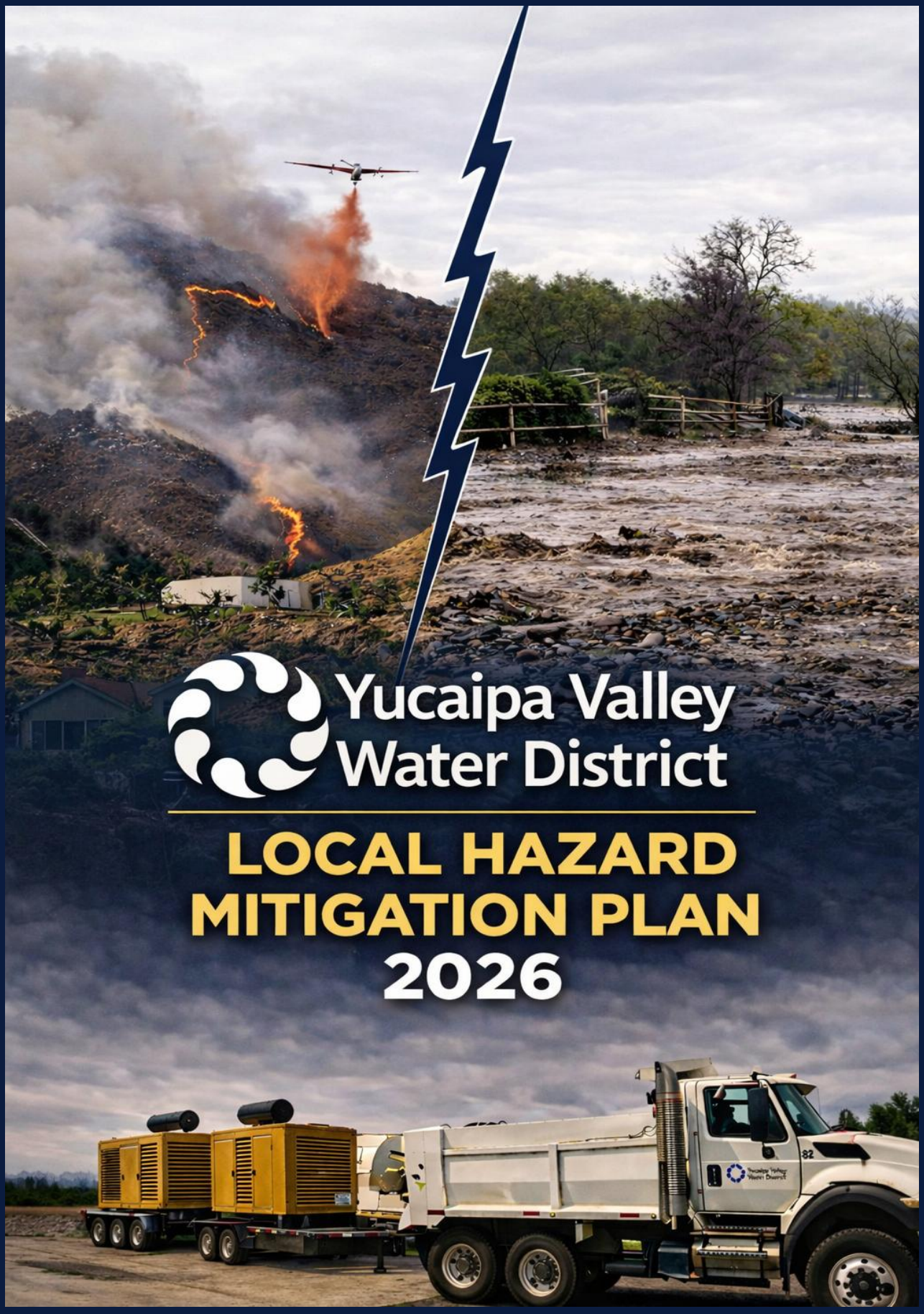
Yucaipa Valley
Water District
LOCAL HAZARD
MITIGATION PLAN
2026

Yucaipa Valley Water District

Hazard Mitigation Plan Update

2026 Hazard Mitigation Plan Update

FEMA Approval Date:

Date of District Board Approval:

Primary Contact During Development

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EXECUTIVE SUMMARY

Yucaipa Valley Water District 2026 Local Hazard Mitigation Plan Update Public Review Draft – May 2026

The District is responsible for delivering safe, reliable drinking water, recycled water, and sewer services to approximately 52,202 residents and businesses in Yucaipa, Calimesa, and surrounding areas. This 2026 Local Hazard Mitigation Plan updates the District's previous plan and fulfills federal requirements under the Disaster Mitigation Act of 2000. An approved plan keeps the District eligible for important federal and state grant funding to strengthen infrastructure before disasters occur.

Why This Plan Matters

Natural hazards cannot be prevented, but their impacts can be significantly reduced. This plan identifies the greatest risks to the District's water, recycled water, and sewer systems and outlines practical actions to protect critical infrastructure, maintain service during emergencies, and reduce long-term costs to ratepayers.

Community Profile

The District serves a diverse community of approximately 52,202 people across 40 square miles (service area) with significant elevation changes (2,044 to 5,184 feet), requiring 18 separate pressure zones. The District operates:

- 244 miles of potable water mains, 42 miles of recycled water mains, and 228 miles of sewer mains.
- 39 production wells
- Multiple treatment facilities, reservoirs, pump stations, and lift stations
- The Henry N. Wochholz Regional Water Recycling Facility (WRWRF) and the 14-mile Brine Line

Approximately 50% of the service area remains undeveloped, placing portions of the District in the Wildland-Urban Interface (WUI).

Priority Hazards

After careful analysis, the Planning Team identified four priority hazards:

Hazard	Probability	Potential Impact	Priority
Earthquake	Highly Likely	Catastrophic	**High**
Wildfire	Highly Likely	Catastrophic	**High**
Drought / Climate Change	Highly Likely	Critical	Medium
Flooding / Post-Fire Debris Flows	Likely	Critical	Medium

Earthquake and Wildfire pose the greatest threats due to the District's location near the San Andreas Fault and in a high fire hazard severity zone.

Key Findings from Risk Assessment

- Many critical facilities and hundreds of miles of pipelines are exposed to multiple hazards.
- A major earthquake on the San Andreas Fault could cause widespread damage to reservoirs, wells, treatment plants, and pipelines.
- Wildfires can cause power outages, smoke damage, and post-fire debris flows that threaten infrastructure in drainages.
- Drought stresses groundwater supplies, while flooding and debris flows primarily affect low-lying crossings, bridges, and lift stations.

Mitigation Strategy – Protecting Your Services

The cornerstone of this plan is the District's 2026–2031 Capital Improvement Program (CIP), a $219.8 million investment that already incorporates many hazard mitigation projects. Major initiatives include:

- Seismic retrofits and replacement of vulnerable pipelines with earthquake-resistant materials
- Reservoir replacements with modern, hazard-resistant designs
- Lift station relocations to higher ground to reduce flood risk.
- Expansion of Aquifer Storage and Recovery (ASR) and the SAGE Project at the WRWRF to improve drought resilience and recycled water production
- Emergency power generators, microgrids, and SCADA upgrades for system-wide reliability
- Brush clearance, fire-resistant upgrades, and post-fire debris flow protection

These projects address multiple hazards simultaneously and will be implemented primarily through existing budgets, supplemented by state and federal grants.

Planning Process

This plan was developed by a dedicated internal Planning Team with input from San Bernardino County Office of Emergency Services, local fire departments, the cities of Yucaipa and Calimesa, and mutual water companies. The draft was made available for public review and comment from May 1 to May 30, 2026, via the District website, Facebook, X (Twitter), and Board meetings.

Next Steps

All public comments received will be reviewed and considered before the final plan is submitted to Cal OES and FEMA for approval. Once approved, the plan will be formally adopted by the YVWD Board of Directors.

The Yucaipa Valley Water District remains committed to delivering reliable water, recycled water, and sewer services, even during emergencies. This Hazard Mitigation Plan is an important step in building long-term resilience for our community.

How to Provide Comments Please submit your comments by May 30, 2026 to: John Wrobel, Public Works Manager Email: jwrobel@yvwd.us Phone: (909) 797-5117
Comments may also be submitted through the District website at www.yvwd.us.

SECTION 1. - Introduction

1.0 Purpose of the Plan

Emergencies or disasters may cause death; leave people injured or displaced; cause significant damage to our communities, businesses, public infrastructure, and our environment; and cost tremendous amounts in terms of response and recovery dollars and economic loss.

Hazard mitigation reduces or eliminates losses of life and property. In addition, it can protect critical facilities, reduce exposure to liability, and minimize service disruption. In the past, emergency management focused primarily on responding after disasters. After disasters, repairs and reconstruction are often completed in such a way as to simply restore areas to pre-disaster conditions. Such efforts expedite a return to normalcy; however, the replication of pre-disaster conditions results in a cycle of damage, reconstruction, and repeated damage. Hazard mitigation helps to ensure that such cycles are broken, and that post-disaster repairs and reconstruction result in a reduction in hazard vulnerability.

While we cannot prevent disasters from happening, their effects can be reduced or eliminated through awareness efforts, preparedness, and mitigation. For those hazards which cannot be fully mitigated, the District must be prepared to provide an efficient and effective response and recovery.

The primary purpose of the updated Local Hazard Mitigation Plan (LHMP) developed by the Yucaipa Valley Water District is to continue to assess the significant nature that may affect the District, evaluate and incorporate ongoing mitigation activities and related programs, determine additional mitigation measures that should be undertaken, and to outline a strategy for implementation of mitigation projects. This plan is an integral part of the District's long-term plan to minimize infrastructure damage from natural disasters. The established mitigation projects provided were identified and reviewed by members of the Districts Safety Planning Committee and additional District staff.

District staff, customers, and professionals active in disaster planning, response, and mitigation provided important input in the development of the plan and recommended goals and objectives, mitigation measures, and priorities for actions.

This plan fulfills the requirements of the following programs:

1. Pre-Disaster Mitigation (PDM)
2. Hazard Mitigation Grant Program (HMGP)
3. Flood Mitigation Assistance (FMA) Program
4. NFIP was not used, as the District is not a city but a Special District that does not qualify for NFIP

Section 322 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, 42 U.S.C. 5165, was enacted under section 104 of the Disaster Mitigation Act of 2000, P.L. 106-390, provides new and revitalized approaches to mitigation planning. Section 322, in concert with other sections of the Act, provides a significant opportunity to reduce the Nation's disaster losses through mitigation planning and emphasizing the need for State, local and tribal entities to closely coordinate mitigation planning and implementation efforts. A major requirement of the law is the development of local hazard mitigation plans. These plans must be developed and approved by the State of California Governor's Office of Emergency Services (CalOES) and Federal Emergency Management Agency (FEMA) every 5 years for the local jurisdictions to be eligible for Hazard Mitigation Grant Program (HMGP) project funding from State and Presidentially declared disasters that occur after 2001. Local mitigation plans must be reviewed, updated, and re-approved by FEMA every five years to remain eligible. This Mitigation Plan has been updated to meet the requirements of the Act and the regulations established by FEMA.

1.1 Community Profile

1.1.1 Physical Setting

Located about 75 miles east of the Pacific Ocean, the District is in San Bernardino and Riverside County. The District is in the upper portion of the Santa Ana Watershed approximately 40 miles west of Palm Springs, 70 miles east of Los Angeles, and 120 miles north of San Diego in a high elevation valley at the base of the San Bernardino Mountain Range. The Yucaipa Valley, including Calimesa, is situated in a rural area east of Redlands and north of Beaumont and generally consists of the cities of Yucaipa and Calimesa. The District's current service area encompasses approximately 25,742 acres or 40 square miles.

The topography of the area is characterized by alluvial highlands, rolling hills separated by deeply entrenched stream beds, namely, the Yucaipa and Wilson Creeks, with a large mesa to the west. The District includes the incorporated cities of Yucaipa and Calimesa, which are in San Bernardino and Riverside Counties, respectively.

The District's primary service area ranges in elevation from a low elevation of 2,044 feet above sea level to a high elevation of 5,184 feet above sea level. The range in elevation of 3,140 feet within the District requires YVWD to provide water service from 18 separate pressure zones. The sphere of influence expands the acreage to 43,525 acres or 68 square miles.

The District's service area includes two mutual water companies, the Western Heights Water Company and the South Mesa Water Company. The service area of the Western Heights Mutual Water Company is 4.53 square miles (2,902 acres), and the service area of the South Mesa Mutual Water Company is 4.00 square miles (2,561 acres). In the future, the population of Western Heights Mutual Water Company and South Mesa Water Company are expected to have limited growth as compared to the larger service area boundary of the District.

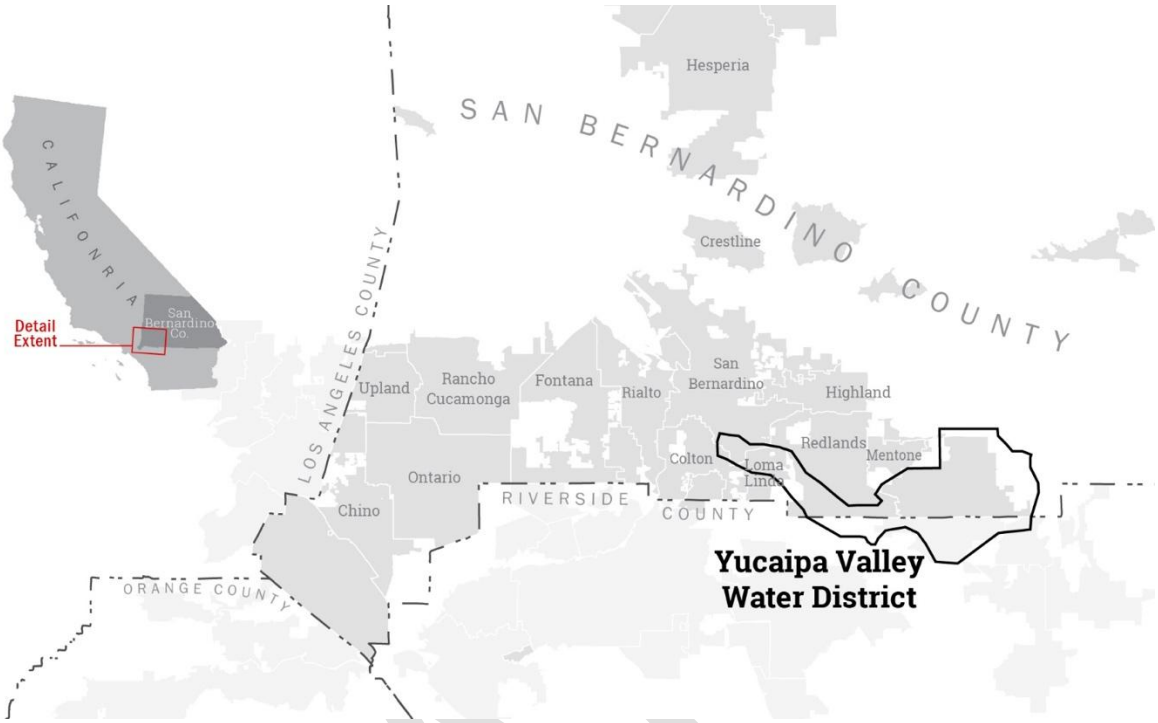


FIGURE 1. Yucaipa Valley Water District County Map.

Temperatures in the District range from an average high of 78ºF to an average low of 49ºF. The record high for the area is 117ºF, and the record low is 17ºF. The annual average rainfall for the area is 15.8 inches. The climate is characterized by hot, dry summers when temperatures can rise above 100º, and moderate winters, with rare freezing temperatures. A major portion of the precipitation occurs between December and March. Snow in the upper reaches of the area is possible but is not considered an important contributing factor to runoff.

The topography of the area is steep hills and broad, steeply sloping valleys. Wilson Creek divides into three main tributaries, with Gateway Wash as the north fork, Oak Glen Creek the south fork, and Wilson Creek located between the two. The central area of Yucaipa is divided into two main drainage systems, which are the area drained by Chicken Springs Wash (a tributary of Wilson Creek), and the area drained by Yucaipa Creek, which is a tributary to Wildwood Creek. Wildwood Creek flows westerly through the southern portion of the watershed and joins Wilson Creek. The watershed also includes several additional areas. They are an area tributary to Mill Creek, a large natural area in the easterly portion which is tributary to Little San Gorgonio Creek, a relatively small area adjacent to the southerly limits (tributary to the County Line Channel) whose flows go southwesterly into Riverside County, a relatively small area in the easterly limits along the San Bernardino Freeway (I-10) (and drains into the City of Redlands), and a relatively small area in the northeasterly portion which is tributary to the unincorporated area of Crafton.

1.1.2 History

Yucaipa Valley Water District was formed as part of a reorganization pursuant to the Reorganization Act of 1965, being Division I of Title 6 of the Government Code of the State of California. This reorganization consisted of the dissolution of the Calimesa Water Company and formation of Improvement District No. 1 of YVWD as successor-in-interest thereto, and the dissolution of Improvement District "A" of the San Bernardino Valley Municipal Water District and the formation of Improvement District "A" of YVWD as successor-in-interest thereto. On September 14, 1971, the Secretary of State of the State of California certified and declared the formation of the District.

The District operates under the County Water District Law, being Division 12 of the State of California Water Code. Although the immediate function of the District at the time was to provide water service, service to residential, commercial, and industrial customers are provided as well. These services include potable water service, drinking water treatment, recycled water service, sewer collection, sewer treatment, and salinity elimination.

1.1.3 Demographics

As mentioned above, the Yucaipa Valley Water District serves two counties, which divides the two cities it serves. Yucaipa is located in San Bernardino, and Calimesa is within Riverside County boundaries. Demographic consistency is represented between the two counties and cities served by the District. The average household size is approximately 2.74 persons per household, reflecting a mix of established residential communities, family-oriented neighborhoods, and single unit dwellings.

The population is diverse, with Hispanic or Latino residents comprising the largest ethnic group at approximately 55.8 percent, followed by Non-Hispanic White residents at 25.4 percent, African American residents at 9.4 percent, and Asian American residents at 8.5 percent. Over 21 percent of the population is foreign-born. Educational attainment levels show that 82.1 percent of residents have attained a high school diploma or higher, while 22.9 percent hold a bachelor's degree or higher. Median household income is approximately $82,184 (2023 data), with 13.2 percent of residents living below the poverty level.

These demographic characteristics influence the District's service demands and hazard vulnerability. Larger average household sizes increase per-connection water and sewer usage, particularly during drought periods when conservation efforts are critical. The diverse population requires culturally appropriate public outreach during emergencies, while lower educational attainment and income levels in some areas can affect residents' ability to prepare for and recover from hazard events.

1.1.4 Population and Service Connections

According to the District's 2025 Urban Water Management Plan, the Yucaipa Valley Water District serves a total population of 52,202 residents and businesses. The District provides three integrated utility services: potable drinking water, recycled water, and sewer collection/treatment with brine disposal.

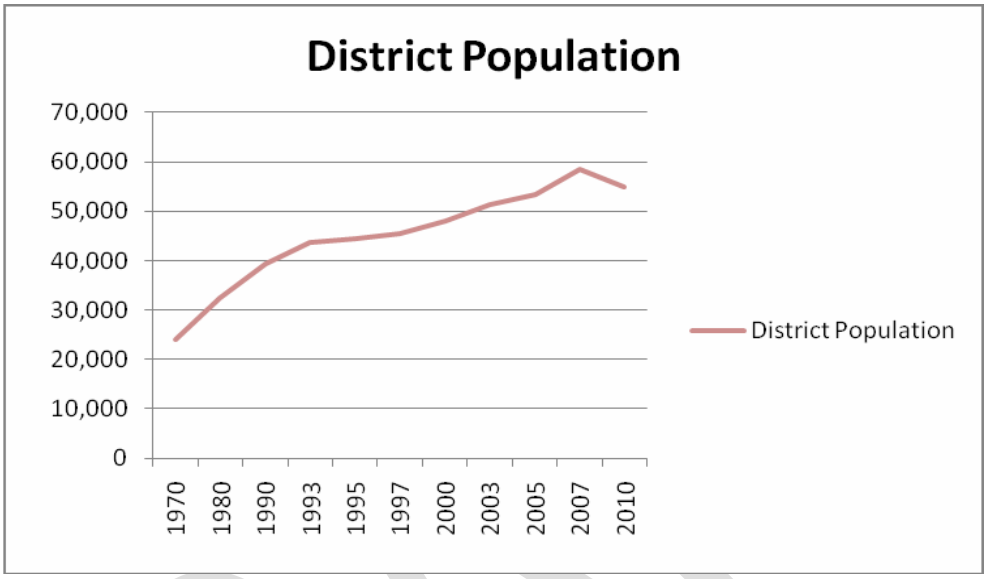


Figure 2. Yucaipa Water District Population 1970-2010 –Source: US Census Bureau

These service connections represent the District's core customer base and directly influence the scale of hazard mitigation efforts. A single major hazard event—such as a significant earthquake, wildfire, or post-fire debris flow could simultaneously disrupt service to tens of thousands of residents and hundreds of commercial customers.

The relatively high number of sewer connections compared to recycled water connections underscores the importance of protecting the Henry N. Wochholz Regional Water Recycling Facility (WRWRF) and the 14-mile Yucaipa Valley Regional Brineline. Any interruption in treatment or brine disposal could rapidly affect both recycled water availability and sewer system capacity. The ongoing Salinity and Groundwater Enhancement (SAGE) Project expansion at the WRWRF is expected to further increase recycled water connections and improve drought resilience in the coming years.

1.1.5 System Overview

The District is a special district focused exclusively on reliable, resilient water and wastewater infrastructure. Unlike cities or counties, the District's mission centers on three distinct but interconnected utility systems:

- **Drinking Water**:

  The drinking water system serves 13,655 connections through 244 miles of water mains and operates across 18 separate pressure zones due to the District's significant elevation change of 3,140 feet (from 2,044 to 5,184 feet). Water is supplied primarily from 39 local groundwater production wells in 10 subbasins, supplemented by imported State Water Project water treated at the YVRWFF. The system includes 28 drinking water reservoirs with a combined storage capacity of approximately 38 million gallons. This complex, multi-zone network allows the District to deliver water reliably across varied terrain but also creates unique vulnerabilities during seismic events or widespread power outages.

- **Recycled Water**:

  The recycled water system has grown significantly over the past decade and serves as a key drought-resilience strategy. It currently includes 44 miles of recycled water pipelines, 7 recycled water reservoirs with a combined storage capacity of 14 million gallons, and 910 dedicated connections serving landscape irrigation for parks, schools, golf courses, commercial properties, and new dual-plumbed residential developments. The system is anchored by the WRWRF, which produces high-quality tertiary treated water. The ongoing Salinity and Groundwater Enhancement SAGE Project is expanding advanced treatment capacity, including reverse osmosis to improve water quality for groundwater recharge and increase overall recycled water production.

- **Sewer Collection and Treatment**:

  The sewer system serves 15,374 connections through 228 miles of gravity sewer mains and 7 lift stations. It collects wastewater from residential, commercial, and institutional customers and conveys it to the WRWRF for treatment. Critical sewer infrastructure includes 15 sewer bridges crossing major drainages and the 14-mile Yucaipa Valley Regional Brineline, which transports brine concentrate from the treatment process. Because the sewer system serves the largest number of connections, it is particularly important to protect against earthquake damage, post-fire debris flows, and flooding, which could lead to service disruptions or environmental impacts.

These service connections represent the District's core customer base and directly influence the scale of hazard mitigation efforts. A single major hazard event such as a significant earthquake, wildfire, or post-fire debris flow could simultaneously disrupt service to tens of thousands of residents and hundreds of commercial customers.

The three systems are highly interconnected. Wastewater collected by the sewer system is treated at the WRWRF and converted into recycled water for beneficial reuse, while brine is managed through the Brineline. This integration improves water supply reliability but also means that damage to any one component (especially the WRWRF or major pipelines) can affect all three services. Mitigation actions therefore prioritize seismic retrofits, emergency

power, infrastructure hardening, lift station relocations, and continued expansion of recycled water infrastructure to ensure reliable service continuity under all hazard conditions.

1.1.6 Existing Land Use

Approximately 50 percent of the land within the District's boundaries remains undeveloped, consisting primarily of open space, steep foothills, and natural drainages in the upper Santa Ana Watershed. The developed portion of the service area is characterized by a mix of low- to medium-density residential neighborhoods, commercial corridors, parks, schools, and limited industrial uses, primarily concentrated in the flatter valley floors of Yucaipa and Calimesa. This significant amount of undeveloped land places large portions of the District in or adjacent to the Wildland-Urban Interface (WUI), particularly along the northern and eastern foothills bordering the San Bernardino National Forest.

This land-use pattern creates unique mitigation challenges and opportunities. The high proportion of undeveloped land provides natural buffers in some areas but also heightens the risk of uncontrolled wildfire and debris flows impacting downstream infrastructure. The District's 2026–2031 Capital Improvement Program directly addresses these vulnerabilities through targeted infrastructure hardening, seismic retrofits, lift station relocations, and the SAGE Project expansion at the WRWRF, ensuring long-term resilience across all three utility systems while supporting sustainable growth within the existing service area.

The District operates with 18 pressure zones due to the range in elevation of 3,140. The operation of the system becomes intricate if dealing with unexpected environmental factors. Within the various land use areas, equal attention was directed to special areas vulnerable to risks:

All facilities listed below are vulnerable to drought, earthquakes, floods, and wildfire.

Table 2. Facility Vulnerability List

Facility	Drought	Earthquake	Flood	Wildfire
Administrative Office		✓	✓	
Wastewater Plant	✓	✓	✓	✓
Water Filtration Facility	✓	✓	✓	✓
Wells	✓	✓	✓	✓
Reservoirs	✓	✓	✓	✓
Pump Stations	✓	✓	✓	✓
Lift Stations	✓	✓	✓	✓

1.1.7 Development Trends

Strategic growth continues within the Yucaipa Valley Water District service area, primarily through infill development, redevelopment of existing parcels, and modest expansion of residential and commercial uses in already urbanized portions of Yucaipa and Calimesa. The District does not anticipate any major expansion of its service area into very high Fire Hazard Severity Zones (FHSZ), active fault traces, or designated floodplains. This deliberate growth strategy is guided by local land-use policies, the District's sphere of influence boundaries, and coordination with the cities of Yucaipa and Calimesa, all of which prioritize avoidance of high-risk areas to minimize future hazard exposure.

Since the District's formation in 1971, development has been concentrated in the lower-elevation valley floors, where infrastructure can be served efficiently across the existing 18 pressure zones. Recent growth has focused on dual-plumbed homes and commercial landscapes that utilize recycled water, thereby reducing demand on potable supplies. No new large-scale residential or commercial projects are planned in the steep foothills or areas mapped as very high FHSZ, active fault rupture zones, or 100-year floodplains. This approach directly supports hazard mitigation objectives by preventing the placement of additional critical infrastructure or population in locations that would be highly vulnerable to earthquake, wildfire, post-fire debris flows, or flooding.

The District's 2026–2031 CIP and the ongoing SAGE project at the WRWRF further reinforce this strategy by enhancing system capacity and resilience within the existing developed footprint rather than extending service into higher-risk undeveloped lands. By maintaining this focused growth pattern, the District avoids increasing its overall vulnerability while continuing to provide reliable drinking water, recycled water, sewer, and brine disposal services to the current and future population.

1.1.8 Water Development Trends

The District's 2026–2031 CIP serves as a driver of long-term infrastructure resilience and is the central mechanism for implementing the mitigation strategies outlined in this plan. Major investments include the expansion of ASR facilities to provide drought-proof storage for recycled water, systematic replacement of aging drinking water and recycled water reservoirs, relocation and upgrading of vulnerable lift stations to higher ground**,** comprehensive pipeline replacement and seismic retrofitting programs targeting water, sewer, and recycled water mains, energy resiliency enhancements at the YVRWFF and WRWRF (including microgrid-ready backup power systems), and advanced SCADA system upgrades for real-time monitoring and rapid response across all pressure zones.

Pipeline retrofit projects focus on replacing aging and vulnerable mains with high-strength, flexible materials such as HDPE pipe with restrained joints and ductile iron pipe with seismic expansion joints. These upgrades improve resistance to ground shaking, liquefaction,

corrosion, and post-fire debris flows while reducing leak potential and extending asset life. A flagship component of the program is the SAGE Project at the WRWRF, which will significantly increase advanced reverse osmosis treatment capacity, improve recycled water quality for groundwater recharge, and strengthen salinity management through the 14-mile Yucaipa Valley Regional Brineline. These targeted projects directly address the unique operational needs of the District's three interconnected utility systems, drinking water production and distribution, recycled water treatment and delivery, and sewer collection/treatment with brine disposal. By focusing resources on hardening and replacing existing assets rather than expanding into high-risk areas, the CIP ensures reliable service continuity for the residents while reducing vulnerability to earthquake, wildfire, drought/climate change, and flooding/post-fire debris flow hazards.

As captured in the 2015 Yucaipa Valley Water District's Urban Water Management Plan (UWMP), the District projects growth within each category listed above. While water use efficiency is always at the forefront of District goals, the development will promote an increase in water use. From 2015 to 2040, the District projects the following increase to the drinking water sectors.

Table 3. YVWD 2025 UWMP

Water Use (AF)	2021	2040	% Increase
Single Family	7420	7650	3
Multi-Family	1089	1150	5.6
Commercial	665	750	12.8
Construction Water	49	30	-38.8
Industrial	24	20	-16.6
Institutional	337	250	-25.81
Sales/Transfer/Exchanges	449	500	11.4
Single & Multi Recycled	209	700	235
Commercial Recycled	2056	2300	11.9

SECTION 2. - Plan Adoption

2.1 Adoption by Local Governing Body

Pursuant to the mitigation planning regulations, Yucaipa Valley Water District's Plan will be submitted to the California Office of Emergency Services (Cal EOS) for review and approval. Cal OES will conduct a review of the Plan in accordance with the Code of Federal Regulations; once this review is complete and any revisions are made, CalOES will forward the plan to FEMA for another review and revisions, as FEMA requires. CalOES will notify the District when FEMA has approved the final LHMP. The final approval letter of approval will be pending adoption by the District's Board of Directors. The Board of Directors Resolution will be sent to CalOES, and CalOES will submit the Resolution to FEMA. SEMC will send a copy of the LHMP

and Resolution to the County of San Bernardino Office of Emergency Services and the County of Riverside Office of Emergency Management.

2.2 Promulgation Authority

This Hazard Mitigation Plan will be adopted by the YVWD elected Board of Directors, following approval of the plan by CalOES and FEMA:

Table 4. YVWD Board of Directors.

Board of Director	Division
Greg Bogh	One
Nyles Oharra	Two
Jay Bogh	Three
Bret Granlund	Four
Joyce McIntire	Five

2.3 Primary Point of Contact

The Point of Contact listed below:
John Wrobel, Public Works Manager
Yucaipa Valley Water District
909-797-5117 (Office)
jwrobel@yvwd.us

SECTION 3. - Planning Process

This section documents the planning process used to review and compile information that leads to an effective LHMP. A comprehensive description of the planning process informs citizens and other readers how the plan was developed and provides a permanent record of how decisions were reached. These decisions can be understood, reconsidered, replicated, or modified in future updates. An integral part of the planning process is documentation of how the public was engaged throughout the process.

This LHMP was completed with the coordination of the District staff and representatives from the City of Yucaipa and local water agencies. These team members have a vested interest in the performance and resiliency of the District.

San Bernardino County Office of Emergency Services reviewed the plan and the contents of this plan for items that should be included from the County MJHMP. San Bernardino County Fire OES supplied hazard maps that are included in this document.

This section includes a list of the Planning Team Members, a summary of the meetings held,

coordination efforts with the surrounding communities/groups, and public outreach efforts.

3.1 Preparing for the Plan

The District Planning Team, identified in the table below, was responsible for the development, review, and refinement of all elements of the plan. The team held the following formal meetings to ensure a systematic and thorough update process:

- Kickoff meeting: The team reviewed current FEMA guidance, confirmed the four priority hazards (earthquake, wildfire, drought/climate change, and flooding including post-fire debris flows), and assigned specific data-collection and analysis responsibilities.

- Risk Assessment Workshop: Team members developed detailed hazard profiles, updated the critical facility inventory (Table 5), and incorporated lessons from the 2020 El Dorado and Apple Fires, including post-fire debris flow modeling and impacts to linear assets and treatment facilities.

- Mitigation Strategy Workshop: The team reviewed and prioritized proposed mitigation actions (Table 7), ensuring direct alignment with the 2026–2031 Capital Improvement Program and the operational needs of the District's drinking water, recycled water, and sewer systems.

- Final Draft Review: The team conducted a comprehensive review of the full draft plan, verified public involvement documentation, and confirmed the plan maintenance procedures.

Staff Contributions Each member of the Planning Team contributed specialized expertise tied to the District's three utility systems:

Table 5. Planning Team

Name	Title	Role in LHMP Development
John Wrobel	Public Works Manager	Overall leadership, external coordination, mitigation strategy
Caleb Nazario	Public Works Supervisor	Asset vulnerability assessments, post-fire debris flow
Todd Madrid	Public Works Supervisor	Critical facility data, seismic & flood reviews
Jennifer Ares	Water Resources Manager	Drought/climate profile, ASR & UWMP integration

Drafting the Hazard Mitigation Plan was accomplished in 8 Phases:

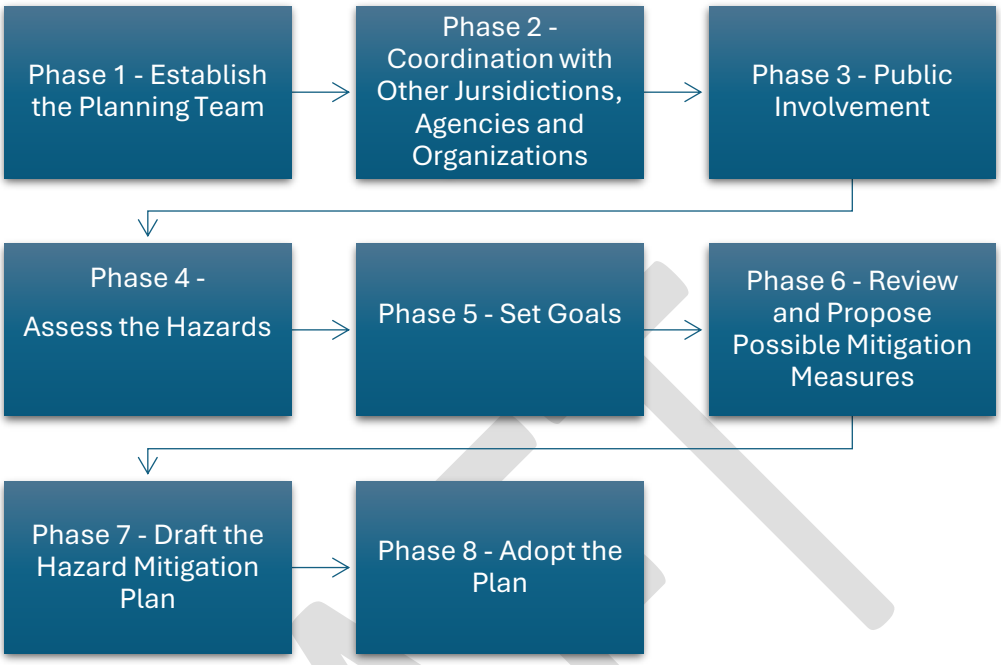


Figure 2. Flow chart for developing a Hazard Mitigation Plan.

To promote regional consistency and leverage shared resources, the Planning Team conducted targeted coordination with external partners:

- January 22, 2026 – Virtual coordination meeting with the San Bernardino County Office of Emergency Services (OES) and County Fire Department to align wildfire, post-fire debris flow, and seismic mitigation strategies with the 2022 San Bernardino County Multi-Jurisdictional Hazard Mitigation Plan.

- February 5, 2026 – Meeting with representatives from the cities of Yucaipa and Calimesa to discuss shared infrastructure risks and opportunities for mutual aid during emergencies.

- Ongoing coordination (2025–2026) with mutual water companies in the upper Santa Ana Watershed regarding recycled water projects, aquifer storage and recovery integration, and regional salinity management.

These coordination efforts ensured the plan is consistent with regional priorities and supports broader watershed resilience.

3.3 Public Involvement/Outreach

Public participation was actively solicited throughout the planning process. The draft plan was posted on the District's official website (www.yvwd.us) on May 1, 2026, for a 30-day public

review and comment period ending May 30, 2026. Announcements regarding the review period were posted on the District's official Facebook page, and on X on May 1, May 11, and May 25, 2026. The draft plan was also made available for public review and comment during regular meetings of the Board of Directors in May 2026.

3.4 Review of Existing Plans, Studies, and Technical Information

The Planning Team conducted a comprehensive review and incorporated the following technical resources to ensure the plan is based on the best available data:

- 2022 San Bernardino County Multi-Jurisdictional Hazard Mitigation Plan (MJHMP)
- 2025 Operating Budget and the complete 2026–2031 Capital Improvement Program
- 2025 Urban Water Management Plan (UWMP)
- Recent hazard data from CalFire (Fire Hazard Severity Zones and detailed reports on the 2020 El Dorado and Apple Fires), USGS (seismic probability models and post-fire debris flow assessments), and the U.S. Drought Monitor (2025–2026 conditions)

This information was systematically used to update hazard profiles, vulnerability assessments, mitigation actions, and plan maintenance procedures.

Table 6. Financial Resources for Future Mitigation Projects

Funding Source	Description	Amount	Notes / Tie to Mitigation & CIP
Operating Budget – Water	Potable water rates and service charges, connection fees and property taxes.	$22.2 million (2026)	Primary revenue source for ongoing operations and routine mitigation projects and capital projects
Operating Budget – Sewer	Sewer service charges and connection fees	$14.4 million (2026)	Funds wastewater ongoing operations, infrastructure hardening (e.g., lift station relocations, sewer main replacements).
Operating Budget – Recycled Water	Recycled water rates, service charges, property taxes and connection	~$2.4 million (2026)	Supports ongoing operations, recycled water storage

	fees		
2026–2031 Capital Improvement Program (CIP)	Estimated capital funding for infrastructure projects	$219,848,257 (5-year total)	Primary vehicle for LHMP implementation. Includes energy resiliency, reservoir replacements, ASR, pipeline upgrades, and SCADA projects that directly mitigate earthquake, wildfire, drought, and flooding risks.
FEMA Grants (HMGP, PDM, BRIC, FMA)	Federal hazard mitigation grant programs	As funding becomes available	Eligible once LHMP is approved; targeted for high-priority CIP projects.
State Grants & Loans	State Revolving Fund (SRF), Prop 1, and other State funding	As funding becomes available	Supports water supply, recycled water, and salinity reduction projects.
Reserves & Other Internal Funds	District reserve accounts and developer contributions	Varies annually	Used for matching funds on CIP projects and emergency mitigation.

3.5 Set Goals

The Planning Team set the goals for the 2026 LHMP. The team members understand the issues facing the Department with respect to the Department's Mission Statement.
Our mission is Yucaipa Valley Water District is committed to professionally managing the precious water, sewer, and recycled water resources of the Yucaipa Valley in a reliable, efficient, and cost-effective manner in order to provide the finest service to our customers, both present and future.

The process of identifying mitigation goals began with a review and validation of damages caused by specific hazards at similar agencies in the surrounding area. Damages to other agencies outside the area were also considered. In addition, the Planning Team estimated damages using engineering budget estimates for anticipated response and replacement costs. The Planning Team completed an assessment of the likelihood and damages for each identified hazard and discussed whether each of the mitigation goals was valid. This discussion led to the opportunity to identify new goals and objectives for mitigation in the LHMP. From

this, the Planning Team determined the best mitigation goals to reduce or avoid long-term vulnerabilities.

3.6 Review and Propose Mitigation Measures

A wide variety of mitigation measures that can be identified to help reduce the impact of the hazards or the severity of damage from hazards was examined. The projects were identified to help ensure the implementation of the Planning Team's goals and objectives. The following categories were used in the review of possible mitigation measures:

1. Public Information and Education - Outreach projects and technical assistance.
2. Preventive Activities - Zoning, building codes, stormwater ordinances
3. Structural Projects - Detention basins, reservoirs, road and bridge improvements
4. Property Protection - Acquisition, retrofitting
5. Emergency Services - Warning, sandbagging, road signs/closures, evacuation
6. Natural Resource Protection - Wetlands, protection, best management practices.

Does the Action:

1. Solve the problem
2. Address Vulnerability Assessment?
3. Reduce the exposure or vulnerability to the highest priority hazard
4. Address multiple hazards?
5. Address more than one (1) Goal/Objective?
6. Benefits equal or exceed costs?

Can the Action:

1. Be implemented with existing funds?
2. Be implemented by existing state or federal grant programs?
3. Be completed within the 5-year life cycle of the LHMP?
4. Be implemented with currently available technologies?

Will the Action:

1. Be accepted by the community?

2. Be supported by community leaders?
3. Adversely impact segments of the population or neighborhoods?
4. Result in legal action such as a lawsuit?
5. Positively or negatively impact the environment?

Is there:

1. Sufficient staffing to undertake the project?
2. Sufficient funds to complete the project?
3. Existing authority to undertake the project?

3.7 Draft Local Hazard Mitigation Plan

District staff prepared the draft LHMP. The Safety Committee reviewed and provided comments on the draft, after which revisions were made before the LHMP was finalized and adopted by the Board of Directors.

3.8 Adopt the Plan

After the public review, the draft plan will be submitted to the State of California OES for review. Once the State has approved the LHMP, the document will be sent to FEMA by the State. FEMA will provide the District with an "Approval Pending Adoption" letter when the Hazard Mitigation Plan update meets all federal requirements. Upon receipt of this letter, the final plan will be posted on the District's Website for a 20-day public comment period and then submitted to the Yucaipa Valley Water Board of Directors for consideration and adoption. Once adopted, the final Resolution will be submitted to FEMA for incorporation into the Hazard Mitigation Plan, and a copy of the resolution will be sent to CalOES and FEMA. A copy of the final LHMP will be delivered to San Bernardino County of Emergency Services and the Riverside County Office of Emergency Management.

SECTION 4. - Risk Assessment

FEMA defines the risk assessment process as a multi-step effort in "Understanding Your Risks: Identifying Hazards and Estimating Losses (FEMA 2001). The risk assessment process provides the foundation for the rest of the mitigation planning process. The four basic components of the risk assessment are:

1) identify hazards;
2) profile hazard events;
3) inventory assets; and
4) estimate losses.

This process measures the potential loss of life, personal injury, economic injury, and property damage resulting from natural hazards by assessing the vulnerability of people, buildings, and infrastructure to natural hazards. While many data sources and tools are available at various levels of government, academia, and the private sector, several options are listed below as a starting point for use in conducting a multi-hazard risk assessment. (see figure 3).

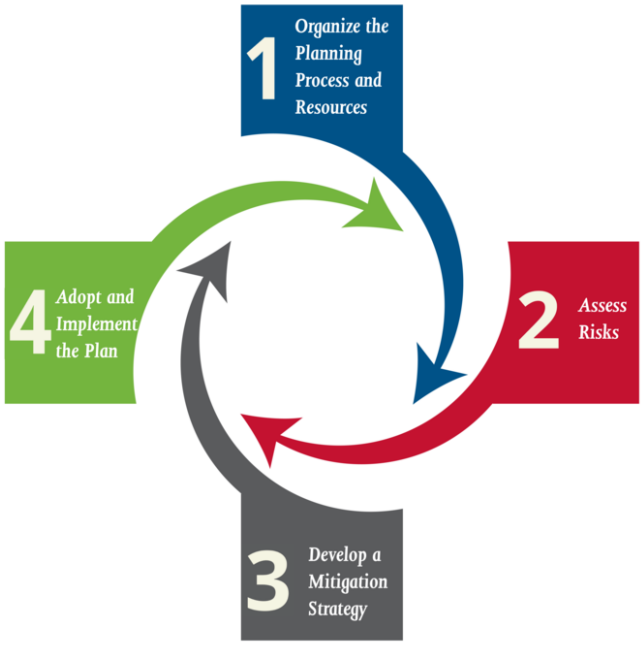


Figure 3. Risk Assessment Process

The risk assessment approach for YVWD is composed of these four steps, and each step is organized in a separate subsection of Chapter 4. Section 4.1 (step 1) includes hazard identification and screening. Even though a particular hazard may not have occurred in recent history in the study area, all hazards that may potentially affect the study area are considered. During this process, all hazards that are unlikely to occur or for which the risk of damage is accepted as very low are eliminated from consideration. All reasonable possible hazards affecting the study area are considered and ranked by the Planning Team and stakeholders. Section 4.2 (step 2) provides a profile for each of the significant hazards identified during the screening process. In general, hazard profiling is accomplished by describing hazards in terms of their natural history, magnitude, frequency, location, and probability. Hazards are identified through the collection of historical and anecdotal information, review of existing plans and studies, and preparation of hazard maps of the study area. Hazard maps are used to determine the geographical extent of the hazard and define the approximate boundaries of areas of risk. Wherever possible, the profile includes a discussion of local characteristics and possible impacts on the community. Section 4.3 (step 3) discusses the process of creating an inventory of the District's critical facilities and infrastructure that may be affected by hazard events. This step includes a comprehensive information gathering and prioritization process essential to perform the vulnerability assessment and loss estimation. Section 4.4 (step 4) presents the methodologies and results of loss estimation for the key hazards identified in step 2.

4.1 Hazard Identification

The Planning Team discussed potential hazards and evaluated their probability of occurrence. The following subsections describe this process and the results. The American Water Works J-100 RAMCAP to help identify the hazards and rank the hazards.

4.1.1. Hazard Screening Criteria

The intent of screening the hazards is to help prioritize which hazards create the greatest concern for the Department. A list of the natural hazards to consider was obtained from the Federal Emergency Management Agency's State and Local Mitigation Planning How-to Guide: Understanding Your Risks (FEMA 386-1). The Planning Team used the Stafford Act and the California Emergency Service Act and guidance from the American Water Works Association standards, G-440 and J-100 RAMCAP. Each risk was ranked with a 1 – 4: with (1) being a "Highly Likely" event, (2) being "Likely" (3) being "Somewhat Likely" event, and (4) being "Least Likely" event. The Planning Team reviewed each hazard on the list using their experience and historical data pertaining to each hazard and developed the following ranked list. Even though Windstorms and Dam Inundation ranked three, these two items are not covered because windstorms cause power outages and PSPS. The District has backup generators at the most critical sites. Dam Inundation only affects the District 'Brine line' in the south San Bernardino area. Losing the 'Brine Line' does not impede the District's critical facilities.

Hazards:

- Earthquake = 1
- Wildfires = 1
- Climate Change/Drought = 1
- Flooding = 2
- Landslides/mudslides = 2
- Windstorms = 3
- Dam Inundation = 3

The following natural hazards were considered not to affect or not to be a risk to the utility Department and were given a ranking of 4 or not applicable to the Utility Department's location.

- Volcanoes
- Tsunami

4.1.2 Hazard Assessment Matrix

The Planning Team used a qualitative ranking system for the hazard screening process consisting of generating a high/medium/low style rating for the probability and impact of each screened hazard.

- For **Probability,** the ratings are: Highly Likely, likely, or Somewhat Likely
- For **Impact**, the ratings are: Catastrophic, Critical, or Limited

The screening assessment matrix is used for the District's hazards. The hazards have been placed in the appropriate/corresponding box/cell of the corresponding "Hazard Matrix" based on the Planning Team's collective experience. A subset of this group of hazards is used for the prioritization of the hazards in the following section.

Table 7. Screening Assessment Matrix.

		Impact		
		Catastrophic	**Critical**	**Limited**
Probability	**Highly Likely (1) (75 – 100%)**	Earthquake Wildfires	Climate Change/Drought	
	Likely (2) (50-75%)		Flooding Landslide	
	Somewhat Likely (3) (50 – 75%)			Windstorms Dam Inundation

4.1.3 Hazard Prioritization

By combining the Hazard Assessment Matrix above showing 1) probability and 2) impact for each screened hazard and indicating the potential for implementing mitigation measures to reduce the risk, a prioritized ranking of the hazards was developed**.**

4.2 Hazard Profile

This plan is an update of the 2021 YVWD Hazard Mitigation Plan (HMP). Since the 2021 plan, new hazard information has become available that drives new definitions of risk, new capabilities are now available, and this current format will allow readers to more easily understand the content. In addition, the 2021 HMP completed several action items, creating an opportunity for developing new mitigation strategies.

4.3 Hazard Definition for Earthquake

Probability: **Highly Likely**
Impact: **Catastrophic**
Priority: **High**

An earthquake is a sudden, rapid shaking of the Earth caused by the breaking and shifting of rock beneath the Earth's surface. For hundreds of millions of years, the forces of plate tectonics have shaped the Earth as the huge plates that form the Earth's surface move slowly over, under, and past each other. Sometimes the movement is gradual. At other times, the plates are locked together, unable to release the accumulating energy. When the accumulated energy grows strong enough, the plates break free, causing the ground to shake. Most earthquakes occur at the boundaries where the plates meet; however, some earthquakes occur in the middle of plates.

Ground shaking from earthquakes can collapse buildings and bridges; disrupt gas, electric, and phone service; and sometimes trigger landslides, avalanches, flash floods, fires, and huge, destructive ocean waves (tsunamis). Buildings with foundations resting on unconsolidated landfill and other unstable soil and trailers and homes not tied to their foundations are at risk because they can be shaken off their mountings during an earthquake. When an earthquake occurs in a populated area, it may cause deaths and injuries and extensive property damage.

Earthquakes strike suddenly, without warning. Earthquakes can occur at any time of the year and at any time of the day or night. On a yearly basis, 70 to 75 damaging earthquakes occur throughout the world. Estimates of losses from a future earthquake in the United States approach $200 billion.

There are 45 states and territories in the United States at moderate to very high risk from earthquakes, and they are in every region of the country. California experiences the most frequent damaging earthquakes; however, Alaska experiences the greatest number of large earthquakes--most located in uninhabited areas. The largest earthquakes felt in the United States were along the New Madrid Fault in Missouri, where a three-month-long series of quakes from 1811 to 1812 included three quakes larger than a magnitude of 8 on the Richter Scale. These earthquakes were felt over the entire Eastern United States, with Missouri, Tennessee, Kentucky, Indiana, Illinois, Ohio, Alabama, Arkansas, and Mississippi experiencing the strongest ground shaking.

4.3.1 Geologic Setting

Yucaipa is located in a tectonically active region near the boundary of the Pacific and American crustal plates. This boundary is generally marked by the San Andreas Fault Zone, which extends through the northeastern portion of the District. The San Andreas system of faults exhibits predominantly right strike-slip movement (i.e., horizontal displacement to the right when viewed across the faults), whereby the Pacific Plate moves relatively northwest with respect

to the continent. This active tectonic environment has strongly influenced the geologic and physiographic history of the District.

The valley region of San Bernardino County incorporates portions of two major physiographic provinces delineated by tectonic structures--the Transverse Ranges and Peninsular Ranges provinces. The Transverse Ranges province is a structurally complex region of east-west trending mountain ranges and valleys separated by faults. The east-west orientation of structural and physiographic features in this province is unique in California (and in much of North America) and is in marked contrast to the generally north-south trend of adjacent provinces. The origin of this unique orientation is uncertain, with the most probable explanation related to rotational stress fracturing from strike-slip (horizontal) movement along the San Andreas Fault Zone. The combined effects of movement along the San Andreas Fault Zone and the formation and displacement of transverse (east-west) faults have splintered much of the province into a series of small, mobile, crustal blocks. Compressive forces related to displacement along the San Andreas Fault Zone have uplifted a number of these crustal fragments, producing the current topographic profile. These compressive forces are ongoing, with the uplift of both the San Gabriel and San Bernardino Mountains continuing up to the present. This has resulted in the level alleviated basins and relatively down-dropped crustal blocks, which define the current topographic configuration of Yucaipa.

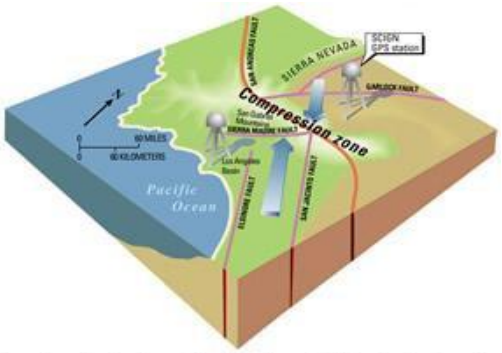
Geologic formations in the District may be grouped into three main categories-alluvium, gneiss/schist and sandstone. The majority of the District rests on alluvial deposits comprised of gravelly, river-washed material located on the "flatlands" and benches. These areas are further differentiated into older and younger alluvial deposits. Older deposits consist of alluvial fan conglomerate called "fanglomerate" and other decomposed clay-rich alluvium.

Younger deposits are generally associated with the river wash areas near Oak Glen Creek and Yucaipa Creek. The rugged Crafton Hills and eastern hills are mainly comprised of gneiss/schist formations, which include such minerals as quartzite and marble. This metamorphic rock is distinctive in its multiple folded layers and coarse grain. Sandstone comprises the hilly area at the northern District limits and includes the Yucaipa ridge landform to the north of the District. This sandstone formation is composed of lithified (hardened) non-marine conglomerates and some limestone.

Liquefaction is a process whereby water-saturated ground loses coherence and takes on a quicksand-like consistency when shaken by a seismic event. This is possible when groundwater is within approximately 40 feet of the surface, faults exist in the vicinity, and geologic formations with a granular nature are present. Such a potential does exist in Yucaipa. Groundwater levels have been determined, through the monitoring of wells in the area, to range historically between over 300 feet and less than 40 feet below the surface of the ground. These levels can fluctuate by as much as 50 feet during a single season. Although the groundwater levels have generally dropped since monitoring began early this century, some areas in the vicinity of Oak Glen Creek, Wilson Creek, and Wildwood Canyon have had groundwater levels within 40 feet of the surface as recently as 1984.

This is mostly due to the "big bend" of the San Andreas fault, from the southern end of the San Joaquin Valley to the eastern end of the San Bernardino mountains (see figure, “Big Bend” at right).

Figure 4 - "Big Bend" Where the fault bends, the Pacific and North American plates push into each other, compressing the earth's crust into the mountains of Southern California and creating hundreds of additional faults (many more than shown in the fault map). These faults produce thousands of small earthquakes each year, and the other half of our significant earthquakes. Examples include the 1994 Northridge and 1987 Whittier Narrows earthquakes.



A schematic block model of Southern California showing the motion of the Pacific and North American plates, and the big bend of the San Andreas fault where the plates squeeze together.

As described in the preceding discussion of geologic factors, faults, and granular (alluvium), soil formations do occur in the District. The potential for liquefaction fluctuates with the water table.

4.3.2 Previous Occurrences for Earthquakes

The earthquakes of California are caused by the movement of huge blocks of the earth's crust- the Pacific and North American plates. The Pacific plate is moving northwest, scraping horizontally past North America at a rate of about 50 millimeters (2 inches) per year. About two-thirds of this movement occurs on the San Andreas Fault and some parallel faults- the San Jacinto, Elsinore, and Imperial faults. Over time, these faults produce about half of the significant earthquakes of our region, as well as many minor earthquakes.

The last significant earthquake on the Southern California stretch of the San Andreas Fault was in 1857, and there has not been a rupture of the fault along its southern end from San Bernardino to the Salton Sea since 1690. It is still storing energy for some future earthquakes. Southern California has thousands of smaller earthquakes every year. A few may cause damage, but most are not even felt. And most of these are not on the major faults listed above. Earthquakes can occur almost everywhere in the region on more than 300 additional faults that can cause damaging earthquakes and countless other small faults.

Of the 119 California earthquakes cited in the list (below), the District is in the area of the potential effect of 28 of them. This means that 24 percent of these earthquakes either had the opportunity to produce some damage to the District or may have produced injuries, fatalities and damages to surrounding communities.

Table 8. California Earthquakes.

Y/M/D	Location	Magnitude
2020 06 24	Lone Pine	M 5.8
***2019 07 06**	Ridgecrest	M 7.1
2014 08 24	South Napa	M 6.0
2014 03 28	Greater Los Angeles Area, La Habra California	M 5.1
2011 04 05	Sierra El Mayor Earthquake (Northern Baja California)	M 7.2
2011 03 16	Near Pico Rivera, Los Angeles Basin	M 4.4
2011 01 10	Gorda Plate Earthquake	M 6.5
2011 01 10	Offshore Northern California	M 6.5
***2010 04 04**	Delta, Baja California, Mexico	M 7.2
2009 06 08	San Francisco Bay Area, California	M 3.5
2009 05 18	Greater Los Angeles Area, California	M 4.7
2009 04 30	Northern California	M 3.5
2009 03 30	Northern California	M 4.3
2009 03 08	San Francisco Bay area, California	M 3.5
2009 01 09	Greater Los Angeles Area, California	M 4.5
2008 07 29	Greater Los Angeles area, California	M 5.5
2008 04 30	Northern California	M 5.4
2007 10 31	San Francisco Bay Area, California	M 5.6
2007 08 09	Greater Los Angeles area, California	M 4.4
2007 07 20	San Francisco Bay area, California	M 4.2
2007 07 02	Central California	M 4.3
2007 05 09	Offshore Northern California	M 5.2
2006 10 20	Northern California	M 4.5
2005 09 22	Central California	M 4.7
2005 06 17	Off the Coast of Northern California	M 6.6
2005 06 16	Greater Los Angeles Area, California	M 4.9
2005 06 15	Off the Coast of Northern	M 7.2

	California	
2005 06 12	Southern California	M 5.2
2005 05 06	Central California	M 4.1
2004 09 28	Central California	M 6.0
2004 05 30	Pine Mountain Club, California	M 3.0
2003 12 22	San Simeon, California	M 6.6 Fatalities 2
2003 10 19	near Orinda, California	M 3.5
2003 10 07	near Imperial Beach, California	M 3.6
2003 09 13	near Simi Valley, California	M 3.4
2003 09 05	near Piedmont, California	M 4.0
2003 08 27	Val Verde, California	M 3.9
2003 08 15	Humboldt Hill, California	M 5.3
2003 05 26	Seven Trees, California	M 3.8
2003 05 26	Muir Beach, California	M 3.4
2003 05 25	Santa Rosa, California	M 4.2
2003 05 24	Brawley, California	M 4.0
2003 03 11	Twentynine Palms Base, California	M 4.6
2003 02 22	Big Bear City, California	M 5.2
2003 02 02	Dublin, CA, Swarm	M 4.1
2003 01 25	Keene, California	M 4.7
2002 12 24	Pacifica, California	M 3.6
2002 11 24	Swarm near San Ramon, California	M 3.9
2002 09 03	Yorba Linda, California	M 4.8
2002 06 17	Bayview, California	M 5.3
2002 05 14	Gilroy, California	M 4.9
2002 03 16	near Channel Islands Beach, California	M 4.6
2000 09 03	Napa, California	M 5.0
***1999 10 16**	Joshua Tree, California	M 7.1
1994 09 01	Cape Mendocino, California	M 7.0
***1994 01 17**	Northridge, California	M 6.7 Fatalities 60
***1992 06 28**	Yucca Valley, California	M 7.3 Fatalities 3
***1992 06 28**	Big Bear, California	M 6.5
1992 04 25	Cape Mendocino, California	M 7.2
1992 04 23	Joshua Tree, California	M 6.2
1991 08 17	Honeydew, California	M 7.0
1991 06 28	Sierra Madre, California	M 5.6 Fatalities 2
1989 10 18	Loma Prieta, California	M 6.9 Fatalities 63
1989 08 08	Santa Cruz County,	M 5.4 Fatalities 1

	California	
***1987 11 24**	Superstition Hills, California	M 6.7
1987 10 04	Whittier Narrows, California	M 5.6 Fatalities 1
1987 10 01	Whittier Narrows, California	M 5.9 Fatalities 8
1986 07 21	Chalfant Valley, California	M 6.2
1986 07 08	North Palm Springs, California	M 6.1
1984 11 23	Round Valley, California	M 5.8
1984 04 24	Morgan Hill, California	M 6.2
1983 05 02	Coalinga, California	M 6.4
1980 11 08	Humboldt County, California	M 7.2
1980 05 27	Mammoth Lakes, California	M 6.0
1980 05 25	Mammoth Lakes, California	M 6.2
1980 01 27	Livermore, California	M 5.8
1980 01 24	Livermore Valley, California	M 5.8
1979 10 15	Imperial Valley, Mexico - California Border	M 6.4
1979 08 06	Coyote Lake, California	M 5.7
1975 08 01	Oroville, California	M 5.8
***1971 02 09**	San Fernando, California	M 6.6 Fatalities 65
1969 10 02	Santa Rosa, California	M 5.7 Fatalities 1
1966 09 12	Truckee, California	M 5.9
1966 06 28	Parkfield, California	M 6.1
1957 03 22	Daly City, California	M 5.3 Fatalities 1
1955 10 24	Concord, California	M 5.4 Fatalities 1
1954 12 21	Eureka, California	M 6.5 Fatalities 1
***1952 08 22**	Kern County, California	M 5.8 Fatalities 2
1952 07 21	Frazier Park	M 7.5 Fatalities 12
1940 05 19	Imperial Valley, California	M 7.1 Fatalities 9
1934 06 08	Parkfield, California	M 6.1
1933 03 11	Long Beach, California	M 6.4 Fatalities 115
1932 06 06	Eureka, California	M 6.4 Fatalities 1
1927 11 04	Lompoc, California	M 7.1
1926 10 22	Monterey Bay, California	M 6.1
1926 06 29	Santa Barbara, California	M 5.5 Fatalities 1
1925 06 29	Santa Barbara, California	M 6.8 Fatalities 13
1923 01 22	Humbolt County, California	M 7.2
1922 03 10	Parkfield, California	M 6.1
1922 01 31	Eureka, California	M 7.3
1918 04 21	San Jacinto, California	M 6.8 Fatalities 1
1915 06 23	Imperial Valley, California	M 6.3 Fatalities 6
1911 07 01	Calaveras fault, California	M 6.5
1906 04 18	San Francisco, California	M 7.8 Fatalities 3000

1901 03 03	Parkfield, California	M 6.4
1899 12 25	San Jacinto, California	M 6.7 Fatalities 6
1899 04 16	Eureka, California	M 7.0
1898 04 15	Mendocino County, California	M 6.8
1898 03 31	Mare Island, California	M 6.3
1897 06 20	Calaveras fault, California	M 6.3
1892 04 21	Winters, California	M 6.4
1892 04 19	Vacaville, California	M 6.4 Fatalities 1
1892 02 24	Imperial Valley, California	M 7.8
1890 02 24	Corralitos, California	M 6.3
1873 11 23	California - Oregon Coast	M 7.3
1872 03 26	Owens Valley, California	M 7.4 Fatalities 27
1868 10 21	Hayward, California	M 6.8 Fatalities 30
1865 10 08	Santa Cruz Mountains, California	M 6.5
1857 01 09	Fort Tejon, California	M 7.9 Fatalities 1
1838 06 09	San Francisco area, California	M 6.8
1836 06 10	South San Francisco Bay region, California	M 6.5
1812 12 21	West of Ventura, California	M 7.1 Fatalities 1
1812 12 08	Southwest of San Bernardino County, California	M 6.9 Fatalities 40

*Events with an asterisk indicate a direct effect on the city of Yucaipa.

4.3.3 Hazard Summary for Earthquake (1)

The following provides information on the probability of future events. In addition, the data provides an overall summary of the District's vulnerability and the impact of each hazard.

The entire geographic area of California is prone to the effects of an earthquake. Figure 6 represents the UCERF probabilities of having a nearby earthquake rupture (within 3 or 4 miles) of magnitude 6.7 or larger in the next 30 years. As shown in the table, the chance of having such an event somewhere in California exceeds 99%. The 30-year probability of an even more powerful quake of magnitude 7.5 or larger is about 46%.

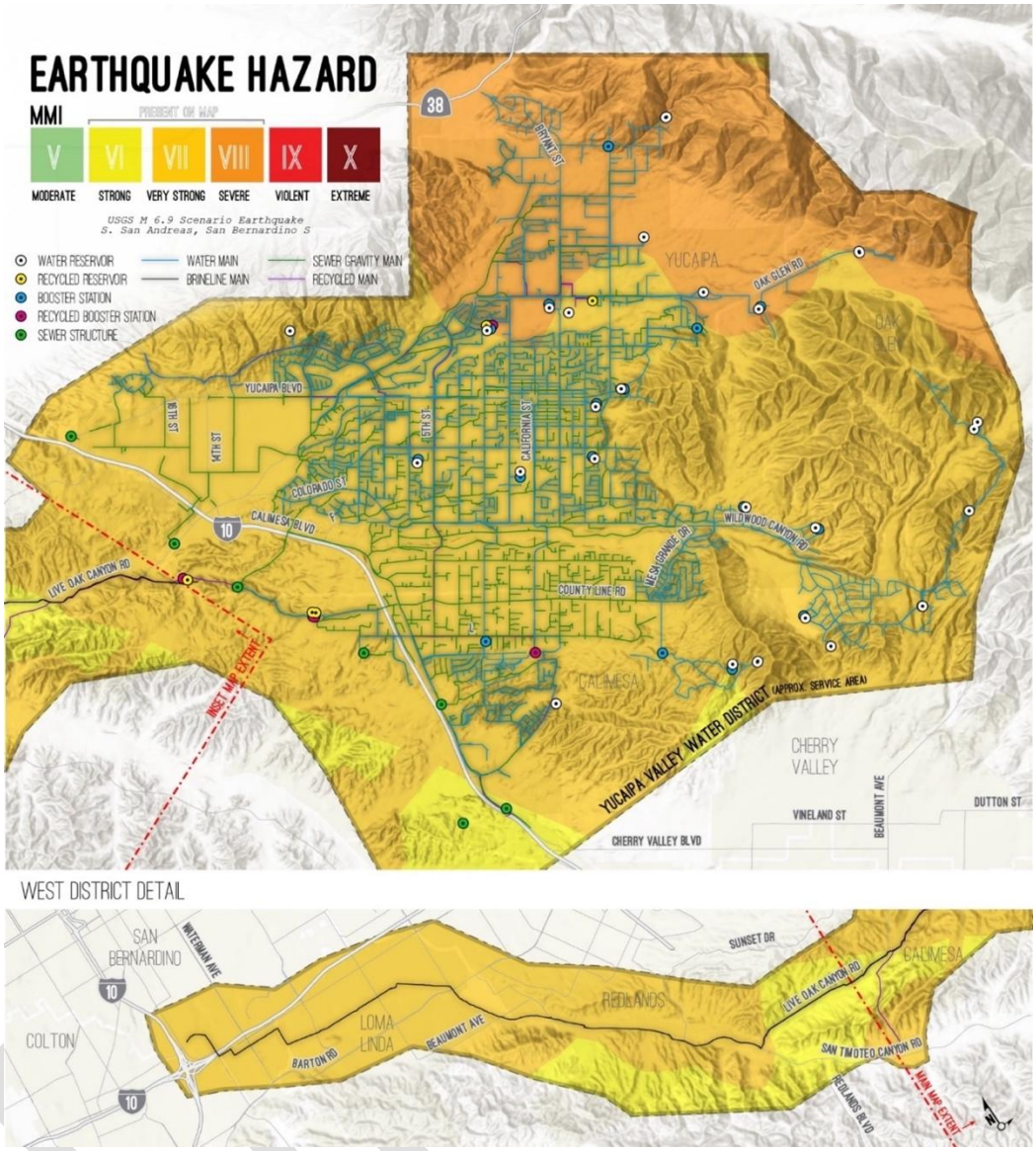


Figure 5. Fault Rupture Hazard Zone.

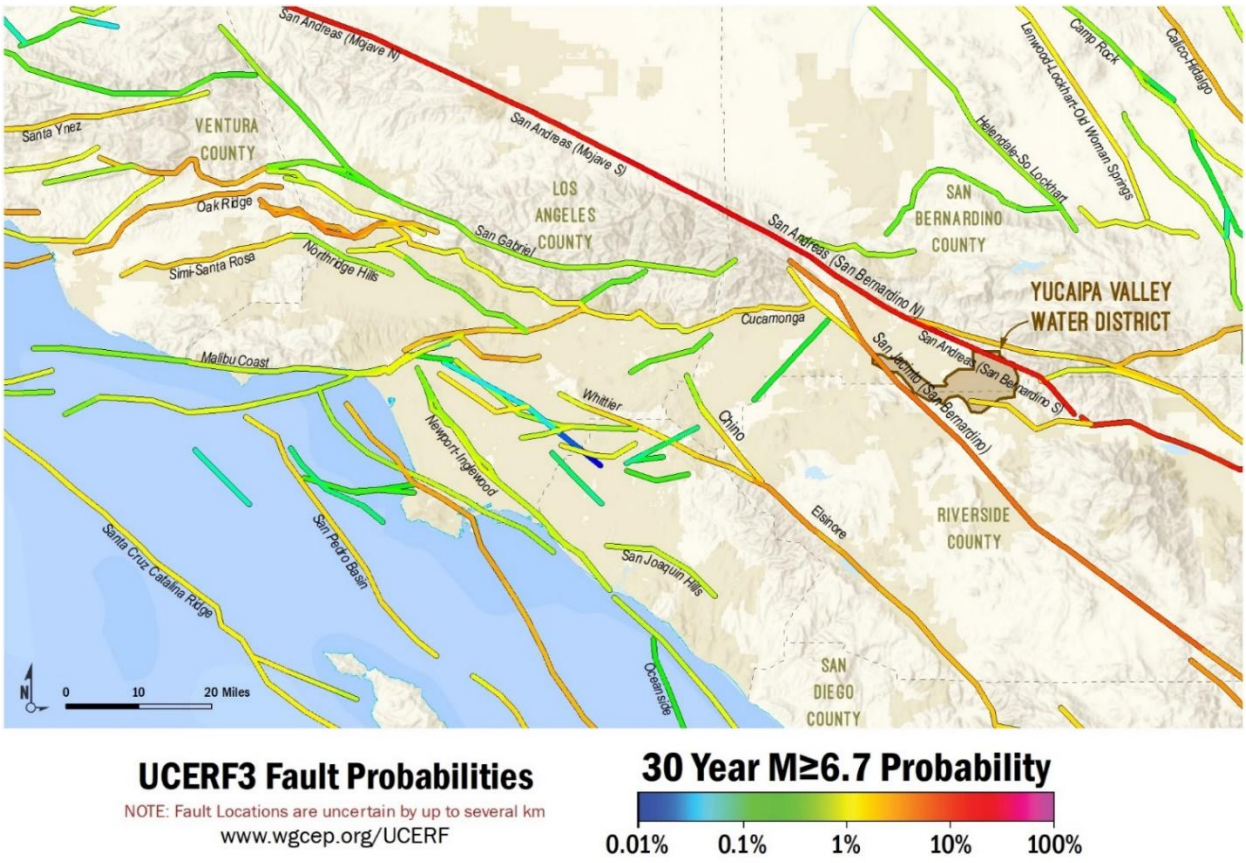


Figure 6. UCERF Fault Probabilities.

Table 9. Point Assets for Earthquakes.

Infrastructure Exposure M 6.9 Scenario Earthquake - S. San Andreas San Bernardino S.			
Infrastructure Type (Point)	VIII- Severe	VII - Very Strong	VI- Strong
Recycled Booster Station	2	5	-
Recycled Reservoir	1	4	-
Sewer Newer Structure	-	5	2
Water Booster Station	4	13	-
Water Reservoir	9	19	-
TOTAL	**16**	**46**	**2**

Table 10. Linear Features.

Linear Infrastructure Exposure (miles) M 6.9 Scenario Earthquake - S. San Andreas San Bernardino S.			
Infrastructure Type (Linear)	VIII - Severe	VII - Very Strong	VI- Strong
Brineline Main	-	11.64	2.33
Recycled Main	2.37	23.05	3.82
Sewer Gravity Main	17.91	191.91	0.63
Water Main	37.13	183.36	0.24
TOTAL	**57.40**	**409.96**	**7.02**

4.4 Hazard Definition for Wildfires

Probability: **Highly Likely**
Impact: **Catastrophic**
Priority: **High**

A wildland fire is a type of fire that spreads through all types of vegetation. It often begins unnoticed, spreads quickly, and is usually signaled by dense smoke that may be visible from miles around. Wildland fires can be caused by human activities (such as arson or campfires) or by natural events such as lightning. Wildland fires often occur in forests or other areas with ample vegetation. In addition to wildland fires, wildfires can be classified as urban fires, interface or intermix fires, and prescribed burns.

The following three factors contribute significantly to wildland fire behavior and can be used to identify wildland fire hazard areas:

1. Topography: As the slope increases, the rate of wildland fire spread typically

increases. South-facing slopes are also subject to more solar radiation, making them drier and thereby intensifying wildland fire behavior. However, ridge tops may mark the end of wildland fire spread since fire spreads more slowly or may even be unable to spread downhill.

2. Fuel: The type and condition of vegetation plays a significant role in the occurrence and spread of wildland fires. Certain types of plants are more susceptible to burning or will burn with greater intensity. Dense or overgrown vegetation increases the amount of combustible material available to fuel the fire (referred to as the "fuel load"). The ratio of living to dead plant matter is also important. The risk of fire is increased significantly during periods of prolonged drought as the moisture content of both living, and dead plant matter decreases. The fuel's continuity, both horizontally and vertically, is also an important factor.
3. Weather: The most variable factor affecting wildland fire behavior is the weather. Temperature, humidity, wind, and lightning can affect chances for ignition and spread of fire. Extreme weather, such as high temperatures and low humidity, can lead to extreme wildland fire activity. By contrast, cooling and higher humidity often signal reduced wildland fire occurrence and easier containment.

4.4.1 Fire Hazard Severity (1)

The frequency and severity of wildland fires are also dependent upon other hazards, such as lightning, drought, and infestations (such as the recent Bark Beetle infestation in the San Bernardino National Forest). If not promptly controlled, wildland fires may grow into an emergency or disaster. Even small fires can threaten lives and resources and destroy improved properties. In addition to affecting people, wildland fires may severely affect livestock and pets. Such events may require emergency watering/feeding, evacuation, and shelter.

The indirect effects of wildland fires can be catastrophic. High temperatures, low humidity, and clear sunny days characterize summer months. Thunderstorms from July through September can create lightning strikes, erratic high winds, and sometimes heavy rains. The City of Yucaipa is bordered by hills, mountains, open fields, and undeveloped lots contiguous to residential development. Residential landscaping, fencing, and outbuildings increase fuel loading, spotting, and fire intensity. The District office, maintenance yard, wastewater treatment plant, and potable water treatment plant are the only facilities where employees work on a full-time basis. The wastewater treatment plant is the only facility that is in a high fire area, and evacuation plans are in place for all facilities in the District.

4.4.2 Previous Occurrences of Wildfires

Wildland fires are a threat in any fire season. Most recently in 2024 the Line fire burned 43,978 acres in the San Bernardino National Forest and areas of Highland, CA. This wildfire had little direct impact to the District. In 2020, the District was directly impacted by the El Dorado Fire that burned roughly

22,744 acres and the Apple Fire which burned roughly 33,424 acres. Both fires caused prolonged smoke impacts, extensive power outages affecting pumping and treatment facilities, and elevated post-fire debris flow risks in upstream washes that caused significant damage to existing reservoirs and piping. In 2010, several wildfires in the hills in the northeast portion of the District burned the natural vegetation for roughly 2,500 acres of land. One structure and one outbuilding were destroyed, and the loss of vegetation resulted in considerable debris being washed down over roads onto streets. In 2009, two separate fires in the hills in the eastern part of the District burned over 1,900 acres resulting in the loss of natural vegetation and causing significant damage from mud and debris in subsequent winter storms. In 2006 a fire in the Crafton Hills in the northwest part of Yucaipa burned natural vegetation in about 60 acres. In 1997, a fire in the hills in the northeast portion of Yucaipa burned the natural vegetation in about 20,000 acres of land. Although no homes were destroyed, the loss of vegetation resulted in considerable debris being washed down over roads onto a park.

Yucaipa Wildfires

Table 11. Wildfires within Yucaipa

Date	Event Name
09/05/2024	Line Fire
9/05/2020	El Dorado Fire
7/03/2020	Apple Fire
8/03/2017	Bryant Fire
10/10/2019	Sandalwood Fire
9/11/2013	Liveoak Fire
9-23-2009	Crafton Fire
8-31-2009	Pendleton Fire
8-30-2009	Oak Glen 3 Fire
5-7-2009	Park Fire
10-26-2007	Jefferson Fire
7-3-2007	Ridge Fire
8-15-2003	Aug 2003 Wildfire
10-21-2001	Oct 2001 Fire
7-8-2001	Bryant Fire
8-31-1998	Aug 1998 Fire
10-29-21997	Fremont Fire
10-17-1995	Bluff Fire
10-27-1993	Mill Creek Fire
7-17-1987	Wash Fire

4.4.3 Hazard Summary for Wildfires

Fire prevention strategies concentrate on educating the public and enforcement of fire codes. Fire suppression strategies focus on containment and control while protecting structures in the threatened areas. Suppression activities may utilize natural firebreaks, direct suppression of the fire by hose lines, aircraft, bulldozers, and hand crews, increasing defensible spaces around homes; utilizing fire suppression foams; and mop up and total extinguishment of the fire.

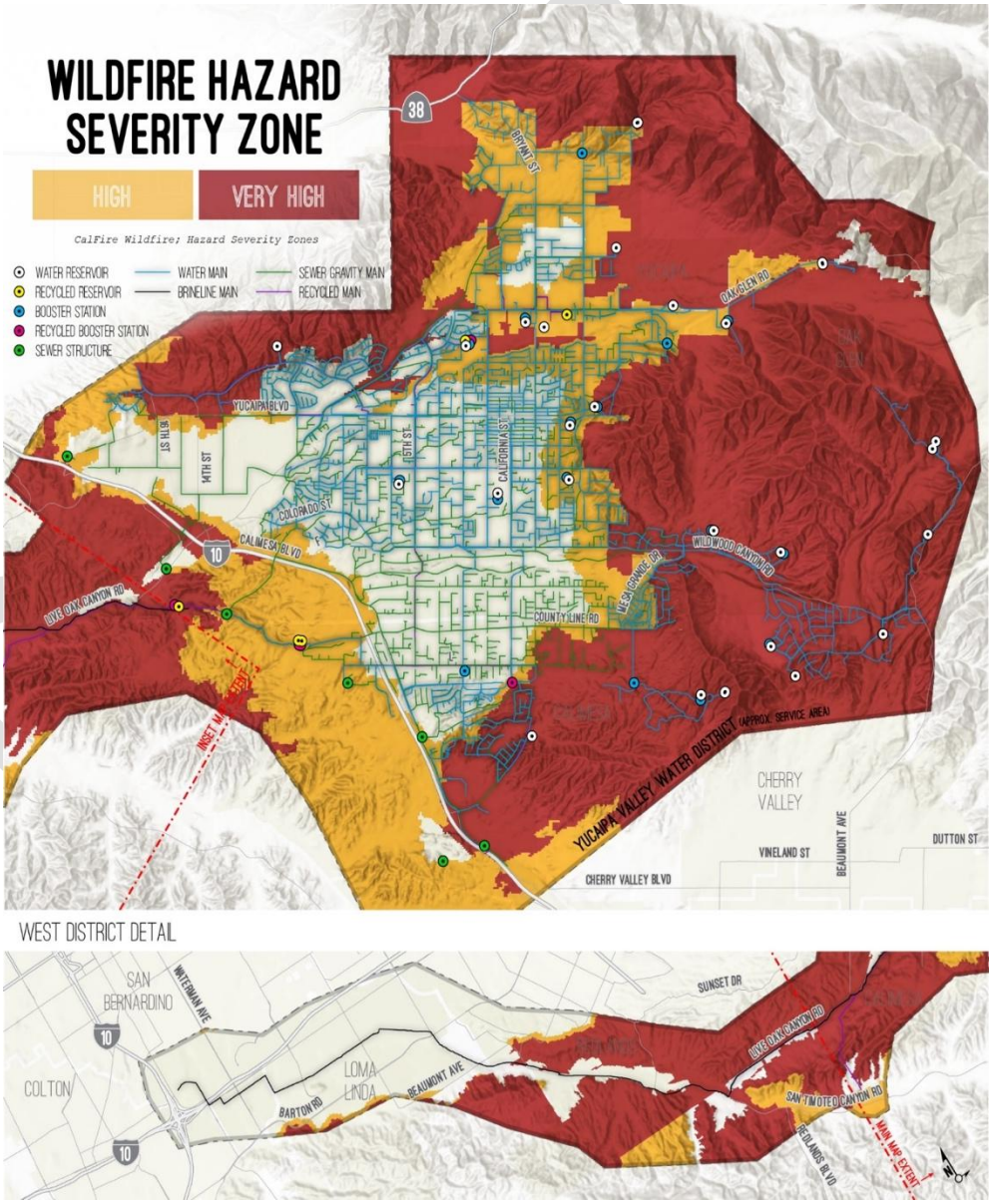


Figure 7. Fire Hazard Severity Zones

Table 12. Wildfire Exposure Point Assets

Infrastructure Exposure - Wildfire Severity Zone			
Infrastructure Type (Point)	Very High	High	
Recycled Booster Station	2	5	
Recycled Reservoir	1	4	
Sewer Newer Structure	1	4	
Water Booster Station	7	7	
Water Reservoir	19	7	
TOTAL	**30**	**27**	**-**

Table 13. Wildfire Linear Features

Linear Infrastructure Exposure (miles) - Wildfire Severity Zone			
Infrastructure Type (Linear)	Very High	High	Moderate
Brineline Main	3.93		4.05
Recycled Main	10.39	6.45	4.06
Sewer Gravity Main	22.49	60.35	18.15
Water Main	55.09	71.16	15.63
TOTAL	**91.90**	**137.95**	**41.89**

4.5 Hazard Definition for Drought and Climate Change (1)

Probability: **Highly Likely**
Impact: **Critical**
Priority: **Medium**

The period between late 2011 and 2014 was the driest in California history since record-keeping began. In May 2015, a state resident poll conducted by Field Poll found that two out of three respondents agreed that it should be mandated for water agencies to reduce water consumption by 25%.

The 2015 prediction of El Niño to bring rains to California raised hopes of ending the drought. In the spring of 2015, the National Oceanic and Atmospheric Administration named the probability of the presence of El Niño conditions until the end of 2015 at 80%. Historically, sixteen winters between 1951 and 2015 had created El Niño. Six of those had below-average rainfall, five had average rainfall, and five had above-average rainfall. However, as of May 2015, drought conditions had worsened, and above-average ocean temperatures had not

resulted in large storms. The drought led to Governor Jerry Brown's instituting mandatory 25 percent water restrictions in June 2015.

Many millions of California trees died from the drought - approximately 102 million, including 62 million in 2016 alone. By the end of 2016, 30% of California had emerged from the drought, mainly in the northern half of the state, while 40% of the state remained in the extreme or exceptional drought levels. Heavy rains in January 2017 were expected to have a significant benefit to the state's northern water reserves, despite widespread power outages and erosional damage in the wake of the deluge. Among the casualties of the rain was the 1,000-year-old Pioneer Cabin Tree in Calaveras Big Trees State Park, which toppled on January 8, 2017.

The winter of 2016–17 turned out to be the wettest on record in Northern California, surpassing the previous record set in 1982–83. Floodwaters caused severe damage to Oroville Dam in early February. Which prompted the temporary evacuation of nearly 200,000 people north of Sacramento in response to the heavy precipitation, which flooded multiple rivers and filled most of the state's major reservoirs; Governor Brown declared an official end to the drought on April 7, 2018.

Description:

The District is not as affected by drought because it receives most of the water supply from groundwater and is dependent on underground water aquifers. The District does purchase water from the State Water Project (SWP) and has a physical connection to the SWP. The District's underground aquifers are in overdraft, a portion of the District's wells have elevated levels of hexavalent chromium. It is challenging for the District to find alternative water supplies from underground aquifers that meet California's water quality standards without constructing additional water treatment facilities. Drought affects all the service areas of Yucaipa Valley Water District.

Mitigation:

Construct more water storage capacity. Drill more wells. Develop ways to capture rainwater from the higher elevations during flash flooding events and divert these waters to percolation ponds to recharge the underground aquifers. Increase purchases of State water project water to recharge the aquifer. Specific sites that are vulnerable to damage from a drought is hard to quantify; however, most damage would be to all wells in the jurisdiction area are at risk of drought. Damage to wells can run from the wells shaft being extended further into the ground to complete ruin of the well shaft, well casing, motor, and bowels. There are 39 wells in the District that would need to be assessed; this information would vary wildly. One would need to know the water level in each well during each drought timeline. This information would vary from the location in the system. The damage could only be assed after knowing all of the variables. The average cost of each well is estimated at $800,000 .

The maps below are taken from https://droughtmonitor.unl.edu/Maps/MapArchive.aspx and show the drought differences in the period between 2011, 2016, and 2020, which vary wildly from year to year.

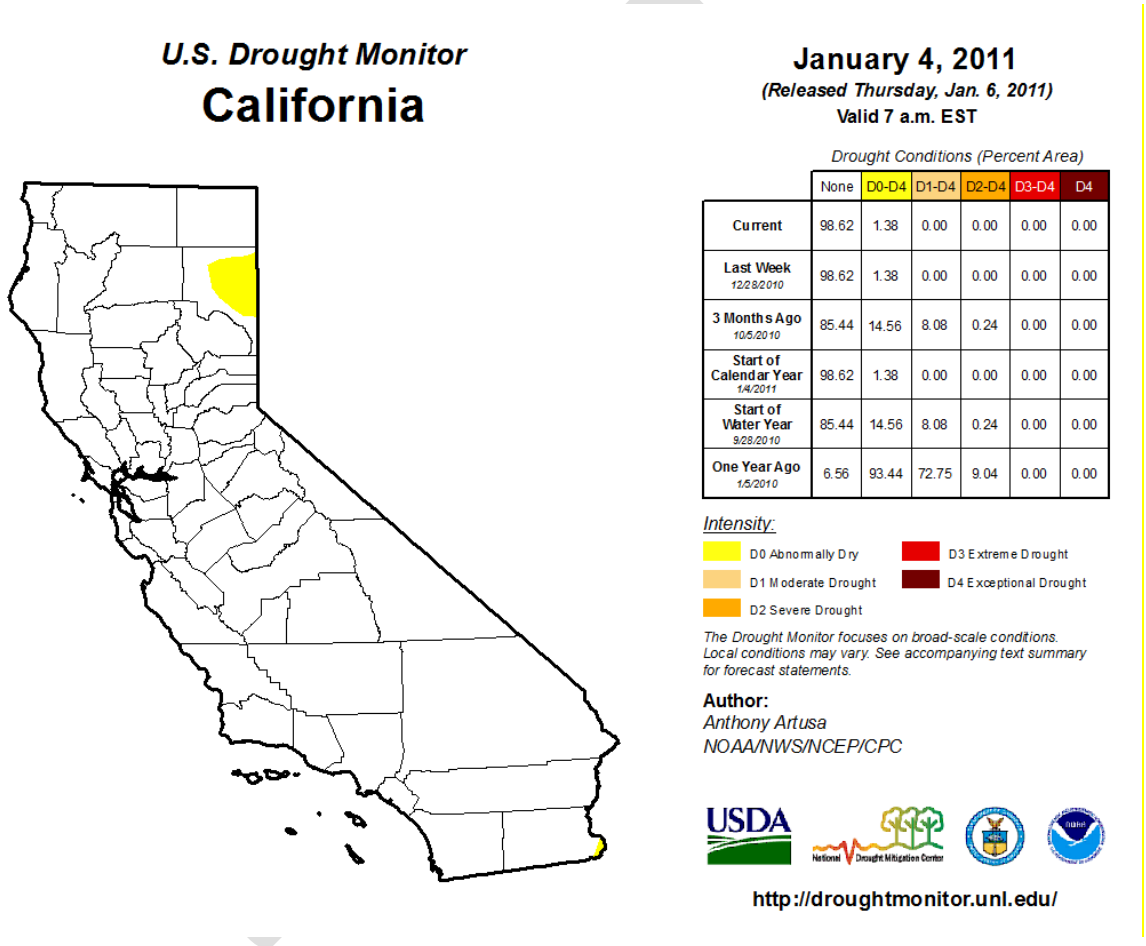


Figure 8A. 2011 Drought Monitor

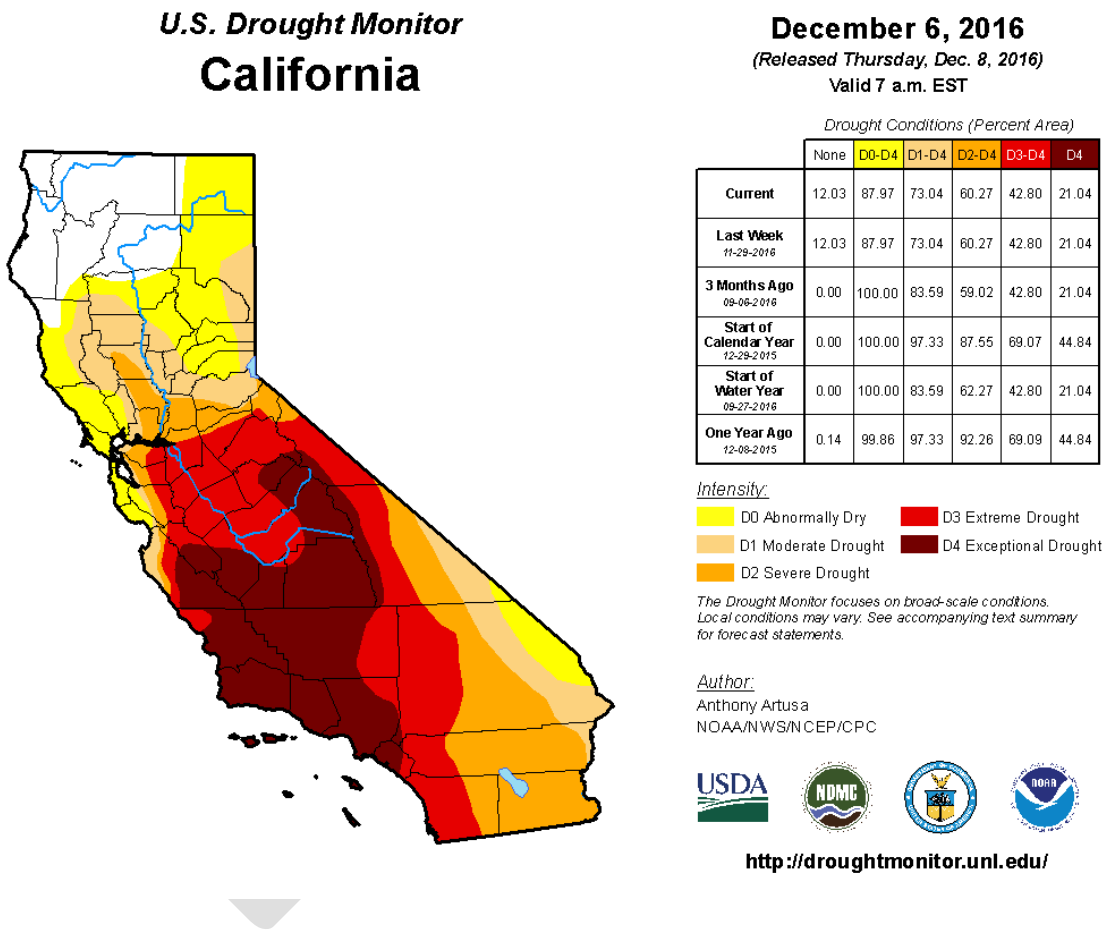


Figure 8B. 2016 Drought Monitor

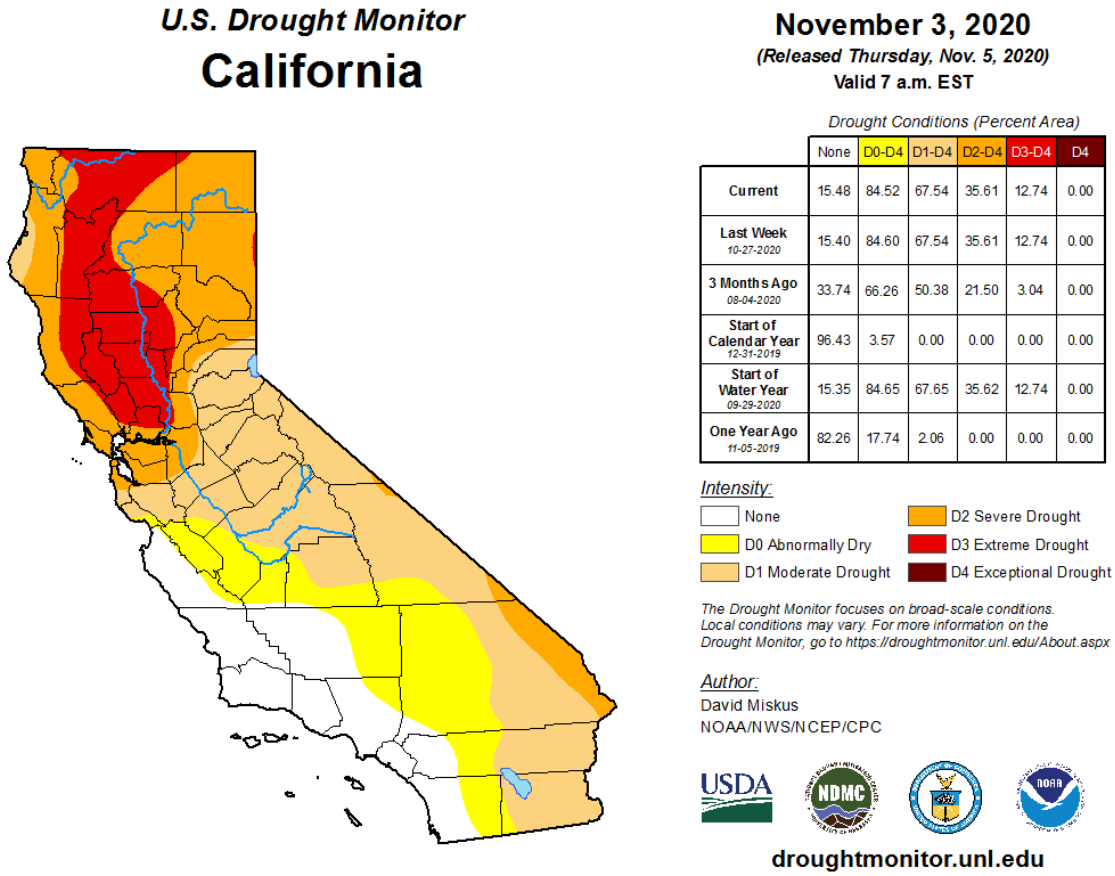


Figure 8C. Current Drought Condition for Southern CA for 2020.

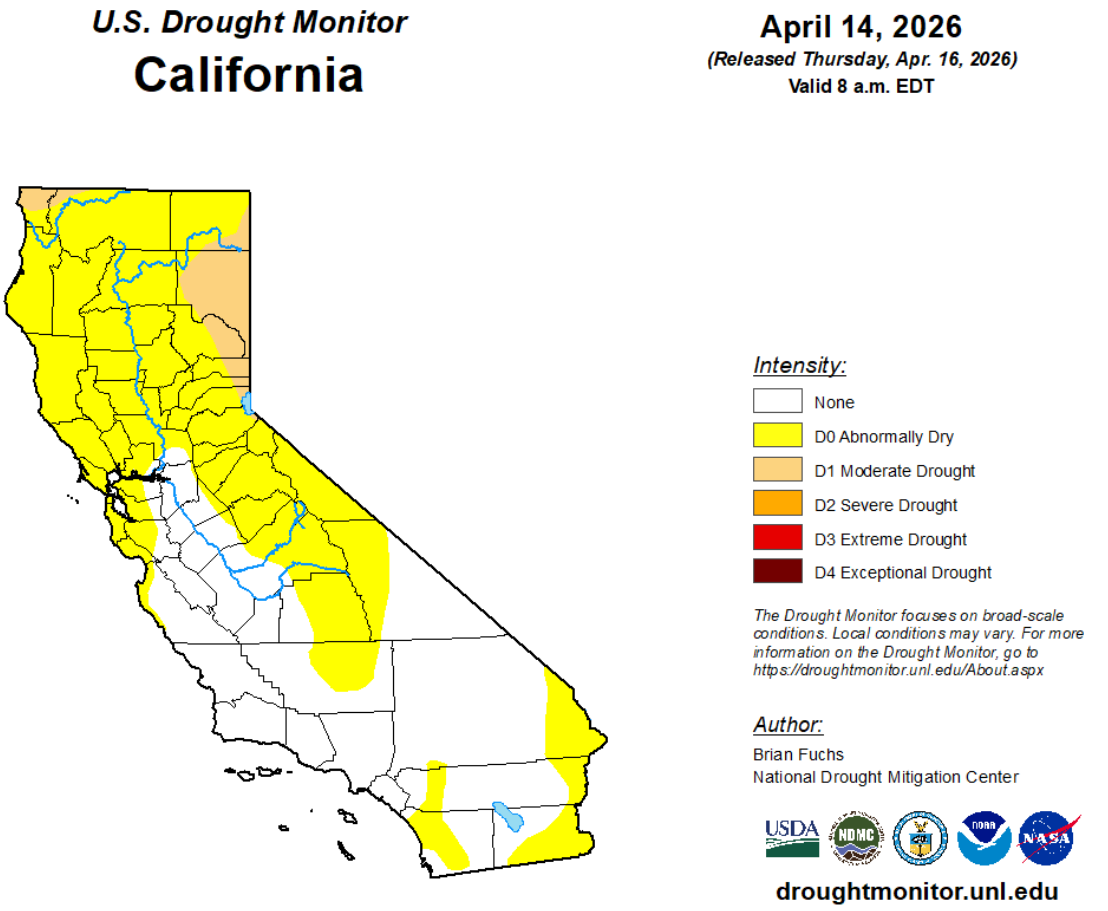


Figure 8D. Current Drought Condition for Southern CA for 2026.

4.5.1 Previous Occurrences of Drought

Table 14. California Drought History *(extracted from USGS, California Drought History)*

1841	The drought was so bad that "a dry Sonoma was declared entirely unsuitable for agriculture"[1]
1864	This drought was preceded by the torrential floods of 1861-1862, showing the fluctuation in climate back in the 1800s.
1924	This drought encouraged farmers to start using irrigation more regularly because of the fluctuation in California weather the need for consistent water availability was crucial for farmers.
1929–1934	This drought was during the infamous Dust Bowl period that ripped across the plains of the United States in the 1920s and 1930s. The Central Valley Project was started in the 1930s in response to drought.

1950s	The 1950s-drought contributed to the creation of the State Water Project.
1976–77	1977 had been the driest year in state history to date. According to the Los Angeles Times, "Drought in the 1970s spurred efforts at urban conservation and the state's Drought Emergency Water Bank came out of drought in the 1980s."
1986–1992	California endured one of its longest droughts ever observed from late 1986 through early 1992. Drought worsened in 1988 as much of the United States also suffered from severe drought. In California, the six-year drought ended in late 1992 as a significant El Niño event in the Pacific Ocean (and the eruption of Mount Pinatubo in June 1991) most likely caused unusual persistent heavy rains.
2007–2009	2007–2009 saw three years of drought conditions, the 12th worst drought period in the state's history, and the first drought for which a statewide proclamation of emergency was issued. The drought of 2007–2009 also saw greatly reduced water diversions from the state water project. The summer of 2007 saw some of the worst wildfires in Southern California history.
2011-2017	From December 2011 to March 2017, the state of California experienced one of the worst droughts to occur in the region on record. The period between late 2011 and 2014 was the driest in California history since record keeping began.

4.5.2 Hazard Summary of Drought

The fundamental drought impact on water agencies is a reduction in available water supplies. As a result, historical occurrences of drought have encouraged water agencies to review the reliability of their water supplies and to initiate planning programs addressing identified needs for improvement. In addition, public and media interest in droughts foster heightened awareness of water supply reliability issues in the Legislature. More than 50 drought-related legislative proposals were introduced during the severe but brief 1976-77 drought. About one-third of these eventually became law. Similar activity on drought-related legislative proposals was observed during the 1987-92 drought. One of the most significant pieces of legislation was the 1991 amendment to the Urban Water Management and Planning Act, in effect since 1983, which requires water suppliers to estimate available water supplies at the end of one, two, and three years, and to develop contingency plans for shortages of up to 50 percent. The District's 2005 Urban Water Management Plan (UWMP) (YVWD, 2006) presents water supply to demand comparisons through 2030. The 2010 UWMP will be completed by June 30, 2011, and will update any demand and supplies documented in the 2005 UWMP and will also require all water agencies to reduce their water demand by 20 percent by the year 2020. The plan also presents water supply to demand comparisons for single dry to multiple dry year scenarios. The comparisons show that the District has adequate supply through 2030.

If the current drought extends for the period that the U.S. Weather Service is currently forecasting, the District will have difficulty in meeting its water supply demands without additional supplies. Groundwater basins would experience a significant loss of production

over and above the significant loss of production that they are currently experiencing. The Yucaipa Valley groundwater basin is experiencing the lowest groundwater levels in 40 years. If this condition continues, the District will need to expand the existing water treatment plant and purchase more State Project water to supply the average demand of 10.72 million gallons day (MGD), 16.16 (MGD) summer and 5.28 (MGD) winter. However, the last drought in the service area didn't cause any damage to the District's facilities, or to the public. The Public was asked to conserve water. The District never ran out of water during the drought. The District has put 'recycled' water lines in at large users, i.e., golf courses, car washes, parks, and public buildings in the city. The infrastructures affected by drought are the District's wells, which would most likely have to be pulled out of the ground, and the shaft would be extended to allow the bowels of the well to reach deeper into the aquifer. Again, water cutbacks would be required of the public.

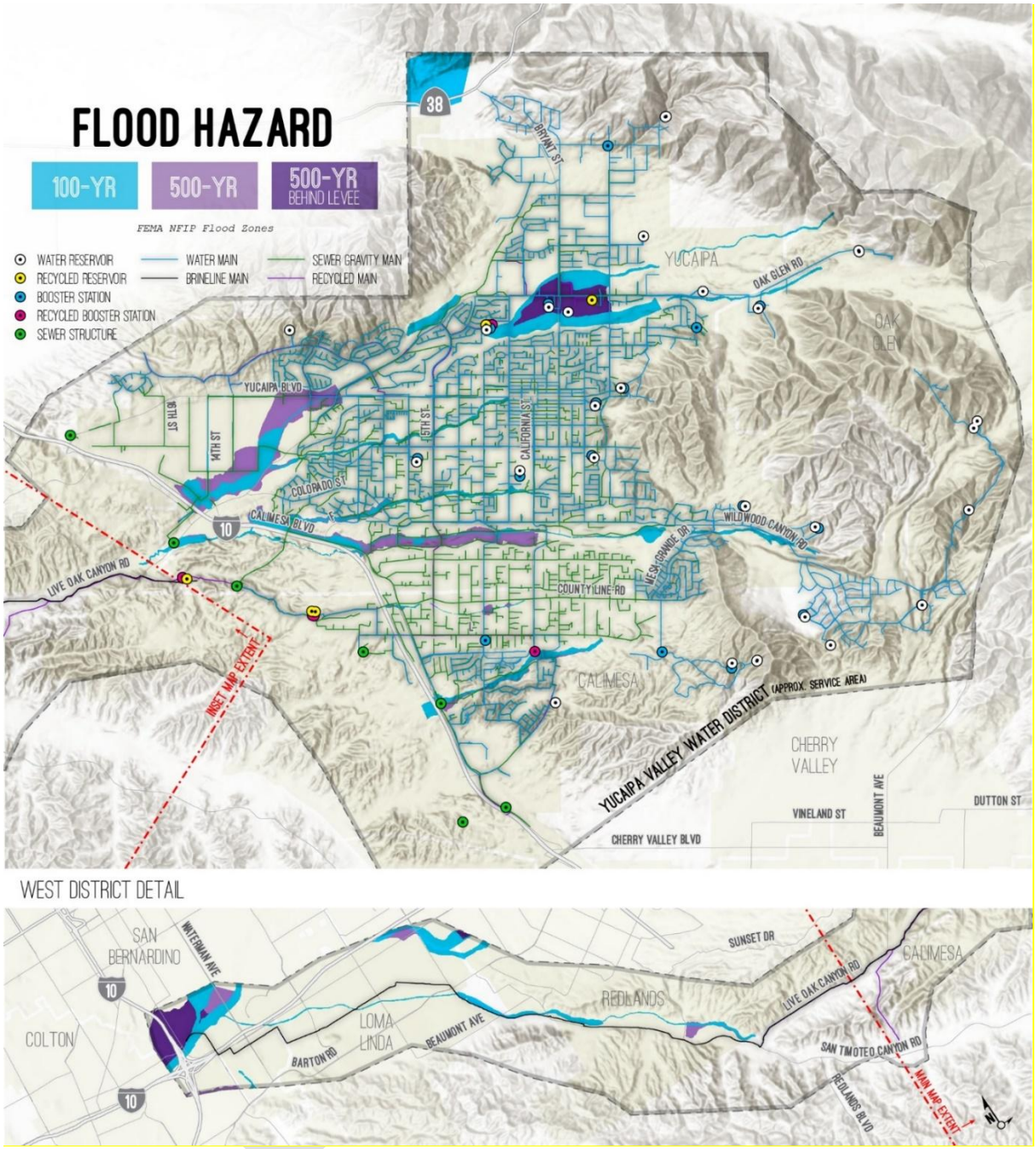


Figure 9. Yucaipa Flood Zones (Fault Zone Data Source: California Geological Survey).

4.6 Hazard Definition for Flooding (Including Post-Fire Debris Flows) (2)

Probability: **Likely**
Impact: **Critical**
Priority: **Medium**

Flooding ranked a critical hazard. Areas subject to flooding in Yucaipa are adjacent to the Wilson and Wildwood Creeks. Wilson Creek flows from the North/East to the South/West corner of the Yucaipa City boundary, and Wildwood Creek flows in the East to West direction. Floodway areas adjacent to these creeks may be subject to damage and isolation during storm events. Winter storms in the past have caused waters in one or more of the natural drainage channels to overflow onto City streets, parks, and private property. Street embankments adjacent to the storm channels have been damaged and required road closure. Normal traffic flow is significantly affected by water and silt deposits in the seven low water crossings. Flooding is a serious and often overlooked consequence of wildfires, especially in recently burned areas. After a wildfire, vegetation that once absorbed rainfall and stabilized the soil is destroyed, leaving the ground bare and vulnerable. The intense heat from fires can also create a water-repellent layer in the soil, preventing water from soaking in. As a result, even moderate rainfall can lead to rapid runoff, causing flash floods and debris flows. These floods can carry ash, loose soil, rocks, and burned vegetation downhill, damaging homes, roads, and waterways. In post-wildfire landscapes, the risk of flooding can remain high for months or even years until vegetation regrows and the soil structure is restored.

Floods are the most common and widespread of all- n a t u r a l disasters--except fire. Most communities in the United States have experienced flooding after spring rains, heavy thunderstorms, or winter snow thaws.

A flood, as defined by the National Flood Insurance Program is:

"A general and temporary condition of partial or complete inundation of two or more acres of normally dry land area or of two or more properties (at least one of which is your property) from:

*Overflow of inland or tidal waters, *Unusual and rapid accumulation or runoff of surface waters from any source, or a mudflow.

The collapse or subsidence of land along the shore of a lake or a similar body of water as a result of erosion or undermining caused by waves or currents of water exceeding anticipated cyclical *levels that result in a flood."* Floods can be slow or fast rising but generally develop over a period of days. Mitigation includes any activities that prevent an emergency, reduce the chance of an emergency happening, or lessen the damaging effects of unavoidable emergencies. Investing in mitigation steps now, such as engaging in floodplain management activities, constructing barriers such as levees, and purchasing flood insurance, will help reduce the amount of structural damage to your home and financial loss from building and

crop damage should a flood, or flash flood occur.

Flooding tends to occur in the summer and early fall because of the monsoon and is typified by increased humidity and high summer temperatures.

The standard for flooding is the so-called "100-year flood," a benchmark used by the Federal Emergency Management Agency to establish a standard of flood control in communities throughout the country. Thus, the 100-year flood is also referred to as the "regulatory" or "base" flood. There is little difference between a 100-year flood and what is known as the 10-year flood. Both terms are really" statements of probability" that scientists and engineers use to describe how one flood compares to others that are likely to occur.

What the 100-year flood means is that there is a one percent chance of a flood of that intensity and elevation happening in any given year. And it could occur more than once in a relatively short period of time. (By comparison, the 10-year flood means that there is a ten percent chance for a flood of its intensity and elevation to happen in any given year.) Rod Bolin, The Ponca City News, July 18, 2002. Page 5-A Identification of Flood-Prone Areas.

Substantial floodplain areas in the District are generally associated with the dry river washes known as Gateway Wash, Wilson Creek, Oak Glen Creek, and Wildwood Creek, as well as Chicken Springs Wash and Yucaipa Creek. These areas have been mapped by the Federal Emergency Management Agency (FEMA) on their Flood Insurance Rate Maps (FIRM). The first version of these maps was prepared in March of 1996 and are reflected in the Fire and Flood Hazard Zones. In August of 2008, FEMA revised the FIRMS to reflect the Letters of Map Revisions (CLOMRS) that have been recorded and affected the Flood Prone areas within the District. There are two categories of flood zones in Yucaipa; FP1 indicates areas inside the 100-year floodplain, while FP2 indicates areas inside the 500-year floodplain. The majority of the floodplains in the District are categorized as FP1 and comprise over 1,225 acres. FP2 areas cover over 300 acres.

Floods are generally classed as either slow-rise or flash floods. Slow-rise floods may be preceded by a warning time lasting from hours to days, or possibly weeks. Evacuation and sandbagging for a slow-rise flood may lessen flood-related damage. Conversely, flash floods are the most difficult to prepare for due to the extremely short warning time, if available at all. Flash flood warnings usually require immediate evacuation within the hour.

Areas subject to flooding are adjacent to the Wilson and Wildwood Creeks. Wilson Creek flows from the North/East to the South/West corner of the Yucaipa Water District boundary, and Wildwood Creek flows in the East to West direction. Floodway areas adjacent to these creeks may be subject to damage and isolation during storm events.

4.6.1 Previous Occurrences of Flooding

Winter storms in the past have caused waters in one or more of the natural drainage channels

to overflow onto City streets, parks, and private property. Street embankments adjacent to the storm channels have been damaged and required road closure. Normal traffic flow is significantly affected by water and silt deposits in the seven low water crossings.

The only dam in the District is at the Yucaipa Regional Park. A second dam was constructed in the eastern extremity of the Crafton Hills in 2001 and is in the process of being expanded to the northwest. The limited inundation areas for both dams pose only a small hazard.

Table 15. Previous Occurrences of Flooding.

Date	Flooding Events Name
***09/12/2023**	**Oak Glen Road Debris Flow**
*1/28/2021	San Bernardino County
January 2017	California Flood
8/2014	Hurricane Marie
1/22/2011	Jan 2011 Flash Flood/Mud Slides
11/30/2002	Nov 2002 Stream Flood
7/11/1999	Aug 1999 Flash Flood
1/1/1997	New Year's Day Flood
11/1/1995	February Storm
3/1995	California Flood
1/1995	California Flood
2/2/1993	Jan. 1 Storm
2/11/1986	California and Western Nevada Floods
1/3-5/1982	Northern California Flood
September 1976	Ocotillo Flash Flood
*2/25/1969	Feb 1969 Flood
*1/25/1969	Jan 1969 Flood
8/23/1967	Aug 1967 Flood
12/18/1966	Dec 1966 Flood
8/14/1965	Aug 1965 Flood
4/10/1965	April 1965 Flood
12/19-24/1964	Christmas Flood
March 1964	North Coast California Tsunami
12/24/1955	California Flood
11/21/1955	California Flood
7/1/1950	July 1950 Flood
September 1939	Los Angeles River
2/27-3/1 1938	Los Angeles Flood of 1938
December 1937	Northeast California Flood
2/4 -7/1937	Santa Ana Flood
12/1933 – 1/1934	Crescenta Valley Flood
1909	California Flood

12/1861 - 1/1862	California's Great Flood
October 1858	1858 San Diego Hurricane
January 1850	1850 Flood
1825	Los Angeles flood of 1825

*Events with an asterisk indicate a direct effect on the city of Yucaipa.

4.6.2 Hazard Summary for Flooding

The following map illustrates FEMA Flood Hazards located within Yucaipa Valley Water District.

Table 16. Point Assets for Floods.

Infrastructure Type (Point)	Flood Fringe	Floodway	100-YR Total	500-YR sans 100-YR	500-YR Total
Recycled Booster Station	-	-	-	-	-
Recycled Reservoir	-	-	-	1	1
Sewer Newer Structure	1	1	2	-	2
Water Booster Station	-	-	-	1	1
Water Reservoir	-	-	-	2	2
TOTAL	**1**	**1**	**2**	**4**	**6**

Table 17. Linear Features for Flood Risk Exposure.

Linear Infrastructure - Flood Risk Exposure (miles)					
Infrastructure Type (linear)	Flood Fringe	Floodway	100-YR Total	500-YR sans 100-YR	500-YR Total
Brineline Main	0.79	0.19	0.98	0.10	1.09
Recycled Main	0.32	0.11	0.42	2.41	2.84
Sewer Gravity Main	6.44	1.73	8.17	6.51	14.67
Water Main	2.84	0.49	3.33	3.34	6.67
TOTAL	**10.38**	**2.52**	**12.90**	**12.36**	**25.26**

4.7 Inventory Assets

Step three in the risk assessment process involves inventorying assets located in the Yucaipa Valley Water District. Section 4.1 profiled the hazards in the District. This information was used to identify the assets at risk from those hazards. Some hazards (such as earthquakes) may affect the entire District, while some affect limited areas (flooding/debris flow incidents). This section provides a description of the inventory development and prioritization process.

4.7.1 Buildings

As of April 2026, the District operates and maintains the following:

- Facilities: 18 pressure zones
- 27 potable reservoirs with a total capacity of 40.5 million gallons (MG)
- 7 recycled water reservoirs with a total capacity of 14 million gallons a day (MGD)
- 14 active wells with a total capacity of 13.4 million gallons a day (MGD)
- 244 miles of water mains
- 35 boosters at 17 locations
- One water treatment plants
- One water reclamation plant
- One administration office
- One environmental control building one garage
- One warehouse
- One old office building
- Seven lift stations
- 15 sewer bridges
- 228 miles of sewer mains

4.7.2 Critical Facility List

This section provides a listing of the critical facilities in the Yucaipa Valley Water District. The primary contact for all District facilities is the following:

Because the District's exact location of facilities is extremely sensitive, especially due to increased concerns for national security, only general locations and descriptions have been included in this section. All costs had arrived from Planning Costs and cost estimates from the Team.

Table 18. Critical Facilities Exposure.

Facility Type	Name	Replacement Cost	Quantity	Hazard Exposure Notes
Treatment Plants	YVRWFF	$145,000,000	1	Earthquake, Wildfire, Drought, Power Loss
Treatment Plants	WRWRF	$175,000,000	1	Earthquake, Wildfire, Power Loss, Flood/Debris Flow
Lift Stations	Lift Station 1	$1,500,000	1	Earthquake, Flood/Debris Flow, Power Loss
Lift Stations	Lift Station 2	$650,000	1	Earthquake, Flood, Power Loss
Lift Stations	Lift Station 3	$650,000	1	Earthquake, Flood, Power Loss
Lift Stations	Lift Station 4	$650,000	1	Earthquake, Flood/Debris Flow, Power Loss
Lift Stations	Lift Station 6	$650,000	1	Earthquake, Flood, Power Loss
Lift Stations	Lift Station 8	$650,000	1	Earthquake, Flood/Debris Flow, Power Loss
Sewer Bridges	Sewer Bridges 1 through 9	$1,500,000 each	9	Earthquake, Flood/Post-Fire Debris Flow
Water Crossings	Water Bridges / Crossings (various)	$1,500,000 each	Multiple	Earthquake, Flood/Post-Fire Debris Flow
Wells	Production Wells (various locations)	$800,000 each	39	Earthquake, Drought, Power Loss
Wells	Calimesa ASR Wells – Phase 1 & 2	$1,200,000 each	Multiple	Earthquake, Drought, Power Loss
Reservoirs	Drinking Water Reservoirs (various)	$4,500,000 each	29	Earthquake, Wildfire, Flood/Debris Flow, Power Loss
Reservoirs	Recycled Water Reservoir R-12.5 Complex	$4,964,500	1 complex (2 × 1.0 MG)	Earthquake, Wildfire, Drought, Power Loss
Pump	Pump Stations	$500,000 each	9	Earthquake, Power

Stations	(various)			Loss, Flood/Debris Flow
Booster Stations	Booster Stations (B-11.21 through B-18.32)	$150,000 each	35	Earthquake, Wildfire, Power Loss
Recycled Water Facilities	Recycled Water Booster Stations (R-1 & R-2)	$100,000 each	2	Earthquake, Drought, Power Loss
Recycled Water Facilities	Recycled Water Reservoir (RES 1)	$1,500,000	1	Earthquake, Drought, Power Loss
Special Properties	Resource Ranch	$2,000,000	1	Earthquake, Wildfire
Special Properties	Enoch Property	$1,500,000	1	Earthquake, Wildfire, Drought
Linear Assets (System-Wide)	Water Mains (all)	$100,000,000	System-wide	Earthquake, Wildfire, Flood/Debris Flow
Linear Assets (System-Wide)	Sewer Gravity Mains (all)	$10,000,000	System-wide	Earthquake, Flood/Post-Fire Debris Flow
Linear Assets (System-Wide)	Recycled Water Mains (all)	$25,000,000	System-wide	Earthquake, Wildfire, Flood/Debris Flow
Linear Assets (System-Wide)	Brine Line (entire)	$10,000,000	System-wide	Earthquake, Flood/Debris Flow

4.8 Vulnerability Assessment

The team reviewed pictures of each of the District's facilities. The pictures were presented with a map of the area to convey the location within the system as well as the site-specific characteristics of the facility. The Planning Team has a long history in the area and knowledge of the potential disasters and emergencies that can occur in and around the community. The Planning Team has the knowledge to assess the system and give valuable input into the assessment and vulnerabilities to the system.

4.8.1 Methodology

The Planning Team reviewed the District's facilities and applied their local and operational knowledge to evaluate how vulnerable each facility is to a potential hazard. The team ranked the facilities by their importance to the District's production and delivery of drinking water, recycle water, brine disposal, and collection of sanitary sewage. The team then used this ranking to develop an estimate of potential economic impacts that could be caused by the high priority hazards. A percentage based on the ranking was applied to the Utility Department's projected annual water revenue to assess the annual economic impact for each facility.

SECTION 5. - Community Capability Assessment

5.1 Agencies and People

The District is in the Southwestern section of San Bernardino County. The District serves the city of Yucaipa, part of the City of Calimesa, an unincorporated area in San Bernardino and Riverside Counties. The District serves approximately 13,678 water service connections, 15,177 sewer connections, 904 recycled water connections with a population of approximately 52,202 customers.

To help mitigate the potential impacts of disasters, both small and large, the District joined CalWARN and is a member of ERINE, both of which are mutual aid agreements. CalWARN has training sessions on the function of mutual assistance, FEMA, CalOES, and County interactions to help water, wastewater agencies, and the public to learn and share ideas two times a year. These meetings are also open to the public. Meeting and training sessions are held twice a year in the spring and fall. District staff attends these sessions on a regular basis. During COVID, CalWARN has held many virtual sessions.

The Utility employs 73 full-time employees in the water, sewer, and administrative office. With the capabilities of CalWARN, the Utility has the potential of having hundreds of mutual aid workers at its disposal within hours of an emergency. This is a public water district and does not have jurisdiction over overbuild codes, land use, or people in the service area. The City of Yucaipa has this duty.

5.2 Existing Plans

The following emergency-related plans apply as appropriate. The following plans are updated yearly. The Urban Water Plan and ERP are updated every five years. During the process, all plans are updated to include new information, hazards, facilities, and old facilities are removed.

- CalWARN Emergency Operations Plan
- The District's Illness Injury Prevention Plan (IIPP)
- The District's Urban Water Master Plan

- Past Hazard Mitigation Plan
- Emergency Operations Plan

The District has a mutual aid agreement with CalWARN that covers most water wastewater agencies in California. As a government entity (Special District, within California Law), the Utility can access the Emergency Managers Mutual Aid (EMMA) and the Emergency Management Assistance Compact (EMAC) for national mutual aid and the National WARN System through the American Water Works Association.

5.1.2 Administrative and Technical Capabilities

The District maintains a dedicated Planning Team of key staff responsible for hazard mitigation planning, implementation, and ongoing maintenance. Technical expertise encompasses water infrastructure design, seismic retrofitting, wildfire risk reduction, ASR systems, advanced recycled water treatment, and salinity management. Geographic Information Systems (GIS) are used for detailed asset mapping and vulnerability analysis, while the SCADA system provides real-time monitoring of wells, reservoirs, treatment plants, lift stations, and pipelines across pressure zones. The District maintains an updated Emergency Response Plan and Illness & Injury Prevention Plan and operates in full compliance with the Standardized Emergency Management System (SEMS), National Incident Management System (NIMS), and Incident Command System (ICS). Active participation in mutual aid networks, including the California Water/Wastewater Agency Response Network (CalWARN) and ERINE, ensures rapid access to additional personnel, equipment, and resources during emergencies affecting drinking water supply, recycled water production, or sewer service.

5.1.3 Legal and Regulatory Capabilities

The District operates under the broad authority of the California Water District Law, which empowers the District to plan, construct, operate, and maintain water, recycled water, and sewer infrastructure. This authority includes the ability to adopt and enforce policies on infrastructure hardening, defensible space (brush clearance), capital project hazard vulnerability screening, and water conservation measures. The District maintains regular coordination with the San Bernardino County OES, San Bernardino County Flood Control District, and local fire departments to align regional hazard planning, emergency response protocols, and post-fire debris flow management strategies.

5.1.4 Capability Gaps and Opportunities for Improvement

While the Yucaipa Valley Water District maintains robust administrative, technical, legal, and fiscal capabilities, several targeted areas present opportunities for further enhancement to strengthen long-term hazard resilience.

First, greater utilization of federal and state hazard mitigation grants (such as HMGP, PDM,

BRIC, and the State Revolving Fund) would accelerate the implementation of high-priority projects within the 2026–2031 Capital Improvement Program. Second, strengthened post-fire debris flow monitoring protocols and closer coordination with the San Bernardino County Flood Control District would better protect critical linear assets, including pipelines, lift stations, sewer bridges, and treatment facilities, particularly in watersheds affected by the 2020 El Dorado and Apple Fires. Third, deeper integration of long-term climate change projections into asset management practices, capital planning processes, and the Urban Water Management Plan would improve the District's ability to anticipate and adapt to more frequent and intense swings between drought and extreme precipitation events. Finally, expanded public education and outreach initiatives focused on water conservation, fire-safe landscaping, and emergency preparedness would better equip customers in the wildland-urban interface to support District efforts during hazard events.

These identified gaps and opportunities will be systematically addressed through the specific mitigation actions detailed in Section 6 (Mitigation Strategies) and through the structured annual review and five-year update process described in Section 7 (Plan Maintenance).

Public Outreach

CalWARN holds workshops twice a year for the members and the water agencies. CalWARN plans to start sending invitations to the public, so the public has a better understanding of hazard mitigation planning in their communities. These workshops promote mitigation and how to prevent the impacts of hazards on the utility's infrastructure. CalWARN has shown from past experiences from utility leaders what they experienced during emergencies and what they should have done differently to mitigate this hazard from happening in the past or in the future.

5.3 Regulations, Codes, Policies, and Ordinances

The Urban Water Management and Planning Act was passed in 2010 and requires water suppliers to estimate water demands and available water supplies. The District's updated Urban Water Management Plan (UWMP) was completed in January 2021. UWMPs are required to evaluate the adequacy of water supplies, including projections of 5, 10, and 20 years. These plans are also required to include water shortage contingency planning for dealing with water shortages, including a catastrophic supply interruption.

UWMPs are intended to be integrated with other urban planning requirements and management plans. Some of these plans include city and county General Plans, Water Master Plans, Recycled Water Master Plans, Integrated Resource Plans, Integrated Regional Water Management Plans, Groundwater Management Plans, Emergency Response Plans, and others.

The Utility has an Emergency Response Plan that details how the Utility will respond to various emergencies and disasters. The Utility must be prepared to respond to a variety of threats that require emergency actions, including:

- Operational incidents, such as power failure or bacteriological contamination of water associated with the District's facilities.
- Outside or inside malevolent acts, such as threatened or intentional contamination of water, intentional damage/destruction of facilities, detection of an intruder or intruder alarm, bomb threat, or suspicious mail.
- Natural disasters, such as earthquakes or floods and power failures.
- Water Conservation Regulations

The District is also required to follow the Standard Emergency Management System (SEMS) and the National Incident Management System (NIMS) and the Incident Command System (ICS) when responding to emergencies.

5.4 Mitigation Programs

The Utility has completed some mitigation programs. The California Department of Water Resources required the Utility to raise well pump motors and other wellhead assemblies above the 500-year flood plain elevation. This was accomplished by installing the motors and wellheads on elevated concrete foundations.

5.5 Fiscal Resources

Fiscal resources for the Utility include the following:

- Revenue from water sales
- Monthly Service Charge fee
- Water Availability Assessment (On Property Taxes)
- Meter Installation Fee
- If necessary, local bond measures and property taxes

Through the California Department of Water Resources, local grants and/or loans are available for water conservation, groundwater management, studies, and activities to enhance local water supply quality and reliability. Project eligibility depends on the type of organization(s) applying and participating in the project and the specific type of project. More than one grant or loan may be appropriate for a proposed activity. Completing the LHMP will facilitate and obtain grant funding in the future.

SECTION 6. - Mitigation Strategies

6.1 Overview

The District's mitigation strategy is derived from the in-depth review of the existing vulnerabilities and capabilities outlined in previous sections of this plan, combined with a vision for creating a disaster-resistant and sustainable system for the future. This vision is based on informed assumptions, recognizes both mitigation challenges and opportunities, and is demonstrated by the goals and objectives outlined below. The mitigation measures identified under each objective include an implementation plan for each measure. The measures were individually evaluated during discussions of mitigation alternatives, and the conclusions were used as input when priorities were decided. All priorities are based on the consensus of the Planning Team.

Mitigation measures are categorized generally for all hazards and specifically for the four high- risk hazards facing the District that were extensively examined in the risk assessment section: drought, earthquakes, floods, and wildfires because mitigation strategies are required to include the District's involvement in the National Flood Insurance Program (NFIP), that is discussed in Section 6.3.4 of this section.

6.2 Mitigation Goals, Objectives, and Projects

This plan is an update of the 2005, 2011, and 2021 YVWD Hazard Mitigation Plan (HMP). Although it is an update, this document has been redesigned so that it looks, feels, and reads differently than the original, as the last three plans were part of a Multi-Jurisdictional Plan with San Bernardino County. That is due to several factors; new hazard information has become available that drives new definitions of risk, new capabilities are now available, and the new format will allow readers to understand the content more easily.

The process of identifying goals began with a review and validation of the Goals and Objectives outlined in the District's 2021 Hazard Mitigation Plan (HMP). Using the previous HMP as a foundation, the District's Planning Team assessed whether each goal remained relevant and appropriate. Through this evaluation, the team reached a consensus that the existing goals should be retained in this updated Plan. The discussion also provided an opportunity to identify and incorporate new goals and objectives where needed. The District intends to integrate the current Local Hazard Mitigation Plan (LHMP) into the updated Water Master Plan, Urban Water and Wastewater Master Plan, and all future building and Capital Improvement Program (CIP) planning efforts, as directed by the General Manager or their designee.

Past LHMP Projects from 2021

6.2.1 Earthquake

Goal:

Identify and mitigate any potential damage to District property and infrastructure.

Objective:

- Design all new facilities to withstand a 7.8 earthquake.
- Establish property protection measures and retrofit programs for facilities in high hazard areas.
- Continuously integrate new data on natural and manmade hazards into all projects and existing facilities.
- Establish a partnership with all levels of government and non-government agencies.

6.2.2 Wildfire

Goal:

Identify and mitigate any potential damage to District property and infrastructure.

Objectives:

The primary objective of long-term actions is to reduce wildfire risk and enhance system resilience through proactive planning and mitigation measures. This includes maintaining defensible space around District facilities, using fire-resistant materials in infrastructure design and upgrades, implementing vegetation management programs, improving emergency response coordination, and monitoring high-risk areas to protect critical assets and ensure continuity of operations.

6.2.3 Drought

Goal:

Identify and mitigate any potential damage to District property and infrastructure.

Objectives:

The overriding objective of the long–term actions is adjustments to drought conditions,

even under normal situations, as a proactive and preparatory measure. This includes, for instance, the increase of water storage capacity, the adoption of water- saving technology, the recharge of groundwater, and monitoring the available water resources.

6.2.4 Flood

Goal:

Identify and mitigate any potential damage to District property and infrastructure.

Objective:

Require identification, improvement, and upgrading of critical facilities in flood hazard areas through such measures as anchorage to prevent flotation, watertight barriers over openings, reinforcement of walls to resist water pressures, use of materials to reduce wall seepage, and installation of pumping facilities for internal and subsurface drainage.

6.2.5 Mitigation Action Plan

Hazard(s) Addressed	Mitigation Action / Project	Description	Estimated Cost	Priority
Earthquake	Seismic retrofits and pipeline replacements	Replace vulnerable water, sewer, and recycled water pipelines with seismic-resistant, high-strength materials.	Included in CIP	High
Earthquake, Power Loss	Emergency power generators and microgrid elements	Install or upgrade backup generators, automatic transfer switches, and microgrid components at critical facilities.	$750,000 – $43.8M	High
Wildfire	Brush clearance and fire-resistant upgrades	Maintain 25–30 ft defensible space around all facilities and apply fire-	Annual operating budget	High

		resistant coatings, materials, and retrofits to structures and equipment.		
Wildfire, Post-Fire Debris Flow	Enhanced post-fire monitoring and erosion control	Coordinate with County Flood Control and install riprap, sediment barriers, monitoring gauges, and early warning systems in high-risk drainages.	TBD	High
Drought / Climate Change	Aquifer Storage and Recovery (ASR) expansion	Implement ASR phases including injection/extraction wells, pipelines, and recycled water infrastructure to support groundwater recharge and drought resilience.	$17M+	High
Drought / Climate Change	Well rehabilitation and new well development	Rehabilitate existing production wells and develop new drought-resilient wells to maintain supply reliability during dry periods.	~$300,000 per well	Medium-High
Flooding / Post-Fire Debris Flow	Lift station relocation and sewer main upgrades	Relocate lift stations to higher ground and replace vulnerable sewer mains with resilient materials.	$18M+	High

All Hazards	SCADA system upgrades	Upgrade SCADA systems for real-time monitoring, automated alerts, and faster response to hazard events.	$3.655M	High
All Hazards	Reservoir replacements.	Replace reservoirs with hazard resistant designs.	~$17M+	High
All Hazards	Annual hazard vulnerability screening	Screen all new and ongoing CIP projects for multiple hazard risks during annual planning processes.	Minimal	High
Earthquake, Wildfire, Power Loss	Energy resiliency upgrades at treatment plants	Implement comprehensive energy resiliency projects including enhanced backup power and potential microgrid integration.	$67.8M	High
Flooding / Post-Fire Debris Flow, Earthquake	Sewer bridge and water crossing hardening	Retrofit or replace sewer bridges and water crossings to withstand seismic forces and debris flows.	$13.5M	High
Wildfire, Post-Fire Debris Flow, All Hazards	Salinity and Groundwater Enhancement (SAGE) Project	Advance recycled water treatment for groundwater recharge, improving drought resilience and reducing reliance on vulnerable	~$45.6M	High

		surface water sources.		

6.3 Mitigation Priorities

During the development of the risk assessment for the District, the Planning Team proposed and discussed alternative mitigation goals, objectives, and specific mitigation measures that the District should undertake to reduce the risk from the four high-risk hazards facing the District.

Multiple factors were considered to establish the mitigation priorities included in this plan. Highest priority rankings were assigned to those mitigation measures that met three primary criteria:

1. The greatest potential for protecting water and wastewater infrastructure life and property
2. The greatest potential for maintaining critical District functions and operability following a disaster; and
3. Achievability in terms of customer support and cost-effectiveness

All rankings were determined by the consensus of the Planning Team. As described in the previous section on hazard and risk assessment, clearly earthquakes have the potential to affect the largest number of people, critical facilities, and buildings and to cause the greatest economic losses. This fact, combined with the relatively high probability of an earthquake occurrence in the next several decades, makes increasing disaster resistance and readiness to earthquakes a high priority. Given the extreme importance of maintaining critical functions in times of disaster and the large number of customers who depend and rely on District services and infrastructure, those mitigation measures that improve disaster resistance, readiness, or recovery capacity are generally given higher priority.

Drought, earthquake, flooding, and wildfire mitigation actions are identified and assigned a priority according to their importance, cost, funding availability, to what degree project planning has been completed, and the anticipated time to implement the measures.

Using the above rationale for establishing mitigation priorities, each mitigation measure is assigned a priority ranking as follows:

- High – Projects that will be the primary focus of implementation over the next five years.
- Medium – Projects that may be implemented over the next five years.
- Low – Projects that will not be implemented over the next five years unless conditions change (new program/funding source)

6.4 Implementation and Prioritization

The mitigation strategy is designed to systematically reduce the District's long-term vulnerability to identify hazards through a structured, integrated, and sustainable implementation approach. The primary vehicle for execution is the 2026–2031 CIP, which already incorporates some of the high-priority mitigation actions. This alignment ensures that hazard mitigation is not treated as a separate initiative but is embedded into the District's core infrastructure planning, budgeting, and operations.

Implementation Process:

Each year, during the spring budget development workshops, the Planning Team and senior staff conduct a formal review of the Mitigation Action Plan. Proposed CIP projects are screened for hazard vulnerability, and mitigation opportunities are identified and prioritized. Projects are then incorporated into the annual budget and multi-year CIP based on the following criteria:

- Protection of life and critical infrastructure
- Timeline for implementation and multi-hazard benefits
- Cost-effectiveness and alignment with available funding
- Operational urgency and system reliability needs

Funding Strategy:

The District maintains strong financial stability supported by diversified and reliable revenue streams from potable water sales, sewer service charges, recycled water revenues, and connection fees. Capital improvement projects remain a consistent priority even during periods of economic uncertainty.

To supplement local funding and reduce impacts on ratepayers, the District will pursue a broad range of external funding sources, including:

- Federal grants: Hazard Mitigation Grant Program (HMGP), Building Resilient Infrastructure and Communities (BRIC), Pre-Disaster Mitigation (PDM), and Flood Mitigation Assistance (FMA)
- State grants and loans: State Revolving Fund (SRF), Proposition 1, and other California water infrastructure funding programs.
- Regional and local partnerships: San Bernardino County Flood Control District cost-share opportunities and developer contributions

Grant applications will be prepared annually for high-priority projects, with District reserve funds and operating revenues used as local match when required.

Timeframe:

Implementation will occur on a continuous five-year rolling basis aligned with the CIP cycle. Pipeline replacement, seismic retrofitting projects, reservoir upgrades, lift station relocations, and energy resiliency enhancements, are scheduled for phased execution between 2026 and

2031. Annual progress will be tracked and reported to the Board of Directors as part of the budget approval process. The full mitigation strategy will be comprehensively reviewed and updated during the next five-year LHMP update cycle targeted for 2031.

Responsibility and Monitoring:

The General Manager, or designee holds overall responsibility for implementing and administering all mitigation projects. This includes coordinating with department managers, tracking project status and expenditures, preparing grant applications, and ensuring compliance with funding requirements. Progress on mitigation actions will be documented annually and presented to the Board of Directors during the spring budget and CIP review workshops.

This integrated implementation framework ensures that hazard mitigation becomes a routine component of the District's operations, capital planning, and long-range budgeting, ultimately building greater resilience across the drinking water, recycled water, and sewer systems.

SECTION 7. - Plan Maintenance

7.1 Monitoring, Evaluating and Updating the Plan

The LHMP will be monitored and evaluated by the General Manager or his/her assignee each year, and progress will be reported as part of the annual budget workshop each spring. Annually, the General Manager or his/her assignee and the Board of Directors will review funding and determine the Capital Improvement Projects to be included in the next fiscal year's budget. The General Manager or his/her assignee will include the LHMP in all budget workshops and grant planning meetings. This will allow open discussion, evaluation, and assessment of the plan to achieve goals, allowing additions and removal of mitigated items. The General Manager or his/her assignee will keep track of all mitigation grants received by the District and when mitigation items from the LHMP are included in the CIP for mitigation.

A full review of the plan will be performed at 5-year intervals by staff in the same manner as the initial LHMP. Progress in reaching mitigation goals, assessment of new and existing hazards, development of new mitigation strategies, and goals will be tackled by a planning team that will include the District's staff and the community served by the District. The public and the City of Yucaipa will be asked to participate in the update process. The District's budget is a public document and is reviewed by the public before the Board of Directors adopts the yearly budget and any updates to the LMHP.

7.2 Implementation through Existing Programs

Once the State of California OES and FEMA approve the LHMP, the District will incorporate the LHMP into capital improvement projects, capital replacement programs, building design, and any updates or repairs to the water distribution system. The District will submit a Notice

of Intents to the State of California to help facilitate funding opportunities in obtaining FEMA and State funding to mitigate hazards within the service area.

The District's General Manager or his/her appointee will be responsible for the implementation of the LHMP and ensuring the LHMP's recommended goals and objectives are met. The General Manager or his/her appointee will be responsible for placing the LHMP on the District's website and incorporate the LHMP into the annual budget workshops. The General Manager or his/her assignee will evaluate the LHMP yearly and verify that the LHMP is updated and rewritten on a 5-year cycle. The District will start the update process one and a half years before the expiration date on this document. The approved HMP will be included in all project planning stages throughout the District planning. This will clarify the hazards in the District in regard to the location of infrastructure and hazards. This will ensure that new or revamping infrastructure is built to withstand the hazards at different locations in the service area. The HMP will be reviewed each year to ensure the LHMP identified projects are completed. The District Engineering Department and the General Manager are responsible for maintaining the LHMP.

7.3 Continued Public Involvement

In the spring of each year at the District's Board of Directors' budget workshop, public comments will be taken regarding the LHMP, and projects will be considered that could possibly be included in the next year's budget. It is the responsibility of the General Manager or his/her designee to ensure the LHMP is included in each budget year staff workshops and Board of Directors Budget meetings. It is also, the General Managers \or his/her appointee has the responsibility to ensure new facilities are incorporated into the LHMP, and the LHMP is updated to include new facilities, as well removing facilities from the LHMP that are no longer used, removed from service or the hazard has been mitigated.

7.4 Plan Adoption and Approval

Following CalOES and FEMA review, the final adopted version of this plan will include a formal resolution of adoption by the District's Board of Directors. The resolution will be appended to the plan upon adoption.

This plan maintenance process ensures that the District's Local Hazard Mitigation Plan remains a dynamic, effective tool for reducing long-term risk to the District's drinking water, recycled water, and sewer infrastructure and the community it serves.

APPENDIX A

Meeting Matrix

Meeting Dates and Attendees

Yucaipa Valley Water District
Hazard Mitigation Plan

Name	07/09/2025	12/10/2025	01/14/2026	02/11/2026
John Wrobel	X	X	X	X
Caleb Nazario	X	X	X	X
Todd Madrid	X	X	X	X
Jennifer Ares	X	X	X	X

The team met to discussed the LHMP between July 2025 and April 2026:

- **July 9, 2025** – Kickoff Meeting: Reviewed FEMA requirements, confirmed the four priority hazards (Earthquake, Wildfire, Drought/Climate Change, and Flooding/Post-Fire Debris Flows), and assigned responsibilities.
- **December 10, 2025** – Risk Assessment Workshop: Updated hazard profiles, critical facility inventories, and incorporated lessons learned from the 2020 El Dorado and Apple Fires.
- **January 14, 2026** – Mitigation Strategy Workshop: Developed and prioritized mitigation actions and aligned them with the 2026–2031 Capital Improvement Program.
- **February 11, 2026** – Final Draft Review: Conducted a comprehensive review of the entire document.

APPENDIX B

And links to the document

www.yvwd.us

The complete 2026 Yucaipa Valley Water District Local Hazard Mitigation Plan – Public Review Draft is available for download below:

Primary Download Links

- **Full PDF Version** Download 2026 LHMP Public Review Draft (PDF)
- **Or** http://documents.yvwd.dst.ca.us/emergency/hmp/260430_YVWD-hmp.pdf

Public Comment Period: May 1, 2026 – May 30, 2026

All comments should be submitted to: **John Wrobel, Public Works Manager** Email: jwrobel@yvwd.us Phone: (909) 797-5117

APPENDIX C

Facebook and X Announcement Public Comments

Posted on the District's Website, Facebook, and X

The Yucaipa Valley Water District Hazard Mitigation Planning Committee is in the process of updating the District's Hazard Mitigation Plan. The LHMP is required by the Federal Disaster Mitigation Act of 2000.

The plan details the risks of both natural and manmade hazards in our service area and includes programs and projects that can help reduce the exposure of District residents and businesses should an event occur. An approved Plan also makes the District eligible for federal pre-disaster and post-disaster assistance.

In order to identify and plan for future disasters, we need your input! We would appreciate your feedback with any comments and/or suggestions. The information you provided will help the District coordinate activities to reduce the risk of injury or property damage in the future.

Your comments are completely confidential. We very much appreciate your participation in this survey, which will be an integral part of our updated plan.

The Hazard Mitigation Plan is available on our website at https://www.yvwd.us

Public Comments

Placeholder for public comments concerning the Local Hazard Mitigation Plan.

APPENDIX D

Glossary of Terms and Acronyms

Glossary of Terms & Acronyms

Term / Acronym	Definition
ASR	Aquifer Storage and Recovery – A water management technique where recycled or surface water is injected into underground aquifers for storage and later recovery.
Brineline	The 14-mile Yucaipa Valley Regional Brineline – Pipeline that transports brine concentrate from the WRWRF to the Santa Ana Regional Interceptor.
Cal OES	California Governor's Office of Emergency Services – State agency responsible for coordinating emergency management and reviewing local hazard mitigation plans.
CIP	Capital Improvement Program – The District's 5-year plan for infrastructure investments (2026–2031 CIP totals $219.8 million).
FEMA	Federal Emergency Management Agency – Federal agency that provides disaster relief and approves Local Hazard Mitigation Plans.
FHSZ	Fire Hazard Severity Zone – Areas designated by CAL FIRE as Moderate, High, or Very High fire risk.
HMGP	Hazard Mitigation Grant Program – FEMA funding program for pre- and post-disaster mitigation projects.
LHMP	Local Hazard Mitigation Plan – This document, required by the Disaster Mitigation Act of 2000.
NFIP	National Flood Insurance Program – Federal program that provides flood insurance; YVWD does not participate directly as a Special District.
SAGE Project	Salinity and Groundwater Enhancement Project – Major upgrade at the WRWRF to improve recycled water quality through advanced treatment (reverse osmosis) for groundwater recharge.
SCADA	Supervisory Control and Data Acquisition – The District's real-time remote monitoring and control system for wells, reservoirs, pumps, and treatment facilities.
SEMS / NIMS / ICS	Standardized Emergency Management System (California), National Incident Management System, and Incident Command System – Standardized frameworks for emergency response.
UWMP	Urban Water Management Plan – State-required plan (updated every 5 years) that assesses water supply reliability and demand.
Wildland-Urban Interface (WUI)	Areas where urban development meets or intermingles with wildland vegetation, increasing wildfire risk.
WRWRF	Henry N. Wochholz Regional Water Recycling Facility – The District's main wastewater treatment and recycled water production plant.
YVRWFF	Yucaipa Valley Regional Water Filtration Facility – Primary drinking water treatment plant (12 MGD capacity).
Post-Fire Debris Flow	Rapid, destructive flow of water, mud, rocks, and debris following a wildfire, often triggered by intense rainfall.
Pressure Zones	18 separate hydraulic zones in the District required due to 3,140 feet of elevation change.
PDM	Pre-Disaster Mitigation – FEMA grant program for hazard mitigation planning and projects.
FMA	Flood Mitigation Assistance – FEMA grant program focused on flood risk reduction.
BRIC	Building Resilient Infrastructure and Communities – FEMA grant program for large-scale resilience projects.

APPENDIX E

References

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APPENDIX F

2026-2031 Capital Improvement Program Summary

CIP Projects with Hazard Mitigation Benefits

Priority	Project ID / Name	Description	Primary Hazard(s) Addressed	Estimated Cost	Scheduled Years	Mitigation Benefit
High	Pipeline Replacement & Seismic Retrofit Program	Systematic replacement of aging water, sewer, and recycled water mains with seismic-resistant materials (HDPE, ductile iron with expansion joints)	Earthquake, Flood/Debris Flow, Wildfire	$85–95 million	2026–2031	High (system-wide resilience)
High	SAGE Project Expansion (Phases 2 & 3)	Advanced treatment upgrades at WRWRF including reverse osmosis for improved recycled water quality and groundwater recharge	Drought/Climate Change, Water Supply Reliability	$45.6 million+	2026–2029	High
High	Aquifer Storage & Recovery (ASR) Expansion	New injection/extraction wells, pipelines, and monitoring systems for seasonal storage of recycled water	Drought/Climate Change	$17 million+	2026–2028	High
High	Reservoir Replacement Program	Replacement of aging potable and recycled water reservoirs with modern, hazard-resistant designs (seismic, wildfire, wind)	Earthquake, Wildfire, Flood	$17 million+	2026–2031	High
High	Lift Station Relocation & Upgrades	Relocate vulnerable lift stations to higher ground and add flood protection	Flooding / Post-Fire Debris Flow	$18 million+	2026–2029	High
High	Energy Resiliency &	Backup generators,	Earthquake, Wildfire	$67.8 million	2026–2031	High

	Microgrid Upgrades	automatic transfer switches, and microgrid readiness at treatment plants and key facilities	(PSPS), Power Loss			
High	SCADA System Modernization	Real-time monitoring, automated alerts, and remote control upgrades across all pressure zones	All Hazards	$3.655 million	2026–2027	High
High	Sewer Bridge & Water Crossing Hardening	Seismic and debris-flow retrofits to 15 sewer bridges and multiple water crossings	Earthquake, Flood/Debris Flow	$13.5 million	2026–2030	High
Medium-High	Well Rehabilitation & New Production Wells	Rehabilitation of existing wells and strategic development of new drought-resilient wells	Drought, Earthquake, Power Loss	~$300,000 per well	Ongoing	Medium-High
Medium	Brush Clearance & Defensible Space Program	Annual vegetation management and fire-resistant upgrades around facilities	Wildfire	Annual Operating Budget	Ongoing	High
Medium	Post-Fire Debris Flow Protection	Riprap, check dams, monitoring gauges, and early warning systems in high-risk drainages	Wildfire → Flood/Debris Flow	TBD	As needed	High

Total 5-Year CIP Investment: $219,848,257

Notes:

- Many projects provide multi-hazard benefits (e.g., seismic pipeline upgrades also improve resistance to debris flows).
- Costs shown are planning-level estimates and will be refined during design.
- All high-priority mitigation actions in Section 6 are either fully funded or programmed within this CIP.
- The complete detailed CIP document is available upon request or on the District website.

Integration Statement:

Hazard vulnerability screening is now a standard part of the annual CIP development process. All new projects are evaluated for risk from the four priority hazards before final approval.