



# Local Hazard Mitigation Plan

La Habra Heights County Water District's Board Adoption Date: XX-XX-XX  
Approved by CalOES: XX-XX-XX  
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## PRIMARY POINT OF CONTACT

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## **SECTION 1: INTRODUCTION**

### **1.1 Purpose of the Plan**

Emergencies and disasters can leave people injured or displaced; result in fatalities; 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 the risk of personal damages, loss of life, and property damages caused by emergencies and disasters.

Repairs and reconstruction after disasters are often completed to simply restore infrastructure to pre-disaster conditions. Such efforts expedite a return to normalcy; however, merely replicating pre-disaster conditions results in a cycle of damage, reconstruction, and repeated damage. Hazard mitigation attempts to break this cycle by reducing hazard vulnerability.

While we cannot prevent disasters from happening, their effects can be reduced or minimized through preparedness and mitigation. For those hazards that cannot be fully mitigated, the community must be prepared to provide efficient, effective response and recovery to emergencies. This can be accomplished through a well-organized public education and awareness effort.

The Local Hazard Mitigation Plan's (LHMP) purpose is to identify potential hazards to La Habra Heights County Water District (LHHCWD, the District) and formulate mitigation measures for District's critical infrastructure future protection . It will also address community safety with respect to the District's facilities and services. Approval of this LHMP by the State of California Office of Emergency Services (CalOES) will also allow the District to become eligible to receive federal funding assistance under the Local Hazard Mitigation Grant program or the Pre-Disaster Mitigation program.

### **1.2 Authority**

In 1976, La Habra Heights County Water District was established pursuant to the County Water District Act (Water Code §30000 et seq.).

The District was established in 1976 succeeding La Habra Heights Mutual Water Company (Mutual Company). The Mutual Company had been established in 1919. Currently, the District serves water to 1,983 meter connections covering 6 square miles of land in rolling hills. The District serves water to approximately 5,600 residents. It occupies approximately 3,904 acres, which includes the vast majority of the City of La Habra Heights and serves water to a small portion of the City of Whittier and County of Los Angeles unincorporated area.

A five-member Board of Directors (Board) governs the District. The members are elected-at-large by registered voters within the District. Elections are held in even-years only. Terms are served with two directors elected in one year and three directors elected in the next two year election cycle. Each director serves a four-year term.

The Board is responsible for establishing the District's strategic direction and policy. A General Manager is appointed by the Board and oversees the District's day-to-day management.

The regularly scheduled Board meeting dates and times are routinely posted on the website, and in front of the office. The meetings are held at the District's offices located at 1271 N. Hacienda Road, La Habra Heights, CA 90631.

Currently, the District has ten employees, including the General Manager who serves under the direction of the five-member Board. Voters who reside within the service area elect each Director to a four-year term.

As required by the Department of Homeland Security's Federal Emergency Management Administration (FEMA), LHMPs must be updated, adopted, and approved every five (5) years.

### **1.3 Community Profile**

The water service area covers part of the City of La Habra Heights as well as a small area in the County of Los Angeles and the City of Whittier. When physical operations began in 1919, the Mutual Company served mostly avocado farmers and a small number of residents.

Currently, the District pumps water from the underground aquifer and distributes water to the customers. Besides the underground aquifer the only other source is a connection to Metropolitan Water District. The District serves a population of approximately 5,600 residents within a 6-square mile area and maintains approximately 1,983 meter services, 60 miles of pipeline, and 13.85 million gallons of water storage capacity.

#### **1.3.1 Physical Setting**

The District is located within the City of La Habra Heights and the County of Los Angeles. The service area is mostly rolling hills, with very little flat land. The service area is also home to small horse properties and small avocado groves. The neighboring cities are Hacienda Heights, Whittier, La Habra and Rowland Heights. Average rainfall for the area is approximately 13 inches per year. This area has a mild climate with average temperatures of a low 40 degrees in the winter and a high of 80 degrees in the summer months.

#### **1.3.2 City of La Habra Heights, Los Angeles County**

La Habra Heights County Water District is located approximately 15 miles east of the Pacific Ocean and is bordered by Whittier, La Habra, Hacienda Heights, and Rowland Heights. The zoning is 1 acre (4,000 m<sup>2</sup>) lots with a variety of home and ranch style properties. La Habra Heights features open space, no sidewalks, encouragement of animal husbandry. La Habra Heights has no commercial activity (stores, gas stations) except for a small real estate office, a plant nursery, a private golf course, oil company, churches, the city and long-term care facilities. The only park in the district is called "The Park" which runs along Hacienda Road.

Located in the southwest section of California, Los Angeles County is bordered by the San Bernardino, Ventura, Kern and Orange Counties and the Pacific Ocean on the west. Los Angeles County has a population of more than 10 million residents, it is the most populated county in the United States, with 88 incorporated cities and many unincorporated areas. The county covers

4,083 square miles. It is home to more than one-quarter of California's residents and most ethnically diverse county in the United States.

### **1.3.3 Demographics**

The City of La Habra Heights has a population of approximately 5,600 people, with a density of 330.5 people per-square mile. There are approximately 1,805 households in La Habra Heights. 93 percent of the population live-in owner-occupied homes and 7 percent of the population live in rented properties. The medium income is \$118,000 with 3.4 percent living below the federal poverty line.

### **1.3.4 Existing Land Use**

The existing land use is housing, government (including a Park), light commercial, a golf club, oil well sites". The City of La Habra Heights is responsible for land use. The District does not have authority to regulate land use in the area. Incorporated areas are regulated by the City of La Habra Height and the unincorporated areas by Los Angeles County.

### **1.3.5 Development Trends**

City of La Habra Heights is mostly in a rural setting with some avocado groves equestrian friendly properties and large homes in a hilly areaThere are no large housing tracks under development in the City. Home prices range from \$500,000 to \$3.9 million.



## **SECTION 2: PLAN ADOPTION**

### **2.1 Adoption by Local Governing Body**

The completed Local Hazard Mitigation Plan (LHMP) will be presented to the District's governing body, Board of Directors, for adoption. The plan will be sent to CalOES and then to FEMA for approval. The District's Board will adopt the final plan, after FEMA has approved the final LHMP.

### **2.2 Promulgation Authority**

This Local Hazard Mitigation Plan was reviewed and approved by elected members of La Habra Heights County Water District Board of Directors:

**Mr. Brad Cooke**

**President**

*Description of Involvement:* President, La Habra Heights County Water District Board of Directors

**Ms. Pam McVicar**

**Vice-President**

*Description of Involvement:* Vice-President, La Habra Heights County Water District Board of Directors

**Ms. Karen Baroldi**

**Director**

*Description of Involvement:* Director, La Habra Heights County Water District Board of Directors.

**Mr. Mark Perumean**

**Director**

*Description of Involvement:* Director, La Habra Heights County Water District Board of Directors

**Mr. James Crabb**

**Director**

*Description of Involvement:* Director, La Habra Heights Water District Board of Directors

**Mr. Michael Gualtieri**

**General Manager/Board Secretary**

*Description of Involvement:* General Manager, La Habra Heights County Water District

### **2.3 Primary Point of Contact**

The Point of Contact for information regarding this plan is:

#### **After FEMA APPROVAL:**

**Mr. Michael Gualtieri**

(562) 697-6769 or [mike@lhhcwd.com](mailto:mike@lhhcwd.com)

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## **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 reasons for those decisions. 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 and involvement of the La Habra Heights County Water District staff and representatives from the local community. These team members have a vested interest in the performance and resiliency of the District. Team members are from the local community and neighboring water agencies to the District. The Board of Directors also, took an active part in the LHMP development. This team developed and implemented the planning process.

Los Angeles County Office of Emergency Services was asked to review this plan, but never responded to the emails and phone calls from Mr. Sturdivan on more than one occasion.

This section includes a list of Planning Team Members, summary of meetings held, coordination efforts with surrounding communities and groups, and public outreach efforts.

### **3.1 Preparing for the Plan**

Planning Team reviewed FEMA's "Hazard Mitigation Plan Crosswalk", the Los Angeles County HMP, and the City of Whittier's HMP and La Habra Heights County Water District's approved LHMP.

The consultant completed a FEMA Hazard Profile of the area. Some of the maps included in the District's LHMP were revised. The Hazard Profile maps were used in the planning meetings to show past flood areas, earthquakes, flash floods and other disasters that have affected the area. Also reviewed were other written documentation of past events. The team discussed the different events that have happened in the community, such as flash flooding, earthquakes, windstorms, power outages and freezing events. Members of the planning team have been longtime residents of the community and lived through many of these emergency events.

The planning process consisted of:

- Documenting past events
- Incorporating data
- Engaging the Planning Team
- Asking for public input and comments on the planning process
- Conducting public outreach

During the planning process the Planning Team utilized the following plans to gain information on the hazards facing the area and mitigation goals of the County of Los Angeles.

- City of Whittier HMP
- Los Angeles County HMP
- California HMP 2013
- Los Angeles County Flood Control
- FEMA Flood Insurance Study for Los Angeles County
- USGS Golden Guardian Shake Out 2008
- La Habra Heights County Water District's Water Master Plan

**Table 1: Plans Reviewed by Planning Team**

<b>Study Plan</b>	<b>Key Information</b>
Orchard Dale Water District's LHMP	Layout of an LHMP for water agencies
Orchard Dale Water District's LHMP	Hazard Identification, mitigation measures
Los Angeles County HMP	Mitigation measures and goals, hazards
USGS Golden Guardian 2008	Earthquakes, affects, planning
La Habra Heights County Water District Water Master Plan	Land use for area, future projects
2013 California HMP	Goals for the State of California
Los Angeles County Flood Control	Gain information on future flood control projects
FEMA Flood Insurance Study for Los Angeles County	Flood history

**Table 2: Financial Resources for Future Mitigation Projects**

<b>Local</b>	<b>Revenues</b>	<b>Amount</b>
District's Budget and Financial Planning Documents	Readiness to serve charge, Water sales, new construction fees, property taxes, rent	Varies from year to year
FEMA Grants	None	None
State Revolving Funds Draft application	None	None
Prop 84 or 1 Funding	None	None
FEMA Mitigation Grants	District has not applied for FEMA funding in the past	As funding and approval are obtained
Future Budget Funds Considerations	Readiness to serve charge, Water sales , new construction fees, property taxes, rent	Varies as funding is available each year

### **3.2 Planning Team**

The Planning Team compiled information and reviewed this LHMP under the authorization of the District. The Planning Team members include:

**Mr. Michael Gualtieri**

**General Manager, La Habra Heights County Water District Water District**

Description of Involvement: Internal Planning Team Member

**Mr. Joe Matthews**

**Superintendent**

Description of Involvement: Internal Planning Team Member

***Mr. Gary Sturdivan***

***LHMP Consultant***

Description of Involvement: Planning Team Lead

The External Review Committee consisted of:

**Mr. John Wobel**

**Superintendent, Yucaipa Valley Water District  
Plan Reviewer**

**Mr. Ray Kolisz**

**General Manager, Twentynine Palms Water District  
Plan Reviewer**

**Edward Castaneda**

**General Manager**

**Orchard Dale Water District**

**Plan Team member and Reviewer**

### **3.3 Coordination with Other Jurisdictions, Agencies, and Organizations**

The Consultant first called the reviewers and asked for their help. The Consultant electronically sent the draft document to each reviewer and gave each a week to make comments. Residents were informed and invited to participate in the meeting and attend the Board meetings once a month. The information was posted on the customer's bill each month and listed the link to the District's website, where the posted draft HMP could be found.

The Planning Team participated in monthly meetings to coordinate efforts, provide input, and receive support for the LHMP. The support included receiving technical expertise, resource

materials and tools. District facilitated the LHMP process and provided information to follow FEMA requirements for the program. The tools, resource materials, and other project related information are maintained on a project portal on the District's website [www.lhhcwd.com](http://www.lhhcwd.com), which allowed access to the information by all participants and the public. All draft LHMP's were posted on the District's website and printed directions for three months on customer's bill how to gain access to the plan. Mr. Gary Sturdivan's contact information was on each document for questions and concerns.

### **3.4 Public Involvement/Outreach**

District staff invited residents of the community to participate in the LHMP planning process. The County of Los Angeles OES was invited to be on the Planning Team by Gary Sturdivan through emails and phone calls; however, they were unable to attend. The 2017-2019 Board meeting agendas, meeting minutes, and sections of the LHMP were posted on the District website as the LHMP was written. Requests for public review and comments were printed on the customer's monthly bills, asking customers to review the documents directing comments or concerns to Mr. Sturdivan by email: [gsturdivan@me.com](mailto:gsturdivan@me.com) or at: 909-658-5974. The public could also attend the Director meetings each month to voice comments or concerns. Mr. Sturdivan attended several Director meetings during the development of the LHMP.

See **Appendix A** for details of public involvement process such as meetings dates, purpose, and public comments.

### **3.5 Assess the Hazard**

A critical component of the LHMP process is to assess the likely hazards that may impact the District's facilities and operations. It is important to have a thorough understanding of these hazards without over analyzing remote or highly unlikely hazards.

This LHMP has been developed through an extensive review of available information on hazards the District has faced in the past and most likely will face in the future. Planning Team reviewed and discussed items that have happened in the State of California. As well as, disasters that have happened in the District's service area and in Southern California. Planning Team reviewed documents such as engineering drawings, photographs, available geotechnical and geologic data. Sources are from both the Internet and outside sources, such as, FEMA Hazard Mapping, Los Angeles County hazard maps and documents.

The Planning Team completed the assessment of the various hazards in a group setting. Team members have numerous years of personal experience working in the local area with many working in a water utility. Team members know the history of past hazardous or emergency events. One event was the Whittier Narrows Earthquake in 1987, a 5.9 magnitude earthquake on a blind thrust fault that was centered in Whittier. Many homes and businesses were impacted including roadway disruptions. Damage ranged from \$213 to \$358 million, with 200 injuries and three directly related deaths, and five additional fatalities. There was also a 5.1 Magnitude Earthquake centered in La Habra on March 28, 2014.

Most of the LHHCWWD is in a designated brush area with a history of fires. On September 2, 1955, Los Angeles County Fire Captain Glenn E. Rockey was killed on a La Habra Heights hillside during the "[Hacienda Fire](#)". The fire also took the lives of five young members of the Los Angeles County Probation Forestry Camp 5-1, and severely burned seven others. Fire investigators mark the spots where some of the men were killed. (Los Angeles County Fire Department Historical Archives). Several other smaller brush fires have occurred since then.

### **3.6 Set Mitigation Goals**

After the hazards were identified, the Team quantified potential damages. Mitigation goals are set based on the likelihood and potential damages from a hazard.

The process of identifying mitigation goals began with a review and validation of specific hazard damages at similar agencies in the surrounding area. In addition, the Planning Team developed estimated costs using engineering budget estimates for anticipated response and replacement needs. Performed an assessment of likely damages for each identified hazard and discussed whether each of the mitigation goals were 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 avoid or reduce long-term vulnerabilities.

The Planning Team set the goals for the 2020 LHMP. The team members understand the issues facing the District with respect to the District's Mission Statement: *To provide high quality potable water at a reasonable cost to the public residing within the District Boundaries.*

At a planning meeting, the group brainstormed determining appropriate mitigation goals to reduce or eliminate long-term vulnerabilities and identify the related hazards. Foremost, the team reviewed the past hazards that have faced the area and other water agencies in the area. In addition, they discussed changes in the community that may have mitigated these events. Then the team decided whether those hazards were still viable today. Some hazards were removed, and other hazards were added to the list.

### **3.7 Review and Propose Mitigation Measures**

Meetings were held with the Planning Team to review the identified hazards and solicit input on appropriate mitigation measures for each hazard to be identified in the LHMP. The Team identified mitigation measures for each critical piece of infrastructure. Each meeting focused on specific hazards of the District's facilities, operations, risk assessment and mitigation strategy.

### **3.8 Draft Local Hazard Mitigation Plan**

The District's consultant led the Planning Team and prepared a draft LHMP with input from the Planning Team, Board of Directors and public. The Planning Team members reviewed and commented on the draft LHMP with subsequent changes made before the LHMP was finalized and adopted by the Board of Directors. Each Board meeting was opened with a public comment period. All meeting agendas, meeting minutes, and draft documents were posted on the District website. Notices were sent to all water customers in the service area, which stated that all LHMP

documents were posted on the website. The consultant's email address was posted on the District's website. Public comment was requested and the consultant addressed all comments or concerns.

The LHMP was reviewed in comparison to the FEMA-designed Crosswalk. The Crosswalk links the federal requirements and identifies the sections in the LHMP where the information can be found. This provides a rating as to the level of compliance with the federal regulations.

### **3.9 Adoption of the Plan**

The draft LHMP was posted on the District's website for 30 days, asking for comments from the public. The public could comment in person at a District Board of Directors meeting or by email and/or telephone.

The LHMP will be submitted to the District's Board of Directors for adoption after incorporating any final comments or changes from CalOES and FEMA. The LHMP will be adopted at the District's regularly scheduled Board of Directors meeting after receiving a letter of FEMA acceptance pending Board approval.

## **SECTION 4: RISK ASSESSMENT**

The goal of mitigation is to reduce future impacts of a hazard, including property damage, disruption to local and regional economies, and amount of public and private funds spent for recovery. Mitigation decisions are based on risk assessments where the probability of an event is evaluated with respect to the anticipated damages caused by such an event.

The purpose of this section is to understand the hazards and their risks in the District's service area. There are generally four steps in this process: 1) hazard identification 2) vulnerability analysis 3) risk analysis and 4) vulnerability assessment, including an estimation of potential losses. Technically, these are four different items, but the terms are sometimes used interchangeably.

### **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. **4.1.1 Hazard Screening Criteria**

The intent of screening the hazards is to help prioritize which hazards create the greatest concern to the District. A list of the natural hazards to consider was obtained from Federal Emergency Management District's (FEMA) State and Local Mitigation Planning How-to Guide: Understanding Your Risks (FEMA 386-1). The Planning Team used the Stafford Act, 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) "Highly Likely", (2) "Likely" (3) "Somewhat Likely" and (4) "Least Likely". 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:



**Hazards:**

- Wildfire = 1
- Climate Change/Drought = 3
- Earthquake = 1
- Landslides = 2
- Severe Storms = 4
- Windstorms = 3
- Flooding = 4

The natural hazards, Volcanoes, Tsunami, and Freezing Events, Severe Storms and Flooding were considered not to affect or be a risk to the District and were given a ranking of 4 or below.

#### 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 3: Screening Assessment Matrix**

	<i>Impact</i>			
		<b>Catastrophic</b>	<b>Critical</b>	<b>Limited</b>
<i>Probability</i>	<b>Highly Likely (1) (75 – 100%)</b>	Earthquake Wildfires		
	<b>Likely (2) (50-75%)</b>	Landslides		
	<b>Somewhat Likely (3) (50 – 75%)</b>		Climate Change/Drought	Windstorms

#### 4.1.3 Hazard Prioritization

Using the hazard screening criteria and assessment matrix, the Planning Team identified the following hazards to be the most likely to affect the District:

- 1. Earthquake:** There are many faults running through the District’s service area. The 1987 Whittier Narrows Earthquake caused significant damage to the distribution system of the District’s pipelines. However, there are no records of the damage or if any recovery money was received by the District from FEMA. The local faults could potentially damage 100% of the District’s critical facilities. A major earthquake has not happened in the service area, however, it will occur, someday, as there are many earthquake fault lines running around, though, and near the service area.
- 2. Wildfire:** Wildfires are a highly significant concern in the service area, as the service area is all rolling hills, with narrow winding roads. Most of the residents have only one way to enter or evacuate the area. In a large wind driven wildfire, evacuation of the residents

would be difficult at best. In the event of a wind driven wildfire, loss of electricity would lead to loss of water pressure to fight the fire. Public Safety Power Shutoffs (PSPS) are a way of life in California. The District's office facilities, computer systems, SCADA system, and operating pump stations are susceptible to fire damage. The consequences include loss of life, buildings, equipment, and property damage. There have been no wildfires or brush fires in recent years, making this area, with large trees and vegetation, ready to be the next casualty and disaster. The HAZUS maps show significant wildfire concerns within the service area.

- 3. Landslides:** Landslides are very common in the foothill in Southern California, as well as, the District's service area. Heavy tropical and winter rainstorms have been known to inundate the area and saturate the hills in the District. Once the ground is saturated and water can no longer soak into the ground; mud and earth start moving downhill. This mud has been known to undermine water pipelines which breaks pipelines and empties water onto hillsides, causing more debris to run downhill. This has affected operations in the past. The FEMA 100-year and 500-year flood maps show potential inundation of the offices, yard and infrastructure.
- 4. Climate Change/Drought:** Climate change is altering California's water supply throughout the state. Northern California is experiencing warmer winters, less snowpack, and longer periods between wet seasons. This affects water supply throughout the Central Valley and urban Southern California. The District relies on groundwater which is impacted from long-term climate change. The District does utilize imported water from northern California, through a connection with the Metropolitan Water District. This connection is for potable water only and only utilized during emergencies or planned shutdowns of other water sources. The District does not recharge the underground aquifer, as this is done by another agency that is responsible for the local ground water replenishment in the region. The State has been in a prolonged drought; however, the winter of 2016/2017 delivered more snow and rain, which has lessened the impact throughout most of the State from the drought of the last seven years. Climate change, leading to higher temperatures may increase water use and groundwater extraction, which will lower the groundwater table. Heavy storm events will increase flash flood risks and decrease groundwater recharge because the water will runoff instead of infiltrating to recharge the underground aquifer. Over time, the District could experience increased pumping costs and water supply wells may become too shallow and must be replaced with deeper wells. Climate change could raise the ground water in the aquifer that could cause a situation of having an overabundance of water, or it may lower it. At this point in time, the drought and probability of climate change have not affected the District significantly.
- 5. Windstorms:** Windstorms are common events in southern California. These events happen mostly during the fall and winter months when an atmospheric high pressure develops over the plains in Nevada and at the same time an atmospheric low pressure

develops off the coast of California over the Pacific Ocean. This atmospheric condition causes high winds to develop. The winds funnel through the mountain passes in southern California and range from 25 to 80 miles per-hour and can-do considerable damage to property.

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