

YORBA LINDA WATER DISTRICT ANNEX

The Yorba Linda Water District (YLWD) is a participant (Member Agency [MA]) in the Orange County Water and Wastewater Multi-Jurisdictional Hazard Mitigation Plan (HMP or Plan). As a participant MA, YLWD representatives were part of the HMP Planning Process and served on the Planning Team responsible for the Plan Update; refer to Section 2 of the Plan. The primary Plan, including the hazard mitigation plan procedural requirements and planning process apply to YLWD.

This Annex supplements information contained in the primary Plan and describes how YLWD’s risks vary from the planning area. The Risk Assessment (Section 3) summarizes the hazards and risks that pose a threat to Orange County. The primary Plan treats the entire County as the planning area and identifies which MAs are subject to a profiled hazard. The purpose of this Annex is to provide additional information specific to YLWD with a focus on the risk assessment and mitigation strategy.

HAZARD MITIGATION PLAN POINT OF CONTACT AND DEVELOPMENT TEAM

The following representatives attended the Planning Team meetings on behalf of YLWD and coordinated the hazard mitigation planning efforts with YLWD staff:

Primary Point of Contact

Anthony Manzano
Senior Project Manager
714-701-3106
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Alternate Point of Contact

Danielle Logsdon
Associate Engineer
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In addition to participating on the Planning Team, an internal team was also formed to support Planning Team representatives and provide information for the Plan update. The following staff served as YLWD’s internal hazard mitigation planning development team.

Representative	Title	How Participated
Anthony Manzano	Sr. Project Manager	Reviewed and commented on Hazard Mitigation Plan
Danielle Logsdon	Associate Engineer	Reviewed and commented on Hazard Mitigation Plan

JURISDICTION PROFILE (Service Population: approximately 79,000)

YLWD is an independent special district that provides water and sewer service to residents and businesses within its service area. The District’s history dates to 1909, when local farmers and ranchers formed the Yorba Linda Water Company. In 1959, the voters elected to create a public utility with the assets of the Water Company, and the YLWD was formed under the California Water District Law, Division 13 of the Water Code of the State of California.

The District is governed by a publicly elected Board of Directors comprised of five Directors who serve four-year terms. The Directors set District policies and programs, provide general oversight of District activities, set water and sewer rates, and employ the general manager to direct the activities of the District.

YLWD provides water and sewer services to most of Yorba Linda, and to portions of Placentia, Anaheim, Brea, and unincorporated Orange County. From 1959 through the mid-1970s, the District experienced a gradual transition from a rural, agriculturally orientated area to a suburban community. In 1978, YLWD Board of Directors agreed to annex lands to the east of then current boundaries that more than doubled the District's size. YLWD purchases imported water from Metropolitan through MWDOC to provide up to approximately 30 percent of its demand for its more than 25,000 potable water service connections. The remaining water comes from the District's local production wells which are pumped from the OCWD groundwater basin.

HAZARDS

Detailed hazard profiles for the planning area are provided in Section 3. YLWD is located inland and therefore is not subject to coastal hazards, such as coastal storms/erosion and tsunamis. However, the District is subject to most of the other hazards identified for the planning area. Many of these hazards are dispersed and may affect the entire region, including climate change, drought, ground shaking from earthquakes, geologic hazards, and high wind. The eastern portion of the district contains areas in the high or very high fire hazard severity zones and areas susceptible to landslides. Portions of the District adjacent to the Santa Ana River are located within the 100-year flood zones. The Prado Dam poses potential inundation hazards, as portions of the District are located within its inundation zone. Human-caused hazards and power outages are also hazards that could impact the District. There are no hazards that are unique to YLWD.

Based on the risk assessment, YLWD's development team identified the following hazards that affect YLWD and summarized their geographic extent, probability of future occurrence, magnitude/severity and significance; refer to Table S-1.

**Table S-1
YLWD Hazard Identification**

Hazard	Geographic Extent	Probability of Future Occurrences	Magnitude/Severity	Significance
Climate Change	Limited	Occasional	Limited	Low
Coastal Storm/Erosion	Limited	Occasional	Negligible	Low
Contamination/ Salt Water Intrusion	Limited	Unlikely	Negligible	Low
Dam/Reservoir Failure	Limited	Unlikely	Negligible	Low
Drought	Significant	Likely	Limited	Low
Earthquake Fault Rupture & Seismic Hazards	Extensive	Likely	Critical	High
Flood	Limited	Occasional	Limited	Low
Geologic Hazards	Limited	Likely	Critical	Medium
High Winds/ Santa Ana Winds	Significant	Likely	Limited	Medium
Landslide/Mudflow	Limited	Occasional	Limited	Medium
Wildland/Urban Fire	Significant	Likely	Limited	High
Human-Caused Hazards	Limited	Occasional	Limited	Low
Power Outage	Limited	Occasional	Critical	High
Geographic Extent Limited: Less than 10% of planning area Significant: 10-50% of planning area Extensive: 50-100% of planning area Probability of Future Occurrences Highly Likely: Near 100% chance of occurrence in next year, or happens every year. Likely: Between 10 and 100% chance of occurrence in next year, or has a recurrence interval of 10 years or less. Occasional: Between 1 and 10% chance of occurrence in the next year, or has a recurrence interval of 11 to 100 years. Unlikely: Less than 1% chance of occurrence in next 100 years, or has a recurrence interval of greater than every 100 years.		Magnitude/Severity Catastrophic—More than 50 percent of property severely damaged; shutdown of facilities for more than 30 days; and/or multiple deaths. Critical—25-50 percent of property severely damaged; shutdown of facilities for at least two weeks; and/or injuries and/or illnesses result in permanent disability. Limited—10-25 percent of property severely damaged; shutdown of facilities for more than a week; and/or injuries/illnesses treatable do not result in permanent disability. Negligible—Less than 10 percent of property severely damaged, shutdown of facilities and services for less than 24 hours; and/or injuries/illnesses treatable with first aid. Significance Low: Minimal potential impact Medium: Moderate potential impact High: Widespread potential impact		

The identification of hazards provided in Table S-1 is highly dependent on the location of facilities within each agencies jurisdiction and takes into consideration the history of the hazard and associated damage (if any), information provided by agencies specializing in a specific hazard (e.g., FEMA, California Geological Survey), and relies upon each agencies’ expertise and knowledge.

Hazard Maps

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

VULNERABILITY AND RISK ASSESSMENT

Assets Susceptible to Hazard Events

Table S-2, YLWD Infrastructure and Exposure to Hazards, identifies YLWD’s water and wastewater infrastructure assets that are located within the mapped hazard zones, identified above.

**Table S-2
YLWD Infrastructure and Exposure to Hazards**

Hazard		Infrastructure Type					
		Interties (#)	Pump Stations (#)	Reservoirs (#)	Wells (#)	Potable Pipeline (miles)	Wastewater Pipeline (miles)
Fire Hazard Zone	Moderate	1	3	2	0	3.8	0.4
	High	0	0	5	0	6.6	1.0
	Very High	0	6	5	1	21.6	0.7
FEMA Flood Zone	100-Year	1	0	0	0	1.6	1.8
	500-Year	1	0	0	0	4.8	1.7
Alquist-Priolo Rupture Zone		0	0	0	0	3.8	0
Ground Shaking	Moderate	0	0	0	0	0	0
	High	0	0	0	0	0	0
	Extreme	9	11	13	9	71.0	17.1
Liquefaction	Moderate	5	0	0	0	6.2	2.4
	High	2	1	0	9	9.1	0.3
	Very High	0	0	0	0	0	0
	Unknown	0	0	0	0	4.9	2.9
Landslide Zone		0	1	6	0	2.2	0.1
Tsunami Zone		0	0	0	0	0	0

Much of YLWD’s potable water and wastewater pipeline systems are located in very high fire hazard areas and extreme ground shaking hazard areas. Additionally, the district contains infrastructure or pipelines in all hazard areas except the tsunami zone.

CAPABILITIES ASSESSMENT

The capabilities assessment is designed to identify existing local agencies, personnel, planning tools, public policy and programs, technology, and funds that have the capability to support hazard mitigation activities and strategies outlined in this Plan. YLWD’s internal development team revised the capabilities identified in the 2012 plan and collaborated to identify current local capabilities and mechanisms available to the MA for reducing damage from future hazard events. Tables S-3a through S-3d assess the authorities, policies, programs, and resources that the jurisdiction has in place that are available to help with the long-term reduction of risk through mitigation. These capabilities include planning and regulatory tools, administrative and technical resources, financial resources, and education and outreach programs. The agency has the ability to create or expand existing policies and programs to implement mitigation programs.

**Table S-3a
Planning and Regulatory Capabilities Summary**

Ordinance, Plan, Policy, Program	Responsible Agency or Department	Description/Comments
Building Code	City of Yorba Linda, City of Placentia, City of Anaheim and Orange County Fire Authority (OCFA)	Standards for constructed facilities such as buildings and non-building structures. Continually updated and maintained Update will occur.
Zoning Ordinance	City of Yorba Linda, City of Placentia, City of Anaheim and County of Orange	Requirements for constructed (structures) and non-constructed properties (agricultural, etc.). Continually updated and maintained Update will occur.
Subdivision Ordinance or Regulations	City of Yorba Linda, City of Placentia, City of Anaheim and County of Orange	
Special Purpose Ordinance	Floodplain Management: SAWPA, OCFCD Stormwater Management: CoYL & OCFCD Slope Ordinances: CoYL Wildfire Ordinances: OCFA State Fire	Standards for constructed facilities such as buildings and non-building structures. Continually updated and maintained Update will occur.
Growth Management Ordinances	City of Yorba Linda, City of Placentia, City of Anaheim and County of Orange	YLWD complies with applicable growth management ordinances and works within the District service area.
Site Plan Review Requirements	City of Yorba Linda, City of Placentia, City of Anaheim and County of Orange	Standards for properties. Continually updated and maintained Update will occur.
General Plan	City of Yorba Linda, City of Placentia, City of Anaheim and County of Orange	YLWD complies with applicable General Plans and works with the cities within the District service area.
Capital Improvements Plan	City of Yorba Linda, City of Placentia, City of Anaheim, Yorba Linda Water District	Standards for infrastructure. Continually updated and maintained Update will occur.
Economic Development Plan	City of Yorba Linda, City of Placentia, City of Anaheim and County of Orange	YLWD complies with applicable economic development plans and works with the cities within the District service area.
Emergency Response Plan	City of Yorba Linda, City of Placentia, City of Anaheim, County of Orange and Yorba Linda Water District	Emergency Management resource. Continually updated and maintained Update will occur.
Post-Disaster Recovery Plan	City of Yorba Linda, City of Placentia, City of Anaheim, County of Orange and Yorba Linda Water District	Emergency Management resource. Continually updated and maintained Update will occur.
Post-Disaster Recovery Ordinance	City of Yorba Linda, City of Placentia, City of Anaheim, County of Orange and Yorba Linda Water District	Emergency Management resource. Continually updated and maintained Update will occur.
Real Estate Disclosure Requirements	City of Yorba Linda, City of Placentia, City of Anaheim and County of Orange	Standards for properties. Continually updated and maintained Update will occur.
Air Quality Emissions	Air Quality Management District	Emission Standards and Permit requirements. Continually updated and maintained Update will occur.
Construction Safety Practices	California Division of Occupational Safety and Health, City of Yorba Linda, City of Placentia, City of Anaheim, County of Orange and Yorba Linda Water District	Standards for construction. Continually updated and maintained Update will occur.
Pressure Vessels	City of Yorba Linda, City of Placentia, City of Anaheim, County of Orange and Yorba Linda Water District	Standards set by jurisdictional agency. For non-occupied structures, YLWD may be sole agency.
Wildlife	California Department of Fish and Wildlife, City of Yorba Linda, City of Placentia, City of Anaheim, County of Orange and Yorba Linda Water District	Federal and jurisdictional agency standards. Continually updated and maintained Update will occur.
Seismic/Geology	City of Yorba Linda, City of Placentia, City of Anaheim, County of Orange and Yorba Linda Water District	Standards for property development. Continually updated and maintained Update will occur.
Archeologist/Paleontologist	City of Yorba Linda, City of Placentia, City of Anaheim, County of Orange and Yorba Linda Water District	Standards for property development. Continually updated and maintained Update will occur.
Water Discharge Requirements	City of Yorba Linda, City of Placentia, City of Anaheim, County of Orange and Yorba Linda Water District	Standards for construction and development. Continually updated and maintained Update will occur.

**Table S-3b
Administrative and Technical Capabilities Summary**

Staff/Personnel or Type of Resource	Responsible Agency or Department	Description/Comments
Planner(s) or Engineer(s) with Knowledge of Land Development and Land Management Practices	Hunsaker & Associates, Planning, Engineering, Surveying	Planners with expertise in land development practices. Collaborate with Engineering and cities to comply with all requirements.
Engineer(s) or Professional(s) Trained in Construction Practices Related to Buildings and/or Infrastructure	Various Consulting Civil Engineers	Licensed Civil Engineers and certified building evaluators (Safety Assessment Program certified by Cal OES).
Planners or Engineer(s) with an Understanding of Natural and/or Human - Caused Hazards	Carollo Engineers and other Consulting Civil Engineers	Outside Contractor.
Floodplain manager	County of Orange, Storm Water Department	Work with the County Floodplain Manager.
Surveyors	On-Call Geotechnical Survey Consultant: Hushmand Associates, Inc.	Certified surveyor on staff.
Staff with Education or Expertise to Assess the Community's Vulnerability to Hazards	City of Yorba Engineering Staff, Rick Yee, Assistant City Engineer Yorba Linda Water District Engineering Staff, Anthony Manzano, Sr. Project Manager	Work with engineers and WEROC to assess vulnerabilities.
Personnel Skilled in GIS and/or HAZUS	YLWD Analyst for GIS; DCSE Consulting, for HAZUS.	Works with outside consultant for this service.
Emergency Manager	County of Orange Fire Authority; Kelly Hubbard, WEROC coordinator; Marc Marcantonio, GM Yorba Linda Water District	Work with the county and WEROC for this expertise.
Grant Writers	Townsend Public Affairs	Search for available grants when applicable.

**Table S-3c
Financial Capabilities Summary**

Financial Resources	Agency or Department	Description/Comments
Capital Improvements Project Funding	Finance Department, Yorba Linda Water District	YLWD Capital Budget 5 yr.
Authority to Levy Taxes for Specific Purposes	Finance Department, Yorba Linda Water District	Special Assessment Areas
Fees for Water, Sewer, Gas, or Electric Service	Finance Department, Yorba Linda Water District	For Reimbursement of Water
Impact Fees for Homebuyers or Developers for New Developments/Homes	Finance Department, Yorba Linda Water District	Water Development Fees
Incur Debt Through General Obligation Bonds	Finance Department, Yorba Linda Water District	For Capital Projects
Incur Debt Through Special Tax and Revenue Bonds	Finance Department, Yorba Linda Water District	For Capital Projects

**Table S-3d
Education and Outreach Capability Summary**

Resource/Programs	Agency or Department	Description/Comments
Education and Outreach	Public Affairs Department, Yorba Linda Water District	Public Outreach and Public Information

MITIGATION STRATEGY**Mitigation Goals**

YLWD adopts the hazard mitigation goals developed by the Planning Team; refer to Section 4.

Mitigation Actions

The internal development team reviewed the mitigation actions identified in the 2012 plan and the updated risk assessment to determine if the mitigation actions were completed, require modification, should be removed because they are no longer relevant, and/or should remain in the Plan Update. New mitigation actions to address the updated risk assessment and capabilities identified above were also considered and added. Table S-4, YLWD Mitigation Actions, identifies the mitigation actions, including the priority, hazard addressed, risk, timeframe, and potential funding sources.

**Table S-4
YLWD Mitigation Actions**

Priority (High, Medium, or Low)	Action/Task/Project Description	Location/ Facility	Risk (High, Medium, or Low)	Cost	Timeframe (Immediate, Short Term, or Long Term)	Possible Funding Sources	Status/ Progress (New, Existing, Modified)	Status Rationale
Multi-Hazard								
1g. High	Increase ground & import water deliveries to provide a redundant water supply during natural hazard events.	Drill and equip new Well 23 along with new transmission main. Increase MWD Connection Flowrates	Medium	\$3M	Long Term	Capital Improvement Plan	New	Mitigate major losses in water supply.
2c. Medium	Develop Evacuation Plan to relocate all Richfield mobile equipment from flood event.	913 S. Richfield Rd., Placentia, CA	Medium	\$2K	Immediate	Dept. Budget	Existing	Have available equipment for Recovery process.
5	Add remote Emergency Operations Center	One room within new Fairmont Booster Pump Station.	Medium	\$200k	Short Term	Capital Improvement Plan	New	Existing EOC Back-up.
3e. Medium	Replace/Update Nextel phones and Motorola radios to insure reliable communications.	All field personnel phones/mobile trucks	Medium	\$10K	Short Term	Capital Improvement Plan	In Progress	Insures reliability of Comm Systems.
3f. Low	Participate in City of Yorba Linda and OCFA mutual aid response teams training exercises.	City of Yorba Linda Emergency Team and OCFA Station #10	Low	\$1K	Immediate	Dept. Budget	Existing	Maintain effective communication with other responders.
3g. Medium	Update the existing Emergency Response Plan to include all-natural hazards in the District service area.	Replace the current 2007-08 ERP	Medium	\$35K	Immediate	Dept. Budget	Modified	Required per OES and FEMA.
5b. High	Provide a list of all new District facilities to local, county, fire, and MWDOC agencies.	Well Nos. 21 & 22 sites	High	\$1K	Immediate	Dept. Budget	New	Both in High Risk area.
High Winds/Santa Ana Winds								
7c. High	Construct a Redundant Data /SCADA communications site.	In the future Fairmont Pump Station Upgrade Project	High	\$75K	Short Term	Capital Improvement Plan	New	Insure Continuity and Emergency planning effectiveness.
7d. Medium	Reinforce existing communications structures to withstand high wind or micro burst conditions.	Eighteen (18) radio communication sites	High	\$144K	Short term	Capital Improvement Plan	Modified	Insure reliability of Radio equipment.

**Table S-4 [continued]
YLWD Mitigation Actions**

Priority (High, Medium, or Low)	Action/Task/Project Description	Location/ Facility	Risk (High, Medium, or Low)	Cost	Timeframe (Immediate, Short Term, or Long Term)	Possible Funding Sources	Status/ Progress (New, Existing, Modified)	Status Rationale
Earthquakes								
1a. Medium	Provide training manual for in-house staff for visually identifying structural defects of critical facilities.	14 reservoirs, transmission mains over 30" dia., 11 production wells, 42 PR stations & 12 Pump Stations.	Low	\$10k	Immediate	Dept. Budget	New	Create manual.
1c. High	Install flexible piping, seismic monitors, earthquake valves, and flow meters on (9) reservoirs in high risk zone.	Fairmont, Springview, Little Canyon, Chino Hills, Santiago, Elk Mountain, Bryant Ranch, Camino de Bryant & Hidden Hills Reservoirs.	High	\$1.8M	Long Term	Capital Improvement Plan	New	Maintain emergency water supply in reservoir.
1d. Medium	Develop a policy and protocol for evaluating any structural damage of critical structures and facilities.	For all reservoirs, operations and administration buildings and pump stations structures	Low	\$3K	Immediate	Dept. Budget	New	Insure integrity of critical structures and facilities.
1e. Medium	Obtain a structural evaluation for the District's oldest reservoir.	Fairmont Reservoir and Pump Station built in 1972.	Low	\$5K	Immediate	Dept. Budget	Modified; Pump Station being re-built.	In High Risk Earthquake zone.
1f. High	Perform a Cathodic Protection Survey on the District's Oldest Critical Transmission Mains.	39" Zone 4 Transmission Main from MET OC-66 Turnout to Fairmont	High	\$25K	Immediate	Dept. Budget	Existing	Insure integrity of critical structures and facilities.
Flood								
2d. Medium	Identify alternate sites for relocation of Richfield's mobile equipment during flood event.	Highland and Lakeview Reservoir sites	Low	\$1k	Immediate	Dept. Budget	Modified	Part of the latest Emergency Response Plan.
Landslide								
6a. Medium	Identify District facilities currently within the high-risk landslide or mudslide areas.	12 Reservoirs except Highland and Lakeview Reservoir	Low	\$10k	Short term	Capital Improvement Plan	Modified	Understand vulnerabilities.

**Table S-4 [continued]
YLWD Mitigation Actions**

Priority (High, Medium, or Low)	Action/Task/Project Description	Location/ Facility	Risk (High, Medium, or Low)	Cost	Timeframe (Immediate, Short Term, or Long Term)	Possible Funding Sources	Status/ Progress (New, Existing, Modified)	Status Rationale
6b. Medium	Protect District assets with a high relative vulnerability to the effect of landslide or mudslide.	12 Reservoirs except Highland and Lakeview	Medium	\$10K	Long Term	Dept. Budget	Modified	Maintain landscaping to reduce risk.
Wildland/Urban Fire								
5a. Low	Provide a list of District facilities in High Fire Threat Zone.	7 out of 14 Reservoir/Pump Stations	High	\$2k	Immediate	Dept. Budget	Modified	New Fire Maps issued by OCFA.
5d. Medium	Identify District facilities that need redundant communication systems.	7 reservoir/pump stations in high fire zone	Medium	\$2k	Immediate	Dept. Budget	Existing	Understand vulnerabilities.
Human-Caused								
11b. Low	Provide on-going training for District employees to identify danger signs of any systems failures.	All Maintenance and Operations personnel	Low	\$1k	Immediate	Dept. Budget	Modified	Protect Assets.
<p>Notes: <u>Timeframe to Completion of Project:</u> "Immediate" is up to 1 year; "Short Term" is 1 to 3 years; "Long Term" is 3 years or longer. <u>Status:</u> "New" refers to a mitigation initiative newly created as part of the plan update process; "Existing" refers to an unfinished initiative that is carried over from the 2012 plan; "Modified" refers to an existing initiative that carried over from the previous plan, but has changed to limit or expand its scope of activities <u>Status Rationale:</u> A statement of justification as to why the project is currently in the status it is in.</p>								

Completed or Removed Mitigation Initiatives

The following mitigation actions from the 2012 plan have been completed or are in progress and therefore are removed from the Plan update.

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