



QUARTZ HILL WATER DISTRICT
2025 WATER SHORTAGE
CONTINGENCY PLAN

JULY 27, 2026

P R E P A R E D F O R:
QUARTZ HILL WATER DISTRICT
5034 W. AVE. L
QUARTZ HILL, CA 93536

P R E P A R E D B Y:
ARDURRA
1800 21ST STREET SUITE C
BAKERSFIELD, CA 93301
661.873.4262



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BIBLIOGRAPHY

The following reports, studies, and other material were reviewed during preparation of this Water Shortage Contingency Plan update.

1. 2025 Urban Water Management Plans Guidebook for Urban Water Suppliers dated January 2026 and prepared by the California Department of Water Resources.
2. Antelope Valley Watermaster 2024 Annual Report dated July 24, 2025 and prepared by Todd Groundwater.
3. 2025 County of Los Angeles All-Hazards Mitigation Plan.



List of Abbreviations

AB	Assembly Bill
AF	Acre-Foot
Ardurra	Ardurra Group, Inc.
BMP	Best Management Practices
CASGEM	California Statewide Groundwater Elevation Monitoring Program
CEHTP	California Environmental Health Tracking Program
CEQA	California Environmental Quality Act
cf	Cubic Feet
CII	Commercial, Industrial, Institutional, water use sectors
CIMIS	California Irrigation Management Information System
CUWCC	California Urban Water Conservation
CWC	California Water Code
DMMs	Demand Management Measures
DOF	Department of Finance
DU	Dwelling Unit
DWR	Department of Water Resources
eARDWP	Electronic Annual Reports to the Drinking Water Program (SWRCB)
Eto	Reference Evapotranspiration
GIS	Geographic Information System
GPCD	Gallons per Capita per Day
IRWM	Integrated Regional Water Management
ITP	Independent Technical Panel
LAFCO	Local Agency Formation Commission
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
PWS	Public Water System
RWQCB	Regional Water Quality Control Board
SB	Senate Bill
SB X7-7	Senate Bill Seven of the Senate's Seventh Extraordinary Session of 2009
SGMA	Sustainable Groundwater Management Act
SQ FT	Square Feet
SWP	State Water Project



LIST OF ABBREVIATIONS

SWRCB	State Water Resources Control Board
RUWMP	Regional Urban Water Management Plan
UWMP	Urban Water Management Plan
WARN	Water/Wastewater Agency Response Network
WDR	Waste Discharge Requirement
WRR	Water Recycling Requirement
WSCP	Water Shortage Contingency Plan



Chapter 1 INTRODUCTION

1.1 Law

This Water Shortage Contingency Plan (WSCP) for Quartz Hill Water District (QHWD or the District) outlines a program for responding to water supply limitations. The intent of the water conservation measures, progressive restrictions on water use, and method of use identified in this WSCP is to enable the District to implement water management measures in a fair and orderly manner for the benefit of the public.

This WSCP describes measures to be implemented during times of declared water shortages or declared water shortage emergencies by either the Metropolitan Water District (MWD), Central Basin Municipal Water District (CBMWD), the District, State or Federal government. It establishes six stages of drought response actions to be implemented in times of shortage, with increasing restrictions on water use in response to decreasing available supplies.

1.2 Quartz Hill Water District (QHWD)

Quartz Hill Water District was incorporated in 1954 as a County Water District and water service provider. QHWD serves over 19,000 people and is located in the City of Lancaster, unincorporated portions of the County of Los Angeles, and a small portion of the City of Palmdale. The QHWD is governed by a Board of Directors consisting of five members elected at large. The Board establishes QHWD policy through the enactment of laws (ordinances) and the adoption of resolutions.

QHWD water system is composed of groundwater pumped from the Antelope Valley Groundwater Basin and imported potable water from the Antelope Valley East Kern Water Agency (AVEK). The water supply system has 10 active wells, and water is conveyed from the wells to the consumers via 97 miles of distribution piping with pipe sizes ranging between 4 and 24-inches in diameter. The District operates eight storage reservoirs within the service area having a total capacity of 13.6 million gallons, six booster station, seventeen pressure regulating stations, and two hydro-pneumatic tanks. All facilities are monitored by a Supervisory Control and Data Acquisition (SCADA) system, which activates wells and booster pump facilities based on storage tank water levels or pressure at selected locations within the distribution system.

QHWD benefits from having multiple water sources from which to draw from during shortages. QHWD works to build capacity in their system such that they can maximize their existing resources without importing new sources. Although many portions of California experienced shortages during the most recent drought, QHWD was able to meet customer demands by voluntary reduction of customer usage and implementation of the water budget based tiered rate structure.



It should be noted that relevant sections of the water code as related to the WSCP are included in **Appendix B.**



Chapter 2 WATER SUPPLY RELIABILITY ANALYSIS

2.1 Water Supply Reliability Analysis

QHWD has never had a single year or multiple dry years in which it did not meet 100% of its demand, regardless of regional hydrology. Therefore, there is no basis in the hydrologic record for reducing supply reliability based upon single and/or multiple dry year conditions when imported water supply is available in addition to historical groundwater production. On this assumption, QHWD's supply is presented as 100% reliable for single and multiple dry year periods as summarized in the following sections.

To supplement this statement QHWD, developed **Table 2-1**, which involved a preliminary climate change vulnerability screening (including impacts from extreme heat, water quality, sea level rise, flooding, and wildfire) for its water supplies.

Table 2-1: Climate Change Vulnerability Screening	
Preliminary Assessment	Imported Water Level of Risk
<i>I. Water Supply and Demand</i>	
Are the water supply diversions sensitive to climate change?	3
Is the water supply source affected by urban or agricultural water demand that might be climate sensitive?	3
Is groundwater a major supply source?	4
Does the water supply source rely on or could it be affected by snowmelt?	4
Does the water supply source come from or could it be affected by coastal aquifers? Has saltwater intrusion been a problem in the past?	N/A
Does the water supply source rely on or could it be affected by changes in stored water supplies?	4
<i>II. Extreme Heat</i>	
Could extreme heat impact operations of the water supply project or diversions?	2
Does the supply source rely on equipment or infrastructure that could be impacted by extreme or prolonged heat?	3



Table 2-1: Climate Change Vulnerability Screening	
Preliminary Assessment	Imported Water Level of Risk
III. Water Quality	
Could water quality issues, such as low dissolved oxygen, algal blooms, disinfectant biproducts affect the water supply source?	N/A
Could reduction in assimilative capacity of a receiving water body affect the water supply source?	N/A
Could the water supply source be affected by water quality shifts during rainfall/runoff events?	1
IV. Sea Level Rise	
Is any of the water supply source infrastructure located in area that could be exposed to rising tides?	N/A
Could coastal erosion affect the water supply source?	N/A
Is the water supply source dependent on coastal structures, such as levees or breakwaters, for protection from flooding?	N/A
V. Flooding	
Is the water supply or any of its associated infrastructure located within the 200-year floodplain? Does the water supply source rely on flood protection infrastructure such as levees or dams?	N/A
VI. Wildfire	
Is the water supply source located in an area that is expected to experience an increase in wildfire activity or severity? Would a wildfire result in damage to the water supply source infrastructure or interruption of its ability to perform as designed? Could the water supply source be affected by an increase in wildfire activity or severity in an upstream watershed or other adjacent area?	3
<i>Note:</i> 1. Level of Risk: 1 – low, 3 – medium, 5 – high.	

Chapter 3 ANNUAL WATER SUPPLY AND DEMAND ASSESSMENT PROCEDURES

3.1 Annual Water Supply and Demand Assessment Procedures

In accordance with California Water Code (CWC) 10632, the District will conduct an annual water supply and demand assessment, or annual assessment by July 1st of each year.

QHWD will determine if a shortage in supply exists and declare the appropriate water shortage level based on the findings. QHWD will draft and prepare a written report that discusses the results of the annual water supply and demand assessment, what water shortage level and shortage response actions are to be implemented and issue the appropriate communication to customers and local governments. A copy of the annual report will be submitted to the Board Directors ahead of the meeting for review. The Board of Directors will listen to the findings and recommendations outlined in the report and vote regarding whether to approve and implement the actions described in the annual report at a May board meeting.

3.1.1 Key Data Inputs

The Water Shortage Contingency Plan team will consist of the QHWD General Manager and the District Engineer. The team will draft and prepare the annual water supply reliability analysis report. The report will use the key data inputs and methodology described in **Table 3-1** to determine the unconstrained demand, infrastructure capabilities, available water supply, and reliability for the current year and one dry year.

**Table 3-1: Key Data Inputs**

Key Input	Data	Description
Current year Customer Demand and Available Supply	Public Water System Statistics Sheet (DWR sheet) & Monthly Tracking Sheet	The water statistics sheet and monthly tracking sheet is prepared by District's General Manager in January for the previous year. The statistics sheet will be used to calculate water supply by source and show unconstrained water demand.
Projected Water Supply	Wells & AVEK Production History Worksheet	This worksheet is prepared by District's General Manager and is updated each year. This worksheet provides the monthly production totals for each well and imported water supply. This will be used to help determine water supply reliability.
Infrastructure Considerations	Annual Project List and Schedule	This list will be prepared by the District's General Manager and describe all the planned projects for the year. The annual project list will be used to assess infrastructure capabilities and any potential constraints to the water system.

3.2 Data and Methodologies

3.2.1 Assessment Methodology

QHWD will enact water shortage response actions if the available water supply is less than the estimated demands. A dry year will be defined as a year where there is over a 10% reduction in the available water supply and corresponds to a stage 2 water shortage level in **Table 4-1**. QHWD will take the following steps to evaluate the water supply and demand:

1. Evaluate Water Supply: Using the Public Water System Statistics Sheet for the past year determine the total amount of water available to QHWD. Review the water supply contract between AVEK and QHWD for any conditions that would lead to supply reductions. Calculate the total water supply available using an excel spreadsheet.
2. Calculate Unconstrained Customer Demand: Using the Public Water System Statistics Sheet calculate the total water delivered the previous year.
3. Planned Water Use for Current Year Considering Dry Year: Compare the available water supply and the customer demand and determine if there is an expected water shortage.
4. Infrastructure Considerations: Using the annual project list and schedule, determine if any projects will reduce or increase supply.
5. Compare supply and demand and decide of the level of water supply reliability for current year and one dry year, declare a water shortage level, and issue relevant communication, if necessary.



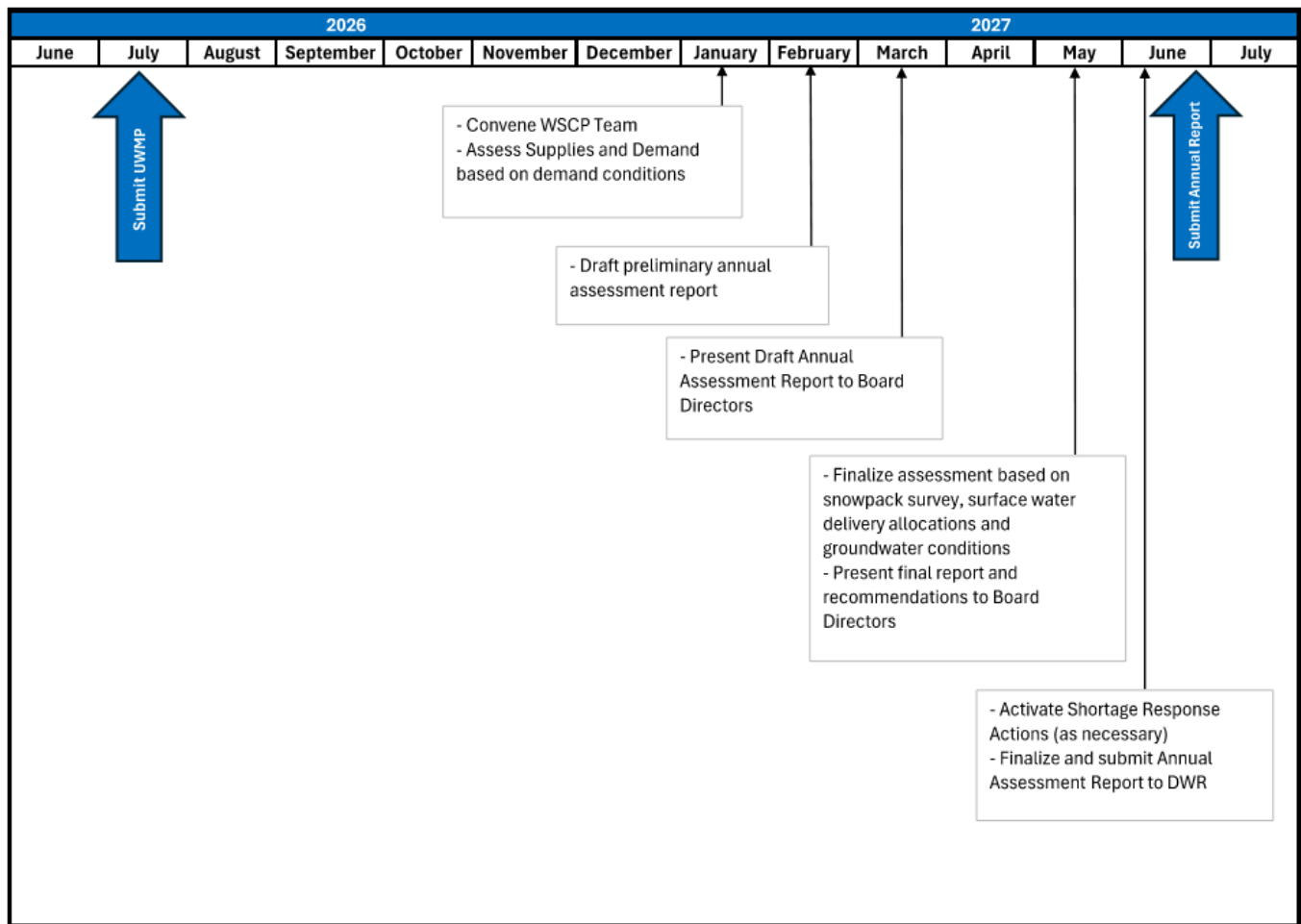
6. Additional considerations: The Board will consider the following in making a determination:
7. The District's wholesale water supplier has determined a drought, water shortage, or water shortage emergency exists or has implemented or taken other action requiring a reduction in water demand.
8. Regional or statewide importation or local distribution systems or facility(ies) have failed or have been shut down (e.g., a main break, reservoir, pipeline, canal, or other distribution or conveyance system failure).
9. Alternative water supplies are limited or unavailable.
10. The State has determined that a drought, water shortage or water shortage emergency exists.
11. The State has implemented restrictions on the use of water or reduced or restricted the delivery of wholesale water to the District.
12. Any other natural disaster that impacts the availability of water to the District.

3.2.2 Water Supply Reliability Analysis Timeline

QHWD will start to evaluate the water supply availability in January and will submit the report to the DWR in June of each year per the recommended timeline as shown in **Figure 3-1**.



Figure 3-1: Water Supply Reliability Analysis Timeline





Chapter 4 SIX STANDARD WATER SHORTAGE LEVELS

This WSCP identifies water conservation measures and progressive restrictions on water use to enable the District to implement water management measures in a fair and orderly manner for the benefit of the public in accordance with CWC §10632(a)(3). This WSCP establishes six (6) stages of drought response actions that could be voluntarily implemented by the District in times of shortage, with increasing restrictions on water use in response to decreasing supplies. This WSCP includes both voluntary and mandatory water use reductions depending on the causes, severity, and anticipated duration of the water supply shortage. Water use reduction stages may be triggered by contamination in one water source, combination of sources, or during times that a shortage is declared by the MWD, CBMWD, GSWC, District, State, or Federal government. QHWD's potable water sources are groundwater and imported potable water from AVEK. Because shortages overlap stages, triggers automatically implement the more restrictive Stage. Specific criteria for triggering QHWD's water use reduction stages are shown in **Table 4-1**.

Table 4-1: Water Shortage Contingency Plan Levels			
Shortage Level	Stage	Percent Supply Reduction	Water Supply Condition
1	Stage I (a): Moderate	0 – 10%	A Level I Water Supply Shortage exists when the District determines, in its sole discretion, that due to drought or other water supply conditions, a water supply shortage or threatened shortage exists and a 10% consumer demand reduction is necessary to make more efficient use of water and appropriately respond to existing water conditions.
2	Stage I (b): Moderate	11 – 20%	A Level II Water Supply Shortage exists when the District determines, in its sole discretion, that due to drought or other water supply conditions, a water supply shortage or threatened shortage exists and a 20% consumer demand reduction is necessary to make more efficient use of water and appropriately respond to existing water conditions.



Table 4-1: Water Shortage Contingency Plan Levels			
Shortage Level	Stage	Percent Supply Reduction	Water Supply Condition
3	Stage II (a): Severe	21 – 30%	A Level III Water Supply Shortage exists when the District declares, in its sole discretion, that due to drought or other water supply conditions, a water supply shortage or threatened shortage exists and a 30% consumer demand reduction is necessary to make more efficient use of water and appropriately respond to existing water conditions.
4	Stage II (b): Severe	31 – 40%	A Level IV Water Supply Shortage exists when the District declares, in its sole discretion, that due to drought or other water supply conditions, a water supply shortage or threatened shortage exists and a 40% consumer demand reduction is necessary to make more efficient use of water and appropriately respond to existing water conditions.
5	Stage III: Critical	41 – 50%	A Level V Water Supply Shortage is referred to as a Water Shortage Emergency. A Level V condition exists when the District declares, in its sole discretion, a water shortage emergency and notifies its residents and businesses that a 50% reduction in consumer demand reduction is necessary to make more efficient use of water and appropriately respond to existing water conditions.
6	Stage IV: Emergency	+ 51%	A Level V Water Supply Shortage is referred to as a Water Shortage Emergency. A Level V condition exists when the District declares, in its sole discretion, a water shortage emergency and notifies its residents and businesses that a 50% reduction in consumer demand is necessary to maintain sufficient water supplies for public health and safety, pursuant to Water Code Section 350 et seq.



Stage I (a): A moderate water shortage exists when the District determines, in its sole discretion, that drought or other water supply conditions have resulted in, or may result in, a water supply shortage requiring up to a 10% reduction in consumer demand. This stage is intended to encourage increased efficiency in water use and early conservation actions to appropriately respond to existing or threatened water supply conditions while maintaining reliable service to all customer classes.

Stage I (b): A continued moderate water shortage exists when the District determines, in its sole discretion, that drought or other water supply conditions warrant a 20% reduction in consumer demand. This stage reflects more pronounced supply constraints and the need for enhanced conservation actions to reduce water use and protect the District's available supplies. Measures implemented during this stage are intended to further improve efficiency and slow demand growth while avoiding emergency conditions.

Stage II (a): A severe water shortage exists when the District declares, in its sole discretion, that drought or other water supply conditions require a 30% reduction in consumer demand. This stage indicates significant stress on available water supplies and necessitates stricter conservation measures and broader compliance to ensure that essential water needs can continue to be met throughout the service area.

Stage II (b): A continued severe water shortage exists when the District declares, in its sole discretion, that drought or other water supply conditions require a 40% reduction in consumer demand. This stage reflects critical supply limitations and the need for aggressive conservation actions across all customer sectors to sustain available supplies and minimize the risk of progressing to emergency conditions.

Stage III: A critical water shortage exists when the District declares a Water Shortage Emergency, determining that a 50% reduction in consumer demand is necessary. At this level, water supply conditions are extremely constrained, and emergency conservation measures are implemented to protect remaining supplies and ensure continued availability of water for essential public health and safety needs.

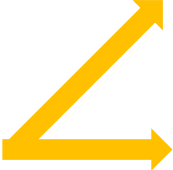
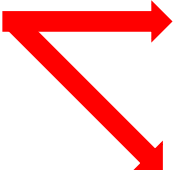
Stage IV: An emergency water shortage represents the most severe supply condition and is also classified as a Water Shortage Emergency. This stage exists when the District declares, in its sole discretion, that drought or other conditions require reductions exceeding 51% to maintain sufficient water supplies for public health and safety, pursuant to CWC Section 350 et seq. Measures implemented under this stage are intended to preserve critical supplies and prioritize essential uses until emergency conditions subside.

Water shortage actions may also be triggered by shortages or mandatory reduction requirements imposed by regional, State, or federal agencies, including CBMWD, MWD, or the SWRCB. The District Manager or designee uses available supply, demand, and operational information to recommend implementation or modification of water shortage response actions to the District.

Table 4-2 provides a crosswalk that shows QHWD's water shortage levels to those mandated by statute.



Table 4-2: Comparison for the District's 2015 Shortage Levels and the 2025 WSCP Mandated Shortage Levels

Stages from 2015 UWMP			Crosswalk	2025 WSCP Mandated Shortage Levels			
Stage	% Supply Reduction	Water Supply Condition		Stage	% Supply Reduction	Water Supply Condition	Mandatory Compliance with Water Savings Measures
1	5%	Insufficient supply to provide 95% for next two years		1	0% to 10%	Slightly Restricted	Mandatory Compliance
2	10%	Insufficient supply to provide 90% for next two years		2	11% to 20%	Slightly Restricted	Mandatory Compliance
3	20%	Insufficient supply to provide 80% for next two years		3	21% to 30%	Moderately Restricted	Mandatory Compliance
4	30%	Insufficient supply to provide 70% for next two years		4	31% to 40%	Moderately Restricted	Mandatory Compliance
5	50%	Insufficient supply to provide 60% for next two years		5	41% to 50%	Severely Restricted	Mandatory Compliance
				6	51% and above	Extremely Restricted	Mandatory Compliance



Chapter 5 SHORTAGE RESPONSE ACTIONS

5.1 Demand Reduction

Table 5-1 summarizes the restrictions and prohibitions on end uses during each stage of water shortage response implemented by QHWD in accordance with CWC §10632(a)(4)(B). The shortage response actions are aligned to the six water shortage levels with the goal of reducing the gap between supply and demand by the required amount per level.

Table 5-1: Demand Reduction Actions			
Shortage Level	Demand Reduction Actions	Estimated Extent of Reducing the Water Shortage Gap	Penalty, Charge, or Other Enforcement?
All Stages	Expand Public Information Campaign	Low	No
1	Public outreach for voluntary reduction in water use by 15%	Medium	No
2	Landscape – Restrict or prohibit runoff from landscape irrigation	Medium	Yes
2	Other water feature or swimming pool restriction	Low	Yes
3	Landscape – Other landscape restriction or prohibition	Medium	Yes
4	Other – Customers must repair leaks, breaks, and malfunctions in a timely manner	Low	Yes
5	Landscape – Limit landscape irrigation to specific days	High	Yes
3,4,5,6	Other – Progressively increasing fines for unsustainable, inefficient and then non-essential water use	High	Yes
<i>Note:</i> 1. See Appendix F for sources and estimates corresponding to water saving levels.			



5.2 Supply Augmentation

Table 5-2 summarizes the supply augmentations and other actions on end users during each stage of water shortage responses by QHWD in accordance with CWC §10632(a)(4)(A).

Table 5-2: Supply Augmentation Actions			
Shortage Level	Supply Augmentation Actions	Estimated Percent Reduction of Shortage Gap	Penalty, Charge, or Other Enforcement?
All Stages	Expand Public Information Campaign	Medium	No
3,4,5,6	Implement or Modify Drought Rate Structure or Surcharge	High	Yes
6	Stored Emergency Supply	Low	No
<i>Note:</i> 1. See Appendix F for sources and estimates corresponding to water saving levels.			

5.3 Operational Changes

In the event of an extreme water shortage QHWD will implement some or all the following operational changes in accordance with CWC §10632(a)(4)(C) and §10632.5(a):

1. QHWD shall provide prompt notice to customer whenever QHWD obtains information that indicates a leak may exist within the end-user's exclusive control. The customer must repair all leaks within twenty-four (24) hours of notification by QHWD.
2. Evaluate maintenance procedures and alter if needed to improve system efficiency
3. Evaluate infrastructure repairs, and complete if possible, to improve system efficiency. The District will continue to evaluate operational and maintenance procedures in order to identify opportunities for improved efficiency in water delivery and reducing water system loss.

5.4 Additional Mandatory Restrictions

QHWD customers shall comply to the mandatory water shortage response actions listed in **Table 5-1** associated with a level 3 or higher water shortage event in accordance with §10632(a)(4)(D). In the event of a water shortage emergency or severe drought QHWD may enact additional mandatory restrictions:

1. Implement drought water rates.
2. Restrict or prohibit the issuance of new water services.
3. Watering or Irrigation of lawn, landscape, or other vegetated area with sprinklers to be limited to the following schedule:



- ❑ June through August – A maximum of two days a week
- ❑ September through May – A maximum of one day a week

5.5 Emergency Response Plan

In 2001, in accordance with the requirements of Assembly Bill 11X, the District's water, fire and emergency services departments developed a comprehensive water shortage contingency plan, which was incorporated into the District's Emergency Response Plan in early 2002. The District's plan is consistent with provisions in the County's Emergency Response Plan. Both plans contain procedures for the distribution of potable water in a disaster and these procedures are consistent with guidelines prepared by the California State Office of Emergency Services.

The UWMP Act requires a catastrophic supply interruption plan. This plan looks at the vulnerability of each source and distribution system to events such as wildfires, flooding, earthquakes, landslides, rockslides, other natural disasters, and unforeseen emergencies. The actions taken to address each catastrophe are consistent with the Safety Element and the County of Los Angeles All-Hazards Mitigation Plan (AHMP) (September 2025) presented in **Table 5-3** below:

Table 5-3: Catastrophic Supply Interruption Actions	
Possible Catastrophe	Summary of Actions
Wildfire/ Flooding	Wildfire and flooding events are identified by the LA County AHMP as hazards that can affect access, power supply, communications, and above-ground infrastructure, even in urbanized coastal areas. While these events are not expected to cause a systemwide water supply failure for the District, localized impacts to facilities, pipelines, or electrical service may occur. In the event of wildfire or flooding impacts, the District would notify affected customers, implement voluntary or mandatory water use restrictions as appropriate, and isolate damaged facilities or pipeline segments to limit service impacts. Emergency coordination with regional agencies and utility providers would be initiated, and impacts to the water system would be mitigated through operational redundancies and use of available storage.
Earthquake/ Fault Rupture/ Liquefaction	Earthquakes and associated ground shaking and liquefaction are identified in the LA County AHMP as primary regional hazards with the potential to cause widespread infrastructure damage. In the event of a major seismic event, the District's EOC would be activated in accordance with the District's EOP. Damaged portions of the water distribution system would be isolated, system integrity would be assessed, and customers would be notified to limit water use as necessary. The District would rely on available stored water, regional system



Table 5-3: Catastrophic Supply Interruption Actions	
	redundancy, and coordination with wholesale water suppliers to maintain critical service while emergency repairs are undertaken.
Sea Level Rise/Storm Surge	The LA County AHMP identifies coastal storms, sea level rise, and storm surge as hazards that may affect low-lying coastal infrastructure over time. While water supply conveyance is largely regional, localized impacts to District facilities or supporting infrastructure could occur during severe coastal storm events. In such cases, the District would implement protective actions for affected facilities, coordinate with regional agencies regarding system status, and implement water use restrictions if necessary to preserve available supplies.
Extreme Heat/Power Disruption	Extreme heat events are identified in the LA County AHMP as an increasing hazard with potential indirect impacts on water systems through increased demand and power supply interruptions. In the event of extreme heat or extended power outages, the District would coordinate with electric utilities and regional water suppliers, implement water use restrictions as necessary, and prioritize available water supplies.

The District's WSCP plan recommended the following: (1) the purchase of water purification equipment; (2) purchase of standby generators and auxiliary pumps; and (3) development of emergency water conveyance and supply storage facilities. Steps (1) and (2) have been implemented. Step (3) is in the study and design phase.

In addition, the District recognizes the importance of the Demand Management Measures (DMMs) in reducing water demand and would continue to implement the DMM programs. Also, the District would increase media attention to the water supply situation during a shortage and would step up public water education programs, encourage property owners to apply for a landscape and interior water use survey and continue to advertise the importance of customers to install ULF (low flow) plumbing fixtures.

During declared shortages, or when a shortage declaration appears imminent, the District General Manager, who serves as the temporary chair, activates a District water shortage response team. The Chairman of the Board of Directors assumes the responsible director's role when he/she has arrived at the operational control center. The team includes: Board of Directors, General Manager, Assistant General Manager and supporting staff. **Table 5-3** summarizes the types of actions the District could take during a water supply catastrophe.

The Health and Safety Element (HSE), adopted in 2022 and amended in 2025, provides the foundational policy framework for protecting the community from natural and human-caused hazards and for guiding emergency preparedness and response activities. The Safety Element identifies public safety risks such as earthquakes, flooding, fire hazards, and hazardous incidents, and establishes goals and policies related to emergency response, infrastructure resilience, and protection of life and property. The HSE includes



contemporary climate change analysis and addresses water supply reliability or climate-related stresses, reflecting current conditions, evolving hazards, and modern planning practices.

5.6 Seismic Risk Assessment and Mitigation Plan

The District's existing water system relies on groundwater production through 10 active wells and imported potable water. The water is conveyed from the wells throughout the service area by approximately 97 miles of distribution system piping ranging from 4 to 24 inches in diameter. The District also has 8 water storage reservoirs and booster pump stations with a combined storage capacity of 13.6 million gallons.

With respect to the seismic risk assessment and mitigation plan, the County of Los Angeles has evaluated the seismic risk to the existing water system facilities in LA County through the development of the 2025 County of Los Angeles All-Hazards Mitigation (LA AHMP), Section 6.3 Earthquake. The following sections provide a summary of the general finding from the Hazard Plan with respect to potential impacts from earthquakes, faults, and liquefaction within the QHWD service area.

5.6.1 Faults, Earthquakes, and Liquefaction

Per the AHMP, the following provides a description of major faults within Los Angeles County with the San Andreas Fault system is the closest to Lancaster and QHWD per the 2020 WSCP:

Over 163 earthquakes of M 5.0 or greater have been recorded in Southern California since 1812. The San Andreas Fault remains the greatest seismic hazard, with a 59% chance of an M 6.7+ event in the next 30 years... Los Angeles County has a long history of experiencing damaging earthquakes due to its location along multiple active fault systems, including the San Andreas, Newport-Inglewood, and Whittier faults.

Per the AHMP, the overall vulnerability to an Earthquake is:

Impacts from future major seismic events are projected to be even more severe due to population density, aging infrastructure, and increasing development in seismically vulnerable areas. Over 75% of unincorporated Los Angeles County is at risk of severe to extreme ground shaking. Current estimates suggest that a large-magnitude earthquake could displace up to 2.2 million people, injure or kill thousands, and result in over \$200 billion in combined economic losses, including \$113 billion in property damage and \$68 billion in business interruptions.

The County's critical systems; power, water, transportation healthcare, and communications, are especially vulnerable. A major earthquake could impair up to 325 hospitals and 1,299 fire stations and disrupt critical infrastructure for millions. Populations with heightened vulnerability include the 75,000+ people experiencing homelessness, those with access and functional needs, and residents of older, unreinforced masonry and soft-story structures.



5.6.2 Seismic Risk

QHWD service area and water system are likely to face violent ground acceleration in the event of an earthquake. The 2025 County of Los Angeles All-Hazards Mitigation Plan states the likely maximum magnitudes for the San Andreas Fault is a 6.7-8.0 magnitude earthquake, with a 59% chance of a 6.7 or greater magnitude event in the next 30 years.

5.6.3 Mitigation

In the event of a system disruption to existing water supplies from an earthquake, fault rupture, or liquefaction. The District will follow guidance from the 2025 County of Los Angeles All-Hazards Mitigation Plan. Additionally, the District should follow procedure and communication listed in the QHWD Emergency Response Plan, activate the portable backup generators if power is lost to District wells, and implement a water shortage due to an emergency.

5.7 Shortage Response Action Effectiveness

All water shortage response actions are intended to reduce the water demand below the available water supply, during a water shortage event. To ensure that all water response actions are effective in reducing the demand to the level necessary, QHWD will routinely monitor water production levels monthly through the current in-place production metering system. If the shortage response actions are not effective in reducing water consumption to the required level QHWD will refine and update the water shortage response actions until effective.



Chapter 6 COMMUNICATION PROTOCOLS

All water shortage response actions are intended to reduce the water demand below the available water supply, during a water shortage event. To ensure that all water response actions are effective in reducing the demand to the level necessary, the District will continue to routinely monitor water consumption levels monthly through the current in place production metering system. If the shortage response actions are not effective in reducing water consumption to the required level the District will refine and update the water shortage response actions until effective.

6.1 Communication Protocols

The District will inform its shareholders, the public, and the necessary local, regional, and State government entities regarding any current or predicted water shortages based on the results of the Annual Water Supply and Demand Assessment in accordance with CWC §10632(a)(5). QHWD will also notify all necessary entities of any shortage response actions mandated in response to the Annual Assessment. In the event of a water shortage due to an emergency, QHWD will follow emergency communication protocols on **Table 6-1** as outlined in the Emergency Response Plan.

Table 6-1: Stages of Water Shortage Contingency Plan – Communication Protocols		
Shortage Level	Communication Protocol and Procedure	Recipient to Be Notified
1	General conservation measures and resources will be posted on the QHWD website, published in the newsletter.	Shareholders and the public
2	Bill stuffers will be distributed to all shareholders that inform of the Stage 2 status and mandatory water shortage response actions. The Stage 2 water shortage response actions will be included in the newsletter and posted on the District's website.	Shareholders and the public
3	Bill stuffers will be distributed to all shareholders that inform of the Stage 3 status and mandatory water shortage response actions. The Stage 3 water shortage response actions will be included in the newsletter and posted on the District's website.	Shareholders, public, all required government entities

**Table 6-1: Stages of Water Shortage Contingency Plan – Communication Protocols**

Shortage Level	Communication Protocol and Procedure	Recipient to Be Notified
4	Bill stuffers will be distributed to all shareholders that inform of the Stage 4 status and mandatory water shortage response actions. The Stage 4 water shortage response actions will be included in the newsletter and posted on the District's website. A Public Notice will be issued to all customers and relevant government entities.	Shareholders, public, all required government entities
5	Bill stuffers will be distributed to all shareholders that inform of the Stage 5 status and mandatory water shortage response actions. The Stage 5 water shortage response actions will be included in the newsletter and posted on the District's website. A Public Notice will be issued to all shareholders and relevant government entities.	Shareholders, public, all required government entities
6	Bill stuffers will be distributed to all shareholders that inform of the Stage 6 status and mandatory water shortage response actions. The Stage 6 water shortage response actions will be included in the newsletter and posted on the District's website. A Public Notice will be issued to all shareholders and relevant government entities.	Shareholders, public, all required government entities



Chapter 7 COMPLIANCE AND ENFORCEMENT

7.1 Compliance and Enforcement

The District will endeavor to achieve water use reduction targets when possible through voluntary compliance measures which will include existing and enhanced water conservation communication, education, outreach, and incentive programs.

7.1.1 Compliance and Enforcement Protocols

The following compliance and enforcement actions to be taken by QHWD under a declared water shortage condition were developed in accordance with CWC §10632(a)(6).

The QHWD Board of Directors may impose a special water waste surcharge against a customer's account and may temporarily or permanently discontinue or restrict, with a flow regulating device, water service to the affected property in the event that the customer or political entity is found by the Board to be in violation of any restrictions or prohibitions under a water shortage mandate declared by the Board.

Before taking such actions, the Board shall give any such customer thirty (30) days written notice and an opportunity to be heard and protest the finding of such violation and the imposition of such measure.

7.1.2 Penalties for Excessive Use

Table 7-1 summarizes the compliance measures that QHWD may implement during a declared water shortage. The Board has determined that the surcharges listed below reasonably compensate QHWD and its customers for all loss of water and other damages incurred and as will foster water conservation within the service area. QHWD will implement the following penalties and charges for excessive water use within its service areas:

Table 7-1: Excessive Water Use Penalties and Charges		
Shortage Level	Violation	Notices and Surcharges
All Stages	1st	Documented warning
All Stages	2nd	Documented warning
All Stages	3rd	A fine not to exceed \$500 per violation
All Stages	4th and Subsequent	Discontinuance of service



Chapter 8 LEGAL AUTHORITIES

8.1 Legal Authorities

The WSCP complies with the District's Policies and Procedures section 8.07 titled "Water Conservation." See **Appendix G**. The ordinance establishes the application of the WSCP to all water users and authorizes the appropriate District officers to administer and enforce the provisions of the plan.

QHWD is governed by the Board of Directors. The Board is comprised of five (5) elected members, serving four (4) year terms. The Board has enacted previous water conservation ordinances and resolutions to prepare for water shortages.

In the event of a water shortage emergency where the ordinary demands and requirements of the District cannot be satisfied without depleting QHWD's water supply to the extent that there would be insufficient water for human consumption, sanitation, and fire protection the Board will declare a water shortage condition in accordance with CWC Division 1, §350.

If the QHWD Board of Directors declares a water shortage emergency, QHWD shall coordinate with the City of Lancaster, City of Palmdale, and the County of Los Angeles to issue a proclamation of a local emergency in accordance with CWC §10632(a)(7)(D).

Chapter 9 FINANCIAL CONSEQUENCES OF A WATER SHORTAGE CONTINGENCY PLAN

9.1 Financial Impacts and Mitigation Action

QHWD has adopted a water budget based tiered rate structure. **Table 9-1** details the drought rates that will be implemented upon a water shortage declaration from the Board.

All surplus revenues that the District collects are currently used to fund the Rate Stabilization Fund, conservation, recycling, and other capital improvements. The District estimated projected ranges of water sales by shortage stage to best understand the impact each level of shortage will have on projected revenues and expenditures by each shortage stage.

Table 9-1: Penalties & Charges	
Shortage Level	Changes to Residential Tiered Rate Structure
2 and 3	- Stage 3a: QHWD's drought surcharge of a 50% increase in the per unit cost for residential Tier 3 usage and a 100% increase in residential Tier 4 usage will be put into effect. - Stage 3b: QHWD's drought surcharge of a 75% increase in the per unit cost for residential Tier 3 usage and a 125% increase in residential Tier 4 usage will be put into effect. - Stage 3c: QHWD's drought surcharge of a 100% increase in the per unit cost for residential Tier 3 usage and a 150% increase in residential Tier 4 usage will be put into effect. - A non-residential drought surcharge of 100% on Tier 3 usage will be implemented.
4 and 5	- Stage 4a: Tier 2 (Outdoor Use) water use will have a 50% drought surcharge. - Stage 4b: Tier 2 (Outdoor Use) water use will have a 75% drought surcharge. Tier 3 usage will increase to a 125% surcharge. Tier 4 usage will increase to a 175% surcharge. - Stage 4c: Tier 2 (Outdoor Use) water use will have a 100% drought surcharge. Tier 3 usage will increase to a 150% surcharge. Tier 4 usage will increase to a 200% surcharge. - The non-residential drought surcharge will be increased to 150% on Tier 3 usage.



Table 9-1: Penalties & Charges	
Shortage Level	Changes to Residential Tiered Rate Structure
5 and 6	• QHWD's drought surcharge of a 100% increase in the per unit cost for residential Tier 2, a 150% increase in the per unit cost for residential Tier 3 usage and a 200% increase in residential Tier 4 usage will be remain in effect. • The non-residential drought surcharge will be increased to 200% on Tier 3 usage.

9.2 Reporting Cost of Compliance with Excessive Water Use Prohibition During Drought Emergency

In compliance with California Water Code Section 366, the District shall report on the cost of compliance, including rate structures or excessive water use ordinances, in the event of any of the following:

- Governor declared statewide drought emergency
- District moves to a local water shortage condition requiring mandatory reductions
- Governor declared local drought emergency



Chapter 10 MONITORING AND REPORTING

10.1 Monitoring and Reporting

QHWD will monitor, analyze, and report on water production and use data in accordance with CWC §10632(a)(9).

All QHWD's shareholder accounts are metered. Meter classes include single-family residential, multi-family residential, commercial, industrial, and landscape. Meters are electronically read on a monthly basis and manually verified as needed.

Under normal water supply conditions, water production figures are recorded daily. Totals are reported monthly to the General Manager. Totals are reported monthly to the Board of Directors and incorporated into the water supply report.

During a Stage 1 or Stage 2 water shortage, daily production figures are reported to the Assistant General Manager. The Assistant General Manager compares the weekly production to the target weekly production to verify that the reduction goal is being met. Weekly reports are forwarded to the General Manager and the Water Shortage Response Team. Monthly reports are sent to the Board of Directors. If reduction goals are not met, the Manager will notify the Board of Directors so that corrective action can be taken.

During a Stage 3 or 4 water shortage, the procedure listed above will be followed, with the addition of a bi-monthly production report to the General Manager.

During a Stage 5, 6, or an emergency event, reports will also be provided weekly to the Board of Directors. During emergency shortages, production figures are reported to the General Manager regularly or as needed.



Chapter 11 WSCP REFINEMENT PROCEDURES

The WSCP is meant to be an adaptive management plan that is subject to evaluation and refinement as needed to ensure that the provisions and measures contained in the plan are effective and achieving the desired results of effectively managing the District's water supply during water shortage conditions. Water shortage response actions will include the appropriate level of water shortage risk tolerance and be periodically evaluated to ensure the strategies employed are appropriate for the water shortage level.

The WSCP will be periodically re-evaluated to ensure that its shortage risk tolerance is adequate, and the shortage response actions are effective and up to date based on lessons learned from implementing the WSCP. The WSCP will be revised and updated during the UWMP update cycle to incorporate updated and new information. For example, actions that are no longer applicable for reasons such as program expiration will be removed. However, if revisions to the WSCP are warranted before the UWMP is updated, the WSCP will be updated outside of the UWMP update cycle. In the course of preparing the Annual Assessment each year, District staff will routinely consider the functionality the overall WSCP and will prepare recommendations for the District if changes are found to be needed.



Chapter 12 SPECIAL WATER FEATURE DISTINCTION

12.1 Special Water Feature Distinction

The District specifically distinguishes between “Decorative Water Features” and all other water features in the WSCP. In the event of a water shortage, potable water use for decorative water features such as fountains is prohibited, and only re-circulated water can be used to operate ornamental fountains or other decorative water features. District did not identify any special water features.

Chapter 13 PLAN ADOPTION, SUBMITTAL, AVAILABILITY, AND AMENDMENT PROCEDURES

The notice of the public hearing, held September 24, 2026 at the District's office, was sent to the county of Los Angeles, City of Palmdale, and City of Lancaster on July xx, 2026, in accordance with CWC §10632(a)(c). A copy of the letters from the District to the City of Lancaster, City of Palmdale, and County of Los Angeles in **Appendix C** of this WSCP.

Table 13-1: Notification to Cities and Counties		
City Name	60 Day Notice	Notice of Public Hearing
City of Lancaster	Yes	Yes
City of Palmdale	Yes	Yes
County Name	60 Day Notice	Notice of Public Hearing
Los Angeles	Yes	Yes

A public adoption hearing was held on September 21, 2026 at the District's office. The public hearing provided opportunity for community input. The WSCP update was adopted by the District on September 24, 2026 by approval of Resolution 2026-XX. A copy of the resolution can be viewed in **Appendix D**.

Within 30 days of adoption, the District will submit the WSCP update to the DWR for review. During the DWR review process the District will coordinate with DWR reviewers as necessary. The District will use the online submittal tool located at www.wuedata.water.ca.gov.secure/ developed by the DWR to electronically submit the WSCP update.

Within 30 days of adoption, the District will submit a CD of the adopted WSCP to the California State Library at the following address:

California State Library
 Government Publications Section
 P.O. Box 942867
 Sacramento, CA 94237-001
 Attention: Coordinator, Urban Water Management Plans

Within 30 days of adoption, the District will submit an electronic copy of the adopted WSCP update to the District of Long Beach and the County of Los Angeles electronically in accordance with CWC Section 10632(a)(c). A copy of the transmittals to said agencies will be included in **Appendix C**.



Within 30 days of adoption, the District will have an electronic copy of the adopted WSCP update available for public review at the District Office (see address below) during normal business hours and available on the District's website, <https://www.paramountDistrict.gov/>.

Quartz Hill Water District
5034 W Ave L,
Quartz Hill, CA 93536

Appendix A

Relevant Sections of Los Angeles County Local Hazard Mitigation Plan



EARTHQUAKE

6.3 Earthquake

6.3.1 Nature

Earthquakes occur due to the sudden release of energy in the Earth's crust, generating seismic waves that cause ground shaking. These events, often triggered by movement along fault lines, vary in intensity depending on factors such as magnitude, depth, and proximity to populated areas. In addition to the initial shaking, secondary hazards such as surface faulting, liquefaction, landslides, tsunamis, and aftershocks can worsen the damage. Los Angeles County, located in a highly active seismic region, faces significant risks from these natural events, necessitating extensive mitigation efforts and preparedness planning.

- The most common effects of earthquakes include violent shaking, structural damage, and disruptions to infrastructure.
- Secondary effects can include, but are not limited to, utilities outages, traffic congestion and transportation systems being impassable, and an increase of fire risks, from broken gas and water lines.

EARTHQUAKE KEY POINTS

1. Nature

Earthquakes occur when there is a sudden release of energy from the Earth's crust, creating seismic waves.

2. Location

Los Angeles County is in one of the most highly active seismic regions, having multiple active faults.

3. Extent

The San Andreas Fault remains the greatest threat, with a high chance of an M 6.7+ occurring.

4. Vulnerability

Residents in high-risk seismic zones could be extremely impacted, along with people experiencing homelessness, low income, and the access and functional needs community.

5. Mitigation and Preparedness

Efforts include strengthening building codes, upgrading critical infrastructure, expanding public education, and enhancing emergency response planning.

- Earthquakes occur with little to no warning, making preparedness essential for minimizing loss of life and property.

6.3.2 Location

Los Angeles County is one of the most seismically active regions in the United States, with multiple active fault systems capable of generating destructive earthquakes.

Major faults include:

- San Andreas Fault - Capable of M 8.0+
- Newport-Inglewood Fault - M 7.4
- Malibu Coast Fault System - M 6.7
- San Fernando Fault - M 6.6
- Santa Monica Fault - M 7.0
- Whittier Fault - M 7.2
- Sierra Madre Fault - M 6.0-7.0

For a better visual representation of this Earthquake Hazard within LA County planning area, please reference Appendix A for earthquake fault maps.

6.3.3 Extent

According to US Geological Survey, there are two types of earthquake measurements, magnitude (Mw) and intensity (i). Magnitude is a measure of the energy released at the source of the earthquake. Intensity scale help measure impact on people and structures.

Earthquake impact is based on magnitude scale is as follows:

- Great—Mw > 8,
- Major—Mw = 7.0 - 7.9
- Strong—Mw = 6.0 - 6.9
- Moderate—Mw = 5.0 - 5.9
- Light—Mw = 4.0 - 4.9
- Minor—Mw = 3.0 - 3.9
- Micro—Mw < 3

Modified Mercalli Intensity Scale is from I to XII, which refers I, as not felt and XII as extreme.

Figure 6.3.1 Modified Mercalli Intensity Scale

CIIM Intensity	People's Reaction	Furnishings	Built Environment	Natural Environment
I	Not felt			Changes in level and clarity of well water are occasionally associated with great earthquakes at distances beyond which the earthquakes felt by people.
II	Felt by a few.	Delicately suspended objects may swing.		
III	Felt by several; vibration like passing of truck.	Hanging objects may swing appreciably.		
IV	Felt by many; sensation like heavy body striking building.	Dishes rattle.	Walls creak; window rattle.	
V	Felt by nearly all; frightens a few.	Pictures swing out of place; small objects move; a few objects fall from shelves within the community.	A few instances of cracked plaster and cracked windows within the community.	Trees and bushes shaken noticeably.
VI	Frightens many; people move unsteadily.	Many objects fall from shelves.	A few instances of fallen plaster, broken windows, and damaged chimneys within the community.	Some fall of tree limbs and tops, isolated rockfalls and landslides, and isolated liquefaction.
VII	Frightens most; some lose balance.	Heavy furniture overturned.	Damage negligible in buildings of good design and construction, but considerable in some poorly built or badly designed structures; weak chimneys broken at roof line, fall of unbraced parapets.	Tree damage, rockfalls, landslides, and liquefaction are more severe and widespread with increasing intensity.
VIII	Many find it difficult to stand.	Very heavy furniture moves conspicuously.	Damage slight in buildings designed to be earthquake resistant, but severe in some poorly built structures. Widespread fall of chimneys and monuments.	
IX	Some forcibly thrown to the ground.		Damage considerable in some buildings designed to be earthquake resistant; buildings shift off foundations if not bolted to them.	
X			Most ordinary masonry structures collapse; damage moderate to severe in many buildings designed to be earthquake resistant.	

Over 75% of unincorporated Los Angeles County is at risk for severe to extreme shaking in a future earthquake.

The region's dense urban environment, combined with aging infrastructure, increases the likelihood of extensive damage and prolonged recovery times.

Faults running beneath critical infrastructure corridors, including freeways and power grids, pose a significant threat to public safety and economic stability of the planning area.

6.3.4 History

Los Angeles County has a long history of destructive earthquakes, with some of the earliest recorded events dating back to the early 19th century. The San Juan Capistrano Earthquake of 1812 (M 7.5) was among the first to be documented, causing the collapse of Mission San Juan Capistrano and resulting in 40 fatalities. Over the years, the county has experienced numerous significant quakes, including the devastating 1857 Fort Tejon Earthquake (M 7.9), the 1971 San Fernando Earthquake (M 6.6), and the infamous 1994 Northridge Earthquake (M 6.7), which caused billions in damages and led to widespread infrastructure failures. There have been no federal declarations or state proclamations for earthquakes in the last five years.

Major Earthquakes in Los Angeles County (1812 - Present)			
Date	Magnitude	Name / Location	Notable Impact
December 8, 1812	7.5	San Juan Capistrano Earthquake	Destroyed Mission San Juan Capistrano, killed 40 people.
December 21, 1812	7.1	West Ventura Earthquake	Caused significant shaking in Southern California.
January 9, 1857	7.9	Fort Tejon Earthquake	Largest earthquake on the San Andreas Fault; ruptured 225 miles.
July 21, 1952	7.5	Kern County Earthquake	Strong shaking felt in Los Angeles; major damage to Bakersfield.
February 9, 1971	6.6	San Fernando Earthquake	65 deaths, \$553 million in damages, collapse of Veterans Hospital.
October 1, 1987	5.9	Whittier Narrows Earthquake	8 deaths, 200 injuries, \$358 million in damages.
February 28, 1990	5.7	Upland Earthquake	30 injuries, \$12.7 million in damages.

June 28, 1991	5.6	Sierra Madre Earthquake	1 death, 100+ injuries, \$40 million in damages.
January 17, 1994	6.7	Northridge Earthquake	57 deaths, 8,700 injuries, \$40 billion in damages, freeways collapsed.
July 29, 2008	5.5	Chino Hills Earthquake	8 injuries, minor structural damage.
March 28, 2014	5.1	La Habra Earthquake	Few injuries, \$10 million in damages.
July 6, 2019	7.1	Ridgecrest Earthquake	Widespread damage in Southern California, infrastructure impacts.

6.3.5 Probability

Trends in Seismic Activity

Over 163 earthquakes of M 5.0 or greater have been recorded in Southern California since 1812.

The San Andreas Fault remains the greatest seismic hazard, with a 59% chance of an M 6.7+ event in the next 30 years.

Future Earthquake Occurrence

The U.S. Geological Survey (USGS) estimates the following probabilities for a major earthquake in Los Angeles County in the next 30 years:

- 60% chance of an M 6.7+ earthquake
- 46% chance of an M 7.0+ earthquake
- 31% chance of an M 7.5+ earthquake

6.3.6 Vulnerability

The county's vulnerability to earthquakes extends beyond physical infrastructure, affecting its residents and essential services. Older buildings, particularly unreinforced masonry and soft-story structures, are at high risk of collapse, posing significant

dangers to residents and businesses. Seismic retrofitting, early warning systems, and stricter building codes have improved resilience, but vulnerabilities remain in older structures and critical infrastructure.

Critical Infrastructure at Risk

- **Highways, bridges, and transportation routes:** A major earthquake could severely disrupt mobility, shipment of goods and services while also delaying emergency response and evacuations. Major highways such as, but not limited to the I-5, I-10, US-101, CA-60, CA-14, I-405, I-710, and I-105 could be impacted.
- **Energy grids and water system:** Disruptions could leave millions without power and clean water.
- **Hospitals and emergency services:** 325 hospitals and 1,299 fire stations in the Los Angeles County could suffer functional impairments.
- **Unreinforced masonry and soft-story buildings:** Many older structures are highly susceptible to collapse during strong ground shaking.

County Specific Critical Facilities Affected:

- Fire Department: 314 facilities (93.18%)
- Public Works: 201 facilities (87.39%)
- Health Services: 56 facilities (85.71%)
- Public Health: 37 facilities (92.50%)
- Libraries: 78 branches (89.66%)
- Parks: 179 (97.79%)
- Education: 70 (85.37%)

Los Angeles County lies at the intersection of multiple major fault lines, including the San Andreas Fault. According to the hazard matrix, the risk of violent ground shaking is prevalent countywide, particularly in urban centers and regions with critical infrastructure. The potential consequences of violent seismic shaking include widespread structural damage, disruption of services, economic losses, and human casualties.

Populations at Risk

- The THIRA estimates over 2 million residents could be significantly impacted in a major seismic event, particularly those in high-risk seismic zones.

- People Experiencing Homelessness (PEH) populations: 75,000+ unhoused individuals in Los Angeles County live in areas at risk of violent shaking.
- Low-income and individuals with access and functional needs (AFN): For more details on impacted population please see Section 5.

Extent of Exposure

- **Total Area Exposed:** 3,041.91 sq mi
- **Supervisory Districts (SD) Impacted:**
 - **SD5:** 1,950.78 sq mi (69.50%)
 - **SD3:** 379.41 sq mi (87.99%)
 - **SD1:** 349.17 sq mi (98.95%)
 - **SD2:** 362.95 sq mi (99.99%)
 - **SD4:** 210.92 sq mi (99.10%)

6.3.7 Impacts

Los Angeles County has a long history of experiencing damaging earthquakes due to its location along multiple active fault systems, including the San Andreas, Newport-Inglewood, and Whittier faults. Historic earthquakes such as the 1971 San Fernando (M6.6) and 1994 Northridge (M6.7) events caused catastrophic losses. The San Fernando earthquake resulted in 65 deaths, the collapse of hospital structures, and over \$550 million in damages, while the Northridge earthquake caused 57 deaths, more than 8,700 injuries, and an estimated \$40 billion in economic losses, including widespread infrastructure failures such as collapsed freeways and damaged utility systems.

Impacts from future major seismic events are projected to be even more severe due to population density, aging infrastructure, and increasing development in seismically vulnerable areas. Over 75% of unincorporated Los Angeles County is at risk of severe to extreme ground shaking. Current estimates suggest that a large-magnitude earthquake could displace up to 2.2 million people, injure or kill thousands, and result in over \$200 billion in combined economic losses, including \$113 billion in property damage and \$68 billion in business interruptions.

The County's critical systems; power, water, transportation, healthcare, and communications, are especially vulnerable. A major earthquake could impair up to 325 hospitals and 1,299 fire stations and disrupt critical infrastructure for millions. Populations with heightened vulnerability include the 75,000+ people experiencing homelessness, those with access and functional needs, and residents of older, unreinforced masonry and soft-story structures.

Without sufficient mitigation, a future earthquake could result in cascading failures across multiple sectors and prolong the County's recovery for years. These risks highlight the urgency for continued investment in seismic retrofitting, stricter enforcement of building codes, expanding statewide early warning systems, and equitable preparedness programs targeting at-risk vulnerable populations.

- **Casualties and injuries:** Depending on the time of day and location, thousands could be injured or killed in a severe earthquake.
- **Economic disruption:** A significant earthquake could halt business operations, damage supply chains, and force thousands into unemployment.
- **Housing displacement:** An estimated 2.2 million residents could be displaced, with tens of thousands requiring emergency sheltering.

Economic Impact

A major earthquake in Los Angeles County could result in over \$200 billion in economic losses, with a total of \$118 trillion-dollar exposure. Losses can include:

- \$68 billion in business interruptions
- \$51 billion in lost economic activity
- \$113 billion in property damages

Problem Statement

The pervasive exposure of Los Angeles County to violent earthquake shaking presents a systemic threat to public safety, economic stability, and essential services. Nearly all major departments and infrastructure elements are located within high-shaking hazard zones. The extensive reach across all five Supervisorial Districts (SD) amplifies the challenge, highlighting the urgent need for retrofitting, public education, preparedness programs, and resilient design policies. Failure to address this hazard could lead to catastrophic loss of life and functionality in the event of a major seismic event.

6.3.8 Mitigation and Preparedness

Efforts to reduce earthquake risks in Los Angeles County include strengthening building codes, enhancing emergency preparedness, and retrofitting vulnerable structures.

Key efforts to mitigate earthquake risks include:

- Strengthening building codes and enforcing retrofitting laws
- Upgrading critical infrastructure
- Expanding public education and early warning systems
- Enhancing emergency response planning

By proactively implementing these measures, Los Angeles County aims to reduce casualties, infrastructure damage, and economic losses in future seismic events.

Seismic Retrofitting Programs

- **Soft story retrofit program:** Mandates seismic upgrades for older apartment buildings.
- **Non-ductile concrete building retrofits:** Strengthens older commercial and residential structures.
- **Hospitals and emergency facilities retrofitting:** Ensures critical services remain operational post-earthquake.

Policy and Regulatory Measures

- Assembly Bill (AB) 1857: Strengthens building standards for multi-story structures.
- AB 2681: Requires cities and counties to inventory vulnerable buildings.
- Updated California Building Code (CBC): Enforces stricter seismic design criteria for new construction.
- Public Education: Teaching to Drop, Cover and Hold On; the household preparedness checklist, educate residents on emergency response, retrofitting, and disaster preparedness.
- Early Warning/ ShakeAlert System: Provides real-time earthquake early warnings to residents via mobile alerts and public messaging.
- Public earthquake drills: Annual Great California ShakeOut encourages preparedness.

6.3.9 Summary

Los Angeles County remains at high risk for devastating earthquakes, with scientific projections indicating a strong likelihood of a significant seismic event in the coming decades. The region has experienced numerous historic earthquakes, and the potential for future large-scale disasters remains ever-present. While advances in engineering, emergency preparedness, and mitigation efforts have improved resilience, challenges persist, particularly regarding aging infrastructure and vulnerable communities. Continued investments in retrofitting, public education, and early warning systems will be critical in minimizing casualties, economic losses, and recovery challenges in future earthquakes.

Appendix B

Relevant Water Code Section

SECTION 2

CWC 10632(a)(1)

The analysis of water supply reliability conducted pursuant to Section 10635.

CWC 10632(a)(2)

The procedures used in conducting an annual water supply and demand assessment that include, at a minimum, both of the following:

- (A) The written decision-making process that an urban water supplier will use each year to determine its water supply reliability.
- (B) The key data inputs and assessment methodology used to evaluate the urban water supplier's water supply reliability for the current year and one dry year, including all of the following:
 - (i) Current year unconstrained demand, considering weather, growth, and other influencing factors, such as policies to manage current supplies to meet demand objectives in future years, as applicable.
 - (ii) Current year available supply, considering hydrological and regulatory conditions in the current year and one dry year. The annual supply and demand assessment may consider more than one dry year solely at the discretion of the urban water supplier.
 - (iii) Existing infrastructure capabilities and plausible constraints.
 - (iv) A defined set of locally applicable evaluation criteria that are consistently relied upon for each annual water supply and demand assessment.
 - (v) A description and quantification of each source of water supply.

CWC 10632.1.

An urban water supplier shall conduct an annual water supply and demand assessment pursuant to subdivision (a) of Section 10632 and, on or before July 1 of each year, submit an annual water shortage assessment report to the department with information for anticipated shortage, triggered shortage response actions, compliance and enforcement actions, and communication actions consistent with the supplier's water shortage contingency plan. An urban water supplier that relies on imported water from the State Water Project or the Bureau of Reclamation shall submit its annual water supply and demand assessment within 14 days of receiving its final allocations, or by July 1 of each year, whichever is later.

CWC 10632(a)(3)

(A) Six standard water shortage levels corresponding to progressive ranges of up to 10, 20, 30, 40, and 50 percent shortages and greater than 50 percent shortage. Urban water suppliers shall define these shortage levels based on the suppliers' water supply conditions, including percentage reductions in water supply, changes in groundwater levels, changes in surface elevation or level of subsidence, or other changes in hydrological or other local conditions indicative of the water supply available for use. Shortage levels shall also apply to catastrophic interruption of water supplies, including, but not limited to, a regional power outage, an earthquake, and other potential emergency events.

(B) An urban water supplier with an existing water shortage contingency plan that uses different water shortage levels may comply with the requirement in subparagraph (A) by developing and including a cross-reference relating its existing categories to the six standard water shortage levels.

SECTION 3

CWC 10632

(a)(1) Stages of action to be undertaken by the urban water supplier in response to water supply shortages, including up to a 50 percent reduction in water supply, and an outline of specific water supply conditions which are applicable to each stage.

(a)(4) Shortage response actions that align with the defined shortage levels and include, at a minimum, all of the following:

- (A) Locally appropriate supply augmentation actions.

- (B) Locally appropriate demand reduction actions to adequately respond to shortages.
- (C) Locally appropriate operational changes.
- (D) Additional, mandatory prohibitions against specific water use practices that are in addition to state-mandated prohibitions and appropriate to the local conditions.
- (E) For each action, an estimate of the extent to which the gap between supplies and demand will be reduced by implementation of the action.

SECTION 4

CWC 10632.5. (a)

In addition to the requirements of paragraph (3) of subdivision (a) of Section 10632, beginning January 1, 2020, the plan shall include a seismic risk assessment and mitigation plan to assess the vulnerability of each of the various facilities of a water system and mitigate those vulnerabilities.

- (B) An urban water supplier shall update the seismic risk assessment and mitigation plan when updating its urban water management plan as required by Section 10621.
- (C) An urban water supplier may comply with this section by submitting, pursuant to Section 10644, a copy of the most recent adopted local hazard mitigation plan or multihazard mitigation plan under the federal Disaster Mitigation Act of 2000 (Public Law 106-390) if the local hazard mitigation plan or multihazard mitigation plan addresses seismic risk.

SECTION 5

CWC 10632 (a)(5)

Communication protocols and procedures to inform customers, the public, interested parties, and local, regional, and state governments, regarding, at a minimum, all of the following:

- (A) Any current or predicted shortages as determined by the annual water supply and demand assessment described pursuant to Section 10632.1.
- (B) Any shortage response actions triggered or anticipated to be triggered by the annual water supply and demand assessment described pursuant to Section 10632.1.

SECTION 6

CWC 10632 (a)(6)

For an urban retail water supplier, customer compliance, enforcement, appeal, and exemption procedures for triggered shortage response actions as determined pursuant to Section 10632.2.

CWC 10632 (a)(7)

- (A) A description of the legal authorities that empower the urban water supplier to implement and enforce its shortage response actions specified in paragraph (4) that may include, but are not limited to, statutory authorities, ordinances, resolutions, and contract provisions.
- (B) A statement that an urban water supplier shall declare a water shortage emergency in accordance with Chapter 3 (commencing with Section 350) of Division 1. [see below]
- (C) A statement that an urban water supplier shall coordinate with any city or county within which it provides water supply services for the possible proclamation of a local emergency, as defined in Section 8558 of the Government Code.

CWC Division 1, Section 350

Declaration of water shortage emergency condition. The governing body of a distributor of a public water supply, whether publicly or privately owned and including a mutual water company, shall declare a water shortage emergency condition to prevail within the area served by such distributor whenever it finds and determines that the ordinary demands and requirements of water consumers cannot be satisfied without depleting the water supply of the distributor to the extent that there would be insufficient water for human consumption, sanitation, and fire protection.

CWC 10632 (a)(8)

A description of the financial consequences of, and responses for, drought conditions, including, but not limited to, all of the following:

- (A) A description of potential revenue reductions and expense increases associated with activated shortage response actions described in paragraph (4).
- (B) A description of mitigation actions needed to address revenue reductions and expense increases associated with activated shortage response actions described in paragraph (4).
- (C) A description of the cost of compliance with Chapter 3.3 (commencing with Section 365) of Division 1.

CWC 10632 (a)(9)

For an urban retail water supplier, monitoring and reporting requirements and procedures that ensure appropriate data is collected, tracked, and analyzed for purposes of monitoring customer compliance and to meet state reporting requirements.

SECTION 7

CWC 10632 (a)(10)

Reevaluation and improvement procedures for systematically monitoring and evaluating the functionality of the water shortage contingency plan in order to ensure shortage risk tolerance is adequate and appropriate water shortage mitigation strategies are implemented as needed.

CWC 10632 (b)

For purposes of developing the water shortage contingency plan pursuant to subdivision (a), an urban water supplier shall analyze and define water features that are artificially supplied with water, including ponds, lakes, waterfalls, and fountains, separately from swimming pools and spas, as defined in subdivision (a) of Section 115921 of the Health and Safety Code.

CWC 10632 (a)(c)

The urban water supplier shall make available the water shortage contingency plan prepared pursuant to this article to its customers and any city or county within which it provides water supplies no later than 30 days after adoption of the water shortage contingency plan.

Appendix C

Notification to Cities and Counties

Appendix D

WSCP Adoption Resolution

Appendix E

Electronic Submittal to DWR



Appendix F

Water Savings Estimate

Water Saving Levels	
Water Saving Levels	How much is this going to reduce the water shortage gap? (%)
High	>20%
Medium	5-15%
Low	1-5%

Water Savings Actions		
Water Savings Action	How much is this going to reduce the water shortage gap? (%)	Additional Explanation or Reference
Expand Public Information Campaign	Medium	<i>California Drought Contingency Plan prepared by State of California Department of Water Resources November 2010</i>
Landscape - Restrict or prohibit runoff from landscape irrigation	High	<i>Urban Drought Guidebook 2008 Updated Edition prepared by State of California Department of Water Resources 2008</i>
Other water feature or swimming pool restriction	Low	<i>Jumpstart Water Shortage Toolkit prepared by the California Urban Water Conservation Council 2015</i>
Landscape - Other landscape restrictions or prohibition	Medium	<i>Urban Drought Guidebook 2008 Updated Edition prepared by State of California Department of Water Resources 2008</i>
Other - Customer must repair leaks, breaks, and malfunctions in a timely manner	Low	Water system losses are dependent on the agency.
Landscape - Limit landscape irrigation to specific days	High	<i>Jumpstart Water Shortage Toolkit prepared by the California Urban Water Conservation Council 2016</i>
Other- Progressively increasing fines for unsustainable, inefficient and then non-essential water use.	High	Voluntary reductions can vary depending on what level of savings is being reduced.
Implement or Modify Drought Rate Structure or Surcharge	High	The District has had high success with their drought rate structure in the past reducing consumption.
Stored Emergency Supply	Low	<i>The District only has a limited supply of emergency water.</i>

Appendix G

QHWD Policies and Procedures Section 8.07



be charged for a new regular connection for the desired meter size as set forth in Article 7.06.

- B. Charges for a Larger Meter:** If the desired meter size is larger than the current size, the Consumer/Owner shall pay the full current charges for a new regular service connection for the desired meter size as set forth in Article 7.06, less any credit on the removed meter.
- C. Charges for Change in Meter Location:** If the Consumer/Owner desires a change in location of the meter, such change may be effected with the mutual agreement of the District and the property owner (in the case of a request by a Consumer who does not own the property), and the Consumer/Owner shall pay for the actual costs incurred by the District.
- D. Change in Land Use:** The Consumer/Owner shall notify the District of any change in the character or use of the property or buildings from that for which the service connection was originally obtained. If a residential property is to be reclassified or used as commercial or industrial, or a commercial property is to be reclassified or used as industrial, the owner shall pay any additional charges that may be applicable by reason of the reclassification. In all cases the Manager's determination of the property's zoning classification or use will be final, subject to an appeal to the Board.
- E. Inclusion of Additional Land Area:** The Consumer/Owner shall notify the District of any additional land area or adjacent lots not served at the time of original commencement of service that are to be served from the existing service connection.

8.07: WATER CONSERVATION

The purpose of this rule is to ensure that water resources available to the District are put to a reasonable beneficial use and that the benefits of the District's water supply and service extend to the largest number of persons.

- A. Wastage:** In order to protect itself against serious and negligent waste of water, the District may disconnect service as set forth in Article 8.05B(3).
- B. Use of Water Saving Devices and Practices:** Each Consumer of the District is urged to install devices to reduce the quantity of water to flush toilets and to reduce the flow rate of showers. Each Consumer is further urged to adopt such other water usage and reusage practices and procedures as are feasible and reasonable.

- C. **Use of Recycled Water:** Where recycled water is available and, where consistent with applicable law, the Consumer shall use such recycled water for landscape irrigation and other non-potable applications. Separate facilities shall be utilized for the transportation and delivery of recycled water.
- D. **Rules and Regulations:** The District may adopt such rules and regulations imposing restrictions on the use and consumption of water, as it may deem appropriate. Violation of District regulations governing water conservation may result in termination of service, as provided in Article 8.05B(2).

8.08: CROSS CONNECTIONS

The District has adopted a Cross-Connection Control Program and incorporates such program herein. The District Cross-Connection Control Program is attached hereto as Appendix D.

8.09: UNLAWFUL ACTS

In order to protect public water supplies, certain acts are, by state law, misdemeanors and in some instances, penalties are punishable by imprisonment in the county jail for not more than one year or in the state prison. Among the more significant statutes involving criminal acts with respect to water systems are:

- A. **Section 498 Penal Code:** This section includes stealing water, as well as diverting other utilities illegally and taking water after service has been disconnected and the meter sealed (including unauthorized connections to fire hydrants - see 9.03).
- B. **Section 488 Penal Code:** Permitting willful or neglectful seepage or overflow of water on adjacent lands, public or private roads or highways.
- C. **Sections 4450 to 4457 Health and Safety Code:** Any act that leads to the pollution of any conduit or reservoir.

8.10: FIRE HYDRANT DAMAGE

When any person, company, or agency is determined to be the responsible party that has caused damage of a fire hydrant or blow off valve, the District may charge that party with all costs necessary to repair the damages and the cost of water loss computed on the basis of the duration of flow and the flow rate.