2024

Orange County Water and Wastewater Multi-Jurisdictional Hazard Mitigation Plan

Annex F: El Toro Water District

WATER EMERGENCY RESPONSE ORGANIZATION OF ORANGE COUNTY
WEROC

Contents

Exhibits

EL TORO WATER DISTRICT ANNEX

El Toro Water District (ETWD) is a participant (Member Agency [MA]) in the Orange County Water and Wastewater Multi-Jurisdictional Hazard Mitigation Plan (MJHMP). As a participant MA, ETWD representatives were part of the MJHMP planning process and served on the planning team responsible for the plan update; refer to **Section 2** of the MJHMP. The base plan, including the MJHMP procedural requirements and planning process apply to ETWD.

This annex details the hazard mitigation planning elements specific to ETWD and describes how ETWD's risks vary from the planning area. This annex is not intended to be a standalone document but supplements the information contained in the base plan. All sections of the MJHMP, including the planning process and other procedural requirements, apply to and were met by ETWD. The base plan treats the entire county as the planning area and identifies which MAs are subject to a profiled hazard. The purpose of this annex is to provide additional information specific to ETWD with a focus on the risk assessment and mitigation strategies.

F.1 HAZARD MITIGATION PLAN POINT OF CONTACT AND DEVELOPMENT TEAM

The representative listed in **Exhibit F-1** lead the ETWD planning team, attended meetings, and coordinated the hazard mitigation planning efforts with ETWD staff and the consultant team supporting the effort.

Exhibit F-1. Planning Team Attendance

Primary Point of Contact
Name: Sherri Seitz
Title: Public Affairs Manager/Emergency Management Coordinator
Telephone: (949) 353-7969
Email: sseitz@etwd.com

ETWD followed the planning process detailed in **Section 2** and formed an internal team to support and provide information for the plan update. The following staff served as ETWD's internal hazard mitigation planning development team.

Exhibit F-2. Internal Hazard Mitigation Planning Development Team

Name	Title
Sherri Seitz	Public Affairs Manager/Emergency Management Coordinator
Dennis Cafferty	General Manager
Scott Hopkins	Operations Superintendent
Hannah Ford	Director of Engineering
Mike Miazga	IT Manager
Vishav Sharma	Chief Financial Officer
Garth Botha	Pump Stations Foreman
Vinnie Coppola	Safety Officer/Compliance Program Coordinator
Jeff Webster	Transmission & Distribution Foreman

Outreach to the public within ETWD's service area was performed to ensure residents could access information on this planning effort. To reach the largest number of people possible, ETWD published a webpage with information on the MJHMP process. Staff utilized Facebook and the District's newsletter to announce the planning efforts and direct residents to the website. ETWD also held a public engagement meeting at the November 2024 ETWD Community Advisory Group Meeting to discuss the hazard mitigation process.

F.2 JURISDICTION PROFILE

Service Population: 51,800

ETWD was formed in September 1960 under provisions of the California Water District Law (Division 13, Section 34000 et seq. of the Water Code of the State of California). ETWD is governed by a publicly elected Board of Directors consisting of five Board Members. The Board of Directors establishes District policies and Rules and Regulations. ETWD's service area, which is nearly completely developed, includes 5,350 acres in South Orange County. ETWD is bordered by the Irvine Ranch Water District (IRWD) to the north and west, the Laguna Beach County Water District (LBCWD) to the southwest, the Moulton Niguel Water District (MNWD) to the east and south, and the Santa Margarita Water District (SMWD) to the northeast. ETWD also shares a small border with Trabuco Canyon Water District (TCWD) in the north-east. ETWD provides water, sewer, and recycled water service to a population of 51,800 in portions of Laguna Hills, Lake Forest, Mission Viejo, Aliso Viejo, and all of the city of Laguna Woods.

ETWD maintains and operates the largest covered drinking water reservoir in Orange County with a capacity of 275 million gallons. SMWD and MNWD share capacity in the regional reservoir. ETWD distributes potable water for domestic consumption, irrigation and fire protection. ETWD staff operates and maintains six water storage reservoirs, nine pumping stations, and over 170 miles of distribution pipelines. ETWD also collects, treats and recycles wastewater. ETWD staff maintains a Water Recycling Plant, 11 sewer pumping stations, 158 miles of sewer collection pipelines, and the recycled water system including the Tertiary Treatment Plant, Recycled Water Pump Station and 24 miles of recycled water pipelines.

ETWD's domestic water demands are met from the supply imported from Metropolitan through MWDOC and supply from the Baker Water Treatment Plant. ETWD receives imported (potable) water from Metropolitan via the Allen-McColloch Pipeline (AMP) and the East Orange County Feeder #2 (EOCF#2). The Baker water supply is delivered via the South County Pipeline through an interconnection with MNWD.

F.3 HAZARDS

This section is intended to profile the hazards and assess the vulnerabilities that ETWD faces, distinct from that of the county-wide planning area. The hazard profiles in the MJHMP discuss overall impacts to the planning area and describes the hazard problem description, hazard extent, magnitude/severity, previous occurrences of hazard events and the likelihood of future occurrences. For more information on risk assessment methodologies, see **Section 3**.

ETWD's service area is subject to most of the other hazards identified for the planning area. Many of these hazards are dispersed and may affect the entire region, including power outages, drought, seismic shaking, and windstorms. Based on the risk assessment, the ETWD development team discussed which hazards should or should not be profiled in the base plan. This discussion

resulted in the identification of the following hazards that affect ETWD and summarized their probability of future occurrence, level of impact and significance as outlined in **Exhibit F-3.** Detailed hazard profiles for the planning area are provided in **Section 3** of the base plan.

Exhibit F-3. El Toro Hazard Identification

Hazard Type	Occurrence Probability*	Affected Area*	Primary Impact*	Secondary Impact*	Hazard Planning Consideration*	Significance to ETWD
Human-Caused Hazards: Power Outage	Highly Likely	Medium	Catastrophic	High	High	High
Wildfire	Highly Likely	Medium	Critical	High	High	High
Human-Caused Hazards: Terrorism (Cyber Threat)	Highly Likely	Medium	Critical	Limited	High	High
Seismic Hazards: Seismic Shaking	Likely	Medium	Catastrophic	High	High	High
Seismic Hazards: Seismic Liquefaction	Likely	Medium	Catastrophic	High	High	High
Severe Weather: Windstorm	Highly Likely	Large	Limited	Negligible	Medium	Low
Severe Weather: Extreme Heat	Likely	Medium	Critical	Moderate	Medium	Medium
Severe Weather: Drought	Highly Likely	Large	Negligible	Negligible	Medium	High
Dam/Reservoir Failure	Somewhat Likely	Medium	Catastrophic	High	Medium	High
Flood	Likely	Medium	Limited	Negligible	Medium	High
Coastal Hazards: Coastal Storms	Likely	Small	Limited	Limited	Medium	N/A
Coastal Hazards: Coastal Erosion	Likely	Isolated	Limited	Limited	Medium	N/A
Seismic Hazards: Fault Rupture	Somewhat Likely	Isolated	Catastrophic	Limited	Medium	N/A
Geological Hazards: Landslide and Mudflow	Somewhat Likely	Small	Limited	Moderate	Medium	Medium
Coastal Hazards: Sea Level Rise	Likely	Isolated	Limited	Negligible	Medium	N/A
Human-Caused Hazards: Contamination/ Saltwater Intrusion	Unlikely	Small	Critical	High	Low	Low
Human-Caused Hazards: Terrorism (MCI)	Unlikely	Isolated	Critical	Moderate	Low	Medium
Human-Caused Hazards: Hazardous Materials	Unlikely	Isolated	Limited	Moderate	Low	Medium
Urban Fire	Unlikely	Isolated	Limited	Negligible	Low	Low
Geological Hazards: Land Subsidence	Unlikely	Isolated	Negligible	Limited	Low	Low
Geological Hazard: Expansive Soils	Unlikely	Isolated	Negligible	Limited	Low	Low
Coastal Hazards: Tsunami	Unlikely	Isolated	Negligible	Negligible	Low	N/A

**The values within these columns are representative of the entire planning area of Orange County and are not narrowed down to ETWD's service area.*

Exhibit F-3. El Toro Hazard Identification (cont.)

Geographic Affected Area	Significance
▪ Isolated: Less than 10% of planning area ▪ Small: 10-30% of planning area ▪ Medium: 30-60% of planning area ▪ Large: 60-100% of planning area	▪ Low: Minimal potential impact ▪ Medium: Moderate potential impact ▪ High: Widespread potential impact
Probability of Future Occurrences	**Magnitude/Severity**
▪ Highly Likely: Near 100% chance of occurrence in next year or happens every year. ▪ Likely: Between 10 and 100% chance of occurrence in next year or has a recurrence interval of 10 years or less. ▪ Occasional: Between 1 and 10% chance of occurrence in the next year or has a recurrence interval of 11 to 100 years. ▪ Unlikely: Less than 1% chance of occurrence in next 100 years or has a recurrence interval of greater than every 100 years	▪ Catastrophic: More than 50% of property severely damaged; shutdown of facilities for more than 30 days; and/or multiple deaths. ▪ Critical: 25-50% of property severely damaged; shutdown of facilities for at least two weeks; and/or injuries and/or illnesses result in permanent disability. ▪ Limited: 10-25% of property severely damaged; shutdown of facilities for more than a week; and/or injuries/illnesses treatable; does not result in permanent disability. ▪ Negligible: Less than 10% of property severely damaged, shutdown of facilities and services for less than 24 hours; and/or injuries/illnesses treatable with first aid

The FEMA Local Mitigation Planning Handbook requires each agency to identify the magnitude/severity of each hazard to their infrastructure. The identification of hazards provided in **Exhibit F-3** is highly dependent on the location of facilities within each agency's jurisdiction and takes into consideration the history of the hazard and associated damage (if any), information provided by agencies specializing in a specific hazard (e.g., FEMA, California Geological Survey), and relies upon each agency's expertise and knowledge. The table was created with input from the Water Emergency Response Organization of Orange County (WEROC), consultant staff, and ETWD.

F.4 HAZARD MAPS

The following maps show the location of hazard zones within the jurisdiction relative to potable water systems, as applicable.

Exhibit F-4. Fire Hazard and ETWD Potable Infrastructure

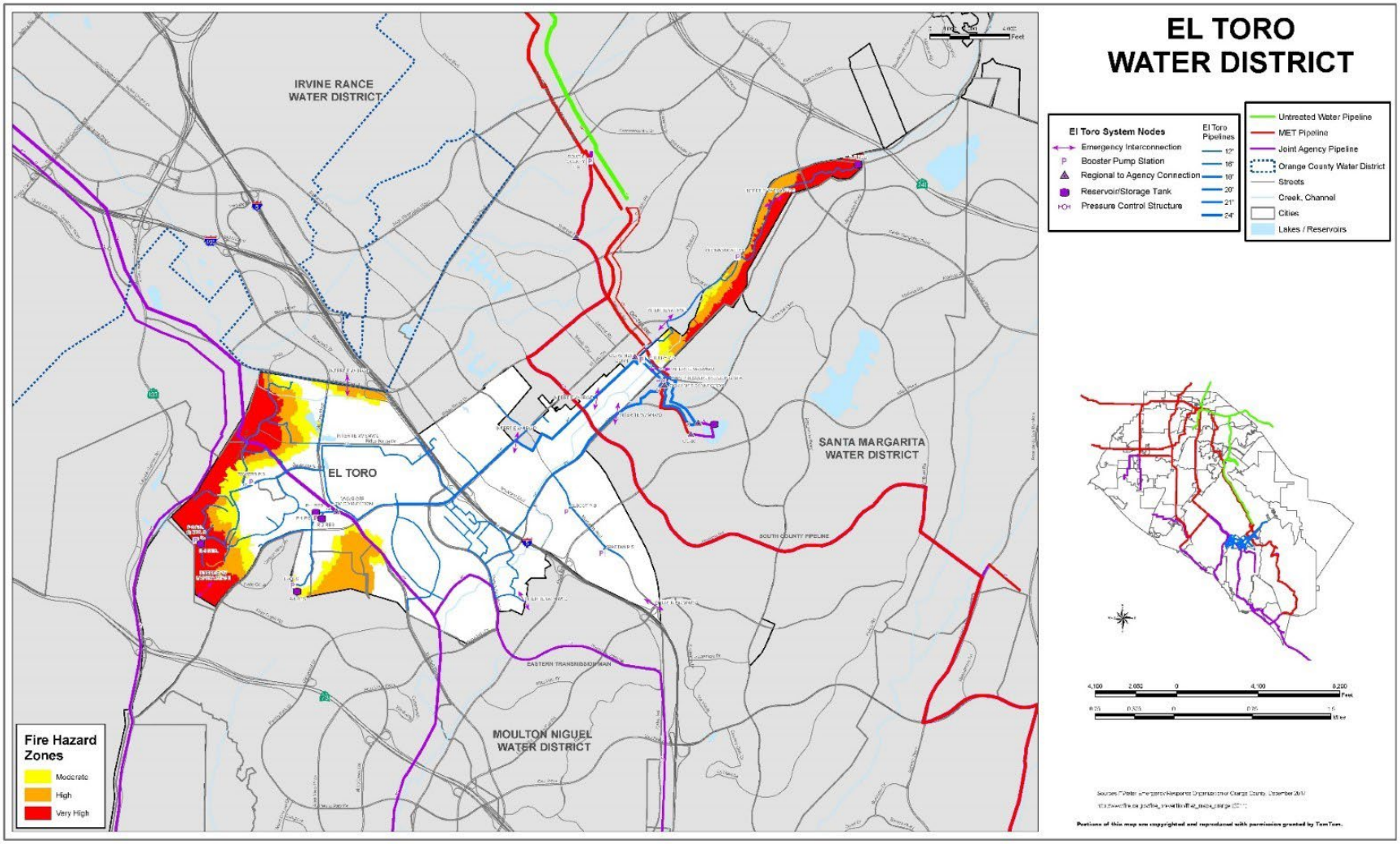


Exhibit F-5. Fire Hazard and ETWD Wastewater Infrastructure

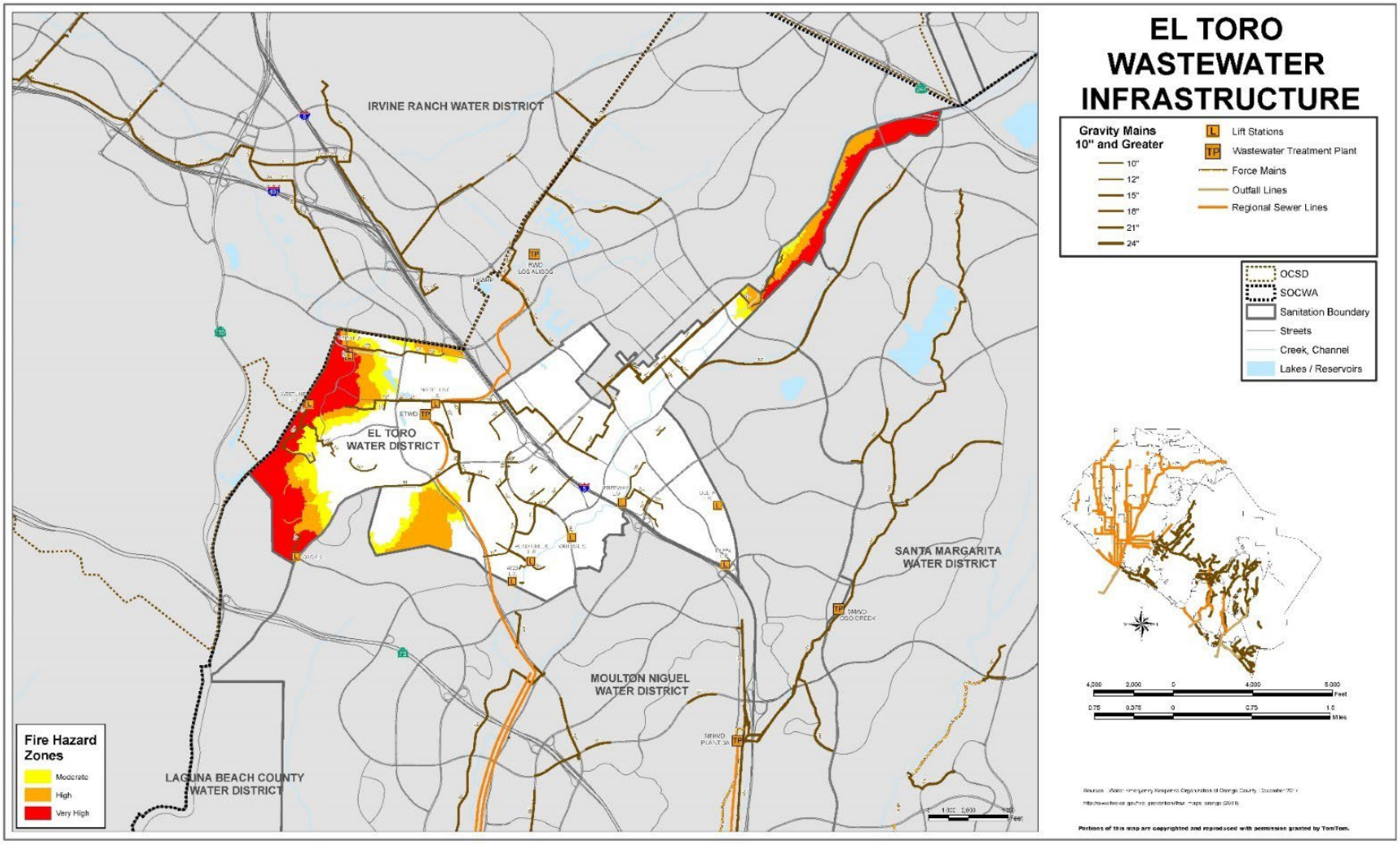


Exhibit F-6. Flood Hazard and ETWD Potable Infrastructure

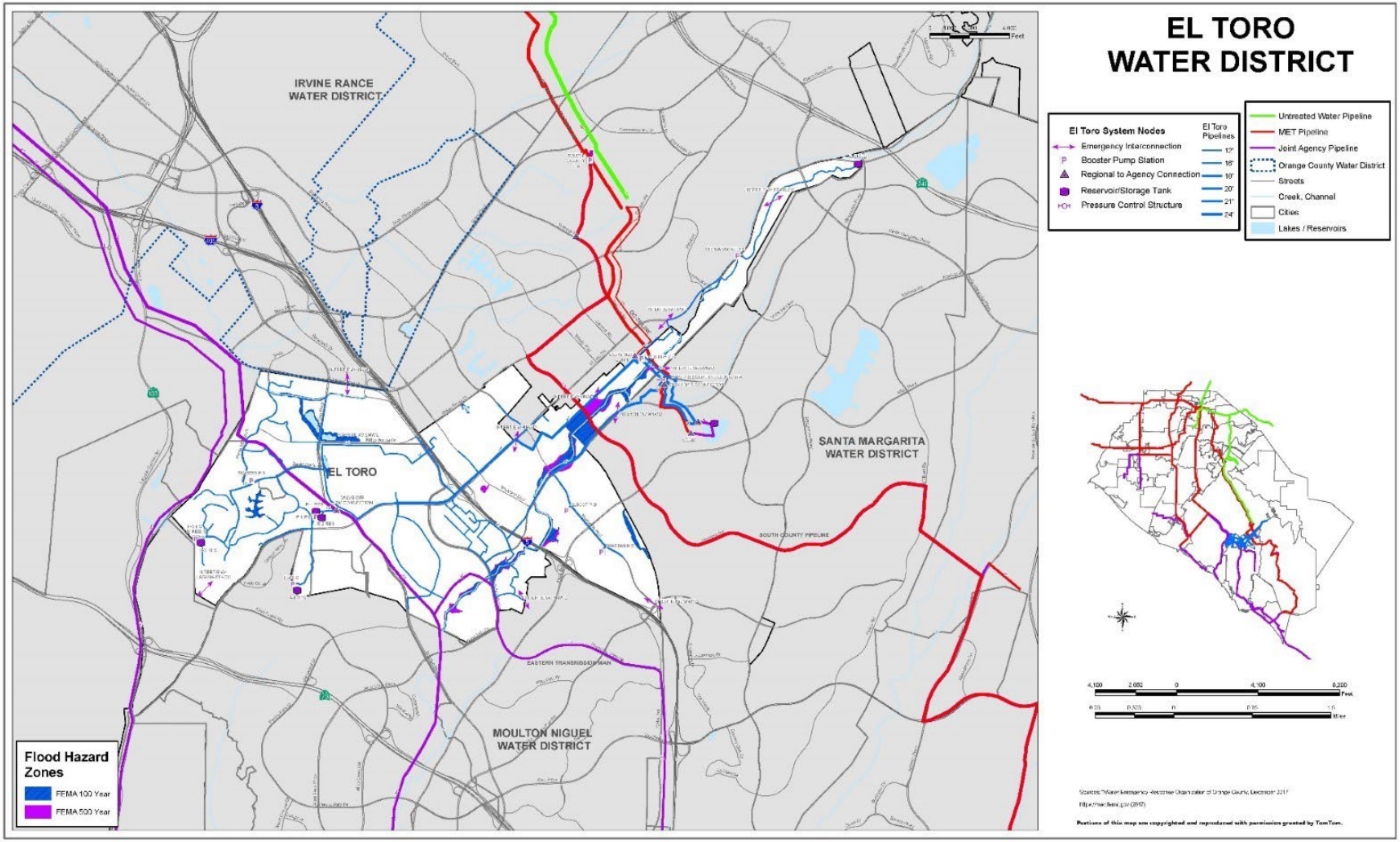


Exhibit F-7. Flood Hazard and ETWD Wastewater Infrastructure

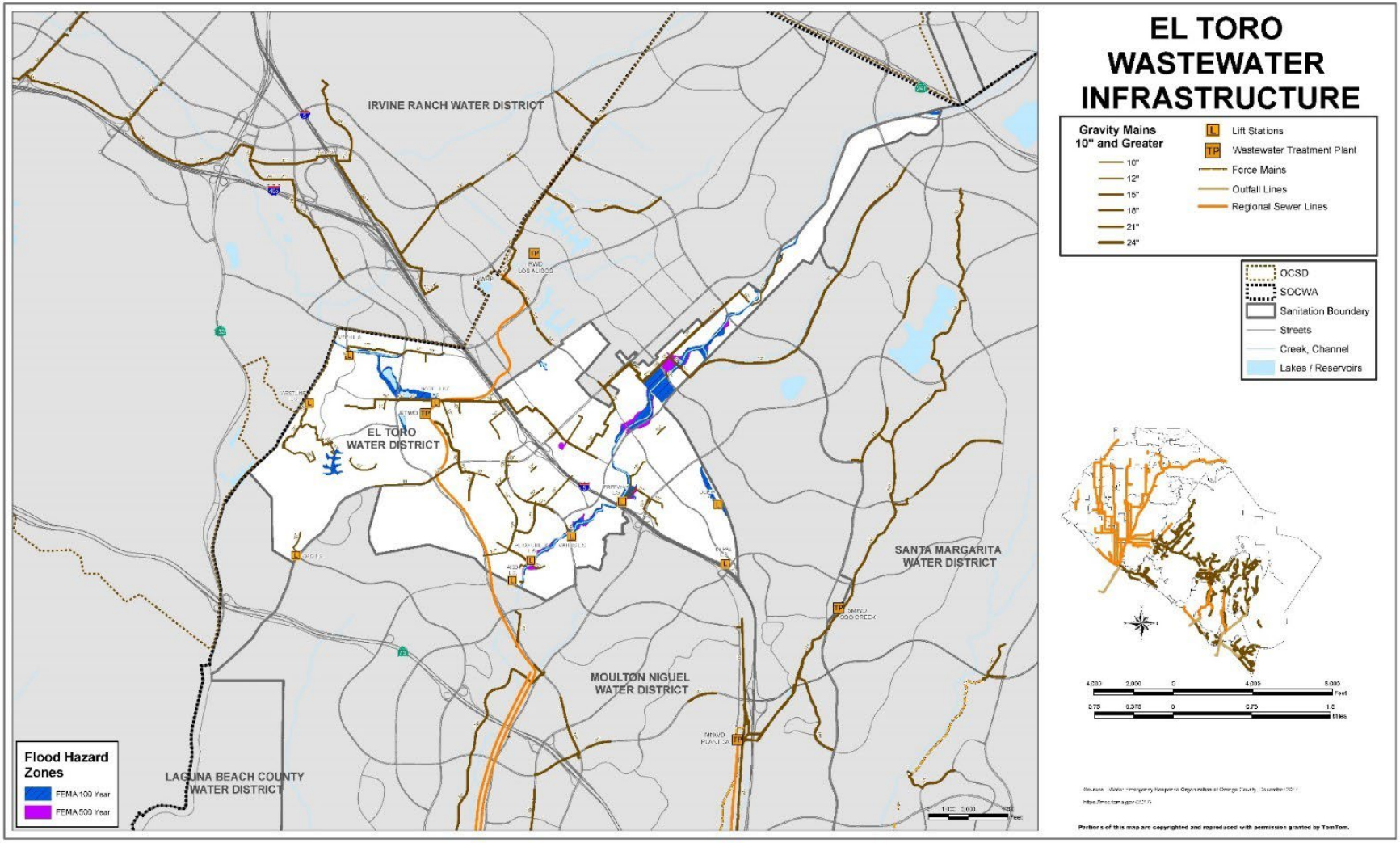


Exhibit F-8. Seismic Shaking Hazard and ETWD Potable Infrastructure

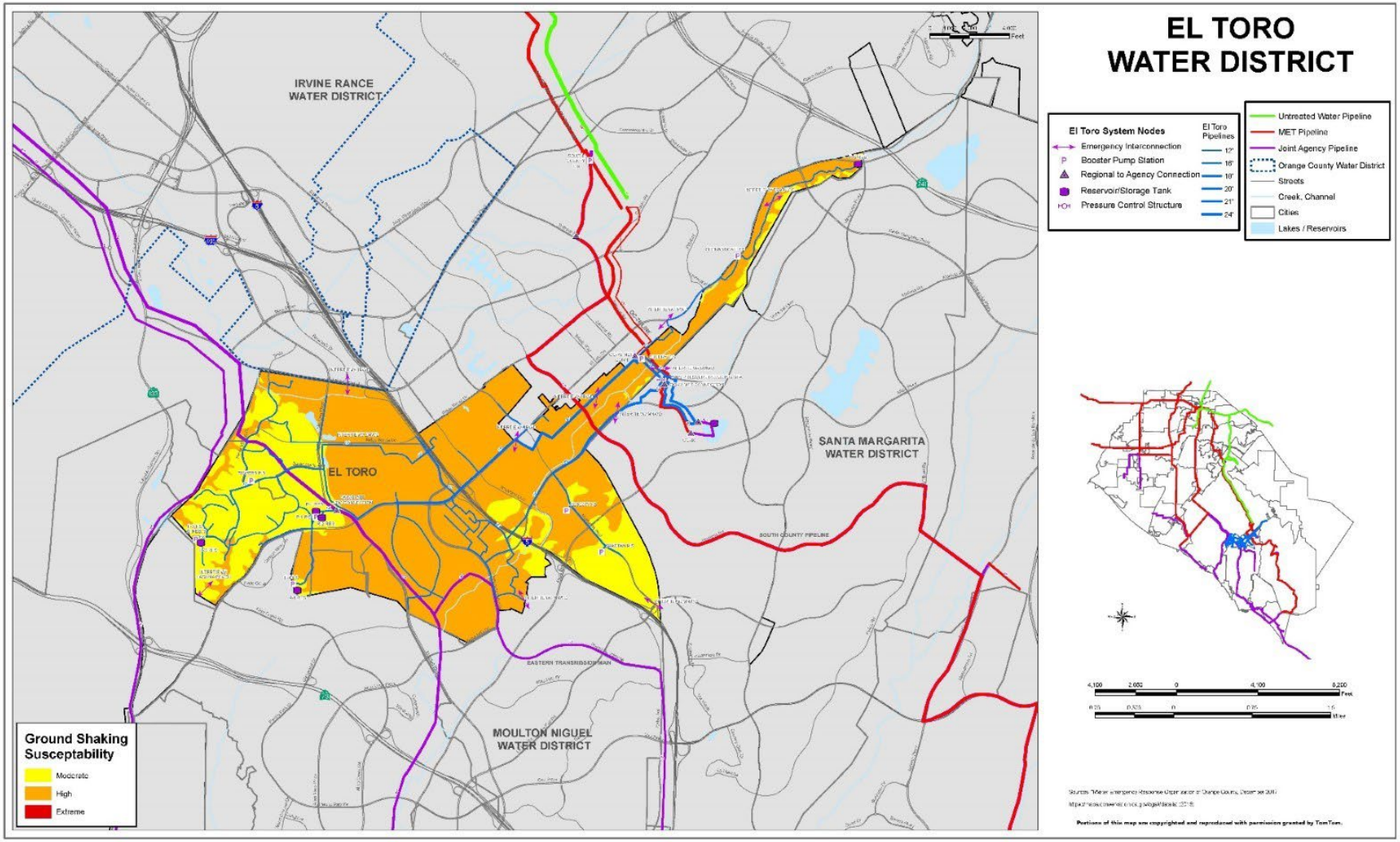


Exhibit F-9. Seismic Shaking and ETWD Wastewater Infrastructure

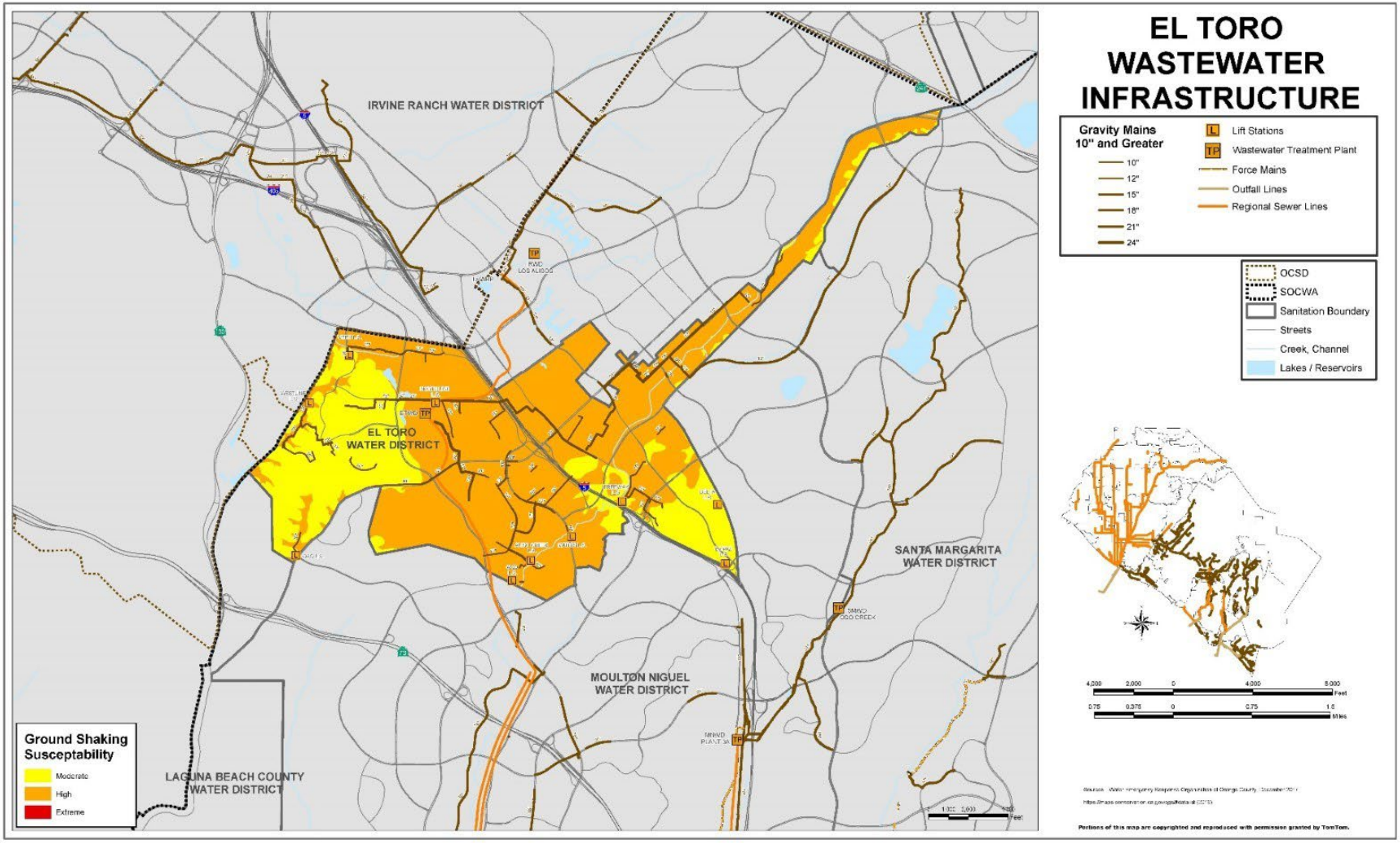


Exhibit F-10. Liquefaction Hazard and ETWD Potable Infrastructure

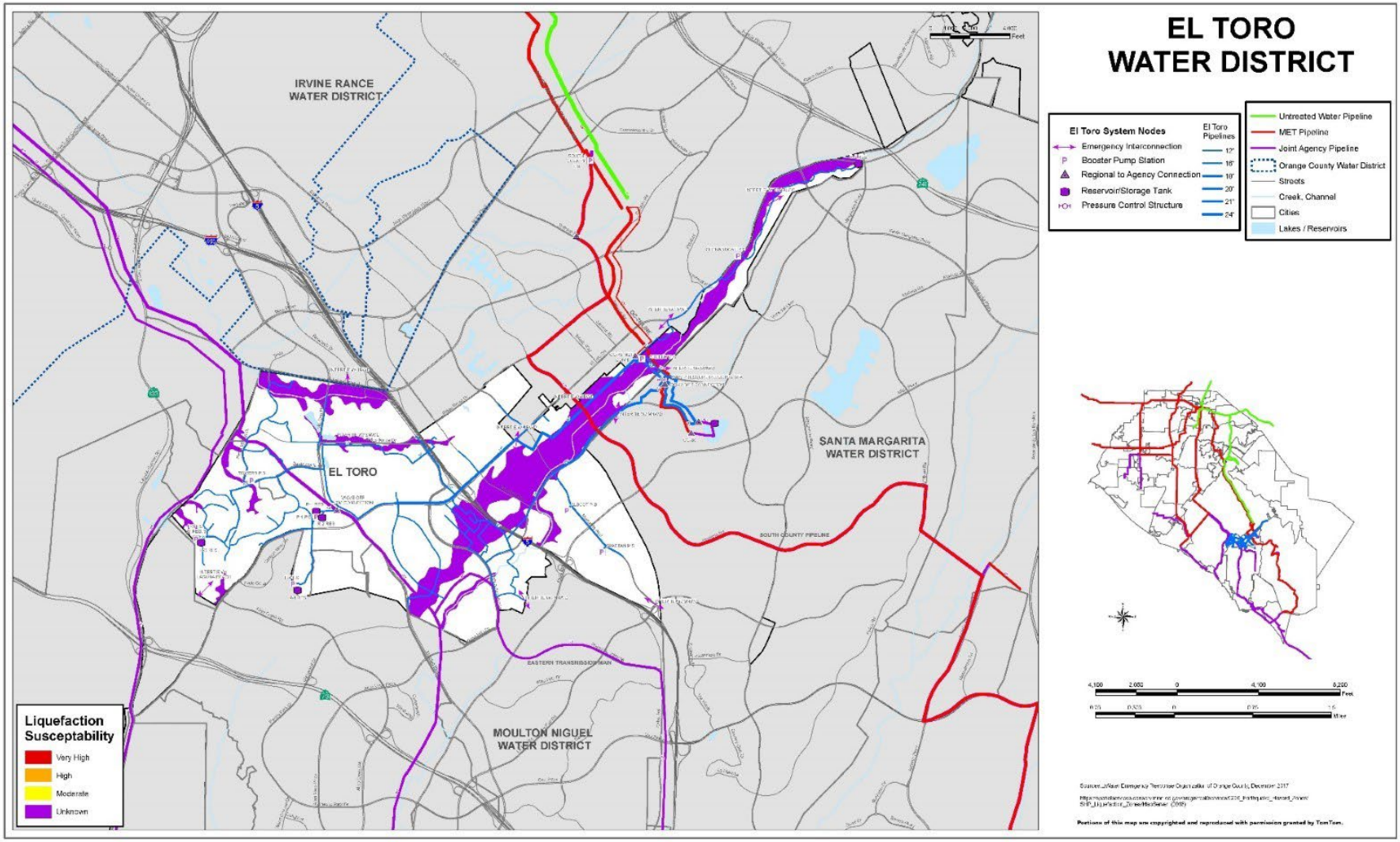


Exhibit F-11. Liquefaction Hazard and ETWD Wastewater Infrastructure

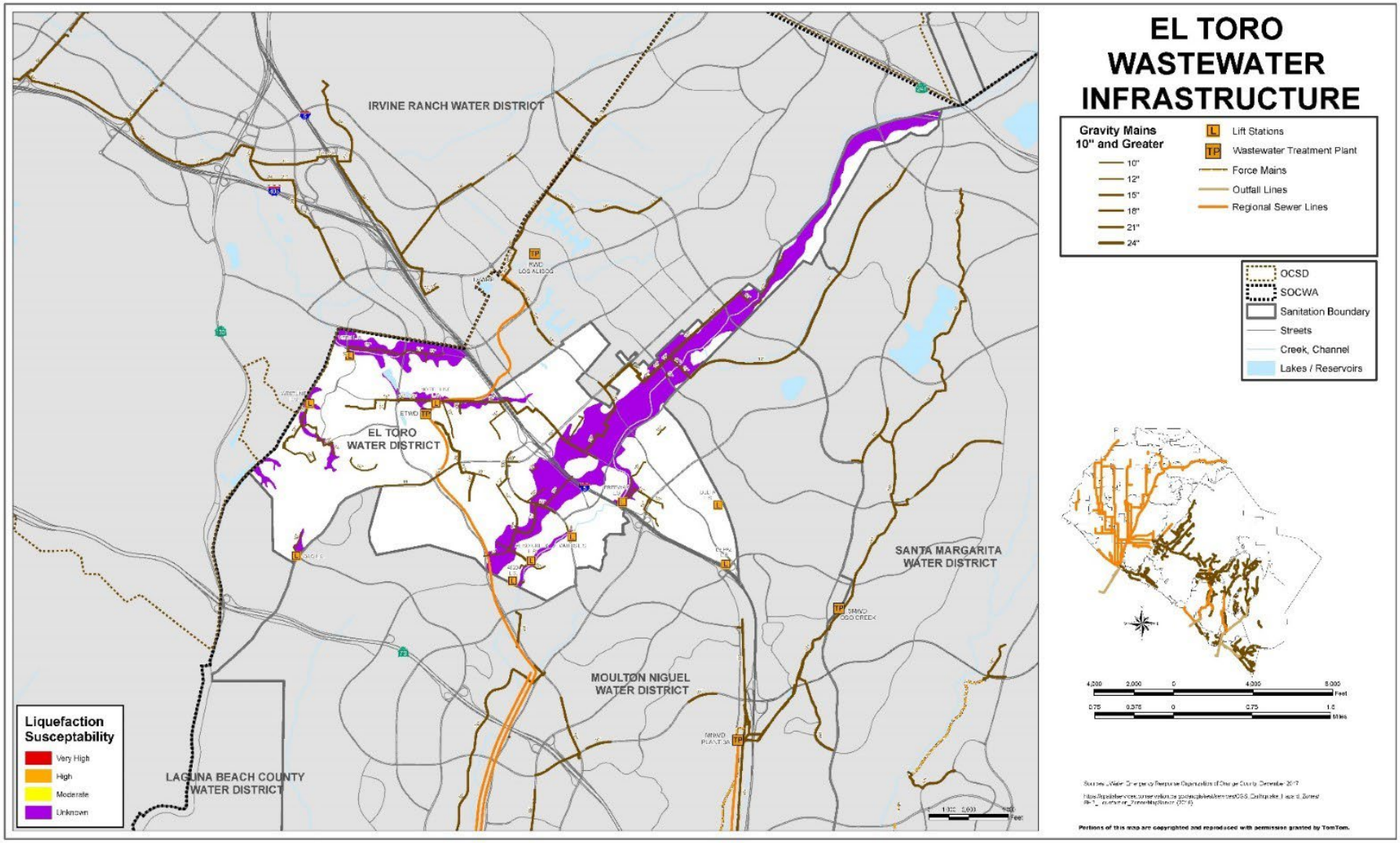


Exhibit F-12. Landslide Hazard and ETWD Potable Infrastructure

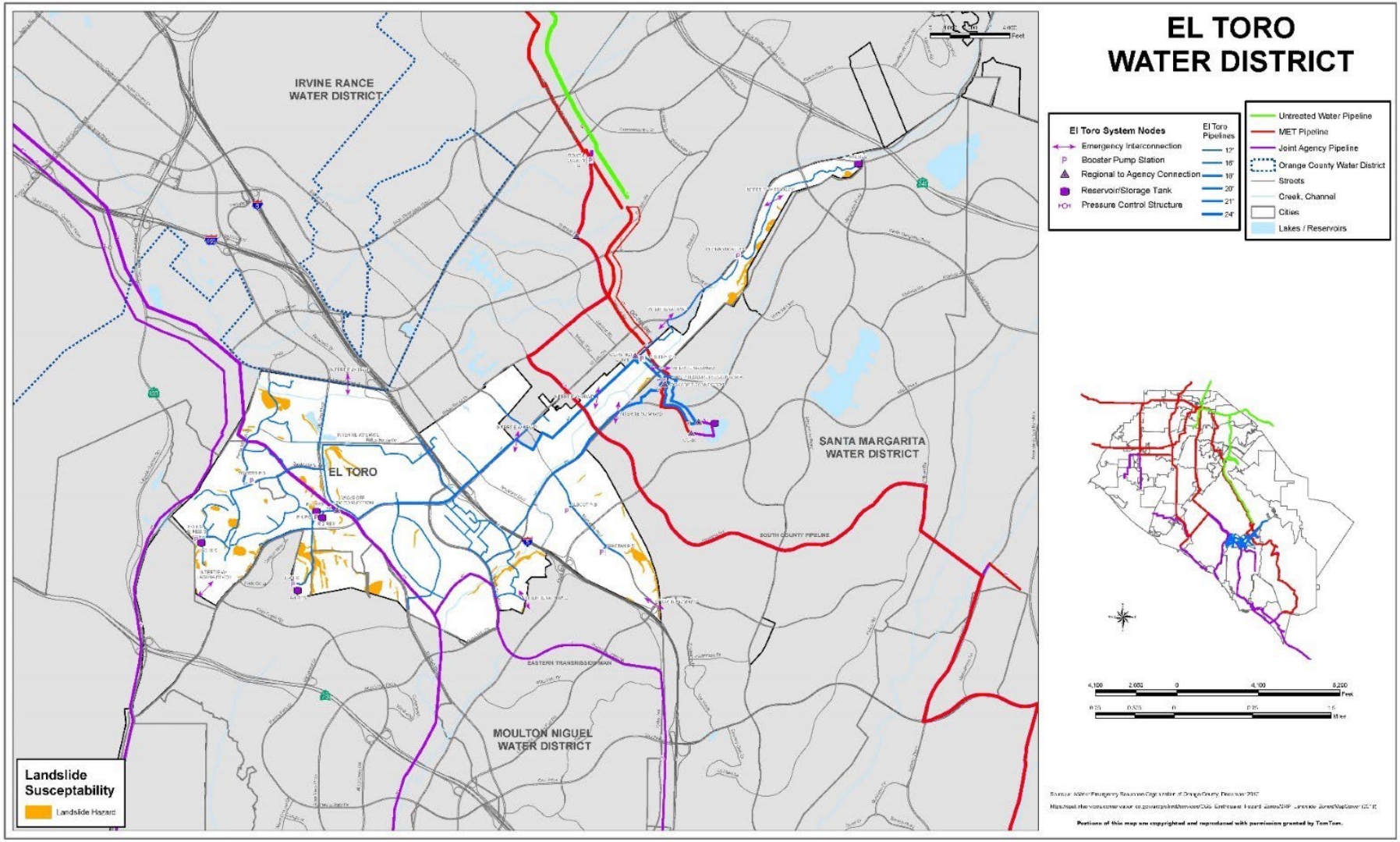
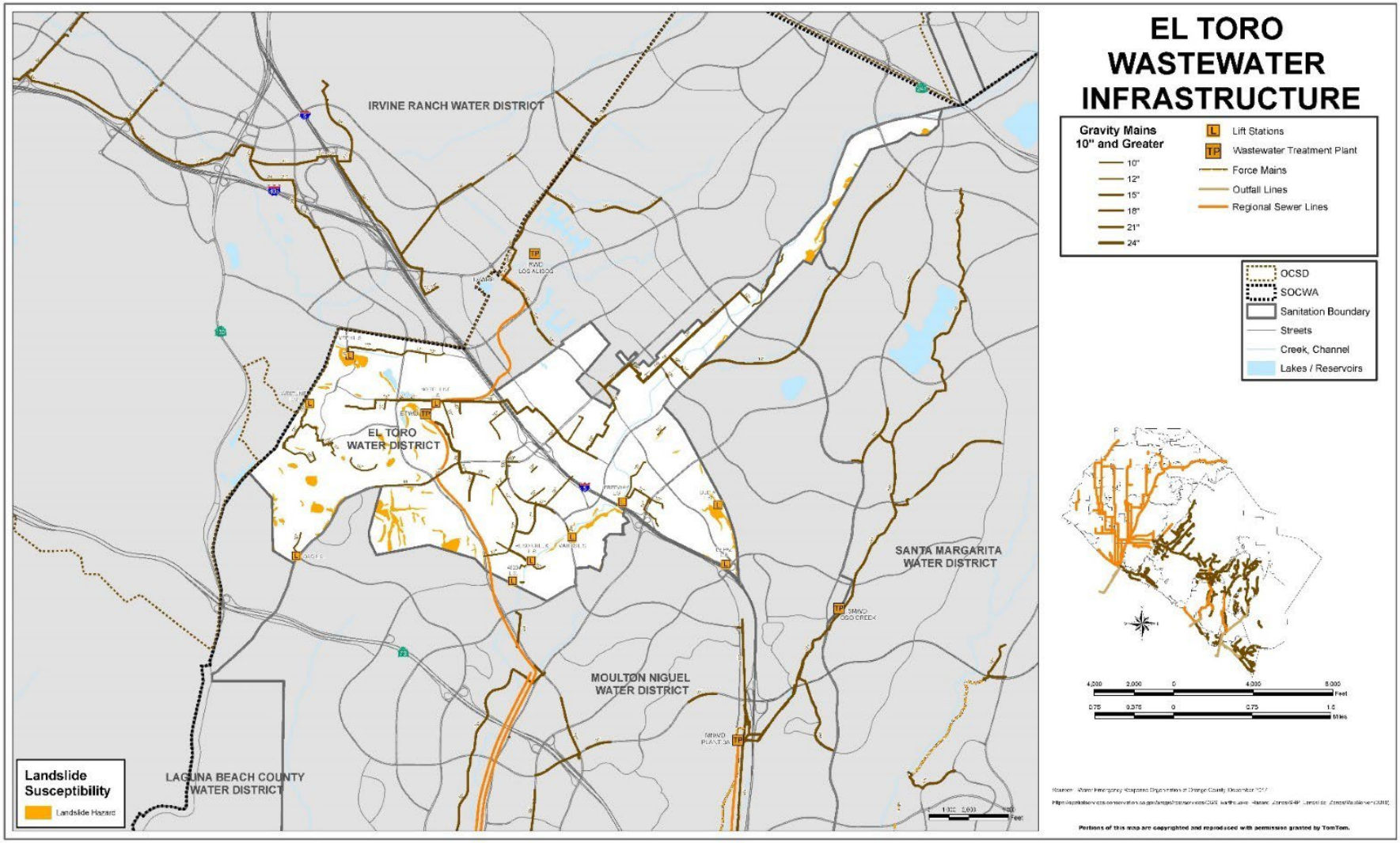


Exhibit F-13. Landslide Hazard and ETWD Wastewater Infrastructure



F.5 VULNERABILITY AND RISK ASSESSMENT

Assessing vulnerabilities shows the unique characteristics of individual hazards and begins the process of narrowing down locations within ETWD's service area that are vulnerable to specific hazard events. The vulnerability assessment considered unique local knowledge of hazards and impacts and a GIS overlaying method for examining such vulnerabilities more in depth. Using these methods vulnerable populations, infrastructure, and potential losses from hazards can be estimated.

Assets Susceptible to Hazard Events

ETWD's infrastructure is outlined in **Exhibit F-14**, which lists the number of infrastructure assets located within the mapped hazard zones identified above.

Exhibit F-14. El Toro Water Infrastructure and Exposure to Hazards

Hazard		Infrastructure Type					
		Interties (#)	Pump Stations (#)	Pressure Control Stations (#)	Reservoirs (#)	Potable Pipelines (miles)	Wastewater Pipeline (miles)
Fire Hazard Zone	Moderate	2	1	0	1	1.7	1.5
	High	1	1	0	0	0.9	0.8
	Very High	2	1	0	2	1.8	1.3
FEMA Flood Zone	100-Year	0	0	0	0	0.7	1.0
	500-Year	0	0	0	0	0.3	0.5
Alquist-Priolo Rupture Zone		0	0	0	0	0	0
Seismic Shaking	Moderate	3	6	1	5	5.3	3.1
	High	11	3	0	1	12.8	15.9
	Extreme	0	0	0	0	0	0
Liquefaction	Moderate	0	0	0	0	0	0
	High	0	0	0	0	0	0
	Very High	0	0	0	0	0	0
	Unknown	5	2	0	0	5.0	8.3
Landslide Zone		1	2	0	0	0.6	0.1
Tsunami Zone		0	1	0	0	0	0

Several infrastructure types are located within areas identified as high and very high fire hazard zones, areas identified as being at risk for moderate and high ground shaking during an earthquake and within landslide zones. Additionally, ETWD does not contain infrastructure or pipelines in the Alquist-Priolo Rupture Zone.

Changes in Land Use and Development

ETWD serves approximately 5,430 acres of developed land that consists of the City of Laguna Woods and portions of the cities of Lake Forest, Aliso Viejo, Laguna Hills, and Mission Viejo. Approximately 55% of the service area is used for residential housing. Current land development projects within the ETWD service area includes 'The Village at Laguna Hills' project that would create 1,500 multi-family residential units and generate approximately 195,340 gallons per day (gpd) of potable water demand. With the redevelopment of the Laguna Hills Mall and creation of

new office spaces, hotels, and restaurants within the Village at Laguna Hills, commercial potable water demand is estimated to increase by 68,120 gpd. Additional developments are planned on Mill Creek and Ridge Route that may result in over 500 new dwelling units (flows have not yet been estimated). Projects within ETWD are planned to ensure demand is met with these increases such as the improvement of the Aliso Creek Lift Station, the South County Pipeline Turnout Project, and rehabilitations within the WRP.

Projects within ETWD are planned to ensure demand is met with these increases such as the construction of the JTM Pump Station, and the replacement of the El Toro Regional Reservoir Cover and Liner.

Vulnerabilities Associated with Climate Change

Hazard	Climate Change Vulnerabilities
Hazards of High Concern	
Dam/Reservoir Failure	There are no expected climate change impacts on dam/reservoir failure. However, fluctuations in the amount of precipitation and intensity of events could cause stress on dam/reservoir facilities not previously anticipated during initial design. These types of issues could increase the vulnerability of these facilities, which is described in the base plan.
Flood	Climate change is expected to cause some higher-level flood waters within the Lake Forest area of ETWD's service area.
Human-Caused Hazard: Power Outage	Climate change will likely increase ETWD's vulnerability to power outages as local electric companies implement protocols such as rolling blackouts or targeted shutoffs that may impact ETWD facilities.
Human-Caused Hazards: Terrorism (Cyber Threat)	Connections between climate change and cyber based terrorism have not been identified.
Seismic Hazards: Seismic Shaking	Climate change is not expected to cause any changes to the frequency or intensity of seismic shaking occurring within the ETWD's service area.
Seismic Hazards: Seismic Liquefaction	Climate change is anticipated to impact liquefaction potential within the ETWD service area as periods of both intense rain and drought could potentially increase or decrease groundwater elevations affecting the risk of liquefaction, depending on the circumstances.
Severe Weather: Drought	Droughts are expected to increase in length and frequency due to climate change and impact ETWD as described in the base plan.
Wildfire	Climate change is expected to cause an increase in wildfires on the western portion of ETWD's service area in the Laguna Woods area and in the northern portion near Seville Park and Wilderness Glen Park.
Hazards of Medium Concern	
Geological Hazards: Landslide and Mudflow	Climate change could indirectly affect the conditions for landslides within ETWD's service area as increased precipitation and storm intensities may cause more moisture-induced landslides.
Human-Caused Hazards: Terrorism (MCI)	Climate change has no direct link to human-caused hazards and is expected to follow the impacts described in the base plan.
Human-Caused Hazards: Hazardous Materials	Climate change has the potential of increasing hazardous materials releases resulting from transportation crashes or damage to storage vessels.
Severe Weather: Extreme Heat	Temperatures are expected to increase due to climate change and impact ETWD's service area as described in the base plan.

Hazard	Climate Change Vulnerabilities
Hazards of Low Concern	
Geological Hazards: Expansive Soils	Climate change is not expected to impact expansive soils within ETWD's service area. The vulnerability follows that described in the Base Plan.
Geological Hazards: Land Subsidence	ETWD's vulnerability to land subsidence is not expected to change due to climate change and is anticipated to be similar to those described in the base plan.
Human-Caused Hazards: Contamination/ Saltwater Intrusion	Changes in contamination and saltwater intrusion vulnerability due to climate change are expected to follow the changes outlined in the base plan.
Severe Weather: Windstorm	The challenges to ETWD from climate change's impacts on Windstorms is expected to follow the impacts described in the base plan.
Urban Fire	There is no anticipated impact to how climate change could influence the ignition or behavior of urban fires.

F.6 CAPABILITIES ASSESSMENT

The capabilities assessment is designed to identify existing local agencies, personnel, planning tools, public policy and programs, technology, and funds that have the capability to support hazard mitigation activities and strategies outlined in this MJHMP. ETWD's internal development team revised the capabilities identified in the 2019 plan and collaborated to identify current local capabilities and mechanisms available to the MA for reducing damage from future hazard events. **Exhibits F-15a through F-15d** assess the authorities, policies, programs, and resources that the jurisdiction has in place that are available to help with the long-term reduction of risk through mitigation. These capabilities include planning and regulatory tools, administrative and technical resources, financial resources, and education and outreach programs. ETWD has the ability to expand on and improve existing emergency management policies and programs to implement mitigation programs. In some instances, methods of expansion and improvement have been identified within a specific capability, while a majority of these capabilities are anticipated to be expanded and improved upon through additional projects/initiatives underway by the Agency. These have been included at the bottom of each table.

Exhibit F-15a. Planning and Regulatory Capabilities Summary

Ordinance, Plan, Policy, Program	Responsible Agency or Department	Description/Comments
Building Code	City of Laguna Woods, Lake Forest, Laguna Hills, Mission Viejo and Aliso Viejo	ETWD complies with applicable building codes and works with the Cities within the service area. **Expansion and Improvement:** As retrofits and replacement projects are identified ETWD will anticipate meeting or exceeding the latest building codes to ensure greater resilience is incorporated into their infrastructure.
Zoning Ordinance	City of Laguna Woods, Lake Forest, Laguna Hills, Mission Viejo, Aliso Viejo. and County of Orange	ETWD complies with applicable zoning ordinances within the service area.
Subdivision Ordinance or Regulations	City of Laguna Woods, Lake Forest, Laguna Hills, Mission Viejo, Aliso Viejo. and County of Orange	ETWD complies with applicable subdivision ordinance or regulations within the service area.

Ordinance, Plan, Policy, Program	Responsible Agency or Department	Description/Comments
Special Purpose Ordinance	ETWD Engineering, Collections System, Administrative and Customer Service Departments	ETWD ordinances: Water Shortage and Supply; Fats, Oil and Grease (FOG), Cross Connection and Industrial Waste Discharge.
Growth Management Ordinances	City of Laguna Woods, Lake Forest, Laguna Hills, Mission Viejo, Aliso Viejo. and County of Orange	ETWD complies with applicable growth management ordinances within the service area. **Expansion and Improvement:** Growth management ordinances need to take into account water needs and available supplies for existing and future populations. Working closely with the Cities and County in the region, ETWD can help better understand how growth management ordinances could impact these resources.
Site Plan Review Requirements	ETWD Engineering Department	ETWD provides plan check for new development for compliance with standards for water, wastewater and recycled water. **Expansion and Improvement:** Developing better methods and techniques to support site plan reviews within Orange County can help ensure adequate planning, design, and engineering analysis is available to Cities and the County when new subdivisions are proposed.
Master Plan	ETWD Engineering Department, City of Laguna Woods, Lake Forest, Laguna Hills, Mission Viejo and Aliso Viejo	ETWD periodically updates its Master plan to define long term projects and operations. ETWD is also integrated into each City's General Plan update process.
Capital Improvements Plan	ETWD	ETWD updates its 10-year capital improvement plan annually as part of the budget process. **Expansion and Improvement:** Incorporation of mitigation strategies into the CIP can help support future funding of improvements necessary to enhance water/wastewater systems.
Economic Development Plan	City of Laguna Woods, Lake Forest, Laguna Hills, Mission Viejo, Aliso Viejo	ETWD complies with applicable economic development management plans within the service area.
Emergency Response Plan	ETWD	ETWD maintains and periodically updates its Emergency Response Plan and provides training to its staff per the NIMS/SEMS requirements. **Expansion and Improvement:** Continued improvement and enhancement of emergency response plans can help ensure ETWD is better prepared for future incidents and can anticipate their communities' needs.
Dams	ETWD Engineering and Operations Department/Department of Safety of Dams	ETWD complies with the DSOD & CRWQCB requirements.
Cross Connection Control Policy Handbook & Title 22	ETWD Engineering and Operations Department	ETWD administers a Cross Connection Control program in compliance with Cross Connection Control Policy Handbook and monitors compliance with Title 22 with its recycled water users.

Ordinance, Plan, Policy, Program	Responsible Agency or Department	Description/Comments
Wastewater	ETWD Operations Department	ETWD maintains a sewer collection and wastewater treatment plant system in compliance with all regulatory requirements.
Waste Discharge Requirements	ETWD Engineering and Operations Departments/Regional Water Quality Control Board	ETWD complies with all applicable waste discharge requirements and monitors compliance with customers and contractors as appropriate.

How can these capabilities be expanded and improved to reduce risk?

- Conduct a risk and resilience assessment (RRA) and create corresponding Emergency Response Plan (ERP) per the America's Water Infrastructure Act of 2018 (AWIA). Consider this plan as a resource to meet the AWIA requirements.
- Conduct disaster response fuel analysis and contingency planning with WEROC as a component of the Southern California Catastrophic Plan.
- Evaluate ability to contract with local fuel distributors and gas stations for emergency backup supply.
- Ensure hazard mitigation actions are reviewed and incorporated, where feasible, to Water and Wastewater Master Plan updates.
- Ensure hazard mitigation actions are reviewed during annual updates to the 10-year Capital Improvement Plan.
- Implement a process to ensure mitigation actions identified in the hazard mitigation plan are reviewed as part of the update to the Emergency Operations/Emergency Response Plan, Urban Water Management Plan, and the Asset Management Program's consequence of failure scoring.

Exhibit F-15b. Administrative and Technical Capabilities Summary

Staff/Personnel or Type of Resource	Responsible Agency or Department	Description/Comments
Planner(s) or Engineer(s) with Knowledge of Land Development and Land Management Practices	Outside Consultants	ETWD staff utilizes an outside consultant with input from staff, as necessary.
Engineer(s) or Professional(s) Trained in Construction Practices Related to Buildings and/or Infrastructure	ETWD Engineering Departments	2 Engineers; 1 Inspector.
Planners or Engineer(s) with an Understanding of Natural and/or Human - Caused Hazards	Outside Consultants	ETWD staff utilizes an outside consultant with input from staff, as necessary.
Floodplain manager	County of Orange	The agency coordinates with the County Floodplain Manager.
Surveyors	Outside Consultants	ETWD staff utilizes an outside consultant with input from staff, as necessary.
Staff with Education or Expertise to Assess the Community's Vulnerability to Hazards	ETWD Engineering and Operations Departments	Specific to water, wastewater and recycled water.
Personnel Skilled in GIS and/or HAZUS	ETWD Information Technology and Engineering Department	IT Manager, Director of Engineering and Senior Engineer.
Emergency Manager	ETWD	General Manager
Grant Writers	Director of Engineering	ETWD staff utilizes an outside consultant with input from staff, as necessary.
Lab Specialist & Lab Staff	ETWD Laboratory Department	1 Lab Supervisor; 1 Lab technician.

Staff/Personnel or Type of Resource	Responsible Agency or Department	Description/Comments
Grant writing	ETWD Engineering Department and Outside Consultants	Director of Engineering ETWD utilizes and outside consultant with input from staff, as necessary.
Hazard data and information	Outside Consultants	ETWD utilizes and outside consultant and WEROC with input from staff, as necessary.
Mutual aid agreements	WEROC and CalWARN	ETWD utilizes WEROC and CalWARN with input from staff, as necessary.

How can these capabilities be expanded and improved to reduce risk?
▪ Evaluate participation in MWDOC Water Loss Control Program, including meter testing and leak detection through training of internal staff or through MWDOC's Choice program. ▪ Have all agency-registered engineers and other qualified individuals attend California Governor's Office of Emergency Services (CalOES) Safety Assessment Program (SAP) training for building inspections. ▪ Coordinate with external agencies and outside consultants to periodically review the Hazard Mitigation Plan and update the status of mitigation actions. ▪ Work with external agencies and outside consultants to identify information that should be included in future updates.

Exhibit F-15c. Financial Capabilities Summary

Financial Resources	Agency or Department	Description/Comments
Capital Improvements Project Funding	ETWD Engineering and Finance Departments	Capital Construction Reserves **Expansion and Improvement:** During annual budgeting ETWD can highlight HMP strategies that support funding needs for the CIP.
Authority to Levy Taxes for Specific Purposes	ETWD Finance Department	Subject to voter approval
Fees for Water, Sewer (Rate Structure)	ETWD Finance Department	ETWD has a rate structure which is used to charge customers. **Expansion and Improvement:** Analysis of future fees for services should analyze potential mitigation funding support opportunities to capture funding for these projects.
Impact Fees for Homebuyers or Developers for New Developments/Homes	ETWD Engineering and Finance Departments	Capital Facilities Fees
Incur Debt Through General Obligation Bonds	ETWD Finance Department	Subject to voter approval
Incur Debt Through Special Tax and Revenue Bonds	ETWD Finance Department	Special Tax Subject to voter approval
Grants	ETWD Engineering and Finance Departments	Emergency management will work with engineering to identify and apply for available grants. **Expansion and Improvement: ETWD** can coordinate with MWDOC to better understand how grant support could be conducted that benefits the agency and the entire planning area as a whole.

How can these capabilities be expanded and improved to reduce risk?
▪ Learn about how to utilize post-disaster mitigation grants (Section 406) and incorporate it into the utility's disaster recovery strategy. ▪ Ensure the District's rates, fees and charges allow for the continuation of critical operations and maintenance programs designed to preserve and extend the useful life of infrastructure. ▪ Consider alternative funding sources, such as grants or low interest loans to maximize ETWD's ability to protect, preserve and enhance the infrastructure.

Exhibit F-15d. Education and Outreach Capability Summary

Resource/ Programs	Agency or Department	Description/Comments
Boil Water Notices	DDW/ETWD	Per the DDW guidance, ETWD would issue this notice to inform residents on how to use drinking water during an emergency.
Construction Alerts	ETWD Engineering and Public Relation Departments	ETWD would utilize this type of notice to inform residents of any construction located in their area.
Community Outreach Events	ETWD Public Relations Department	ETWD attends multiple events each year hosted by other agencies. (i.e., South County Disaster Preparedness Expo). ETWD communicates on a variety of topics including emergency preparedness.
Alert OC	County of Orange/WEROC/ETWD Public Relations Department	ETWD participates in the County of Orange Alert OC emergency notification system to alert residents in case of an emergency by phone, email and/or text.
Newsletter	ETWD Public Relations Department	The ETWD newsletter provides an opportunity to educate residents how ETWD prepares for emergencies and how residents can prepare for an emergency. **Expansion and Improvement:** Incorporate mitigation information and analysis into newsletters to continue sharing information with residents.
Website	ETWD Public Relations Department and IT Department	The ETWD website provides an opportunity to educate residents on how ETWD prepares for emergencies, how the residents can prepare for an emergency and/or provide information during an emergency. ETWD will develop an emergency preparedness page for the website.
Social Media	ETWD Public Relations Department	ETWD social media accounts provide an opportunity to communicate to the community prior to an emergency and quickly during an emergency. **Expansion and Improvement:** Increase the use of social media resources for hazard mitigation related content and information
Press Releases	ETWD Public Relations Department	ETWD would utilize this type of notice to inform residents on emergency preparedness information and/or during an emergency.
Laguna Woods Village Television	Laguna Woods Village Television/ETWD	Communicate to Laguna Woods residents on emergency preparedness and during an emergency.
Bill Stuffer/Bill Message	ETWD Public Relations Department	Communicate to residents on emergency preparedness.

How can these capabilities be expanded and improved to reduce risk?
▪ Participation in WEROC-led efforts to develop standardized messaging for water outages, dam events, and general disaster response. Ensure that messaging will work for the general community, as well as the Access, Disability, and Functional Needs community specific to ETWD. ▪ Work with emergency management organizations to continually expand educational resources that can be made available to the community.

- Continue to look for opportunities, such as community events, to provide hazard information, promote community awareness and identify emergency preparedness measures.

F.7 MITIGATION STRATEGY

F.7.1 Mitigation Goals

ETWD adopts the hazard mitigation goals developed by the planning team; refer to **Section 4**.

F.7.2 Mitigation Actions

The internal development team reviewed the mitigation actions identified in the 2019 plan and the updated risk assessment to determine if the mitigation actions were completed, required modification, should be removed because they are no longer relevant, and/or should remain in the MJHMP update. New mitigation actions to address the updated risk assessment and capabilities identified above were also considered and added. **Exhibit F-16,** ETWD Mitigation Actions, identifies the mitigation actions, including the priority, hazard addressed, risk, timeframe, and potential funding sources.

Exhibit F-16. El Toro Water Mitigation Actions

Action/Task/Project Description	Location/ Facility	Hazard	Cost	Responsible	Timeframe	Possible Funding Sources	Status
HIGH PRIORITY							
Install parallel or replace sewer force mains where feasible and appropriate.	District wide	Wildfire, Flood, Seismic Shaking	Unknown	Operations	Short Term	District Capital Reserves	Ongoing
Relocate the Effluent Transmission Main deep under Aliso Creek to mitigate its currently vulnerable state exposed within the creek and replace Aliso Creek Lift Station Emergency Generator.	Ocean Outfall Line	Severe Weather, Flood, Seismic Shaking; Power Outages	$900,000	Operations/ Engineering	Short Term	District Capital Reserves	New
MEDIUM PRIORITY							
Participate in South Orange County Reliability Projects.	All	Wildfire, Flood, Seismic Shaking	Unknown	Engineering	Long Term	District Capital Reserves	Ongoing
Install stationary generator at P-3 Pump Station.	Midzone	Wildfire, Flood, Seismic Shaking	$250,000	Operations	Short Term	District Capital Reserves	Ongoing
Continue to coordinate with SOCWA regarding the condition and potential replacement schedule for the Effluent Transmission Main.	Ocean Outfall Line	Wildfire, Flood, Seismic Shaking	Unknown	Operations	Long Term	District Capital Reserves	Ongoing
Implement La Paz Lift Station Slope/Panel Stabilization project.	LaPaz Station	Wildfire, Flood, Seismic Shaking, Seismic Landslide	$20,000	Operations/ Engineering	Short Term	District Capital Reserves	Ongoing
Implement WRP Holding Pond stabilization project.	WRP	Wildfire, Flood, Seismic Shaking, Seismic Landslide	$506,000	Operations/ Engineering	Long Term	District Capital Reserves	New
Provide maintenance around facilities in fire prone areas to avoid the chance of fire threat by reducing the fuel source.	Reservoir 3, Reservoir 5, Oso Sewer Lift Station, and Westline Sewer Lift Station	Wildfire	Various	Operations/ Engineering	Immediate	Annual Operating Budget	Existing
Provide special vegetation cleanups at critical facilities to remove unwanted vegetation (e.g. fallen limbs, leaves, pine needles and weeds) as needed to avoid the chance of fire threat by reducing the fuel source.	P-1, P-3, P-4, Reservoir 5, Reservoir 6, and the Holding Pond	Wildfire	$75,000	Operations/ Engineering	Immediate	Annual Operating Budget	Existing
Rehabilitate the Aliso Creek Lift Station to increase its capacity and protect against sewer spills.	Aliso Creek	Severe Weather, Flood, Seismic Shaking	$8,394,000	Operations	Short Term	District Capital Reserves	New

Action/Task/Project Description	Location/ Facility	Hazard	Cost	Responsible	Timeframe	Possible Funding Sources	Status
Replace critical wastewater conveyance systems (such as the Effluent Transmission Main and Westline force mains) made of Techite piping, a material prone to catastrophic failure.	District Wide	Severe Weather, Flood, Seismic Shaking	Unknown	Operations	Long Term	District Capital Reserves	New
Replace Mathis Lift Station Emergency Generator	Mathis	Power Outage	$156,800	Operations	Long Term	District Capital Reserves	New
Replace Westline Lift Station Emergency Generator	Westline	Power Outage	$267,000	Operations	Short Term	District Capital Reserves	New
Replace Veeh Lift Station Emergency Generator	Veeh	Power Outage	$262,000	Operations	Long Term	District Capital Reserves	New
Replace MPR Emergency Generator	MPR	Power Outage	$62,000	Operations	Long Term	District Capital Reserves	New
Replace Warehouse Backup Emergency Generator	Warehouse	Power Outage	$344,000	Operations	Long Term	District Capital Reserves	New
Purchase portable emergency generator.	District Wide	Power Outage	$313,000	Operations	Long Term	District Capital Reserves	New
Evaluate the need for additional diesel storage.	District Wide	Power Outage	Unknown	Operations	Long Term	District Capital Reserves	New
Improve areas in the distribution system identified in the Master Plan to provide adequate fire flow.	District Wide	Power Outage	$2,000,000	Operations	Long Term	District Capital Reserves	New
LOW PRIORITY							
Relocate Fuel Storage Tanks at WRP Above Ground.	WRP	Wildfire, Flood, Seismic Shaking	$450,000	Operations	Long Term	District Capital Reserves	Existing
Install additional storage at sewer lift stations to enhance response time in the event of pump station failures.	All	Wildfire, Flood, Seismic Shaking	Unknown	Operations/ Engineering	Long Term	District Capital Reserves	Ongoing
Conduct a seismic vulnerability assessment of critical facilities.	All	Seismic Shaking and Liquefaction	Unknown	Engineering	Long Term	District Capital Reserves	Ongoing
Implement Infiltration & Intrusion Study Flow Monitoring Project.	District Wide	Flood	Unknown	Operations	Long Term	District Capital Reserves	Ongoing

F.7.3 Completed or Removed Mitigation Initiatives

The following mitigation actions from the 2019 plan have been completed or are in progress and therefore are removed from this plan update.

- **Mitigation:** Configure and backup server VM's to a cloud cold site.
  - **Status:** Complete.
- **Mitigation:** Install Cyber Security Monitoring System
  - **Status:** Complete.
- **Mitigation:** Demolish abandoned water treatment plant.
  - **Status:** Complete.
- **Mitigation:** Install additional wet well storage and emergency overflow storage at the Oso Lift Station as a component of the Oso Lift Station Improvement Project.
  - **Status:** Complete.
- **Mitigation:** Implement protective measures for the 4920 Lift Station influent siphon at creek crossing.
  - **Status:** Complete.
- **Mitigation:** Replace sodium hypochlorite storage tanks at Reservoir 6 to prevent a chemical spill.
  - **Status:** Complete.
- **Mitigation:** Purchase trailer mounted wastewater emergency pump.
  - **Status:** Complete.
- **Mitigation:** Aliso Creek Lift Station Emergency Pump.
  - **Status:** Complete.
- **Mitigation:** Replace Ocean Outfall Pump Station Emergency Generator
  - **Status:** Complete.

F.8 PLAN INTEGRATION

ETWD's capital budget, Water Master Plan, Wastewater Master Plan and Annual Operating Budget are all used to implement mitigation initiatives identified in this annex. After adoption of the MJHMP, ETWD will continue to integrate mitigation priorities into these documents.

Since the previous Plan Update, ETWD incorporated information from the MJHMP in its CIP, in addition to the following planning mechanisms:

- Risk assessment information used to update the hazard analysis in the ETWD Emergency Operations Plan.
- Hazard profiles and risk assessment informed the Water Master Plan and the provision of an adequate supply of water as an essential service to ensure public health and safety, community well-being, and economic growth.

ETWD will continuously monitor the progress of mitigation actions implemented through these other planning mechanisms and, where appropriate, their priority actions will be incorporated into updates of this Plan.