

**LAGUNA BEACH COUNTY WATER DISTRICT ANNEX**

The Laguna Beach County Water District (Laguna Beach) 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, Laguna Beach 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 Laguna Beach.

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

| <b>Primary Point of Contact</b>                          | <b>Alternate Point of Contact</b>         |
|--|---|
| Dave Youngblood<br>Manager of Engineering and Operations | John Langill<br>Operations Superintendent |

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 Laguna Beach’s internal hazard mitigation planning development team.

| <b>Representative</b> | <b>Title</b>                          | <b>How Participated</b> |
|-----------------------|---------------------------------------|-------------------------|
| Dave Youngblood       | Manager of Engineering and Operations | Plan Review             |
| John Langill          | Operations Superintendent             | Plan Review             |
| Leo Lopez             | Safety Officer                        | Plan Review             |

**JURISDICTION PROFILE (Service Population: 19,820)**

Laguna Beach is well known as a unique beach community and artist’s colony. Laguna Beach County Water District (Laguna Beach) provides water services to 19,820 people within an 8.5 square mile area, including portions of the City of Laguna Beach, a portion of Crystal Cove State Park, and the community of Emerald Bay. Laguna Beach serves approximately 3,800-acre feet of water annually to its 8,488 customers. There are 21 water storage reservoirs with a total storage capacity of 33.5 million gallons. Laguna Beach staff operates and maintains 36 pumps in 11 pumping stations and 135 miles of distribution pipelines ranging in diameter from 4 to 16 inches.

The area’s sewer and storm drain services are managed by the Water Quality Department of the City of Laguna Beach. The department is organized into two divisions: Wastewater and Water Quality. Wastewater is responsible for maintaining 95 miles of sewer lines, 26 pump stations and the four-mile North Coast Interceptor that transmits sewage to the regional treatment plant operated by SOCWA.

Water Quality is a new division formed to implement the water quality permit approved by the San Diego Regional Water Quality Control Board in 2002. The new permit identifies multiple tasks cities and counties must complete to comply with the permit and reduce water pollution.

**HAZARDS**

Detailed hazard profiles for the planning area are provided in Section 3. Laguna Beach is a coastal community and is therefore is subject to sea-level rise, coastal erosion, and tsunami hazards. The district is also subject to many of the other hazards identified in the planning area. Many of these hazards are disperse and may affect the entire region, including climate change, drought, ground shaking from earthquakes, and high wind. The canyon areas are susceptible to high fire hazards and landslides. There are no dams located within the area and the community is not in a dam inundation area. Geologic hazards (land subsidence and expansive soils) are not present within Laguna Beach. There are no hazards that are unique to Laguna Beach.

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

**Table I-1  
Laguna Beach Hazard Identification**

| Hazard  | Geographic Extent | Probability of Future Occurrences  | Magnitude/Severity | Significance |
|---|-------------------|--|--------------------|--------------|
| Climate Change  | Significant       | Likely   | Critical           | Medium       |
| Coastal Storms/Erosion  | Limited           | Likely   | Limited            | Medium       |
| Contamination/<br>Salt Water Intrusion  | Limited           | Likely   | Limited            | High         |
| Drought   | Extensive         | Highly Likely  | Catastrophic       | High         |
| Earthquake Fault Rupture &<br>Seismic Hazards   | Extensive         | High Likely  | Catastrophic       | High         |
| Flood   | Significant       | Highly Likely  | Critical           | High         |
| High Winds/<br>Santa Ana Winds  | Significant       | Likely   | Limited            | High         |
| Landslide/Mudflow   | Extensive         | Highly Likely  | Limited            | High         |
| Tsunami   | Extensive         | Likely   | Limited            | Medium       |
| Wildland/Urban Fire   | Extensive         | Highly Likely  | Catastrophic       | High         |
| Human-Caused Hazards  | Limited           | Likely   | Critical           | Medium       |
| Power Outage  | Significant       | Likely   | Limited            | High         |
| <b>Geographic Extent</b><br>Limited: Less than 10% of planning area<br>Significant: 10-50% of planning area<br>Extensive: 50-100% of planning area  |                   | <b>Magnitude/Severity</b><br>Catastrophic—More than 50 percent of property severely damaged; shutdown of facilities for more than 30 days; and/or multiple deaths.<br>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.<br>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.<br>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. |                    |              |
| <b>Probability of Future Occurrences</b><br>Highly Likely: Near 100% chance of occurrence in next year, or happens every year.<br>Likely: Between 10 and 100% chance of occurrence in next year, or has a recurrence interval of 10 years or less.<br>Occasional: Between 1 and 10% chance of occurrence in the next year, or has a recurrence interval of 11 to 100 years.<br>Unlikely: Less than 1% chance of occurrence in next 100 years, or has a recurrence interval of greater than every 100 years. |                   | <b>Significance</b><br>Low: Minimal potential impact<br>Medium: Moderate potential impact<br>High: Widespread potential impact   |                    |              |

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

**VULNERABILITY AND RISK ASSESSMENT**

**Assets Susceptible to Hazard Events**

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

**Table I-2  
Laguna Beach Infrastructure and Exposure to Hazards**

| Hazard                      |           | Infrastructure Type |                   |                      |                |           |                          |
|-----------------------------|-----------|---------------------|-------------------|----------------------|----------------|-----------|--------------------------|
|                             |           | Interties (#)       | Pump Stations (#) | Treatment Plants (#) | Reservoirs (#) | Wells (#) | Potable Pipeline (miles) |
| Fire Hazard Zone            | Moderate  | 1                   | 1                 | 0                    | 2              | 0         | 1.1                      |
|                             | High      | 0                   | 1                 | 0                    | 2              | 0         | 1.7                      |
|                             | Very High | 0                   | 3                 | 0                    | 3              | 0         | 14.8                     |
| FEMA Flood Zone             | 100-Year  | 0                   | 0                 | 0                    | 0              | 0         | 0.5                      |
|                             | 500-Year  | 1                   | 0                 | 0                    | 0              | 0         | 0.1                      |
| Alquist-Priolo Rupture Zone |           | 0                   | 0                 | 0                    | 0              | 0         | 0                        |
| Ground Shaking              | Moderate  | 0                   | 0                 | 0                    | 0              | 0         | 7.4                      |
|                             | High      | 13                  | 3                 | 1                    | 3              | 10        | 11.8                     |
|                             | Extreme   | 0                   | 0                 | 0                    | 0              | 0         | 0                        |
| Liquefaction                | Moderate  | 0                   | 1                 | 1                    | 1              | 5         | 0                        |
|                             | High      | 4                   | 0                 | 0                    | 0              | 5         | 0                        |
|                             | Very High | 0                   | 0                 | 0                    | 0              | 0         | 0                        |
|                             | Unknown   | 0                   | 0                 | 0                    | 0              | 0         | 1.0                      |
| Landslide Zone              |           | 0                   | 0                 | 0                    | 0              | 0         | 3.0                      |
| Tsunami Zone                |           | 0                   | 0                 | 0                    | 0              | 0         | 0.0                      |

Several miles of potable pipeline are located within areas identified as very high fire hazard zones. Several interties, pump stations, reservoirs, and wells, as well as a treatment plant are in areas susceptible to a high amount of ground shaking during an earthquake. Additionally, a number of interties, service connections, and wells are located within areas identified as having very high risk of liquefaction during an earthquake.

**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. The Laguna Beach 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 I-3a through I-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 I-3a  
Planning and Regulatory Capabilities Summary**

| <b>Ordinance, Plan, Policy, Program</b> | <b>Responsible Agency or Department</b> | <b>Description/Comments</b>   |
|---|---|---|
| Building Code                           | Engineering Department, LBCWD           | LBCWD complies with applicable building codes and works with cities located within the District service area.                       |
| Zoning Ordinance                        | Cities within the LBCWD jurisdiction.   | LBCWD complies with applicable zoning codes and works with cities located within the District service area.                         |
| Subdivision Ordinance or Regulations    | City/County                             | LBCWD complies with applicable subdivision ordinance or regulations and works with cities located within the District service area. |
| Special Purpose Ordinance               | City/County                             | LBCWD complies with applicable special purpose ordinances and works with the cities located within the District service area.       |
| Growth Management Ordinances            | City/County                             | LBCWD complies with applicable growth management ordinances and works with the cities located within the service area.              |
| Site Plan Review Requirements           | City/County                             | LBCWD complies with applicable site plan review requirements and works with cities located within the service area.                 |
| General Plan                            | City/County                             | LBCWD complies with applicable General Plan requirements and works with cities located within the service area.                     |
| Capital Improvements Plan               | Engineering Department, LBCWD           | Updated yearly.   |
| Economic Development Plan               | City/County                             | LBCWD complies with applicable economic development plans and works with cities located within the service area.                    |
| Emergency Response Plan                 | All Departments.                        | State and Local jurisdictions. Continually updated and maintained.  |

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

| <b>Staff/Personnel or Type of Resource</b>  | <b>Responsible Agency or Department</b> | <b>Description/Comments</b>   |
|---|---|---|
| Planner(s) or Engineer(s) with Knowledge of Land Development and Land Management Practices                  | Engineering Department, LBCWD           | State and Local jurisdictions. 1 Senior Engineer Planner; 1 Engineer Technician. Attend trainings, continuing education related to land use planning and hazard mitigation. |
| Engineer(s) or Professional(s) Trained in Construction Practices Related to Buildings and/or Infrastructure | Engineering Department, LBCWD           | State and Local jurisdictions. 1 Senior Engineer Planner; 1 Engineer Technician.  |
| Planners or Engineer(s) with an Understanding of Natural and/or Human - Caused Hazards                      | Engineering Department, LBCWD           | State and Local jurisdictions. 1 Senior Engineer Planner.   |
| Surveyors   | Engineering Department, LBCWD           | State and Local jurisdictions. 1 Senior Engineer Planner; 1 Engineer Technician.  |
| Personnel Skilled in GIS and/or HAZUS   | Engineering Department, LBCWD           | State and Local jurisdictions. 1 GIS Technician.  |

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

| Financial Resources   | Agency or Department                                    | Description/Comments   |
|---|---|--|
| Capital Improvements Project Funding                                | Finance Department, LBCWD                               | 1 Manager of Finances; 1 Accountant; 1 Senior Accountant Tech.                                     |
| Authority to Levy Taxes for Specific Purposes                       | Finance Department, LBCWD                               | 1 Manager of Finances; 1 Accountant; 1 Senior Accountant Tech.                                     |
| Fees for Water, Sewer, Gas, or Electric Service                     | Finance Department & Customer Service Department, LBCWD | 1 Manager of Finances; 1 Accountant; 1 Senior Accountant Tech. Collects water rates and fees only. |
| Impact Fees for Homebuyers or Developers for New Developments/Homes | Finance Department, LBCWD                               | 1 Manager of Finances; 1 Accountant; 1 Senior Accountant Tech. Capacity fees for water only.       |
| Incur Debt Through General Obligation Bonds                         | Finance Department, LBCWD                               | 1 Manager of Finances; 1 Accountant; 1 Senior Accountant Tech.                                     |
| Incur Debt Through Private Activity Bonds                           | Finance Department, LBCWD                               | 1 Manager of Finances; 1 Accountant; 1 Senior Accountant Tech.                                     |
| Withhold Spending in Hazard-Prone Areas                             | Finance Department, LBCWD                               | 1 Manager of Finances; 1 Accountant; 1 Senior Accountant Tech.                                     |

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

| Resource/Programs  | Agency or Department               | Description/Comments   |
|--------------------|------------------------------------|--|
| Water Conservation | Customer Service Department, LBCWD | The District hosts the SmartScape Expo and participates at local community events to educate residents. Assistant General Manager; Public Affairs Officer. |

**MITIGATION STRATEGY**

**Mitigation Goals**

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

**Table I-4  
Laguna Beach 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                                       |
|---------------------------------|--|----------------------|-----------------------------|------|---|--------------------------|---|--|
| <b>Multi-Hazard</b>             |  |                      |                             |      |   |                          |   |  |
| Medium                          | Develop comprehensive and proactive approaches to reduce possibility of damages and losses by including hazard review and mitigation in new project design and existing facility upgrades.             | All Facilities       | Medium                      | N/A  | Immediate                                       | Budget                   | On-going                                  | Presently included in all proposed projects.           |
| Medium                          | Maintain an effective training program on the proper operation of all routine, safety, and emergency equipment.  | All Facilities       | Medium                      | N/A  | Immediate                                       | Budget, Grant            | On-going                                  | Included in District's Standard Operations Procedures. |
| Medium                          | Perform semi-annual inspections for facilities prior to seasonal hazard events (fire season, rain season).   | All Facilities       | High                        | N/A  | Immediate                                       | Budget, Grant            | On-going                                  | Included in District's Standard Operations Procedures. |
| Medium                          | Work with the City of Laguna Beach to review and approve project plans that may impact District resources.   | All Facilities       | Medium                      | N/A  | Immediate                                       | Budget, Grant            | On-going                                  | Included in District's Standard Operations Procedures. |
| Medium                          | Maintain an active preventive maintenance program on all the components of the Aufdenkamp Transmission Main (ATM), the Coast Supply Line (CSL), Cross Town Feeder, and Laguna Pacific Main.            | Specified Facilities | High                        | N/A  | Immediate                                       | Budget, Grant            | On-going                                  | Included in District's Standard Operations Procedures. |
| Medium                          | Provide NIMS training for staff as required through FEMA and CalEMA and update NIMSCAST annually.  | All Facilities       | Medium                      | N/A  | Immediate                                       | Budget, Grant            | Existing                                  | Completed annually as-needed.                          |
| Medium                          | Practice disaster response procedures through training and practice drills.  | All Facilities       | High                        | N/A  | Immediate                                       | Budget, Grant            | Existing                                  | Completed annually.                                    |
| Medium                          | Establish a Disaster Response Committee as "Keepers of the Plan" to promote cooperative knowledge of the District's Emergency Operations Plan and staff involvement in disaster response preparations. | All Facilities       | Medium                      | N/A  | Immediate                                       | Budget, Grant            | Existing                                  | On-going.  |

**Table I-4  
Laguna Beach 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   | Participate and coordinate with WEROC and other member agencies in hazard and disaster preparedness.  | Existing             | Medium                      | N/A    | Immediate                                       | Budget, Grant            | Existing                                   | On-going.        |
| Medium   | Develop and maintain mutual aid agreements with other utility groups for support and assistance during a disaster.                            | All Facilities       | Medium                      | N/A    | Immediate                                       | Budget, Grant            | Revised                                    | On-going.        |
| High   | Develop, update, and maintain an emergency communications plan that establishes lines of communication to be utilized during disaster events. | Existing             | Medium                      | N/A    | Immediate                                       | Budget, Grant            | Existing                                   | Completed        |
| Medium   | Leak test all reaches of the ATM and CSL.   | Specified Facilities | High                        | \$350K | Immediate                                       | Budget, Grant            | Existing                                   | Completed        |
| <b>Earthquake</b>  |   |                      |                             |        |   |                          |  |                  |
| Medium   | Seismically retrofit existing steel reservoirs that are 20 years and older.   | All Facilities       | High                        |        | Immediate                                       | Budget, Grant            | Modified Seismic Valve Replacement Project | Completed.       |
| High   | Seismically evaluate buried or partially buried concrete reservoirs and vaults.   | Specified Facilities | High                        |        | Immediate                                       | Budget, Grant            | Existing                                   | Completed        |
| Medium   | Develop a CSL and ATM isolation plan.   | Specified Facilities | Medium                      | N/A    | Immediate                                       | Budget, Grant            | Completed                                  | Completed        |
| Medium   | Investigate transporting potable water through truck haulers to the District.   | All Facilities       | Medium                      | N/A    | Immediate                                       | Budget, Grant            | In-progress                                | Completed        |
| <p>Notes:<br/> <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.<br/> <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<br/> <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: Protect the District's SCADA System against malfunction, cyber-attack, tampering, and hacking.

Status: SCADA Communication Upgrade completed June 2011; SCADA Program/Computer Upgrade completed June 2012.

Mitigation: Maintain a proactive review of proposed projects in the vicinity of the ATM and CSL.

Status: Completed. Included in District's Standard Operations Procedures.

Mitigation: Proactively seek alternative supplies from the OCWD groundwater basin, local resources, recycled water, SOCOD Project, and Poseidon Huntington Beach Project.

Status: Completed.

Mitigation: Maintain the Emergency Interties with Irvine Ranch Water District, Moulton Niguel Water District, South Coast Water District, El Toro Water District, and the City of Newport Beach.

Status: Intertie with IRWD completed and Intertie with MNWD replaced.

Mitigation: Install mixers in water storage reservoirs.

Status: Completed.

Mitigation: Investigate transporting potable water through neighboring agencies.

Status: Completed.

Mitigation: Install permanent chlorination stations at key water storage reservoirs.

Status: Completed.

Mitigation: Take a proactive approach to recognize potential hazards and harden existing facilities, pipelines appurtenances, and source water connections against identified hazards.

Status: Completed.

Mitigation: Maintain an up to date effective disaster response plan and update annually.

Status: Completed.

Mitigation: Immediately respond to emergencies for loss of pressure, broken water mains, and inoperative essential equipment and pump stations to minimize damage and loss to District-owned and property owned by others.

Status: Valve, Fire Hydrants, Cast Iron Pipe are replaced annually. Cement sand bags and silt fences are installed at Viejo.

**PLAN INTEGRATION**

Laguna Beach's capital budget, and Water Master Plan 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.