation, transmission, and distribution facilities on a not-for-profit basis.

Governance

TID is governed by a five-member Board of Directors, each elected from five geographic divisions within the District. Core services include the delivery of surface water through an extensive gravity-fed canal and lateral system, the generation and distribution of electricity, and the operation of hydroelectric facilities on the Tuolumne River through the Don Pedro Project. TID's jurisdiction includes the cities of Turlock, Ceres, Hughson, and portions of Modesto, along with several unincorporated communities such as Denair, Keyes, and Hickman [(2)].

2. Stanislaus Local Agency Formation Commission (LAFCO), Municipal Service Review and Sphere of Influence Update for the Turlock Irrigation District, 2011.

Water Operations

With deep roots in California's agricultural history, TID owns and manages one of the state's oldest and most essential water delivery systems. Anchored by senior water rights on the Tuolumne River—some dating back to the 1800s—TID's water infrastructure underpins irrigation, supports hydropower generation, and plays a key role in regional environmental and recreational management. The system spans major facilities such as Don Pedro Reservoir and an extensive network of canals that sustain farming operations throughout TID.

The Tuolumne River, fed largely by Sierra Nevada snowmelt, provides the primary water supply for TID. While typically dependable, the river is also subject to variability—ranging from multi-year droughts to high-flow flood events, as seen during the storms of 1997 and 2017. As the lead operator of Don Pedro Dam, TID is responsible for managing downstream releases that support fish and wildlife habitat while balancing agricultural demands and flood control. A thorough understanding of this infrastructure and its vulnerabilities is critical for identifying risks and implementing mitigation strategies that protect water reliability and system resilience.

Don Pedro Reservoir

Don Pedro Reservoir, located approximately two miles upstream of La Grange, is owned and operated primarily by TID. It is the sixth-largest reservoir in California, with a storage capacity of 2.03 million acre-feet. The 585-foot-tall dam is also one of the tallest in the nation and provides significant flood control for downstream communities. In addition to its operational importance, Don Pedro Reservoir supports extensive recreational use, including fishing, boating, camping, and water sports. Facilities developed with State support at Fleming Meadows, Blue Oaks, and Moccasin Point provide infrastructure for public use.

La Grange Diversion Dam

Built in partnership with the Modesto Irrigation District in 1893, the La Grange Dam serves as the diversion point for water from the Tuolumne River for both the Modesto and Turlock Irrigation Districts. TID operates a small powerplant on it canal system just downstream of the dam.

Turlock Lake

Turlock Lake serves as a critical balancing reservoir in the TID system. Located between Hickman and La Grange, it temporarily stores water released from Don Pedro before it enters TID's canal network. This arrangement provides operational flexibility by decoupling irrigation delivery schedules from upstream dam releases, allowing for more efficient and responsive water management during high-demand or emergency periods.

Lateral 8 Regulating Reservoir

The Lateral 8 Regulating Reservoir, completed in 2016 near Hilmar, is a 25-acre facility that stores approximately 130 acre-feet of irrigation water. This infrastructure helps improve delivery efficiency and service reliability to roughly 12,000 downstream acres. The reservoir also supports water conservation by stabilizing system flows and reducing operational spills, which allows surplus water to be retained in upstream reservoirs for future use.

Ceres Main Regulating Reservoir

The Ceres Main Regulating Reservoir is a 220 Acre-foot reservoir within TID's canal system. It is designed to capture and temporarily store flows from the Ceres Main Canal, allowing for controlled redistribution of water back into both the Ceres Main Canal and the Lower Lateral 3 Canal. This operational flexibility enhances downstream water deliveries, improves system efficiency, and supports more reliable irrigation service during peak demand periods.

Canal System

TID operates an extensive canal system that forms the foundation of its surface water delivery operations. The system includes more than 250 miles of open channels, consisting of main canals, laterals, and distribution turnouts that deliver irrigation water to agricultural users across TID's service area in Stanislaus and Merced counties.

Water released from Turlock Lake flows into TID's two main conveyance routes, the Main Canal and the Ceres Main Canal, which distributes water throughout the service territory. The system is gravity-fed, enabling efficient water delivery without the need for extensive pumping infrastructure. Numerous flow

control structures, check gates, siphons, and turnouts help regulate distribution and balance demand across a wide range of conditions.

To support operational oversight, many components of the canal network are equipped with remote monitoring and control systems, including Supervisory Control and Data Acquisition (SCADA) technology. These systems allow TID to monitor flow conditions in real time and make adjustments to improve efficiency and responsiveness.

The canal system plays a vital role in supporting the region's agricultural economy and water supply reliability. In recent years, TID has continued to modernize the network through lining projects, control structure upgrades, and the addition of regulating reservoirs such as the Lateral 8 facility, which enhances system performance during peak demand periods.

TID's canal infrastructure is integral to daily operations and regional water management, and it remains a critical component of TID's overall service capabilities.

TID's Irrigation Service Area

The TID services a diverse agricultural region in California's Central Valley, supporting a wide array of crops including:

Alfalfa	Grain	Sweet potatoes
Almonds	Grapes	Walnuts
Beans	Oats	
Corn	Peaches	

These crops reflect the region's Mediterranean climate and the fertile soils of the San Joaquin Valley, making it one of the most productive agricultural areas in the United States. TID's irrigation infrastructure, comprising approximately 250 miles of canals and laterals, supports this agricultural diversity by delivering water to around 7,500 parcels covering nearly 150,000 acres of farmland in Stanislaus and Merced counties [(3)].

3. Turlock Irrigation District. Irrigation Information. Accessed April 21, 2025.

Power Operations

The Turlock Irrigation District operates a diverse and strategically important power portfolio to meet the energy needs of its customers. TID owns and manages a combination of natural gas, hydroelectric, solar, geothermal, and biomass resources, along with power purchase agreements that support grid reliability and sustainability. These assets not only supply electricity to thousands of homes and businesses but also contribute to regional energy resilience. Understanding the role and vulnerability of TID's power infrastructure is essential to evaluating potential impacts from natural and human-caused hazards—and to identifying mitigation strategies that reduce risk to the power system and the communities that depend on it.

Almond Power Plant

Located in Turlock, Almond Power Plant is a natural gas-fired plant capable of generating 48 megawatts of electricity. This plant came on-line in 1995.

Almond 2 Power Plant (A2PP)

The Almond 2 Power Plant is located between the cities of Ceres and Modesto, CA, and consists of three rapid start simple cycle gas turbine generators assisting us in meeting reliability obligations as a Balancing Authority and improving the economy, efficiency, and flexibility of the electrical system, including the integration of intermittent renewable resources.

Walnut Energy Center

The Walnut Energy Center (WEC), which began commercial operation in 2006, is TID's largest power generation facility with a capacity of 250 megawatts. Using natural gas and advanced emissions control technology, WEC operates as one of the cleanest plants of its size in the nation, producing emissions up to 85 percent lower than older facilities in California. The plant uses up to 2 million gallons per day of recycled water from the City of Turlock's Wastewater Treatment Plant in a Zero Liquid Discharge system, ensuring no liquid waste returns to the city. WEC consists of two gas turbines and one steam turbine, with each gas turbine equipped with a combustion system to minimize pollutants and a Heat Recovery Steam Generator that captures exhaust heat to produce steam for the steam turbine. In its first year, WEC generated more than 960 million kilowatt hours, meeting up to 80 percent of TID's internal energy needs, and it continues to provide efficient, reliable, and environmentally responsible power for the growing demands of the service area.

Don Pedro Dam and Powerhouse

At the base of Don Pedro Dam, Don Pedro's power plant occupies the entire width of the river channel at the toe of the dam. It's an outdoor structure, constructed of reinforced concrete and originally constructed with three generators and a fourth unit was added in 1989 increasing total generation to 203 megawatts of hydroelectric power with 139 MW going to TID and 64 MW to MID. TID's portion of Don Pedro generates enough electricity to supply about 37,000 average homes.

Small Scale Hydroelectric Facilities

TID generates electricity on its irrigation canal system as well as surrounding irrigation district's canals through several small hydroelectric plants. Each of these renewable energy plants utilizes the power of irrigation water flowing through the gravity-fed system to create electricity.

Rosamond Solar Facility

In November 2015, TID entered into a 20-year agreement to purchase 54 megawatts of clean, renewable solar power from SunPower's newly constructed Rosamond Solar site located near Edwards Air Force Base in Kern County, CA. TID expects the plant to generate an equivalent amount of energy to power approximately 20,000 homes.

TID Parking Structure

TID installed a 70.7-kilowatt array of photovoltaic panels atop the parking structure at its offices on Canal Drive in Turlock. The array generates up to 132,460 kilowatt-hours a year.

Biomass

In order to reduce the wildland fire hazard posed by these dead trees and to dispose of the millions of trees already removed from the forest, the State of California has mandated that utilities buy power from biomass power plants that use these dead and dying trees for a significant portion of their fuel.

This mandate was part of a provision in Senate Bill 859, approved by the legislature and signed into law by Governor Brown on September 14, 2016. TID has entered into contracts with ARP-Loyalton Cogen LLC and Roseburg Forest Products Co. to purchase biomass as mandated by this law.

Geothermal

In 1984, TID acquired an interest in a geothermal power plant in the Geysers Steam Field, the world's largest geothermal field, located in California's Lake County approximately 70 miles north of San Francisco. The project has a capacity of generating 6.8 megawatts.

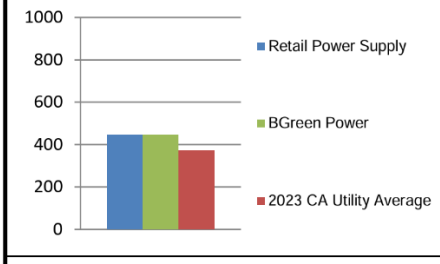
Power Content Label

The Energy Commission's Power Source Disclosure program provides consumers with a detailed view into the sources of energy purchased by their retail suppliers to power their homes and businesses. The result of this reporting is the Power Content Label, which resembles a nutrition label, with a breakdown of TID's energy sources. For comparison, the label includes a summary of California's energy mix, which is called total system power.

Figure 3-TID 2023 Power Content Label

2023 POWER CONTENT LABEL
Turlock Irrigation District
https://www.tid.org/power/power-mix/

Greenhouse Gas Emissions Intensity (lbs CO_2e/MWh)			Energy Resources	Retail Power Supply	BGreen Power	2023 CA Power Mix
Retail Power Supply	BGreen Power	2023 CA Utility Average	**Eligible Renewable**[1]	**32.4%**	**32.4%**	**36.9%**
			Biomass & Biowaste	0.0%	0.0%	2.1%
447	**447**	**373**	Geothermal	1.5%	1.5%	4.8%
			Eligible Hydroelectric	5.1%	5.1%	1.8%
			Solar	6.7%	6.7%	17.0%
			Wind	19.0%	19.0%	11.2%
			Coal	**0.0%**	**0.0%**	**1.8%**
			Large Hydroelectric	**28.9%**	**28.9%**	**11.7%**
			Natural Gas	**38.1%**	**38.1%**	**36.6%**
			Nuclear	**0.3%**	**0.3%**	**9.3%**
			Other	**0.0%**	**0.0%**	**0.1%**
			Unspecified Power[2]	**0.2%**	**0.2%**	**3.7%**
			TOTAL	**100.0%**	**100.0%**	**100.0%**
			Percentage of Retail Sales Covered by Retired Unbundled RECs[3]**:**	**0%**	**0%**	



[1]The eligible renewable percentage above does not reflect RPS compliance, which is determined using a different methodology.
[2]Unspecified power is electricity that has been purchased through open market transactions and is not traceable to a specific generation source.
[3]Renewable energy credits (RECs) are tracking instruments issued for renewable generation. Unbundled renewable energy credits (RECs) represent renewable generation that was not delivered to serve retail sales. Unbundled RECs are not reflected in the power mix or GHG emissions intensities above.

For specific information about this electricity portfolio, contact:	**Cory Sobotta** **209-883-8337**
For general information about the Power Content Label, visit:	https://www.energy.ca.gov/programs-and-topics/programs/power-source-disclosure-program

Climate in the TID Service Area

The TID service area, situated in California's Central Valley, experiences a Mediterranean climate with hot, dry summers and mild, winters. The region receives about 12 inches of rainfall annually, with clear seasonal changes. Winters are typically cool, with average lows around 38 degrees Fahrenheit, while summers are hot and dry, with average highs reaching 94 degrees in July and August.

This climate creates optimal conditions for diverse crop cultivation, supporting the area's strong agricultural productivity and contributing to the region's economic growth.

While this overall climate is consistent, local variations, or microclimates, can occur due to factors such as topography, proximity to water bodies, and urban development.

In the TID region, these microclimatic differences may influence temperature, humidity, and precipitation levels across different locales. For instance, areas near the Tuolumne River or Turlock Lake might experience slightly cooler temperatures and higher humidity compared to more urbanized zones like Turlock, Ceres or Modesto. Additionally, agricultural lands with extensive irrigation can create localized cooling effects, altering the immediate microclimate.

TID has been recording rainfall and temperature since the 1800s. This extensive historical data provides valuable insights into weather patterns and microclimatic variations within TID.

Demographics of the TID Service Area

Table 1. Basic Demographic Information (includes areas in both counties that are not inside TID boundaries)

Census Area	Total Population	Total Households	Employment Rate (employment rate in CA- 60.2%)	Median Household Income (Median in California- $95,521)	Race and Ethnicity (Hispanic or Latino of any race)	Bachelor's Degree or Higher (Bachelor's Degree or higher in CA- 37.5%)
Stanislaus County [4]	552,878	179,152	58.8%	$82,758	265,978	21%
Merced County[5]	291,202	88,053	54.7%	$57,570	173,857	14.5%

Census Area	Percentage of Population Living at or Below the Poverty Line	Percentage of Households Speaking a Language other than English at Home	Foreign Born Population	Average Family Size	Married, Not Separated	Unhoused Population – Sheltered and Unsheltered
Stanislaus County	12.3% [6]	44.9% [4]	21.7% [4]	3.53 [4]	48.2% [4]	2052 [10]
Merced County	19.1% [7]	51.4% [5]	25.8% [5]	3.85 [5]	43.3% [5]	717 [9]

Table 2. Disabled Population Information (Non-Institutionalized Population - includes areas in both counties that are not inside TID boundaries)

Census Area	With a Hearing Difficulty	With a Vision Difficulty	With a Cognitive Difficulty	With an Ambulatory Difficulty	With a Self-Care Difficulty	With an Independent Living Difficulty
Stanislaus County	3.2% [10]	2.5% [10]	5.0% [10]	6.4% [10]	2.4% [10]	6.2% [10]
Merced County	2.7% [11]	2.5% [11]	6.8% [11]	6.9% [11]	3.5% [11]	6.6% [11]

1. Source: US Census Bureau (US Census Bureau Stanislaus County)
2. Source: US Census Bureau (US Census Bureau Merced County)
3. Source: US Census Bureau American Community Survey 2024 (Stanislaus County)
4. Source: US Census Bureau American Community Survey 2024 (Merced County)
5. Source: 2024 Stanislaus County Point in Time Count
6. Source: 2024 Merced County Point in Time Count
7. Source: US Census Bureau American Community Survey Disability Characteristics (Stanislaus County)
8. Source: US Census Bureau American Community Survey Disability Characteristics (Merced County)

Vulnerable Populations

Older Adults

Stanislaus County: In Stanislaus County, approximately 100,000 residents aged 60 and older live in the community, and 35% of adults aged 65+ do not earn enough income to meet basic needs, as measured by the Elder Index. A single older adult who rents requires an estimated $22,668 annually to maintain a minimal standard of living [4]. Many rely on public assistance: 7,204 older adults receive Supplemental Security Income (SSI), 4,154 receive In-Home Supportive Services (IHSS), and 24,637 are dually eligible for both Medicare and Medi-Cal [4]. Additionally, 954 adults aged 55+ interacted with the county's homeless response system, highlighting the housing instability faced by this population [4]. As California's senior population continues to rise, hazard mitigation and emergency planning must specifically address the vulnerabilities of low-income older adults to ensure equitable resilience.

4. Snapshot of Older Adults in Stanislaus County, Justice in Aging

Merced County: In Merced County, approximately 43,000 adults aged 60 and older reside in the community, and an estimated 20% live alone [5]. About 26% of residents aged 65 and older fall below 200% of the federal poverty level, and 8.7% experience food insecurity, and many rely on public support services, including the In-Home Supportive Services (IHSS) program and targeted assistance through the Multipurpose Senior Services Program (MSSP), caregiver support, legal aid, and meal delivery programs [6,7] . These figures highlight the economic vulnerability and service dependency of Merced's aging population and reinforce the importance of incorporating older adult needs into hazard mitigation and emergency planning.

5. Merced County Area Plan on Aging, 2024–2028
6. California Department of Aging, "County Data Snapshot: Merced"
7. Justice in Aging, "California Statewide Data Snapshots

Disadvantaged Neighborhoods

Several disadvantaged unincorporated communities (DUCs) are located within or adjacent to Turlock Irrigation District's (TID) service area. These include Keyes, Cowan Tract, Monterey Park Tract, Parklawn, Shackelford, and Bystrum in Stanislaus County, and Ballico, Bear Creek, Cressey, Delhi, Dos Palos, El Nido, Fergus, Hilmar-Irwin, Le Grand, Planada, Santa Nella, Snelling, South Dos Palos, Stevinson, The Grove, Volta, and Winton in Merced County [9,10,11,12]. These areas possess median household incomes below 80% of the statewide median and consist of at least 10 dwellings in proximity, meeting the SB 244 criteria for disadvantaged status [11]. Many lack full public infrastructure and rely on shared wells, septic systems, substandard roads, and limited public services, placing them at heightened risk during disasters and prolonged utility outages [12]. Integrating their needs is essential to equitable hazard mitigation planning, ensuring all residents have access to emergency support and recovery resources.

8. Stanislaus Local Agency Formation Commission (LAFCO), Municipal Service Review – Turlock Irrigation District, 2023.
9. PolicyLink, Mapping Disadvantaged Communities in the San Joaquin Valley (Merced County DUC list)
10. Stanislaus County Planning & Community Development Department, Disadvantaged Unincorporated Communities Report, 2015.
11. California Government Code § 65302.10 (SB 244) DUC definition
12. PolicyLink, technical methodology for identifying DUCs (infrastructure and service gaps)

Unhoused Populations

The unhoused population within and surrounding TID's service area represents one of the most vulnerable community groups during disasters. Individuals experiencing homelessness face heightened exposure to extreme weather, poor air quality, and public health threats, and often lack access to reliable communication channels, transportation, or shelter options during emergencies. Without stable housing, they are also excluded from many traditional planning and response systems. Incorporating the needs of unhoused individuals into hazard mitigation and emergency planning is essential to ensure equitable protection and delivery of life-sustaining services.

TID faces several challenges when addressing the needs of unhoused populations, who aren't direct water or electricity customers:

Lack of Customer Records & Notifications: Without billing accounts, TID cannot identify, contact, or promptly notify unhoused individuals—particularly during planned outages or increased flows in the Tuolumne River as a result of normal operations at Don Pedro and La Grange Dams.

Encampment Locations & Infrastructure Risks: Encampments sometimes develop near waterways or electrical facilities. Without oversight or sanitation infrastructure, they elevate public health and system integrity risks—but TID has no direct mechanisms for prevention or mitigation.

Implications for TID's Emergency Planning:

- **Emergency Alerts & Support**: TID must rely on community partners (e.g., outreach teams, shelters) for notification and assistance plans during outages.
- **Public Health Risks**: Lack of hygiene and water access in encampments may lead to contamination near canals or reservoirs, necessitating broader monitoring and security strategies for protection of critical infrastructure and District employees working in remote areas.
- **Collaboration Is Vital:** Addressing these challenges requires coordination with local agencies, public health, sanitation districts, and nonprofits.

In summary, unhoused populations fall outside the reach of TID's typical utility-based systems and scope of responsibilities, creating significant gaps in service delivery, communication, and infrastructure safety. Effective hazard mitigation will demand proactive partnerships and new approaches beyond standard utility-customer relationships.

Tribal Nations

Within the TID Service Area

No federally recognized tribal reservations or rancherias are located within TID's service area.

Adjacent to the TID Service Area

Tuolumne County: Tuolumne Band of Me-Wuk Indians: A federally recognized Miwok tribe whose reservation—the Tuolumne Rancheria—is situated near the Sierra Nevada foothills in Tuolumne County, just north of the township of Tuolumne. They maintain a tribal government, health services, fire department, and law enforcement.

Chicken Ranch Rancheria of Me-Wuk Indians: Another federally recognized Sierra Miwok tribe based in Jamestown, Tuolumne County. Though smaller, they operate the Chicken Ranch Casino on their land.

Special or Sensitive Locations

Government Facilities

- **Stanislaus County Fairgrounds (Turlock):** Operated by the County, hosts public events and infrastructure.
- **Turlock Municipal Airport (Ballico Field):** A public, general aviation airport located approximately 8 mi east of Turlock, partially within TID's territory.
- **The Stanislaus County Public Safety Center:** Often referred to as the county's main jail at 200 East Hackett Road, Modesto, CA 95358, is located within TID's electric service territory. This facility serves as the primary medium/maximum security center and booking facility for the county.
- **Mount Oso Communications Facilities:** Located in the western hills of Stanislaus County, Mount Oso is a critical communications hub supporting a wide range of public safety, governmental, and commercial telecommunications systems. The site hosts numerous radio towers, microwave links, and repeater infrastructure essential to regional emergency response coordination, law enforcement communications, and data transmission. Mount Oso lies within TID's electric service territory and is highly dependent on continuous power to maintain system functionality. A loss of electrical service—especially during wildland fire, severe weather, or seismic events—could disrupt critical communications across Stanislaus, San Joaquin, and neighboring counties. As such, Mount Oso is considered a priority facility for outage prevention, backup power assurance, and rapid service restoration within TID's hazard mitigation and emergency response planning efforts.

Data Centers

- Data Center 209 LLC: Located at 202 West Main Street in downtown Turlock, this facility provides managed data and telecommunications services to local businesses.

Community Lifelines

Community Lifelines represent the essential services that allow a community to function. These integrated networks of assets, services, and capabilities support daily needs and ensure the continuity of critical government and business operations. They are vital to human health, safety, and economic security, as outlined in the **National Response Framework, 4th Edition (October 28, 2019)**. Within TID's service territory, the Federal Emergency Management Agency (FEMA) identifies seven key Community Lifelines that are crucial for maintaining community functionality and resilience:

1. **Safety and Security:** This lifeline includes law enforcement, fire services, search and rescue operations, and government services that ensure public safety and maintain order.
2. **Food, Water, Shelter:** This encompasses the provision of food, potable water, shelter, and agriculture services. In the TID service area, the district supplies untreated Tuolumne River water to the Stanislaus Regional Water Authority (SRWA), a Joint Powers Authority which includes the cities of Ceres and Turlock. The SRWA treats and distributes it to the cities of Ceres and Turlock for municipal use.
3. **Health and Medical:** This lifeline covers medical care, public health services, patient movement, medical supply chains, and fatality management.
4. **Energy (Power & Fuel):** These are critical community lifelines that support the functioning of essential services and infrastructure. They are fundamental to daily life, emergency response, and recovery efforts during disasters. TID supplies electric power in its service territory from its generation facilities.
5. **Communications:** This lifeline includes infrastructure for responder communications, public alerts, financial services, and emergency dispatch systems.

6. **Transportation:** This involves the maintenance and operation of highways, roadways, mass transit, railways, aviation, and maritime systems.
7. **Hazardous Materials:** This lifeline pertains to the management of facilities handling hazardous materials, pollution control, and containment of contaminants.

During community outreach for developing this LHMP, key Community Lifelines, along with public safety agencies, critical infrastructure providers, and other essential service organizations, were included.

For specific agencies identified, see Table 6. External Partner Agencies, NGOs, Community Groups, and Public and Private Non-Profits beginning on page 24.

Development and Hazard Vulnerability Since 2020

Since the adoption of the 2020 Local Hazard Mitigation Plan (LHMP), approved by FEMA in 2021, the Turlock Irrigation District (TID) has observed ongoing development across its service area in both Stanislaus and Merced counties. Urban growth in cities such as Turlock, Ceres, Patterson, Livingston, and Atwater has increased service demand, although most development has remained within incorporated boundaries.

In the unincorporated areas of Stanislaus County, growth has been limited, with one notable exception: the Diablo Grande planned community west of Patterson. Originally developed in the 1990s but never fully built out, the County approved a revised development plan in 2017 that reduced residential density and limited hillside development. This area was evacuated during the 2020 SCU Lightning Complex Fire, illustrating its ongoing wildland fire risk [13].

In Merced County, development has remained moderate, with growth centered in Livingston and Atwater. Although most new housing is within cities, expansion of impervious surfaces has led to increased runoff and heightened flood risk in some low-lying areas. The county projected a 1.3% average annual population growth rate through 2025, which may strain existing infrastructure and emergency services [14].

These development trends have also contributed to ongoing exposure to PM2.5 (fine particulate matter) across the region. Sources include:

- Increased vehicle traffic and construction activity from residential expansion, both of which generate PM2.5 through tailpipe emissions and airborne dust [15].
- Agricultural operations—traditionally a significant source of PM2.5 through open burning of orchard prunings, vineyard removals, and other biomass have seen a regulatory shift. As of January 1, 2025, nearly all open agricultural burning has been banned in Stanislaus and Merced counties under Senate Bill 705 and San Joaquin Valley Air Pollution Control District regulations [16]. Only limited, permitted burns (e.g., for pest control or disease prevention) are allowed on designated burn days under strict air quality and meteorological conditions [16,17].
- Expansion into the wildland-urban interface, particularly around Diablo Grande, increases wildland fire risk. Wildland fire remains a major contributor to PM2.5, as illustrated during the 2020 SCU Lightning Complex Fire [18].

Recent monitoring data shows that PM2.5 concentrations have declined over time, but the region remains out of compliance with the most recent federal standards. Average annual PM2.5 levels in the San Joaquin Valley dropped from ~27.6 µg/m³ (micrograms per cubic meter – a microgram equals 1 millionth of a gram) in 1999 to ~13.5 µg/m³ in 2023, bringing the area into attainment of the 1997 15 µg/m³ standard—but not the 12 µg/m³ (2012) or 9 µg/m³ (2024) federal standards [19, 20].

From 2022–2024, Turlock's design value averaged approximately 10.1 µg/m [15, 16]. Winter temperature inversions, wildland fire smoke, and regional emissions continue to challenge attainment goals.

These combined factors have modestly increased TID's overall hazard exposure:

- **Flooding:** Urbanization in flood-prone zones elevates risk to canals, substations, and other infrastructure.
- **Wildland fire:** Interface development heightens wildland fire risk and the need for proactive vegetation management.
- **Seismic Risk:** Continued infrastructure investment reinforces the importance of earthquake resilience for critical systems.
- **Service Demand:** Population and agricultural growth place additional pressure on water and power delivery systems.
- **Air Quality/Public Health:** Persistent PM2.5 exposure, especially during wildland fire and winter seasons, poses increasing risks to public health, particularly for vulnerable populations and outdoor workers.

As of this update, development since 2020 has not significantly impacted TID's operational capacity or reliability. However, TID continues to track growth, hazard exposure, and environmental conditions to inform mitigation strategies and capital planning.

13. Stanislaus County. Multi-Jurisdictional Hazard Mitigation Plan, 2021 Update
14. Merced County. Multi-Jurisdictional Hazard Mitigation Plan, 2021-2026
15. California Air Resources Board. "Inhalable Particulate Matter and Health."
16. San Joaquin Valley Air Pollution Control District. Agricultural Burning Program Update
17. City of Merced Fire Department. "Burn Day Information."
18. U.S. EPA AirNow. "SCU Lightning Complex Fire Smoke Impacts – 2020."
19. Turlock Journal. "Report: San Joaquin Valley Reaches Air Quality Milestone." March 2024.
20. U.S. EPA. Federal Register, July 2025. "Determination of Attainment by the Attainment Date and Clean Data Determination: California—San Joaquin Valley PM2.5 Nonattainment Area."

Projected Changes in Development in the TID Service Area

Over the next five years, the TID service area is expected to experience steady growth in housing, energy infrastructure, and transportation development. These trends will increase demand for TID services and may influence TID's exposure to hazards such as flooding, wildland fire, and air quality degradation.

Residential and Population Growth

According to the Regional Housing Needs Allocation Plan: 2023–2031, Stanislaus County jurisdictions are expected to accommodate thousands of new housing units over the current planning cycle. The plan identifies housing growth targets for cities within the TID service area, including Turlock, Ceres, and Patterson, to address projected population increases and regional housing demand [21]. In Merced County, UC Merced population forecasts estimate a 19% to 21% increase between 2018 and 2030, which will contribute to continued development pressure, particularly in Atwater and Livingston [22].

Energy and Infrastructure Expansion

TID's 2023 Integrated Resource Plan outlines major investments in energy infrastructure through 2030 to meet growing electric demand and align with California's clean energy goals. Planned projects include:

- A 94 MW solar photovoltaic facility with battery storage capabilities.
- Hydroelectric generation upgrades at Don Pedro Reservoir between 2025 and 2028, expected to add approximately 41 MW of capacity.
- Exploratory efforts into additional renewable and emerging technologies such as wind, geothermal, small modular reactors (SMRs), and green hydrogen [23].

Transportation Development and Transit-Oriented Growth

The Altamont Corridor Express (ACE) service is being extended from Ceres to Merced under the Valley Rail program. According to the ACE Ceres–Merced Extension Draft Environmental Impact Report (EIR) prepared by the San Joaquin Regional Rail Commission, this Phase II project includes constructing or upgrading tracks and at least three new stations in Turlock, Livingston (or Atwater alternative), and Merced along approximately 34 miles of the Union Pacific Fresno Subdivision. Construction was approved in April 2021, with phased service expected to begin in the mid-2020s, including a Turlock station by around 2027–2029 [24].

Implications for Hazard Exposure and District Operations

These projected development trends may elevate:

- Flooding risks due to increased impervious surfaces and stormwater runoff.
- Wildfire exposure where growth encroaches on wildland-urban interface areas, especially in western Stanislaus County.
- PM2.5 emissions, particularly from construction and transportation activity, unless offset by clean energy and emissions control strategies.
- Water and electric demand, which will require system upgrades and operational planning to maintain resilience and reliability during hazard events.

TID will need to integrate these land use and infrastructure forecasts into mitigation strategies, capital improvement planning, and emergency preparedness efforts to remain responsive to future growth and associated hazards.

21. Stanislaus Council of Governments. Regional Housing Needs Allocation Plan: 2023–2031. Adopted February 15, 2023
22. University of California, Merced. Population and Housing Growth Projections – Merced County, 2020.
23. Turlock Irrigation District. 2023 Integrated Resource Plan Filing with the California Energy Commission, 2023.
24. San Joaquin Regional Rail Commission, ACE Ceres–Merced Extension Draft EIR, April 2021, p. 1-1 to 1-4, detailing new station locations and track improvements.

Impacts of Projected Changes in Development on TID

TID provides retail electric service across approximately 662 square miles, encompassing portions of Stanislaus, Merced, and Tuolumne counties. This territory includes urban centers such as Turlock and Ceres as well as unincorporated agricultural communities. Over the next several years, anticipated residential growth, electrification, and infrastructure expansion will continue to increase electric demand and expand TID's exposure to natural hazards.

Population and Housing Growth

The Stanislaus Council of Governments (StanCOG) projects that jurisdictions within TID's electric service area will need to accommodate thousands of new housing units by 2031 to meet state housing targets [25]. Most of this growth is expected in and around Turlock, Ceres, and Keyes, with additional infill development in unincorporated areas. New development will require electric service extensions and may increase exposure to wildland fire, flooding, and extreme heat.

Electric Load and Infrastructure Expansion

According to the 2023 TID Annual Report, TID recorded a peak retail system load of 692 MW in August 2023 [26]. Separately, the TID Balancing Authority, which includes additional generation and load entities within its footprint—recorded a peak load of 735 MW during 2022 [27].

TID's 2023 Integrated Resource Plan (IRP) forecasts that peak retail load will grow from 597 MW in 2023 to approximately 623 MW by 2030, reflecting steady demand growth associated with population increases, electrification, and regional economic activity [28]. To support this, TID plans to construct at least two new substations and undertake significant distribution system upgrades [29].

Electric Vehicle Infrastructure and Energy Transition

StanCOG's Electric Vehicle Infrastructure Study projects that up to 60,000 electric vehicles will be operating in Stanislaus County by 2035, requiring large-scale deployment of residential and commercial charging infrastructure [30]. EV adoption is expected to shift peak load patterns and increase total electricity demand.

TID is also piloting Project Nexus, which explores the use of canal-top solar installations to reduce evaporation and generate renewable energy. If expanded, the project would introduce a new class of distributed generation assets across TID's service area [31].

Implications for Risk and Resilience Planning

As electric infrastructure expands and demand increases, the risk to critical systems statewide from natural hazards including flooding, wildland fire, extreme heat, and public safety power shutoffs (PSPS) will grow. TID continues to coordinate with local jurisdictions and leverage GIS-based hazard overlays to ensure that system upgrades and new facilities are sited with resilience in mind.

25. Stanislaus Council of Governments (StanCOG), Regional Housing Needs Allocation Projections, 2024.
26. Turlock Irrigation District, 2023 Annual Report, p. 2 – "692 MW peak load in August 2023."
27. Turlock Irrigation District, 2022 Annual Operations Review, p. 10 – "TID Balancing Authority 2022 peak load of 735 MW."
28. Turlock Irrigation District, Integrated Resource Plan (IRP), 2023 – load forecast from 597 MW in 2023 to 623 MW by 2030.
29. Turlock Irrigation District, Board Presentations and Capital Projects Updates, 2023–2024.
30. StanCOG, Electric Vehicle Infrastructure Study, 2023 – EV adoption forecast for Stanislaus County.
31. California Department of Water Resources & TID, Project Nexus Pilot Overview, 2023.

II. Planning Process

TID prepares for potential hazards that could impact its service area through a comprehensive planning process. As part of its LHMP, TID is committed to a comprehensive planning process that involves a wide range of stakeholders. The LHMP outlines stakeholders, hazard and risk assessments, mitigation capabilities, public outreach, and the project timeline.

The TID EMPT initiated the LHMP process with a kickoff meeting on October 31, 2024.

The EMPT created an outline using FEMA/Cal OES guidance updated in 2022 and implemented in 2023. Although planning began under that guidance, this LHMP aligns with FEMA's most recent Local Mitigation Planning Policy Guide (FP-206-21-0002), effective April 11, 2025 [32]. The Expanded Outline followed the updated FEMA/Cal OES Standard Elements A through G. The EMPT reviewed required elements and brainstormed ideas from local knowledge and previous planning experience to serve as a guide to meet all requirements. The EMPT created a timeline for plan development to keep the project moving forward while addressing all the requirements.

32. The FEMA Local Mitigation Planning Policy Guide (FP-206-21-0002), effective April 11, 2025

Internal Stakeholders

The TID's planning process team, in consultation with the TID Management Team, expands to include a LHMP Steering Committee with representatives from multiple divisions across the water and power departments. This group ensures that all TID departments have their perspectives represented while maintaining a small, cohesive body to guide development and implementation of the LHMP.

The Steering Committee and EMPT meet regularly, sometimes separately and sometimes jointly to review progress, share insights, and make decisions related to the plan. The Steering Committee also identifies staff to serve as subject matter experts (SMEs), providing technical assistance, practical guidance, and expertise in their respective areas. The TID Internal Stakeholders are assembled as follows:

Emergency Management Planning Team: Provides overall coordination, direction, and integration of the LHMP process.

Table 3. Emergency Management Planning Team Members

Name	Position
Jason Hicks	TID- Manager of Security and Emergency Preparedness
Herb Smart	TID- Emergency Preparedness Coordinator
Brannon Gomes	Don Pedro Recreation Agency- Recreation Division Manager
Dave Funk	Consultant- Dave L. Funk Emergency Management Consulting
Calvin Curtin	Consultant- C3 Crisis Solutions

Steering Committee: Comprised of representatives from key water and power divisions; the Steering Committee is responsible for reviewing progress, ensuring departmental input, and shaping the plan's development.

Table 4. LHMP Steering Committee Members

Name	Position
Carlos Agueda	Environmental Health and Safety Division Manager
Dave Arounsack	IT Services Department Manager
Brett Bodine	Electrical Engineering and Operations Department Manager
Mario Castrejon	Maintenance and Operations Department Manager
Michael Clipper	Risk and Investment Analyst
Olivia Cramer	Chief Hydrologist
Sukhdeep Gill	Electrical Engineering and Operations Department Manager
Brannon Gomes	DPRA Recreation Division Manager
Jason Hicks	Manager of Security and Emergency Preparedness
Karl Kobrock	Electrical Engineering and Operations Department Manager
Keith Larson	Supervising Engineering Technician-Civil Engineering
Brandon McMillan	Communications Specialist
Bill Penney	Civil Engineering Department Manager
Herb Smart	Emergency Preparedness Coordinator
Pat Straubinger	Security Specialist
Mike Tehada	Combustion Turbine Department Manager

Internal Stakeholders and Subject Matter Experts: The LHMP Steering Committee and Subject Matter Experts (SMEs) provided strategic guidance and technical input throughout the development of this plan. The committee was composed of representatives from TID departments with operational responsibilities or assets that may be affected by the hazards identified in this plan. Each SME contributed specialized expertise within their respective discipline to ensure that the mitigation strategies developed are accurate, technically sound, and aligned with District operations and regulatory requirements. In addition, the SMEs played a critical role in reviewing and validating the hazard assessments, offering insight on past impacts, potential vulnerabilities, and the relative significance of each hazard to TID's infrastructure and operations. Their feedback was incorporated into the final risk rankings, vulnerability summaries, and the identification of mitigation priorities that form the foundation of this plan.

Internal Stakeholders and SME Meeting: TID held an Internal Stakeholders/SME Kickoff Meeting on June 16, 2025 via Microsoft Teams to review the project scope, requirements, and the 2020 LHMP.

Table 5. LHMP Internal Stakeholders and Subject Matter Experts

Name	Position
Mario Castrejon	Maintenance and Operations Department Manager
Michael Clipper	Risk and Investment Analyst
Olivia Cramer	Chief Hydrologist
Sukhdeep Gill	Electrical Engineering and Operations Department Manager
Brannon Gomes	DPRA Recreation Division Manager
Karl Kobrock	Electrical Engineering and Operations Department Manager
Keith Larson	Supervising Engineering Technician-Civil Engineering
Brandon McMillan	Communications Specialist
Bill Penney	Civil Engineering Department Manager
Herb Smart	Regulatory & Emergency Planning Coordinator I
Pat Straubinger	Security Specialist
Mike Tehada	Combustion Turbine Department Manager

External Stakeholders

TID includes external agencies, non-governmental organizations (NGOs), community groups, service providers for vulnerable populations, public/private partners, and other key stakeholders in this Local Hazard Mitigation Plan to ensure a comprehensive and inclusive approach to risk reduction. Engaging these stakeholders ensures the plan incorporates diverse expertise, addresses community vulnerabilities, and supports coordination across sectors. This approach allows TID to develop strategies that reflect community needs and strengthen resilience across the District.

The table below lists the entities and groups that received an electronic copy of the initial draft of the plan and whose expertise, feedback, and input are incorporated into the plan's development.

Table 6. External Partner Agencies, NGOs, Community Groups, and Public and Private Non-Profits

Al-Misbaah Community Resource Center for Northern CA	Delhi MAC	Merced Irrigation District	Stanislaus County Fairgrounds
Alzheimer/Dementia Support Center	Denair Community Services District	Modesto Chamber of Commerce	Stanislaus County Farm Bureau
Burbank Paradise Fire Protection District	Denair Fire Protection District	Modesto Gospel Mission	Stanislaus County Free Library Board
CA Department of Fish and Wildlife	Denair Municipal Advisory Council	Modesto Irrigation District	Stanislaus County OES
Ca State University Stanislaus	Disability Resources Agency for Independent Living	Modesto Irrigation District	Stanislaus County Office of Education
Cal OES Mitigation Planning	District 1 Supervisor, Merced County	Modesto Rotary	Stanislaus County Operational Area Council
California Highway Patrol - Merced	District 2 Supervisor, Merced County	Modesto Sunrise Rotary	Stanislaus County Parks and Recreation Commission
California Highway Patrol - Modesto	District 3 Supervisor, Merced County	Monterey Park Tract Community Services District	Stanislaus County Planning Department
California Highway Patrol - Sonora	District 4 Supervisor, Merced County	Mountain View Volunteer Fire Protection District	Stanislaus County Public Health
California State Parks	District 5 Supervisor, Merced County	NAACP Modesto/Stanislaus Branch	Stanislaus County Veteran's Service Office
Center For Human Services	Doctor's Hospital of Manteca	National Weather Service	Stanislaus County Workforce Development Board
Ceres Chamber of Commerce	Doctor's Hospital of Modesto	Newman Drainage District	Stanislaus Local Agency Formation Commission
Ceres Rotary	East Side Mosquito Abatement District	Newman Fire Dept	Stanislaus Regional 911
Chabad of Modesto	East Side Water District	Oakdale Irrigation District	Stanislaus Regional Water Authority
City and County of San Francisco/Hetch Hetchy	East Stanislaus Resource Conservation District	Oakdale Rural Fire District	Stanislaus Senior Foundation
City of Ceres	Economic Development Action Committee	Patterson Cemetery District	Stanislaus State University

City of Ceres City Manager	EJ Gallo	Patterson Irrigation District	Suntex (Don Pedro concessionaire)
City of Ceres/Ceres Fire Protection District	EJ Gallo	Portuguese Society of America	Tuolumne Co Sheriff's Office
City of Hughson	El Concilio of California Coalition	Reclamation District 2063	Tuolumne Co Sheriff's Office
City of Hughson	El Soyo Water District	Reclamation District 2091	Tuolumne County Board of Supervisors
City of Hughson Chief of Police Services	Emanuel Medical Center	Reclamation District 2092	Tuolumne County Farm Bureau
City of Modesto Emergency Manager	Empire Municipal Advisory Council	Red Cross	Tuolumne County OES
City of Modesto Fire Dept	Grayson Community Services District	Riverdale Park Tract Community Services District	Tuolumne River Regional Park Citizens Advisory Committee
City of Newman	Habitat For Humanity	Salida Fire Protection District	Turlock Certified Farmers Market
City of Oakdale	Hickman Municipal Advisory Council	Salvation Army Modesto	Turlock Chamber of Commerce
City of Oakdale Fire Dept	Hickman Schools	San Joaquin County Board of Supervisors	Turlock Mosquito Abatement District
City of Patterson	Hickman Schools	San Joaquin County Farm Bureau	Turlock Rotary
City of Patterson	Hickman Schools	San Joaquin Valley Air Pollution Control District	Turlock Rural Fire District
City of Patterson Fire Dept	Hilmar MAC	Sand Creek Flood Control District	Turlock Unified School District
City of Ripon Emergency Manager	Hughson Fire Protection District	Santa Clara County Board of Supervisors	United Way of Stanislaus County
City of Riverbank	In-Home Supportive Services Advisory Committee	Senior Coalition of Stanislaus County	University of California Merced
City of Riverbank	Keyes Community Services District	Society for disABILITIES	Veterans of Foreign Wars
City of Riverbank Planning	Keyes Fire District	South Modesto Municipal Advisory Council	Visually Impaired Persons Support
City of Turlock City Clerk	Keyes Municipal Advisory Council	Stanislaus Co Office of Emergency Services	West Modesto Community Collaborative
City of Turlock Fire Dept	Knights Ferry Municipal Advisory Council	Stanislaus Consolidated Fire Protection District	West Stanislaus Fire Protection District
City of Turlock Planning	Lake Don Pedro Community Services District	Stanislaus County Agricultural Advisory Board	West Stanislaus Irrigation District
City of Turlock Police	Lake Don Pedro Homeowners Association	Stanislaus County Behavioral Health and Recovery Services	Western Hills Water District
City of Waterford	Manufacturers Council of the Central Valley	Stanislaus County Board of Supervisors	Westley Community Services District
Community Housing-Shelter Services	Mariposa County Board of Supervisors	Stanislaus County CERT Coordinator	Westport Fire Protection District
Community Impact Central Valley	Merced Co Office of Emergency Services	Stanislaus County Community Services Agency	Wood Colony Municipal Advisory Council

	Merced-Mariposa Joint Dispatch		
Crows Landing Community Services District	Merced County Farm Bureau	Stanislaus County Equal Rights Commission	Woodland Ave Fire Protection District
Del Puerto Community Health Care District	Merced County OES		Stanislaus County Fairgrounds
Del Puerto Water District	Merced County Office of Education		Stanislaus County Farm Bureau
	Merced County Planning		Stanislaus County Free Library Board

Involvement of Cities, Counties, Special Districts, and Partner Agencies

As shown in the comprehensive contact table above, the development of TID's LHMP incorporated input from cities, counties, special districts, and partner agencies to strengthen coordination across jurisdictions and enhance regional resilience. This collaboration provided valuable expertise, supported the identification of shared hazards, and helped align MID's mitigation strategies with broader local and regional emergency management efforts.

TID engaged agency partners, broader stakeholder groups, and community organizations to support an inclusive planning process. As part of this outreach, TID participated in the Stanislaus County Operational Area Council meeting and coordinated with El Concilio/Latino Emergency Council. These efforts ensured that the planning process incorporated diverse perspectives and addressed community needs, consistent with FEMA and Cal OES requirements for whole-community participation.

Feedback and input received from these partners were carefully reviewed and incorporated throughout the planning process. Comments informed updates to hazard assessments, refinement of risk rankings, and the identification of feasible and locally supported mitigation actions. Partner agencies also provided data on critical facilities, infrastructure, and previous hazard events, which improved the accuracy of exposure mapping and vulnerability analysis. Incorporating this input helped ensure that TID's LHMP reflects a coordinated, data-driven approach consistent with regional priorities and supports the District's commitment to ongoing interagency collaboration and community resilience.

The stakeholder engagement and coordination efforts described above laid the foundation for the plan's public review and adoption process, ensuring transparency, accessibility, and community involvement in the final stages of plan development.

Stanislaus County Operational Area Council Meeting

To support a coordinated and inclusive planning process consistent with FEMA and CalOES outreach requirements, TID conducted targeted engagement with local government partners through the Stanislaus County Operational Area Council (OAC). On May 28, 2025, TID participated in the regularly scheduled OAC meeting to formally announce the initiation of its LHMP update.

The OAC serves as the regional coordinating body for emergency planning and disaster response across the Stanislaus Operational Area. It provides policy guidance and technical review to ensure consistency with the Incident Command System (ICS), Standardized Emergency Management System (SEMS), National Incident Management System (NIMS), and Homeland Security Presidential Directives (HSPD) 5 and 8. The Council includes 10 voting members: the Stanislaus County Assistant Director of Emergency Services and one representative from each of the nine incorporated cities in the county.

At the meeting, TID announced its intent to update the LHMP and presented the preliminary hazard list. TID requested that OAC members support outreach by connecting the District with local agencies, community organizations, and other stakeholders representing a broad cross-section of the community. TID informed attendees that it would circulate draft plan materials for review and comment during key phases of the planning process, including hazard identification, risk assessment, and mitigation strategy development. This outreach supports interagency coordination and ensures whole-community engagement in LHMP development.

See Appendix B for meeting documentation.

El Concilio/Latino Emergency Council Meeting

As part of its whole community approach, TID conducted targeted outreach to El Concilio/Latino Emergency Council during a virtual meeting on June 4, 2025. TID shared information about the LHMP update, presented the plan's purpose, and outlined the hazards under consideration. TID emphasized the importance of inclusive engagement to ensure that the perspectives of historically underserved populations are incorporated into the planning process. Attendees provided community-specific concerns, identified vulnerable populations, and supported outreach efforts.

TID invited participants to review draft materials as they become available and to provide feedback through email or the project website (tid.org/LHMP). This outreach advanced the LHMP's goal of developing equitable and locally informed mitigation strategies.

See Appendix B for meeting documentation.

Public Outreach and Engagement

The Public Outreach Strategy implemented by TID was guided by a whole-community approach designed to foster broad engagement and gather input from diverse stakeholders. The Emergency Management Planning Team (EMPT) and the TID External Affairs Communications staff collaborated to develop multiple outreach methods intended to maximize public participation and transparency throughout the planning process.

To ensure accessibility, the draft LHMP was made available electronically through TID's website for public review and comment. Public notices announcing the draft plan's availability were distributed through the District's communication channels, including online postings, press releases, and direct outreach to partner agencies and community organizations. Stakeholders and residents were encouraged to review the plan and provide feedback regarding hazard identification, risk priorities, and proposed mitigation actions. Printed copies of the draft LHMP were also made available for public review in TID's Customer Service Lobbies in Turlock and Ceres, CA.

Comments received during the public review period were evaluated by the EMPT and incorporated into the final draft where appropriate, ensuring the plan accurately reflected community perspectives, operational realities, and District priorities. Following the public review period, the final version of the LHMP was formally presented to the TID Board of Directors for adoption by resolution, meeting FEMA and Cal OES requirements under 44 CFR §201.6(c)(5).

This process not only ensured compliance with state and federal standards but also reinforced TID's commitment to transparency, public engagement, and the integration of community input into long-term risk reduction and resilience planning.

Moving forward, TID will continue to promote public participation throughout the plan maintenance cycle. The District will provide opportunities for stakeholders, partner agencies, and community members to review progress, recommend updates, and propose new mitigation actions during future plan evaluations and revisions. Public involvement will be maintained through the District's website, social media platforms, and participation in regional coordination forums, ensuring the LHMP remains a living document that reflects evolving conditions, emerging hazards, and community priorities.

TID.org

TID uses its official website (tid.org) as a central hub for information about the LHMP. A permanent, dedicated page at **tid.org/LHMP** provides an overview of the plan's purpose, updates on its progress, and opportunities for public engagement and comment. The page has been active since mid-2018, originally hosting the prior LHMP, and now serves as the platform for this plan update. Maintaining this page over an extended period has built community familiarity, reinforced transparency, and established a trusted source where stakeholders know they can find accurate information and provide feedback. In addition, TID maintains a dedicated email address (LHMP@Tid.org) for direct communication.

Figure 4-TID.org Homepage

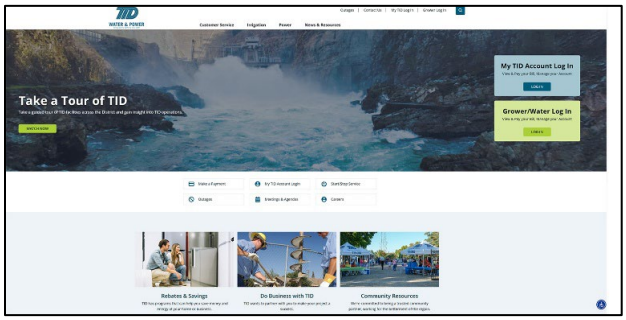
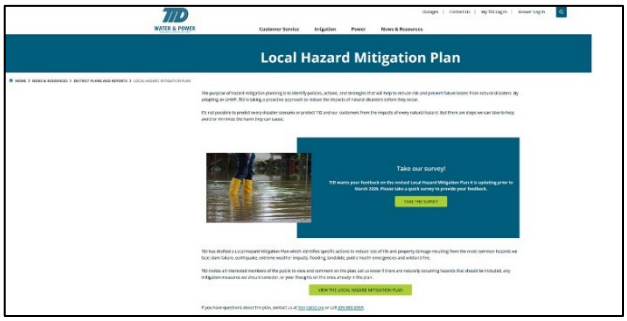


Figure 5. TID.org/LHMP page



Community Survey

As part of the plan update process, TID hosted an online community survey on its LHMP webpage to gather input from customers, residents, and stakeholders within the District's service area. The survey was designed to collect feedback on natural hazards that may impact TID's operations and facilities, identify perceived vulnerabilities, and solicit suggestions for feasible mitigation actions and strategies. Responses submitted through the survey were reviewed by the EMPT and incorporated into the planning process, ensuring that the updated LHMP reflects community priorities, operational considerations, and public concerns.

Survey Questions

- What city or unincorporated area of the TID service territory do you live or work in?
- Are you responding as a resident, community organization, nonprofit, or a local business?
- Do you consider the area that you live or work in to be a vulnerable community or underserved population?
- From the below list of identified Hazards, are there any hazards that we should add and/or that should be removed?
    - Dam Failure
    - Earthquake
    - Extreme Weather (including Damaging Winds, Tornadoes, Extreme Temperatures, Localized Extreme Rainfall, and Poor Air Quality)
    - Flooding
    - Landslide

    - Public Health Emergency
- Wildland Fire
- Which of the above hazards do you feel is the biggest risk?
- Please tell us how important each one of the following risk-reducing activities are for your community (rank the following with either *very important, somewhat important, or not important*):
    - **Prevention:** Potential projects to reduce or eliminate hazardous conditions
    - **Property Protection:** Actions that involve the modification of existing buildings or structures to protect them from a hazard or remove them from the hazard area
    - **Public Education and Awareness:** Actions to inform and educate residents, elected officials, and property owners, about the hazards and potential ways to reduce the hazard
    - **Disaster Response:** Are there any other additional services that TID could provide during an emergency or disaster?
- Any additional information or comments you would like to provide?

Dedicated Contact Information for Public Feedback

To promote public engagement in the LHMP process, TID has established a dedicated phone number and email address for feedback. These provide a direct line of communication with TID's Emergency Planning Coordinator, who serves as the Plan Administrator. The Administrator's TID phone number and email address are included in all public-facing materials to ensure the community can easily share comments, questions, and suggestions.

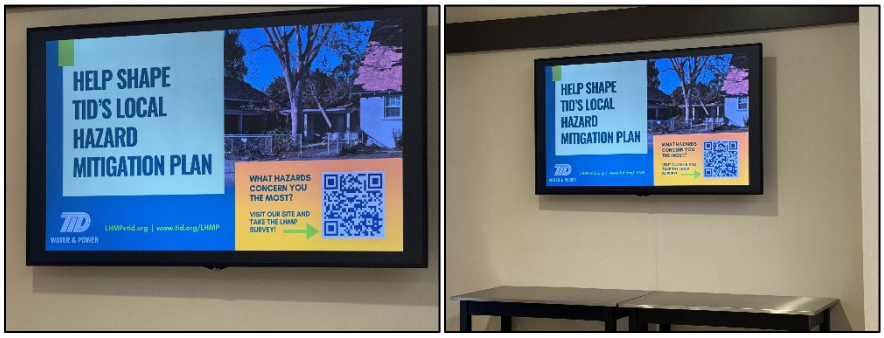
- Email address: lhmp@tid.org
- Phone number: 209-883-8359

Public Review Opportunities

TID provided multiple opportunities for the public to review and comment on the LHMP. TID placed hard copies of both the adopted 2020 LHMP and the draft update at its customer service offices in Turlock and Ceres. Electronic message boards in each lobby display rotating notices alerting customers of the plan's availability.

TID also maintains a dedicated LHMP webpage at TID.org/LHMP where the plan is posted, explains the update process, and outlines ways to submit feedback. In addition, the District promoted the plan's availability through newsletters and social media. These actions supported FEMA's "whole community" approach by ensuring broad access and meaningful opportunities for public involvement.

Figure 6- Lobby Electronic Signage



Social Media

INSERT SM POSTINGS

TID LHMP Board Meeting Workshop

INSERT DESCRIPTION OF BOARD WORKSHOP

Local Radio Interview

As part of its public outreach, TID featured the Local Hazard Mitigation Plan (LHMP) in a live interview on *The Michael Douglas Show* on KFIV radio on June 23, 2025. Jason Hicks, TID's Manager of Security and Emergency Preparedness, explained how the LHMP identifies natural disasters that could impact TID's ability to provide reliable water and power, and outlined the mitigation strategies being considered. Hicks emphasized that the planning process depends on public input, encouraging listeners to visit **tid.org/LHMP** to complete a survey, provide feedback, and stay connected throughout the plan's development. During the interview, Michael Douglas emphasized the importance of community involvement. Hicks highlighted that public engagement strengthens the plan and supports TID's ability to remain resilient and responsive to customer needs.

See Appendix B for a transcript of the interview.

The Grower Newsletter

As part of its public outreach strategy, TID included information about the LHMP update in the July 2025 issue of The Grower, the District's monthly newsletter distributed to 2,070 irrigation customers by email. The newsletter, which provides updates on water policies, scheduling, and operational news for agricultural users, raised awareness about the LHMP and encouraged stakeholder participation. The July issue invited readers to complete the LHMP survey and provide feedback on identified hazards. In addition to the digital version, TID made printed copies available in the lobbies of the Main Office and Ceres Customer Service Center to ensure access for customers who prefer or require in-person materials.

See Appendix B for a copy of the email to growers and a sample of the printed version.

Public Events

National Night Out

On August 1, 2025, TID representatives Jason Hicks and Herb Smart participated in National Night Out at Smyrna Park in Ceres, engaging directly with residents on safety and emergency preparedness while promoting TID's Local Hazard Mitigation Plan (LHMP). The event provided an opportunity to distribute information, answer questions, and encourage public input on hazard mitigation planning.

Figure 7- National Night Out at Smyrna Park

Turlock Certified Farmer's Market

On August 16, 2025, TID staff participated in the Turlock Certified Farmer's Market, where they spoke with residents in an informal community setting. The market provided a chance to connect with people as they shopped locally, explain how the Local Hazard Mitigation Plan (LHMP) guides TID's preparedness efforts, and gather input on community priorities. By using a popular weekend event in the heart of downtown, TID reached a wide range of residents who might not typically attend government meetings, broadening participation in the planning process.

Figure 8- Turlock Certified Farmer's Market

Stanislaus County Public Safety Fair

On September 20, 2025, TID staff attended the Stanislaus County Public Safety Fair, held at Enslen Park in Modesto from 10:00 am to 2:00 pm. At the event, attended by multiple county emergency management agencies, public safety departments, utilities and others, TID had displays and a booth where they advertised the Local Hazard Mitigation Plan and invited public input and feedback on its draft contents. The event was well attended and offered TID the opportunity to engage stakeholders and members of the community regarding the risks and hazards facing their communities.

Figure 9- Stanislaus County Public Safety Fair

Tracking Public Comments

To effectively manage feedback from all external stakeholders, the EMPT established a process to log each comment received, noting the commenter and the date of submission. The log also documents the outcome of each comment, indicating whether included as-is, reworded, combined with other comments, or dismissed, along with a reason for any dismissal. A version of this log, with personal information removed, is available upon request.

INSERT SAMPLE COMMENTS FROM LOG

Review and Incorporation of Existing Plans

The planning team reviewed existing plans, policies, and technical documents to integrate hazard data, historical impacts, and mitigation strategies into the LHMP. These resources, from TID and partner agencies, provided essential information on hazard risks, historical impacts, mitigation strategies, and operational context. The team integrated key elements such as hazard maps, impact data, graphs, and charts to ensure consistency and alignment with ongoing planning efforts.

Internal TID Plans

The planning team referenced a variety of internal TID plans to compile detailed information about District operations, infrastructure, and facilities. These documents provided valuable insights, including system maps, operational charts and tables, historical disaster data, and other technical content essential for hazard identification and risk assessment.

Table 7. Internal TID Plans

TID Local Hazard Mitigation Plan 2020	TID Strategic Plan, 2020-2025
TID 2023 Integrated Resource Plan	TID Sustainability Plan
TID 2020 Agricultural Water Management Plan	TID Emergency Operations Plan 2021
Don Pedro Dam, La Grange Dam, and Turlock Lake Powerhouse Emergency Action Plans	TID Wildfire Mitigation Plan 2023

TID Continuity of District/Continuity of Operations Plan (COD/COOP)
TID Crisis Communication Plan
TID Wildland Fire Emergency Response Plan
TID Increased Flows Emergency Response Plan
TID Emergency Management Strategic Plan
TID Major Power Outage Emergency Response Plan
TID Canal System Failure Emergency Response Plan
TID Significant Storm Floatable Debris Emergency Response Plan
TID Emergency Management Strategic Plan

Regional Hazard Mitigation Plans

To ensure consistency and alignment with broader regional mitigation efforts, the planning team reviewed approved Multi-Jurisdictional Hazard Mitigation Plans (MJHMPs) from the three counties in which TID operates. The team evaluated these plans to identify shared hazards, regional impacts, and demographic trends relevant to TID's service area. The following MJHMPs were reviewed:

- Stanislaus County 2022 Multi-Jurisdictional Hazard Mitigation Plan (MJHMP)
- Merced County MJHMP 2021-2026
- Tuolumne County MJHMP 2024

External Agency Plans and Information Resources

In addition to county-level mitigation plans, the LHMP planning team reviewed a variety of external resources, technical studies, and regional planning documents. These materials provided supporting information on topics such as air quality, disadvantaged communities, population trends, aging services, and infrastructure vulnerabilities. Together, they helped define TID's risk profile and ensure that local hazards were evaluated within a regional context.

The primary plans and data sources reviewed are shown in the table below. Other references used during plan development are cited within the text of this document.

Table 8. External Plans and Information Resources

US Census Bureau 2020 Census	Stanislaus Local Agency Formation Commission (LAFCO), Municipal Service Review and Sphere of Influence Update for the Turlock Irrigation District, 2022
US Census Bureau American Community Survey 2024	2024 Stanislaus County Point in Time Count
FEMA Public Assistance Program and Policy Guide (PAPPG) version 5	2024 Merced County Point in Time Count
FEMA Public Assistance Program and Policy Guide (PAPPG) version 5	US Geological Survey Earthquake Hazards Program, Earthquake Catalog
FEMA/CalOES Local Mitigation Plan Review Tool (2023)	FEMA National Risk Index for Natural Hazards
NOAA Centers for Environmental Information, Storm Events Database	

Status of Mitigation Priorities

Since the adoption of the 2020 TID LHMP, the District's mitigation priorities have remained consistent. TID continues to emphasize the protection of critical infrastructure, the delivery of reliable water and energy services, and the reduction of vulnerability to natural hazards. No significant changes have been made to these goals or associated mitigation efforts, and the current LHMP reaffirms TID's ongoing commitment to these core strategies.