

**SOUTH ORANGE COUNTY WASTEWATER AUTHORITY
ANNEX**

The South Orange County Wastewater Authority (SOCWA) 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, SOCWA 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 SOCWA.

This Annex supplements information contained in the primary Plan and describes how SOCWA’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 SOCWA 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 SOCWA and coordinated the hazard mitigation planning efforts with SOCWA staff:

Primary Point of Contact

Sean Peacher
Environmental Compliance Safety Risk Manager
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949-234-5443

Alternate Point of Contact

Bill Paddock
Supervising Mechanic
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949-234-5466

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 SOCWA’s internal hazard mitigation planning development team.

Representative	Title	How Participated
Betty Burnett	General Manager	Final Review
Jim Burror	Director of Operations	Final Review
Amber Baylor	Director of Environmental Compliance	Planning Process

JURISDICTION PROFILE (Service Population: 0.5 million)

SOCWA provides wastewater treatment, effluent and biosolids disposal, and water recycling at regional facilities in the southern part of Orange County. SOCWA was created July 1, 2001 as a Joint Powers Authority and formed under and pursuant to Government Code Section 6500 and is the legal successor to the Aliso Water Management Utility, the South East Regional Reclamation Authority, and the South Orange County Reclamation Authority. SOCWA is comprised of 10-member utilities including the City of Laguna Beach, City of San Clemente, City of San Juan Capistrano, El Toro Water District, Emerald Bay Service District, Irvine Ranch Water District, Moulton Niguel Water District, Santa Margarita Water District, South Coast Water District and Trabuco Canyon Water District.

SOCWA is governed by a Board of Directors. As members of SOCWA's Board of Directors (one Director from each Member Agency) they each balance the interests of their own respective district or city while continuing the purpose and mission of SOCWA's Project Committees.

SOCWA operates three wastewater treatment plants: Regional Treatment Plant, JB Latham Treatment Plant, and Coastal Treatment Plant, as well as the Effluent Transmission Main (ETM) and the Aliso Creek and San Juan Creek Ocean Outfalls. The City of Laguna Beach operates the North Coast Interceptor on a contract basis on behalf of SOCWA. Moulton Niguel Water District operates the Alicia Parkway Pump Station on behalf of SOCWA, and the City of San Clemente operates the San Clemente Land Outfall.

SOCWA provides, at a minimum, full secondary treatment at all its regional wastewater facilities, and has active water recycling, industrial waste (pretreatment), biosolids management and ocean/shoreline monitoring programs. Programs related to Hazard Mitigation Planning include acquiring, constructing, maintaining, repairing, managing, operating and controlling facilities for the collection, transmission, treatment and disposal of wastewater and biosolids, the reclamation and reuse of wastewater for beneficial purposes, and the production, transmission, storage and distribution of non-domestic water.

HAZARDS

Detailed hazard profiles for the planning area are provided in Section 3. SOCWA's service area includes most of the southern portion of Orange County and its exposure to hazards reflects the same countywide scope presented in Section 3. Compared to northern Orange County, it has more area susceptible to wildfire and landslide but less area susceptible to flooding and the most extreme seismic risks. There are no hazards that are unique to SOCWA.

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

**Table D-1
SOCWA Hazard Identification**

Hazard	Geographic Extent	Probability of Future Occurrences	Magnitude/Severity	Significance
Climate Change	Limited	Occasional	Limited	Medium
Coastal Storms/Erosion	Limited	Likely	Critical	Medium
Contamination/ Salt Water Intrusion	Limited	Unlikely	Negligible	Low
Dam/Reservoir Failure	Limited	Unlikely	Negligible	Low
Drought	Limited	Highly Likely	Negligible	Low
Earthquake Fault Rupture & Seismic Hazards	Extensive	Likely	Catastrophic	High
Flood	Extensive	Highly Likely	Catastrophic	High
Geologic Hazards	Limited	Occasional	Limited	Low
High Winds/ Santa Ana Winds	Significant	Highly Likely	Critical	Medium
Landslide/Mudflow	Extensive	Likely	Catastrophic	Medium
Wildland/Urban Fire	Extensive	Highly Likely	Catastrophic	High
Human-Caused Hazards	Extensive	Occasional	Critical	High
Power Outage	Extensive	Highly Likely	Limited	Medium
Geographic Extent Limited: Less than 10% of planning area Significant: 10-50% of planning area Extensive: 50-100% of planning area		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.		
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.		Significance Low: Minimal potential impact Medium: Moderate potential impact High: Widespread potential impact		

The identification of hazards provided in Table D-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 wastewater systems, as applicable.

VULNERABILITY AND RISK ASSESSMENT

Assets Susceptible to Hazard Events

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

**Table D-2
SOCWA Infrastructure and Exposure to Hazards**

Hazard		Infrastructure
		Wastewater Pipeline (miles)
Fire Hazard Zone	Moderate	2.8
	High	7.9
	Very High	13.5
FEMA Flood Zone	100-Year	10.9
	500-Year	3.3
Alquist-Priolo Rupture Zone		0
Ground Shaking	Moderate	2.9
	High	37.7
	Extreme	0
Liquefaction	Moderate	16.7
	High	1.7
	Very High	0
	Unknown	7.2
Landslide Zone		8.0
Tsunami Zone		0.2

A majority of the district’s pipeline system is in areas susceptible to a high amount of ground shaking during an earthquake. Pipelines are located within every hazard area within the exception of an Alquist-Priolo Rupture 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. SOCWA’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 D-3a through D-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 D-3a
Planning and Regulatory Capabilities Summary**

Ordinance, Plan, Policy, Program	Responsible Agency or Department	Description/Comments
Building Code	Engineering	SOCWA complies with applicable building codes and works within the District service area.
Zoning Ordinance	City/County	SOCWA complies with applicable zoning ordinances and works within the District service area.
Subdivision Ordinance or Regulations	City/County	SOCWA complies with applicable subdivision ordinances or regulations within the District service area.
Special Purpose Ordinance	Operations/Engineering/Environmental Compliance	SOCWA complies with applicable special purpose ordinances within the District service area.
Growth Management Ordinances	City/County	SOCWA complies with applicable growth management ordinances within the District service area.
Site Plan Review Requirements	Operations/Engineering	Site Plans are reviewed regularly, updated, and provided to local police, fire, and various county agencies (such as OCHCA and OCIAC).
General Plan	Engineering	SOCWA complies with applicable General Plans within the District service area.
Capital Improvements Plan	Engineering	Part of SOCWA's 10-Year Planning/Budgeting Process
Economic Development Plan	City/County	SOCWA complies with applicable economic development plans within the District service area.
Emergency Response Plan	Environmental Compliance	Updated annually or as needed when hazard identification arises.
Post-Disaster Recovery Plan	County Emergency Management	Business Continuity Plan; Partial recovery information in the Emergency Response Plan.
Water Discharge Requirements	Environmental Compliance	Monthly reporting of applicable spills.

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

Staff/Personnel or Type of Resource	Responsible Agency or Department	Description/Comments
Engineer(s) or Professional(s) Trained in Construction Practices Related to Buildings and/or Infrastructure	Engineering	Engineering staff are involved with hazard mitigation.
Planners or Engineer(s) with an Understanding of Natural and/or Human - Caused Hazards	Engineering	Engineering staff are involved with hazard mitigation.
Floodplain Manager	Engineering	Reviews 100-year flood information and incorporates into engineering designs.
Emergency Manager	Environmental Compliance	Staff is trained in FEMA ICS and able to support efforts.
Lab Specialist	Environmental Compliance	Staff is aware of proper sampling and analytical techniques to complete if a hazard presents itself.

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

Financial Resources	Agency or Department	Description/Comments
Capital Improvements Project Funding	Engineering/Operations	As needed grant funding to repair damages caused by hazards.
Grants	Engineering/Operations	As needed grant funding to repair damages caused by hazards.

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

Resource/Programs	Agency or Department	Description/Comments
Ongoing.	All Departments at SOCWA	Multiple life/safety trainings completed for emergency preparedness and response in the event of various manmade or natural disasters.

MITIGATION STRATEGY

Mitigation Goals

SOCWA 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 D-4, SOCWA Mitigation Actions, identifies the mitigation actions, including the priority, hazard addressed, risk, timeframe, and potential funding sources.

**Table D-4
SOCWA 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								
Medium	Implement Vulnerability Risk Assessment recommendations.	All of SOCWA	Low	Unknown	Long Term	Capital	Existing	Work in progress. Vulnerabilities identified as part of OCIAAC and Police Service Assessments being reviewed/budgeted for. Department of Homeland Security completing assessment in 2018.
High	Keep Emergency Operations Plan up-to-date.	All of SOCWA	Low	Unknown	Long Term	Capital	Ongoing	Continual updates. Plan reviewed and specific emergency response scenario actions updated as part of annual Safety Manual review. Continue to work with WEROC to improve emergency communications. Continue to participate in WEROC interagency mutual aid agreements and emergency assistance protocols.
Medium	Perform a seismic study analysis for all structures and facilities.	All of SOCWA	Low	\$45,000 (FY '12/'13)	Long Term	Capital	Existing	One plant done two others future. Begin 10-year planning process for completion of one remaining plant with seismic study pending.
Medium	Conduct routine site inspections of structures and facilities and follow-up on any reported structural deficiencies or mitigation measures.	All of SOCWA	Low	\$16,000 per year	Long Term	Capital	Ongoing	Part of 10-year planning process. Facilities presently inspected during internal quarterly safety inspections.

**Table D-4 [continued]
SOCWA 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
Medium	Follow the Asset Management Plan for replacement and refurbishment of facilities.	All of SOCWA	Low	Over \$70 million over 10 yrs.	Long Term	Capital	Ongoing	Ongoing, some repairs started and other pending as part of 10-year planning process for budget purposes.
Medium	Develop procedures for mobilizing District personnel and pre-positioning resources and equipment.	All of SOCWA	Low	Unknown	Long Term	Capital	Ongoing	Ongoing, assessment of back-up power completed by Army Core of Engineers. Coordination/improvements started with local police, fire, and OCIAC.
Medium	Identify the process and develop procedures for checking critical wastewater facilities and equipment, including testing systems.	All of SOCWA	Low	Unknown	Long Term	Capital	Ongoing	Ongoing, SCADA utilized. SOCWA personnel utilized for facility emergency protective measures as needed.
High	Improve security at key facilities and install surveillance equipment.	All of SOCWA	Low	\$90,000	Long Term	Capital	Ongoing	Part of 10-year planning process. Recommendations received from OCIAC and local police services started, remaining items to be budgeted for possible future improvements.
Medium	Upgrade SCADA system to existing sites as needed.	All of SOCWA	Low	\$80,000	Long Term	Capital	Ongoing	Ongoing, SCADA upgrades completed regularly by SOCWA staff.
Medium	Protect facilities within flood plain areas.	Coastal Treatment Plant	Low	Unknown	Long Term	Capital	Ongoing	Annual creek cleaning, additional protective measures pending. Onsite preventative maintenance flood protective measures are completed as needed.

**Table D-4 [continued]
SOCWA 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
Medium	Standardize and upgrade older lift station electrical and instrumentation systems.	Coastal Treatment Plant	Low	\$250,000	Long Term	Capital	Ongoing	Ongoing, electrical and instrumentation as a whole is part of 10-year planning process for budget purposes.
Medium	Continue and expand cooperation with all outside agencies regarding human caused hazards.	All of SOCWA	Low	Unknown	Long Term	Capital	Ongoing	Ongoing. Continue Emergency prep internally, w/ WEROC, OCIAC, OCFA, and local police services. Panic alarms now present at JB Latham Administrative Offices with direct push response to local police and security services.
Medium	Continue and expand education for administrative and field personnel on possible human caused hazards.	All of SOCWA	Low	Unknown	Long Term	Capital	Ongoing	Ongoing. Complete additional employee training including workplace violence and active shooter. Run/hide/fight technique utilized at SOCWA.
Medium	Survey and improve site fencing and other forms of hardening deterrence to facilities including the use of camera and wireless communications.	All of SOCWA	Low	\$110,000	Long Term	Capital	Ongoing	Part of 10-year planning process, some recommended improvements from OCIAC done, while remaining items pending budget approval.
Medium	Continue daily site checks at critical locations.	All of SOCWA	Low	Unknown	Long Term	Capital	Ongoing	Ongoing, part of daily rounds. O&M employees trained and aware of SOCWA security measures.
Medium	Modify SCADA system, when feasible, to look for additional parameters of operation that may indicate problem areas.	All of SOCWA	Low	Unknown	Long Term	Capital	Ongoing	SCADA upgrades completed regularly, includes security and vulnerability review and implementation of additional measures

**Table D-4 [continued]
SOCWA 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
Medium	Continue and expand safety training for all district personnel who may come in contact with said materials.	All of SOCWA	Low	Unknown	Long Term	Capital	Ongoing	Ongoing safety training for all SOCWA personnel. All Admin and O&M employees part of SOCWA 2018 Safety Training Schedule.
Medium	Conduct additional workshops for awareness of hazardous materials incidents for all employees.	All of SOCWA	Low	Unknown	Long Term	Capital	Ongoing	Ongoing, workshops are part of safety training. Additional internal and external trainings implemented since time SOCWA Safety Program was initiated in 2015.
Flood								
Medium	Protect and reinforce facilities within flood plain areas, rivers and creeks or relocate facilities out of harm's way.	All of SOCWA	Low	Unknown	Long Term	Capital	Ongoing	Ongoing, part of 10-year planning process. Engineering Department to review permit requirements, feasibility, and associated costs of possibly relocating facilities. Identify and hopefully implement effective flood protection measures. Develop a flood management plan. Revise and update flood plain maps.

**Table D-4 [continued]
SOCWA 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
Wildland/Urban Fire								
High	Develop a comprehensive approach to reducing the possibility of damage and losses due to structural fire/wildfire.	Coastal and Regional Treatment Plants	Low	\$35,000 (Current)	Long Term	Capital	Ongoing	Began activities for hardening site structures and landscaping. Recommendations based on results of SOCWA's Fire Prevention Plan and OCFA recommendations received as a result of completing voluntary vegetation management inspections.
High	Adopt a policy for design of non-combustible facilities to reduce the threat and impact of structure fires.	All of SOCWA	Low	Included in Above	Long Term	Capital	Ongoing	No policy adopted, following best engineering practices. Will be reviewed in more detail future possible capital improvement projects.
Medium	Provide routine maintenance around facilities to avoid the chance of fire threat and reducing the fuel source.	All of SOCWA	Low	\$40,000	Long Term	Capital	Ongoing	Preventative Maintenance performed regularly. Additional maintenance performed based on results of SOCWA's Fire Prevention Plan and OCFA recommendations received during completion of voluntary vegetation management inspections.

**Table D-4 [continued]
SOCWA 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
Earthquake (ground shaking/liquefaction)								
Medium	Develop a comprehensive approach to reducing the possibility of damage and losses due to earthquake.	All of SOCWA	Low	Unknown	Long Term	Capital	New	Conduct evaluation of SOCWA facilities to determine seismic vulnerabilities. Seek funding to conduct necessary seismic strengthening work on critical infrastructure. Retrofit wastewater infrastructure that are determined to be structurally deficient.
Landslide								
Medium	Develop a comprehensive approach to reducing the possibility of damage and losses due to landslide.	All of SOCWA	Low	Unknown	Long Term	Capital	New	Complete an inventory of locations where critical facilities, other buildings, and infrastructure are vulnerable to landslide. Implement slope stabilization on those areas deemed to be high risk.
Coastal Erosion								
Low	Develop a comprehensive approach to improve tsunami emergency notification and response procedures.	JB Latham and Coastal Treatment Plants	Low	Unknown	Long Term	Capital	New	Use erosion and sediment control features that provide protection. Develop an erosion protection program for high hazard areas.
<p>Notes:</p> <p><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.</p> <p><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</p> <p><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.

Mitigation: Install permanent emergency power at all critical infrastructure sites.

Status: Complete, assessment also done by Army Core of Engineers. SOCWA facilities now contain permanent emergency power at all three treatment plants, additional diesel fuel would be required after a prolonged (multiple days) power outage.

Mitigation: Create a fire management plan outlining various impacted facilities and vulnerabilities.

Status: SOCWA Fire Prevention Plan complete. SOCWA also involved with development of Orange County Fire Authority (OCFA) Wildland Urban Interface Plan which included SOCWA facilities. Plan identifies fire concerns and includes recommended strategies and tactics as well as an evacuation plan for emergencies.

Mitigation: Share all infrastructures/building information with local, county, and state fire agencies.

Status: Information provided to local fire agencies including OCFA during annual Fire and Life Safety Inspections, and with the Certified Unified Program Agency (CUPA).

PLAN INTEGRATION

SOCWA's Capital Budget, Wastewater Master Plan, Fire Protection and Evacuation Plan, and SOCWA Safety Manual (including but not limited to SOCWA Emergency Response and Disaster Contingency Procedure, SOCWA Grounds and Building Security Procedure, SOCWA Fire Prevention Procedure, and SOCWA Hazardous Material Handling Procedure) are all used to implement mitigation initiatives identified in this annex. After adoption of the HMP, the District will continue to integrate mitigation priorities into these documents.

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