

# FOOTHILL MUNICIPAL WATER DISTRICT

## 2026 Multi-Jurisdictional Hazard Mitigation Plan

### Volume 2 Planning Partner Annexes

PUBLIC COMMENT DRAFT  
JULY 2026





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# 1. INTRODUCTION

## 1.1 BACKGROUND

This is the first MJHMP for Foothill Municipal Water District (FMWD) and five of its member agencies. Crescenta Valley Water District developed a single-jurisdiction HMP in 2021 and chose to join the Planning Partnership to update their initial plan.

Multi-jurisdictional hazard mitigation planning can be an effective process to build partnerships between jurisdictions that face common hazard risks, leading to shared solutions. It can also help build a foundation to shift priorities as risks and vulnerabilities change. Multi-jurisdictional planning processes are encouraged by the Federal Emergency Management Agency (FEMA), and offer the following advantages:

- Improves communication and coordination among jurisdictions and other regional entities.
- Enables comprehensive mitigation approaches to reduce risks that affect multiple jurisdictions.
- Maximizes economies of scale by leveraging individual capabilities and sharing costs and resources.
- Avoids duplication of efforts, and
- Provides an organizational structure that local jurisdictions may find supportive.

For the 2026 Foothill Municipal Water District Multi-Jurisdictional Hazard Mitigation Plan, a planning partnership was formed and was made up of Planning Partners seeking Disaster Mitigation Act of 2000 (DMA 2000) compliance. They were responsible for participating throughout the process, reviewing information and providing input, informing the risk assessment, developing mitigation strategies, and adopting the MJHMP. The DMA 2000 defines a local government as follows:

“Any county, municipality, city, town, township, public authority, school district, special district, intrastate district, council of governments (regardless of whether the council of governments is incorporated as a nonprofit corporation under State law), regional or interstate government entity, or agency or instrumentality of a local government; any Indian tribe or authorized tribal organization, or Alaska Native village or organization; and any rural community, unincorporated town or village, or other public entity.”

In addition to Foothill Municipal Water District, the jurisdictions participating in this Multi-Jurisdictional Hazard Mitigation Plan include the following:

- Crescenta Valley Water District (plan update)
- La Cañada Irrigation District (initial plan)
- Las Flores Water Company (initial plan)
- Lincoln Avenue Water Company (initial plan)
- Valley Water Company (initial plan)



All participating jurisdictions in a multi-jurisdictional plan must meet the requirements of Chapter 44 of the Code of Federal Regulations (44 CFR):

“Multi-jurisdictional plans may be accepted, as appropriate, as long as each jurisdiction has participated in the process and has officially adopted the plan.” (Section 201.6(a)(4)).

Each participating planning partner prepared a jurisdiction-specific annex to this plan. These annexes, as well as information on the process by which they were created, are contained in this volume.

## 1.2 THE PLANNING PARTNERSHIP

### 1.2.1 Initial Solicitation and Letters of Commitment

In mid-2024, FMWD notified its member agencies of the planning process and invited them to participate. They were asked to formally accept by sending a letter of intent to participate and to identify points of contact to represent the agency and participate throughout the planning process. The contacts each jurisdiction identified in the letter of intent to participate were informed of the planning process, attended meetings, provided direct input, and reviewed plan documents.

Crescenta Valley Water District (CVWD) adopted a single-jurisdiction hazard mitigation plan in 2021. CVWD began this MJHMP planning process as a stakeholder on the Planning Committee and later joined the Planning Partnership to update their initial hazard mitigation plan.

### 1.2.2 Planning Partner Expectations

The planning team and consultant, Black & Veatch, developed the following list of planning partner expectations, which were provided and discussed at a formal kickoff meeting held in December 2024.

- Confirm lead and primary points of contact for the update effort.
- Support and participate in the stakeholder engagement at Planning Committee meetings.
- Provide support required to implement the public involvement strategy.
- Participate in the planning process through the following:
  - Planning Committee meetings
  - Public meetings and outreach efforts
  - Workshops and planning partner-specific training sessions, and
  - Public review and comment periods prior to adoption.
- Perform a “consistency review” of all technical studies, plans, and ordinances specific to hazards.
- Review the risk assessment and identify hazards and vulnerabilities specific to the jurisdiction.
- Attend the mandatory jurisdictional annex workshop.
- Review and determine if the mitigation recommendations chosen in Volume 1 will meet the needs of the jurisdiction.
- Create an action plan that identifies each project, who will oversee the task, how it will be financed, and when it is estimated to occur.
- Formally adopt the MJHMP.





By adopting the MJHMP, each planning partner also agrees to the plan implementation and maintenance protocol established in Volume 1. Failure to meet these criteria would result in a planning partner being dropped from the planning partnership by the Planning Committee and thus losing eligibility under the scope of the plan. All planning partners met the planning partner expectations, including attendance at mandatory workshops.

### 1.2.3 Final Coverage

All of the above jurisdictions submitted letters of commitment to participate, completed an annex template, fully met the participation requirements for this update, and will be covered by the 2026 Foothill Municipal Water District Multi-Jurisdiction Hazard Mitigation Plan upon FEMA's approval of the plan and adoption of the plan by their individual governing bodies.

## 1.3 ANNEX DEVELOPMENT

### 1.3.1 Capability Assessment

A capability assessment creates an inventory of a jurisdiction's mission, programs, and policies, and evaluates its capacity to carry them out. All participating jurisdictions compiled a capability assessment which helped to identify potential gaps in the jurisdictions' capabilities. Specifically, if the capability assessment identified an opportunity to add a missing core capability or expand an existing one, then doing so has been selected as an action in the jurisdiction's action plan. The sections below describe specific capabilities evaluated under the assessment.

#### *Planning and Regulatory Capabilities*

Jurisdictions can develop policies and programs and implement rules and regulations to protect and serve residents. Local policies are typically identified in planning documents, implemented via a local ordinance, and enforced by a governmental body. Because the planning and regulatory authority of municipalities is generally broader than that of special-purpose districts, the assessment of these capabilities is more limited for this plan.

#### *Fiscal Capability*

Assessing a jurisdiction's fiscal capability provides an understanding of the ability to fulfill the financial needs associated with hazard mitigation projects. This assessment identifies both outside resources, such as grant-funding eligibility, and local jurisdictional authority to generate internal financial capability, such as through utility user fees (rates).

#### *Administrative and Technical Capability*

Without appropriate personnel, the mitigation strategy may not be implemented. Administrative and technical capabilities focus on the availability of personnel resources responsible for implementing all the facets of hazard mitigation. These resources include technical experts, such as engineers, scientists, and grant writers.



### ***Education and Outreach Capability***

Regular engagement with the public on hazard mitigation provides opportunities to open a two-way dialogue that can result in a more resilient community. Use of a jurisdictional website, social media outlets, and other outreach resources to communicate mitigation information are assessed for each planning partner. Assessing outreach and education capability illustrates the connection between the agency and community members.

### ***Compliance with National Flood Insurance Program Requirements***

The NFIP is not available to special-purpose districts. However, any new assets or infrastructure developed by the districts are in compliance with the floodplain regulations established by the surrounding municipal entities.

### ***Participation in Voluntary Programs***

Participation in voluntary programs, such as the National Weather Service's StormReady and the National Fire Protection Association's Firewise USA, can enhance a jurisdiction's ability to mitigate, prepare for, and respond to natural hazards. These programs complement each other by focusing on communication, mitigation, and community preparedness to save lives and minimize the impact of natural hazards on a community. Participation in these programs demonstrates a jurisdiction's commitment to go beyond the minimum requirements set forth by local, state, and federal regulations to create a more resilient community.

### ***Adaptive Capacity***

An adaptive capacity assessment evaluates a jurisdiction's ability to anticipate impacts that may occur in the future. By looking at public support, technical adaptive capacity, and other factors, jurisdictions can identify their core capability for resilience against issues such as implications from climate change. The assessment provides jurisdictions with an opportunity to identify areas for improvement by ranking their adaptive capacity as high, medium, or low.

## **1.3.2 Mitigation Action Plan Development**

### ***Risk Ranking***

The risk-ranking methodology for partner annexes was the same as that used for the areawide risk ranking described in Volume 1. Each planning partner was asked to review the ranked risk for its jurisdiction, based on probability of occurrence and the potential impact on their constituency, vital facilities, and the facilities' functionality after a hazard event.

The objectives of this exercise were to familiarize the planning partnership with how to use the risk ranking, part of the assessment results, as a tool to support other planning and hazard mitigation processes and to help prioritize types of mitigation actions that should be considered. Hazards that were ranked as "high" and "medium" for each jurisdiction were considered to be priorities for identifying mitigation actions.



### Information Reviewed to Develop the Action Plan

In February 2026, each planning partner was provided with a toolkit of relevant documents to assist in developing their jurisdiction's action plan and was required to attend a workshop that provided guidance to develop their action plans. The toolkits were used during the mandatory Phase 2 workshop and in follow-up work conducted by the planning partners. Planning partners reviewed the following information included in the toolkit to assist in the identification of proposed mitigation actions:

- Capability assessment—Reviewed to identify capabilities that the jurisdiction does not currently have but should consider pursuing, or capabilities that should be revisited and updated to include best available information; also reviewed to determine how existing capabilities can be leveraged to increase or improve hazard mitigation in the jurisdiction.
- Adaptive capacity—Reviewed to identify ways to leverage or continue to improve existing capacities and to improve understanding of other capacities.
- Future integration opportunities—Reviewed to identify specific integration actions to be included in the mitigation strategy.
- Jurisdiction-specific vulnerabilities—Reviewed to identify actions that could reduce known vulnerabilities.
- Mitigation best practices catalog—Reviewed to identify actions that the jurisdiction should consider including in its action plan.
- Public input—Reviewed to identify potential actions and community priorities.

### Action Plan Prioritization

The mitigation actions recommended in each jurisdiction's action plan were prioritized using the same prioritization method in the 2023 California State HMP. Each action is reviewed and scored based on 15 questions, as presented in Table 1-1.

Table 1-1. Mitigation Action Prioritization Categories

| Category                  | Question                                                                                                                                             |
|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| Life Safety               | Will the action result in life safety?                                                                                                               |
| Property Protection       | Will the action result in property protection?                                                                                                       |
| Cost-Effective            | Will the action be cost-effective (future benefits exceed cost)?                                                                                     |
| Technically Feasible      | Is the action technically feasible?                                                                                                                  |
| Legal Authority           | Does the jurisdiction have the legal authority to implement?                                                                                         |
| Funding Available         | Is funding available for the action?                                                                                                                 |
| Environmental             | Will the action have a positive impact on the natural environment?                                                                                   |
| Climate Change            | Will the action mitigate impacts from climate change?                                                                                                |
| Equity Priority Community | Does the action benefit equity priority communities?                                                                                                 |
| Administrative Capacity   | Does the jurisdiction have the administrative capability to execute the action?                                                                      |
| Multi-Hazard              | Will the action reduce risk to more than one hazard?                                                                                                 |
| Timeline                  | Can the action be completed in less than 5 years?                                                                                                    |
| Stakeholder Support       | Is there stakeholder (outside of jurisdiction staff) support for the action?                                                                         |
| Other Local Objective     | Will the action meet other local objectives (such as capital improvements, economic development, environmental quality, or open space preservation?) |
| Support Policies          | Does the action support the policies of other plans and programs?                                                                                    |



The answers to each of these questions are weighted as follows:

- Yes = 3 points
- Not sure/could be either yes or no/question is difficult to quantify = 1 point
- No = 0 points

After the scoring of each action, priorities are assigned based on the following:

- 31 or more = High Priority
- 15 to 30 = Medium Priority
- 0 to 14 = Low Priority

### **Classification of Actions**

Each recommended action was also classified based on the hazard it addresses and the type of mitigation it involves. Mitigation types used for this classification are as follows:

- **Local Plans and Regulations**—Government, administrative or regulatory actions that influence the way land and buildings are developed to reduce hazard losses. Includes planning and zoning, floodplain laws, capital improvement programs, open space preservation, and stormwater management regulations.
- **Emergency Services**—Actions that protect people and property during and immediately after a hazard event. Includes warning systems, emergency response services, and the protection of essential facilities.
- **Structure and Infrastructure Projects**—Modification of buildings or structures to protect them from a hazard or removal of structures from a hazard area. Includes acquisition, elevation, relocation, and structural retrofit.
- **Education and Awareness Programs**—Actions to inform residents and elected officials about hazards and ways to mitigate them. Includes outreach projects, real estate disclosure, hazard information centers, and school-age and adult education.
- **Natural Systems Protection**—Actions that minimize hazard loss and preserve or restore the functions of natural systems. Includes sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, wetland restoration and preservation, and green infrastructure.
- **Climate Resiliency**—Actions that incorporate methods to mitigate and/or adapt to the impacts of climate change. Includes aquifer storage and recovery activities, incorporating future conditions projections in project design or planning, or actions that specifically address jurisdiction-specific climate change risks, such as sea-level rise or urban heat island effects.
- **Community Capacity Building**—Actions that increase or enhance local capabilities to adjust to potential damage, to take advantage of opportunities to build capacity, or to respond to consequences of insufficient capacity. Includes staff training, memorandums of understanding, development of plans and studies, and monitoring programs.



### 1.3.3 Annex-Preparation Process

#### **Templates**

Templates were created to help the planning partners prepare their jurisdiction-specific annexes. The templates were designed so that all criteria of Section 201.6 of 44 CFR for local governments would be met.

The templates were designed to lead all partners through the necessary steps to generate the Disaster Mitigation Act-required elements specific to their jurisdictions. The templates and accompanying instructions were used by every planning partner to develop the jurisdictional annexes.

#### **Toolkit**

Each planning partner was provided with a toolkit to assist in completing the annex template and developing their jurisdiction's action plan. The toolkits contained the following:

- Information on past hazard events that have impacted the planning area.
- The risk assessment results developed for the plan update.
- Jurisdiction-specific annex templates, with instructions for completing them.
- A catalog of mitigation best practices and suggested actions to enhance adaptive capacity.
- The results of the public survey on community awareness of hazards conducted as part of the public involvement strategy.

#### **Workshop**

All partners were required to attend and participate in a virtual technical assistance workshop held in February 2026, where key elements of the annex template were discussed. The workshop focused on how the toolkit could be used to facilitate completion of the template and develop each jurisdiction's mitigation action plan. The templates were subsequently completed by a designated point of contact for each partner and a member of the planning team. The workshop addressed the following topics:

- The jurisdictional annex templates and the toolkit.
- Natural events history.
- Jurisdiction-specific issues.
- Risk ranking.
- Status of prior actions, if applicable.
- Developing the action plan.
- Benefit-cost review.
- Prioritization protocol.
- Next steps.

Following the conclusion of the workshop, a copy of the presentation given at the workshop session was provided to each of the planning partners.



## 2. FOOTHILL MUNICIPAL WATER DISTRICT



Figure 2-1. View of the San Gabriel Mountains

### 2.1 LOCAL HAZARD MITIGATION PLANNING TEAM

Table 2-1. Local Planning Team

|                          | Primary Point of Contact                                                                                                                             | Alternate Point of Contact                          |
|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|
| Name and Title:          | Natalie Ouwersloot, District Engineer                                                                                                                | Michael Le, Water Program Technician                |
| Address:                 | 4536 Hampton Road<br>La Cañada Flintridge, CA 91011                                                                                                  | 4536 Hampton Road<br>La Cañada Flintridge, CA 91011 |
| Phone Number:            | (818) 790-4036 x105                                                                                                                                  | (818) 790-4036 x104                                 |
| Email:                   | <a href="mailto:natalieo@fmwd.com">natalieo@fmwd.com</a>                                                                                             | <a href="mailto:mle@fmwd.com">mle@fmwd.com</a>      |
| <b>Contributors:</b>     |                                                                                                                                                      |                                                     |
| Name and Title:          | Nina Jazmadarian, General Manager                                                                                                                    |                                                     |
| Method of Participation: | Participated in meetings, provided input in the annex process                                                                                        |                                                     |
| Name and Title:          | Kim Wong, Engineering Aide                                                                                                                           |                                                     |
| Method of Participation: | Participated in meetings, provided input in the annex process                                                                                        |                                                     |
| Name and Title:          | Natalie Ouwersloot, District Engineer                                                                                                                |                                                     |
| Method of Participation: | Served on the MJHMP Core Planning Team, participated in meetings, provided input in the annex process, reviewed and commented on the MJHMP and annex |                                                     |
| Name and Title:          | Michael Le, Water Program Technician                                                                                                                 |                                                     |
| Method of Participation: | Participated in meetings, provided input in the annex process, reviewed and commented on the MJHMP and annex                                         |                                                     |



## 2.2 JURISDICTIONAL PROFILE

### 2.2.1 Overview

Foothill Municipal Water District (FMWD) incorporated on January 7, 1952, to help meet the increased water needs of the rapidly growing foothill communities following the end of World War II. Water leaders, and ultimately voters, saw the need to supplement local groundwater with water imported by the Metropolitan Water District of Southern California (MWD). At that time, MWD delivered Colorado River water into the Southern California region for about 10 years through its Colorado River Aqueduct. Since then, MWD also received water from the California State Water Project in 1972. Foothill officially joined MWD in 1953 and operates as one of its 26 member agencies (Foothill Municipal Water District 2026b).

Foothill Municipal Water District's mission is to provide member agencies with an adequate and reliable supply of quality water to meet their projected demands in a cost-efficient and climate responsible manner.

### 2.2.2 Service Area

FMWD covers about 22 square miles in the foothills of the San Gabriel Mountains, bordered between the City of Pasadena on the east and the City of Glendale on the south and west. FMWD serves approximately 80,000 people through its own member agencies (Foothill Municipal Water District 2026b).

The District's customers are retail water agencies. While a majority of these retail water agencies pump local groundwater, they may purchase additional water from Foothill to meet their demands. Foothill takes delivery of water from MWD at a connection near the Rose Bowl in Pasadena and must pump up into the service area to deliver to its member agencies. Before reaching Foothill, MWD treats the imported water to drinking water quality standards (Foothill Municipal Water District 2026b).

While FMWD once provided only about 20 percent of the water needed to satisfy demand in its service area, today it supplies more than half of the region's annual demand (Foothill Municipal Water District 2026b).

### 2.2.3 Governance

The District employs a full-time staff of 9 employees. Funding sources include wholesale water sales to its member agencies and other service-related revenues. A five-person board of directors elected by residents in the five divisions that comprise the District's service area set policies that govern FMWD (Foothill Municipal Water District 2026b).

### 2.2.4 Assets

FMWD owns and maintains service connections, two pump stations, approximately 10 miles of transmission mains (ranging in size from 24-inch to 39-inch), and six storage tanks (two located in each pressure zone) with a total storage capacity of 6.8 million gallons (Foothill Municipal Water District 2026a).



FMWD takes water from Metropolitan's Upper Feeder at a service connection located near the Rose Bowl. At that location, the purchased water flows by gravity through FMWD's 39-inch Arroyo Seco Main and terminates at the District's Main Pump Station. The Main Pump Station consists of two banks (East Bank and West Bank) of vertical turbine pumping units (boosters). There is no treatment chemical used or stored within the facilities or distribution system (Foothill Municipal Water District 2026a).

The East Bank consists of pumps ranging in size from 100 HP to 350 HP. With a total capacity to pump up to 13.0 MGD (20.2 cfs), these boosters push water into the Altadena Force Main which delivers water to the Altadena Reservoir pressure zone. The East Bank pumps serve the Las Flores Water Company, Lincoln Avenue Water Company and Rubio Cañon Land & Water Association (Foothill Municipal Water District 2026a).

The West Bank consists of five pumps ranging in size from 125 HP to 350 HP. With a total capacity to pump 20.1 MGD (31.2 cfs), the West Bank pumps push water into the 30-inch Westside Force Main to a junction (TEE) with the 24-inch La Cañada Lateral and the 24-inch Berkshire Boost Station Lateral. The La Cañada Lateral terminates at the La Cañada Reservoirs. The La Cañada Reservoirs serve water to the La Cañada Irrigation District, Liberty Utilities, Valley Water Company & the District's Berkshire Pumping Station (Foothill Municipal Water District 2026a).

The Berkshire Pump Station consists of four 300 HP vertical turbine pumps with a total capacity of 9.8 MGD (15.2 cfs). The Berkshire Pump Station pumps water through the 24-inch La Crescenta Force Main into the La Crescenta Reservoir pressure zone. The Berkshire Pump Station serves water typically to the Crescenta Valley Water District and La Cañada Irrigation District. During unusual situations, the Berkshire Pump Station is able to deliver water to the Valley Water Company (Foothill Municipal Water District 2026a).

Table 2-2 summarizes the critical assets of the district and their value.

Table 2-2. Water District Assets

| Asset                                             | Value                |
|---------------------------------------------------|----------------------|
| <b>Property</b>                                   |                      |
| Acres of land owned by FMWD (3.89 acres)          | ~\$24 million        |
| <b>Critical Infrastructure and Equipment</b>      |                      |
| Miles of transmission pipeline (approx. 10 miles) | \$3,241,400          |
| 3 fixed standby generators (2 diesel, 1 gas)      | \$2,217,100          |
| 5 Utility service trucks/vehicles                 | \$241,300            |
| SCADA System                                      | \$1,562,300          |
| <b>Critical Facilities</b>                        |                      |
| Administrative/OC building                        | \$1,750,000          |
| Main Pumping Station                              | \$5,500,000          |
| Berkshire Pumping Station                         | \$2,350,000          |
| La Cañada Reservoirs                              | \$1,887,800          |
| La Crescenta Reservoirs                           | \$1,947,900          |
| Altadena Reservoirs                               | \$1,272,300          |
| <b>TOTAL:</b>                                     | <b>\$45+ million</b> |





## 2.3 CURRENT TRENDS

Although the District does not operate direct retail connections, it does serve approximately 80,000 residents across its member agencies - including Crescenta Valley Water District, La Cañada Irrigation District, Las Flores Water Company, Liberty Utilities, Lincoln Avenue Water Company, Kinneloa Irrigation District, Rubio Cañon Land & Water Association, and Valley Water Company. Demand for water has remained relatively stable over the past decade, with year-to-year fluctuations influenced more by weather patterns and conservation efforts than by population change. However, the Eaton Fire effected wholesale demand with 20 percent of the District's service area being destroyed by the fire. It is anticipated that wholesale demand will eventually return to pre-fire conditions as the region recovers.

## 2.4 CAPABILITY ASSESSMENT

### 2.4.1 Planning and Regulatory Capabilities

Jurisdictions can develop policies and programs and implement rules and regulations to protect and serve residents. Local policies are typically identified in community plans, implemented through local ordinance, and enforced through a governing body. An assessment of planning and regulatory capabilities is presented in Table 2-3.

Table 2-3. Planning and Regulatory Capabilities

| Plan, Study, or Program                             | Date of Most Recent Update | Comment                                                                                                                                                                                                                                                                                |
|-----------------------------------------------------|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Capital Improvement Program                         | Updated annually           | 20-year program                                                                                                                                                                                                                                                                        |
| Recycled Water Study                                | 2020                       | Efforts to recycle water support drought risk reduction.                                                                                                                                                                                                                               |
| Water Resources Plan                                | 2009                       | Identifies sources of water the FMWD can draw from.                                                                                                                                                                                                                                    |
| Urban Water Management Plan (UWMP)                  | 2025 Plan In Progress      | The UWMP is a state-mandated plan that outlines long-term resource planning, water supply reliability, and conservation efforts for its service area. It assesses supply against demand, sets drought contingency plans, and explores alternatives like recycled water and storm water |
| Multi-Jurisdictional Hazard Mitigation Plan (MJHMP) | In Progress                | FMWD is currently participating in the 2026 HMP.                                                                                                                                                                                                                                       |
| Emergency Response Plan (ERP)                       | 2025 ERP Update            | Provides procedures for emergency response.                                                                                                                                                                                                                                            |

### Opportunities to Expand Planning and Regulatory Capabilities

Action 001-Foothill Municipal Water District in Table 2-20 is a project identified by the District that highlights expansion of planning and regulatory capabilities.

### 2.4.2 Administrative and Technical Capabilities

Planning, regulatory, and fiscal capabilities provide the backbone for successfully developing a mitigation strategy; however, without the appropriate personnel, the strategy may not be implemented.



Administrative and technical capabilities focus on the availability of personnel resources responsible for implementing all the facets of hazard mitigation. These resources include technical experts, such as engineers and scientists, as well as personnel with capabilities that may be found in multiple departments, such as grant writers. An assessment of administrative and technical capabilities is presented in Table 2-4.

Table 2-4. Administrative and Technical Capabilities

| Staff/Personnel Resource                                                                | Available? | Department/Position                                                                                               |
|-----------------------------------------------------------------------------------------|------------|-------------------------------------------------------------------------------------------------------------------|
| Planners or engineers with knowledge of land development and land management practices  | N/A        | FMWD lacks the authorities to regulate or dictate land use. Therefore, this capability is not applicable to FMWD. |
| Engineers or professionals trained in building or infrastructure construction practices | Yes        | Engineering Department and Contract Support                                                                       |
| Planners or engineers with an understanding of natural hazards                          | Yes        | Can contract for these services when needed.                                                                      |
| Staff with training in benefit-cost analysis                                            | Yes        | Can contract for these services when needed.                                                                      |
| Surveyors                                                                               | Yes        | Can contract for these services when needed.                                                                      |
| Personnel skilled or trained in GIS applications                                        | Yes        | Engineering Aide                                                                                                  |
| Scientist familiar with natural hazards in local area                                   | Yes        | Can contract for these services when needed.                                                                      |
| Emergency manager                                                                       | Yes        | Operations Manager                                                                                                |
| Grant writers                                                                           | Yes        | Procurement Services and Management                                                                               |
| Procurement Services and Management                                                     | Yes        | Administrative Manager                                                                                            |

### **Opportunities to Expand Administrative and Technical Capabilities**

FMWD's current administrative and technical capabilities can be expanded to further reduce risk to the service area and its customers. To support this effort, FMWD has identified a series of mitigation actions (see Table 2-20) focused on improving infrastructure resilience and protecting critical community lifelines. These actions emphasize ongoing inspections, targeted upgrades, and routine maintenance to enhance system reliability and ensure continued delivery of essential services during and after natural hazard events.

### **2.4.3 Fiscal Capabilities**

Assessing a jurisdiction's fiscal capability provides an understanding of the ability to fulfill the financial needs associated with hazard mitigation projects. This assessment identifies both outside resources, such as grant funding eligibility and local jurisdictional authority to generate internal financial capability, such as through impact fees. An assessment of fiscal capabilities is presented in Table 2-5.





Table 2-5. Fiscal Capabilities

| Financial Resource                                   | Accessible or Eligible to Use?     |
|------------------------------------------------------|------------------------------------|
| Community Development Block Grants                   | N/A                                |
| Capital Improvements Project Funding                 | Yes                                |
| Authority to Levy Taxes for Specific Purposes        | Yes                                |
| User Fees for Water, Sewer, Gas or Electric Service  | Yes – charges and volumetric rates |
| Incur Debt through General Obligation Bonds          | Yes                                |
| Incur Debt through Special Tax Bonds                 | Yes                                |
| Incur Debt through Private Activity Bonds            | No                                 |
| Withhold Public Expenditures in Hazard-Prone Areas   | No                                 |
| State-Sponsored Grant Programs                       | Yes                                |
| Development Impact Fees for Homebuyers or Developers | No                                 |

### **Opportunities to Expand Fiscal Capabilities**

FMWD will continue using its existing budget and CIP to support and integrate hazard mitigation. They will also pursue state and federal grant funding opportunities to help offset project costs, as shown in Table 2-20. This will allow the District to increase long-term resilience, implement mitigation actions with its current budget and CIP, and leverage other resources to implement infrastructure upgrades, reduce risk, and maintain reliable service delivery.

## **2.4.4 Education and Outreach Capabilities**

Regular engagement with the public on issues regarding hazard mitigation provides an opportunity to directly interface with community members. Assessing the education and outreach capability illustrates the connection between the government and community members, which opens a two-way dialogue that can result in a more resilient community, based on awareness and engagement. An assessment of education and outreach capabilities is presented in Table 2-6.

Table 2-6. Education and Outreach Capabilities

| Criterion                                                                            | Available? | Description and Role in Risk Reduction |
|--------------------------------------------------------------------------------------|------------|----------------------------------------|
| Public Information Officer                                                           | Yes        | Michael Le, Water Program Technician   |
| Personnel skilled or trained in website development                                  | Yes        | Contractor                             |
| Hazard mitigation information on website                                             | Yes        | Hazard Mitigation Plan information     |
| Social media for hazard mitigation education and outreach                            | Yes        | Nextdoor                               |
| Citizen boards or commissions that address issues related to hazard mitigation       | No         | -                                      |
| Other programs in place that could be used to communicate hazard-related information | Yes        | Public board meeting                   |
| Warning systems for hazard events                                                    | No         | -                                      |

### **Opportunities to Expand Education and Outreach Capabilities**

FMWD identified the following opportunities to expand current education and outreach capabilities. In doing so, the District can increase community-wide awareness of natural hazard risk and preparedness that can reduce vulnerability and support overall resilience.



- Enhance website content (see 006-Foothill Municipal Water District in Table 2-20)
  - Add a hazard mitigation page with resources on wildfire, drought, earthquake, and water supply reliability.
  - Provide links to regional emergency partners such as LA County Office of Emergency Management, Cal OES, National Weather Service (NWS), and Ready.gov for up-to-date emergency alerts and preparedness information.
- Expand Social Media Outreach (see 006-Foothill Municipal Water District in Table 2-20) - Use multiple platforms in addition to Nextdoor to share real-time hazard alerts, water conservation tips, and preparedness messages.
- Develop Community Workshops or Webinars (see 006-Foothill Municipal Water District in Table 2-20) - Offer seasonal outreach sessions (e.g., wildfire preparedness in summer) to engage residents directly and answer questions about water service reliability during emergencies.
- Establish an Emergency Notification or Alert System (see 006-Foothill Municipal Water District in Table 2-20) - Explore options for text/email alerts to notify customers about service disruptions, emergency events, or hazard warnings.
- Coordinate Outreach with Member Agencies (see 006-Foothill Municipal Water District in Table 2-20) - Partner with retail agencies to deliver consistent public education messaging and materials across the service area.

### 2.4.5 Community Classifications

Other programs, such as NWS StormReady, can enhance a jurisdiction's ability to mitigate, prepare for, and respond to natural hazards. These programs indicate a jurisdiction's desire to go beyond minimum regulatory requirements in order to create a more resilient community. These programs focus on communication, mitigation, and community preparedness to minimize the impact of natural hazards on a community. Classifications under various community mitigation programs are presented in Table 2-7.

Table 2-7. Community Classifications

|                | Participating? | Classification or Number | Date Classified |
|----------------|----------------|--------------------------|-----------------|
| FIPS Code      | Yes            | 037-91229                | N/A             |
| UEI#           | Yes            | J81XPMY8JMR5             | N/A             |
| NWS StormReady | No             | N/A                      | N/A             |
| Firewise       | No             | N/A                      | N/A             |

#### ***Opportunities to Expand Community Classification Capabilities***

Any expansion to the local capabilities identified in this section is likely to benefit the community classifications listed in this sub-section. Currently, there is no need to identify specific community classifications for expansion.

### 2.4.6 Adaptive Capacity for Climate Change

An adaptive capacity assessment evaluates a jurisdiction's ability to anticipate impacts from future conditions. By looking at public support, technical adaptive capacity, and other factors, jurisdictions identify their core capability for resilience against issues such as extreme heat. The adaptive capacity



assessment provides jurisdictions with an opportunity to identify areas for improvement by ranking their capacity as high, medium, or low. The District's adaptive capacity for the impacts of climate change is presented in Table 2-8.

Table 2-8. Adaptive Capacity for Climate Change

| Criterion                                                                                          | Jurisdiction Rating <sup>a</sup> | Comment                                                                                                                                             |
|----------------------------------------------------------------------------------------------------|----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Technical Capacity</b>                                                                          |                                  |                                                                                                                                                     |
| Jurisdiction-level understanding of potential climate change impacts                               | High                             | Staff understanding through water resource planning, supply reliability planning, and imported water risk assessments.                              |
| Jurisdiction-level monitoring of climate change impacts                                            | High                             | Ongoing monitoring through regional water supply planning and participation in climate-related water resource efforts.                              |
| Technical resources to assess proposed strategies for feasibility and externalities                | Medium                           | In-house engineering and planning staff with ability to evaluate strategies; additional specialized analyses conducted through consultants.         |
| Jurisdiction-level capacity for development of greenhouse gas emissions inventory                  | High                             | Member of The Climate Registry and capable of preparing GHG inventories.                                                                            |
| Capital planning and land use decisions informed by potential climate impacts                      | Medium                           | Climate considerations incorporated into capital planning and infrastructure resilience planning; land use authority lies with local jurisdictions. |
| Participation in regional groups addressing climate risks                                          | High                             | Active participation in regional water planning and climate-related initiatives, including involvement with The Climate Registry.                   |
| <b>Implementation Capacity</b>                                                                     |                                  |                                                                                                                                                     |
| Clear authority/mandate to consider climate change impacts during public decision-making processes | Medium                           | Climate resilience considered in infrastructure planning and water supply reliability decisions.                                                    |
| Identified strategies for greenhouse gas mitigation efforts                                        | High                             | GHG inventory reporting and operational efficiency efforts through The Climate Registry participation.                                              |
| Identified strategies for adaptation to impacts                                                    | High                             | Strategies include supply diversification, groundwater storage, and infrastructure resilience planning.                                             |
| Champions for climate action in local government departments                                       | Medium                           | Staff leadership within planning and engineering functions supports climate resilience initiatives.                                                 |
| Political support for implementing climate change adaptation strategies                            | High                             | Board Members are very supportive of infrastructure resilience and supply reliability projects.                                                     |
| Financial resources devoted to climate change adaptation                                           | Medium                           | Funding incorporated into capital improvement projects and water supply reliability initiatives.                                                    |
| Local authority over sectors likely to be negatively impacted                                      | Low                              | District has authority over water supply infrastructure but not land use or other sectors.                                                          |



| Public Capacity                                            |        |                                                                                                                            |
|------------------------------------------------------------|--------|----------------------------------------------------------------------------------------------------------------------------|
| Customers' knowledge of and understanding of climate risk  | Medium | Public awareness through drought messaging and water supply reliability communications.                                    |
| Customers' support of adaptation efforts                   | High   | Strong public support for water supply reliability and drought resilience projects.                                        |
| Customers' capacity to adapt to climate impacts            | Medium | Local communities have some adaptive capacity but may face financial and infrastructure constraints.                       |
| Local economy current capacity to adapt to climate impacts | Medium | Regional economy generally resilient but vulnerable to earthquake and wildfire impacts.                                    |
| Local ecosystems capacity to adapt to climate impacts      | Medium | Natural systems under stress from drought, earthquake, and wildfire but supported by regional resource management efforts. |

a. High = Capacity exists and is in use; Medium = Capacity may exist but is not used or could use some improvement; Low = Capacity does not exist or could use substantial improvement; Unsure = Not enough information is known to assign a rating.

### ***Opportunities to Expand Adaptive Capacity Capabilities***

The District has not identified a need to expand adaptive capacity capabilities.

## **2.5 NATIONAL FLOOD INSURANCE PROGRAM COMPLIANCE**

Districts are not eligible to participate in the National Flood Insurance Program (NFIP). However, any new assets or infrastructure developed by the District are in compliance with the floodplain regulations established by the surrounding municipal entities.

## **2.6 INTEGRATION**

For hazard mitigation planning, "integration" means that hazard mitigation information is used in other relevant planning mechanisms, such as capital facilities planning, and that relevant information from those sources is used in hazard mitigation. This section identifies where there are opportunities for integration in the future. The progress reporting process described in Volume 1 of the hazard mitigation plan will document the progress of hazard mitigation actions related to integration and identify new opportunities for integration.

### **2.6.1 Opportunities for Future Integration**

The capability assessment in this annex indicates opportunities to integrate this mitigation plan with other jurisdictional planning/regulatory capabilities. Capabilities were identified as integration opportunities if they can support or enhance the actions identified in this plan or be supported or enhanced by components of this plan. The capability assessment identified the following plans and programs that do not currently integrate hazard mitigation information but provide opportunities to do so in the future.

- AWIA Risk and Resilience Assessment (RRA): Under AWIA, water utilities must perform a Risk and Resilience Assessment (RRA) every five years to identify vulnerabilities in infrastructure, physical security, and cybersecurity systems. Information on hazard risk and vulnerabilities from this mitigation plan can be used to update the RRA.



- Emergency Response Plan (ERP): Information on hazard events developed in this mitigation plan can be used to update emergency response planning.
- CA Senate Bill 1153: This bill requires urban retail water suppliers to include wildfire mitigation actions in disaster preparedness plans. This plan includes actions to mitigate wildfire risk.

## 2.7 RISK ASSESSMENT

### 2.7.1 Jurisdiction-Specific Natural Hazard Event History

Table 2-9 lists past occurrences in the last five years of natural hazards for which specific damage was recorded in this jurisdiction. Other hazard events that broadly affected Los Angeles County, including this jurisdiction, are listed in the risk assessments in Volume 1 of this hazard mitigation plan.

Table 2-9. Past Natural Hazard Events

| Type of Event | Declaration Title                                         | State or Federal Disaster # | Declaration Date                 | Damage Assessment                                                                                                                                       |
|---------------|-----------------------------------------------------------|-----------------------------|----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| Biological    | COVID-19 Pandemic                                         | EM-3428-CA<br>DR-4482-CA    | March 13, 2020<br>March 22, 2020 | Employees that were able worked from home. Otherwise, worked in different offices and locations to mitigate any damage. Cost was in emergency supplies. |
| Flood         | Severe Winter Storms, Flooding, Landslides, and Mudslides | DR-4683-CA                  | January 14, 2023                 | Some erosion on reservoir site next to neighbor's parking lot. Mitigated with wattles.                                                                  |
| Fire          | Eaton Fire                                                | FM-5550-CA                  | January 8, 2025                  | Significant damage to four retail agencies and 20% of end users properties destroyed. District did not suffer damage.                                   |
| Fire          | Wildfires and Straight-Line Winds                         | DR-4856-CA                  | January 8, 2025                  | Used emergency generator since there was no power to pump water in La Canada Flintridge.                                                                |
| Severe Storm  | 2025 Late December Storms                                 | N/A                         | December 24, 2025                | Slope failure to retail agency property.                                                                                                                |

### 2.7.2 Hazard Ranking

The prioritization and categorization of identified hazards for the Foothill Municipal Water District is based principally on the Priority Risk Index (PRI), a tool used to measure the degree of risk for identified hazards in a particular planning area. The PRI was used to assist the District in identifying hazards that pose the most significant threat. Table 2-10 presents a local ranking of all hazards of concern for which this hazard mitigation plan provides complete risk assessments. As described in detail in Volume 1, the ranking process involves an assessment of the likelihood of occurrence for each hazard, along with its potential impacts on people, property and the economy.





Table 2-10. Hazard Risk Ranking Summary

| Hazard                                | Weighted Risk Factors |        |                |              |                | PRI | Risk Ranking |
|---------------------------------------|-----------------------|--------|----------------|--------------|----------------|-----|--------------|
|                                       | Probability           | Impact | Spatial Extent | Warning Time | Climate Change |     |              |
| Dam Failure                           | .3                    | .3     | .4             | .1           | .3             | 1.4 | Low          |
| Drought                               | 1.2                   | 1.2    | .8             | .1           | .4             | 3.7 | High         |
| Earthquake                            | 1.2                   | 1.2    | .8             | .4           | .3             | 3.9 | High         |
| Extreme Temperature                   | 1.2                   | 1.2    | .8             | .1           | .4             | 3.7 | High         |
| Flood*                                | 1.2                   | .3     | .4             | .1           | .4             | 2.4 | Medium       |
| Landslide, Subsidence & Mass Movement | .6                    | 1.2    | .4             | .1           | .3             | 2.6 | Medium       |
| Strong Wind                           | 1.2                   | 1.2    | .8             | .1           | .4             | 3.7 | High         |
| Wildfire                              | 1.2                   | 1.2    | .8             | .1           | .4             | 3.7 | High         |

Note: PRI Value 1 to 1.9 = Low Hazard Risk Ranking

PRI Value 2.0 to 2.9 = Medium Hazard Risk Ranking

PRI Value 3.0 to 4.0 = High Hazard Risk Ranking

\*Flood risk is based on localized urban flooding, not regulated mapped floodplains

### 2.7.3 Agency-Specific Vulnerabilities

Volume 1 of this hazard mitigation plan provides a summary of risk assessments for hazards of concern that may have similar impacts on each agency in the planning area. This section provides information on key vulnerabilities for this agency including a summary of count and replacement cost values of agency assets. Available agency-specific risk maps of the hazards are provided at the end of this annex.

#### Vulnerability and Risk Assessment

The following information applies to the quantitative risk assessment results for Foothill Municipal Water District. Summarized vulnerability and risk assessment results for the entire planning area are contained in the applicable hazard chapters of Volume 1.

#### Dam Failure

Table 2-11. Estimated Dam Failure Exposure to Pipelines

| Total Miles of Pipeline | Miles of Pipeline Exposed to Hazard | Percent of Pipeline Exposed |
|-------------------------|-------------------------------------|-----------------------------|
| 12.0                    | 1.6                                 | 13.5%                       |

#### Earthquake

Table 2-12. Earthquake Hazard Estimated Average Probability of Damage State of Facilities

| Scenario           | Probability of Damage State |               |                 |                  |                 |               |                 |                  | Complete Replacement Cost Value |
|--------------------|-----------------------------|---------------|-----------------|------------------|-----------------|---------------|-----------------|------------------|---------------------------------|
|                    | No Damage                   | Slight Damage | Moderate Damage | Extensive Damage | Complete Damage | Exceed Slight | Exceed Moderate | Exceed Extensive |                                 |
| Puente Hills M6.95 | 0%                          | 4%            | 27%             | 43%              | 26%             | 100%          | 95%             | 69%              | \$50,430,988                    |
| Sierra Madre M7.16 | 0%                          | 2%            | 21%             | 40%              | 37%             | 100%          | 98%             | 77%              | \$54,346,155                    |
| Verdugo M6.90      | 0%                          | 1%            | 18%             | 40%              | 40%             | 100%          | 99%             | 80%              | \$54,433,672                    |

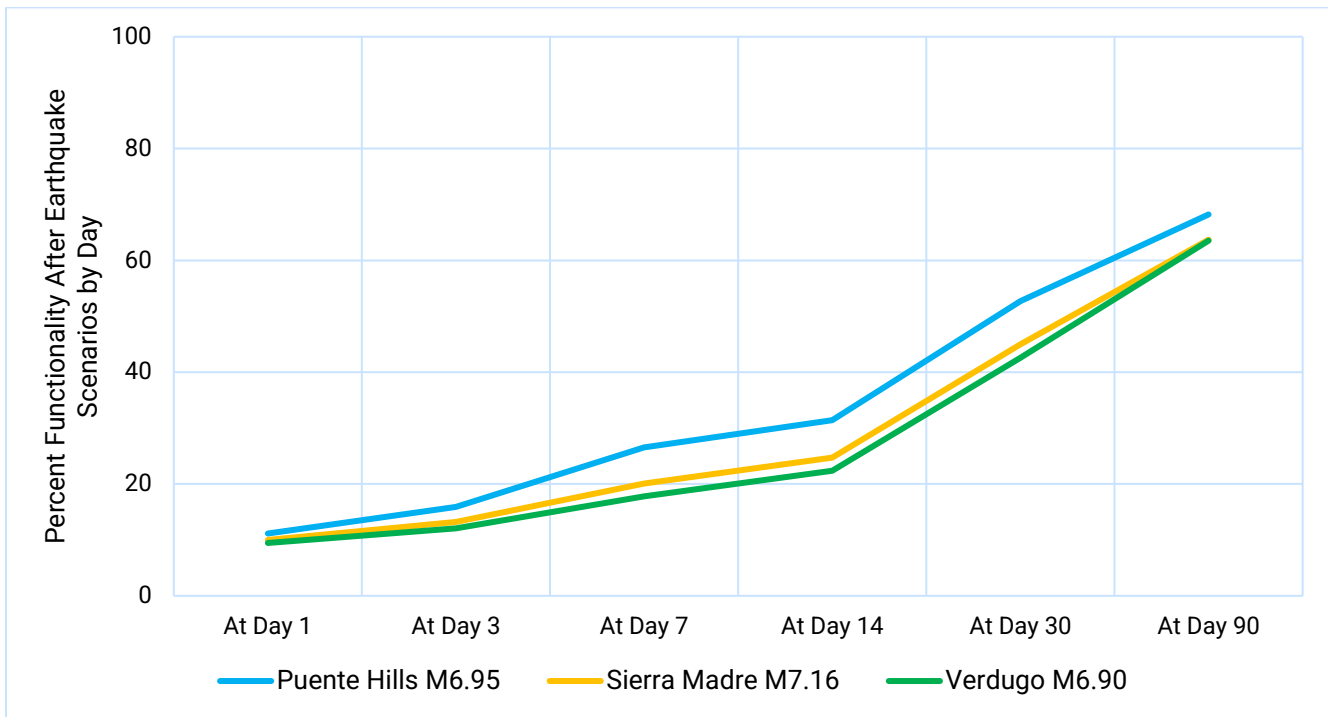


Figure 2-2. Average Percent Functionality of Facilities After Earthquake Scenarios by Day

Table 2-13. Estimated Pipe Leaks and Breaks from Earthquake Hazard

| Scenario           | Number of Leaks | Number of Breaks | Total Number of Repairs | Hours to Repair Leaks | Hours to Repair Breaks | Total Hours to Repair | Economic Loss |
|--------------------|-----------------|------------------|-------------------------|-----------------------|------------------------|-----------------------|---------------|
| Puente Hills M6.95 | 2               | 0.5              | 2.5                     | 9.2                   | 4.6                    | 13.8                  | \$71,537      |
| Sierra Madre M7.16 | 4.3             | 1.1              | 5.4                     | 19.1                  | 9.5                    | 28.6                  | \$151,614     |
| Verdugo M6.90      | 4.4             | 1.1              | 5.5                     | 19.6                  | 9.8                    | 29.4                  | \$154,761     |

Table 2-14. Estimated Liquefaction and NEHRP D Soils Exposure to Pipelines

| Scenario      | Total Miles of Pipeline | Miles of Pipeline Exposed to Hazard | Percent of Pipeline Exposed |
|---------------|-------------------------|-------------------------------------|-----------------------------|
| Liquefaction  | 10                      | 3.1                                 | 26.1%                       |
| NEHRP D Soils | 10                      | 4.1                                 | 34.2%                       |

Table 2-15. Estimated Liquefaction and NEHRP D Soils Exposure to Facilities

| Scenario                            | Type of Facility | Number of Facilities | Replacement Cost Value |
|-------------------------------------|------------------|----------------------|------------------------|
| Liquefaction                        | Pump Station     | 1                    | \$536,813              |
| <b>Total Liquefaction Exposure</b>  |                  | <b>1</b>             | <b>\$536,813</b>       |
| NEHRP D Soils                       | Building         | 2                    | \$1,082,539            |
| NEHRP D Soils                       | Pump Station     | 1                    | \$536,813              |
| NEHRP D Soils                       | Reservoir        | 2                    | \$20,000,000           |
| <b>Total NEHRP D Soils Exposure</b> |                  | <b>5</b>             | <b>\$21,619,352</b>    |



### Flood

The FMWD service area includes mapped floodplains, but none of these areas intersect with agency-owned assets.

### Landslide

Table 2-16. Estimated Landslide Exposure to Pipelines

| Scenario                           | Total Miles of Pipeline | Miles of Pipeline Exposed to Hazard | Percent of Pipeline Exposed |
|------------------------------------|-------------------------|-------------------------------------|-----------------------------|
| Very High Landslide Susceptibility | 10.0                    | 0.1                                 | 0.4%                        |
| High Landslide Susceptibility      | 10.0                    | 4.3                                 | 35.7%                       |
| Moderate Landslide Susceptibility  | 10.0                    | 0.3                                 | 2.9%                        |
| <b>Total</b>                       | <b>30.0</b>             | <b>4.7</b>                          | <b>39.00%</b>               |

Table 2-17. Facilities Exposed to the High Susceptibility Landslide Hazard Area

| Type of Facility | Number of Facilities Exposed | Replacement Cost Value |
|------------------|------------------------------|------------------------|
| Pump Station     | 1                            | \$536,813              |
| Reservoir        | 4                            | \$40,000,000           |
| <b>Total</b>     | <b>5</b>                     | <b>\$40,536,813</b>    |

### Wildfire

Table 2-18. Estimated Wildfire Exposure to Pipelines

| Scenario                            | Total Miles of Pipeline | Miles of Pipeline Exposed | Percent of Pipeline Exposed |
|-------------------------------------|-------------------------|---------------------------|-----------------------------|
| Very High Fire Hazard Severity Zone | 10.0                    | 7.7                       | 64.3%                       |
| High Fire Hazard Severity Zone      | 10.0                    | 0.2                       | 1.9%                        |
| Moderate Fire Hazard Severity Zone  | 10.0                    | 0.4                       | 3.1%                        |
| <b>Total</b>                        | <b>30.0</b>             | <b>8.3</b>                | <b>69.30%</b>               |

Table 2-19. Facilities Exposed to the Very High Fire Hazard Severity Zone

| Type of Facility | Number of Facilities Exposed | Replacement Cost Value |
|------------------|------------------------------|------------------------|
| Building         | 2                            | \$1,082,539            |
| Pump Station     | 2                            | \$871,988              |
| Reservoir        | 4                            | \$40,000,000           |
| <b>Total</b>     | <b>8</b>                     | <b>\$41,954,527.00</b> |

### Other Noted Vulnerabilities

The following agency-specific issues have been identified based on a review of the results of the risk assessment, public involvement strategy, and other available resources:

- A comprehensive condition assessment, geotechnical evaluation, and seismic and structural analysis are needed for three partially buried welded steel reservoirs constructed in 1954 to



identify structural and nonstructural vulnerabilities under current seismic codes and site conditions, and to develop findings, recommendations, and prioritized mitigation actions.

- A water system interconnection is needed with the City of Glendale Water and Power Department to allow for shared water supply and operational support during emergencies or system disruptions.

Mitigation actions addressing these issues were prioritized for consideration in the action plan presented in this annex.

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## 2.8 HAZARD MITIGATION STRATEGY

This section includes the following components of the mitigation strategy for this jurisdiction:

- Hazard Mitigation Action Plan Matrix
- Mitigation Action Prioritization
- Mitigation Action Classification and Natural Hazards Addressed

Table 2-20. Hazard Mitigation Action Plan Matrix

| Action Number                           | Action Description                                                                                                                                                                                                                                                                                                                                                       | Lead and Support Implementers                                                                                  | Goals Met        | Benefits New or Existing Assets | Estimated Cost                 | Potential Funding Sources                                    | Timeline                       | Community Lifeline Addressed                                                                         |
|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|------------------|---------------------------------|--------------------------------|--------------------------------------------------------------|--------------------------------|------------------------------------------------------------------------------------------------------|
| 001 – Foothill Municipal Water District | Conduct a comprehensive condition assessment, geotechnical evaluation, and seismic and structural analysis of three partially buried welded steel reservoirs constructed in 1954 to identify structural and nonstructural vulnerabilities under current seismic codes and site conditions, and to develop findings, recommendations, and prioritized mitigation actions. | Lead: District Engineer, Foothill Municipal Water District<br><br>Support: General Manager, Operations Manager | 1, 2, 5          | Existing                        | Medium (\$50,000 - \$250,000)  | FEMA HMGP, FEMA BRIC, CIP Budget, General Budget, Staff Time | Short Term (less than 5 years) | Safety and Security, Water Systems, Energy                                                           |
| 002 – Foothill Municipal Water District | Pipeline Inspections Project - The District completes electromagnetic pipeline inspection projects to determine vulnerable areas of pipelines and necessary protections. These inspections are done periodically to each section of pipe to determine deterioration in the pipelines. The District will then implement any identified mitigation actions.                | Lead: District Engineer, Foothill Municipal Water District<br><br>Support: General Manager, Operations Manager | 1, 2, 3, 4, 5, 6 | Both                            | High (\$250,000 - \$1 million) | FEMA HMGP, FEMA BRIC, CIP Budget, General Budget             | Short Term (less than 5 years) | Safety and Security, Food, Hydration, Shelter, Energy, Communications, Transportation, Water Systems |
| 003 – Foothill Municipal Water District | Demolish and replace three aging welded steel potable water reservoirs with new, partially buried reinforced concrete tanks to improve seismic resilience, increase storage capacity, and ensure reliable potable water supply during and after natural hazard events.                                                                                                   | Lead: District Engineer, Foothill Municipal Water District<br><br>Support: General Manager, Operations Manager | 1, 2, 3, 4, 5, 6 | Existing                        | Very High (>\$1 million)       | FEMA HMGP, FEMA BRIC, CIP Budget, General Budget, Staff Time | Long Term (5+ years)           | Safety and Security, Water Systems                                                                   |
| 004 – Foothill Municipal Water District | Rehabilitate and upgrade potable water pumps, motors, and associated controls at critical facilities to improve system reliability, redundancy, and operational resilience during hazard events, including power disruptions, seismic events, and high-demand conditions.                                                                                                | Lead: District Engineer, Foothill Municipal Water District                                                     | 1, 2, 5, 6       | Existing                        | Medium (\$50,000 - \$250,000)  | FEMA HMGP, FEMA BRIC, CIP Budget, General Budget, Staff Time | Short Term (less than 5 years) | Safety and Security, Food, Hydration, Shelter, Water Systems,                                        |





| Action Number                           | Action Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Lead and Support Implementers                                                                                  | Goals Met  | Benefits New or Existing Assets | Estimated Cost                | Potential Funding Sources              | Timeline                       | Community Lifeline Addressed                                                                         |
|-----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|------------|---------------------------------|-------------------------------|----------------------------------------|--------------------------------|------------------------------------------------------------------------------------------------------|
|                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Support: General Manager, Operations Manager                                                                   |            |                                 |                               |                                        |                                |                                                                                                      |
| 005 – Foothill Municipal Water District | Develop and conduct a tabletop emergency exercise involving key staff and partners to test emergency response roles, communications, and decision-making for hazard events, and to identify improvements to plans, coordination, and operational readiness.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Lead: District Engineer, Foothill Municipal Water District<br><br>Support: General Manager, Operations Manager | 1, 3, 4    | Existing                        | Low (>\$50,000)               | CIP Budget, General Budget, Staff Time | Short Term (less than 5 years) | Safety and Security, Food, Hydration, Shelter, Energy, Communications, Transportation, Water Systems |
| 006 – Foothill Municipal Water District | Expand the District's current outreach and education program by completing the following: <ul style="list-style-type: none"> <li>Add a hazard mitigation page with resources on wildfire, drought, earthquake, and water supply reliability.</li> <li>Provide links to regional emergency partners such as LA County Office of Emergency Management, Cal OES, National Weather Service (NWS), and Ready.gov for up-to-date emergency alerts and preparedness information.</li> <li>Use multiple platforms in addition to Nextdoor to share real-time hazard alerts, water conservation tips, and preparedness messages.</li> <li>Offer seasonal outreach sessions (e.g., wildfire preparedness in summer) to engage residents directly and answer questions about water service reliability during emergencies.</li> <li>Explore options for text/email alerts to notify customers about service disruptions, emergency events, or hazard warnings.</li> <li>Partner with retail agencies to deliver consistent public education messaging and materials across the service area.</li> </ul> | Lead: District Engineer, Foothill Municipal Water District<br><br>Support: General Manager, Operations Manager | 1, 3, 4    | Existing                        | Medium (\$50,000 - \$250,000) | CIP Budget, General Budget, Staff Time | Short Term (less than 5 years) | -                                                                                                    |
| 007 – Foothill Municipal Water District | Implement a Defensible Space and Vegetation Management Program to regularly clear and remove brush, overgrown vegetation, and other combustible materials surrounding FMWD water system facilities. Project activities will include routine vegetation management and ongoing maintenance to reduce wildfire fuel loads around critical infrastructure such as pump stations and reservoirs. Reducing combustible materials near these assets will lower the risk of wildfire-related damage, service disruptions, and restricted                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Lead: Operations Manager<br><br>Support: General Manager, District Engineer                                    | 1, 2, 5, 6 | Existing                        | Low (>\$50,000)               | CIP Budget, General Budget, Staff Time | Short Term (less than 5 years) | Safety and Security, Water Systems,                                                                  |



| Action Number                           | Action Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Lead and Support Implementers                                                                                  | Goals Met  | Benefits New or Existing Assets | Estimated Cost                | Potential Funding Sources              | Timeline                       | Community Lifeline Addressed                       |
|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|------------|---------------------------------|-------------------------------|----------------------------------------|--------------------------------|----------------------------------------------------|
|                                         | access during emergency response. This action will strengthen water system resilience and support the continued delivery of potable water for public health, safety, and fire protection during and after wildfire events.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                |            |                                 |                               |                                        |                                |                                                    |
| 008 – Foothill Municipal Water District | Implement enhancements to the District’s radio communication system to improve reliability and effectiveness during emergency events. Project activities may include upgrading existing radio equipment, expanding system coverage, improving signal strength, and enhancing interoperability with partner agencies and first responders. Strengthening radio communications will support real-time coordination, situational awareness, and effective response when other communication systems are disrupted or overloaded. This action will reduce response delays, improve operational efficiency, and help ensure continuity of critical water system operations during and after emergency events.                                         | Lead: Operations Manager<br><br>Support: General Manager, District Engineer                                    | 1, 2, 3, 4 | Existing                        | Low (>\$50,000)               | CIP Budget, General Budget, Staff Time | Short Term (less than 5 years) | Safety and Security, Communications, Water Systems |
| 009 – Foothill Municipal Water District | Implement upgrades to the District’s SCADA (Supervisory Control and Data Acquisition) system to improve monitoring, operational control, and resilience of critical water infrastructure. Project activities may include updating outdated hardware and software, enhancing network security, and integrating advanced control and alarm capabilities. Strengthening the SCADA system will increase system reliability during emergency events, reduce the risk of operational disruptions, and support timely identification and response to system issues. This action will help ensure the continued delivery of potable water, protect public health and safety, and enhance overall water system resilience during and after hazard events. | Lead: District Engineer, Foothill Municipal Water District<br><br>Support: General Manager, Operations Manager | 1, 2, 6    | Existing                        | Medium (\$50,000 - \$250,000) | CIP Budget, General Budget, Staff Time | Short Term (less than 5 years) | Safety and Security, Communications, Water Systems |
| 010 – Foothill Municipal Water District | Implement and enhance cybersecurity measures to protect the District’s water system infrastructure from cyber threats, unauthorized access, and data breaches. Project activities may include updating security software and hardware, deploying advanced firewalls and intrusion detection systems, conducting regular vulnerability assessments, and providing ongoing cybersecurity training for staff. Strengthening cybersecurity defenses will help prevent operational disruptions, safeguard sensitive system data, and                                                                                                                                                                                                                  | Lead: District Engineer, Foothill Municipal Water District<br><br>Support: General Manager, Operations Manager | 1, 2, 5, 6 | Existing                        | Medium (\$50,000 - \$250,000) | CIP Budget, General Budget, Staff Time | Short Term (less than 5 years) | Safety and Security, Communications, Water Systems |



| Action Number                           | Action Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Lead and Support Implementers                                                                                  | Goals Met     | Benefits New or Existing Assets | Estimated Cost                 | Potential Funding Sources                                    | Timeline                       | Community Lifeline Addressed  |
|-----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|---------------|---------------------------------|--------------------------------|--------------------------------------------------------------|--------------------------------|-------------------------------|
|                                         | maintain reliable water system operations during and after emergency events. This action will improve overall system resilience, protect public health and safety, and reduce potential impacts associated with cyber incidents.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                |               |                                 |                                |                                                              |                                |                               |
| 011 – Foothill Municipal Water District | Implement the installation of solar photovoltaic systems at critical water system facilities to provide supplemental power for essential monitoring equipment, low-demand operations, and administrative functions. Project activities will include installing photovoltaic panels, inverters, and supporting electrical infrastructure. While the solar systems will not fully power pump operations, they will reduce reliance on the electrical grid, support critical systems during partial power outages, and improve overall energy efficiency. This action will enhance operational resilience, contribute to sustainability goals, and help maintain essential water system functions during emergency events.                                                      | Lead: District Engineer, Foothill Municipal Water District<br><br>Support: General Manager, Operations Manager | 1, 2, 6       | Existing                        | High (\$250,000 - \$1 million) | CIP Budget, General Budget, Staff Time                       | Short Term (less than 5 years) | Communications, Water Systems |
| 012 – Foothill Municipal Water District | Implement a water system interconnection with the City of Glendale Water and Power Department to allow for shared water supply and operational support during emergencies or system disruptions. Project activities will include construction of pipelines, valves, and associated infrastructure necessary to enable reliable water transfer between the two systems. Establishing this interconnection will enhance system redundancy, increase operational flexibility, and improve resilience during hazards such as infrastructure failures, high-demand periods, and natural disasters. This action will help ensure the continuous delivery of potable water, protect public health and safety, and support coordinated emergency response with neighboring agencies. | Lead: District Engineer, Foothill Municipal Water District<br><br>Support: General Manager, Operations Manager | 1, 2, 4, 5, 6 | New                             | Very High (>\$1 million)       | FEMA HMGP, FEMA BRIC, CIP Budget, General Budget, Staff Time | Long Term (5+ years)           | Water Systems                 |
| 013 – Foothill Municipal Water District | Implement a valve replacement and installation program throughout the District's water system to improve operational control, reliability, and resilience. Project activities will include replacing aging valves, installing new valves at strategic locations, and retrofitting critical system segments using valves that meet current performance and durability standards. Enhanced valve infrastructure will increase operational flexibility by allowing the District to more efficiently isolate portions of the system during maintenance, repairs, or emergency                                                                                                                                                                                                    | Lead: District Engineer, Foothill Municipal Water District<br><br>Support: General Manager, Operations Manager | 1, 2, 5, 6    | Both                            | High (\$250,000 - \$1 million) | CIP Budget, General Budget, Staff Time                       | Short Term (less than 5 years) | Water Systems                 |



| Action Number                           | Action Description                                                                                                                                                                                                                                           | Lead and Support Implementers                                                                                    | Goals Met | Benefits New or Existing Assets | Estimated Cost           | Potential Funding Sources       | Timeline             | Community Lifeline Addressed |
|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|-----------|---------------------------------|--------------------------|---------------------------------|----------------------|------------------------------|
|                                         | events, thereby minimizing service disruptions. This action will enable quicker response to pipeline breaks, equipment failures, and other hazard events, helping ensure the continued delivery of potable water and protection of public health and safety. |                                                                                                                  |           |                                 |                          |                                 |                      |                              |
| 014 – Foothill Municipal Water District | Support and advance stormwater capture projects to enhance basin replenishment, in coordination with regional partners and planning efforts. Coordinates with Action 007 – Valley Water                                                                      | Lead: District Engineer, Foothill Municipal Water District<br><br>Support: General Manager, Valley Water Company | 5         | New                             | Very High (>\$1 million) | LA County Measure W, Staff Time | Long Term (5+ years) | Water Systems                |

Table 2-21. Mitigation Action Prioritization

| Action Number                           | Life Safety | Property Protection | Cost-Effectiveness | Technically Feasible | Legal Authority | Funding Available | Grant Eligible | Environmental | Climate Change | Equity Priority Community | Administrative Capacity | Multi-Hazard | Timeline | Other Local Objective | Support Policies | Total Score | Priority |
|-----------------------------------------|-------------|---------------------|--------------------|----------------------|-----------------|-------------------|----------------|---------------|----------------|---------------------------|-------------------------|--------------|----------|-----------------------|------------------|-------------|----------|
| 001 – Foothill Municipal Water District | 3           | 3                   | 3                  | 3                    | 3               | 1                 | 1              | 1             | 1              | 1                         | 3                       | 3            | 3        | 3                     | 3                | 35          | High     |
| 002 – Foothill Municipal Water District | 3           | 3                   | 1                  | 3                    | 3               | 1                 | 3              | 1             | 1              | 3                         | 3                       | 3            | 3        | 3                     | 3                | 37          | High     |
| 003 – Foothill Municipal Water District | 3           | 3                   | 1                  | 3                    | 3               | 1                 | 3              | 1             | 3              | 3                         | 1                       | 3            | 3        | 1                     | 3                | 35          | High     |
| 004 – Foothill Municipal Water District | 3           | 3                   | 3                  | 3                    | 3               | 1                 | 3              | 1             | 3              | 3                         | 1                       | 3            | 3        | 1                     | 3                | 37          | High     |
| 005 – Foothill Municipal Water District | 3           | 3                   | 3                  | 3                    | 3               | 3                 | 1              | 0             | 0              | 3                         | 3                       | 3            | 3        | 3                     | 3                | 37          | High     |
| 006 – Foothill Municipal Water District | 3           | 1                   | 3                  | 3                    | 3               | 1                 | 1              | 1             | 1              | 3                         | 3                       | 3            | 3        | 1                     | 1                | 31          | High     |
| 007 – Foothill Municipal Water District | 3           | 3                   | 3                  | 3                    | 3               | 3                 | 1              | 3             | 1              | 3                         | 3                       | 3            | 3        | 3                     | 3                | 41          | High     |
| 008 – Foothill Municipal Water District | 3           | 3                   | 3                  | 3                    | 3               | 3                 | 1              | 0             | 0              | 3                         | 3                       | 3            | 3        | 1                     | 3                | 35          | High     |
| 009 – Foothill Municipal Water District | 3           | 3                   | 3                  | 3                    | 3               | 3                 | 1              | 0             | 1              | 3                         | 3                       | 3            | 3        | 1                     | 3                | 36          | High     |
| 010 – Foothill Municipal Water District | 1           | 3                   | 3                  | 3                    | 3               | 1                 | 1              | 0             | 0              | 3                         | 3                       | 3            | 3        | 1                     | 3                | 31          | High     |
| 011 – Foothill Municipal Water District | 1           | 3                   | 1                  | 3                    | 3               | 1                 | 1              | 1             | 3              | 3                         | 3                       | 3            | 3        | 3                     | 3                | 35          | High     |
| 012 – Foothill Municipal Water District | 1           | 1                   | 1                  | 3                    | 3               | 1                 | 1              | 1             | 3              | 3                         | 3                       | 3            | 1        | 3                     | 3                | 31          | High     |
| 013 – Foothill Municipal Water District | 1           | 1                   | 1                  | 3                    | 3               | 3                 | 1              | 1             | 1              | 3                         | 3                       | 3            | 3        | 3                     | 3                | 33          | High     |
| 014 – Foothill Municipal Water District | 0           | 0                   | 1                  | 3                    | 0               | 0                 | 1              | 3             | 1              | 3                         | 3                       | 0            | 0        | 1                     | 0                | 16          | Medium   |

Note: 31 or more = High Priority  
15 to 30 = Medium Priority  
0 to 14 = Low Priority



Table 2-22. Mitigation Action Classification and Natural Hazards Addressed

| Action                                  | Mitigation Classification   |                    |                                       |                                  |                            |                    |                             | Natural Hazards |         |            |                     |       |           |             |          |
|-----------------------------------------|-----------------------------|--------------------|---------------------------------------|----------------------------------|----------------------------|--------------------|-----------------------------|-----------------|---------|------------|---------------------|-------|-----------|-------------|----------|
|                                         | Local Plans and Regulations | Emergency Services | Structure and Infrastructure Projects | Education and Awareness Programs | Natural Systems Protection | Climate Resilience | Community Capacity Building | Dam Failure     | Drought | Earthquake | Extreme Temperature | Flood | Landslide | Strong Wind | Wildfire |
| 001 – Foothill Municipal Water District | ■                           | ■                  | ■                                     |                                  |                            | ■                  | ■                           |                 |         | ■          |                     |       |           | ■           | ■        |
| 002 – Foothill Municipal Water District |                             | ■                  | ■                                     |                                  |                            | ■                  |                             |                 |         | ■          |                     | ■     | ■         |             | ■        |
| 003 – Foothill Municipal Water District |                             | ■                  | ■                                     |                                  |                            | ■                  |                             |                 | ■       | ■          |                     |       |           |             | ■        |
| 004 – Foothill Municipal Water District |                             | ■                  | ■                                     |                                  |                            | ■                  |                             |                 | ■       | ■          | ■                   |       |           | ■           | ■        |
| 005 – Foothill Municipal Water District | ■                           | ■                  |                                       | ■                                |                            |                    | ■                           | ■               | ■       | ■          | ■                   | ■     | ■         | ■           | ■        |
| 006 – Foothill Municipal Water District |                             | ■                  |                                       | ■                                |                            |                    | ■                           | ■               | ■       | ■          | ■                   | ■     | ■         | ■           | ■        |
| 007 – Foothill Municipal Water District |                             | ■                  |                                       |                                  | ■                          |                    |                             |                 |         |            |                     |       |           | ■           | ■        |
| 008 – Foothill Municipal Water District |                             | ■                  |                                       | ■                                |                            |                    | ■                           | ■               | ■       | ■          | ■                   | ■     | ■         | ■           | ■        |
| 009 – Foothill Municipal Water District |                             | ■                  | ■                                     |                                  |                            |                    | ■                           | ■               | ■       | ■          | ■                   | ■     | ■         | ■           | ■        |
| 010 – Foothill Municipal Water District | ■                           | ■                  |                                       |                                  |                            |                    | ■                           | ■               | ■       | ■          | ■                   | ■     | ■         | ■           | ■        |
| 011 – Foothill Municipal Water District |                             | ■                  | ■                                     |                                  |                            | ■                  | ■                           | ■               | ■       | ■          | ■                   | ■     | ■         | ■           | ■        |
| 012 – Foothill Municipal Water District |                             | ■                  |                                       |                                  |                            | ■                  | ■                           |                 | ■       | ■          |                     |       | ■         | ■           | ■        |
| 013 – Foothill Municipal Water District |                             | ■                  | ■                                     |                                  |                            |                    |                             | ■               | ■       | ■          | ■                   | ■     | ■         | ■           | ■        |
| 014 – Foothill Municipal Water District | ■                           |                    |                                       | ■                                | ■                          | ■                  | ■                           |                 | ■       |            |                     |       |           |             |          |



## 2.9 PUBLIC OUTREACH

Table 2-23. Public Outreach

| Local Outreach Activity                             | Date                                 | Number of People Involved |
|-----------------------------------------------------|--------------------------------------|---------------------------|
| Crescenta Valley Weekly Newspaper informational ad  | 8/7/2025                             | 8,000 subscribers         |
| La Cañada Outlook Newspaper informational ad        | August 2025                          | 8,493 subscribers         |
| Supported La Cañada Community Preparedness Event    | 9/16/2025                            | 300                       |
| Supported La Crescenta Emergency Preparedness Event | 9/27/2025                            | 100                       |
| Social Media Posts for Hazard Awareness Survey      | Throughout the planning process      | Varies                    |
| Hazard Mitigation Information on the Website        | Throughout the planning process      | Varies                    |
| Hazard Awareness Survey                             | Open throughout the planning process | 139 respondents           |

## 2.10 INFORMATION SOURCES USED FOR THIS ANNEX

The following technical reports, plans, and regulatory mechanisms were reviewed to provide information for this annex.

- **Capital Improvement Program**—The Capital Improvement Program prioritizes projects that have been identified to improve District facilities, infrastructure, and equipment, including potential mitigation projects. The Capital Improvement Program was used as a source of information while preparing this annex.
- **Urban Water Management Plan**—This plan was used to inform the capability assessment.

The following outside resources and references were reviewed:

- **Hazard Mitigation Plan Annex Development Toolkit**—The toolkit was used to support the identification of past hazard events and noted vulnerabilities, the risk ranking, and the development of the mitigation action plan.

## 2.11 AGENCY HAZARD MAPPING

Agency-specific risk maps of the hazards are provided on the following pages. For a complete description of each hazard, please see the applicable chapters in Volume 1 of this plan. These maps are based on the vulnerability and risk assessment results for this plan.



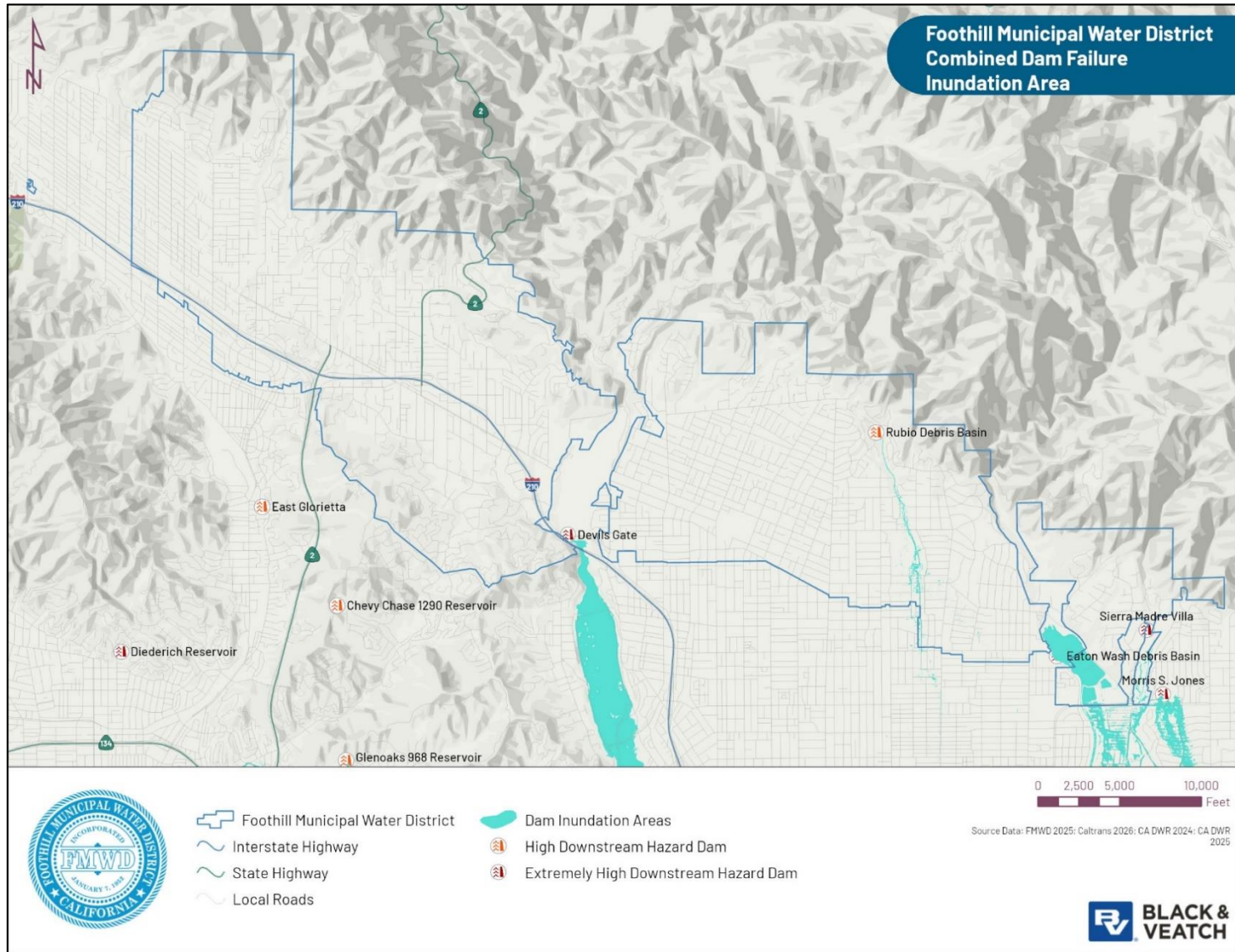


Figure 2-3. Dam Failure Hazard Map – Combined Dam Failure Inundation Areas

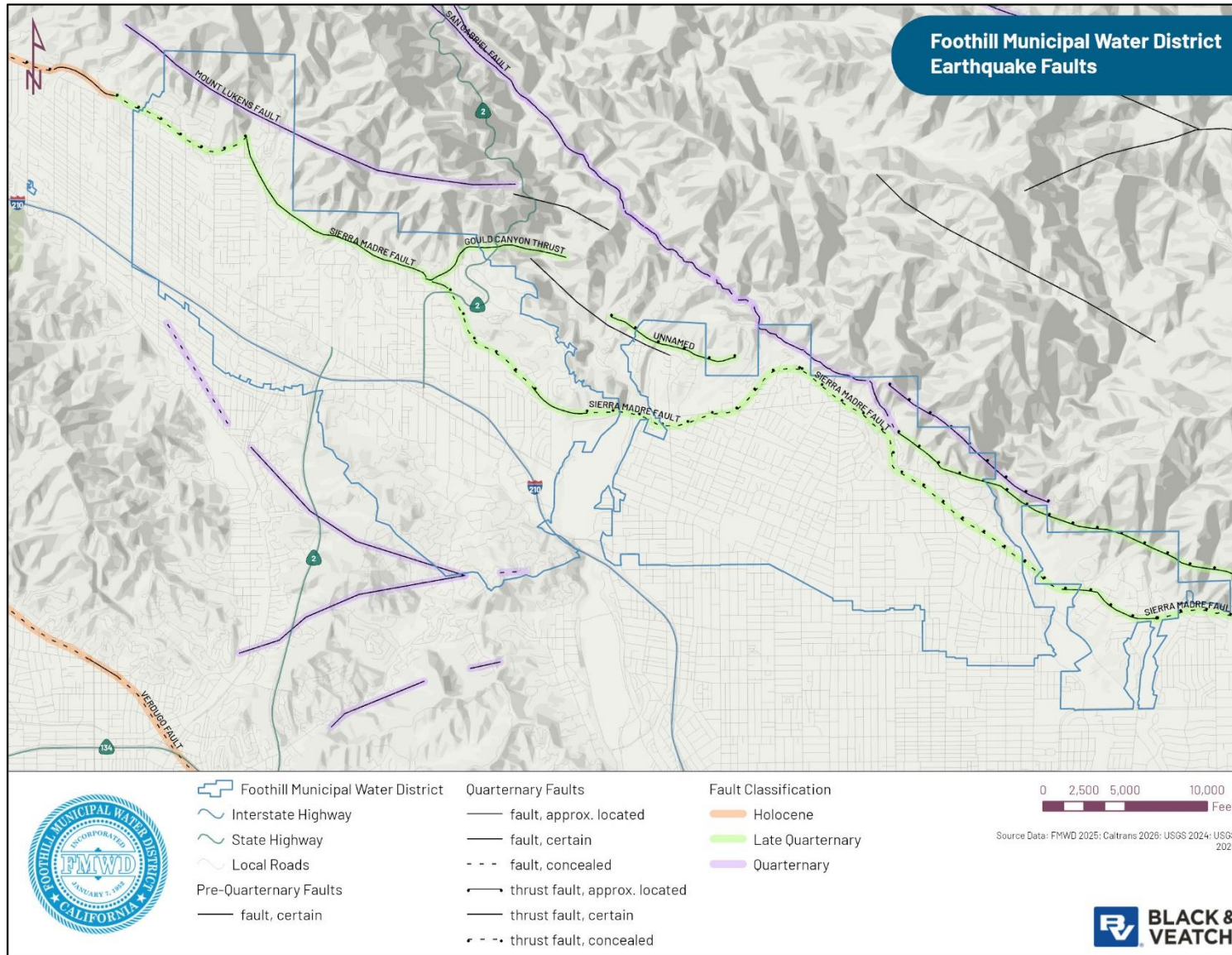


Figure 2-4. Earthquake Faults



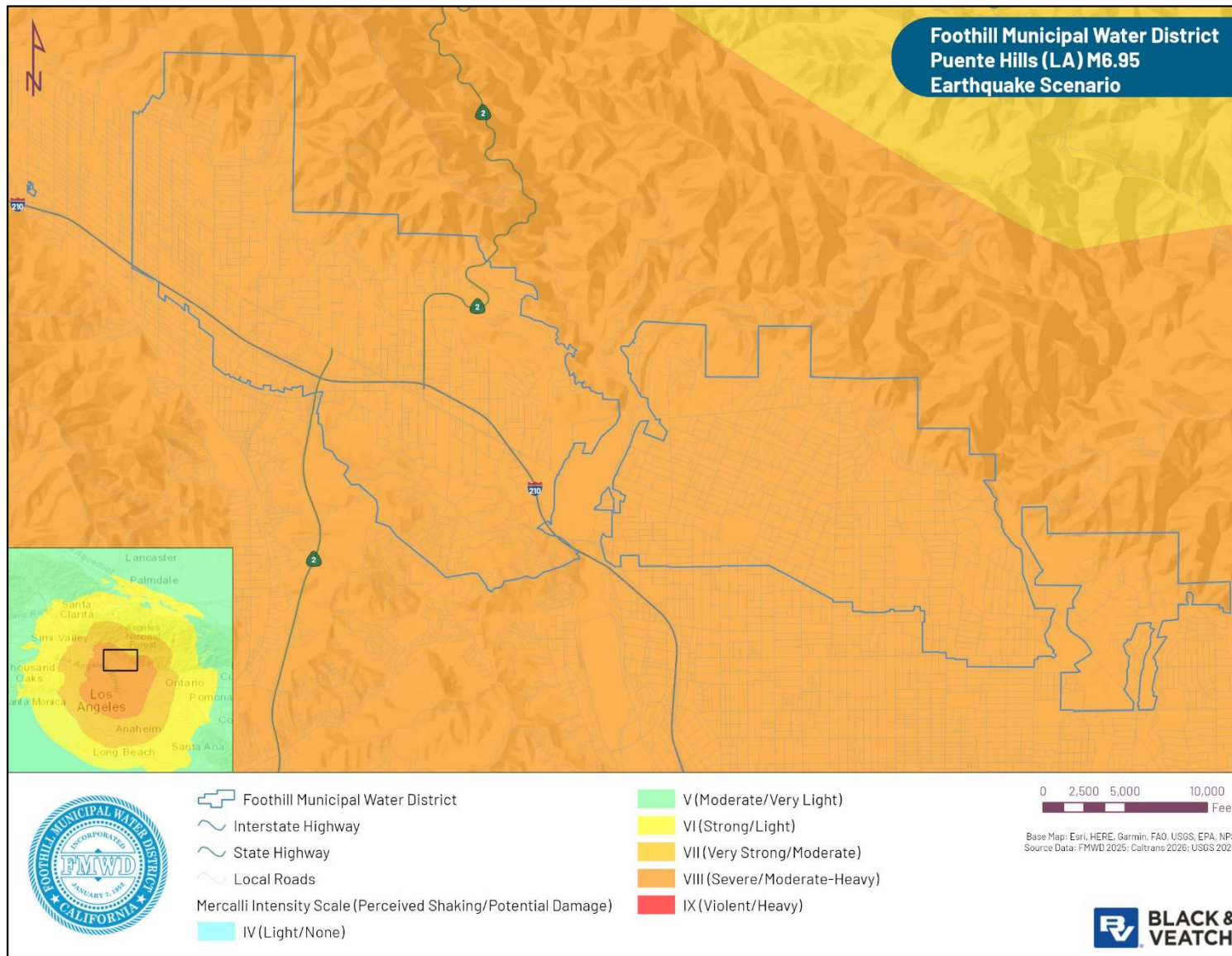


Figure 2-5. Earthquake Hazard Map – Puente Hills M6.95 Scenario

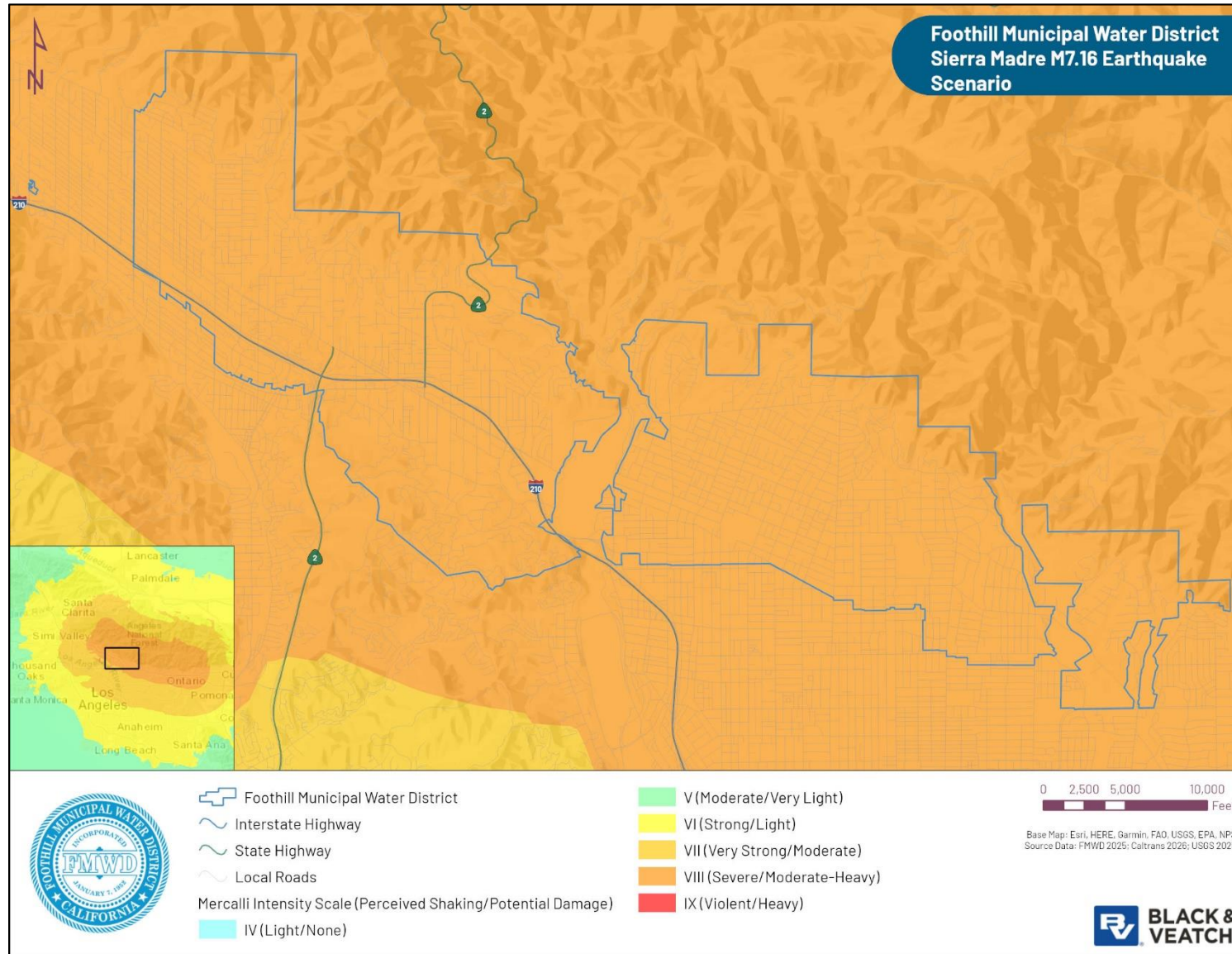


Figure 2-6. Earthquake Hazard Map – Sierra Madre M7.16 Scenario



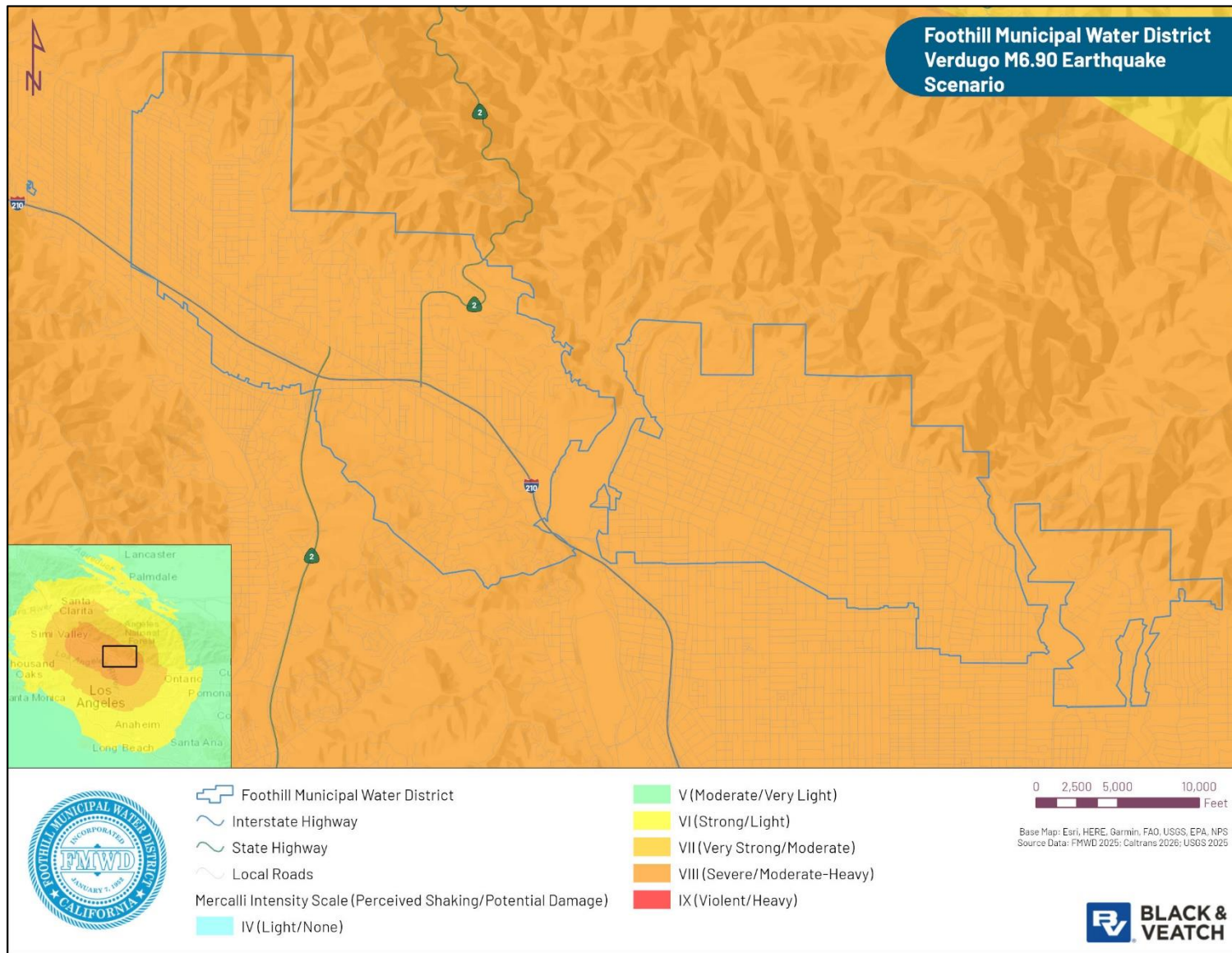


Figure 2-7. Earthquake Hazard Map – Verdugo M6.90 Scenario

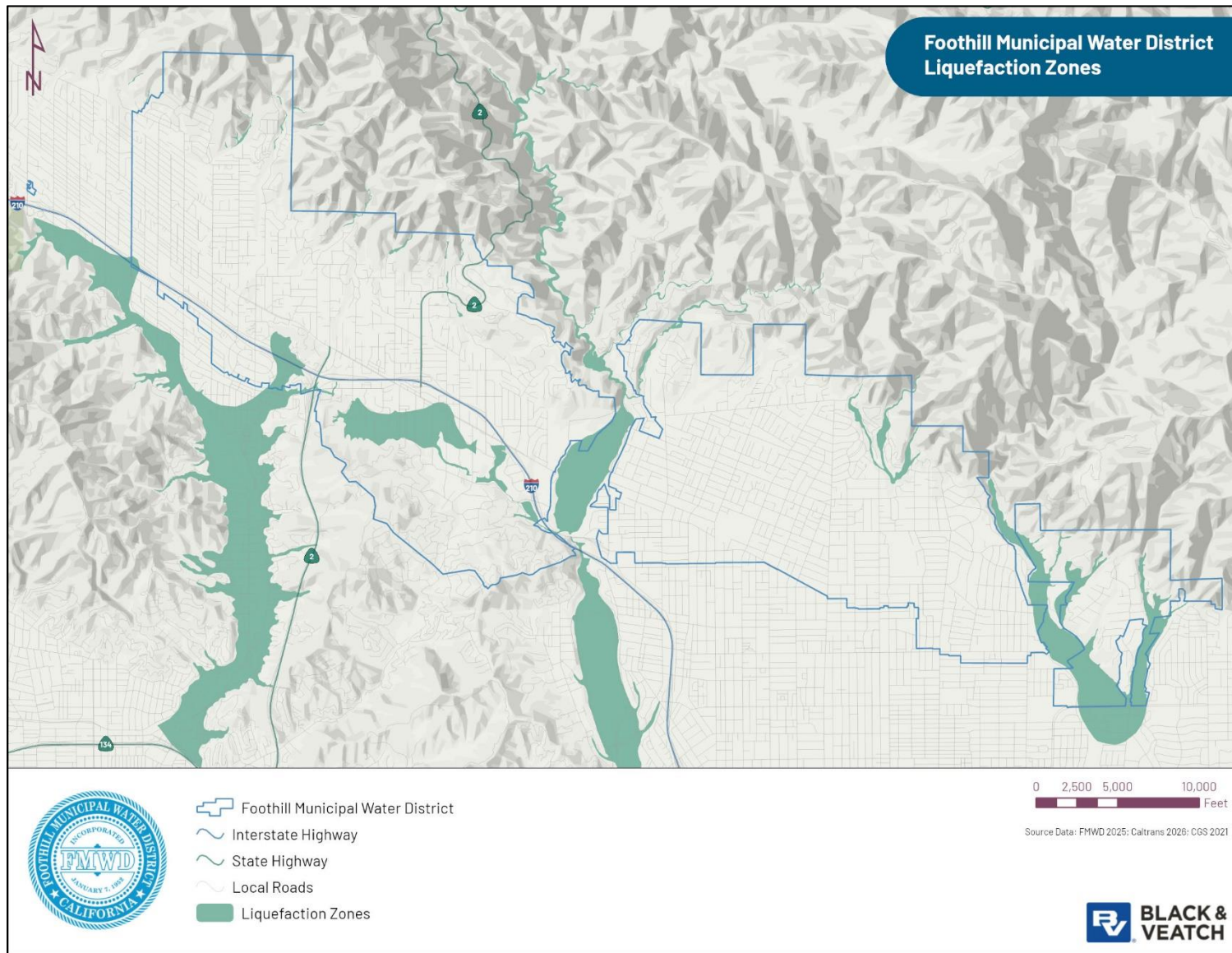


Figure 2-8. Liquefaction Hazard Map – Liquefaction Zones



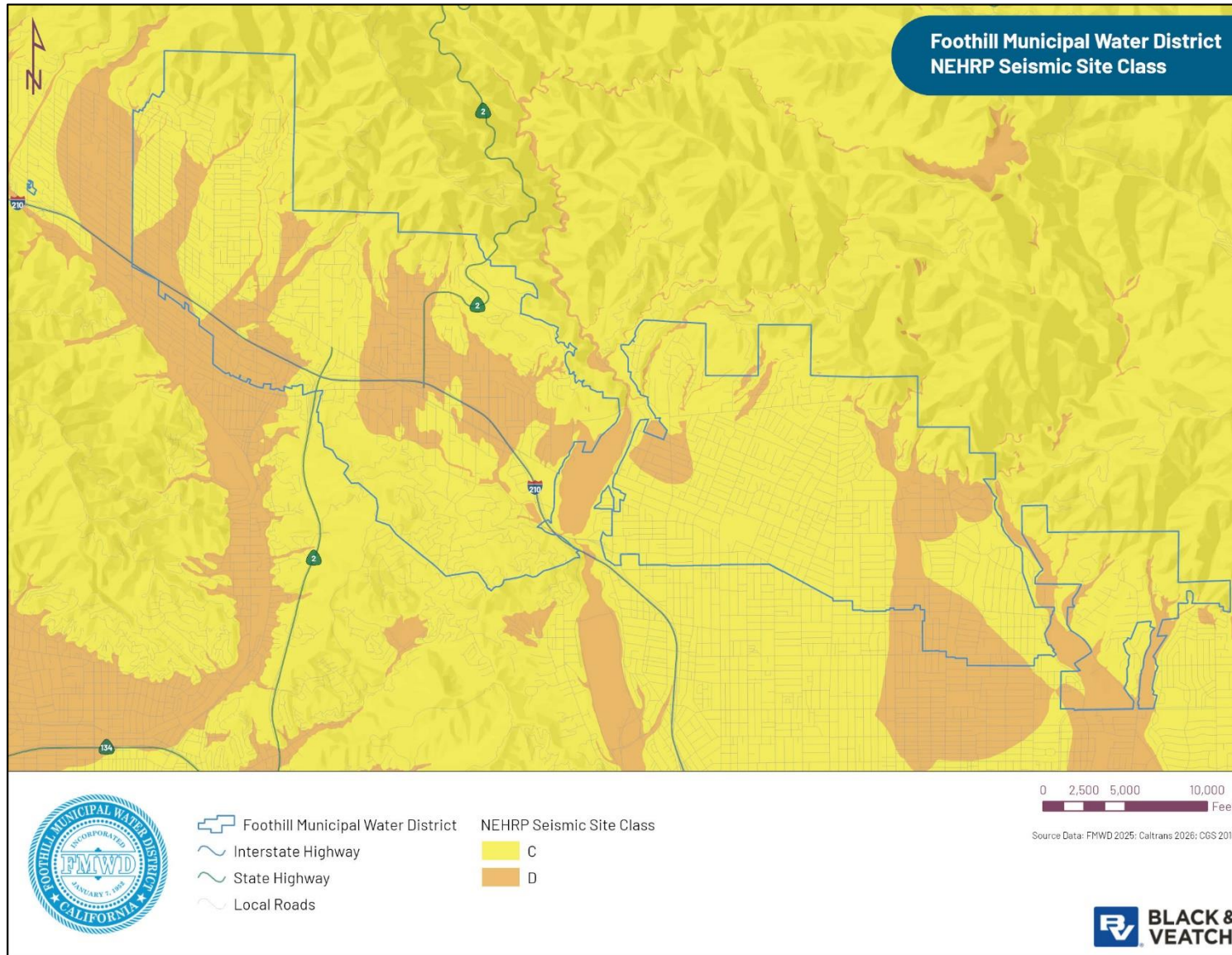


Figure 2-9. Liquefaction Hazard Map – NEHRP Seismic Site Class

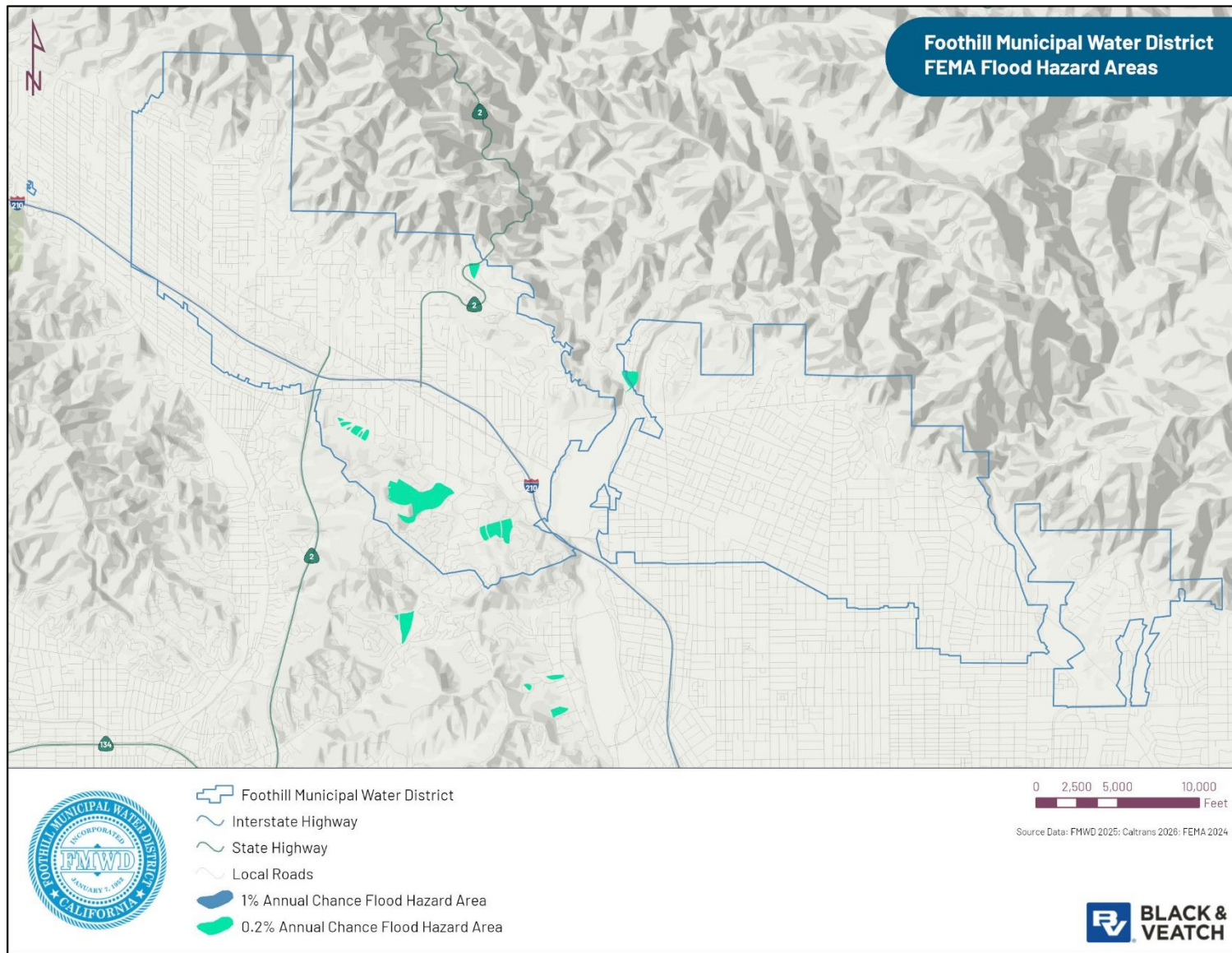


Figure 2-10. Flood Hazard Map – FEMA Flood Hazard Areas



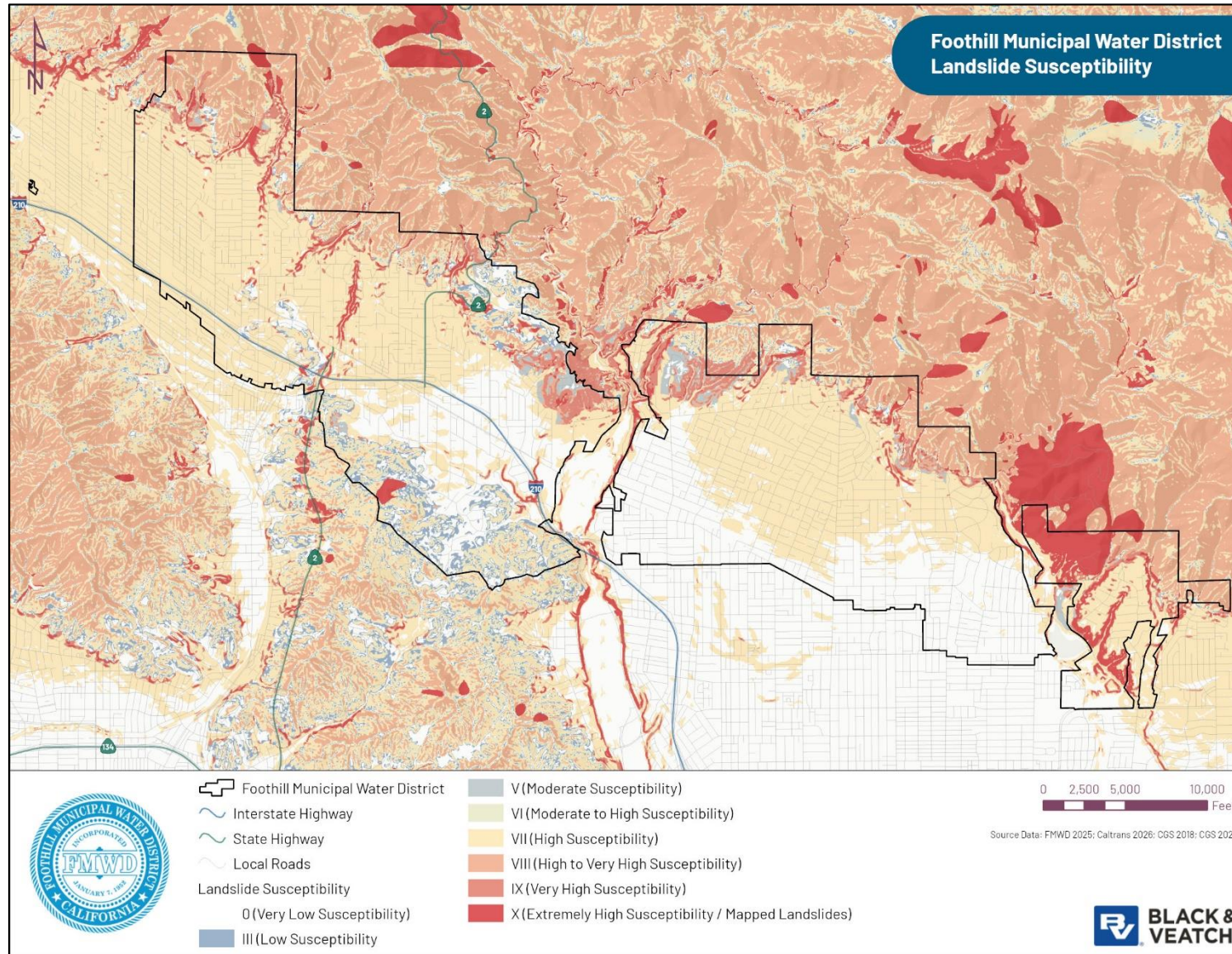


Figure 2-11. Landslide Hazard Map – Landslide Susceptibility



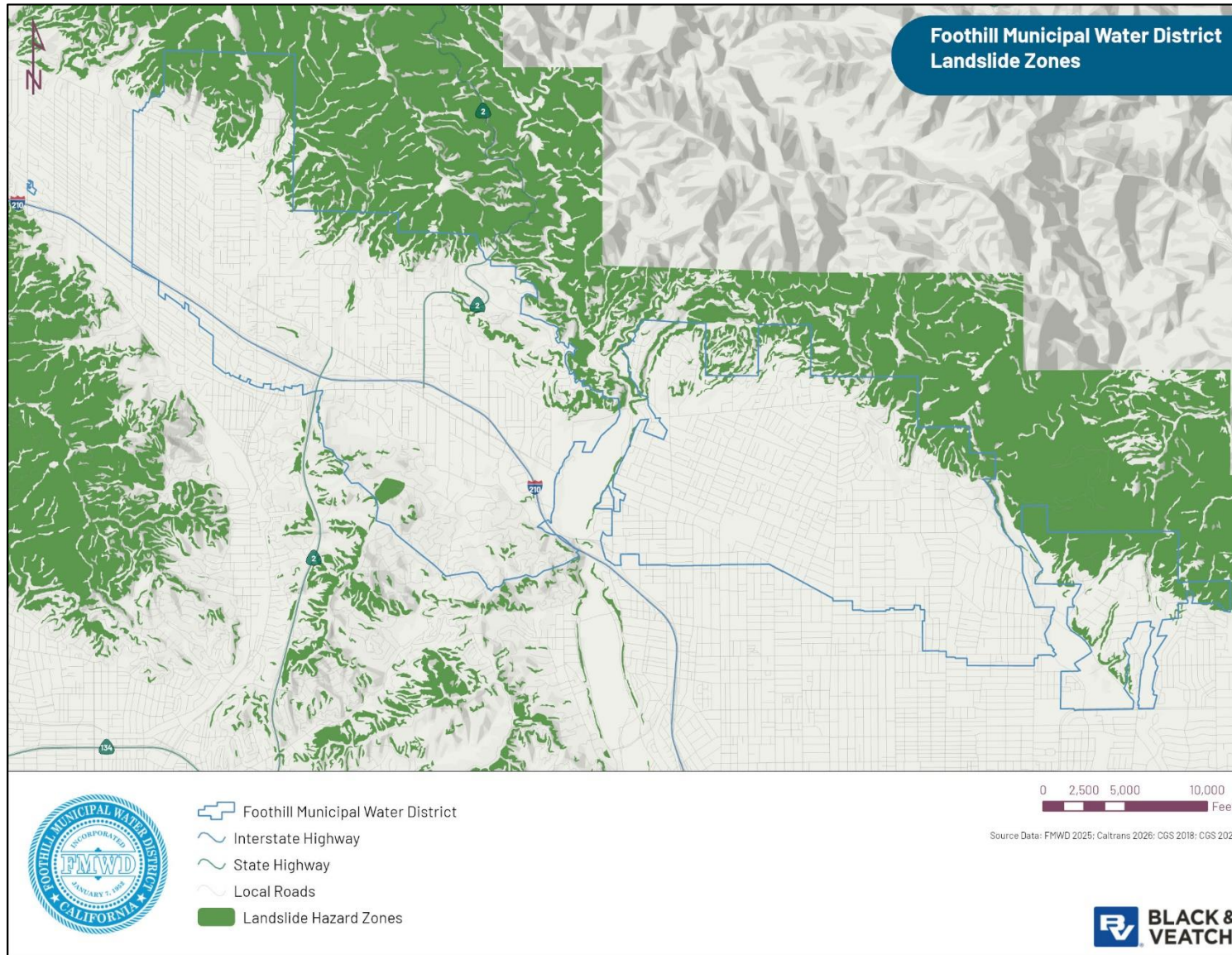


Figure 2-12. Landslide Hazard Map – Landslide Zones

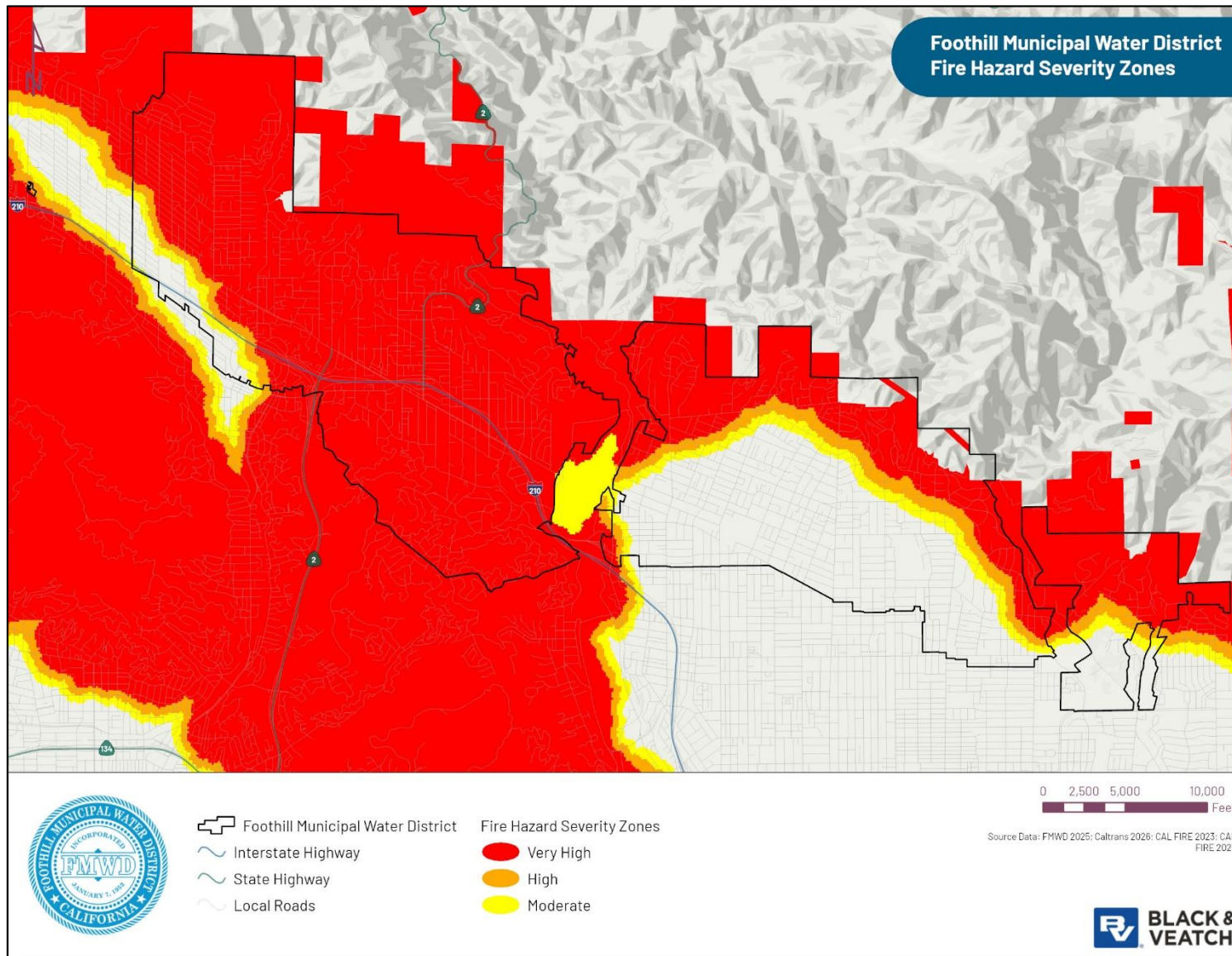


Figure 2-13. Wildfire Hazard Map – Fire Hazard Severity Zones



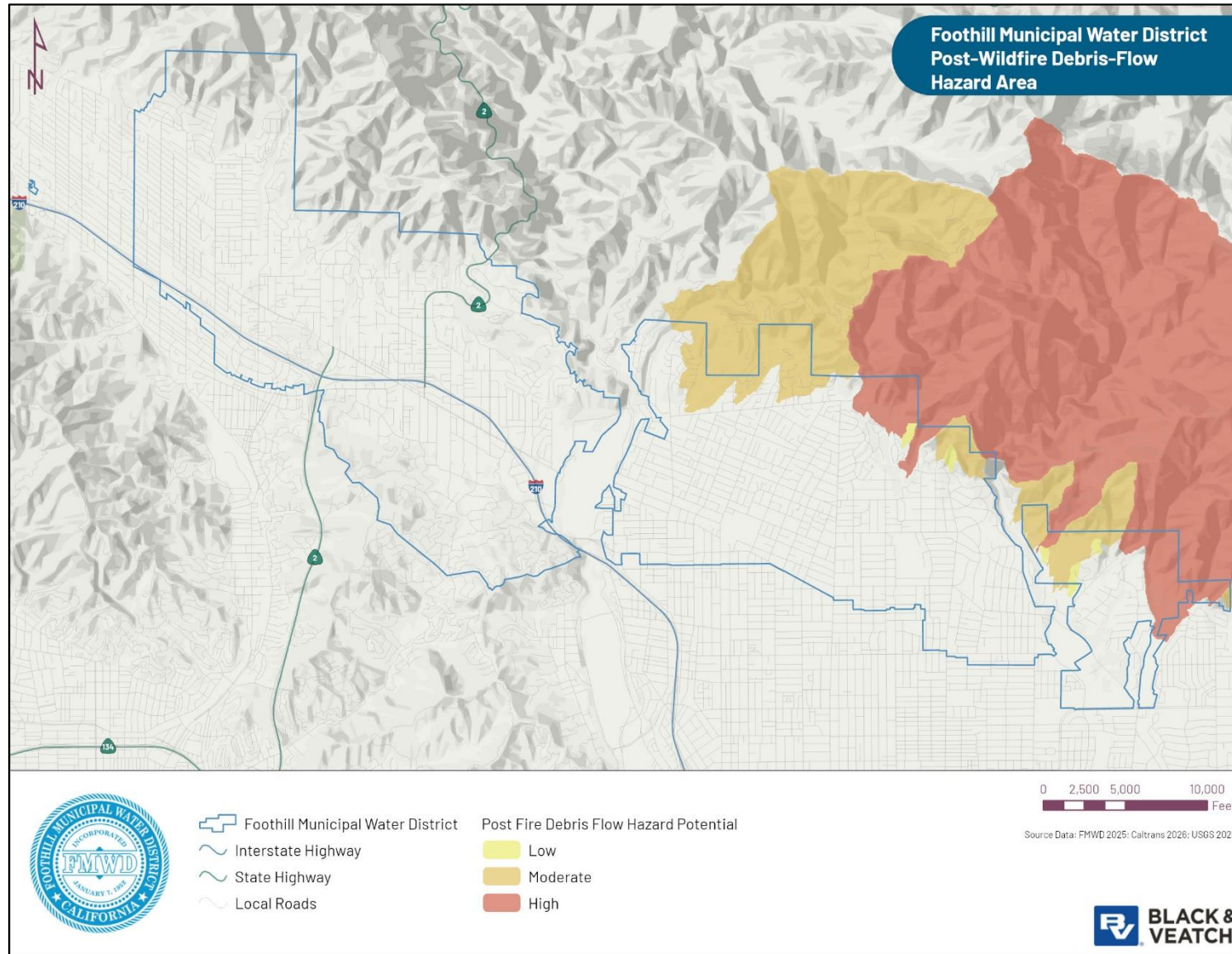


Figure 2-14. Eaton Fire Post-Fire Debris Flow Hazard Map – Hazard Potential

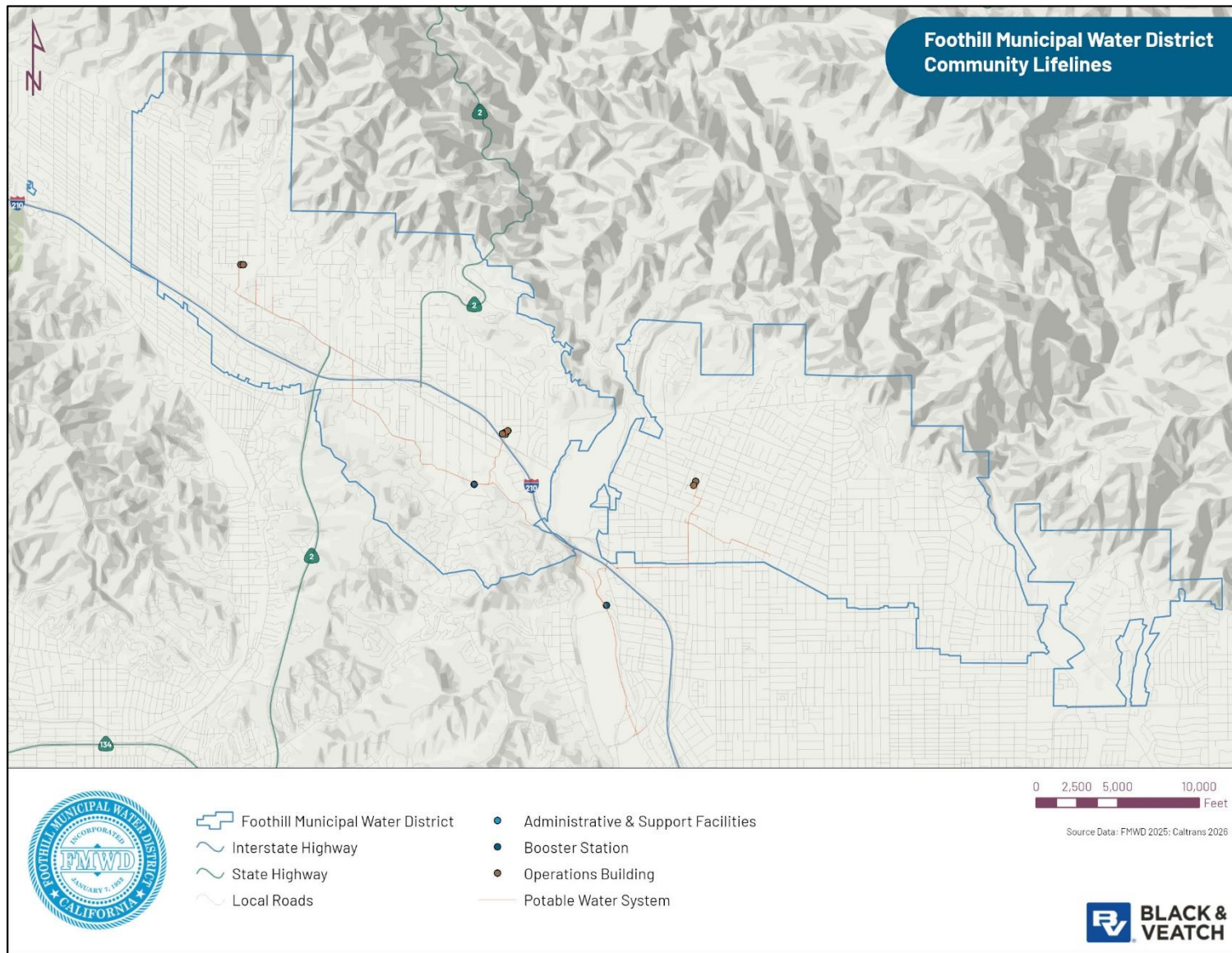


Figure 2-15. Community Lifelines



### 3. CRESCENTA VALLEY WATER DISTRICT



Figure 3-1. CVWD distributes PERCI vests, eliminating the need for traditional emergency go-bags  
Credit: Monique Burke, Customer Service Clerk, and Mario Mejia, Customer Service Field Representative

#### 3.1 LOCAL HAZARD MITIGATION PLANNING TEAM

Table 3-1. Local Planning Team

|                          | Primary Point of Contact                                                                                                                                                                                                   | Alternate Point of Contact                         |
|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|
| Name and Title:          | Darlene Telles, Risk and Resilience Manager                                                                                                                                                                                | Carla Dillon, Director of Engineering & Operations |
| Address:                 | 3730 Glenwood Avenue<br>Glendale, CA 91214                                                                                                                                                                                 | 2700 Foothill Boulevard<br>La Crescenta, CA 91214  |
| Phone Number:            | (818) 236-4132                                                                                                                                                                                                             | (818) 236-4119                                     |
| Email:                   | dtelles@cvwd.com                                                                                                                                                                                                           | cdillon@cvwd.com                                   |
| <b>Contributors:</b>     |                                                                                                                                                                                                                            |                                                    |
| Name and Title:          | Darlene Telles, Risk and Resilience Manager                                                                                                                                                                                |                                                    |
| Method of Participation: | Served on the CPT during the MJHMP planning process; provided input throughout the planning process; primary point of contact for the District's annex; provided input and identified mitigation strategies for this annex |                                                    |



|                                             |                                                                                                                                                   |
|---------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| Name and Title:<br>Method of Participation: | Carla Dillon, Director of Engineering & Operations<br>Attended planning meeting; contributed to District's annex; participated in public outreach |
| Name and Title:<br>Method of Participation: | Christina Kopleman, Engineering<br>Provided specifications & asset information/details                                                            |
| Name and Title:<br>Method of Participation: | Armine Sargsyan, External Affairs Specialist<br>Public Outreach                                                                                   |
| Name and Title:<br>Method of Participation: | Lilit Danelyan, Project Coordinator<br>Provided GIS data                                                                                          |

## 3.2 JURISDICTIONAL PROFILE

### 3.2.1 Overview

Crescenta Valley Water District (CVWD) is an independent special district, which operates under the authority of Division 12 of the California Water Code. CVWD has been providing water and wastewater services to residents since 1950. CVWD employs a full-time staff of 31 employees (additional 4 LTE (limited term employees) and 3 interns).

The District Board of Directors adopts an operating and capital budget every year. The budget authorizes and provides the basis for reporting and controlling financial operations and accountability for the District's enterprise operations and capital projects. It is the District's financial policy that all revenue for user charges and surcharges generated by District customers must support all District operations, including capital project funding in accordance with cost-of-service principles. Water and wastewater rates are charges imposed on customers for services and are the primary component of the District's revenue. Water and wastewater rates include a commodity (usage) charge and a fixed (readiness-to-serve) charge to all residential and commercial units in the District's service area.

### 3.2.2 Service Area

The District serves an area of approximately 4 square miles. The Crescenta Valley Water District provides water distribution and sewage collection within its boundaries to the unincorporated communities of La Crescenta, Montrose, and Verdugo City as well as a small portion of the Cities of La Cañada Flintridge and Glendale. CVWD currently provides water to over 8,400 accounts representing a population of approximately 35,800. Customer growth is steady although the Crescenta Valley area is nearly built out. Residential growth is occurring through increased housing density in the multiple-unit zoned areas (primarily Montrose) as well as limited in-fill housing development on random parcels in La Crescenta (CVWD 2026).

#### **Water Supply**

The District pumps groundwater from the Verdugo Basin, which is beneath the District's service area, about 200 feet below the ground's surface. Water production out of the Verdugo Basin is highly dependent on replenishment from precipitation, which may take up to three years to fully infiltrate into the basin. District procurement of imported water is contracted through the Foothill Municipal Water District (FMWD), which purchases 100 percent of its water from Metropolitan Water District (MWD) (Crescenta Valley Water District 2021).





## Wastewater

CVWD has owned and operated a wastewater collection system since sewers were constructed in the early 1980s. The installation of this collection system was mandated by the Los Angeles Region State Water Resources Control Board (Order No. 76-2). The District does not treat or dispose of this sewage but conveys the sewage in a large sewer pipe (interceptor) through the City of Glendale to the Los Angeles – Glendale Wastewater Reclamation Plant, which is adjacent to the Los Angeles River southwest of Glendale. The sewage undergoes treatment at the plant, with the treated effluent discharged to the Los Angeles River and the residual sludge transported by large interceptor lines to the Hyperion Wastewater Treatment Plant in Playa Del Rey for further processing and ultimate disposal into Santa Monica Bay (Crescenta Valley Water District 2021).

### 3.2.3 Governance

CVWD is an independent special district, operating under the authority of Division 12 of the California Water Code. CVWD has been providing water services to residents since 1950 and wastewater services since 1980. The District is governed by a five-member Board of Directors, elected at large from within the District boundaries. The District General Manager administers the day-to-day operations of the District in accordance with the policies and procedures established by the Board of Directors. CVWD employs a full-time staff of 31 employees. The Board of Directors' regularly scheduled meetings are on the second and fourth Tuesdays of each month. Meetings are publicly noticed, and customers are encouraged to attend. The Board of Directors adopted this plan after approval pending adoption was granted by FEMA; the District Director of Engineering & Operations will oversee its implementation (Crescenta Valley Water District 2021).

### 3.2.4 Assets

The District's critical assets are summarized in the table below.

Table 3-2. Water District Assets

| Asset                             | Value            |
|-----------------------------------|------------------|
| <b>Equipment</b>                  |                  |
| Wastewater Pipelines              | \$226,419,621.00 |
| Wastewater Control Valve          | \$1,680,750.00   |
| Wastewater Fitting                | \$8,070,096.00   |
| Wastewater Flow Meter             | \$186,750.00     |
| Wastewater Manhole                | \$31,623,000.00  |
| Wastewater Wet Well               | \$24,900.00      |
| Potable Water Pipelines           | \$288,739,613.00 |
| Potable Emergency Interconnection | \$1,132,172      |
| Potable Fitting                   | \$3,593,070.00   |
| Potable Hydrant                   | \$6,704,325      |
| Potable Interconnection           | \$1,960,875.00   |
| Potable Water Valve               | \$14,186,775     |
| Pressure Reducing Station         | \$2,956,875.00   |
| <b>Critical Facilities</b>        |                  |
| Buildings                         | \$10,184,100.00  |



| Asset                              | Value                   |
|------------------------------------|-------------------------|
| Wells                              | \$3,921,750.00          |
| Reservoir                          | \$59,019,225.00         |
| Potable Water Booster Pump Station | \$16,402,875.00         |
| Potable Aeration Tower             | \$473,100.00            |
| Potable Mixing Station             | \$634,950.00            |
| Potable Motor Control Center       | \$8,092,500.00          |
| Potable Water Treatment Plant      | \$1,883,063.00          |
| Wastewater Lift Station            | \$2,116,500.00          |
| <b>Total:</b>                      | <b>\$102,728,063.00</b> |

### 3.3 CURRENT TRENDS

The District's customer base is primarily residential, with some light commercial uses along Foothill Boulevard in La Crescenta and Honolulu Avenue in Montrose. Customer growth is steady, although the Crescenta Valley area is nearly built out. Residential growth is occurring through increased housing density in the multiple-unit zone areas, primarily Montrose, as well as limited in-fill housing development on random parcels in La Crescenta.

### 3.4 CAPABILITY ASSESSMENT

#### 3.4.1 Planning and Regulatory Capabilities

Jurisdictions can develop policies and programs and implement rules and regulations to protect and serve residents. Local policies are typically identified in community plans, implemented through local ordinance, and enforced through a governing body. An assessment of planning and regulatory capabilities is presented on the table below.

Table 3-3. Planning and Regulatory Capabilities

| Plan, Study, or Program      | Date of Most Recent Update          | Comment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|------------------------------|-------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2022 Strategic Plan Update   | August 2022                         | The 2022 Strategic Plan Update is a reassessment of the goals set forth in the 2020 plan and is designed to supplement the original plan and respond to new challenges the District has navigated since 2020. This includes persistent droughts, supply chain issues, significant inflation, lower than expected revenues, and global pandemic (CVWD 2022).                                                                                                                                                                                                                                      |
| Urban Water Management Plan  | June 2021<br>May 2026 (in progress) | <a href="#">This plan</a> serves as an update to the 2015 CVWD Urban Water Management Plan. It was prepared consistently with the requirements under Water Code Sections 10610 through 10656 of the Urban Water Management Planning Act (Act) and its amendments. This update included updates to meet the UWMP Act, including water loss, drought risk assessment, reporting of energy intensity, lay description, climate change impacts and considerations, water shortage contingency plan, and seismic risk assessment mitigation plan. The 2025 UWMP will be completed prior to June 2026. |
| Sewer System Management Plan | 2025                                | The <a href="#">2025 Sewer System Management Plan</a> supplements CVWD's operations and maintenance program and goals by providing high-level, consolidated guidelines and procedures for all aspects of the District's sewer system                                                                                                                                                                                                                                                                                                                                                             |



| Plan, Study, or Program              | Date of Most Recent Update | Comment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|--------------------------------------|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                      |                            | management. The Sewer System Management Plan will contribute to the proper management of the collection system and assist the District in minimizing the frequency and impacts of sewer system overflows by providing guidance for appropriate maintenance, capacity management, and emergency response.                                                                                                                                                                                                                                                                                                                 |
| Water Shortage Contingency Plan      | 2021 (2026 in progress)    | The <a href="#">2021 Water Shortage Contingency Plan</a> (WSCP) describes CVWD's new and existing policies in place to respond to water supply shortages from natural and manmade hazards, including a catastrophic interruption and greater than a 50 percent reduction in water supply. The WSCP is being updated as part of the Urban Water Management Plan and will be completed by June 2026.                                                                                                                                                                                                                       |
| Water Conservation Program           | Ongoing program            | The purpose of this program is to provide water conservation regulations, in a phased approach, to minimize the effect of a shortage of water supplies on the customers of CVWD during various critical stages of a water shortage. Along with permanent water conservation requirements, CVWD's Water Conservation Program consists of <a href="#">six stages</a> , to respond to a reduction in potable water available to CVWD for distribution to its customers with Phase 1 conservation requirements in effect at all times unless a mandatory conservation stage has been implemented by CVWD Board of Directors. |
| Wastewater Master Plan (WWMP)        | 2024                       | The WWMP is a long-term strategic document that guides CVWD in evaluating, operating, and upgrading sewer systems and treatment facilities. It ensures infrastructure can handle current and future growth while meeting environmental regulations. Key purposes include capacity planning, risk reduction, and financial forecasting.                                                                                                                                                                                                                                                                                   |
| Capital Improvement Plan Master Plan | 2026                       | The Capital Improvement Plan (CIP) master plan for the District is a strategic, long-term roadmap (typically 5+ years) designed to identify, prioritize, and fund infrastructure projects. Its primary purpose is to ensure safe, reliable water service by replacing aging assets, meeting regulatory requirements, expanding capacity for growth, and ensuring financial sustainability through planned, proactive investment rather than reactive emergency repairs.                                                                                                                                                  |
| Rules and Regulations                | 2026                       | The District maintains a comprehensive catalog of Rules and Regulations. The purpose of this document is to establish the policies governing water and wastewater service, including customer requirements, operational standards, and enforcement provisions. The catalog is accompanied by appendices that are updated on a regular basis. The District's Rules and Regulations were most recently updated in March 2026. The document is reviewed periodically and revised as needed to ensure alignment with applicable laws, regulatory requirements, and current District practices.                               |
| Emergency Response Plan              | 2021                       | The Emergency Response Plan guides emergency response procedures. The District is building out its emergency response handbook, providing more robust training and planning for quarterly tabletops through its recertification, which will be in 2026. Emergency inventory has been budgeted for FY 2027 and CVWD is working with neighboring agencies to overlap ERP and training.                                                                                                                                                                                                                                     |
| District Design Standards            | 2021                       | The District officially updates their standards through an audit every five years, however standards are reviewed and revised as needed as part of our ongoing operations and maintenance of the system as well as CIP projects. This ensures the quality and safety of water supply.                                                                                                                                                                                                                                                                                                                                    |
| Green Book                           | 2023                       | The "Greenbook" (Standard Specifications for Public Works Construction) is a widely used, comprehensive manual setting minimum standards for public                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |



| Plan, Study, or Program              | Date of Most Recent Update | Comment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|--------------------------------------|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                      |                            | works projects, particularly in Southern California. It covers materials, methods, and general provisions for construction (e.g., street, utility work) to ensure uniformity, fairness, and quality in infrastructure projects.                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| AWWA Standards                       | 2022                       | <a href="#">American Water Works Association</a> establishes minimum requirements for the design, manufacturing, installation, and operation of water infrastructure. In public works construction, these standards serve as the benchmark for quality, ensuring materials and processes—from pipes to treatment systems—are reliable and safe. These are consensus-based guidelines that the District voluntarily uses as a resource when developing their standard operating procedures.                                                                                                                                                                                                            |
| State Building Code                  | 2025                       | Building codes are a comprehensive, triennial set of regulations that governs the design and construction of buildings to ensure safety, health, and energy efficiency, often updating with new model codes every three years.                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Los Angeles County Public Works Code | 2026                       | These codes are updated through the District Engineering Department and incorporated into our design standards to ensure compliance and best management practices for the safety and health of the community.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Fire Code                            | 2026                       | Fire Codes are updated through the District Engineering Department and incorporated into CVWD design standards to ensure compliance and best management practices for the safety and health of the community.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Division of Drinking Water           | 2026                       | The California Division of Drinking Water (DDW) sets, monitors, and enforces strict standards (Maximum Contaminant Levels, or MCLs) for over 90 contaminants in public water systems under Title 22 of the California Code of Regulations. These standards, often more stringent than federal EPA rules, include legal limits on chemicals, bacteria, and radioactivity, alongside mandated testing and reporting to protect public health. The District not only strictly follows these regulations but develops procedures and enforces best management practices to ensure the meeting of these regulations.                                                                                       |
| Resolution No. 681                   | 2017                       | Resolution No. 681 gives authority to the General Manager to implement a color-coded water conservation alert system. This is Phase II of the goal to reduce the risk and severity of water shortage, a result of increased demands, consecutive years of below normal precipitation in the Verdugo Basin watersheds, and the potential of reduced water allotments.                                                                                                                                                                                                                                                                                                                                  |
| Resolution No. 682                   | 2015                       | Resolution No. 682 authorizes the General Manager to implement a water conservation program as Phase I of the goal to reduce water use to below pre-drought water usage and reduce the risk and severity of water shortage. This resolution prohibited or had stringent restrictions for several water usages for all Crescenta Valley Water District customers, including: water hose usage; overspray and runoff; fountains, similar; structures; leaks; irrigating times; hand watering; windy and rainy days; vehicle washing; swimming pools; construction water; restrictions; fire hydrants; drinking water upon; request; hotels/motels; reporting waste of water; and pre-rinse spray valve. |

### ***Opportunities to Expand Planning and Regulatory Capabilities***

CVWD will continue strengthen the integration of hazard mitigation into current and future planning and regulatory capabilities. This includes the incorporation of mitigation projects and priorities into the CIP, Sewer System Management Plan, Urban Water Management Plan, asset management, and policy updates and development. Refer to Table 3-27 for projects the District identified that highlights how they will expand their planning and regulatory capabilities.





### 3.4.2 Administrative and Technical Capabilities

Planning, regulatory, and fiscal capabilities provide the backbone for successfully developing a mitigation strategy; however, without the appropriate personnel, the strategy may not be implemented. Administrative and technical capabilities focus on the availability of personnel resources responsible for implementing all the facets of hazard mitigation. These resources include technical experts, such as engineers and scientists, as well as personnel with capabilities that may be found in multiple departments, such as grant writers. An assessment of administrative and technical capabilities is presented in Table 3-4.

Table 3-4. Administrative and Technical Capabilities

| Staff / Personnel Resources                                                             | Available? | Description                                                                                                                     |
|-----------------------------------------------------------------------------------------|------------|---------------------------------------------------------------------------------------------------------------------------------|
| Planners or engineers with knowledge of land development and land management practices  | N/A        | The District lacks the authority to regulate or dictate land use. Therefore, this capability is not applicable to the District. |
| Engineers or professionals trained in building or infrastructure construction practices | Yes        | Engineering Department                                                                                                          |
| Planners or engineers with an understanding of natural hazards                          | Yes        | Engineering Department                                                                                                          |
| Staff with training in benefit-cost analysis                                            | Yes        | Engineering Department                                                                                                          |
| Surveyors                                                                               | No         | Can contract for these services when needed.                                                                                    |
| Personnel skilled or trained in GIS applications                                        | Yes        | Engineering Department                                                                                                          |
| Scientist familiar with natural hazards in local area                                   | No         | Can contract for these services when needed.                                                                                    |
| Emergency manager                                                                       | Yes        | Engineering Department                                                                                                          |
| Grant writers                                                                           | Yes        | Engineering Department                                                                                                          |
| Procurement Services and Management                                                     | Yes        | Interdepartmentally                                                                                                             |

### Opportunities to Expand Administrative and Technical Capabilities

CVWD's current administrative and technical capabilities can be expanded to further reduce risk to the service area and its customers. To support this effort, CVWD has identified several mitigation actions (see Table 2-20) focused on improving infrastructure resilience and protecting critical community lifelines. These actions emphasize ongoing inspections, targeted upgrades, and routine maintenance to enhance system reliability and ensure continued delivery of essential services during and after natural hazard events.

### 3.4.3 Fiscal Capabilities

Assessing a jurisdiction's fiscal capability provides an understanding of the ability to fulfill the financial needs associated with hazard mitigation projects. This assessment identifies both outside resources, such as grant funding eligibility and local jurisdictional authority to generate internal financial capability, such as through impact fees. An assessment of fiscal capabilities is presented in the table below.



Table 3-5. Fiscal Capabilities

| Financial Resource                                   | Accessible or Eligible to Use? |
|------------------------------------------------------|--------------------------------|
| Community Development Block Grants                   | No                             |
| Capital Improvements Project Funding                 | Yes                            |
| Authority to Levy Taxes for Specific Purposes        | No                             |
| User Fees for Water, Sewer, Gas or Electric Service  | Yes – water and sewer          |
| Incur Debt through General Obligation Bonds          | Yes                            |
| Incur Debt through Special Tax Bonds                 | Yes                            |
| Incur Debt through Private Activity Bonds            | No                             |
| Withhold Public Expenditures in Hazard-Prone Areas   | No                             |
| State-Sponsored Grant Programs                       | Yes                            |
| Development Impact Fees for Homebuyers or Developers | Yes                            |
| Federal-Sponsored Grant Programs                     | Yes                            |

### Opportunities to Expand Fiscal Capabilities

CVWD will continue using its existing budget and CIP to support and integrate hazard mitigation and will also pursue state and federal grant funding opportunities to help offset project costs, as shown in Table 3-27. This will allow the District to increase long-term resilience, implement mitigation actions with its current budget and CIP, and leverage other resources to implement infrastructure upgrades, reduce risk, and maintain reliable service delivery.

### 3.4.4 Education and Outreach Capabilities

Regular engagement with the public on issues regarding hazard mitigation provides an opportunity to directly interface with community members. Assessing the education and outreach capability illustrates the connection between the government and community members, which opens a two-way dialogue that can result in a more resilient community, based on awareness and engagement. An assessment of education and outreach capabilities is presented in the table below.

Table 3-6. Education and Outreach Capabilities

| Criterion                                                                            | Available? | Description and Role in Risk Reduction                                                                                                                                                               |
|--------------------------------------------------------------------------------------|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Public Information Officer                                                           | Yes        | Arminé Sargsyn                                                                                                                                                                                       |
| Personnel skilled or trained in website development                                  | No         | -                                                                                                                                                                                                    |
| Hazard mitigation information on website                                             | Yes        | CVWD maintains a website and posts information about hazard mitigation ( <a href="https://www.cvwd.com/local-hazard-mitigation-plan">https://www.cvwd.com/local-hazard-mitigation-plan</a> )         |
| Social media for hazard mitigation education and outreach                            | Yes        | CVWD maintains a website and social media pages (Facebook, Instagram, Nextdoor, Constant Contact, and Everbridge)                                                                                    |
| Citizen boards or commissions that address issues related to hazard mitigation       | Yes        | Crescenta Valley Fire Safety Council - a non-profit volunteer organization whose mission is preparing for and recovering from forest fires and other natural disasters; Neighbors Helping Neighbors. |
| Other programs in place that could be used to communicate hazard-related information | Yes        | The Los Angeles County Hazard Mitigation Plan website provides a good source of information for the general population within the CVWD service area.                                                 |



| Criterion                         | Available? | Description and Role in Risk Reduction |
|-----------------------------------|------------|----------------------------------------|
| Warning systems for hazard events | Yes        | Email to customers through Everbridge  |

### ***Opportunities to Expand Education and Outreach Capabilities***

CVWD identified mitigation actions (see Table 2-20) to expand current education and outreach capabilities. In doing so, the District can increase community-wide awareness of natural hazard risk and preparedness that can reduce vulnerability and support overall resilience. This includes upgrades to communication infrastructure (017-Crescenta Valley) and the development of an Emergency Community Water Fulfillment Center (039-Crescenta Valley).

### **3.4.5 Community Classifications**

Other programs, such as NWS StormReady, can enhance a jurisdiction's ability to mitigate, prepare for, and respond to natural hazards. These programs indicate a jurisdiction's desire to go beyond minimum regulatory requirements in order to create a more resilient community. These programs focus on communication, mitigation, and community preparedness to minimize the impact of natural hazards on a community. Classifications under various community mitigation programs are presented in the table below.

Table 3-7. Community Classifications

|                | Participating? | Classification or Number | Date Classified |
|----------------|----------------|--------------------------|-----------------|
| UEI#           | Yes            | 95-1642028               | N/A             |
| NWS StormReady | No             | N/A                      | N/A             |
| Firewise       | No             | N/A                      | N/A             |

### ***Opportunities to Expand Community Classification Capabilities***

Any expansion to the local capabilities identified in this section is likely to benefit the community classifications listed in this sub-section. Currently, there is no need to identify specific community classifications for expansion.

### **3.4.6 Adaptive Capacity for Climate Change**

An adaptive capacity assessment evaluates a jurisdiction's ability to anticipate impacts from future conditions. By looking at public support, technical adaptive capacity, and other factors, jurisdictions identify their core capability for resilience against issues such as extreme heat. The adaptive capacity assessment provides jurisdictions with an opportunity to identify areas for improvement by ranking their capacity as high, medium, or low. The District's adaptive capacity for the impacts of climate change is presented in the table below.



Table 3-8. Adaptive Capacity for Climate Change

| Criterion                                                                                          | Jurisdiction Rating <sup>a</sup> | Comment                                                                                                                                                   |
|----------------------------------------------------------------------------------------------------|----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Technical Capacity</b>                                                                          |                                  |                                                                                                                                                           |
| Jurisdiction-level understanding of potential climate change impacts                               | Low                              | -                                                                                                                                                         |
| Jurisdiction-level monitoring of climate change impacts                                            | Low                              | -                                                                                                                                                         |
| Technical resources to assess proposed strategies for feasibility and externalities                | Low                              | -                                                                                                                                                         |
| Jurisdiction-level capacity for development of greenhouse gas emissions inventory                  | Low                              | -                                                                                                                                                         |
| Capital planning and land use decisions informed by potential climate impacts                      | Low                              | -                                                                                                                                                         |
| Participation in regional groups addressing climate risks                                          | High                             | Specifically for wildfire there is coordination with sponsoring State legislation and state-wide water associations, regional groups to address planning. |
| <b>Implementation Capacity</b>                                                                     |                                  |                                                                                                                                                           |
| Clear authority/mandate to consider climate change impacts during public decision-making processes | Low                              | -                                                                                                                                                         |
| Identified strategies for greenhouse gas mitigation efforts                                        | Low                              | -                                                                                                                                                         |
| Identified strategies for adaptation to impacts                                                    | Low                              | -                                                                                                                                                         |
| Champions for climate action in local government departments                                       | Low                              | -                                                                                                                                                         |
| Political support for implementing climate change adaptation strategies                            | Medium                           | There is moderate political support for climate change adaptation projects.                                                                               |
| Financial resources devoted to climate change adaptation                                           | Low                              | -                                                                                                                                                         |
| Local authority over sectors likely to be negative impacted                                        | Low                              | -                                                                                                                                                         |
| <b>Public Capacity</b>                                                                             |                                  |                                                                                                                                                           |
| Customers' knowledge of and understanding of climate risk                                          | Medium                           | Customers are aware of limited water resources and have desire to capture stormwater                                                                      |
| Customers' support of adaptation efforts                                                           | Medium                           | There is moderate customer support for climate change adaptation projects.                                                                                |
| Customers' capacity to adapt to climate impacts                                                    | Low                              | -                                                                                                                                                         |
| Local economy current capacity to adapt to climate impacts                                         | Low                              | -                                                                                                                                                         |
| Local ecosystems capacity to adapt to climate impacts                                              | Low                              | -                                                                                                                                                         |

a. High = Capacity exists and is in use; Medium = Capacity may exist but is not used or could use some improvement.  
 Low = Capacity does not exist or could use substantial improvement; Unsure= Not enough information is known to assign a rating.

### Opportunities to Expand Adaptive Capacity Capabilities

The District has not identified a need to expand adaptive capacity capabilities.

## 3.5 NATIONAL FLOOD INSURANCE PROGRAM COMPLIANCE

Districts are not eligible to participate in the National Flood Insurance Program (NFIP). However, any new assets or infrastructure developed by the District is in compliance with the floodplain regulations established by the surrounding municipal entities.



## 3.6 INTEGRATION

For hazard mitigation planning, “integration” means that hazard mitigation information is used in other relevant planning mechanisms, such as capital facilities planning, and that relevant information from those sources is used in hazard mitigation. This section identifies where such integration is already in place, and where there are opportunities for further integration in the future. Resources listed at the end of this annex were used to provide information on integration. The progress reporting process described in Volume 1 of the hazard mitigation plan will document the progress of hazard mitigation actions related to integration and identify new opportunities for integration.

### 3.6.1 Existing Integration

Some level of integration has already been established between local hazard mitigation planning and the following other local plans and programs.

#### *Planning and Regulatory*

CVWD’s planning and regulatory capabilities and functions are integrated into its hazard mitigation efforts to ensure infrastructure improvements and operational strategies are consistent with local, state, and federal requirements. This includes:

- **2022 Strategic Plan Update** - The update is a reassessment of the goals set forth in the 2020 plan and is designed to supplement the original plan and respond to new challenges the District has navigated since 2020. This includes persistent droughts, supply chain issues, significant inflation, lower than expected revenues, and global pandemic (CVWD 2022).
- **2020 Urban Water Management Plan** - This plan serves as an update to the 2015 CVWD Urban Water Management Plan. It was prepared consistently with the requirements under Water Code Sections 10610 through 10656 of the Urban Water Management Planning Act (Act) and its amendments. This update included updates to meet the UWMP Act, including water loss, drought risk assessment, reporting of energy intensity, lay description, climate change impacts and considerations, water shortage contingency plan, and seismic risk assessment mitigation plan.
- **2026 CIP Master Plan** – Includes improvement projects to expand current systems to provide continuity of operations and increase resilience of infrastructure. The District is in the process of performing an audit to ensure the plan is proactive and robust enough to meet infrastructure needs that support long term resiliency efforts.
- **Water Conservation Plan** – This plan promotes the efficient use of water, reduction or elimination of water waste, complements CVWD’s Water Quality regulations and urban runoff reduction efforts, and enables implementation of CVWD’s Water Shortage Contingency Measures. Prohibitions include but are not limited to restrictions on outdoor watering, washing of vehicles, food preparation establishments, repairing of leaks and other malfunctions, swimming pools, decorative water features, construction activities, and water service provisions.
- **Wastewater Master Plan** – The District completed a WWMP in March 2026, which includes increased asset management programs focusing on preventative maintenance to mitigate Sewer Systems Overflow as well as long term planning for increased resiliency and infrastructure improvements.



- **Emergency Response Planning** – The District has an emergency response plan and is working to update and build out its planning through stocking up on emergency supplies, conducting tabletop exercises, providing emergency ‘go vests’ to employees, and enrolling employees in an on-line emergency response app to better facilitate response and personal preparedness. The ultimate goal is to conduct regional tabletop exercises with neighboring agencies and overlap emergency response and training.
- **Water Quality, Regulations & Compliance** – The District is pro-active in identifying and responding to new water quality, regulations and compliance. Recently, the District created a position that has full responsibility for all operational compliance.
- **Cybersecurity and IT Risk Assessment:** CVWD recognizes cybersecurity as a critical component of operational resilience. The District participated in the Cybersecurity and Infrastructure Security Agency (CISA) Vulnerability Assessment and Risk (VADR) program in 2025 and has received ongoing weekly Cyber Hygiene reports since that time to proactively identify and address system vulnerabilities. In 2026, the District also completed a Risk and Vulnerability Assessment (RVA), which provided a comprehensive evaluation of cybersecurity practices and technical controls. Findings from these efforts are used to strengthen network security, improve monitoring, and support continuity of operations.

### ***Fiscal***

CVWD’s fiscal capabilities support the planning, implementation, and long-term maintenance of hazard mitigation projects within its service area. The District manages financial resources through annual budgets, CIPs, customer fees, and state programs that assist in maintaining systems, protect community lifelines, and provide continuity of operations. These capabilities allow the District to perform routine maintenance, pursue infrastructure upgrades, leverage state and federal grant opportunities, and respond to emergency repair needs.

### ***Administrative and Technical***

CVWD currently integrates hazard mitigation into its day-to-day operations through administrative staff. Available resources include planners, engineers, and managers that work together to identify and mitigate risk, implement mitigation projects, and maintain essential water services for customers. Through these efforts, CVWD supports proactive risk reduction and strengthens their ability to maintain operations during and after natural hazards.

### ***Education and Outreach***

CVWD has established education and outreach programs and capabilities that support hazard mitigation through a district website, social media pages, public meetings, and informational flyers. Specifically, the District has the following information on their website:

- **Hazard Mitigation Plan** – The District provides a link to the current HMP on the website and provides summaries of the goals, objectives, and roles of the Planning Committee.
- **Rainfall History** - The District has been tracking rainfall for the County of Los Angeles Public Works Water Resources Department since 1962. Staff has presented this historical rainfall information in a report that breaks the amounts down by month, year, and decade for each rain year (October 1 – September 30) from 1962 to present.



- **Informational Flyers** on the website that include how to stay informed during emergencies and water conservation methods.
- **Fact Sheets** on various topics including safeguarding water, case studies, and the CIP.

Through ongoing efforts, the District helps increase customer awareness of actions that can reduce vulnerability to hazards, such as drought, wastewater overflows, and wildfires, while promoting responsible water use. This outreach strengthens community preparedness and supports overall resilience within the service area.

### 3.6.2 Opportunities for Future Integration

The capability assessment in this annex indicates opportunities to integrate this mitigation plan with other jurisdictional planning/regulatory capabilities. Capabilities were identified as integration opportunities if they can support or enhance the actions identified in this plan or be supported or enhanced by components of this plan. The capability assessment identified the following plans and programs that do not currently integrate hazard mitigation information but provide opportunities to do so in the future.

- **AWIA Risk and Resilience Assessment (RRA):** Under AWIA, water utilities must perform a Risk and Resilience Assessment (RRA) every five years to identify vulnerabilities in infrastructure, physical security, and cybersecurity systems. Information on hazard risk and vulnerabilities from this mitigation plan can be used to update the RRA.
- **Emergency Response Plan (ERP):** Information on hazard events developed in this mitigation plan can be used to update emergency response planning.
- **CA Senate Bill 1153:** This bill requires urban retail water suppliers to include wildfire mitigation actions in disaster preparedness plans. This plan includes actions to mitigate wildfire risk.

## 3.7 RISK ASSESSMENT

### 3.7.1 Jurisdiction-Specific Natural Hazard Event History

Table 2-9 lists past occurrences in the last five years of natural hazards for which specific damage was recorded in this jurisdiction. Other hazard events that broadly affected Los Angeles County, including this jurisdiction, are listed in the risk assessments in Volume 1 of this hazard mitigation plan.

Table 3-9. Past Natural Hazard Events

| Type of Event | Declaration Title | State or Federal Disaster # | Declaration Date                 | Damage Assessment                                                                 |
|---------------|-------------------|-----------------------------|----------------------------------|-----------------------------------------------------------------------------------|
| Biological    | COVID-19 Pandemic | EM-3428-CA<br>DR-4482-CA    | March 13, 2020<br>March 22, 2020 | \$269,000 bill assistance                                                         |
| Fire          | Eaton Fire        | FM-5550-CA                  | January 8, 2025                  | ~\$80,000 power supply (generators), fuel and brush clearance/structure hardening |



### 3.7.2 Hazard Ranking

The prioritization and categorization of identified hazards for the Crescenta Valley Water District is based principally on the Priority Risk Index (PRI), a tool used to measure the degree of risk for identified hazards in a particular planning area. The PRI was used to assist the District in identifying hazards that pose the most significant threat. Table 3-10 presents a local ranking of all hazards of concern for which this hazard mitigation plan provides complete risk assessments. As described in detail in Volume 1, the ranking process involves an assessment of the likelihood of occurrence for each hazard, along with its potential impacts on people, property and the economy.

Table 3-10. Hazard Risk Ranking Summary

| Hazard                                | Weighted Risk Factors |        |                |              |                | PRI | Risk Ranking |
|---------------------------------------|-----------------------|--------|----------------|--------------|----------------|-----|--------------|
|                                       | Probability           | Impact | Spatial Extent | Warning Time | Climate Change |     |              |
| Dam Failure                           | 0                     | 0      | 0              | 0            | 0              | 0   | None         |
| Drought                               | 1.2                   | 1.2    | .8             | .1           | .4             | 3.7 | High         |
| Earthquake                            | 1.2                   | 1.2    | .8             | .4           | .3             | 3.9 | High         |
| Extreme Temperature                   | 1.2                   | 1.2    | .8             | .1           | .4             | 3.7 | High         |
| Flood*                                | 1.2                   | .3     | .4             | .1           | .4             | 2.4 | Medium       |
| Landslide, Subsidence & Mass Movement | .6                    | 1.2    | .4             | .1           | .3             | 2.6 | Medium       |
| Strong Wind                           | 1.2                   | 1.2    | .8             | .1           | .4             | 3.7 | High         |
| Wildfire                              | 1.2                   | 1.2    | .8             | .1           | .4             | 3.7 | High         |

Note: PRI Value 1 to 1.9 = Low Hazard Risk Ranking

PRI Value 2.0 to 2.9 = Medium Hazard Risk Ranking

PRI Value 3.0 to 4.0 = High Hazard Risk Ranking

\*Flood risk is based on localized urban flooding, not regulated mapped floodplains

### 3.7.3 Agency-Specific Vulnerabilities

Volume 1 of this hazard mitigation plan provides a summary of risk assessments for hazards of concern that may have similar impacts on each agency in the planning area. This section provides information on key vulnerabilities for this agency including a summary of count and replacement cost values of agency assets. Available agency-specific risk maps of the hazards are provided at the end of this annex.

#### Vulnerability and Risk Assessment

The following information applies to the quantitative risk assessment results for Crescenta Valley Water District. Summarized vulnerability and risk assessment results for the entire planning area are contained in the applicable hazard chapters of Volume 1.





## Earthquake

Table 3-11. Earthquake Hazard Estimated Average Probability of Damage State of Facilities

| Scenario           | Probability of Damage State |               |                 |                  |                 |               |                 |                  | Complete Replacement Cost Value |
|--------------------|-----------------------------|---------------|-----------------|------------------|-----------------|---------------|-----------------|------------------|---------------------------------|
|                    | No Damage                   | Slight Damage | Moderate Damage | Extensive Damage | Complete Damage | Exceed Slight | Exceed Moderate | Exceed Extensive |                                 |
| Puente Hills M6.95 | 1%                          | 3%            | 22%             | 51%              | 24%             | 99%           | 96%             | 74%              | \$77,895,618                    |
| Sierra Madre M7.16 | 0%                          | 2%            | 17%             | 49%              | 32%             | 100%          | 98%             | 81%              | \$82,718,328                    |
| Verdugo M6.90      | 0%                          | 1%            | 15%             | 47%              | 36%             | 100%          | 98%             | 83%              | \$85,477,842                    |

Figure 3-2. Average Percent Functionality of Facilities After Earthquake Scenarios by Day

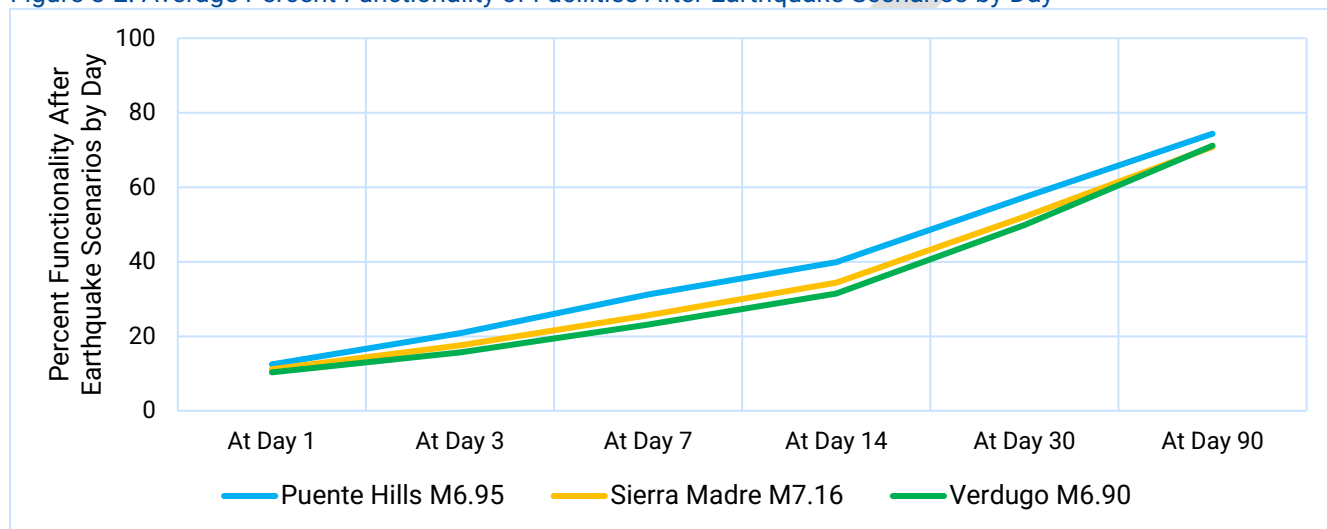


Table 3-12. Estimated Pipe Leaks and Breaks from Earthquake Hazard – Potable Water System

| Scenario           | Number of Leaks | Number of Breaks | Total Number of Repairs | Hours to Repair Leaks | Hours to Repair Breaks | Total Hours to Repair | Economic Loss |
|--------------------|-----------------|------------------|-------------------------|-----------------------|------------------------|-----------------------|---------------|
| Puente Hills M6.95 | 20.2            | 5.1              | 25.3                    | 69.6                  | 33.6                   | 103.2                 | \$177,106     |
| Sierra Madre M7.16 | 47.6            | 11.9             | 59.5                    | 163.2                 | 81.6                   | 244.8                 | \$416,178     |
| Verdugo M6.90      | 40.4            | 10.1             | 50.5                    | 139.2                 | 69.6                   | 208.8                 | \$353,878     |

Table 3-13. Estimated Pipe Leaks and Breaks from Earthquake Hazard – Wastewater System

| Scenario           | Number of Leaks | Number of Breaks | Total Number of Repairs | Hours to Repair Leaks | Hours to Repair Breaks | Total Hours to Repair | Economic Loss |
|--------------------|-----------------|------------------|-------------------------|-----------------------|------------------------|-----------------------|---------------|
| Puente Hills M6.95 | 47.7            | 11.9             | 59.7                    | 180                   | 93.6                   | 273.6                 | \$417,665     |
| Sierra Madre M7.16 | 107.0           | 26.8             | 133.8                   | 376.8                 | 189.6                  | 566.4                 | \$936,435     |
| Verdugo M6.90      | 91.5            | 22.9             | 114.4                   | 333.6                 | 172.8                  | 506.4                 | \$800,981     |



Table 3-14. Estimated Liquefaction and NEHRP D Soils Exposure to Pipelines – Potable Water System

| Scenario      | Total Miles of Pipeline | Miles of Pipeline Exposed to Hazard | Percent of Pipeline Exposed |
|---------------|-------------------------|-------------------------------------|-----------------------------|
| Liquefaction  | 97.3                    | 9.4                                 | 9.7%                        |
| NEHRP D Soils | 97.3                    | 51.8                                | 53.2%                       |

Table 3-15. Estimated Liquefaction and NEHRP D Soils Exposure to Pipelines – Wastewater System

| Scenario      | Total Miles of Pipeline | Miles of Pipeline Exposed to Hazard | Percent of Pipeline Exposed |
|---------------|-------------------------|-------------------------------------|-----------------------------|
| Liquefaction  | 68.8                    | 6.5                                 | 9.4%                        |
| NEHRP D Soils | 68.8                    | 27.8                                | 40.3%                       |

Table 3-16. Estimated Liquefaction and NEHRP D Soils Exposure to Facilities

| Scenario                            | Type of Facility             | Number of Facilities | Replacement Cost Value |
|-------------------------------------|------------------------------|----------------------|------------------------|
| Liquefaction                        | Operations Building          | 1                    | \$2,683,200            |
| Liquefaction                        | Sewer Fitting                | 206                  | \$257,088              |
| Liquefaction                        | Sewer Manhole                | 112                  | \$2,795,520            |
| Liquefaction                        | Wastewater Reclamation Plant | 1                    | \$1                    |
| Liquefaction                        | Water Aeration Tower         | 2                    | \$474,240              |
| Liquefaction                        | Water Booster Station        | 7                    | \$8,221,199            |
| Liquefaction                        | Water Fitting                | 216                  | \$404,784              |
| Liquefaction                        | Water Hydrant                | 59                   | \$552,240              |
| Liquefaction                        | Water Interconnection        | 2                    | \$756,600              |
| Liquefaction                        | Water Reservoir              | 2                    | \$390,000              |
| Liquefaction                        | Water Valve                  | 204                  | \$1,272,960            |
| Liquefaction                        | Well                         | 7                    | \$22,932,000           |
| <b>Total Liquefaction Exposure</b>  |                              | <b>819</b>           | <b>\$40,739,832</b>    |
| NEHRP D Soils                       | Operations Building          | 1                    | \$2,683,200            |
| NEHRP D Soils                       | Sewer Fitting                | 2,262                | \$2,822,976            |
| NEHRP D Soils                       | Sewer Lift Station           | 1                    | \$1,060,800            |
| NEHRP D Soils                       | Sewer Manhole                | 497                  | \$12,405,120           |
| NEHRP D Soils                       | Sewer Valve                  | 3                    | \$1,684,800            |
| NEHRP D Soils                       | Wastewater Reclamation Plant | 1                    | \$1                    |
| NEHRP D Soils                       | Water Aeration Tower         | 2                    | \$474,240              |
| NEHRP D Soils                       | Water Booster Station        | 14                   | \$16,442,398           |
| NEHRP D Soils                       | Water Fitting                | 1,337                | \$2,505,538            |
| NEHRP D Soils                       | Water Hydrant                | 383                  | \$3,584,880            |
| NEHRP D Soils                       | Water Interconnection        | 2                    | \$756,600              |
| NEHRP D Soils                       | Water Mixing Station         | 1                    | \$636,480              |
| NEHRP D Soils                       | Water Reservoir              | 4                    | \$13,138,320           |
| NEHRP D Soils                       | Water Valve                  | 1,282                | \$7,999,680            |
| NEHRP D Soils                       | Well                         | 10                   | \$32,760,000           |
| <b>Total NEHRP D Soils Exposure</b> |                              | <b>5,800</b>         | <b>\$98,955,033</b>    |



## Landslide

Table 3-17. Estimated Landslide Exposure to Pipelines – Potable Water System

| Scenario                           | Total Miles of Pipeline | Miles of Pipeline Exposed to Hazard | Percent of Pipeline Exposed |
|------------------------------------|-------------------------|-------------------------------------|-----------------------------|
| Very High Landslide Susceptibility | 97.3                    | 1.2                                 | 1.2%                        |
| High Landslide Susceptibility      | 97.3                    | 88.7                                | 91.1%                       |
| Moderate Landslide Susceptibility  | 97.3                    | 0.5                                 | 0.5%                        |
| <b>Total</b>                       | <b>291.9</b>            | <b>90.4</b>                         | <b>92.80%</b>               |

Table 3-18. Estimated Landslide Exposure to Pipelines – Wastewater System

| Scenario                           | Total Miles of Pipeline | Miles of Pipeline Exposed to Hazard | Percent of Pipeline Exposed |
|------------------------------------|-------------------------|-------------------------------------|-----------------------------|
| Very High Landslide Susceptibility | 68.8                    | 1.3                                 | 1.9%                        |
| High Landslide Susceptibility      | 68.8                    | 59.4                                | 86.3%                       |
| Moderate Landslide Susceptibility  | 68.8                    | 0.5                                 | 0.7%                        |
| <b>Total</b>                       | <b>206.4</b>            | <b>61.2</b>                         | <b>88.90%</b>               |

Table 3-19. Facilities Exposed to the Very High Susceptibility Landslide Hazard Area

| Type of Facility      | Number of Facilities Exposed | Replacement Cost Value |
|-----------------------|------------------------------|------------------------|
| Sewer Fitting         | 92                           | \$114,816              |
| Sewer Lift Station    | 1                            | \$1,060,800            |
| Sewer Manhole         | 25                           | \$624,000              |
| Sewer Wet Well        | 1                            | \$24,960               |
| Water Booster Station | 1                            | \$1,174,457            |
| Water Fitting         | 19                           | \$35,606               |
| Water Hydrant         | 10                           | \$93,600               |
| Water Reservoir       | 2                            | \$2,296,320            |
| Water Valve           | 22                           | \$137,280              |
| <b>Total</b>          | <b>173</b>                   | <b>\$5,561,839</b>     |

Table 3-20. Facilities Exposed to the High Susceptibility Landslide Hazard Area

| Type of Facility                    | Number of Facilities Exposed | Replacement Cost Value |
|-------------------------------------|------------------------------|------------------------|
| Administrative & Support Facilities | 1                            | \$4,617,600            |
| Operations Building                 | 2                            | \$2,907,840            |
| Sewer Fitting                       | 5,995                        | \$7,481,760            |
| Sewer Lift Station                  | 1                            | \$1,060,800            |
| Sewer Manhole                       | 1,102                        | \$27,505,920           |
| Sewer Valve                         | 2                            | \$1,123,200            |
| Water Aeration Tower                | 2                            | \$474,240              |
| Water Booster Station               | 28                           | \$32,884,796           |
| Water Fitting                       | 2,185                        | \$4,094,690            |
| Water Hydrant                       | 666                          | \$6,233,760            |
| Water Interconnection               | 4                            | \$1,513,200            |
| Water Mixing Station                | 1                            | \$636,480              |
| Water Reservoir                     | 14                           | \$50,469,120           |



|              |               |                    |
|--------------|---------------|--------------------|
| Water Valve  | 2,106         | \$13,141,440       |
| <b>Total</b> | <b>12,117</b> | <b>\$5,561,839</b> |

Table 3-21. Facilities Exposed to the Moderate Susceptibility Landslide Hazard Area

| Type of Facility   | Number of Facilities Exposed | Replacement Cost Value |
|--------------------|------------------------------|------------------------|
| Sewer Lift Station | 1                            | \$1,060,800            |
| Sewer Wet Well     | 1                            | \$24,960               |
| Water Reservoir    | 2                            | \$2,296,320            |
| <b>Total</b>       | <b>4</b>                     | <b>\$3,382,080</b>     |

## Wildfire

Table 3-22. Estimated Wildfire Exposure to Pipelines – Potable Water System

| Scenario                            | Total Miles of Pipeline | Miles of Pipeline Exposed | Percent of Pipeline Exposed |
|-------------------------------------|-------------------------|---------------------------|-----------------------------|
| Very High Fire Hazard Severity Zone | 97.3                    | 60.7                      | 62.3%                       |
| High Fire Hazard Severity Zone      | 97.3                    | 11.4                      | 11.7%                       |
| Moderate Fire Hazard Severity Zone  | 97.3                    | 9.0                       | 9.2%                        |
| <b>Total</b>                        | <b>291.9</b>            | <b>81.1</b>               | <b>83.20%</b>               |

Table 3-23. Estimated Wildfire Exposure to Pipelines – Wastewater System

| Scenario                            | Total Miles of Pipeline | Miles of Pipeline Exposed | Percent of Pipeline Exposed |
|-------------------------------------|-------------------------|---------------------------|-----------------------------|
| Very High Fire Hazard Severity Zone | 68.8                    | 47.7                      | 69.4%                       |
| High Fire Hazard Severity Zone      | 68.8                    | 4.9                       | 7.1%                        |
| Moderate Fire Hazard Severity Zone  | 68.8                    | 4.8                       | 6.9%                        |
| <b>Total</b>                        | <b>206.4</b>            | <b>57.4</b>               | <b>83.40%</b>               |

Table 3-24. Facilities Exposed to the Very High Fire Hazard Severity Zone

| Type of Facility      | Number of Facilities Exposed | Replacement Cost Value  |
|-----------------------|------------------------------|-------------------------|
| Operations Building   | 3                            | \$5,591,040             |
| Sewer Fitting         | 4,829                        | \$6,026,592             |
| Sewer Lift Station    | 2                            | \$2,121,600             |
| Sewer Manhole         | 899                          | \$22,439,040            |
| Sewer Valve           | 1                            | \$561,600               |
| Sewer Wet Well        | 1                            | \$24,960                |
| Water Aeration Tower  | 2                            | \$474,240               |
| Water Booster Station | 33                           | \$38,757,081            |
| Water Fitting         | 1,494                        | \$2,799,756             |
| Water Hydrant         | 455                          | \$4,258,800             |
| Water Interconnection | 4                            | \$1,513,200             |
| Water Reservoir       | 18                           | \$47,305,440            |
| Water Valve           | 1,420                        | \$8,860,800             |
| Well                  | 10                           | \$32,760,000            |
| <b>Total</b>          | <b>9,171</b>                 | <b>\$173,494,149.00</b> |





Table 3-25. Facilities Exposed to the High Fire Hazard Severity Zone

| Type of Facility                    | Number of Facilities Exposed | Replacement Cost Value |
|-------------------------------------|------------------------------|------------------------|
| Administrative & Support Facilities | 1                            | \$4,617,600            |
| Sewer Fitting                       | 480                          | \$599,040              |
| Sewer Manhole                       | 94                           | \$2,346,240            |
| Sewer Valve                         | 1                            | \$561,600              |
| Water Fitting                       | 311                          | \$582,814              |
| Water Hydrant                       | 91                           | \$851,760              |
| Water Valve                         | 291                          | \$1,815,840            |
| <b>Total</b>                        | <b>1,270</b>                 | <b>\$14,650,894</b>    |

### Other Noted Vulnerabilities

The following jurisdiction-specific issues have been identified based on a review of the results of the risk assessment, public involvement strategy, and other available resources:

- Improved resiliency and fire code compliance of the water distribution system, including fire hydrants is needed.
- A new groundwater well is needed to improve water supply resiliency.
- La Crescenta is nestled in the Foothills of the San Gabriel Mountains. The terrain is steep and the streets are narrow. This creates hazards and challenges in our daily operations. It can impact materials, trench safety and equipment. This must be considered in our daily operations and maintenance of our water and wastewater systems as well as infrastructure upgrades and CIP projects.

Mitigation actions addressing these issues were prioritized for consideration in the action plan presented in this annex.



### 3.8 STATUS OF PREVIOUS MITIGATION ACTIONS

Table 3-26 summarizes the mitigation actions that were recommended in the 2021 HMP for CWVD and their implementation status at the time this update was prepared.

Table 3-26. Status of Prior Plan Actions

| Action from Prior Plan                                                                                                                                   | Comment                                                                                                                                           | Removed; Identified as a Current Capability or No Longer Feasible | Carried Over to Plan Update |                         |
|----------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|-----------------------------|-------------------------|
|                                                                                                                                                          |                                                                                                                                                   |                                                                   | Yes/No                      | Action # in Plan Update |
| Acquire stationary emergency electric generators for Main Booster Stations (2 total)                                                                     | Not completed. Carry forward. Need to list specific locations.                                                                                    | -                                                                 | Yes                         | 020 – Crescenta Valley  |
| Acquire stationary emergency electric generators for well sites (5 total sites)                                                                          | Not completed. Carry forward. Need to list specific locations.                                                                                    | -                                                                 | Yes                         | 021 – Crescenta Valley  |
| Acquire portable emergency electric generators for booster stations (4 total)                                                                            | Not completed. Carry forward. For which booster station locations.                                                                                | -                                                                 | Yes                         | 022 – Crescenta Valley  |
| Acquire portable emergency electric generators for well sites (4 total)                                                                                  | Not completed. Carry forward. For which well locations.                                                                                           | -                                                                 | Yes                         | 023 – Crescenta Valley  |
| Install seismic sensors and valve actuators on reservoir inlet/outlet valves (4 sites)                                                                   | Not completed. Have them at 12 of 17 reservoirs. None installed since this plan. None at Oak Creek #1, Oak Creek #2, Ordunio, Oceanview, Encinal. | -                                                                 | Yes                         | 024 – Crescenta Valley  |
| Install security cameras at reservoir and well sites (88 cameras total)                                                                                  | Not completed. Require radios and antennae that can support. This would be longer-term plan.                                                      | -                                                                 | Yes                         | 025 – Crescenta Valley  |
| Install an emergency chlorine / ammonia portable station                                                                                                 | Partially completed. Have installed emergency chlorine; ammonia not necessary.                                                                    | Remove – No longer needed – not switching to chloramines          | No                          | -                       |
| Conduct seismic evaluation study of existing CVWD building (4 buildings)                                                                                 | Not completed                                                                                                                                     | -                                                                 | Yes                         | 026 – Crescenta Valley  |
| Seismically upgrade/retrofit CVWD buildings                                                                                                              | Not completed                                                                                                                                     | -                                                                 | Yes                         | 027 – Crescenta Valley  |
| Repair slope and inlet/outlet pipeline at Edmund #2 Reservoir                                                                                            | Not completed. Redid manifold roughly 3 years ago.                                                                                                | -                                                                 | Yes                         | 028 – Crescenta Valley  |
| Replace above ground outlet pipe at Gross Canyon Reservoir such that it will mitigate the future impacts from Earthquake, Landslide and Wildfire events. | Not completed                                                                                                                                     | -                                                                 | Yes                         | 029 – Crescenta Valley  |
| Conduct feasibility study for relocation / upgrades to access roads at reservoirs                                                                        | Not completed. Prioritize specific roads                                                                                                          | -                                                                 | Yes                         | 030 – Crescenta Valley  |
| Relocate access roadway at Pickens Canyon Reservoir                                                                                                      | Not completed. Submitting grant applications.                                                                                                     | -                                                                 | Yes                         | 031 – Crescenta Valley  |
| Retrofit access road to Edmund #2 Reservoir                                                                                                              | Not completed                                                                                                                                     | -                                                                 | Yes                         | 032 – Crescenta Valley  |



| Action from Prior Plan                                                                                    | Comment                                                                                                            | Removed; Identified as a Current Capability or No Longer Feasible | Carried Over to Plan Update |                         |
|-----------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|-----------------------------|-------------------------|
|                                                                                                           |                                                                                                                    |                                                                   | Yes/No                      | Action # in Plan Update |
| Retrofit access roadway at Shields Reservoir                                                              | Not completed. Temporarily addressed issue with clean-up and debris removal.                                       | -                                                                 | Yes                         | 033 – Crescenta Valley  |
| Retrofit CVWD / La Cañada Irrigation District interconnection at Canada Dr.                               | Did an emergency repair.                                                                                           | No longer needed                                                  | No                          | -                       |
| Install emergency interconnection pipeline among Glendale/FMWD/CVWD                                       | Completed                                                                                                          | -                                                                 | No                          | -                       |
| Conduct feasibility study for sewer bypass system for large diameter pipeline with Glendale               | Not completed. Still needed.                                                                                       | -                                                                 | Yes                         | 034 – Crescenta Valley  |
| Install sewer bypass system for large diameter pipeline with Glendale                                     | Not completed. Only needed after #18; may not be needed.                                                           | -                                                                 | Yes                         | 035 – Crescenta Valley  |
| Conduct feasibility study of protection of water & sewer pipeline within Caltrans Bridge Freeway crossing | Not completed. Initial preliminary feasibility study conducted and needs to be updated with bypass plans in place. | -                                                                 | Yes                         | 036 – Crescenta Valley  |
| Conduct feasibility study for new water storage facility and pipeline crossings of Pickens Canyon         | Not completed. Look at options for service and inspection.                                                         | -                                                                 | Yes                         | 037 – Crescenta Valley  |
| Conduct feasibility study for pipeline crossing of LA County Flood Control Channels                       | Not completed. System assessment to look for other options. Permitting streamlining.                               | -                                                                 | Yes                         | 038 – Crescenta Valley  |
| Develop Emergency Community Water Fulfillment Center                                                      | Have a manifold setup. Would need to chlorinate and sample before use in the event of an emergency                 | Develop SOP for deployment                                        | Yes                         | 039 – Crescenta Valley  |

### 3.9 HAZARD MITIGATION STRATEGY

This section includes the following components of the mitigation strategy for this jurisdiction:

- Hazard Mitigation Action Plan Matrix
- Mitigation Action Prioritization
- Mitigation Action Classification and Natural Hazards Addressed

Table 3-27. Hazard Mitigation Action Plan Matrix

| Action Number          | Action Description                                                                                       | Lead and Support Implementers | Goals Met | Benefits New or Existing Assets | Estimated Cost  | Potential Funding Sources    | Timeline                       | Community Lifeline Addressed |
|------------------------|----------------------------------------------------------------------------------------------------------|-------------------------------|-----------|---------------------------------|-----------------|------------------------------|--------------------------------|------------------------------|
| 001 – Crescenta Valley | Evaluate feasibility of back-up battery storage in lieu of or addition to generators for critical sites. | Lead: CVWD Engineering Staff  | 2, 3, 4   | Existing                        | Low (>\$50,000) | Staff Time, CIP Budget, FEMA | Short Term (less than 5 years) | Water Systems                |



| Action Number          | Action Description                                                                                                                                                                                                                                            | Lead and Support Implementers                                                 | Goals Met        | Benefits New or Existing Assets | Estimated Cost                 | Potential Funding Sources                         | Timeline                       | Community Lifeline Addressed                                               |
|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|------------------|---------------------------------|--------------------------------|---------------------------------------------------|--------------------------------|----------------------------------------------------------------------------|
|                        |                                                                                                                                                                                                                                                               |                                                                               |                  |                                 |                                | HMGP, FEMA BRIC                                   |                                |                                                                            |
| 002 – Crescenta Valley | Install additional EV chargers to ensure vehicle and equipment power availability during emergencies.                                                                                                                                                         | Lead: CVWD Engineering Staff                                                  | 2                | Both                            | Low (>\$50,000)                | FEMA HMGP, FEMA BRIC, CIP Budget, Staff Time      | Short Term (less than 5 years) | Energy, Safety and Security, Communications, Transportation, Water Systems |
| 003 – Crescenta Valley | Analyze and audit the water distribution system, including fire hydrants, to improve resiliency and ensure fire code compliance.                                                                                                                              | Lead: CVWD Engineering Staff                                                  | 1, 5, 6          | Both                            | Low (>\$50,000)                | FEMA HMGP, Staff Time, General Budget, CIP Budget | Short Term (less than 5 years) | Safety and Security, Water Systems                                         |
| 004 – Crescenta Valley | Evaluate water systems hydraulic (model) for pressure and fire flow.                                                                                                                                                                                          | Lead: CVWD Engineering Staff                                                  | 2, 5, 6          | Both                            | Medium (\$50,000 - \$250,000)  | FEMA HMGP, Staff Time, General Budget, CIP Budget | Short Term (less than 5 years) | Safety and Security, Water Systems                                         |
| 005 – Crescenta Valley | Install a new groundwater well to improve water supply resiliency.                                                                                                                                                                                            | Lead: CVWD Engineering Staff                                                  | 2, 4, 5          | New                             | Very High (>\$1 million)       | Staff Time, CIP Budget, FEMA HMGP, FEMA BRIC      | Long Term (5+ years)           | Water Systems                                                              |
| 006 – Crescenta Valley | Conduct seismic evaluations on all reservoirs.                                                                                                                                                                                                                | Lead: CVWD Engineering Staff                                                  | 1, 2, 5          | Existing                        | High (\$250,000 - \$1 million) | FEMA HMGP, CIP Budget, Staff Time                 | Short Term (less than 5 years) | Water Systems                                                              |
| 007 – Crescenta Valley | Integrate the hazard mitigation plan into other plans that address natural hazards within the service area including: <ul style="list-style-type: none"> <li>• ERP</li> <li>• CIP</li> <li>• Strategic Plan</li> <li>• Urban Water Management Plan</li> </ul> | Lead: Carla Management Group                                                  | 1, 2, 3, 4, 5, 6 | Both                            | Low (>\$50,000)                | Staff Time, General Budget                        | Short Term (less than 5 years) | N/A                                                                        |
| 008 – Crescenta Valley | Plan for upgrades to retrofit reservoirs.                                                                                                                                                                                                                     | Lead: CVWD Engineering Staff                                                  | 1, 2, 5          | Existing                        | High (\$250,000 - \$1 million) | FEMA HMGP, FEMA BRIC, CIP Budget, Staff Time      | Short Term (less than 5 years) | Water Systems                                                              |
| 009 – Crescenta Valley | Construct upgrades for reservoir seismic stability.                                                                                                                                                                                                           | Lead: CVWD Engineering Staff                                                  | 1, 2, 5          | Existing                        | Very High (>\$1 million)       | FEMA HMG, FEMA BRIC, CIP Budget, Staff Time       | Short Term (less than 5 years) | Water Systems                                                              |
| 010 – Crescenta Valley | Install IPVC pipe with greater seismic integrity.                                                                                                                                                                                                             | Lead: CVWD Engineering Staff                                                  | 1, 2, 5          | Both                            | Very High (>\$1 million)       | FEMA HMGP, FEMA BRIC, CIP Budget, Staff Time      | Short Term (less than 5 years) | Water Systems                                                              |
| 011 – Crescenta Valley | Community Outreach & Public Education: media outreach for public education on mitigation efforts including Bi-annual regional events.                                                                                                                         | Lead: CVWD Engineering Staff<br><br>Support: CVWD Public Outreach Department, | 3, 4, 5          | Both                            | Low (>\$50,000)                | Staff Time, General Budget                        | Short Term (less than 5 years) | Food, Hydration, Shelter, Health and Medical                               |





| Action Number          | Action Description                                                                                                                       | Lead and Support Implementers                                                                  | Goals Met | Benefits New or Existing Assets | Estimated Cost                 | Potential Funding Sources                            | Timeline                       | Community Lifeline Addressed                            |
|------------------------|------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|-----------|---------------------------------|--------------------------------|------------------------------------------------------|--------------------------------|---------------------------------------------------------|
|                        |                                                                                                                                          | Risk & Resilience Department                                                                   |           |                                 |                                |                                                      |                                |                                                         |
| 012 – Crescenta Valley | System analysis (water & wastewater) to identify upgrades that support mitigation outreach (valves: backwater, pressure regulators, etc. | Lead: CVWD Engineering Staff                                                                   | 3         | Existing                        | Low (>\$50,000)                | Staff Time, General Budget                           | Short Term (less than 5 years) | Food, Hydration, Shelter                                |
| 013 – Crescenta Valley | Emergency Preparation regional coordination & response with tabletop.                                                                    | Lead: CVWD Public Outreach Department<br>Support: CVWD Risk & Resilience Department            | 2, 4, 5   | Existing                        | Low (>\$50,000)                | Staff Time, General Budget                           | Short Term (less than 5 years) | Communications, Water Systems                           |
| 014 – Crescenta Valley | ERP centralized communications for EOC utilization.                                                                                      | Lead: CVWD Risk & Resilience Department<br>Support: CVWD Public Outreach Department            | 1, 2, 5   | Existing                        | Low (>\$50,000)                | General Budget, Staff Time                           | Short Term (less than 5 years) | Communications, Water Systems, Safety and Security      |
| 015 – Crescenta Valley | Electronic Access Control System.                                                                                                        | Lead: CVWD Engineering Staff                                                                   | 2, 5      | Both                            | Very High (>\$1 million)       | CIP Budget                                           | Short Term (less than 5 years) | Safety and Security, Water Systems                      |
| 016 – Crescenta Valley | Communication Infrastructure Upgrades – Antenna Tower.                                                                                   | Lead: CVWD Engineering Staff                                                                   | 2, 5      | Existing                        | Medium (\$50,000 - \$250,000)  | Staff Time, CIP Budget                               | Short Term (less than 5 years) | Water Systems, Communications                           |
| 017 – Crescenta Valley | Building expansion to accommodate EOC.                                                                                                   | Lead: Crescenta Valley Water District Finance and Administration                               | 2, 3, 5   | Existing                        | High (\$250,000 - \$1 million) | FEMA HMGP, CIP Budget, Staff Time                    | Short Term (less than 5 years) | Food, Hydration, Shelter, Communications, Water Systems |
| 018 – Crescenta Valley | Fleet Tracking: Improve access & safety during regional EOC.                                                                             | Lead: CVWD Risk & Resilience Department<br>Support: CVWD Operations and Maintenance Department | 1, 2, 5   | Existing                        | Low (>\$50,000)                | General Budget, Staff Time                           | Short Term (less than 5 years) | Transportation, Communications, Safety and Security     |
| 019 – Crescenta Valley | Acquire stationary emergency electric generators for Main Booster Stations (2 total).                                                    | Lead: Dennis Ngyuen, Christina Kopleman                                                        | 1, 2, 5   | Both                            | Very High (>\$1 million)       | FEMA HMGP, FEMA BRIC, District Funds for Local Match | Short Term (less than 5 years) | Energy, Water Systems                                   |
| 020 – Crescenta Valley | Acquire stationary emergency electric generators for well sites (5 total sites).                                                         | Lead: Dennis Ngyuen, Christina Kopleman                                                        | 1, 2, 5   | Both                            | High (\$250,000 - \$1 million) | FEMA HMGP, FEMA BRIC, District Funds for Local Match | Short Term (less than 5 years) | Energy, Water Systems                                   |



| Action Number          | Action Description                                                                                                                                       | Lead and Support Implementers           | Goals Met  | Benefits New or Existing Assets | Estimated Cost                 | Potential Funding Sources                             | Timeline                       | Community Lifeline Addressed            |
|------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|------------|---------------------------------|--------------------------------|-------------------------------------------------------|--------------------------------|-----------------------------------------|
| 021 – Crescenta Valley | Acquire portable emergency electric generators for booster stations (4 total).                                                                           | Lead: Dennis Nguyen, Christina Kopleman | 1, 2, 5    | Both                            | High (\$250,000 - \$1 million) | FEMA HMGP, FEMA BRIC, District Funds for Local Match  | Short Term (less than 5 years) | Energy, Water Systems                   |
| 022 – Crescenta Valley | Acquire portable emergency electric generators for well sites (4 total).                                                                                 | Lead: Dennis Nguyen, Christina Kopleman | 1, 2, 5    | Both                            | Medium (\$50,000 - \$250,000)  | FEMA HMGP, FEMA BRIC, District Funds for Local Match  | Short Term (less than 5 years) | Energy, Water Systems                   |
| 023 – Crescenta Valley | Install seismic sensors and valve actuators on reservoir inlet/outlet valves (4 sites).                                                                  | Lead: Dennis Nguyen, Christina Kopleman | 1, 2, 5, 6 | Both                            | High (\$250,000 - \$1 million) | FEMA HMGP, FEMA BRIC, District Funds                  | Short Term (less than 5 years) | Water Systems, Food, Hydration, Shelter |
| 024 – Crescenta Valley | Install security cameras at reservoir and well sites (88 cameras total).                                                                                 | Lead: Arturo Montes, Elena Chamarro     | 5          | Both                            | Medium (\$50,000 - \$250,000)  | Homeland Security Grant Program, EMPG, District Funds | Long Term (5+ years)           | Safety and Security, Water Systems      |
| 025 – Crescenta Valley | Conduct seismic evaluation study of existing CVWD buildings (4 buildings).                                                                               | Lead: Dennis Bguyen, Christina Kopleman | 1, 2, 5, 6 | Existing                        | Medium (\$50,000 - \$250,000)  | District funds, FEMA HMGP, FEMA BRIC                  | Short Term (less than 5 years) | Food, Hydration, Shelter                |
| 026 – Crescenta Valley | Seismically upgrade/retrofit CVWD buildings.                                                                                                             | Lead: Dennis Nguyen, Christina Kopleman | 1, 2, 5, 6 | Existing                        | Very High (>\$1 million)       | FEMA HMGP, FEMA BRIC, District Funds for Local Match  | Long Term (5+ years)           | Food, Hydration, Shelter                |
| 027 – Crescenta Valley | Repair slope and inlet/outlet pipeline at Edmund #2 Reservoir.                                                                                           | Lead: Dennis Nguyen, Christina Kopleman | 1, 2, 5, 6 | Existing                        | Medium (\$50,000 - \$250,000)  | FEMA HMGP, FEMA BRIC, District Funds for Local Match  | Short Term (less than 5 years) | Water Systems                           |
| 028 – Crescenta Valley | Replace above ground outlet pipe at Gross Canyon Reservoir such that it will mitigate the future impacts from earthquake, landslide and wildfire events. | Lead: Dennis Nguyen, Gabriel Gomez      | 1, 2, 5, 6 | Existing                        | Medium (\$50,000 - \$250,000)  | FEMA HMGP, FEMA BRIC, District Funds for Local Match  | Short Term (less than 5 years) | Water Systems                           |
| 029 – Crescenta Valley | Conduct feasibility study for relocation / upgrades to access roads at reservoirs.                                                                       | Lead: Dennis Nguyen, Christina Kopleman | 1, 2, 5, 6 | Existing                        | Medium (\$50,000 - \$250,000)  | FEMA HMGP, District Funds for Local Match             | Short Term (less than 5 years) | Transportation, Water Systems           |



| Action Number          | Action Description                                                                                         | Lead and Support Implementers           | Goals Met  | Benefits New or Existing Assets | Estimated Cost                 | Potential Funding Sources                            | Timeline                       | Community Lifeline Addressed           |
|------------------------|------------------------------------------------------------------------------------------------------------|-----------------------------------------|------------|---------------------------------|--------------------------------|------------------------------------------------------|--------------------------------|----------------------------------------|
| 030 – Crescenta Valley | Relocate access roadway at Pickens Canyon Reservoir.                                                       | Lead: Dennis Nguyen, Christina Kopelman | 1          | Existing                        | Very High (>\$1 million)       | FEMA HMGP, FEMA BRIC, District Funds for Local Match | Long Term (5+ years)           | Transportation, Water Systems          |
| 031 – Crescenta Valley | Retrofit access road to Edmund #2 Reservoir.                                                               | Lead: Dennis Nguyen, Gabriel Gomez      | 1          | Existing                        | Very High (>\$1 million)       | FEMA HMGP, FEMA BRIC, District Funds for Local Match | Long Term (5+ years)           | Transportation, Water Systems          |
| 032 – Crescenta Valley | Retrofit access roadway at Shields Reservoir.                                                              | Lead: Dennis Nguyen, Gabriel Gomez      | 1          | Existing                        | High (\$250,000 - \$1 million) | FEMA HMGP, FEMA BRIC, District Funds for Local Match | Long Term (5+ years)           | Transportation, Water Systems          |
| 033 – Crescenta Valley | Conduct feasibility study for sewer bypass system for large diameter pipeline with Glendale.               | Lead: Carla Dillon, Darlene Telles      | 1, 2, 5, 6 | Existing                        | Medium (\$50,000 - \$250,000)  | FEMA HMGP, District Funds for Local Match            | Short Term (less than 5 years) | Water Systems                          |
| 034 – Crescenta Valley | Install sewer bypass system for large diameter pipeline with Glendale.                                     | Lead: Carla Dillon, Darlene Telles      | 1, 2, 5, 6 | New                             | Very High (>\$1 million)       | FEMA HMGP, FEMA BRIC, District Funds for Local Match | Long Term (5+ years)           | Water Systems                          |
| 035 – Crescenta Valley | Conduct feasibility study of protection of water & sewer pipeline within Caltrans Bridge Freeway crossing. | Lead: Christina Kopleman, Carla Dillon  | 1, 2, 5, 6 | Existing                        | Medium (\$50,000 - \$250,000)  | FEMA HMGP, District Funds for Local Match            | Short Term (less than 5 years) | Water Systems                          |
| 036 – Crescenta Valley | Conduct feasibility study for new water storage facility and pipeline crossings of Pickens Canyon.         | Lead: Christina Kopleman, Carla Dillon  | 1, 2, 5, 6 | Existing                        | Medium (\$50,000 - \$250,000)  | FEMA HMGP, District Funds for Local Match            | Short Term (less than 5 years) | Water Systems                          |
| 037 – Crescenta Valley | Conduct feasibility study for pipeline crossing of LA County Flood Control Channels.                       | Lead: Christina Kopleman, Dennis Nguyen | 1, 2, 5, 6 | Existing                        | Medium (\$50,000 - \$250,000)  | FEMA HMGP, District Funds for Local Match            | Short Term (less than 5 years) | Water Systems                          |
| 038 – Crescenta Valley | Develop Emergency Community Water Fulfillment Center.                                                      | Lead: Gabriel Gomez, Morgen DuRose      | 1, 2, 5, 6 | Both                            | Medium (\$50,000 - \$250,000)  | FEMA HMGP, FEMA BRIC, District Funds for Local Match | Short Term (less than 5 years) | Food Hydration, Shelter, Water Systems |



| Action Number          | Action Description                                                                                                                                                  | Lead and Support Implementers | Goals Met | Benefits New or Existing Assets | Estimated Cost                | Potential Funding Sources | Timeline                       | Community Lifeline Addressed           |
|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|-----------|---------------------------------|-------------------------------|---------------------------|--------------------------------|----------------------------------------|
| 039 – Crescenta Valley | Conduct a feasibility assessment to determine potential environmental impacts and contaminants specific to the watershed for treating and sourcing the water supply | Lead: CVWD Engineering Staff  | 1, 5      | Both                            | Medium (\$50,000 - \$250,000) | District Funds            | Short Term (less than 5 years) | Food Hydration, Shelter, Water Systems |

Table 3-28. Mitigation Action Prioritization

| Action Number          | Life Safety | Property Protection | Cost-Effectiveness | Technically Feasible | Legal Authority | Funding Available | Grant Eligible | Environmental | Climate Change | Equity Priority Community | Administrative Capacity | Multi-Hazard | Timeline | Other Local Objective | Support Policies | Total Score | Priority |
|------------------------|-------------|---------------------|--------------------|----------------------|-----------------|-------------------|----------------|---------------|----------------|---------------------------|-------------------------|--------------|----------|-----------------------|------------------|-------------|----------|
| 001 – Crescenta Valley | 0           | 0                   | 0                  | 3                    | 3               | 1                 | 1              | 0             | 0              | 0                         | 3                       | 3            | 3        | 0                     | 3                | 20          | Medium   |
| 002 – Crescenta Valley | 0           | 0                   | 3                  | 3                    | 3               | 1                 | 1              | 0             | 0              | 0                         | 3                       | 3            | 3        | 3                     | 3                | 26          | Medium   |
| 003 – Crescenta Valley | 3           | 3                   | 3                  | 3                    | 3               | 1                 | 1              | 0             | 0              | 0                         | 3                       | 0            | 3        | 3                     | 3                | 29          | Medium   |
| 004 – Crescenta Valley | 3           | 3                   | 3                  | 3                    | 3               | 1                 | 1              | 0             | 0              | 0                         | 3                       | 3            | 3        | 3                     | 3                | 32          | High     |
| 005 – Crescenta Valley | 3           | 0                   | 3                  | 3                    | 3               | 1                 | 1              | 1             | 0              | 0                         | 3                       | 3            | 1        | 3                     | 3                | 28          | Medium   |
| 006 – Crescenta Valley | 3           | 3                   | 3                  | 3                    | 3               | 1                 | 1              | 0             | 0              | 0                         | 3                       | 3            | 3        | 3                     | 3                | 32          | High     |
| 007 – Crescenta Valley | 1           | 1                   | 3                  | 3                    | 3               | 3                 | 1              | 0             | 0              | 1                         | 3                       | 3            | 3        | 3                     | 3                | 31          | High     |
| 008 – Crescenta Valley | 3           | 3                   | 3                  | 3                    | 3               | 1                 | 1              | 0             | 0              | 0                         | 3                       | 3            | 1        | 3                     | 3                | 30          | Medium   |
| 009 – Crescenta Valley | 3           | 3                   | 3                  | 3                    | 3               | 1                 | 1              | 0             | 0              | 0                         | 3                       | 3            | 0        | 3                     | 3                | 29          | Medium   |
| 010 – Crescenta Valley | 3           | 3                   | 3                  | 3                    | 3               | 1                 | 1              | 0             | 0              | 0                         | 3                       | 3            | 1        | 3                     | 3                | 30          | Medium   |
| 011 – Crescenta Valley | 3           | 3                   | 3                  | 3                    | 3               | 1                 | 0              | 0             | 0              | 0                         | 3                       | 3            | 3        | 0                     | 3                | 28          | Medium   |
| 012 – Crescenta Valley | 3           | 3                   | 3                  | 3                    | 3               | 0                 | 0              | 0             | 0              | 0                         | 3                       | 3            | 3        | 3                     | 3                | 30          | Medium   |
| 013 – Crescenta Valley | 3           | 3                   | 3                  | 3                    | 3               | 0                 | 0              | 0             | 0              | 0                         | 3                       | 3            | 3        | 3                     | 3                | 30          | Medium   |
| 014 – Crescenta Valley | 3           | 3                   | 3                  | 3                    | 3               | 0                 | 0              | 0             | 0              | 0                         | 3                       | 3            | 3        | 3                     | 3                | 30          | Medium   |
| 015 – Crescenta Valley | 1           | 3                   | 3                  | 3                    | 3               | 3                 | 1              | 0             | 0              | 0                         | 3                       | 3            | 3        | 3                     | 3                | 32          | High     |
| 016 – Crescenta Valley | 3           | 1                   | 3                  | 3                    | 3               | 1                 | 1              | 0             | 0              | 0                         | 3                       | 3            | 3        | 3                     | 3                | 30          | Medium   |
| 017 – Crescenta Valley | 1           | 1                   | 3                  | 3                    | 3               | 1                 | 1              | 0             | 0              | 0                         | 3                       | 3            | 3        | 3                     | 3                | 28          | Medium   |
| 018 – Crescenta Valley | 3           | 3                   | 3                  | 3                    | 3               | 0                 | 0              | 0             | 0              | 0                         | 3                       | 3            | 3        | 3                     | 3                | 30          | Medium   |
| 019 – Crescenta Valley | 3           | 3                   | 3                  | 3                    | 3               | 0                 | 0              | 0             | 0              | 0                         | 3                       | 3            | 3        | 3                     | 3                | 30          | Medium   |
| 020 – Crescenta Valley | 3           | 3                   | 3                  | 3                    | 3               | 3                 | 3              | 0             | 3              | 3                         | 3                       | 3            | 3        | 3                     | 3                | 42          | High     |
| 021 – Crescenta Valley | 3           | 3                   | 3                  | 3                    | 3               | 3                 | 3              | 0             | 3              | 3                         | 3                       | 3            | 3        | 3                     | 3                | 42          | High     |
| 022 – Crescenta Valley | 3           | 3                   | 3                  | 3                    | 3               | 3                 | 3              | 0             | 3              | 3                         | 3                       | 3            | 3        | 3                     | 3                | 42          | High     |
| 023 – Crescenta Valley | 3           | 3                   | 1                  | 1                    | 3               | 1                 | 3              | 1             | 0              | 0                         | 3                       | 0            | 3        | 3                     | 3                | 28          | Medium   |
| 024 – Crescenta Valley | 1           | 1                   | 3                  | 3                    | 3               | 1                 | 1              | 0             | 0              | 0                         | 3                       | 3            | 1        | 3                     | 3                | 26          | Medium   |
| 025 – Crescenta Valley | 3           | 3                   | 3                  | 3                    | 3               | 3                 | 3              | 3             | 0              | 0                         | 3                       | 0            | 3        | 3                     | 3                | 36          | High     |
| 026 – Crescenta Valley | 3           | 3                   | 3                  | 3                    | 3               | 3                 | 3              | 3             | 0              | 0                         | 3                       | 0            | 1        | 3                     | 3                | 34          | High     |
| 027 – Crescenta Valley | 3           | 3                   | 3                  | 3                    | 3               | 3                 | 3              | 1             | 1              | 0                         | 1                       | 3            | 3        | 3                     | 3                | 36          | High     |
| 028 – Crescenta Valley | 3           | 1                   | 3                  | 3                    | 3               | 3                 | 3              | 0             | 3              | 0                         | 1                       | 3            | 3        | 3                     | 3                | 35          | High     |
| 029 – Crescenta Valley | 1           | 1                   | 1                  | 3                    | 1               | 3                 | 3              | 0             | 0              | 0                         | 3                       | 3            | 3        | 1                     | 1                | 24          | Medium   |
| 030 – Crescenta Valley | 1           | 3                   | 1                  | 1                    | 1               | 3                 | 3              | 0             | 0              | 0                         | 3                       | 3            | 1        | 1                     | 1                | 22          | Medium   |





| Action Number          | Life Safety | Property Protection | Cost-Effectiveness | Technically Feasible | Legal Authority | Funding Available | Grant Eligible | Environmental | Climate Change | Equity Priority Community | Administrative Capacity | Multi-Hazard | Timeline | Other Local Objective | Support Policies | Total Score | Priority |
|------------------------|-------------|---------------------|--------------------|----------------------|-----------------|-------------------|----------------|---------------|----------------|---------------------------|-------------------------|--------------|----------|-----------------------|------------------|-------------|----------|
| 031 – Crescenta Valley | 1           | 3                   | 1                  | 1                    | 1               | 3                 | 3              | 0             | 0              | 0                         | 3                       | 3            | 1        | 1                     | 1                | 22          | Medium   |
| 032 – Crescenta Valley | 1           | 3                   | 1                  | 1                    | 1               | 3                 | 3              | 0             | 0              | 0                         | 3                       | 3            | 1        | 1                     | 1                | 22          | Medium   |
| 033 – Crescenta Valley | 1           | 1                   | 1                  | 3                    | 1               | 3                 | 3              | 0             | 0              | 0                         | 3                       | 3            | 3        | 1                     | 1                | 24          | Medium   |
| 034 – Crescenta Valley | 1           | 3                   | 1                  | 1                    | 1               | 3                 | 3              | 0             | 0              | 0                         | 3                       | 3            | 1        | 1                     | 1                | 22          | Medium   |
| 035 – Crescenta Valley | 1           | 1                   | 3                  | 3                    | 3               | 3                 | 3              | 0             | 3              | 0                         | 3                       | 3            | 3        | 3                     | 3                | 35          | High     |
| 036 – Crescenta Valley | 1           | 1                   | 3                  | 3                    | 3               | 3                 | 3              | 0             | 3              | 0                         | 3                       | 3            | 3        | 3                     | 3                | 35          | High     |
| 037 – Crescenta Valley | 1           | 1                   | 3                  | 3                    | 3               | 3                 | 3              | 0             | 3              | 0                         | 3                       | 3            | 3        | 3                     | 3                | 35          | High     |
| 038 – Crescenta Valley | 3           | 1                   | 3                  | 3                    | 3               | 3                 | 3              | 0             | 3              | 3                         | 3                       | 3            | 3        | 3                     | 3                | 40          | High     |
| 039 – Crescenta Valley | 3           | 0                   | 3                  | 3                    | 3               | 1                 | 0              | 3             | 0              | 3                         | 3                       | 0            | 3        | 3                     | 3                | 31          | Medium   |

Note: 31 or more = High Priority  
15 to 30 = Medium Priority  
0 to 14 = Low Priority

Table 3-29. Mitigation Action Classification and Natural Hazards Addressed

| Action                 | Mitigation Classification   |                    |                                       |                                  |                            |                    |                             | Natural Hazards |         |            |                     |       |           |             |          |
|------------------------|-----------------------------|--------------------|---------------------------------------|----------------------------------|----------------------------|--------------------|-----------------------------|-----------------|---------|------------|---------------------|-------|-----------|-------------|----------|
|                        | Local Plans and Regulations | Emergency Services | Structure and Infrastructure Projects | Education and Awareness Programs | Natural Systems Protection | Climate Resilience | Community Capacity Building | Dam Failure*    | Drought | Earthquake | Extreme Temperature | Flood | Landslide | Strong Wind | Wildfire |
| 001 – Crescenta Valley |                             | ■                  |                                       |                                  |                            |                    | ■                           |                 | ■       | ■          | ■                   | ■     | ■         | ■           | ■        |
| 002 – Crescenta Valley |                             | ■                  |                                       |                                  |                            |                    | ■                           |                 |         | ■          |                     | ■     | ■         | ■           | ■        |
| 003 – Crescenta Valley |                             | ■                  | ■                                     |                                  |                            |                    |                             |                 |         |            |                     |       |           |             | ■        |
| 004 – Crescenta Valley |                             | ■                  |                                       |                                  |                            |                    |                             |                 |         |            |                     |       |           |             | ■        |
| 005 – Crescenta Valley |                             | ■                  |                                       |                                  |                            |                    |                             |                 | ■       | ■          |                     |       |           |             | ■        |
| 006 – Crescenta Valley |                             | ■                  | ■                                     |                                  |                            |                    | ■                           |                 |         | ■          |                     |       |           |             |          |
| 007 – Crescenta Valley | ■                           |                    |                                       | ■                                |                            | ■                  |                             |                 | ■       | ■          | ■                   | ■     | ■         | ■           | ■        |
| 008 – Crescenta Valley |                             | ■                  | ■                                     |                                  |                            |                    |                             |                 |         | ■          |                     |       |           |             |          |
| 009 – Crescenta Valley |                             | ■                  | ■                                     |                                  |                            |                    |                             |                 |         | ■          |                     |       |           |             |          |
| 010 – Crescenta Valley |                             | ■                  | ■                                     |                                  |                            |                    |                             |                 |         | ■          |                     |       |           |             |          |
| 011 – Crescenta Valley |                             | ■                  |                                       | ■                                |                            |                    |                             |                 | ■       | ■          | ■                   |       |           | ■           |          |
| 012 – Crescenta Valley |                             | ■                  |                                       | ■                                |                            |                    |                             |                 | ■       | ■          |                     | ■     |           | ■           |          |
| 013 – Crescenta Valley |                             | ■                  |                                       | ■                                |                            |                    | ■                           |                 |         | ■          |                     | ■     |           | ■           | ■        |
| 014 – Crescenta Valley |                             | ■                  |                                       |                                  |                            |                    | ■                           |                 |         | ■          |                     | ■     |           | ■           | ■        |



| Action                 | Mitigation Classification   |                    |                                       |                                  |                            |                    |                             | Natural Hazards |         |            |                     |       |           |             |          |
|------------------------|-----------------------------|--------------------|---------------------------------------|----------------------------------|----------------------------|--------------------|-----------------------------|-----------------|---------|------------|---------------------|-------|-----------|-------------|----------|
|                        | Local Plans and Regulations | Emergency Services | Structure and Infrastructure Projects | Education and Awareness Programs | Natural Systems Protection | Climate Resilience | Community Capacity Building | Dam Failure*    | Drought | Earthquake | Extreme Temperature | Flood | Landslide | Strong Wind | Wildfire |
| 015 – Crescenta Valley |                             | ■                  |                                       |                                  |                            |                    | ■                           |                 |         | ■          |                     |       |           | ■           | ■        |
| 016 – Crescenta Valley |                             | ■                  |                                       |                                  |                            |                    | ■                           |                 |         | ■          |                     | ■     |           | ■           | ■        |
| 017 – Crescenta Valley |                             | ■                  |                                       |                                  |                            |                    | ■                           |                 |         | ■          | ■                   | ■     |           | ■           | ■        |
| 018 – Crescenta Valley |                             | ■                  |                                       | ■                                |                            |                    | ■                           |                 |         | ■          |                     | ■     |           | ■           | ■        |
| 019 – Crescenta Valley |                             | ■                  |                                       |                                  |                            |                    | ■                           |                 |         | ■          |                     | ■     |           | ■           | ■        |
| 020 – Crescenta Valley |                             |                    | ■                                     |                                  |                            | ■                  |                             |                 |         | ■          |                     | ■     | ■         |             | ■        |
| 021 – Crescenta Valley |                             |                    | ■                                     |                                  |                            | ■                  |                             |                 |         | ■          |                     | ■     | ■         |             | ■        |
| 022 – Crescenta Valley |                             |                    | ■                                     |                                  |                            | ■                  |                             |                 |         | ■          |                     | ■     | ■         |             | ■        |
| 023 – Crescenta Valley |                             |                    | ■                                     |                                  |                            |                    |                             |                 |         | ■          |                     |       |           |             |          |
| 024 – Crescenta Valley |                             |                    |                                       |                                  |                            |                    |                             |                 |         | ■          |                     | ■     | ■         |             | ■        |
| 025 – Crescenta Valley |                             |                    | ■                                     |                                  |                            |                    |                             |                 |         | ■          |                     |       |           |             |          |
| 026 – Crescenta Valley |                             |                    | ■                                     |                                  |                            |                    |                             |                 |         | ■          |                     |       |           |             |          |
| 027 – Crescenta Valley |                             |                    | ■                                     |                                  |                            | ■                  |                             |                 |         | ■          |                     |       | ■         |             | ■        |
| 028 – Crescenta Valley |                             |                    | ■                                     |                                  |                            | ■                  |                             |                 |         | ■          |                     |       | ■         |             | ■        |
| 029 – Crescenta Valley | ■                           |                    | ■                                     |                                  |                            |                    |                             |                 |         | ■          |                     | ■     | ■         |             | ■        |
| 030 – Crescenta Valley |                             |                    | ■                                     |                                  |                            |                    |                             |                 |         | ■          |                     | ■     | ■         |             | ■        |
| 031 – Crescenta Valley |                             |                    | ■                                     |                                  |                            |                    |                             |                 |         | ■          |                     | ■     | ■         |             | ■        |
| 032 – Crescenta Valley |                             |                    | ■                                     |                                  |                            |                    |                             |                 |         | ■          |                     | ■     | ■         |             | ■        |
| 033 – Crescenta Valley | ■                           |                    | ■                                     |                                  |                            |                    |                             |                 |         | ■          |                     | ■     | ■         |             | ■        |
| 034 – Crescenta Valley |                             |                    | ■                                     |                                  |                            | ■                  |                             |                 |         | ■          |                     | ■     | ■         |             | ■        |
| 035 – Crescenta Valley | ■                           |                    | ■                                     |                                  |                            |                    |                             |                 |         | ■          |                     |       |           |             |          |
| 036 – Crescenta Valley | ■                           |                    | ■                                     |                                  |                            |                    |                             |                 | ■       | ■          |                     | ■     | ■         |             | ■        |
| 037 – Crescenta Valley | ■                           |                    | ■                                     |                                  |                            |                    |                             |                 |         | ■          |                     | ■     | ■         |             | ■        |
| 038 – Crescenta Valley |                             | ■                  | ■                                     |                                  |                            | ■                  |                             |                 | ■       | ■          |                     | ■     | ■         |             | ■        |
| 039 – Crescenta Valley |                             |                    |                                       |                                  | ■                          |                    | ■                           |                 | ■       |            |                     |       |           |             |          |

Note: The dam failure hazard does not impact CVWD assets.

### 3.10 PUBLIC OUTREACH

Table 3-30. Public Outreach

| Local Outreach Activity                            | Date       | Number of People Involved |
|----------------------------------------------------|------------|---------------------------|
| La Cañada Community Preparedness                   | 9/16/2025  | 300                       |
| Crescenta Valley Weekly Newspaper informational ad | 8/7/2025   | 8,000                     |
| Social Media Posts                                 | 8/7/2025   | 1,000                     |
| La Crescenta Emergency Preparedness event          | 9/27/2025  | 100                       |
| Farmer's Market                                    | 11/9/2025  | 200                       |
| Rain barrel distribution event                     | 10/11/2025 | 50                        |



Figure 3-3. Public Outreach Event September 2025

Source: Crescenta Valley Water District



### 3.11 INFORMATION SOURCES USED FOR THIS ANNEX

The following technical reports, plans, and regulatory mechanisms were reviewed to provide information for this annex.

- **2021 Crescenta Valley Water District Local Hazard Mitigation Plan**—The prior plan was used as a starting point to update agency information
- **Capital Improvement Program**—The Capital Improvement Program prioritizes projects that have been identified to improve District facilities, infrastructure, and equipment, including potential mitigation projects. The Capital Improvement Program was used as a source of information while preparing this annex.
- **Urban Water Management Plan**—This plan was used to inform the capability assessment.
- **Sewer System Management Plan**—This plan was used to inform the capability assessment.

The following outside resources and references were reviewed:

- **Hazard Mitigation Plan Annex Development Toolkit**—The toolkit was used to support the identification of past hazard events and noted vulnerabilities, the risk ranking, and the development of the mitigation action plan.

### 3.12 AGENCY HAZARD MAPPING

Agency-specific risk maps of the hazards are provided on the following pages. For a complete description of each hazard, please see the applicable chapters in Volume 1 of this plan. These maps are based on the vulnerability and risk assessment results for this plan.



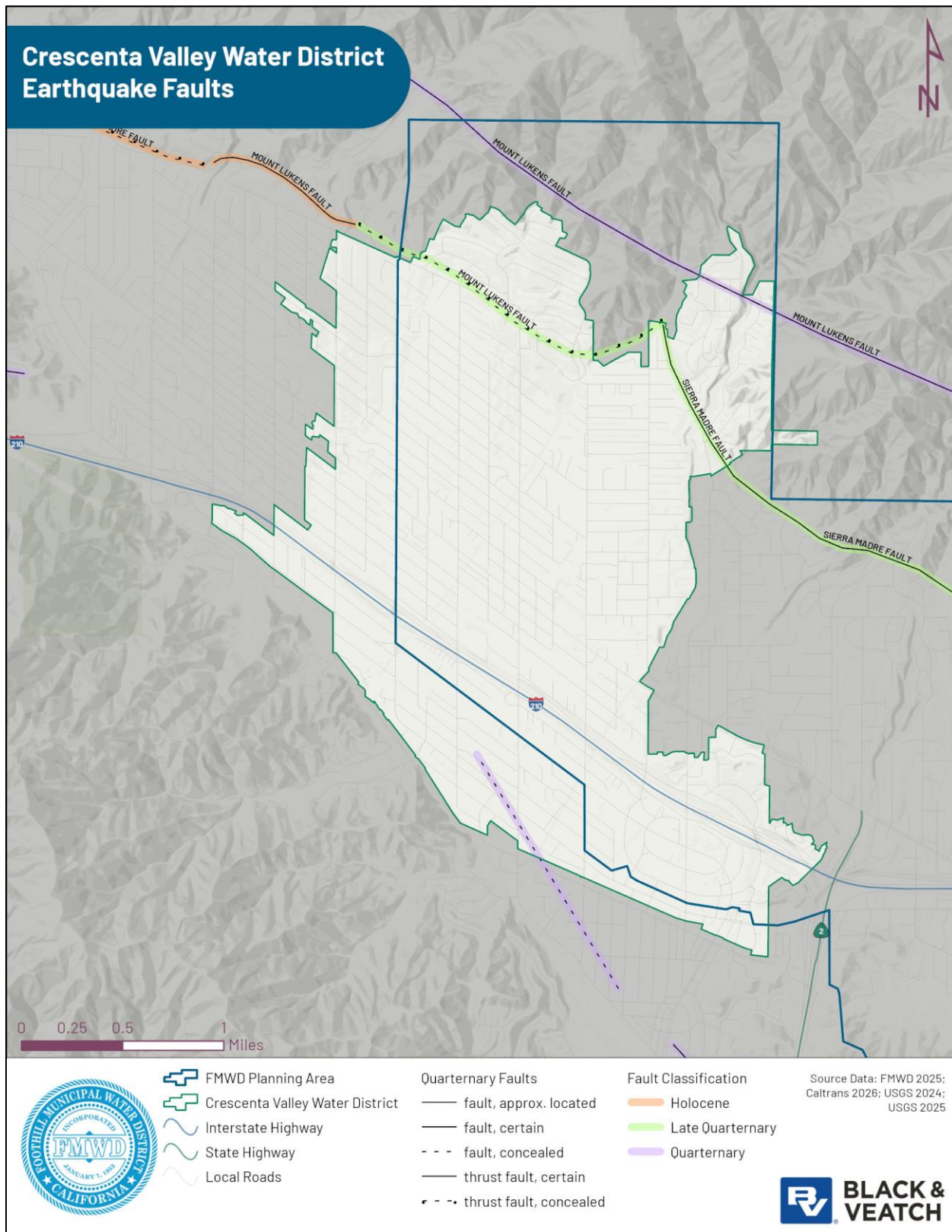


Figure 3-4. Earthquake Faults Map

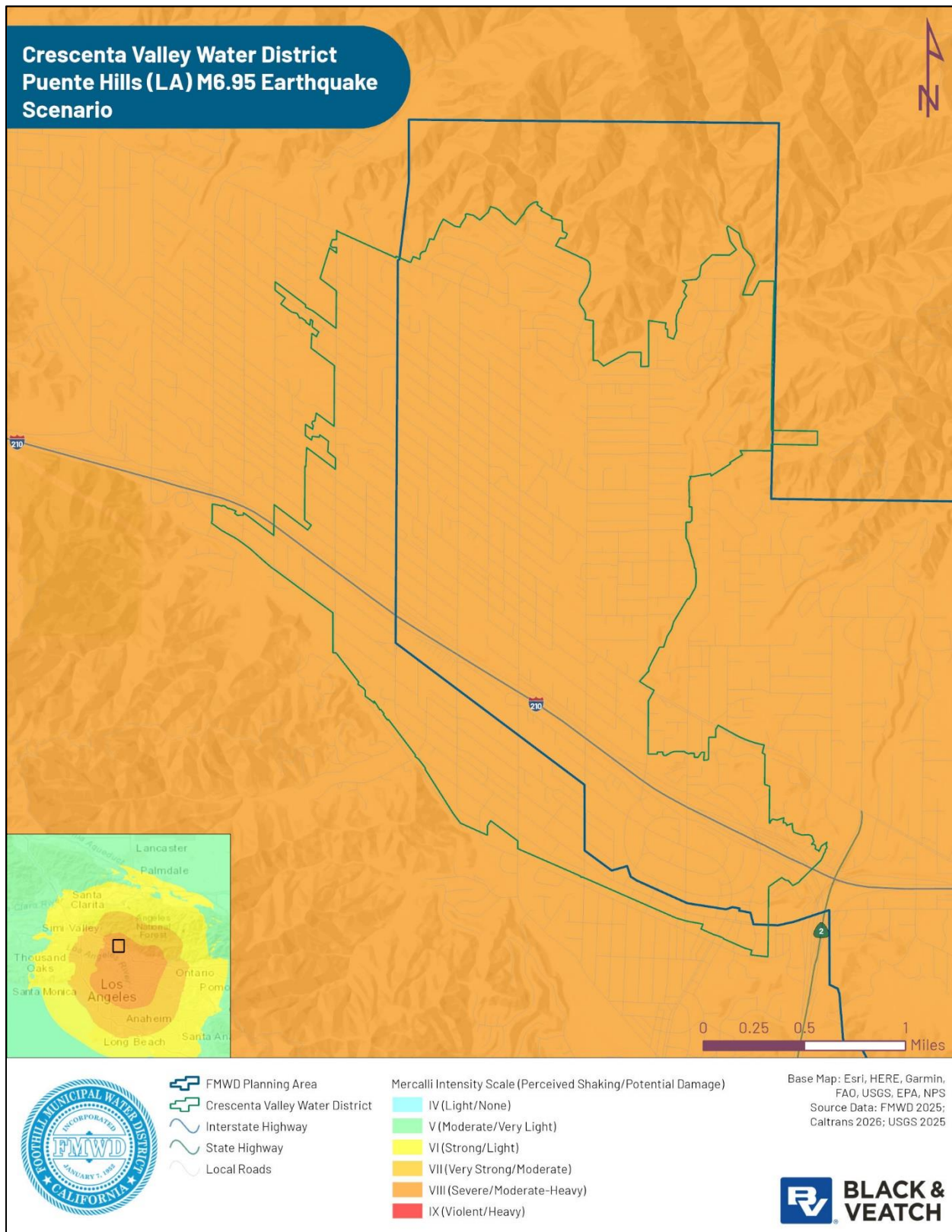


Figure 3-5. Earthquake Hazard Map – Puente Hills M6.95 Scenario



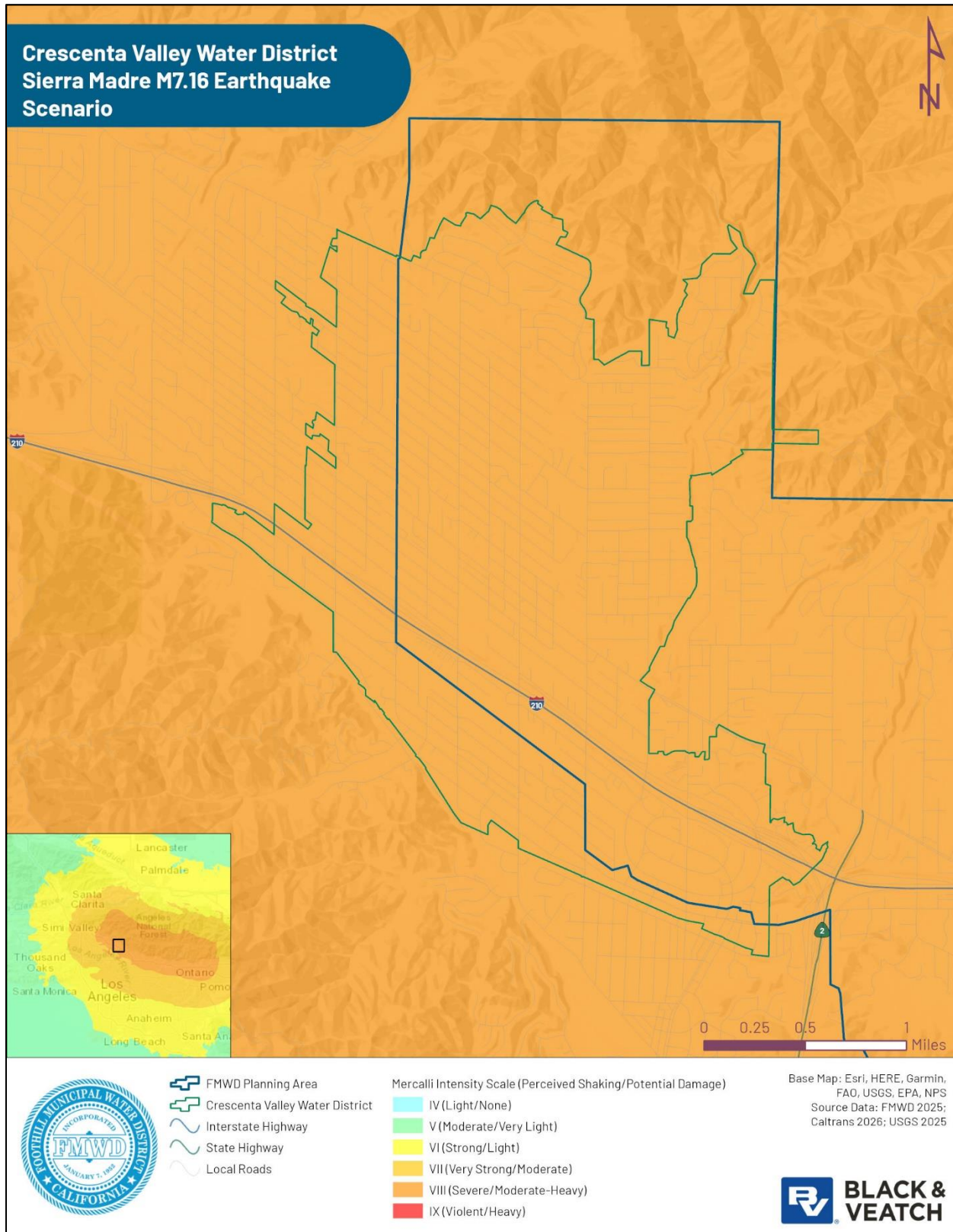


Figure 3-6. Earthquake Hazard Map – Sierra Madre M7.16 Scenario

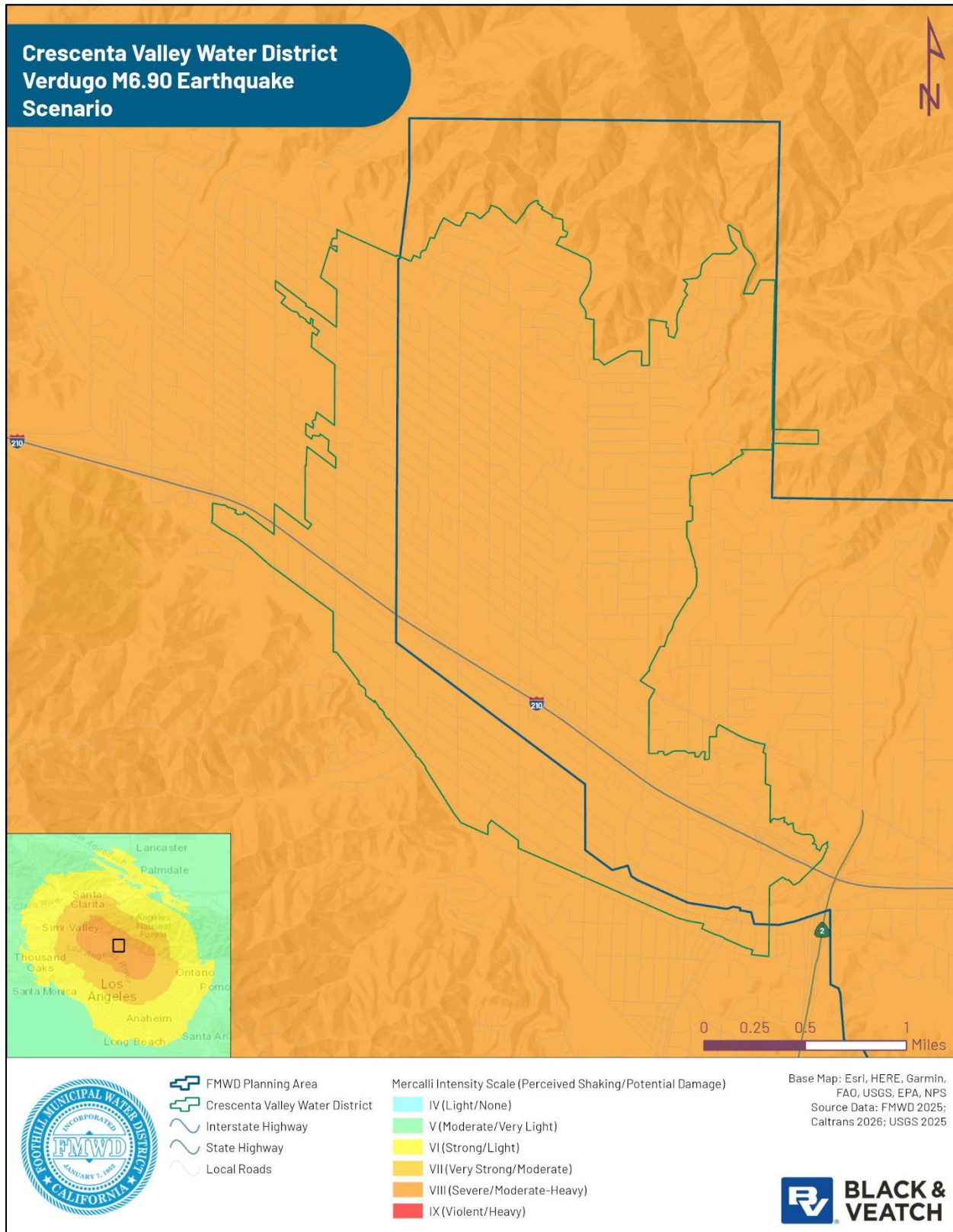


Figure 3-7. Earthquake Hazard Map – Verdugo M6.90 Scenario



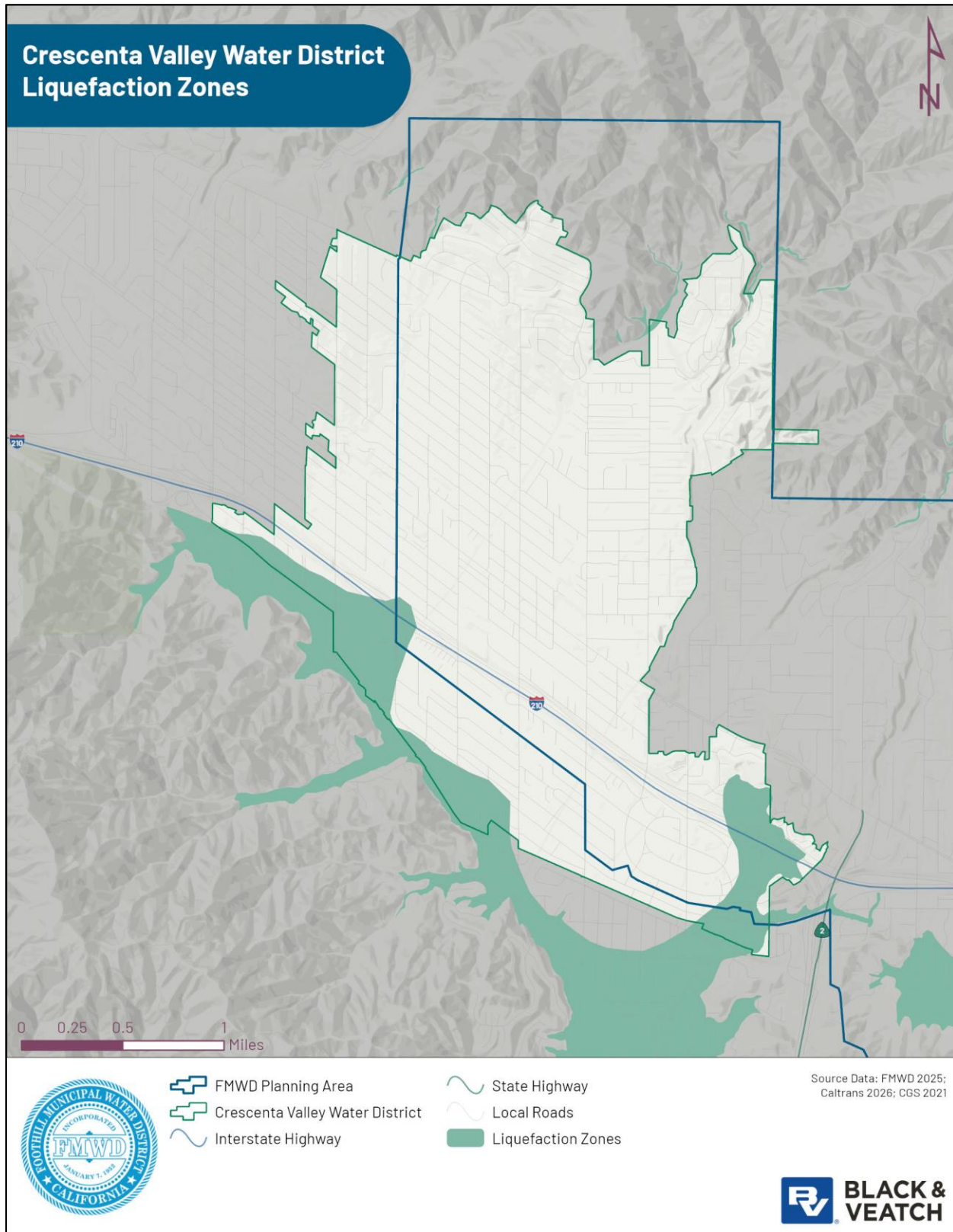


Figure 3-8. Liquefaction Hazard Map – Liquefaction Zones



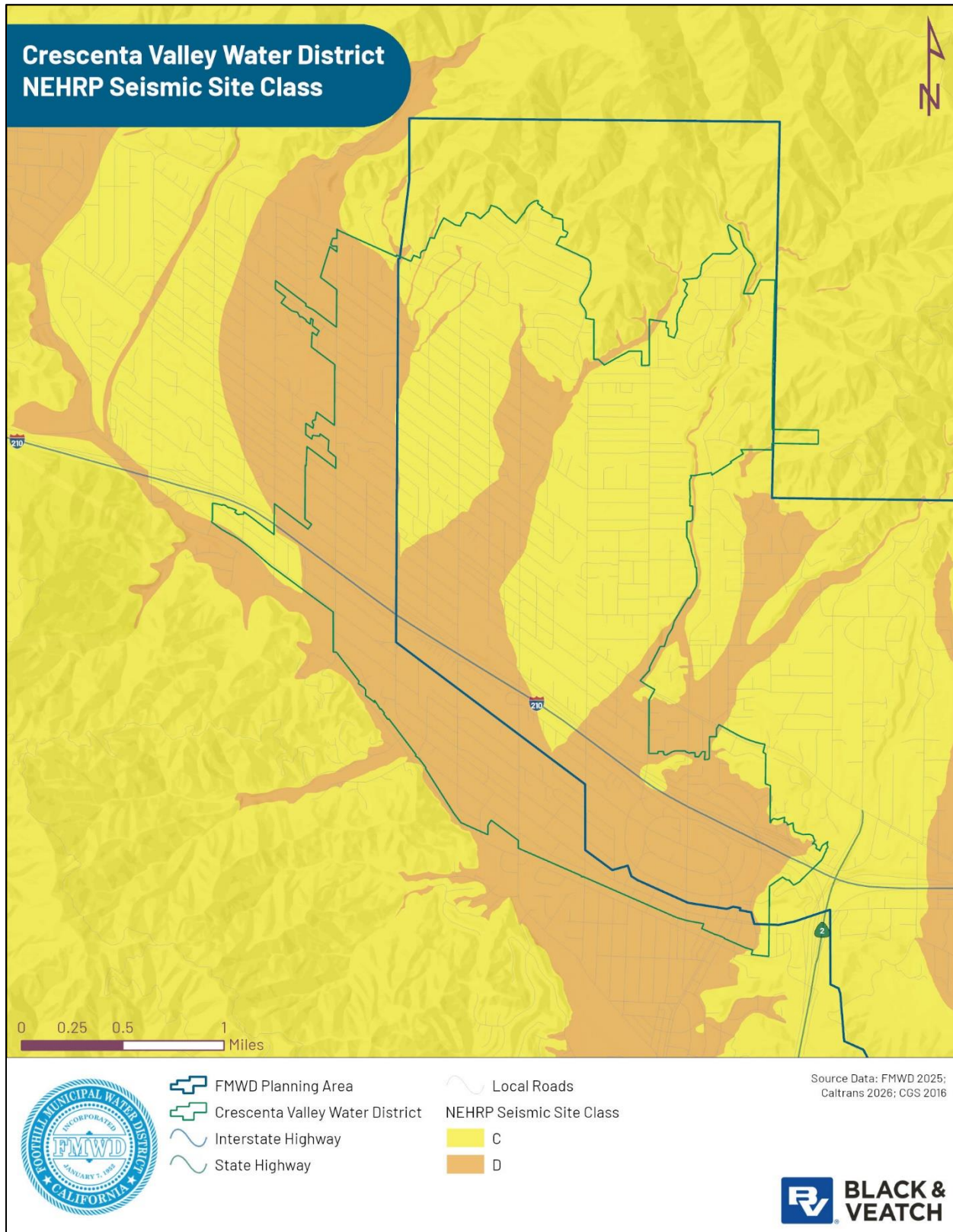


Figure 3-9. Liquefaction Hazard Map – NEHRP Seismic Site Class



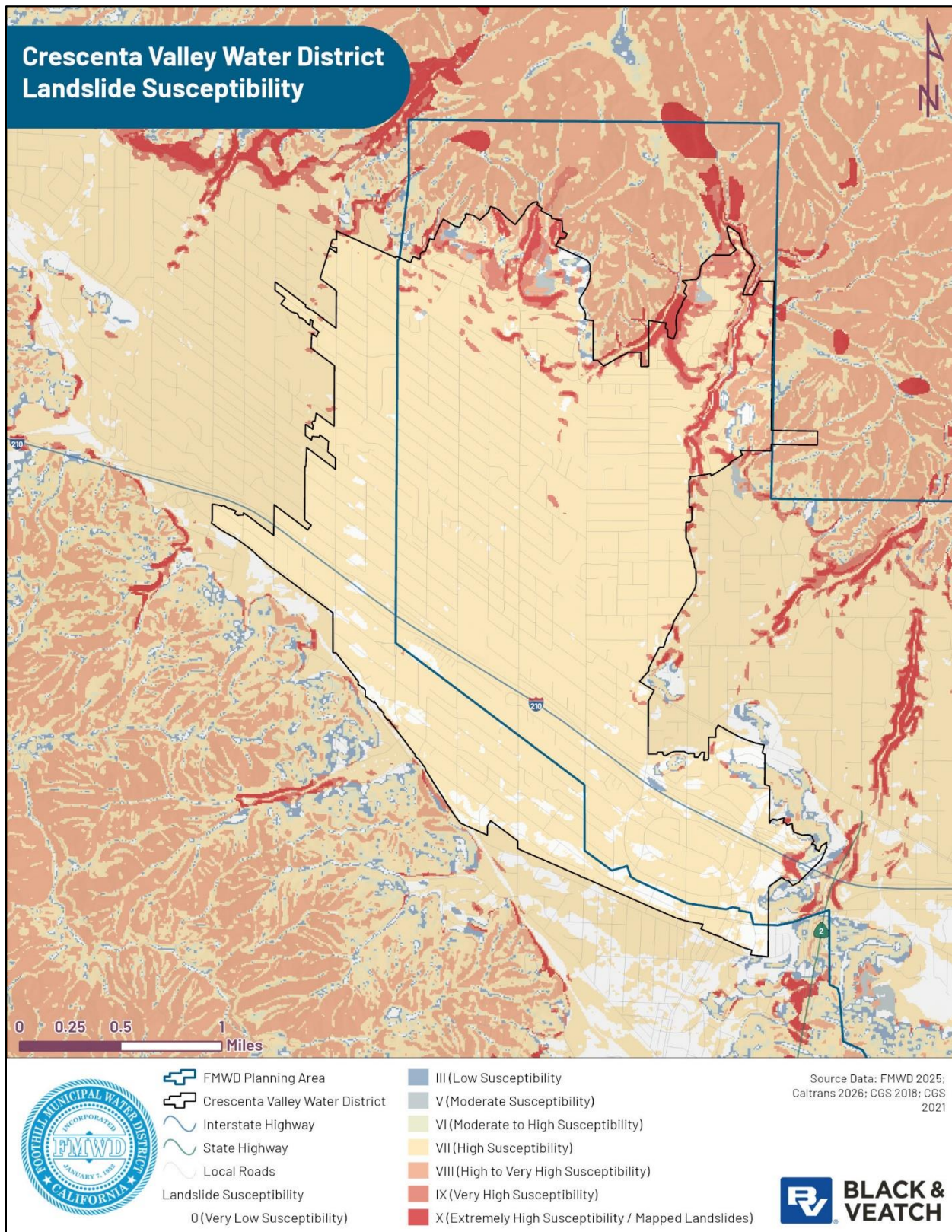


Figure 3-10. Landslide Hazard Map – Landslide Susceptibility



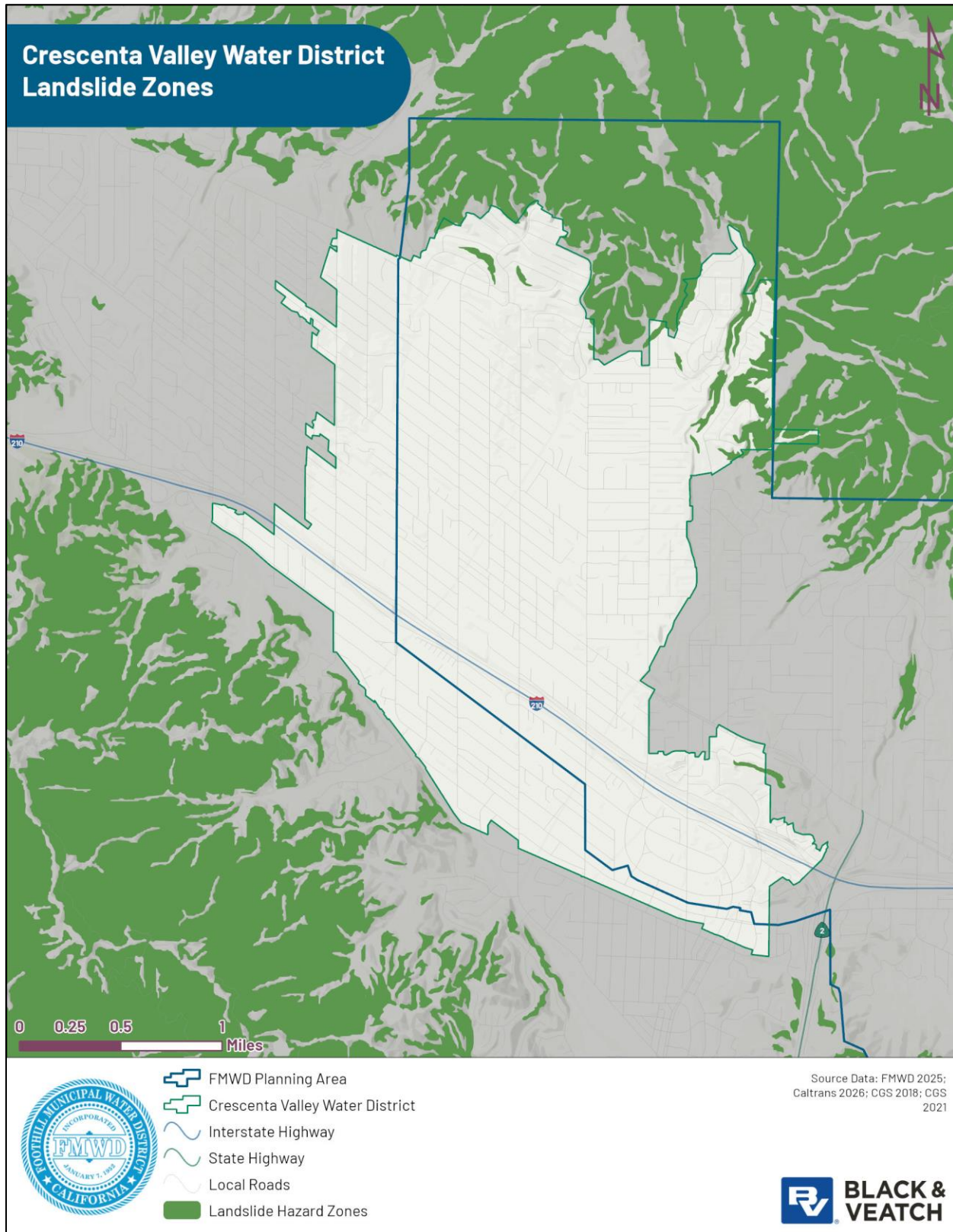


Figure 3-11. Landslide Hazard Map – Landslide Zones

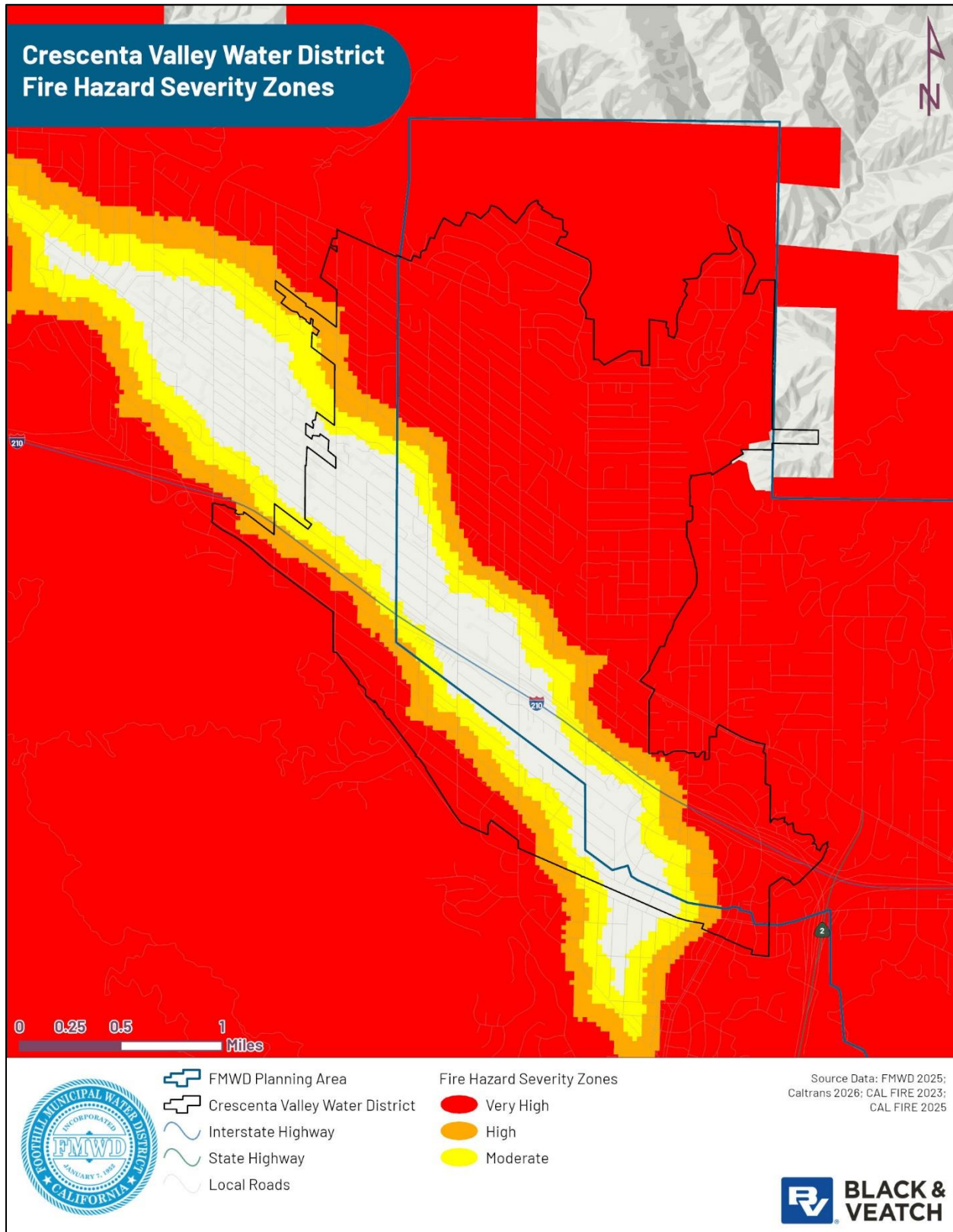


Figure 3-12. Wildfire Hazard Map – Fire Hazard Severity Zones



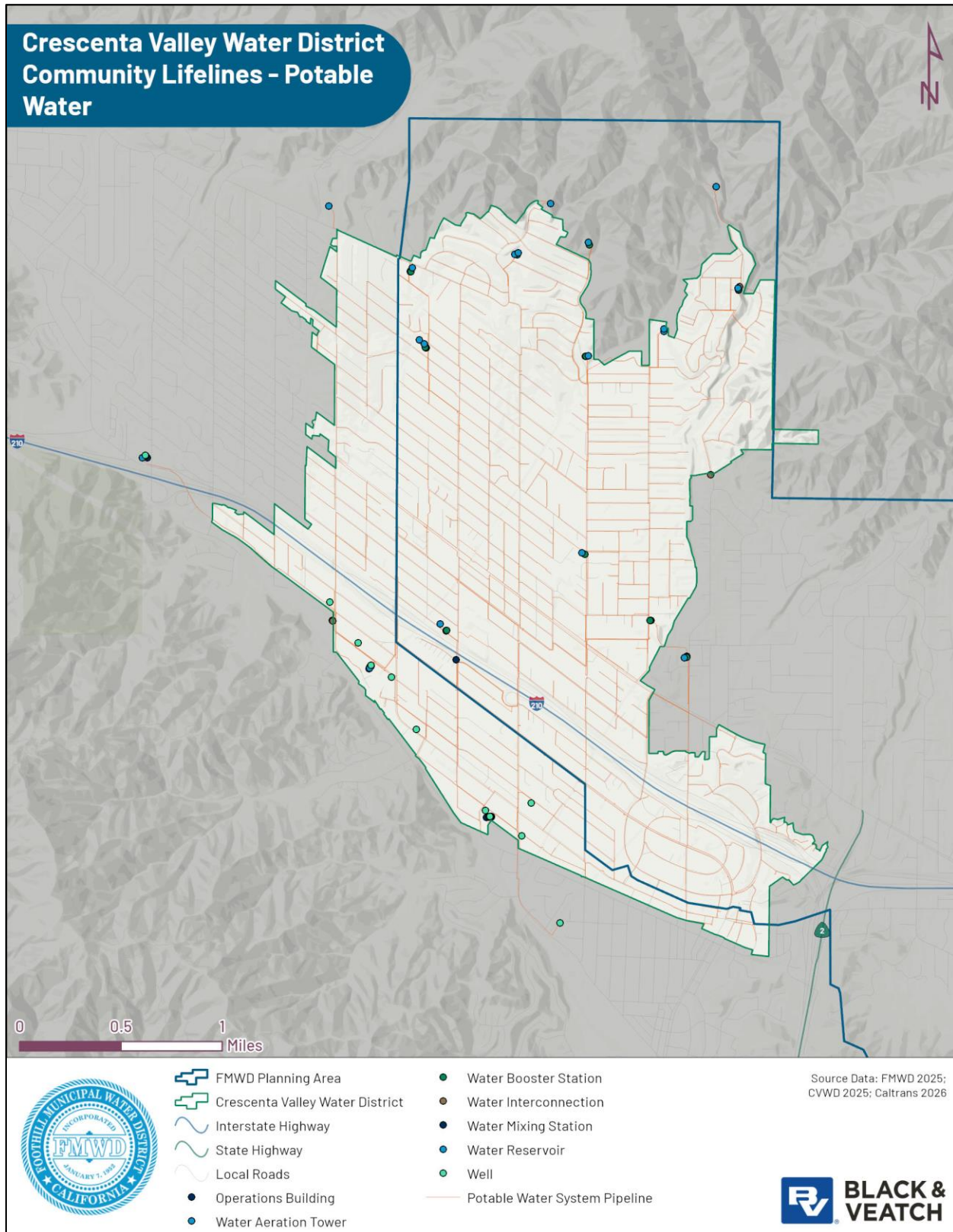


Figure 3-13. Potable Water Community Lifelines

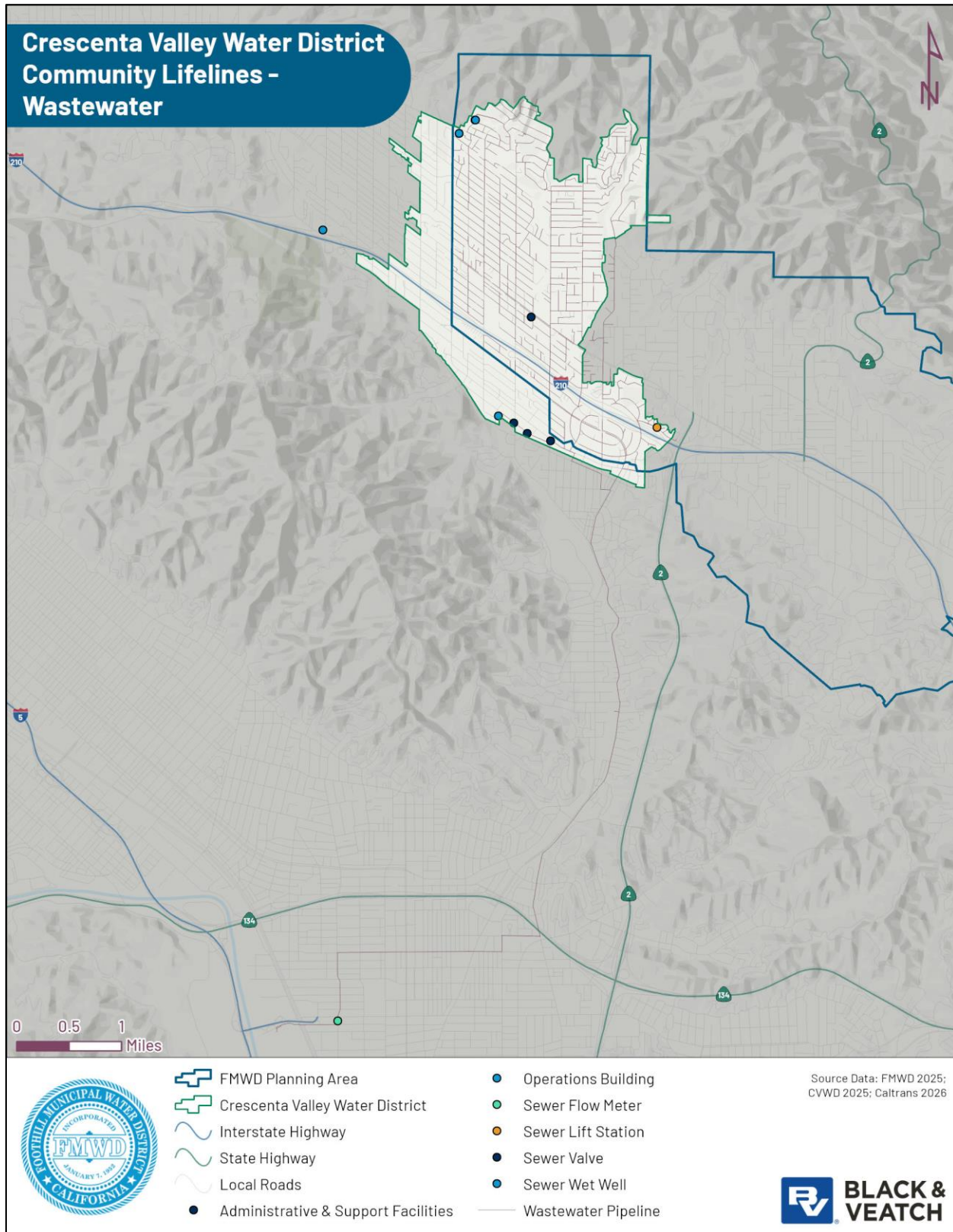


Figure 3-14. Wastewater Community Lifelines



## 4. LA CAÑADA IRRIGATION DISTRICT



### 4.1 LOCAL HAZARD MITIGATION PLANNING TEAM

Table 4-1. Local Planning Team

|                          | Primary Point of Contact                                                                                                                                             | Alternate Point of Contact                            |
|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|
| Name and Title:          | Justin Baily, General Manager                                                                                                                                        | Richard H. Myers, Jr, Board Member                    |
| Address:                 | 1443 Foothill Blvd.<br>La Cañada Flintridge, CA 91011                                                                                                                | 1443 Foothill Blvd.<br>La Cañada Flintridge, CA 91011 |
| Phone Number:            | (818) 790-6749                                                                                                                                                       | (818) 790-6749                                        |
| Email:                   | Justin.LCID@outlook.com                                                                                                                                              | customerservice@lcidwater.com                         |
| <b>Contributors:</b>     |                                                                                                                                                                      |                                                       |
| Name and Title:          | Justin Baily, General Manager                                                                                                                                        |                                                       |
| Method of Participation: | Served on the CPT for the MJHMP; provided information and input on this annex; attended meetings; provided input throughout the planning process; reviewed the MJHMP |                                                       |

## 4.2 JURISDICTIONAL PROFILE

### 4.2.1 Overview



The La Cañada Irrigation District (LCID), established in 1924, serves approximately 40% of the City of La Cañada Flintridge, located in the foothills of the San Gabriel Mountains. A small percentage of the District's customers reside outside the city limits. LCID is one of the eight retail member agencies of the Foothill Municipal Water District, which was created by the member agencies in 1952 to provide imported Metropolitan Water District water to the expanding communities of the region.

### 4.2.2 Service Area

La Cañada Irrigation District provides water service to nearly half of the City of La Cañada Flintridge and encompasses approximately 2.5 square miles. The population of roughly 9,300 people are served through 2,940 active water service connections.

### 4.2.3 Governance

The District is governed by the Board of Directors, which assumes responsibility for the adoption of this plan. The General Manager will oversee the plan's implementation.

### 4.2.4 Assets

The table below summarizes the critical assets of the district and their value.

Table 4-2. Water District Assets

| Asset                            | Value          |
|----------------------------------|----------------|
| <b>Source Water</b>              |                |
| Pickens Canyon Tunnel            | N/A            |
| <b>Pump Stations</b>             |                |
| Castle Road Pump Station         | \$1,273,084.10 |
| Hampton Pump Station             | \$881,873.03   |
| Del Oro Pump Station             | \$443,724.48   |
| Harter Lane Pump Station (No. 7) | N/A            |
| Pump Station No. 6               | N/A            |
| Pump Station No. 2               | \$823,587.05   |
| <b>Reservoirs</b>                |                |
| Los Amigos Reservoir (No. 2)     | N/A            |
| Los Amigos Reservoir (No. 2A)    | N/A            |
| Alta Canyada Reservoir (No. 4)   | \$565,472.00   |
| Alta Canyada Reservoir (No. 4A)  | N/A            |
| Old Landmark Reservoir (No. 6)   | \$615,371.94   |
| Reservoir No. 7                  | \$1,087,297.88 |
| Reservoir No. 7A                 | N/A            |
| Reservoir No. 8                  | \$168,662.38   |
| Reservoir No. 9                  | \$720,628.17   |
| Receiving Reservoir (No. 1)      | \$182,151.02   |
| Office & Operations Center       | \$1,233,945.07 |
| <b>Equipment</b>                 |                |
| Tow-Behind Portable Compressor   | \$30,000       |





| Asset                             | Value     |
|-----------------------------------|-----------|
| Tow-Behind Portable Generator     | \$150,000 |
| Del-Oro Fire Pump                 | \$300,000 |
| Chevy Silverado 1500              | \$60,000  |
| Chevy Silverado 1500              | \$60,000  |
| Chevy Silverado 1500              | \$60,000  |
| Chevy Silverado 1500              | \$60,000  |
| Chevy Stakebed 3500 (Valve Truck) | \$80,000  |
| Chevy Stakebed 3500 (Dump Truck)  | \$80,000  |
| Case Backhoe                      | \$150,000 |
| Chevy Colorado                    | \$40,000  |
| Chevy Silverado 1500 (4-door)     | \$70,000  |
| <b>Critical Facilities</b>        |           |
| Valley Water Interconnection      | N/A       |
| CVWD Interconnection              | N/A       |

### 4.3 CURRENT TRENDS

La Cañada Irrigation District originally was formed by a merger of several smaller La Cañada mutual water companies in the late 1800's to serve the growing population settling in this portion of the Foothills above the Los Angeles basin and then redesignated an Irrigation District by the Irrigation District Act of 1924. The District's service area expanded throughout the years to include the full area served today. Total number of customers has increased by 2 percent since 2000. Population in the service area has remained very stable of the past 20 years, but recent zoning and housing requirements are resulting in an increase in Additional Dwelling Units ("ADU's") and multi-unit buildings to be constructed within the service area. This indicates that small increases in population are likely but may not translate to increased water supply and demands due to the offset in landscaping irrigation. The District has no plans to expand its service area.

### 4.4 CAPABILITY ASSESSMENT

#### 4.4.1 Planning and Regulatory Capabilities

Jurisdictions can develop policies and programs and implement rules and regulations to protect and serve residents. Local policies are typically identified in community plans, implemented through local ordinance, and enforced through a governing body. An assessment of planning and regulatory capabilities is presented on the table below.

Table 4-3. Planning and Regulatory Capabilities

| Plan, Study, or Program                 | Date of Most Recent Update         | Comment                                                                                                                                      |
|-----------------------------------------|------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| Capital Improvement Program             | Implemented 2024, updated annually | Covers 5-year timeframe                                                                                                                      |
| Master Plan                             | Draft 2025, Final 6/2026           | Forecasts 20 years. Establishes dynamic grading matrix (age, leak history, fire flow, velocity, etc..) for asset replacement prioritization. |
| Bacteriological Sample Site Plan (BSSP) | Revised & Adopted 2022             | Review and Re-Submit every 10 years                                                                                                          |



### ***Opportunities to Expand Planning and Regulatory Capabilities***

LCID will continue to strengthen the integration of hazard mitigation into current and future planning and regulatory capabilities. This includes the incorporation of mitigation projects and priorities into its CIP, asset management, and policy updates and development. Action 007- La Cañada Irrigation District in Table 2-20 is a project identified by the District that highlights how they will develop a post-disaster recovery plan that integrates portions of the HMP.

### **4.4.2 Administrative and Technical Capabilities**

Planning, regulatory, and fiscal capabilities provide the backbone for successfully developing a mitigation strategy; however, without the appropriate personnel, the strategy may not be implemented. Administrative and technical capabilities focus on the availability of personnel resources responsible for implementing all the facets of hazard mitigation. These resources include technical experts, such as engineers and scientists, as well as personnel with capabilities that may be found in multiple departments, such as grant writers. An assessment of administrative and technical capabilities is presented in Table 4-4.

Table 4-4. Administrative and Technical Capabilities

| Staff / Personnel Resources                                                             | Available? | Description                                                                                                                       |
|-----------------------------------------------------------------------------------------|------------|-----------------------------------------------------------------------------------------------------------------------------------|
| Planners or engineers with knowledge of land development and land management practices  | N/A        | The District lacks the authorities to regulate or dictate land use. Therefore, this capability is not applicable to the District. |
| Engineers or professionals trained in building or infrastructure construction practices | Yes        | Justin Bailey, General Manager.                                                                                                   |
| Planners or engineers with an understanding of natural hazards                          | Yes        | Can contract for these services when needed.                                                                                      |
| Staff with training in benefit-cost analysis                                            | Yes        | Can contract for these services when needed.                                                                                      |
| Surveyors                                                                               | Yes        | Can contract for these services when needed.                                                                                      |
| Personnel skilled or trained in GIS applications                                        | Yes        | Can contract for these services when needed.                                                                                      |
| Scientist familiar with natural hazards in local area                                   | Yes        | Can contract for these services when needed.                                                                                      |
| Emergency manager                                                                       | Yes        | Justin Bailey, General Manager.                                                                                                   |
| Grant writers                                                                           | Yes        | Can contract for these services when needed.                                                                                      |
| Procurement Services and Management                                                     | Yes        | Existing staff can run and manage procurement services as needed.                                                                 |

### ***Administrative and Technical Capabilities***

LCID's current administrative and technical capabilities can be expanded to further reduce risk to the service area and its customers. To support this effort, LCID has identified a series of mitigation actions (see Table 2-20) focused on improving infrastructure resilience and protecting critical community lifelines. These actions emphasize ongoing inspections, targeted upgrades, and routine maintenance to enhance system reliability and ensure continued delivery of essential services during and after natural hazard events.



### 4.4.3 Fiscal Capabilities

Assessing a jurisdiction's fiscal capability provides an understanding of the ability to fulfill the financial needs associated with hazard mitigation projects. This assessment identifies both outside resources, such as grant funding eligibility and local jurisdictional authority to generate internal financial capability, such as through impact fees. An assessment of fiscal capabilities is presented in the table below.

Table 4-5. Fiscal Capabilities

| Financial Resource                                   | Accessible or Eligible to Use? |
|------------------------------------------------------|--------------------------------|
| Community Development Block Grants                   | No                             |
| Capital Improvements Project Funding                 | Yes                            |
| Authority to Levy Taxes for Specific Purposes        | Yes                            |
| User Fees for Water, Sewer, Gas or Electric Service  | Yes                            |
| Incur Debt through General Obligation Bonds          | Yes                            |
| Incur Debt through Special Tax Bonds                 | Unknown                        |
| Incur Debt through Private Activity Bonds            | Yes                            |
| Withhold Public Expenditures in Hazard-Prone Areas   | Unknown                        |
| State-Sponsored Grant Programs                       | Unknown                        |
| Development Impact Fees for Homebuyers or Developers | Unknown                        |

### Opportunities to Expand Fiscal Capabilities

LCID will continue using its existing budget and CIP to support and integrate hazard mitigation. They will also pursue state and federal grant funding opportunities to help offset project costs, as shown in Table 2-20. This will allow the District to increase long-term resilience, implement mitigation actions with its current budget and CIP, and leverage other resources to implement infrastructure upgrades, reduce risk, and maintain reliable service delivery.

### 4.4.4 Education and Outreach Capabilities

Regular engagement with the public on issues regarding hazard mitigation provides an opportunity to directly interface with community members. Assessing the education and outreach capability illustrates the connection between the government and community members, which opens a two-way dialogue that can result in a more resilient community, based on awareness and engagement. An assessment of education and outreach capabilities is presented in the table below.

Table 4-6. Education and Outreach Capabilities

| Outreach Capability                                                            | Description and Role in Risk Reduction                                                                                                                                                                        |
|--------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Public Information Officer                                                     | No, General Manager is default public information officer.                                                                                                                                                    |
| Personnel skilled or trained in website development                            | No, a 3 <sup>rd</sup> party vendor to update and maintain website                                                                                                                                             |
| Hazard mitigation information on website                                       | Yes, the District maintains a website ( <a href="https://www.lcidwater.com/">https://www.lcidwater.com/</a> ) that is used to provide information to its customers including preparation for natural hazards. |
| Social media for hazard mitigation education and outreach                      | No                                                                                                                                                                                                            |
| Citizen boards or commissions that address issues related to hazard mitigation | No                                                                                                                                                                                                            |



| Outreach Capability                                                                  | Description and Role in Risk Reduction                       |
|--------------------------------------------------------------------------------------|--------------------------------------------------------------|
| Other programs in place that could be used to communicate hazard-related information | Yes – Customer billing has email and text messaging feature. |
| Warning systems for hazard events                                                    | No                                                           |

#### ***Opportunities to Expand Education and Outreach Capabilities***

LCID identified mitigation actions (see refer to action 008- La Cañada Irrigation District in Table 2-20) to expand current education and outreach capabilities. In doing so, the District can increase community-wide awareness of natural hazard risk and preparedness that can reduce vulnerability and support overall resilience.

#### **4.4.5 Community Classifications**

Other programs, such as NWS StormReady, can enhance a jurisdiction's ability to mitigate, prepare for, and respond to natural hazards. These programs indicate a jurisdiction's desire to go beyond minimum regulatory requirements in order to create a more resilient community. These programs focus on communication, mitigation, and community preparedness to minimize the impact of natural hazards on a community. Classifications under various community mitigation programs are presented in the table below.

Table 4-7. Community Classifications

|                | Participating? | Classification or Number | Date Classified |
|----------------|----------------|--------------------------|-----------------|
| FIPS Code      | Yes            | 06037                    | N/A             |
| UEI#           | Yes            | S53XH6KFP7K8             | N/A             |
| NWS StormReady | No             | N/A                      | N/A             |
| Firewise       | No             | N/A                      | N/A             |

#### ***Opportunities to Expand Community Classification Capabilities***

Any expansion to the local capabilities identified in this section is likely to benefit the community classifications listed in this sub-section. Currently, there is no need to identify specific community classifications for expansion.

#### **4.4.6 Adaptive Capacity for Climate Change**

An adaptive capacity assessment evaluates a jurisdiction's ability to anticipate impacts from future conditions. By looking at public support, technical adaptive capacity, and other factors, jurisdictions identify their core capability for resilience against issues such as extreme heat. The adaptive capacity assessment provides jurisdictions with an opportunity to identify areas for improvement by ranking their capacity high, medium, or low. The District's adaptive capacity for the impacts of climate change is presented in the table below.





Table 4-8. Adaptive Capacity for Climate Change

| Criterion                                                                                          | Jurisdiction Rating <sup>a</sup> | Comment                                                                                                                                |
|----------------------------------------------------------------------------------------------------|----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| <b>Technical Capacity</b>                                                                          |                                  |                                                                                                                                        |
| Jurisdiction-level understanding of potential climate change impacts                               | Low                              | -                                                                                                                                      |
| Jurisdiction-level monitoring of climate change impacts                                            | Low                              | -                                                                                                                                      |
| Technical resources to assess proposed strategies for feasibility and externalities                | Low                              | -                                                                                                                                      |
| Jurisdiction-level capacity for development of greenhouse gas emissions inventory                  | Low                              | -                                                                                                                                      |
| Capital planning and land use decisions informed by potential climate impacts                      | Low                              | -                                                                                                                                      |
| Participation in regional groups addressing climate risks                                          | Low                              | -                                                                                                                                      |
| <b>Implementation Capacity</b>                                                                     |                                  |                                                                                                                                        |
| Clear authority/mandate to consider climate change impacts during public decision-making processes | Medium                           | The District understands the potential risk of climate change and considers those projections prior to the implementation of projects. |
| Identified strategies for greenhouse gas mitigation efforts                                        | Low                              | -                                                                                                                                      |
| Identified strategies for adaptation to impacts                                                    | Low                              | -                                                                                                                                      |
| Champions for climate action in local government departments                                       | Low                              | -                                                                                                                                      |
| Political support for implementing climate change adaptation strategies                            | Low                              | -                                                                                                                                      |
| Financial resources devoted to climate change adaptation                                           | Low                              | -                                                                                                                                      |
| Local authority over sectors likely to be negative impacted                                        | Low                              | -                                                                                                                                      |
| <b>Public Capacity</b>                                                                             |                                  |                                                                                                                                        |
| Customers' knowledge of and understanding of climate risk                                          | Medium                           | Customers have access to information on the potential impacts of climate change on risk                                                |
| Customers' support of adaptation efforts                                                           | Low                              | Depends on cost for customers                                                                                                          |
| Customers' capacity to adapt to climate impacts                                                    | Low                              | -                                                                                                                                      |
| Local economy current capacity to adapt to climate impacts                                         | Low                              | -                                                                                                                                      |
| Local ecosystems capacity to adapt to climate impacts                                              | Low                              | -                                                                                                                                      |

a. High = Capacity exists and is in use; Medium = Capacity may exist but is not used or could use some improvement; Low = Capacity does not exist or could use substantial improvement; Unsure= Not enough information is known to assign a rating.

### Opportunities to Expand Adaptive Capacity Capabilities

The District has not identified a need to expand adaptive capacity capabilities.

## 4.5 NATIONAL FLOOD INSURANCE PROGRAM COMPLIANCE

Districts are not eligible to participate in the National Flood Insurance Program (NFIP). However, any new assets or infrastructure developed by the District is in compliance with the floodplain regulations established by the surrounding municipal entities.

## 4.6 INTEGRATION

For hazard mitigation planning, “integration” means that hazard mitigation information is used in other relevant planning mechanisms, such as capital facilities planning, and that relevant information from those sources is used in hazard mitigation. This section identifies where such integration is already in place, and where there are opportunities for further integration in the future. Resources listed at the end of this annex were used to provide information on integration. The progress reporting process described in Volume 1 of the hazard mitigation plan will document the progress of hazard mitigation actions related to integration and identify new opportunities for integration.

### 4.6.1 Existing Integration

Some level of integration has already been established between local hazard mitigation planning and the following other local plans and programs.

#### *Planning and Regulatory*

LCID’s planning and regulatory capabilities are integrated into its hazard mitigation efforts with community objectives including incorporating the goals for risk reduction and safety into current policies of other plans. For example, LCID’s Capital Improvements Plan (CIP) identifies projects that prioritize mitigation of natural hazard risks and protection of community lifelines within the service area.

#### *Fiscal*

LCID’s fiscal capabilities support the planning, implementation, and long-term maintenance of hazard mitigation projects within its service area. The District manages financial resources through annual budgets, CIPs, customer fees, and state programs that assist in maintaining systems, protect community lifelines, and provide continuity of operations. These capabilities allow the District to perform routine maintenance, pursue infrastructure upgrades, leverage state and federal grant opportunities, and respond to emergency repair needs.

#### *Administrative and Technical*

LCID’s currently integrates hazard mitigation into its day-to-day operations through administrative staff and contract support. Available resources include planners, engineers, and management that work together to identify and mitigate risk, implement mitigation projects, and maintain essential water services for customers. Through these efforts, LCID supports proactive risk reduction and strengthens their ability to maintain operations during and after natural hazards.

#### *Education and Outreach*

LCID has established education and outreach programs and capabilities that support hazard mitigation through a district website (<https://www.lcidwater.com/>). Through ongoing efforts, the District helps



increase customer awareness of actions that can reduce vulnerability to and be prepared for natural hazards, such as droughts, large wind events, earthquakes, wildfires, and floods. This outreach strengthens community preparedness and supports overall resilience within the service area.

#### 4.6.2 Opportunities for Future Integration

The capability assessment in this annex indicates opportunities to integrate this mitigation plan with other jurisdictional planning/regulatory capabilities. Capabilities were identified as integration opportunities if they can support or enhance the actions identified in this plan or be supported or enhanced by components of this plan. The capability assessment identified the following plans and programs that do not currently integrate hazard mitigation information but provide opportunities to do so in the future.

- AWIA Risk and Resilience Assessment (RRA): Under AWIA, water utilities must perform a Risk and Resilience Assessment (RRA) every five years to identify vulnerabilities in infrastructure, physical security, and cybersecurity systems. Information on hazard risk and vulnerabilities from this mitigation plan can be used to update the RRA.
- Emergency Response Plan (ERP): Information on hazard events developed in this mitigation plan can be used to update emergency response planning.
- CA Senate Bill 1153: This bill requires urban retail water suppliers to include wildfire mitigation actions in disaster preparedness plans. This plan includes actions to mitigate wildfire risk.

### 4.7 RISK ASSESSMENT

#### 4.7.1 Jurisdiction-Specific Natural Hazard Event History

Table 2-9 lists past occurrences in the last five years of natural hazards for which specific damage was recorded in this jurisdiction. Other hazard events that broadly affected Los Angeles County, including this jurisdiction, are listed in the risk assessments in Volume 1 of this hazard mitigation plan.

Table 4-9. Past Natural Hazard Events

| Type of Event | Declaration Title | State or Federal Disaster # | Declaration Date                 | Damage Assessment                                                                                                            |
|---------------|-------------------|-----------------------------|----------------------------------|------------------------------------------------------------------------------------------------------------------------------|
| Biological    | COVID-19 Pandemic | EM-3428-CA<br>DR-4482-CA    | March 13, 2020<br>March 22, 2020 | All operational capabilities reduced due to distancing and health advisory requirements (extended time off by anyone “sick”) |

#### 4.7.2 Hazard Ranking

The prioritization and categorization of identified hazards for the La Cañada Irrigation District is based principally on the Priority Risk Index (PRI), a tool used to measure the degree of risk for identified hazards in a particular planning area. The PRI was used to assist the District in identifying hazards that pose the most significant threat. Table 4-10 presents a local ranking of all hazards of concern for which this hazard mitigation plan provides complete risk assessments. As described in detail in Volume 1, the



ranking process involves an assessment of the likelihood of occurrence for each hazard, along with its potential impacts on people, property and the economy.

Table 4-10. Hazard Risk Ranking Summary

| Hazard                                | Weighted Risk Factors |        |                |              |                | PRI | Risk Ranking |
|---------------------------------------|-----------------------|--------|----------------|--------------|----------------|-----|--------------|
|                                       | Probability           | Impact | Spatial Extent | Warning Time | Climate Change |     |              |
| Dam Failure                           | 0                     | 0      | 0              | 0            | 0              | 0   | None         |
| Drought                               | 1.2                   | 1.2    | .8             | .1           | .4             | 3.7 | High         |
| Earthquake                            | 0.9                   | 0.6    | 0.8            | 0.4          | 0.3            | 3   | High         |
| Extreme Temperature                   | 1.2                   | 0.6    | 0.8            | 0.4          | 0.5            | 3.5 | High         |
| Flood*                                | 0.9                   | 0.6    | 0.4            | 0.2          | 0.4            | 2.5 | Medium       |
| Landslide, Subsidence & Mass Movement | 0.9                   | 0.6    | 0.4            | 0.3          | 0.4            | 2.6 | Medium       |
| Strong Wind                           | 1.2                   | 1.2    | .8             | .1           | .4             | 3.7 | High         |
| Wildfire                              | 1.2                   | 1.2    | .8             | .1           | .4             | 3.7 | High         |

Note: PRI Value 1 to 1.9 = Low Hazard Risk Ranking

PRI Value 2.0 to 2.9 = Medium Hazard Risk Ranking

PRI Value 3.0 to 4.0 = High Hazard Risk Ranking

\*Flood risk is based on localized urban flooding, not regulated mapped floodplains

### 4.7.3 Agency-Specific Vulnerabilities

Volume 1 of this hazard mitigation plan provides a summary of risk assessments for hazards of concern that may have similar impacts on each agency in the planning area. This section provides information on key vulnerabilities for this agency including a summary of count and replacement cost values of agency assets. Available agency-specific risk maps of the hazards are provided at the end of this annex.

#### Vulnerability and Risk Assessment

The following information applies to the quantitative risk assessment results for La Cañada Irrigation District. Summarized vulnerability and risk assessment results for the entire planning area are contained in the applicable hazard chapters of Volume 1.

#### Earthquake

Table 4-11. Earthquake Hazard Estimated Average Probability of Damage State of Facilities

| Scenario           | Probability of Damage State |               |                 |                  |                 |               |                 |                  | Complete Replacement Cost Value |
|--------------------|-----------------------------|---------------|-----------------|------------------|-----------------|---------------|-----------------|------------------|---------------------------------|
|                    | No Damage                   | Slight Damage | Moderate Damage | Extensive Damage | Complete Damage | Exceed Slight | Exceed Moderate | Exceed Extensive |                                 |
| Puente Hills M6.95 | 35%                         | 2%            | 16%             | 31%              | 16%             | 65%           | 63%             | 47%              | \$3,862,379                     |
| Sierra Madre M7.16 | 35%                         | 0%            | 9%              | 31%              | 25%             | 65%           | 65%             | 56%              | \$4,321,959                     |
| Verdugo M6.90      | 35%                         | 1%            | 12%             | 31%              | 21%             | 65%           | 64%             | 53%              | \$4,236,961                     |



Figure 4-1. Average Percent Functionality of Facilities After Earthquake Scenarios by Day

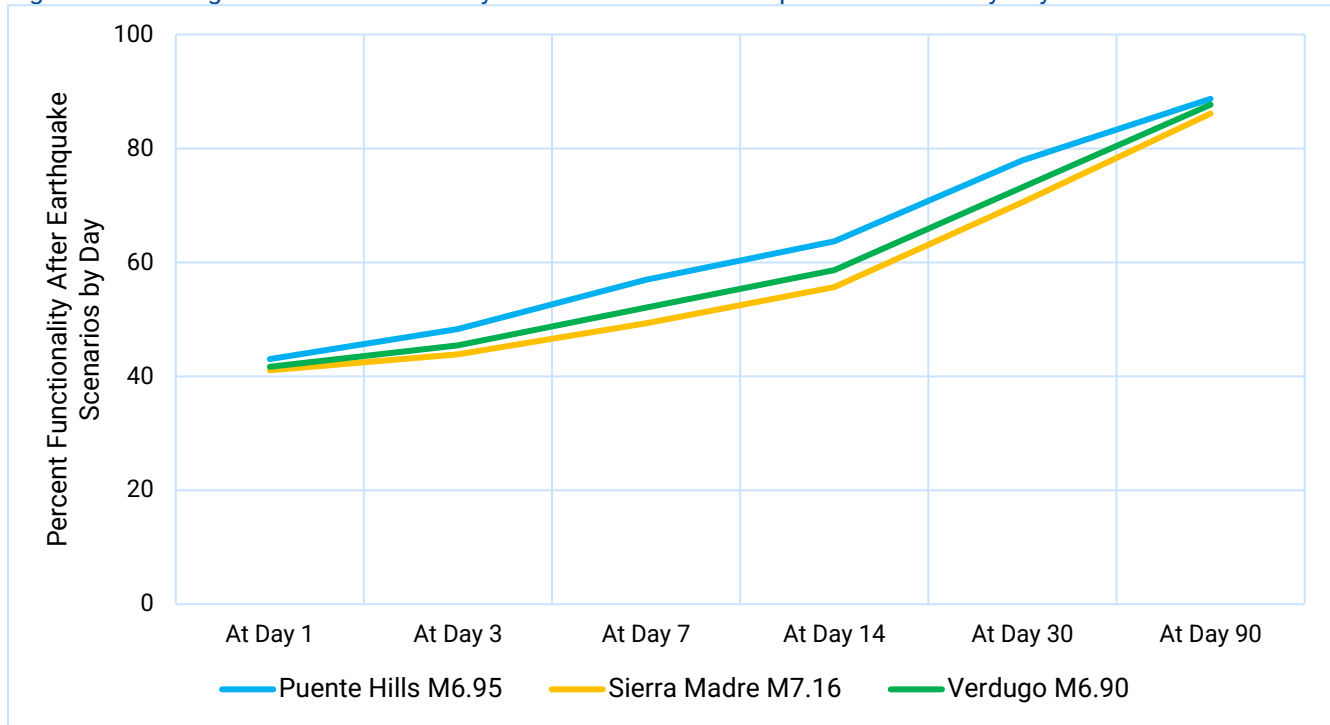


Table 4-12. Estimated Pipe Leaks and Breaks from Earthquake Hazard

| Scenario           | Number of Leaks | Number of Breaks | Total Number of Repairs | Hours to Repair Leaks | Hours to Repair Breaks | Total Hours to Repair | Economic Loss |
|--------------------|-----------------|------------------|-------------------------|-----------------------|------------------------|-----------------------|---------------|
| Puente Hills M6.95 | 8.0             | 2.0              | 10.0                    | 96.0                  | 48.0                   | 144.0                 | \$105,651     |
| Sierra Madre M7.16 | 21.5            | 5.4              | 26.8                    | 256.8                 | 129.6                  | 386.4                 | \$284,577     |
| Verdugo M6.90      | 15.2            | 3.8              | 19.0                    | 182.4                 | 91.2                   | 273.6                 | \$201,295     |

Table 4-13. Estimated Liquefaction and NEHRP D Soils Exposure to Pipelines

| Scenario      | Total Miles of Pipeline | Miles of Pipeline Exposed to Hazard | Percent of Pipeline Exposed |
|---------------|-------------------------|-------------------------------------|-----------------------------|
| Liquefaction  | 44                      | 0.6                                 | 1.3%                        |
| NEHRP D Soils | 44                      | 19.7                                | 44.8%                       |

Table 4-14. Estimated Liquefaction and NEHRP D Soils Exposure to Facilities

| Scenario                            | Type of Facility | Number of Facilities | Replacement Cost Value |
|-------------------------------------|------------------|----------------------|------------------------|
| NEHRP D Soils                       | Building         | 1                    | \$1,233,945            |
| NEHRP D Soils                       | Pump Station     | 5                    | \$3,099,605            |
| NEHRP D Soils                       | Reservoir        | 5                    | \$1,581,610            |
| <b>Total NEHRP D Soils Exposure</b> |                  | <b>11</b>            | <b>\$5,915,160</b>     |



## Landslide

Table 4-15. Estimated Landslide Exposure to Pipelines

| Scenario                           | Total Miles of Pipeline | Miles of Pipeline Exposed to Hazard | Percent of Pipeline Exposed |
|------------------------------------|-------------------------|-------------------------------------|-----------------------------|
| Very High Landslide Susceptibility | 44.0                    | 0.8                                 | 1.9%                        |
| High Landslide Susceptibility      | 44.0                    | 36.1                                | 82.1%                       |
| Moderate Landslide Susceptibility  | 44.0                    | 0.5                                 | 1.2%                        |
| <b>Total</b>                       | <b>132.0</b>            | <b>37.4</b>                         | <b>85.20%</b>               |

Table 4-16. Facilities Exposed to the High Susceptibility Landslide Hazard Area

| Type of Facility | Number of Facilities Exposed | Replacement Cost Value |
|------------------|------------------------------|------------------------|
| Building         | 1                            | \$1,233,945            |
| Pump Station     | 5                            | \$2,661,457            |
| Reservoir        | 9                            | \$2,856,091            |
| <b>Total</b>     | <b>15</b>                    | <b>\$6,751,492</b>     |

## Wildfire

Table 4-17. Estimated Wildfire Exposure to Pipelines

| Scenario                            | Total Miles of Pipeline | Miles of Pipeline Exposed | Percent of Pipeline Exposed |
|-------------------------------------|-------------------------|---------------------------|-----------------------------|
| Very High Fire Hazard Severity Zone | 12.0                    | 7.7                       | 64.3%                       |
| High Fire Hazard Severity Zone      | 12.0                    | 0.2                       | 1.9%                        |
| Moderate Fire Hazard Severity Zone  | 12.0                    | 0.4                       | 3.1%                        |
| <b>Total</b>                        | <b>36.0</b>             | <b>8.3</b>                | <b>69.30%</b>               |

Table 4-18. Facilities Exposed to the Very High Fire Hazard Severity Zone

| Type of Facility | Number of Facilities Exposed | Replacement Cost Value |
|------------------|------------------------------|------------------------|
| Building         | 1                            | \$1,233,945            |
| Pump Station     | 6                            | \$3,543,330            |
| Reservoir        | 10                           | \$3,218,524            |
| <b>Total</b>     | <b>17</b>                    | <b>\$7,995,798</b>     |

## Other Noted Vulnerabilities

The following jurisdiction-specific issues have been identified based on a review of the results of the risk assessment, public involvement strategy, and other available resources:

- Long-term water supply reliability support is needed.
- A new reservoir is needed to increase storage capacity during droughts, high-demand periods, or emergency events.
- Solar panels are needed at critical facilities to support continued operation of monitoring and control equipment during power outages, improving situational awareness and system oversight during extended emergencies.

Mitigation actions addressing these issues were prioritized for consideration in the action plan presented in this annex.



## 4.8 HAZARD MITIGATION STRATEGY

This section includes the following components of the mitigation strategy for this jurisdiction:

- Hazard Mitigation Action Plan Matrix
- Mitigation Action Prioritization
- Mitigation Action Classification and Natural Hazards Addressed

Table 4-19. Hazard Mitigation Action Plan Matrix

| Action Number                       | Action Description                                                                                                                                                                                                                                                                                                                                           | Lead and Support Implementers | Goals Met        | Benefits New or Existing Assets | Estimated Cost                 | Potential Funding Sources                                                   | Timeline                       | Community Lifeline Addressed                                 |
|-------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|------------------|---------------------------------|--------------------------------|-----------------------------------------------------------------------------|--------------------------------|--------------------------------------------------------------|
| 001 – La Cañada Irrigation District | Conduct a study to evaluate pump station capacity, electrical service, and system redundancy needed to support firefighting demands and peak summer operations. Based on study findings, upgrade select two-pump stations by adding additional pump capacity to improve redundancy, reliability, operational flexibility, and emergency response capability. | Lead: LCID General Manager    | 1, 2, 5, 6       | Both                            | High (\$250,000 - \$1 million) | CIP Budget, FEMA HMGP, FEMA FMA, FEMA HMGP Post-Fire, FEMA BRIC             | Short Term (less than 5 years) | Safety and Security, Water Systems                           |
| 002 – La Cañada Irrigation District | Implement groundwater injection through Aquifer Storage and Replenishment (ASR) by converting an existing permitted groundwater well to an injection-only facility to support long-term water supply reliability.                                                                                                                                            | Lead: LCID General Manager    | 1, 2, 3, 4, 5, 6 | Existing                        | Medium (\$50,000 - \$250,000)  | CIP Budget, FEMA BRIC, FEMA HMGP Post-Fire, FEMA FMA, FEMA HMGP, Staff Time | Short Term (less than 5 years) | Safety and Security, Food, Hydration, Shelter, Water Systems |
| 003 – La Cañada Irrigation District | Add storage capacity at an existing reservoir at the end of its service life or during replacement to increase available supply for firefighting and improve resilience to emergency-related water supply interruptions.                                                                                                                                     | Lead: LCID General Manager    | 2, 3, 5, 6       | Both                            | Very High (>\$1 million)       | FEMA HMGP, FEMA BRIC, FEMA FMA, FEMA HMGP Post-Fire, CIP Budget             | Long Term (5+ years)           | Water Systems, Food, Hydration, Shelter                      |
| 004 – La Cañada Irrigation District | Construct a new reservoir to increase storage capacity for firefighting needs and improve resilience to water supply interruptions during emergency events.                                                                                                                                                                                                  | Lead: LCID General Manager    | 2, 3, 5, 6       | New                             | Very High (>\$1 million)       | FEMA HMGP, FEMA FMA, FEMA HMGP Post-Fire, FEMA BRIC, CIP Budget             | Long Term (5+ years)           | Water Systems, Safety and Security                           |
| 005 – La Cañada Irrigation District | Install solar panels at critical facilities to support continued operation of monitoring and control equipment during power outages, improving situational awareness and system oversight during extended emergencies.                                                                                                                                       | Lead: LCID General Manager    | 2, 3, 5, 6       | Both                            | Medium (\$50,000 - \$250,000)  | CIP Budget, FEMA HGMP, FEMA BRIC                                            | Short Term (less than 5 years) | Energy                                                       |



| Action Number                       | Action Description                                                                                                                                                                                                                                                                                                                                                    | Lead and Support Implementers | Goals Met        | Benefits New or Existing Assets | Estimated Cost                 | Potential Funding Sources                                                   | Timeline                       | Community Lifeline Addressed                                                    |
|-------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|------------------|---------------------------------|--------------------------------|-----------------------------------------------------------------------------|--------------------------------|---------------------------------------------------------------------------------|
| 006 – La Cañada Irrigation District | Assess and install additional fire hydrants in locations that do not meet current spacing and sizing standards to improve firefighting capability within older portions of the distribution system.                                                                                                                                                                   | Lead: LCID General Manager    | 1, 2             | Both                            | High (\$250,000 - \$1 million) | FEMA HMGP Post-Fire, FEMA BRIC,CIP Budget                                   | Long Term (5+ years)           | Water Systems, Food, Hydration, Shelter                                         |
| 007 – La Cañada Irrigation District | Post-Disaster Recovery Plan – The District currently does not have a post-disaster recovery plan. This action includes the development of this plan which will build on the mitigation goals and objectives and hazard risks identified in the HMP. This plan will help facilitate pre-disaster planning that guides long-term recovery efforts following a disaster. | Lead: LCID General Manager    | 1, 2, 3, 4       | Both                            | Medium (\$50,000 - \$250,000)  | CIP Budget, FEMA HGMP                                                       | Short Term (less than 5 years) | All                                                                             |
| 008 – La Cañada Irrigation District | Expand the District’s current outreach and education program by using multiple ways to share real-time hazard alerts, water conservation tips, and preparedness messages.                                                                                                                                                                                             | Lead: LCID General Manager    | 1, 2, 3, 4       | Both                            | Medium (\$50,000 - \$250,000)  | Annual Budget, Staff Time                                                   | Short Term (less than 5 years) | All                                                                             |
| 009 – La Cañada Irrigation District | Convert existing groundwater well into an injection-only facility to store water for use during droughts, high-demand periods, or emergency events, thereby improving water supply reliability and system resilience.                                                                                                                                                 | Lead: LCID General Manager    | 1, 2, 3, 4, 5, 6 | Existing                        | Medium (\$50,000 - \$250,000)  | CIP Budget, FEMA BRIC, FEMA HMGP Post-Fire, FEMA FMA, FEMA HMGP, Staff Time | Short Term (less than 5 years) | Safety and Security, Food, Hydration, Shelter, Health and Medical Water Systems |
| 010 – La Cañada Irrigation District | Modify pump station electrical systems to allow connection of mutual aid portable generators.                                                                                                                                                                                                                                                                         | Lead: LCID General Manager    | 1, 2, 5, 6       | Both                            | Medium (\$50,000 - \$250,000)  | FEMA HMGP, FEMA FMA, FEMA HMGP Post-Fire, FEMA BRIC                         | Short Term (less than 5 years) | Safety and Security, Food, Hydration, Shelter, Water Systems                    |
| 011 – La Cañada Irrigation District | Conduct feasibility assessment to determine effective methods to replenish storage capacity during any fire requiring multiple hydrants simultaneously.                                                                                                                                                                                                               | Lead: LCID General Manager    | 1, 2, 4, 5       | Both                            | Medium (\$50,000 - \$250,000)  | FEMA HMGP, FEMA FMA, FEMA HMGP Post-Fire, FEMA BRIC                         | Short Term (less than 5 years) | Safety and Security, Water Systems                                              |
| 012 – La Cañada Irrigation District | Explore opportunities to sustain minimum staffing levels through an extended emergency event, especially if event requires 24-hour manual operation and repair / response activities. Potential opportunities could include on-call support or mutual aid agreements.                                                                                                 | Lead: LCID General Manager    | 1, 2, 4, 5       | Both                            | Low (>\$50,000)                | Annual Budget, Staff Time                                                   | Short Term (less than 5 years) | Safety and Security, Food, Hydration, Shelter, Health and Medical Water Systems |





Table 4-20. Mitigation Action Prioritization

| Action Number                       | Life Safety | Property Protection | Cost-Effectiveness | Technically Feasible | Legal Authority | Funding Available | Grant Eligible | Environmental | Climate Change | Equity Priority Community | Administrative Capacity | Multi-Hazard | Timeline | Other Local Objective | Support Policies | Total Score | Priority |
|-------------------------------------|-------------|---------------------|--------------------|----------------------|-----------------|-------------------|----------------|---------------|----------------|---------------------------|-------------------------|--------------|----------|-----------------------|------------------|-------------|----------|
| 001 – La Cañada Irrigation District | 3           | 3                   | 3                  | 3                    | 3               | 1                 | 3              | 0             | 1              | 0                         | 1                       | 3            | 3        | 3                     | 3                | 33          | High     |
| 002 – La Cañada Irrigation District | 1           | 1                   | 3                  | 3                    | 0               | 1                 | 3              | 0             | 1              | 0                         | 3                       | 3            | 3        | 3                     | 3                | 28          | Medium   |
| 003 – La Cañada Irrigation District | 1           | 3                   | 3                  | 3                    | 3               | 1                 | 3              | 0             | 1              | 0                         | 3                       | 3            | 1        | 3                     | 3                | 31          | High     |
| 004 – La Cañada Irrigation District | 1           | 3                   | 3                  | 3                    | 3               | 3                 | 1              | 3             | 3              | 1                         | 3                       | 3            | 3        | 3                     | 3                | 39          | High     |
| 005 – La Cañada Irrigation District | 3           | 3                   | 3                  | 3                    | 3               | 3                 | 3              | 3             | 3              | 3                         | 1                       | 3            | 3        | 3                     | 3                | 43          | High     |
| 006 – La Cañada Irrigation District | 3           | 3                   | 3                  | 1                    | 3               | 3                 | 3              | 3             | 3              | 3                         | 1                       | 1            | 1        | 3                     | 3                | 37          | High     |
| 007 – La Cañada Irrigation District | 3           | 3                   | 3                  | 3                    | 3               | 1                 | 1              | 0             | 1              | 1                         | 3                       | 3            | 3        | 3                     | 1                | 32          | High     |
| 008 – La Cañada Irrigation District | 3           | 3                   | 3                  | 3                    | 3               | 1                 | 1              | 0             | 0              | 1                         | 3                       | 3            | 3        | 1                     | 1                | 29          | Medium   |
| 009 – La Cañada Irrigation District | 1           | 1                   | 3                  | 3                    | 0               | 1                 | 3              | 0             | 1              | 0                         | 3                       | 3            | 3        | 3                     | 3                | 28          | Medium   |
| 010 – La Cañada Irrigation District | 3           | 3                   | 1                  | 3                    | 3               | 0                 | 3              | 0             | 1              | 3                         | 3                       | 3            | 3        | 3                     | 3                | 35          | High     |
| 011 – La Cañada Irrigation District | 3           | 3                   | 3                  | 3                    | 3               | 1                 | 1              | 0             | 3              | 3                         | 1                       | 0            | 3        | 3                     | 3                | 33          | High     |
| 012 – La Cañada Irrigation District | 3           | 3                   | 3                  | 3                    | 3               | 1                 | 0              | 0             | 3              | 3                         | 1                       | 3            | 3        | 3                     | 3                | 35          | High     |

Note: 31 or more = High Priority  
 15 to 30 = Medium Priority  
 0 to 14 = Low Priority

Table 4-21. Mitigation Action Classification and Natural Hazards Addressed

| Action                              | Mitigation Classification   |                    |                                       |                                  |                            |                    |                             | Natural Hazards |         |            |                     |       |           |             |          |
|-------------------------------------|-----------------------------|--------------------|---------------------------------------|----------------------------------|----------------------------|--------------------|-----------------------------|-----------------|---------|------------|---------------------|-------|-----------|-------------|----------|
|                                     | Local Plans and Regulations | Emergency Services | Structure and Infrastructure Projects | Education and Awareness Programs | Natural Systems Protection | Climate Resilience | Community Capacity Building | Dam Failure*    | Drought | Earthquake | Extreme Temperature | Flood | Landslide | Strong Wind | Wildfire |
| 001 – La Cañada Irrigation District |                             | ■                  | ■                                     |                                  | ■                          | ■                  | ■                           |                 | ■       | ■          | ■                   |       |           | ■           | ■        |
| 002 – La Cañada Irrigation District |                             | ■                  | ■                                     |                                  | ■                          | ■                  | ■                           |                 | ■       | ■          | ■                   | ■     | ■         | ■           | ■        |
| 003 – La Cañada Irrigation District |                             | ■                  | ■                                     |                                  |                            | ■                  | ■                           |                 | ■       | ■          | ■                   | ■     | ■         | ■           | ■        |
| 004 – La Cañada Irrigation District |                             | ■                  | ■                                     |                                  |                            | ■                  | ■                           |                 | ■       | ■          | ■                   | ■     | ■         | ■           | ■        |
| 005 – La Cañada Irrigation District |                             | ■                  | ■                                     |                                  |                            | ■                  |                             |                 |         | ■          | ■                   | ■     | ■         | ■           | ■        |
| 006 – La Cañada Irrigation District |                             | ■                  | ■                                     |                                  |                            | ■                  |                             |                 |         |            |                     |       |           |             | ■        |



| Action                              | Mitigation Classification   |                    |                                       |                                  |                            |                    |                             | Natural Hazards |         |            |                     |       |           |             |          |
|-------------------------------------|-----------------------------|--------------------|---------------------------------------|----------------------------------|----------------------------|--------------------|-----------------------------|-----------------|---------|------------|---------------------|-------|-----------|-------------|----------|
|                                     | Local Plans and Regulations | Emergency Services | Structure and Infrastructure Projects | Education and Awareness Programs | Natural Systems Protection | Climate Resilience | Community Capacity Building | Dam Failure*    | Drought | Earthquake | Extreme Temperature | Flood | Landslide | Strong Wind | Wildfire |
| 007 – La Cañada Irrigation District | ■                           | ■                  |                                       |                                  |                            | ■                  | ■                           |                 | ■       | ■          | ■                   | ■     | ■         | ■           | ■        |
| 008 – La Cañada Irrigation District | ■                           |                    |                                       | ■                                |                            |                    | ■                           |                 | ■       | ■          | ■                   | ■     | ■         | ■           | ■        |
| 009 – La Cañada Irrigation District |                             | ■                  | ■                                     |                                  | ■                          | ■                  | ■                           |                 | ■       | ■          | ■                   | ■     | ■         | ■           | ■        |
| 010 – La Cañada Irrigation District |                             | ■                  | ■                                     |                                  |                            |                    | ■                           |                 | ■       | ■          | ■                   |       |           | ■           | ■        |
| 011 – La Cañada Irrigation District |                             | ■                  | ■                                     |                                  |                            | ■                  | ■                           |                 |         |            |                     |       |           |             | ■        |
| 012 – La Cañada Irrigation District | ■                           | ■                  |                                       |                                  |                            | ■                  | ■                           |                 | ■       | ■          | ■                   | ■     | ■         | ■           | ■        |

Note: The dam failure hazard does not impact LCID assets.

## 4.9 PUBLIC OUTREACH

Table 4-22. Public Outreach

| Local Outreach Activity                            | Date                                 | Number of People Involved |
|----------------------------------------------------|--------------------------------------|---------------------------|
| Crescenta Valley Weekly Newspaper informational ad | 8/7/2025                             | 8,000 subscribers         |
| La Cañada Outlook Newspaper informational ad       | August 2025                          | 8,493 subscribers         |
| Hazard Awareness Survey                            | Open throughout the planning process | 139 respondents           |

## 4.10 INFORMATION SOURCES USED FOR THIS ANNEX

The following technical reports, plans, and regulatory mechanisms were reviewed to provide information for this annex.

- **Capital Improvement Program**—The Capital Improvement Program prioritizes projects that have been identified to improve District facilities, infrastructure, and equipment, including potential mitigation projects. The Capital Improvement Program was used as a source of information while preparing this annex.
- **Master Plan**—This plan was used to inform the capability assessment.

The following outside resources and references were reviewed:

- **Hazard Mitigation Plan Annex Development Toolkit**—The toolkit was used to support the identification of past hazard events and noted vulnerabilities, the risk ranking, and the development of the mitigation action plan.

## 4.11 AGENCY HAZARD MAPPING

Agency-specific risk maps of the hazards are provided on the following pages. For a complete description of each hazard, please see the applicable chapters in Volume 1 of this plan. These maps are based on the vulnerability and risk assessment results for this plan.

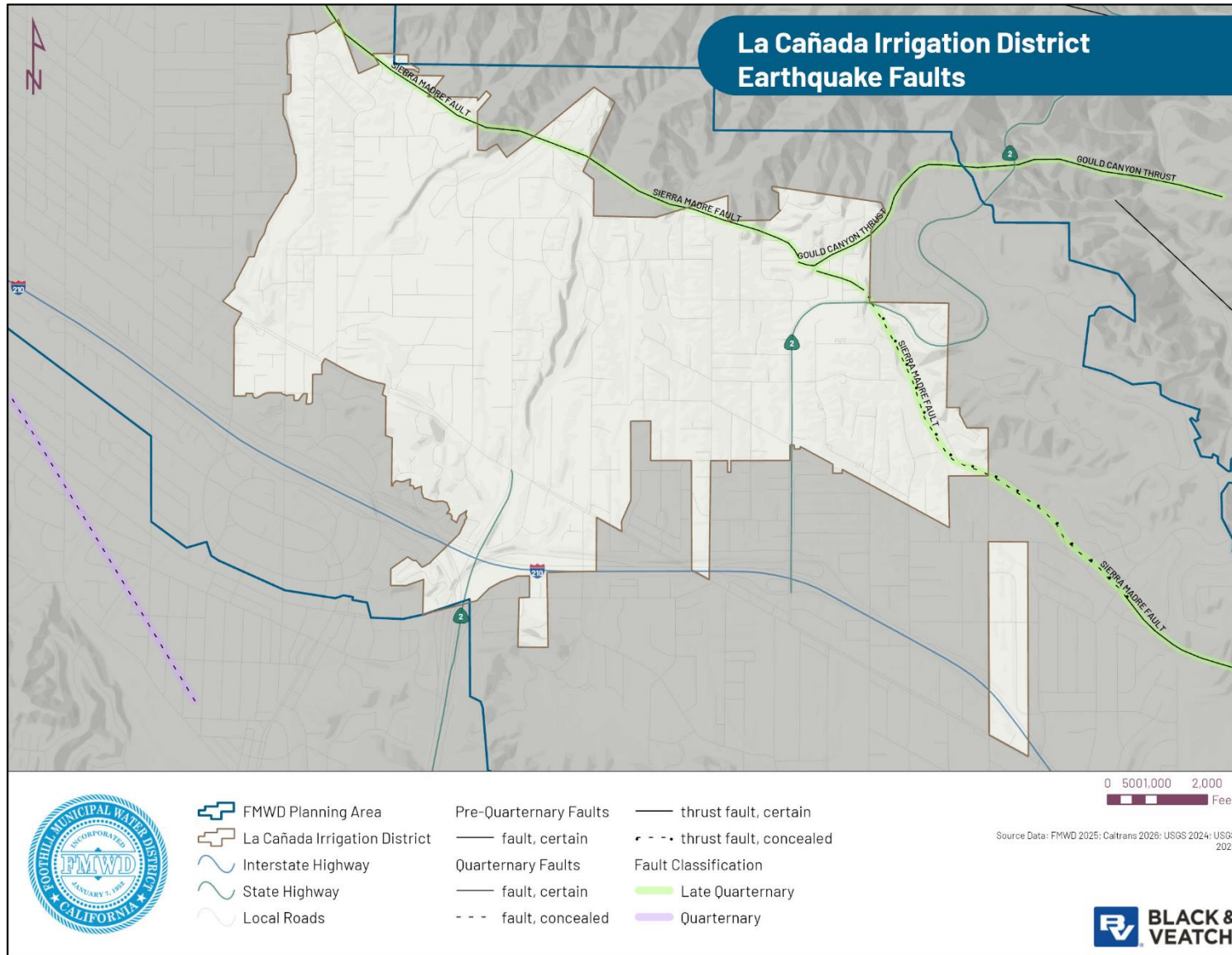


Figure 4-2. Earthquake Faults



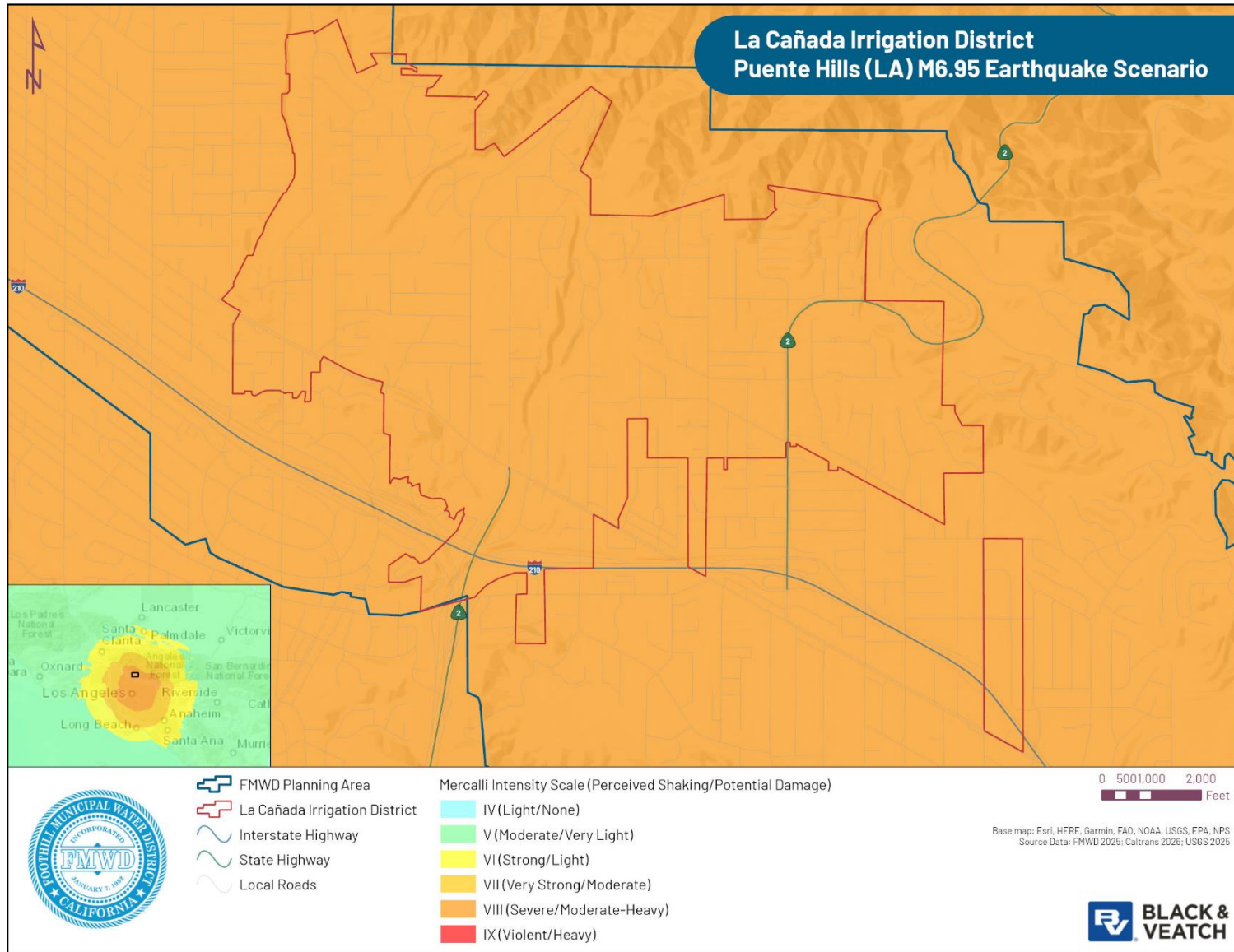


Figure 4-3. Earthquake Hazard Map – Puente Hills M6.95 Scenario

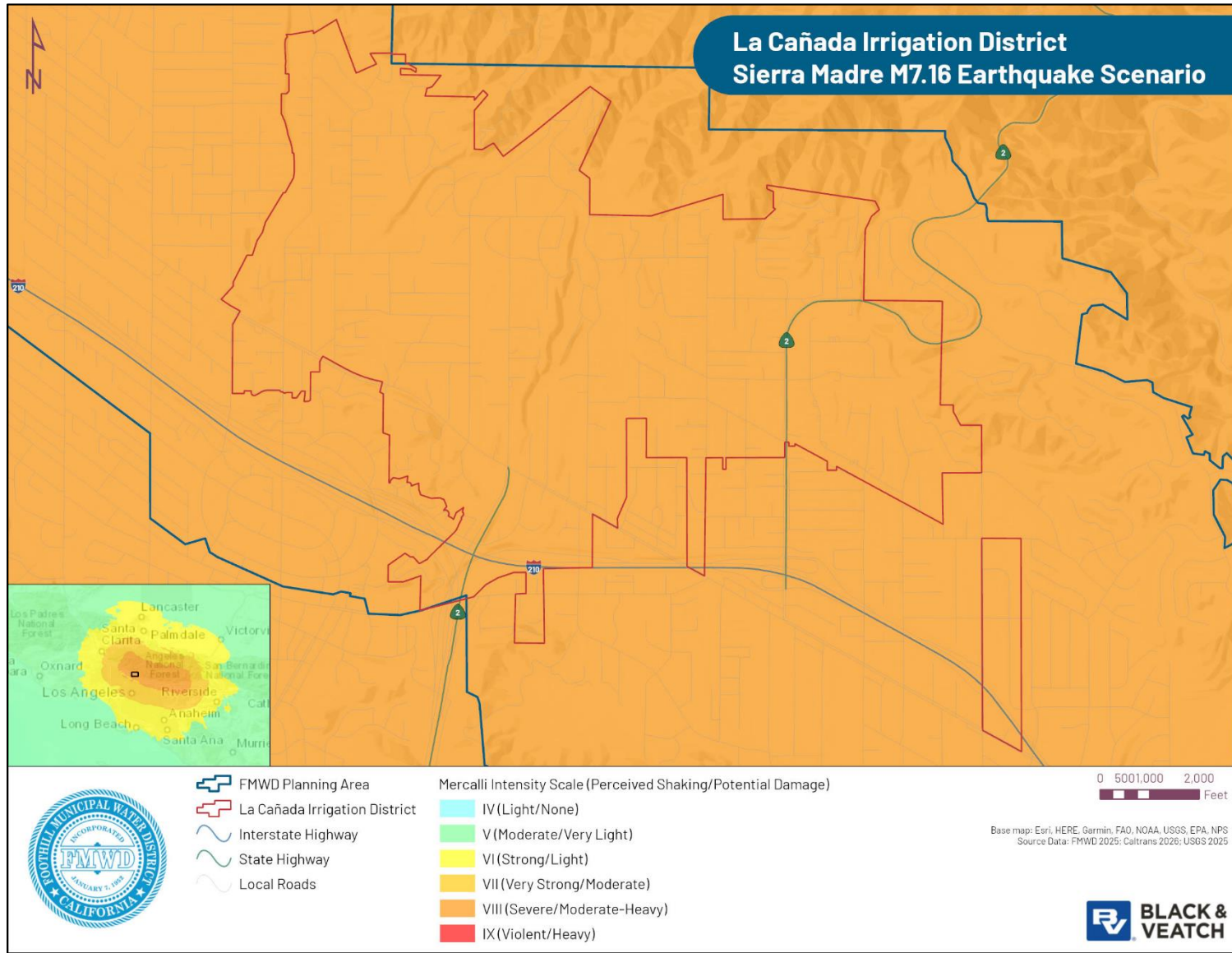


Figure 4-4. Earthquake Hazard Map – Sierra Madre M7.16 Scenario

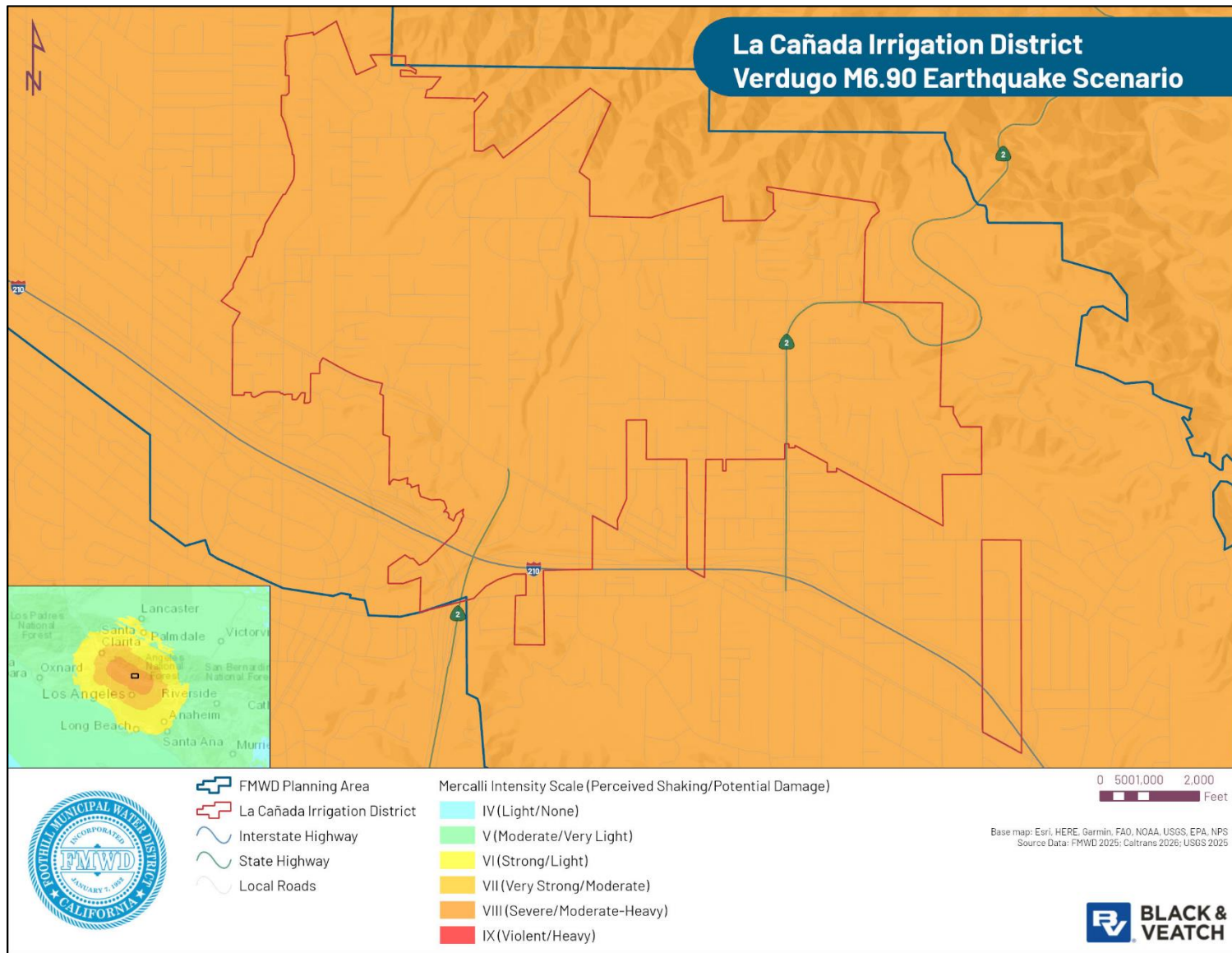


Figure 4-5. Earthquake Hazard Map – Verdugo M6.90 Scenario



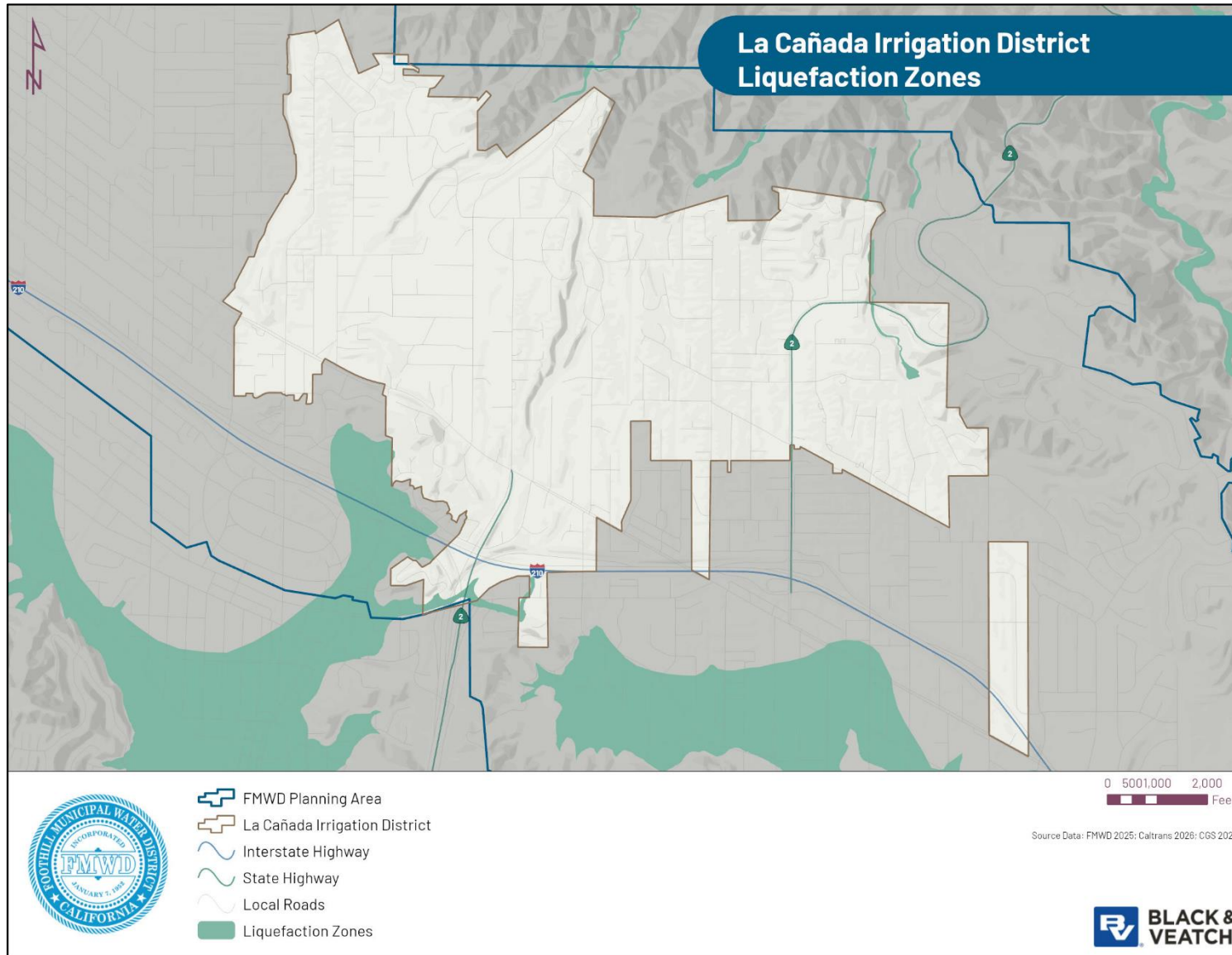


Figure 4-6. Liquefaction Hazard Map – Liquefaction Zones



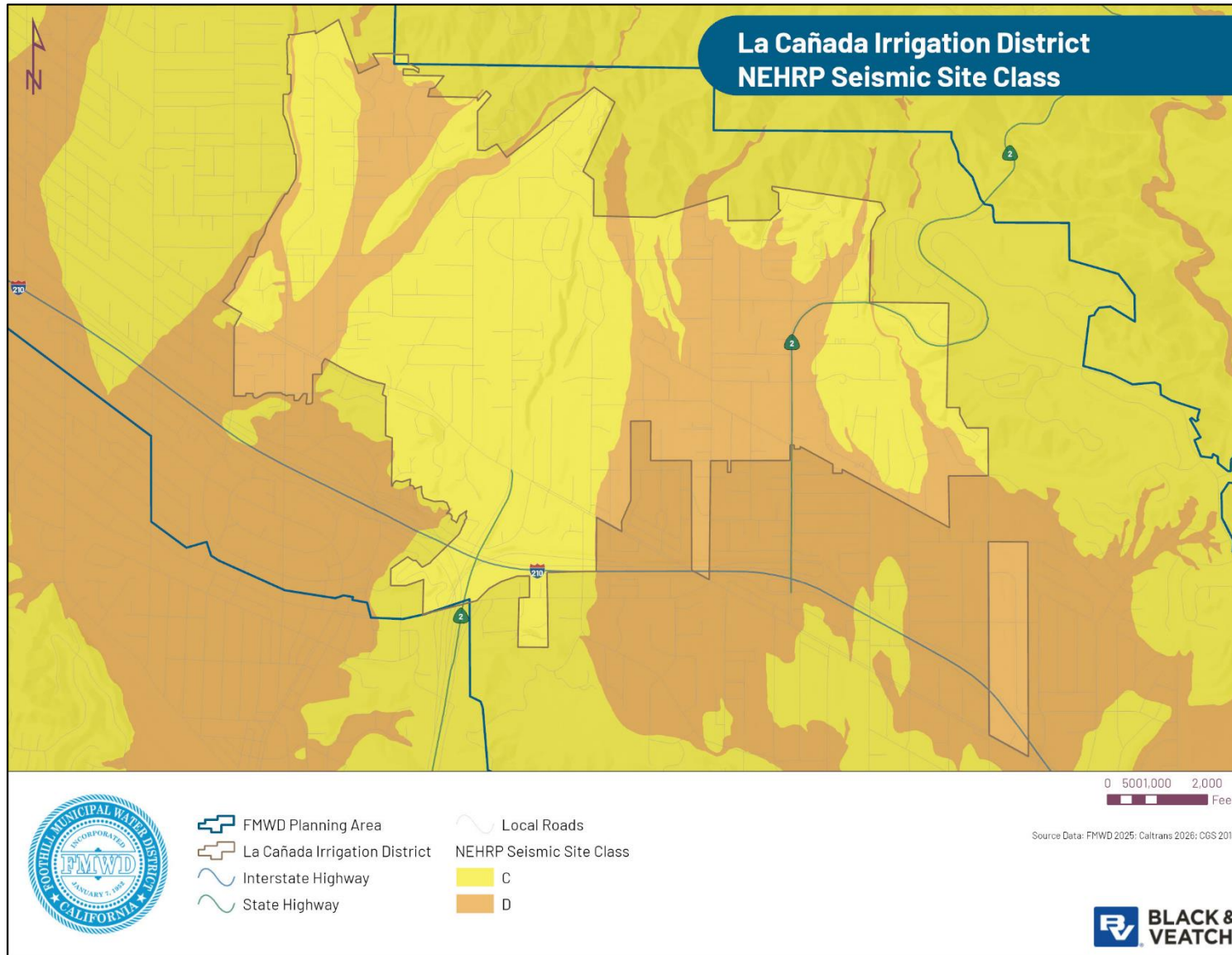


Figure 4-7. Liquefaction Hazard Map – NEHRP Seismic Site Class

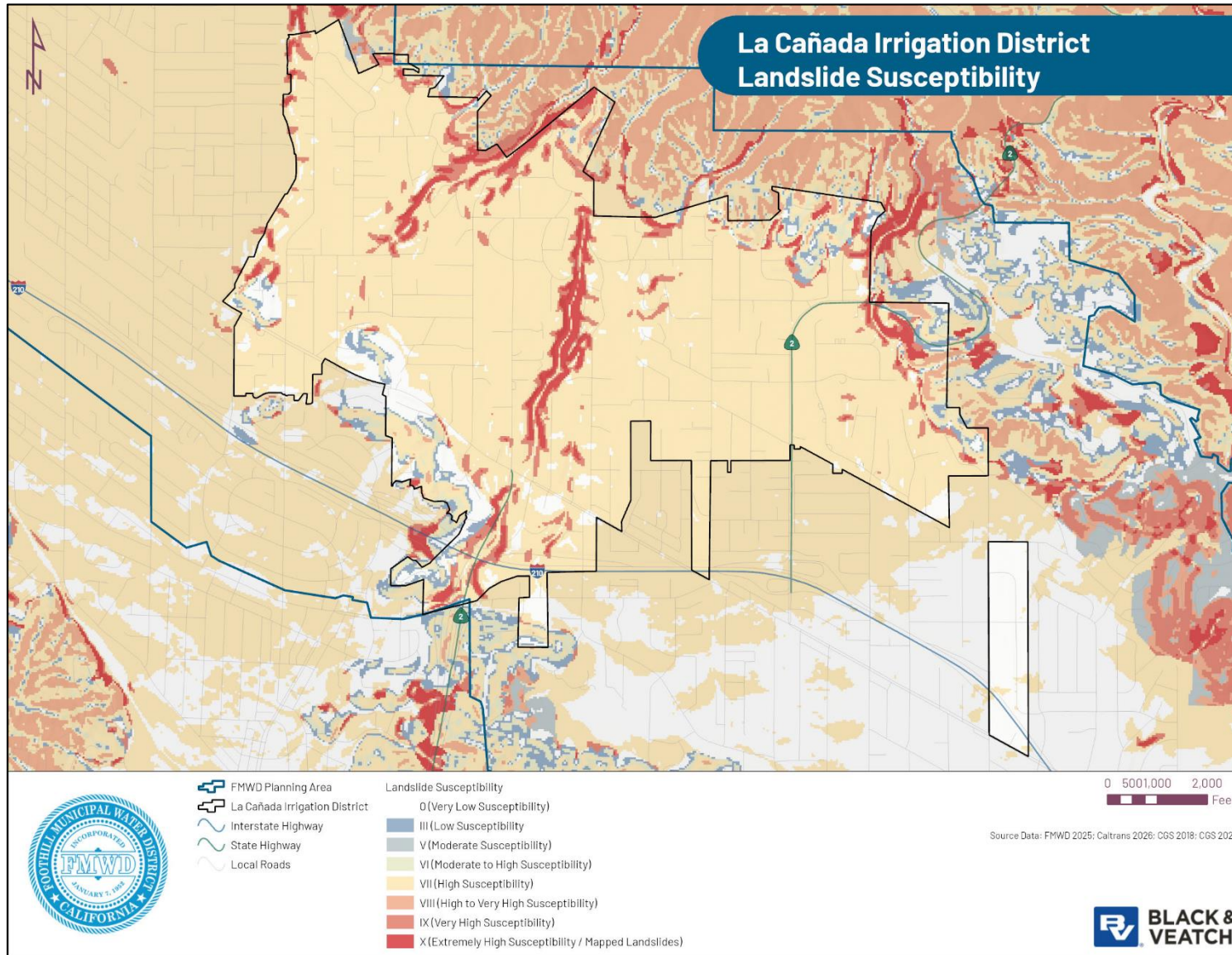


Figure 4-8. Landslide Hazard Map – Landslide Susceptibility



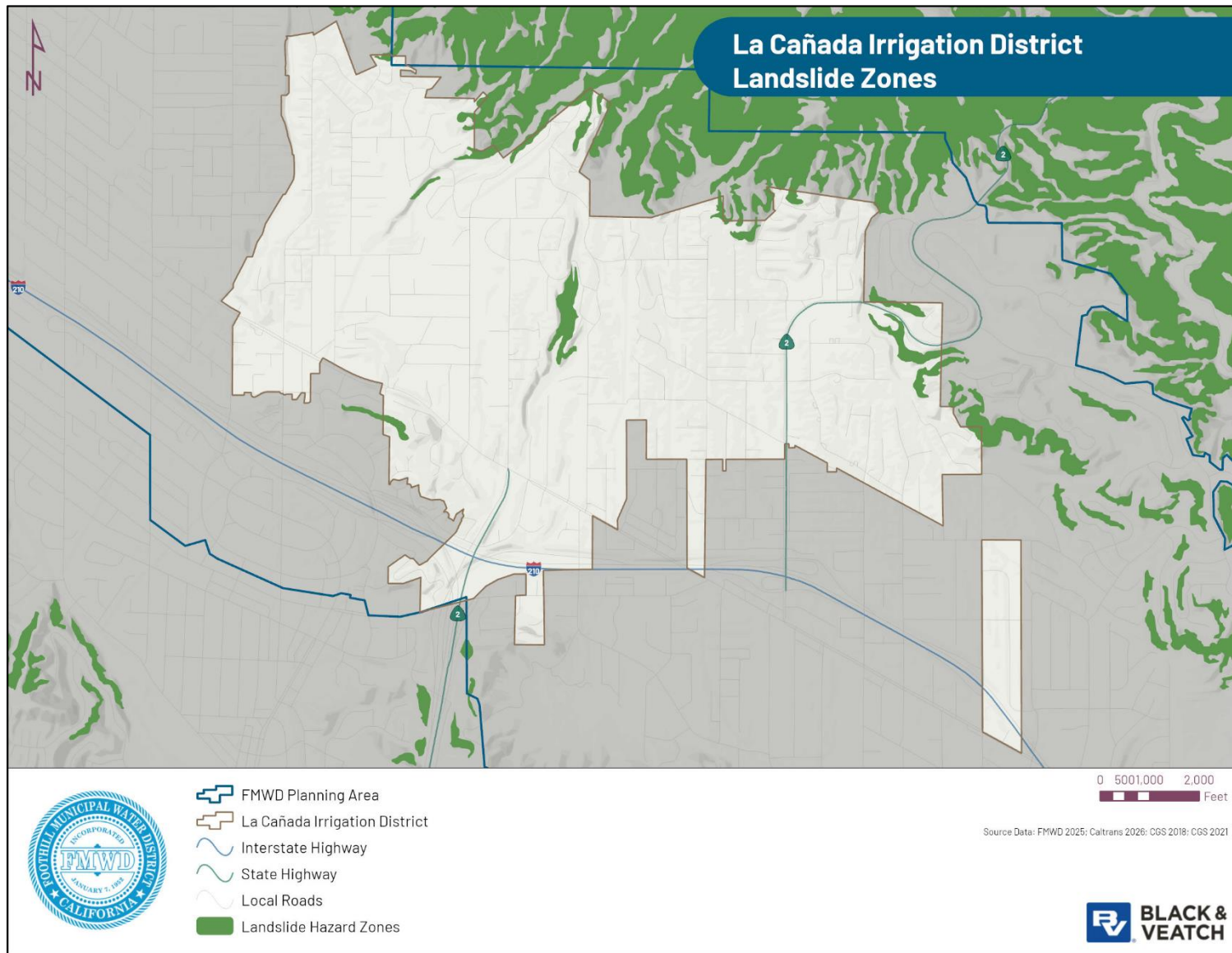


Figure 4-9. Landslide Hazard Map – Landslide Zones

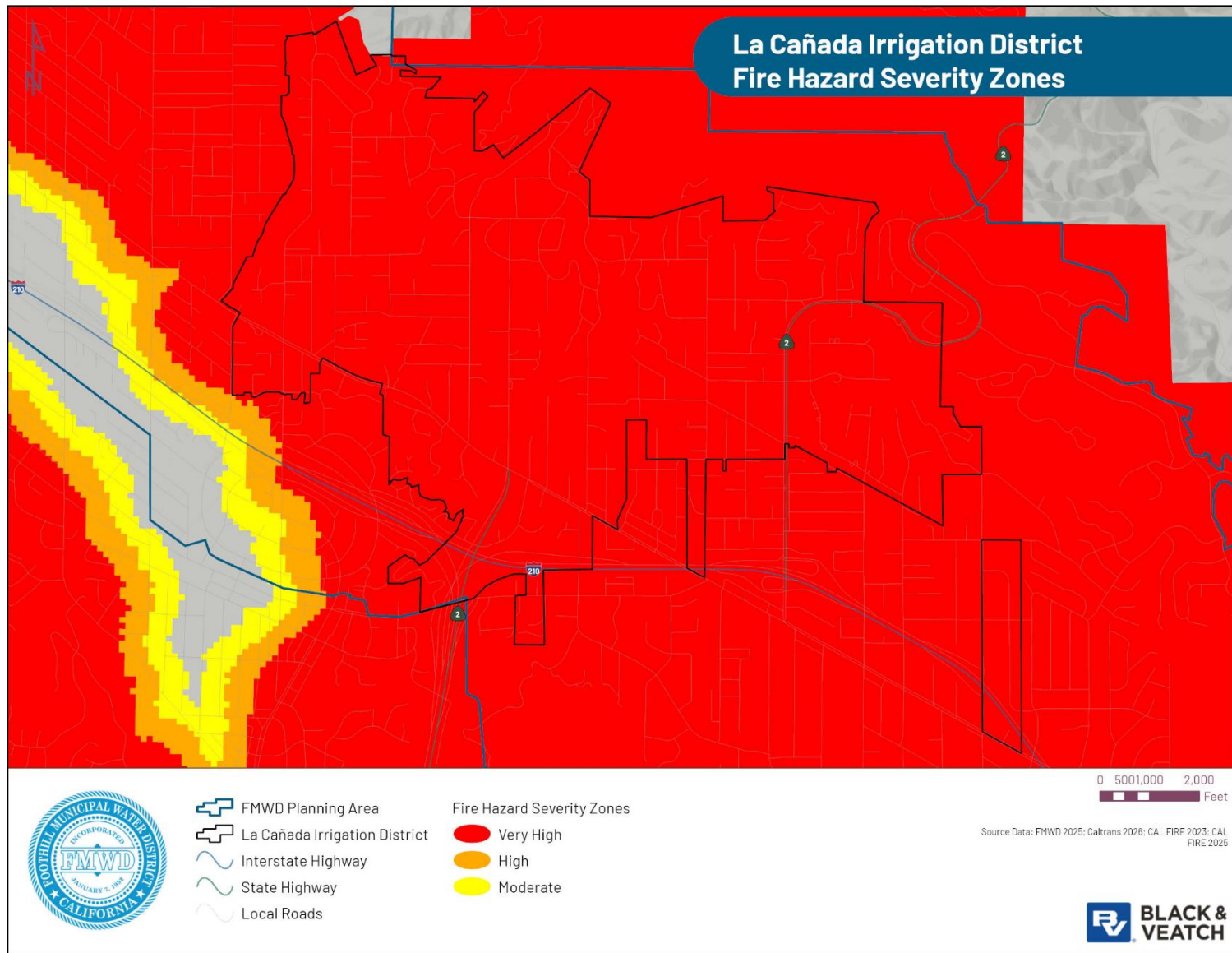


Figure 4-10. Wildfire Hazard Map – Fire Hazard Severity Zones



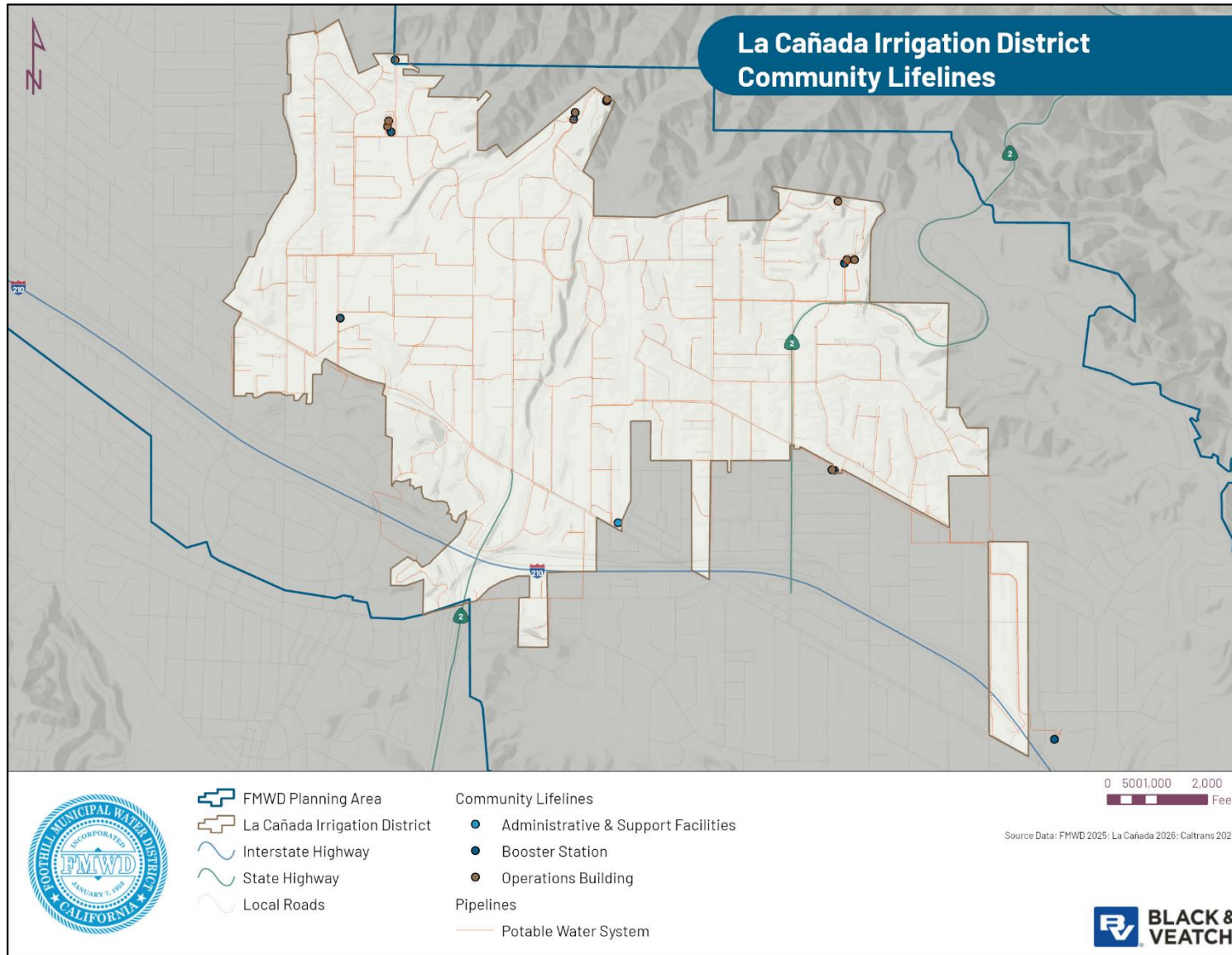


Figure 4-11. Community Lifelines

## 5. LAS FLORES WATER COMPANY



Figure 5-1. Las Flores Water Company

### 5.1 LOCAL HAZARD MITIGATION PLANNING TEAM

Table 5-1. Local Planning Team

|                          | Primary Point of Contact                                                                                              | Alternate Point of Contact                                               |
|--------------------------|-----------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|
| Name and Title:          | William Kimberling, General Manager                                                                                   | John Bednarski, Board President                                          |
| Address:                 | 428 E. Sacramento Street Altadena, CA 91001                                                                           | 428 E. Sacramento Street Altadena, CA 91001                              |
| Phone Number:            | (626) 797-1138                                                                                                        | (626)797-113                                                             |
| Email:                   | <a href="mailto:ifwc@pacbell.net">ifwc@pacbell.net</a>                                                                | <a href="mailto:info@lasfloreswaterco.com">info@lasfloreswaterco.com</a> |
| <b>Contributors:</b>     |                                                                                                                       |                                                                          |
| Name and Title:          | William Kimberling, General Manager                                                                                   |                                                                          |
| Method of Participation: | Provided information on assets, capabilities, adaptive capacity, risk, and mitigation strategy. Reviewed draft annex. |                                                                          |
| Name and Title:          | Natalie Ouwersloot, District Engineer for Foothill Municipal Water District                                           |                                                                          |
| Method of Participation: | Provided asset data and assisted with annex development.                                                              |                                                                          |



## 5.2 JURISDICTIONAL PROFILE

### 2.11.1 Overview

The Las Flores Water Company (LFWC) is a utility service which specializes in the treatment, maintenance and distribution of drinking water supplies and irrigation systems in central and northern Altadena, located just east of the Mountain View Cemetery. The company maintains two reservoirs and a well near the business office (Las Flores Water Company 2026).

Las Flores Water Company water sources include Mount View Well (35% in 2015) and the remainder purchased from the Metropolitan Water District of Southern California via a connection with the Foothill Municipal Water District.

In the aftermath of the Eaton Fire, LFWC faces serious challenges as it has lost approximately 1,100 of the 1,480 service connections, or about 75% of the homes in its service area. It is currently working with Los Angeles County to allow for and expedite rebuilding permits.

### 5.2.1 Service Area

LFWC operates a relatively small system serving approximately 4,500 people through about 1,480 service connections. Service area elevations range from 1,100 to 1,867 feet above sea level. Three pressure zones are required to provide and maintain reasonable pressures throughout the service area. Its water supply comes from a blend of local groundwater, pumped from the Monk Hill subarea of the Raymond Basin, and imported water purchased through Foothill Municipal Water District. In addition to water treatment and delivery, Las Flores is responsible for system maintenance, infrastructure investment, and ensuring compliance with federal, state, and local drinking water standards.

### 5.2.2 Governance

The District is governed by a five-member Board of Directors, which assumes responsibility for the adoption of this plan. The General Manager will oversee the plan's implementation.

### 5.2.3 Assets

The table below summarizes the critical assets of the district and their value.

Table 5-2. Water District Assets

| Asset                                        | Value                |
|----------------------------------------------|----------------------|
| <b>Property</b>                              |                      |
| All Properties                               | \$10,000,000         |
| <b>Critical Infrastructure and Equipment</b> |                      |
| All pipeline and equipment                   | \$30,000,000         |
| <b>Critical Facilities</b>                   |                      |
| All Facilities                               | \$60,000,000         |
| <b>TOTAL:</b>                                | <b>\$100,000,000</b> |



## 5.3 CURRENT TRENDS

The 2025 Eaton fire resulted in severe damage or complete destruction of 75 percent of the customer homes in the Las Flores service area. While the region is being rebuilt, the reduction in service was one of the prompts for a consolidation study with Lincoln Avenue Water Company and Rubio Cañon Land & Water Association.

## 5.4 CAPABILITY ASSESSMENT

### 5.4.1 Planning and Regulatory Capabilities

Jurisdictions can develop policies and programs and implement rules and regulations to protect and serve residents. Local policies are typically identified in community plans, implemented through local ordinance, and enforced through a governing body. An assessment of planning and regulatory capabilities is presented in the table below.

Table 5-3. Planning and Regulatory Capabilities

| Plan, Study, or Program     | Date of Most Recent Update | Comment                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-----------------------------|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Capital Improvement Program | 2025                       | The Company continues to focus efforts to upgrade aging infrastructure. Over the last 20 years, the Company has invested more than \$3 million in new pipelines and facilities. The Las Flores Water Company's goal is to continue with this program, while being capable to promptly respond to any unplanned incidents that may occur, as well as maintain an appropriate financial reserve to address unforeseen events. |
| Consolidation Study         | February 2026              | 2025 Eaton fire damaged the reservoirs and 75% of customer homes. Study was to explore a merger with neighboring Lincoln Avenue Water Company and Rubio Cañon Land & Water Association.                                                                                                                                                                                                                                     |

### *Opportunities to Expand Planning and Regulatory Capabilities*

The Las Flores Water Company will continue to strengthen the integration of hazard mitigation into current and future planning and regulatory capabilities. This includes the incorporation of mitigation projects and priorities into its CIP, asset management, and policy updates and development.

### 5.4.2 Administrative and Technical Capabilities

Planning, regulatory, and fiscal capabilities provide the backbone for successfully developing a mitigation strategy; however, without the appropriate personnel, the strategy may not be implemented. Administrative and technical capabilities focus on the availability of personnel resources responsible for implementing all the facets of hazard mitigation. These resources include technical experts, such as engineers and scientists, as well as personnel with capabilities that may be found in multiple departments, such as grant writers. An assessment of administrative and technical capabilities is presented in Table 5-4.





Table 5-4. Administrative and Technical Capabilities

| Staff/Personnel Resource                                                                | Available? | Department/Position                                                                                                   |
|-----------------------------------------------------------------------------------------|------------|-----------------------------------------------------------------------------------------------------------------------|
| Planners or engineers with knowledge of land development and land management practices  | N/A        | The Water Company lacks the authorities to regulate or dictate land use. Therefore this capability is not applicable. |
| Engineers or professionals trained in building or infrastructure construction practices | Yes        | General Manager, Directors                                                                                            |
| Planners or engineers with an understanding of natural hazards                          | Yes        | General Manager, Directors                                                                                            |
| Staff with training in benefit-cost analysis                                            | No         | Can contract for these services when needed.                                                                          |
| Surveyors                                                                               | No         | Can contract for these services when needed.                                                                          |
| Personnel skilled or trained in GIS applications                                        | No         | Can contract for these services when needed.                                                                          |
| Scientist familiar with natural hazards in local area                                   | No         | Can contract for these services when needed.                                                                          |
| Emergency manager                                                                       | Yes        | General Manager                                                                                                       |
| Grant writers                                                                           | No         | Can contract for these services when needed.                                                                          |
| Procurement Services and Management                                                     | Yes        | Existing staff can run and manage procurement services as needed.                                                     |

### Opportunities to Expand Administrative and Technical Capabilities

The Las Flores Water Company's current administrative and technical capabilities can be expanded to further reduce risk to the service area and its customers. To support this effort, the Las Flores Water Company has identified a series of mitigation actions (see Table 2-20) focused on improving infrastructure resilience and protecting critical community lifelines. These actions emphasize ongoing inspections, targeted upgrades, and routine maintenance to enhance system reliability and ensure continued delivery of essential services during and after natural hazard events.

### 5.4.3 Fiscal Capabilities

Assessing a jurisdiction's fiscal capability provides an understanding of the ability to fulfill the financial needs associated with hazard mitigation projects. This assessment identifies both outside resources, such as grant funding eligibility and local jurisdictional authority to generate internal financial capability, such as through impact fees. An assessment of fiscal capabilities is presented in the table below.

Table 5-5. Fiscal Capabilities

| Financial Resource                                                      | Accessible or Eligible to Use? |
|-------------------------------------------------------------------------|--------------------------------|
| Community Development Block Grants                                      | Accessible                     |
| Capital Improvements Project Funding                                    | Yes                            |
| Authority to Levy Taxes for Specific Purposes                           | Accessible                     |
| User Fees for Water, Sewer, Gas or Electric Service<br>If yes, specify. | Yes                            |
| Incur Debt through General Obligation Bonds                             | Accessible                     |
| Incur Debt through Special Tax Bonds                                    | Accessible                     |
| Incur Debt through Private Activity Bonds                               | Accessible                     |



| Financial Resource                                   | Accessible or Eligible to Use? |
|------------------------------------------------------|--------------------------------|
| Withhold Public Expenditures in Hazard-Prone Areas   | Accessible                     |
| State-Sponsored Grant Programs                       | Accessible                     |
| Development Impact Fees for Homebuyers or Developers | Accessible                     |

### ***Opportunities to Expand Fiscal Capabilities***

The Las Flores Water Company will continue using its existing budget and CIP to support and integrate hazard mitigation. They will also pursue state and federal grant funding opportunities to help offset project costs, as shown in Table 2-20. This will allow the Water Company to increase long-term resilience, implement mitigation actions with its current budget and CIP, and leverage other resources to implement infrastructure upgrades, reduce risk, and maintain reliable service delivery.

### **5.4.4 Education and Outreach Capabilities**

Regular engagement with the public on issues regarding hazard mitigation provides an opportunity to directly interface with community members. Assessing the education and outreach capability illustrates the connection between the government and community members, which opens a two-way dialogue that can result in a more resilient community, based on awareness and engagement. An assessment of education and outreach capabilities is presented in the table below.

Table 5-6. Education and Outreach Capabilities

| Outreach Capability                                                                  | Description and Role in Risk Reduction                                                                                                                      |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Public Information Officer                                                           | None                                                                                                                                                        |
| Personnel skilled or trained in website development                                  | None                                                                                                                                                        |
| Hazard mitigation information on website                                             | Yes, information on drought mitigation through responsible water use is located on the website.                                                             |
| Social media for hazard mitigation education and outreach                            | None                                                                                                                                                        |
| Citizen boards or commissions that address issues related to hazard mitigation       | None                                                                                                                                                        |
| Other programs in place that could be used to communicate hazard-related information | The Las Flores Water Company provides update letters. These update letters will include information on hazard related threats such as drought and wildfire. |
| Warning systems for hazard events                                                    | Cal Warn                                                                                                                                                    |

### ***Opportunities to Expand Education and Outreach Capabilities***

The Las Flores Water Company identified the following opportunities (see Table 2-20) to expand current education and outreach capabilities. In doing so, the Water Company can increase community-wide awareness of natural hazard risk and preparedness that can reduce vulnerability and support overall resilience.

- Provide links to regional emergency partners such as LA County Office of Emergency Management, Cal OES, National Weather Service (NWS), and Ready.gov for up-to-date emergency alerts and preparedness information.
- Use multiple social media platforms to share real-time hazard alerts, water conservation tips, and preparedness messages.



- Offer seasonal outreach sessions (e.g., wildfire preparedness in summer) to engage residents directly and answer questions about water service reliability during emergencies.
- Explore options for text/email alerts to notify customers about service disruptions, emergency events, or hazard warnings.
- Partner with retail agencies to deliver consistent public education messaging and materials across the service area.

#### 5.4.5 Community Classifications

Other programs, such as NWS StormReady, can enhance a jurisdiction's ability to mitigate, prepare for, and respond to natural hazards. These programs indicate a jurisdiction's desire to go beyond minimum regulatory requirements in order to create a more resilient community. These programs focus on communication, mitigation, and community preparedness to minimize the impact of natural hazards on a community. Classifications under various community mitigation programs are presented in the table below.

Table 5-7. Community Classifications

|                | Participating? | Classification or Number | Date Classified |
|----------------|----------------|--------------------------|-----------------|
| FIPS Code      | Yes            | 037-90107                | N/A             |
| UEI#           | Yes            | F899R58VBJ18             | N/A             |
| NWS StormReady | No             | N/A                      | N/A             |
| Firewise       | No             | N/A                      | N/A             |

#### Opportunities to Expand Community Classification Capabilities

Any expansion to the local capabilities identified in this section is likely to benefit the community classifications listed in this sub-section. Currently, there is no need to identify specific community classifications for expansion.

#### 5.4.6 Adaptive Capacity for Climate Change

An adaptive capacity assessment evaluates a jurisdiction's ability to anticipate impacts from future conditions. By looking at public support, technical adaptive capacity, and other factors, jurisdictions identify their core capability for resilience against issues such as extreme heat. The adaptive capacity assessment provides jurisdictions with an opportunity to identify areas for improvement by ranking their capacity high, medium, or low. The District's adaptive capacity for the impacts of climate change is presented in the table below.



Table 5-8. Adaptive Capacity for Climate Change

| Criterion                                                                                          | Jurisdiction Rating <sup>a</sup> | Comment                                                                                                                                             |
|----------------------------------------------------------------------------------------------------|----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Technical Capacity</b>                                                                          |                                  |                                                                                                                                                     |
| Jurisdiction-level understanding of potential climate change impacts                               | High                             | Staff understanding through water resource planning, supply reliability planning, and imported water risk assessments.                              |
| Jurisdiction-level monitoring of climate change impacts                                            | High                             | Ongoing monitoring through regional water supply planning and participation in climate-related water resource efforts.                              |
| Technical resources to assess proposed strategies for feasibility and externalities                | Low                              | -                                                                                                                                                   |
| Jurisdiction-level capacity for development of greenhouse gas emissions inventory                  | Low                              | -                                                                                                                                                   |
| Capital planning and land use decisions informed by potential climate impacts                      | Medium                           | Climate considerations incorporated into capital planning and infrastructure resilience planning; land use authority lies with local jurisdictions. |
| Participation in regional groups addressing climate risks                                          | Low                              | -                                                                                                                                                   |
| <b>Implementation Capacity</b>                                                                     |                                  |                                                                                                                                                     |
| Clear authority/mandate to consider climate change impacts during public decision-making processes | Medium                           | Climate resilience considered in infrastructure planning and water supply reliability decisions.                                                    |
| Identified strategies for greenhouse gas mitigation efforts                                        | High                             | GHG inventory reporting and operational efficiency efforts through The Climate Registry participation.                                              |
| Identified strategies for adaptation to impacts                                                    | High                             | Strategies include supply diversification, groundwater storage, and infrastructure resilience planning.                                             |
| Champions for climate action in local government departments                                       | Medium                           | Staff leadership within planning and engineering functions supports climate resilience initiatives.                                                 |
| Political support for implementing climate change adaptation strategies                            | High                             | Board Members are very supportive of infrastructure resilience and supply reliability projects.                                                     |
| Financial resources devoted to climate change adaptation                                           | Low                              | -                                                                                                                                                   |
| Local authority over sectors likely to be negative impacted                                        | Low                              | -                                                                                                                                                   |
| <b>Public Capacity</b>                                                                             |                                  |                                                                                                                                                     |
| Customers' knowledge of and understanding of climate risk                                          | Medium                           | Public awareness through drought messaging and water supply reliability communications.                                                             |
| Customers' support of adaptation efforts                                                           | High                             | Strong public support for water supply reliability and drought resilience projects.                                                                 |
| Customers' capacity to adapt to climate impacts                                                    | Medium                           | Local communities have some adaptive capacity but may face financial and infrastructure constraints.                                                |
| Local economy current capacity to adapt to climate impacts                                         | Low                              | -                                                                                                                                                   |
| Local ecosystems capacity to adapt to climate impacts                                              | Low                              | -                                                                                                                                                   |

- a. High = Capacity exists and is in use; Medium = Capacity may exist but is not used or could use some improvement; Low = Capacity does not exist or could use substantial improvement; Unsure= Not enough information is known to assign a rating.





### ***Opportunities to Expand Adaptive Capacity Capabilities***

The District has not identified a need to expand adaptive capacity capabilities.

## **5.5 NATIONAL FLOOD INSURANCE PROGRAM COMPLIANCE**

Districts are not eligible to participate in the National Flood Insurance Program (NFIP). However, any new assets or infrastructure developed by the District are in compliance with the floodplain regulations established by the surrounding municipal entities.

## **5.6 INTEGRATION**

For hazard mitigation planning, “integration” means that hazard mitigation information is used in other relevant planning mechanisms, such as capital facilities planning, and that relevant information from those sources is used in hazard mitigation. This section identifies where such integration is already in place, and where there are opportunities for further integration in the future. Resources listed at the end of this annex were used to provide information on integration. The progress reporting process described in Volume 1 of the hazard mitigation plan will document the progress of hazard mitigation actions related to integration and identify new opportunities for integration.

### **5.6.1 Existing Integration**

Some level of integration has already been established between local hazard mitigation planning and the following other local plans and programs.

#### ***Planning and Regulatory***

Las Flores Water Company’s planning and regulatory capabilities and functions are integrated into its hazard mitigation efforts to ensure infrastructure improvements and operational strategies are consistent with local, state, and federal requirements. For example, Las Flores’ Capital Improvements Program (CIP) identifies projects that prioritize mitigation of natural hazard risks and protection of community lifelines within the service area.

#### ***Fiscal***

Las Flores Water Company’s fiscal capabilities support the planning, implementation, and long-term maintenance of hazard mitigation projects within its service area. Las Flores manages financial resources through annual budgets, CIPs, customer fees, and state programs that assist in maintaining systems, protect community lifelines, and provide continuity of operations. These capabilities allow the Las Flores Water Company to perform routine maintenance, pursue infrastructure upgrades, leverage state and federal grant opportunities, and respond to emergency repair needs.

#### ***Administrative and Technical***

The Las Flores Water Company currently integrates hazard mitigation into its day-to-day operations through administrative staff and contract support staff that work together to identify and mitigate risk, implement mitigation projects, and maintain essential water services for customers. Through these



efforts, Las Flores supports proactive risk reduction and strengthens their ability to maintain operations during and after natural hazards.

### Education and Outreach

The Las Flores Water Company provides information on hazards and hazard mitigation through the Company website and update letters. Education and outreach largely focuses on drought and wildfire.

### 5.6.2 Opportunities for Future Integration

The capability assessment in this annex indicates opportunities to integrate this mitigation plan with other jurisdictional planning/regulatory capabilities. Capabilities were identified as integration opportunities if they can support or enhance the actions identified in this plan or be supported or enhanced by components of this plan. The capability assessment identified the following plans and programs that do not currently integrate hazard mitigation information but provide opportunities to do so in the future.

- AWIA Risk and Resilience Assessment (RRA): Under AWIA, water utilities must perform a Risk and Resilience Assessment (RRA) every five years to identify vulnerabilities in infrastructure, physical security, and cybersecurity systems. Information on hazard risk and vulnerabilities from this mitigation plan can be used to update the RRA.
- Emergency Response Plan (ERP): Information on hazard events developed in this mitigation plan can be used to update emergency response planning.
- CA Senate Bill 1153: This bill requires urban retail water suppliers to include wildfire mitigation actions in disaster preparedness plans. This plan includes actions to mitigate wildfire risk.

## 5.7 RISK ASSESSMENT

### 5.7.1 Jurisdiction-Specific Natural Hazard Event History

Table 2-9 lists past occurrences in the last five years of natural hazards for which specific damage was recorded in this jurisdiction. Other hazard events that broadly affected Los Angeles County, including this jurisdiction, are listed in the risk assessments in Volume 1 of this hazard mitigation plan.

Table 5-9. Past Natural Hazard Events

| Type of Event | Declaration Title | State or Federal Disaster # | Declaration Date                 | Damage Assessment                                                               |
|---------------|-------------------|-----------------------------|----------------------------------|---------------------------------------------------------------------------------|
| Biological    | COVID-19 Pandemic | EM-3428-CA<br>DR-4482-CA    | March 13, 2020<br>March 22, 2020 | COVID Relief Fund. Subject to closures and mandated masking, social distancing. |
| Fire          | Eaton Fire        | FM-5550-CA                  | January 8, 2025                  | Two reservoirs and 75% of the customer base were damaged.                       |

### 5.7.2 Hazard Ranking

The prioritization and categorization of identified hazards for the Las Flores Water Company is based principally on the Priority Risk Index (PRI), a tool used to measure the degree of risk for identified



hazards in a particular planning area. The PRI was used to assist the District in identifying hazards that pose the most significant threat. Table 5-10 presents a local ranking of all hazards of concern for which this hazard mitigation plan provides complete risk assessments. As described in detail in Volume 1, the ranking process involves an assessment of the likelihood of occurrence for each hazard, along with its potential impacts on people, property and the economy.

Table 5-10. Hazard Risk Ranking Summary

| Hazard                                | Weighted Risk Factors |        |                |              |                | PRI | Risk Ranking |
|---------------------------------------|-----------------------|--------|----------------|--------------|----------------|-----|--------------|
|                                       | Probability           | Impact | Spatial Extent | Warning Time | Climate Change |     |              |
| Dam Failure                           | .3                    | .3     | .2             | .1           | .3             | 1.2 | Low          |
| Drought                               | 1.2                   | 1.2    | .8             | .1           | .4             | 3.7 | High         |
| Earthquake                            | 1.2                   | 1.2    | .8             | .4           | .3             | 3.9 | High         |
| Extreme Temperature                   | 1.2                   | 1.2    | .8             | .1           | .4             | 3.7 | High         |
| Flood*                                | 1.2                   | .3     | .4             | .1           | .4             | 2.4 | Medium       |
| Landslide, Subsidence & Mass Movement | .6                    | 1.2    | .4             | .1           | .3             | 2.6 | Medium       |
| Strong Wind                           | 1.2                   | 1.2    | .8             | .1           | .4             | 3.7 | High         |
| Wildfire                              | 1.2                   | 1.2    | .8             | .1           | .4             | 3.7 | High         |

Note: PRI Value 1 to 1.9 = Low Hazard Risk Ranking

PRI Value 2.0 to 2.9 = Medium Hazard Risk Ranking

PRI Value 3.0 to 4.0 = High Hazard Risk Ranking

\*Flood risk is based on localized urban flooding, not regulated mapped floodplains

### 5.7.3 Agency-Specific Vulnerabilities

Volume 1 of this hazard mitigation plan provides a summary of risk assessments for hazards of concern that may have similar impacts on each agency in the planning area. This section provides information on key vulnerabilities for this agency including a summary of count and replacement cost values of agency assets. Available agency-specific risk maps of the hazards are provided at the end of this annex.

#### Vulnerability and Risk Assessment

The following information applies to the quantitative risk assessment results for Foothill Municipal Water District. Summarized vulnerability and risk assessment results for the entire planning area are contained in the applicable hazard chapters of Volume 1.

#### Dam Failure

Table 5-11. Estimated Dam Failure Exposure to Pipelines

| Total Miles of Pipeline | Miles of Pipeline Exposed to Hazard | Percent of Pipeline Exposed |
|-------------------------|-------------------------------------|-----------------------------|
| 23.4                    | 0.02                                | 0.1%                        |



## Earthquake

Table 5-12. Earthquake Hazard Estimated Average Probability of Damage State of Facilities

| Scenario           | Probability of Damage State |               |                 |                  |                 |               |                 |                  | Complete Replacement Cost Value |
|--------------------|-----------------------------|---------------|-----------------|------------------|-----------------|---------------|-----------------|------------------|---------------------------------|
|                    | No Damage                   | Slight Damage | Moderate Damage | Extensive Damage | Complete Damage | Exceed Slight | Exceed Moderate | Exceed Extensive |                                 |
| Puente Hills M6.95 | 36%                         | 3%            | 19%             | 31%              | 11%             | 64%           | 61%             | 42%              | \$7,081,878                     |
| Sierra Madre M7.16 | 36%                         | 1%            | 12%             | 31%              | 20%             | 64%           | 63%             | 51%              | \$7,986,700                     |
| Verdugo M6.90      | 36%                         | 1%            | 12%             | 31%              | 20%             | 64%           | 64%             | 52%              | \$8,050,103                     |

Figure 5-2. Average Percent Functionality of Facilities After Earthquake Scenarios by Day

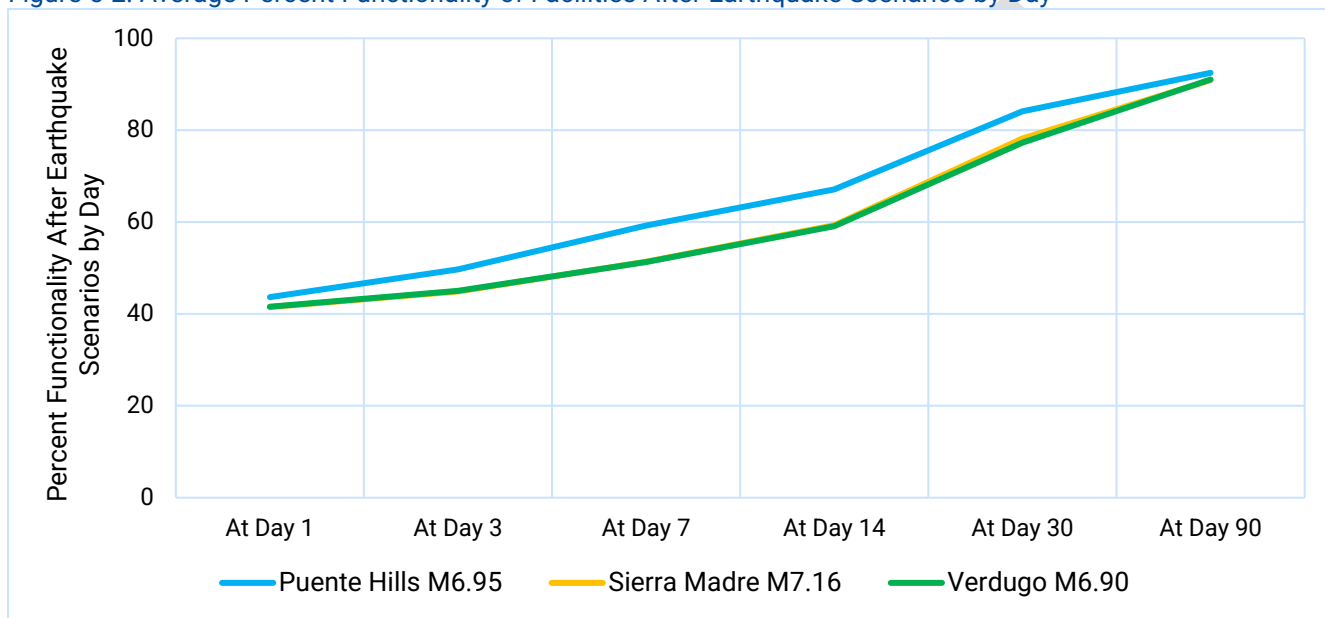


Table 5-13. Estimated Pipe Leaks and Breaks from Earthquake Hazard

| Scenario           | Number of Leaks | Number of Breaks | Total Number of Repairs | Hours to Repair Leaks | Hours to Repair Breaks | Total Hours to Repair | Economic Loss |
|--------------------|-----------------|------------------|-------------------------|-----------------------|------------------------|-----------------------|---------------|
| Puente Hills M6.95 | 3.5             | 0.9              | 4.4                     | 21.9                  | 9.6                    | 31.5                  | \$15,687      |
| Sierra Madre M7.16 | 10.5            | 2.6              | 13.1                    | 62.4                  | 31.2                   | 93.6                  | \$47,165      |
| Verdugo M6.90      | 7.2             | 1.8              | 9.1                     | 43.2                  | 21.6                   | 64.8                  | \$32,607      |

Table 5-14. Estimated Liquefaction and NEHRP D Soils Exposure to Pipelines

| Scenario     | Total Miles of Pipeline | Miles of Pipeline Exposed to Hazard | Percent of Pipeline Exposed |
|--------------|-------------------------|-------------------------------------|-----------------------------|
| Liquefaction | 23.4                    | 0.2                                 | 0.8%                        |





| Scenario      | Total Miles of Pipeline | Miles of Pipeline Exposed to Hazard | Percent of Pipeline Exposed |
|---------------|-------------------------|-------------------------------------|-----------------------------|
| NEHRP D Soils | 23.4                    | 0.8                                 | 3.5%                        |

## Landslide

Table 5-15. Estimated Landslide Exposure to Pipelines

| Scenario                           | Total Miles of Pipeline | Miles of Pipeline Exposed to Hazard | Percent of Pipeline Exposed |
|------------------------------------|-------------------------|-------------------------------------|-----------------------------|
| Very High Landslide Susceptibility | 23.4                    | 0.1                                 | 0.3%                        |
| High Landslide Susceptibility      | 23.4                    | 18.7                                | 79.7%                       |
| Moderate Landslide Susceptibility  | 23.4                    | 0.3                                 | 1.1%                        |
| <b>Total</b>                       | <b>70.2</b>             | <b>19.1</b>                         | <b>81.10%</b>               |

Table 5-16. Facilities Exposed to the High Susceptibility Landslide Hazard Area

| Type of Facility                    | Number of Facilities Exposed | Replacement Cost Value |
|-------------------------------------|------------------------------|------------------------|
| Pump Station                        | 3                            | \$6,000,000            |
| Administrative & Support Facilities | 1                            | \$423,146              |
| Reservoir                           | 4                            | \$6,000,000            |
| <b>Total</b>                        | <b>5</b>                     | <b>\$12,413,146</b>    |

## Wildfire

Table 5-17. Estimated Post-Fire Debris Flow Exposure to Pipelines

| Total Miles of Pipeline | Miles of Pipeline Exposed to Hazard | Percent of Pipeline Exposed |
|-------------------------|-------------------------------------|-----------------------------|
| 23.4                    | 0.9                                 | 4.1%                        |

Table 5-18. Facilities Exposed to Eaton Fire Post-Fire Debris Flow– High Combined Hazard Area

| Type of Facility | Number of Facilities Exposed | Replacement Cost Value |
|------------------|------------------------------|------------------------|
| Reservoir        | 1                            | \$3,000,000            |

Table 5-19. Estimated Wildfire Exposure to Pipelines

| Scenario                            | Total Miles of Pipeline | Miles of Pipeline Exposed | Percent of Pipeline Exposed |
|-------------------------------------|-------------------------|---------------------------|-----------------------------|
| Very High Fire Hazard Severity Zone | 23.4                    | 5.3                       | 22.6%                       |
| High Fire Hazard Severity Zone      | 23.4                    | 2.3                       | 9.7%                        |
| Moderate Fire Hazard Severity Zone  | 23.4                    | 2.3                       | 9.8%                        |
| <b>Total</b>                        | <b>70.2</b>             | <b>9.9</b>                | <b>42.10%</b>               |

Table 5-20. Facilities Exposed to the Very High Fire Hazard Severity Zone

| Type of Facility | Number of Facilities Exposed | Replacement Cost Value |
|------------------|------------------------------|------------------------|
| Pump Station     | 1                            | \$2,000,000            |
| Reservoir        | 2                            | \$4,000,000            |



|       |   |                |
|-------|---|----------------|
| Total | 3 | \$6,000,000.00 |
|-------|---|----------------|

### ***Other Noted Vulnerabilities***

The following jurisdiction-specific issues have been identified based on a review of the results of the risk assessment, public involvement strategy, and other available resources:

- The water main pipelines were damaged or destroyed by the Eaton Fire and require repair or replacement to provide overall resilience to future hazards and continuity of operations for the Las Flores Water Company.

Mitigation actions addressing this issue were prioritized for consideration in the action plan presented in this annex.

DRAFT



## 5.8 HAZARD MITIGATION STRATEGY

This section includes the following components of the mitigation strategy for this jurisdiction:

- Hazard Mitigation Action Plan Matrix
- Mitigation Action Prioritization
- Mitigation Action Classification and Natural Hazards Addressed

Table 5-21. Hazard Mitigation Action Plan Matrix

| Action Number    | Action Description                                                                                                                                                                                                                                                                                                                | Lead and Support Implementers | Goals Met | Benefits New or Existing Assets | Estimated Cost                 | Potential Funding Sources                    | Timeline             | Community Lifeline Addressed |
|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|-----------|---------------------------------|--------------------------------|----------------------------------------------|----------------------|------------------------------|
| 001 – Las Flores | Where appropriate, support retrofitting, purchase or relocation of structures located in hazard areas, prioritizing those that have experienced repetitive losses and/or are in high- or medium-risk hazard areas.                                                                                                                | Lead: General Manager         | 1, 2      | Existing                        | Very High (>\$1 million)       | Staff Time, CIP Budget, FEMA HMGP, FEMA BRIC | Long Term (5+ years) | Water Systems                |
| 002 – Las Flores | Actively participate in the plan maintenance protocols outlined in Volume 1 of this hazard mitigation plan.                                                                                                                                                                                                                       | Lead: General Manager         | All       | N/A                             | Low (>\$50,000)                | Staff Time, General Budget                   | Long Term (5+ years) | All                          |
| 003 – Las Flores | Repair or replace water main pipelines along Menlo Drive damaged or destroyed by the Eaton Fire. This will include 800 linear feet of pipeline, 1 fire hydrant, and 2 tie ins. This will provide overall resilience to future hazards and continuity of operations for the Las Flores Water Company.                              | Lead: General Manager         | 1, 2, 5   | Both                            | High (\$250,000 - \$1 million) | Staff Time, CIP Budget, FEMA HMGP, FEMA BRIC | Long Term (5+ years) | Water Systems                |
| 004 – Las Flores | Repair or replace water main pipelines along Parkman Street damaged or destroyed by the Eaton Fire. This will include 1,000 linear feet of pipeline, 2 fire hydrants, 24 service connectors, and 2 tie ins. This will provide overall resilience to future hazards and continuity of operations for the Las Flores Water Company. | Lead: General Manager         | 1, 2, 5   | Both                            | High (\$250,000 - \$1 million) | Staff Time, CIP Budget, FEMA HMGP, FEMA BRIC | Long Term (5+ years) | Water Systems                |
| 005 – Las Flores | Repair or replace water main pipelines along Wapello Street damaged or destroyed by the Eaton Fire. This will include 800 linear feet of pipeline, 2 fire hydrants, 20 service connectors, and 2 tie ins. This will provide overall resilience to future hazards and continuity of operations for the Las Flores Water Company.   | Lead: General Manager         | 1, 2, 5   | Both                            | High (\$250,000 - \$1 million) | Staff Time, CIP Budget, FEMA HMGP, FEMA BRIC | Long Term (5+ years) | Water Systems                |
| 006 – Las Flores | Repair or replace water main pipelines along 2700 to 3000 N. Marengo Ave damaged or destroyed by the Eaton Fire. This will include 1,600 linear feet of pipeline, 4 fire hydrants, 30 service connectors, and 4 tie ins. This will provide overall resilience to future hazards and                                               | Lead: General Manager         | 1, 2, 5   | Both                            | Very High (>\$1 million)       | Staff Time, CIP Budget, FEMA HMGP, FEMA BRIC | Long Term (5+ years) | Water Systems                |



| Action Number    | Action Description                                                                                                                                                                                                                                                                                                                             | Lead and Support Implementers | Goals Met | Benefits New or Existing Assets | Estimated Cost                 | Potential Funding Sources                    | Timeline             | Community Lifeline Addressed |
|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|-----------|---------------------------------|--------------------------------|----------------------------------------------|----------------------|------------------------------|
|                  | continuity of operations for the Las Flores Water Company.                                                                                                                                                                                                                                                                                     |                               |           |                                 |                                |                                              |                      |                              |
| 007 – Las Flores | Repair or replace water main pipelines along 2700 TO 2900 N. Santa Anita damaged or destroyed by the Eaton Fire. This will include 1,400 linear feet of pipeline, 3 fire hydrants, 25 service connectors, and 4 tie ins. This will provide overall resilience to future hazards and continuity of operations for the Las Flores Water Company. | Lead: General Manager         | 1, 2, 5   | Both                            | High (\$250,000 - \$1 million) | Staff Time, CIP Budget, FEMA HMGP, FEMA BRIC | Long Term (5+ years) | Water Systems                |
| 008 – Las Flores | Repair or replace water main pipelines along Marigold Street damaged or destroyed by the Eaton Fire. This will include 1,100 linear feet of pipeline, 3 fire hydrants, 30 service connectors, and 3 tie ins. This will provide overall resilience to future hazards and continuity of operations for the Las Flores Water Company.             | Lead: General Manager         | 1, 2, 5   | Both                            | High (\$250,000 - \$1 million) | Staff Time, CIP Budget, FEMA HMGP, FEMA BRIC | Long Term (5+ years) | Water Systems                |
| 009 – Las Flores | Repair or replace water main pipelines along Saint James Place damaged or destroyed by the Eaton Fire. This will include 1,100 linear feet of pipeline, 3 fire hydrants, 35 service connectors, and 2 tie ins. This will provide overall resilience to future hazards and continuity of operations for the Las Flores Water Company.           | Lead: General Manager         | 1, 2, 5   | Both                            | High (\$250,000 - \$1 million) | Staff Time, CIP Budget, FEMA HMGP, FEMA BRIC | Long Term (5+ years) | Water Systems                |
| 010 – Las Flores | Repair or replace water main pipelines along 500 Block of E. Palm St. damaged or destroyed by the Eaton Fire. This will include 500 linear feet of pipeline, 1 fire hydrant, 6 service connectors, and 2 tie ins. This will provide overall resilience to future hazards and continuity of operations for the Las Flores Water Company.        | Lead: General Manager         | 1, 2, 5   | Both                            | High (\$250,000 - \$1 million) | Staff Time, CIP Budget, FEMA HMGP, FEMA BRIC | Long Term (5+ years) | Water Systems                |
| 011 – Las Flores | Repair or replace water main pipelines along 300 Block of E. Palm St. damaged or destroyed by the Eaton Fire. This will include 400 linear feet of pipeline, 1 fire hydrant, 10 service connectors, and 1 tie in. This will provide overall resilience to future hazards and continuity of operations for the Las Flores Water Company.        | Lead: General Manager         | 1, 2, 5   | Both                            | High (\$250,000 - \$1 million) | Staff Time, CIP Budget, FEMA HMGP, FEMA BRIC | Long Term (5+ years) | Water Systems                |
| 012 – Las Flores | Repair or replace water main pipelines along Wistaria Place damaged or destroyed by the Eaton Fire. This will include 400 linear feet of pipeline, 1 fire hydrant, 8 service connectors, and 1 tie in. This will provide overall resilience to future hazards and continuity of operations for the Las Flores Water Company.                   | Lead: General Manager         | 1, 2, 5   | Both                            | High (\$250,000 - \$1 million) | Staff Time, CIP Budget, FEMA HMGP            | Long Term (5+ years) | Water Systems                |
| 013 – Las Flores | Repair or replace water main pipelines along 300 to 500 E. Poppyfields Dr. damaged or destroyed by the Eaton Fire. This will include 900 linear feet of pipeline, 2 fire                                                                                                                                                                       | Lead: General Manager         | 1, 2, 5   | Both                            | High (\$250,000 - \$1 million) | Staff Time, CIP Budget, FEMA                 | Long Term (5+ years) | Water Systems                |





| Action Number    | Action Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Lead and Support Implementers | Goals Met | Benefits New or Existing Assets | Estimated Cost                 | Potential Funding Sources                    | Timeline                       | Community Lifeline Addressed |
|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|-----------|---------------------------------|--------------------------------|----------------------------------------------|--------------------------------|------------------------------|
|                  | hydrants, 25 service connectors, and 2 tie ins. This will provide overall resilience to future hazards and continuity of operations for the Las Flores Water Company.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                               |           |                                 |                                | HMGP, FEMA BRIC                              |                                |                              |
| 014 – Las Flores | Repair or replace water main pipelines along 400 Block of E. Pine St. damaged or destroyed by the Eaton Fire. This will include 500 linear feet of pipeline, 1 fire hydrant, 15 service connectors, and 2 tie ins. This will provide overall resilience to future hazards and continuity of operations for the Las Flores Water Company.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Lead: General Manager         | 1, 2, 5   | Both                            | High (\$250,000 - \$1 million) | Staff Time, CIP Budget, FEMA HMGP, FEMA BRIC | Long Term (5+ years)           | Water Systems                |
| 015 – Las Flores | Repair or replace water main pipelines along 300 Block of E. Pentagon St. damaged or destroyed by the Eaton Fire. This will include 500 linear feet of pipeline, 2 fire hydrants, 10 service connectors, and 2 tie ins. This will provide overall resilience to future hazards and continuity of operations for the Las Flores Water Company.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Lead: General Manager         | 1, 2, 5   | Both                            | High (\$250,000 - \$1 million) | Staff Time, CIP Budget, FEMA HMGP, FEMA BRIC | Long Term (5+ years)           | Water Systems                |
| 016 – Las Flores | Install a SCADA system at facilities lacking remote monitoring. These systems enhance situational awareness, enable remote operations during emergencies, support early detection of system failures, and reduce staff exposure during hazardous conditions.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Lead: General Manager         | 1, 2, 5   | Both                            | Medium (\$50,000 - \$250,000)  | Staff Time, CIP Budget, FEMA HMGP, FEMA BRIC | Long Term (5+ years)           | Water Systems                |
| 017 – Las Flores | Expand the Water Company's current outreach and education program by completing the following: <ul style="list-style-type: none"> <li>Provide links to regional emergency partners such as LA County Office of Emergency Management, Cal OES, National Weather Service (NWS), and Ready.gov for up-to-date emergency alerts and preparedness information.</li> <li>Use multiple social media platforms to share real-time hazard alerts, water conservation tips, and preparedness messages.</li> <li>Offer seasonal outreach sessions (e.g., wildfire preparedness in summer) to engage residents directly and answer questions about water service reliability during emergencies.</li> <li>Explore options for text/email alerts to notify customers about service disruptions, emergency events, or hazard warnings.</li> <li>Partner with retail agencies to deliver consistent public education messaging and materials across the service area.</li> </ul> | Lead: General Manager         | 1, 3, 4   | Existing                        | Medium (\$50,000 - \$250,000)  | CIP Budget, General Budget, Staff Time       | Short Term (less than 5 years) | -                            |



Table 5-22. Mitigation Action Prioritization

| Action Number    | Life Safety | Property Protection | Cost-Effectiveness | Technically Feasible | Legal Authority | Funding Available | Grant Eligible | Environmental | Climate Change | Equity Priority Community | Administrative Capacity | Multi-Hazard | Timeline | Other Local Objective | Support Policies | Total Score | Priority |
|------------------|-------------|---------------------|--------------------|----------------------|-----------------|-------------------|----------------|---------------|----------------|---------------------------|-------------------------|--------------|----------|-----------------------|------------------|-------------|----------|
| 001 – Las Flores | 3           | 3                   | 3                  | 1                    | 1               | 1                 | 3              | 1             | 3              | 3                         | 1                       | 3            | 1        | 3                     | 3                | 33          | High     |
| 002 – Las Flores | 1           | 3                   | 3                  | 3                    | 3               | 3                 | 3              | 1             | 3              | 3                         | 3                       | 3            | 1        | 3                     | 3                | 39          | High     |
| 003 – Las Flores | 3           | 3                   | 1                  | 3                    | 3               | 3                 | 3              | 1             | 3              | 3                         | 1                       | 1            | 1        | 3                     | 3                | 35          | High     |
| 004 – Las Flores | 3           | 3                   | 1                  | 3                    | 3               | 3                 | 3              | 1             | 3              | 3                         | 1                       | 1            | 1        | 3                     | 3                | 35          | High     |
| 005 – Las Flores | 3           | 3                   | 1                  | 3                    | 3               | 3                 | 3              | 1             | 3              | 3                         | 1                       | 1            | 1        | 3                     | 3                | 35          | High     |
| 006 – Las Flores | 3           | 3                   | 1                  | 3                    | 3               | 3                 | 3              | 1             | 3              | 3                         | 1                       | 1            | 1        | 3                     | 3                | 35          | High     |
| 007 – Las Flores | 3           | 3                   | 1                  | 3                    | 3               | 3                 | 3              | 1             | 3              | 3                         | 1                       | 1            | 1        | 3                     | 3                | 35          | High     |
| 008 – Las Flores | 3           | 3                   | 1                  | 3                    | 3               | 3                 | 3              | 1             | 3              | 3                         | 1                       | 1            | 1        | 3                     | 3                | 35          | High     |
| 009 – Las Flores | 3           | 3                   | 1                  | 3                    | 3               | 3                 | 3              | 1             | 3              | 3                         | 1                       | 1            | 1        | 3                     | 3                | 35          | High     |
| 010 – Las Flores | 3           | 3                   | 1                  | 3                    | 3               | 3                 | 3              | 1             | 3              | 3                         | 1                       | 1            | 1        | 3                     | 3                | 35          | High     |
| 011 – Las Flores | 3           | 3                   | 1                  | 3                    | 3               | 3                 | 3              | 1             | 3              | 3                         | 1                       | 1            | 1        | 3                     | 3                | 35          | High     |
| 012 – Las Flores | 3           | 3                   | 1                  | 3                    | 3               | 3                 | 3              | 1             | 3              | 3                         | 1                       | 1            | 1        | 3                     | 3                | 35          | High     |
| 013 – Las Flores | 3           | 3                   | 1                  | 3                    | 3               | 3                 | 3              | 1             | 3              | 3                         | 1                       | 1            | 1        | 3                     | 3                | 35          | High     |
| 014 – Las Flores | 3           | 3                   | 1                  | 3                    | 3               | 3                 | 3              | 1             | 3              | 3                         | 1                       | 1            | 1        | 3                     | 3                | 35          | High     |
| 015 – Las Flores | 3           | 3                   | 1                  | 3                    | 3               | 3                 | 3              | 1             | 3              | 3                         | 1                       | 1            | 1        | 3                     | 3                | 35          | High     |
| 016 – Las Flores | 3           | 3                   | 3                  | 3                    | 3               | 3                 | 3              | 1             | 1              | 3                         | 1                       | 1            | 1        | 3                     | 3                | 35          | High     |
| 017 – Las Flores | 3           | 1                   | 3                  | 3                    | 3               | 1                 | 1              | 1             | 1              | 3                         | 3                       | 3            | 3        | 1                     | 1                | 31          | High     |

Note: 31 or more = High Priority  
15 to 30 = Medium Priority  
0 to 14 = Low Priority

Table 5-23. Mitigation Action Classification and Natural Hazards Addressed

| Action           | Mitigation Classification   |                    |                                       |                                  |                            |                    |                             | Natural Hazards |         |            |                     |       |           |             |          |
|------------------|-----------------------------|--------------------|---------------------------------------|----------------------------------|----------------------------|--------------------|-----------------------------|-----------------|---------|------------|---------------------|-------|-----------|-------------|----------|
|                  | Local Plans and Regulations | Emergency Services | Structure and Infrastructure Projects | Education and Awareness Programs | Natural Systems Protection | Climate Resilience | Community Capacity Building | Dam Failure     | Drought | Earthquake | Extreme Temperature | Flood | Landslide | Strong Wind | Wildfire |
| 001 – Las Flores |                             |                    | ■                                     |                                  |                            | ■                  |                             | ■               |         | ■          | ■                   | ■     | ■         |             | ■        |
| 002 – Las Flores | ■                           |                    |                                       |                                  |                            | ■                  |                             | ■               | ■       | ■          | ■                   | ■     | ■         | ■           | ■        |
| 003 – Las Flores |                             | ■                  | ■                                     |                                  |                            | ■                  |                             |                 | ■       |            |                     |       |           |             | ■        |



| Action           | Mitigation Classification   |                    |                                       |                                  |                            |                    |                             | Natural Hazards |         |            |                     |       |           |             |          |
|------------------|-----------------------------|--------------------|---------------------------------------|----------------------------------|----------------------------|--------------------|-----------------------------|-----------------|---------|------------|---------------------|-------|-----------|-------------|----------|
|                  | Local Plans and Regulations | Emergency Services | Structure and Infrastructure Projects | Education and Awareness Programs | Natural Systems Protection | Climate Resilience | Community Capacity Building | Dam Failure     | Drought | Earthquake | Extreme Temperature | Flood | Landslide | Strong Wind | Wildfire |
| 004 – Las Flores |                             | ■                  | ■                                     |                                  |                            | ■                  |                             |                 | ■       |            |                     |       |           |             | ■        |
| 005 – Las Flores |                             | ■                  | ■                                     |                                  |                            | ■                  |                             |                 | ■       |            |                     |       |           |             | ■        |
| 006 – Las Flores |                             | ■                  | ■                                     |                                  |                            | ■                  |                             |                 | ■       |            |                     |       |           |             | ■        |
| 007 – Las Flores |                             | ■                  | ■                                     |                                  |                            | ■                  |                             |                 | ■       |            |                     |       |           |             | ■        |
| 008 – Las Flores |                             | ■                  | ■                                     |                                  |                            | ■                  |                             |                 | ■       |            |                     |       |           |             | ■        |
| 009 – Las Flores |                             | ■                  | ■                                     |                                  |                            | ■                  |                             |                 | ■       |            |                     |       |           |             | ■        |
| 010 – Las Flores |                             | ■                  | ■                                     |                                  |                            | ■                  |                             |                 | ■       |            |                     |       |           |             | ■        |
| 011 – Las Flores |                             | ■                  | ■                                     |                                  |                            | ■                  |                             |                 | ■       |            |                     |       |           |             | ■        |
| 012 – Las Flores |                             | ■                  | ■                                     |                                  |                            | ■                  |                             |                 | ■       |            |                     |       |           |             | ■        |
| 013 – Las Flores |                             | ■                  | ■                                     |                                  |                            | ■                  |                             |                 | ■       |            |                     |       |           |             | ■        |
| 014 – Las Flores |                             | ■                  | ■                                     |                                  |                            | ■                  |                             |                 | ■       |            |                     |       |           |             | ■        |
| 015 – Las Flores |                             | ■                  | ■                                     |                                  |                            | ■                  |                             |                 | ■       |            |                     |       |           |             | ■        |
| 016 – Las Flores |                             |                    | ■                                     |                                  |                            | ■                  |                             |                 | ■       | ■          | ■                   | ■     | ■         |             | ■        |
| 017 – Las Flores |                             | ■                  |                                       | ■                                |                            |                    | ■                           |                 | ■       | ■          | ■                   | ■     | ■         | ■           | ■        |

## 5.9 PUBLIC OUTREACH

Las Flores supported the overall public outreach for the entire planning effort, but capacity was limited to do individual outreach due to a focus on disaster recovery activities.

## 5.10 INFORMATION SOURCES USED FOR THIS ANNEX

The following technical reports, plans, and regulatory mechanisms were reviewed to provide information for this annex.

- **Capital Improvement Program**—The Capital Improvement Program prioritizes projects that have been identified to improve District facilities, infrastructure, and equipment, including potential mitigation projects. The Capital Improvement Program was used as a source of information while preparing this annex.
- **Consolidation Study**—This study was used to inform the capability assessment in the aftermath of the Eaton Fire.

The following outside resources and references were reviewed:

- **Hazard Mitigation Plan Annex Development Toolkit**—The toolkit was used to support the identification of past hazard events and noted vulnerabilities, the risk ranking, and the development of the mitigation action plan.

## 5.11 AGENCY HAZARD MAPPING

Agency-specific risk maps of the hazards are provided on the following pages. For a complete description of each hazard, please see the applicable chapters in Volume 1 of this plan. These maps are based on the vulnerability and risk assessment results for this plan.



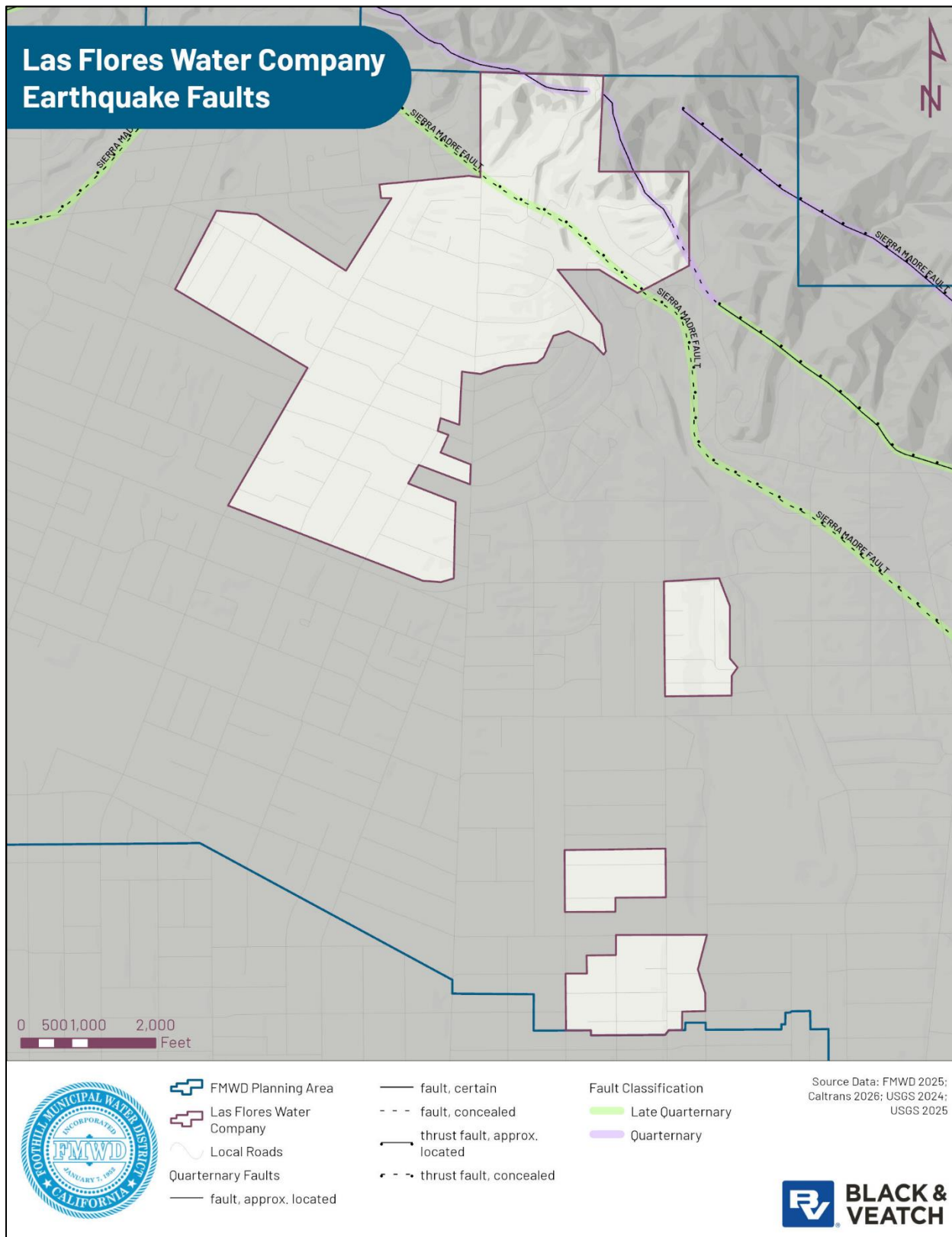


Figure 5-3. Earthquake Faults Map

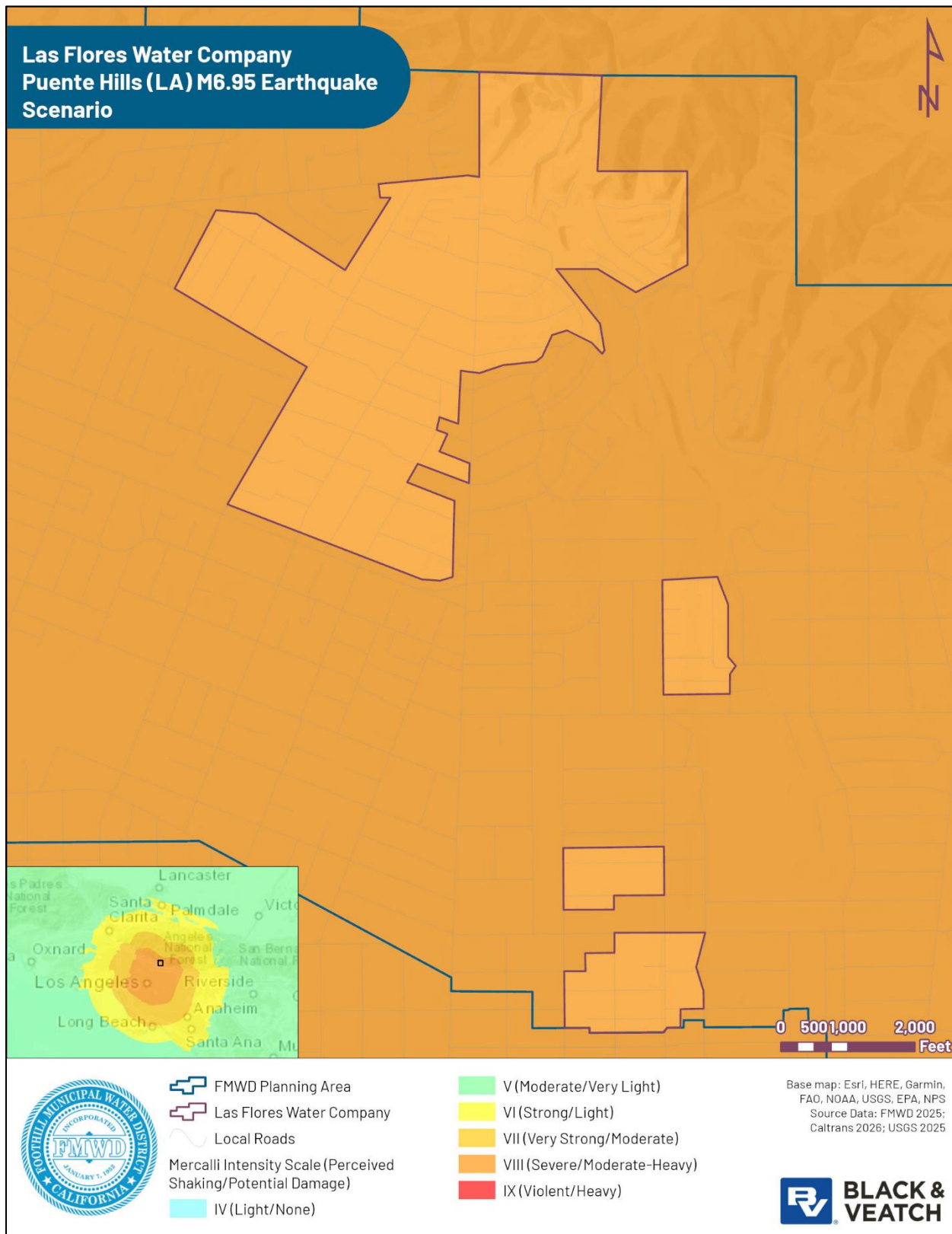


Figure 5-4. Earthquake Hazard Map – Puente Hills M6.95 Scenario

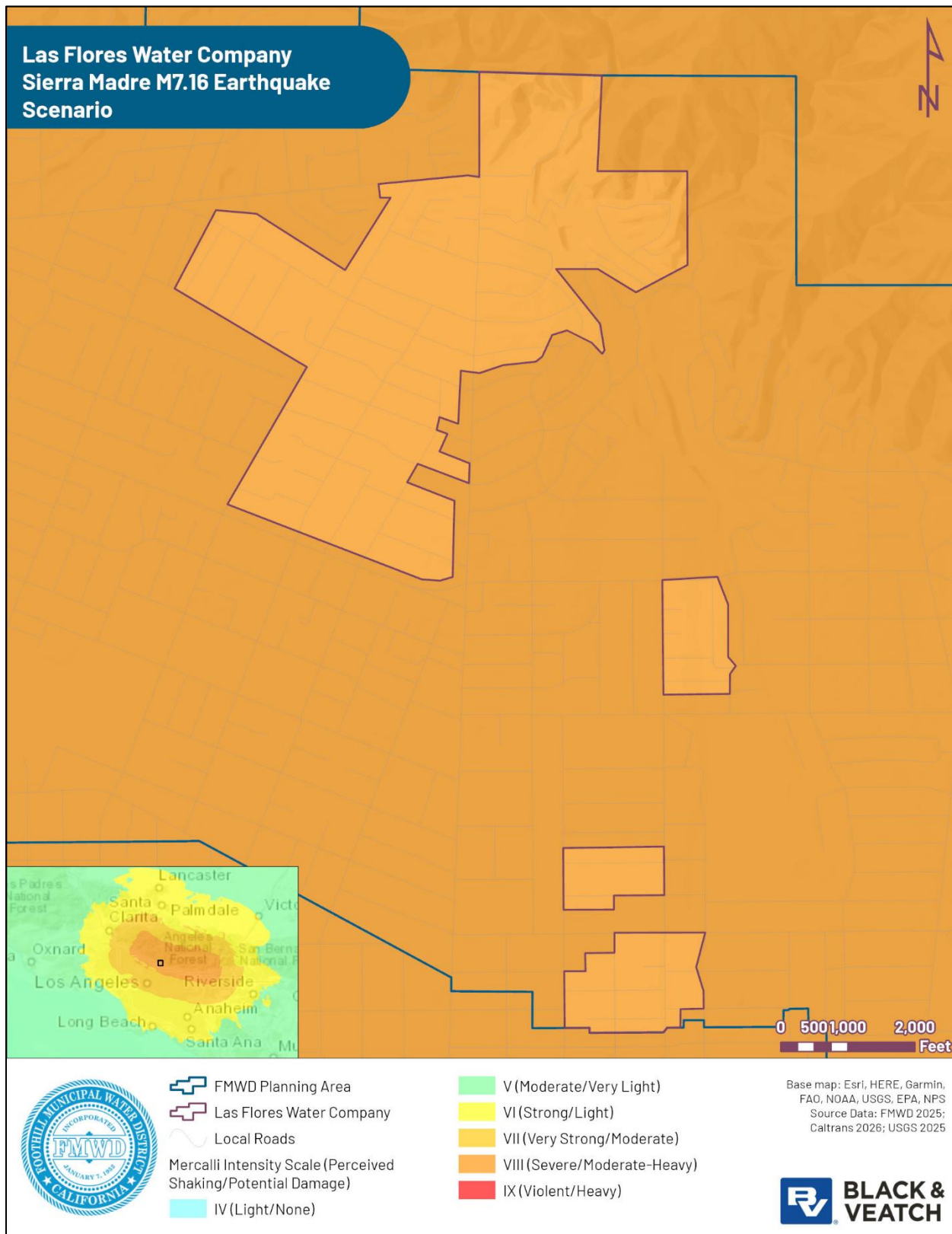


Figure 5-5. Earthquake Hazard Map – Sierra Madre M7.16 Scenario



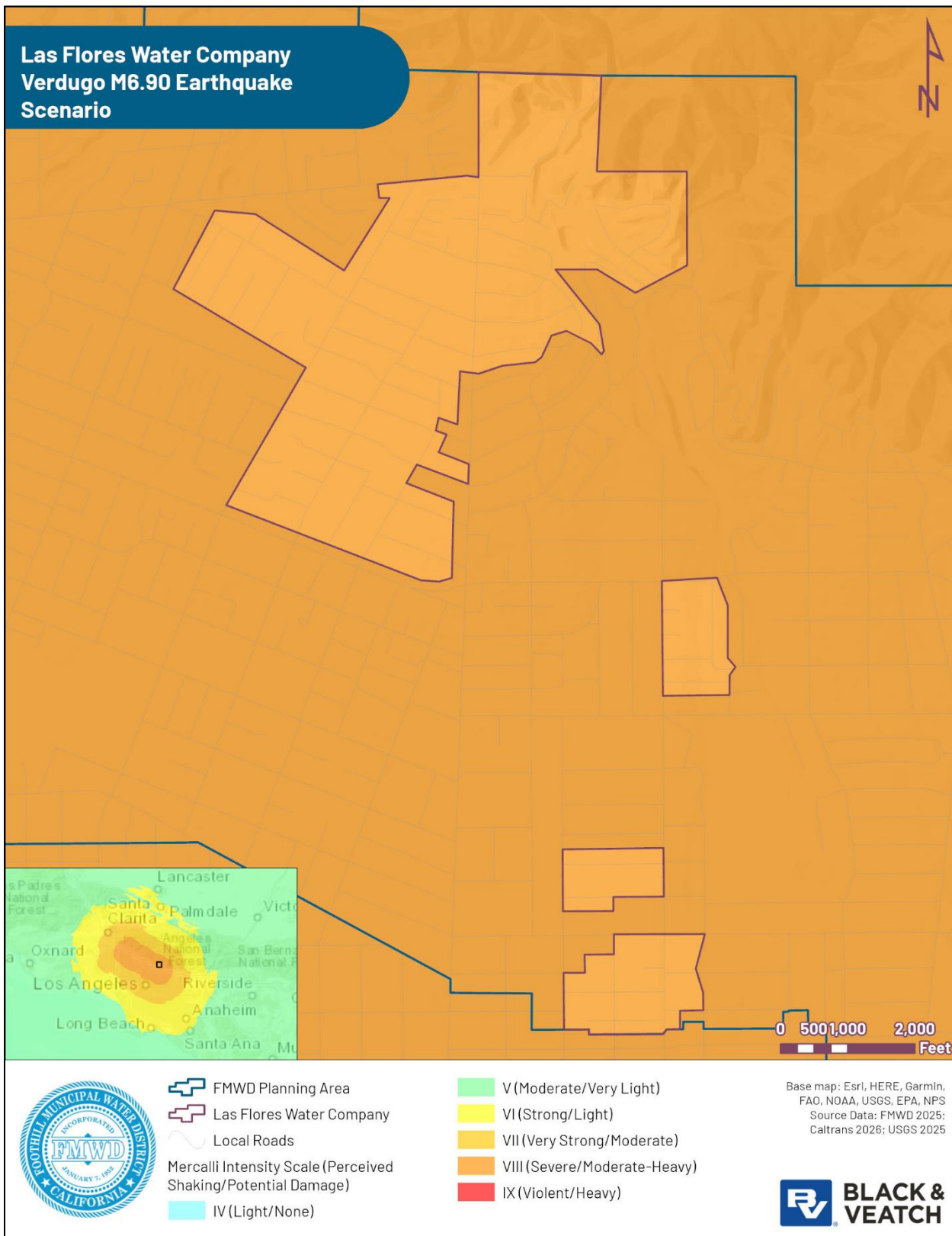


Figure 5-6. Earthquake Hazard Map – Verdugo M6.90 Scenario



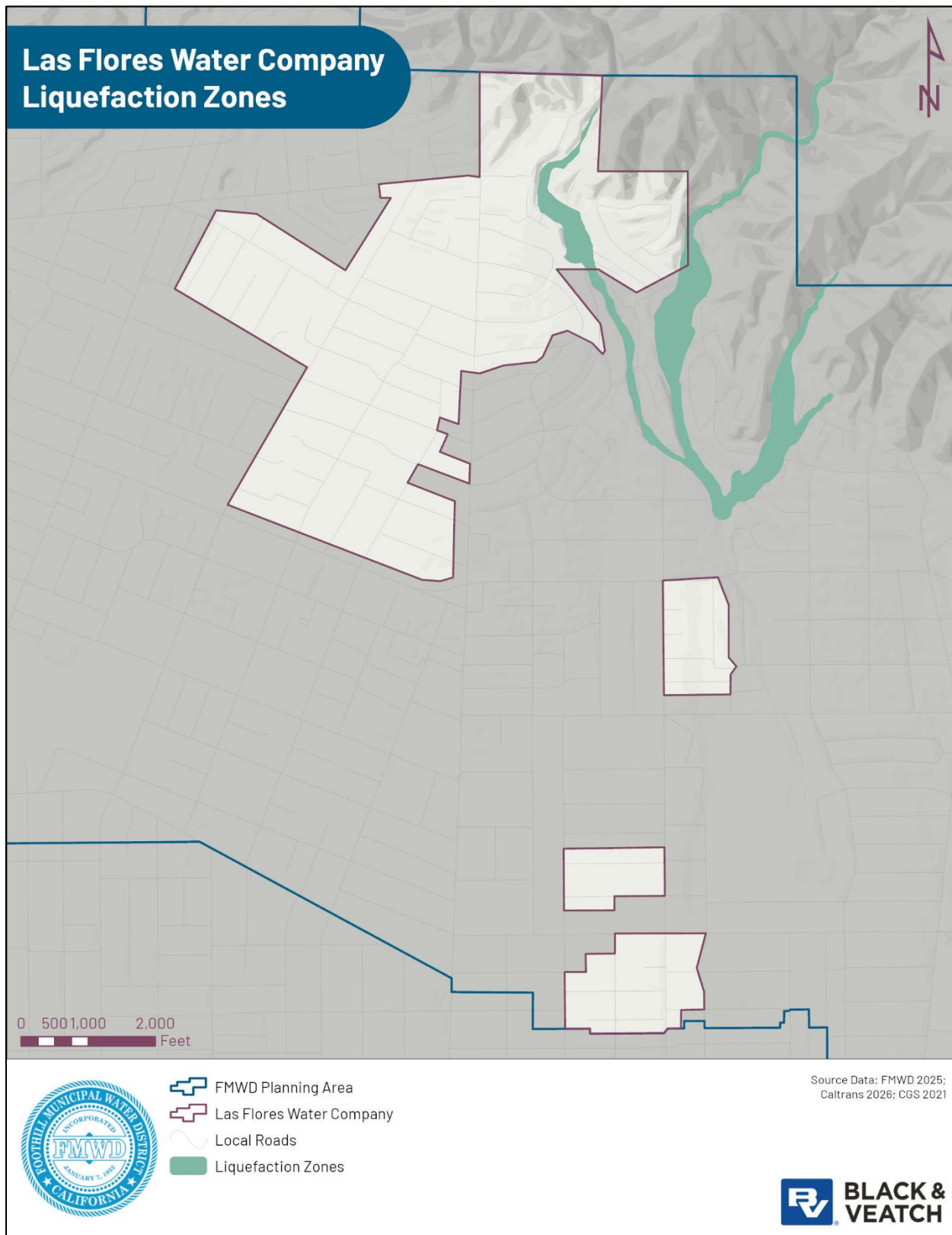


Figure 5-7. Liquefaction Hazard Map – Liquefaction Zones

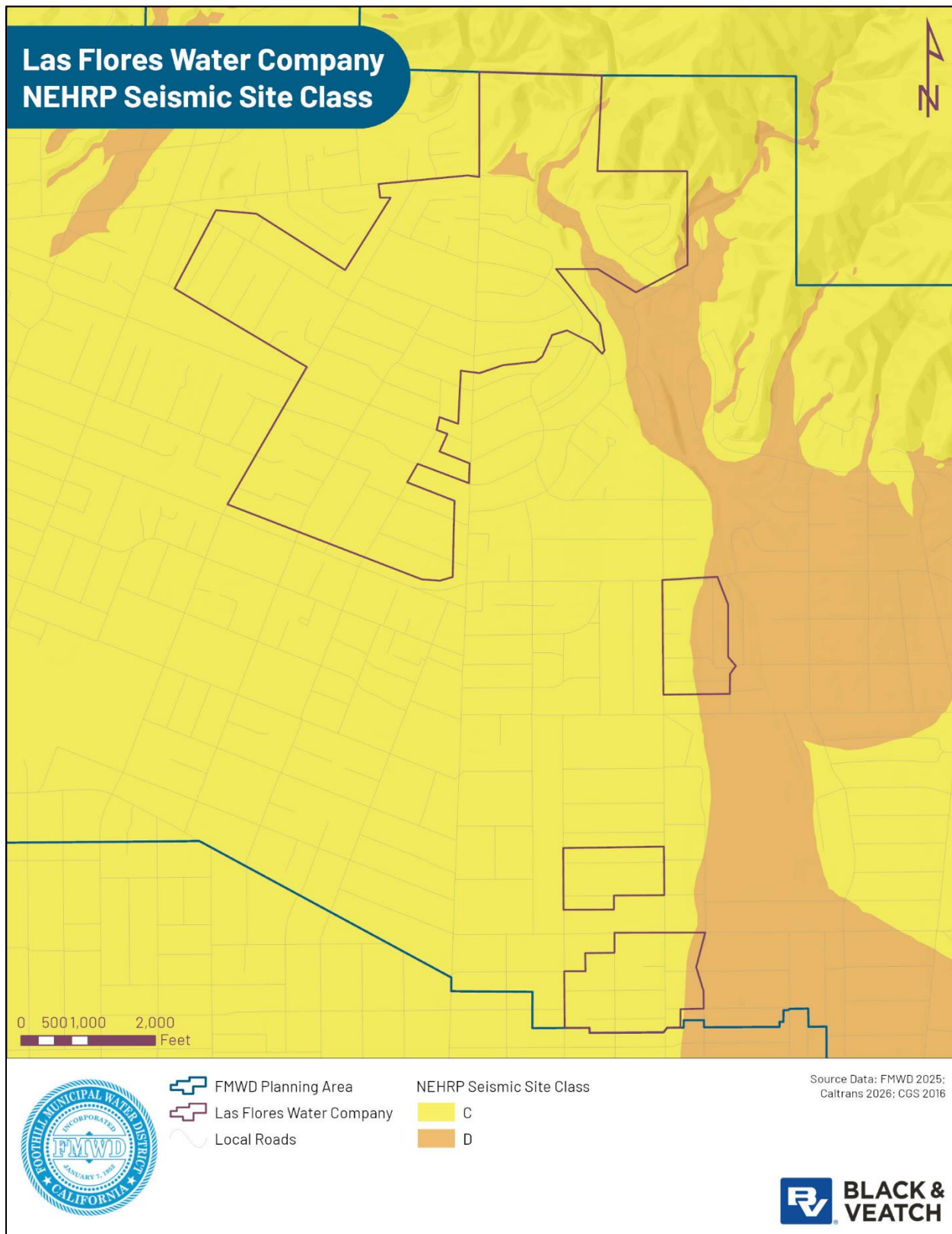


Figure 5-8. Liquefaction Hazard Map – NEHRP Seismic Site Class

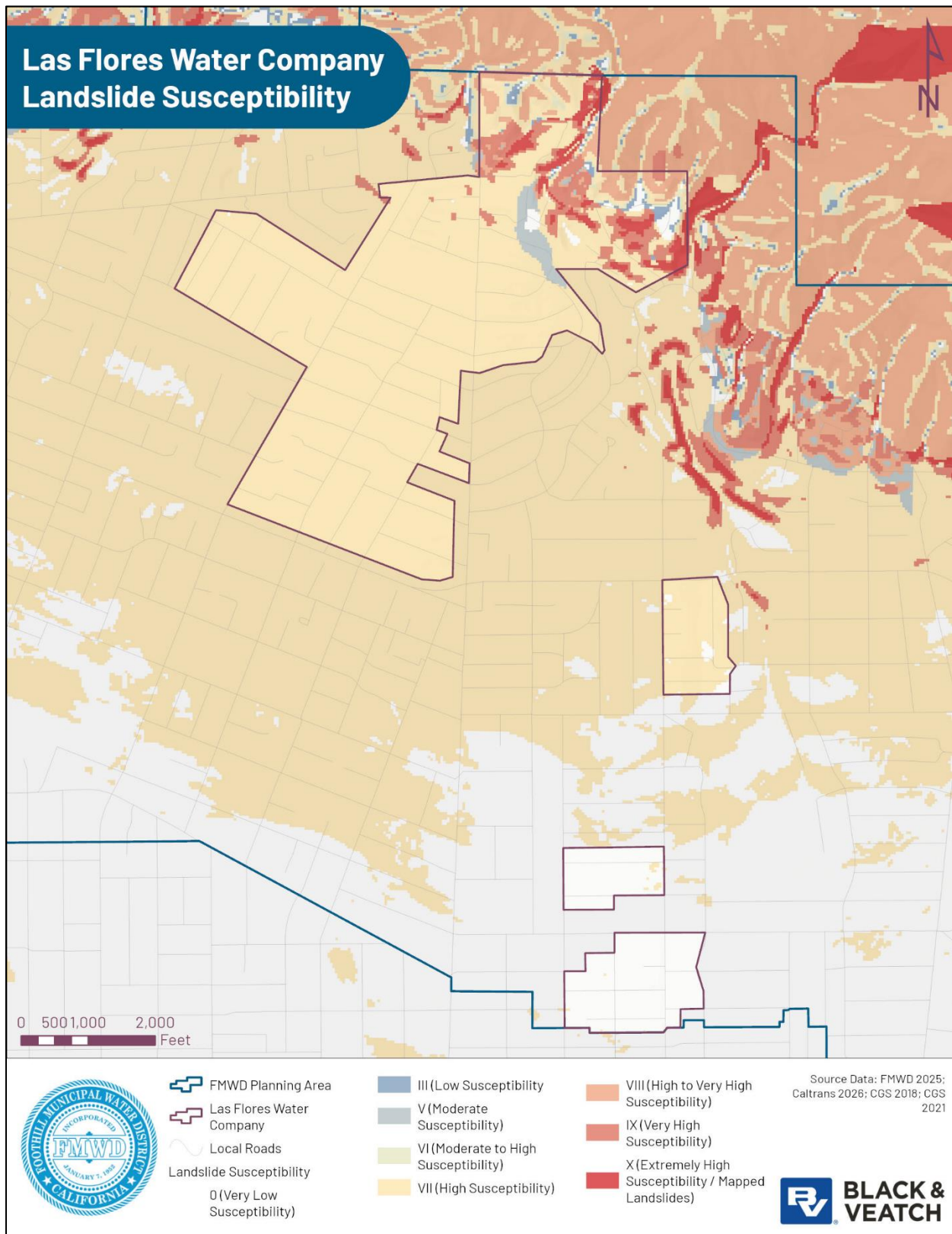


Figure 5-9. Landslide Hazard Map – Landslide Susceptibility



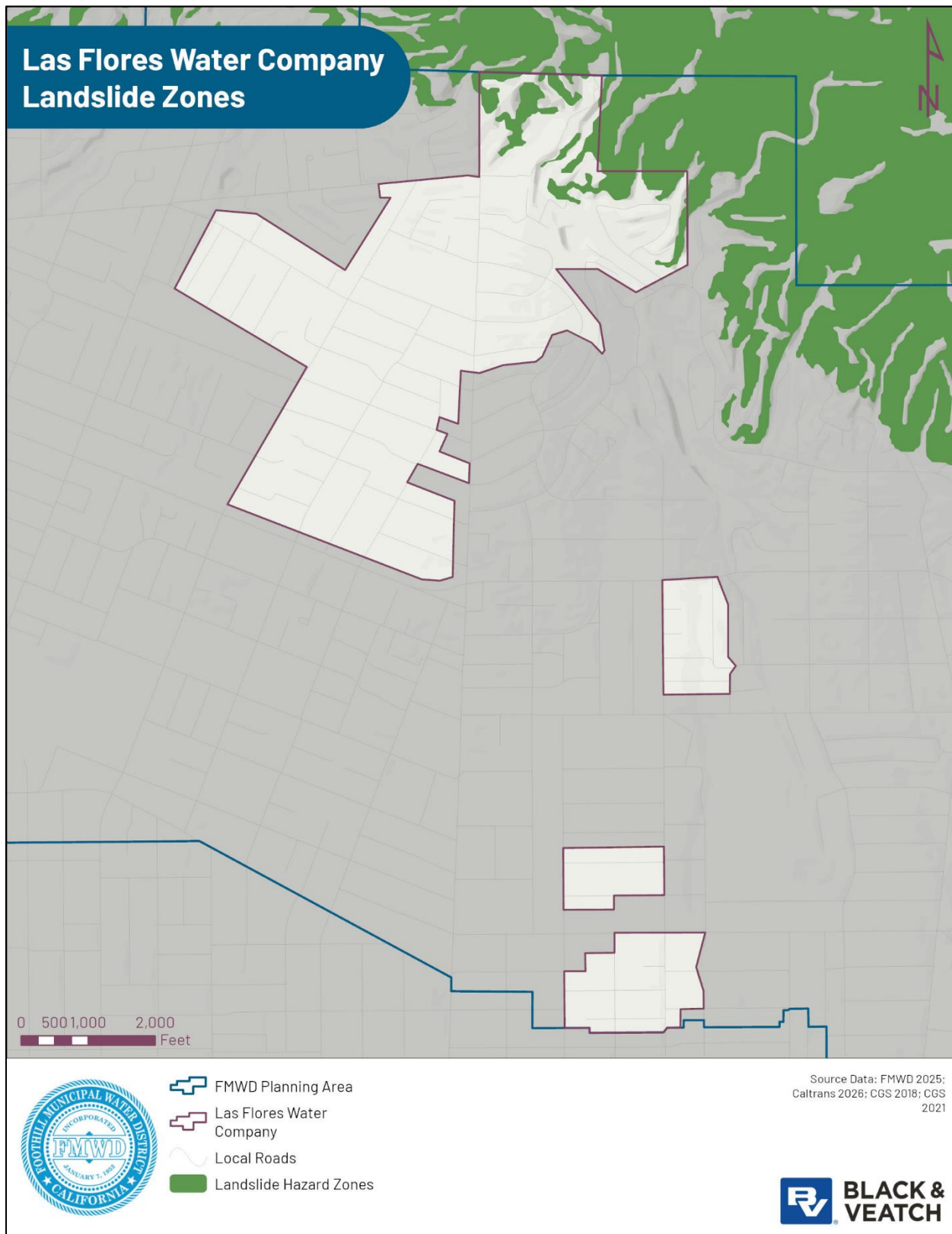


Figure 5-10. Landslide Hazard Map – Landslide Zones



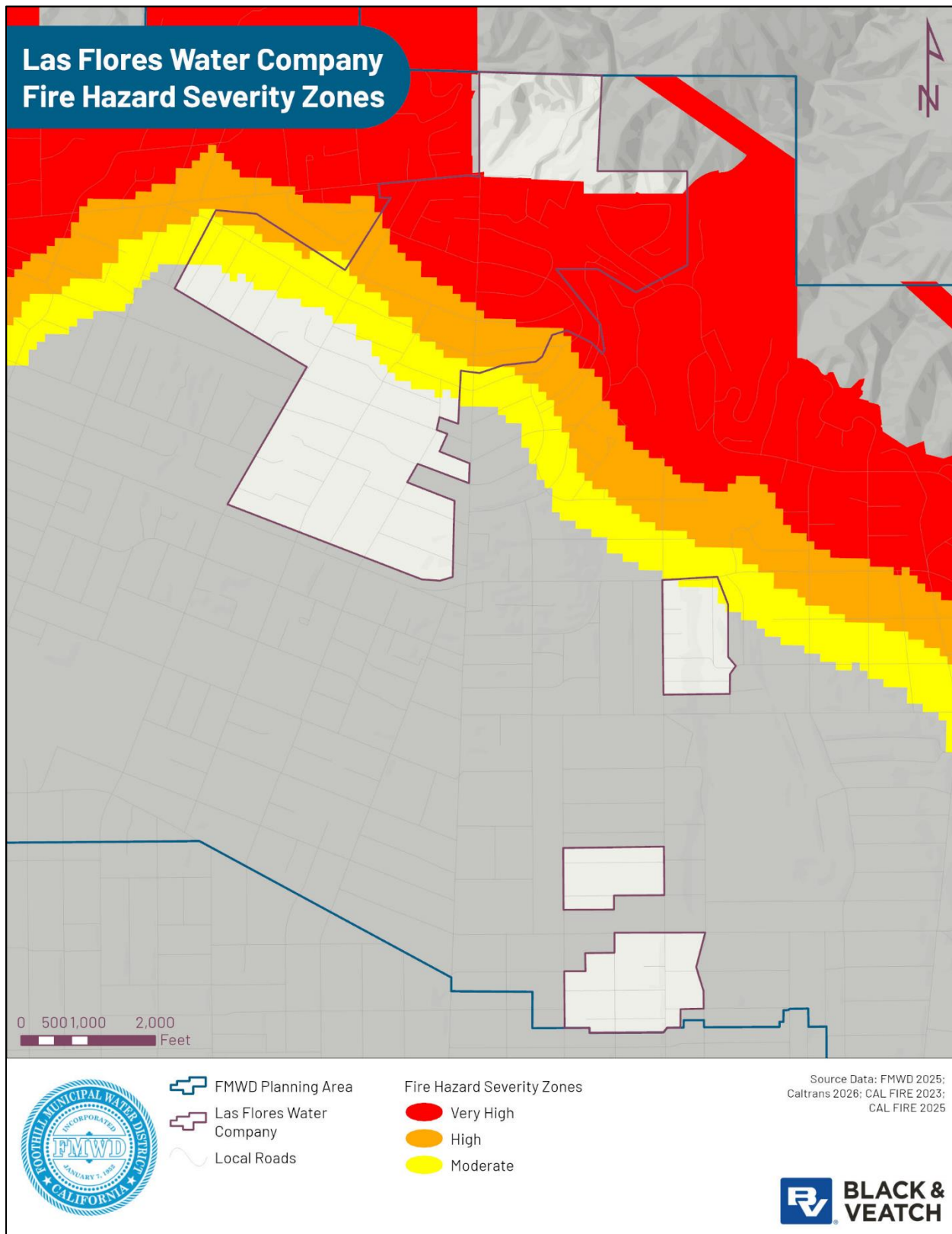


Figure 5-11. Wildfire Hazard Map – Fire Hazard Severity Zones

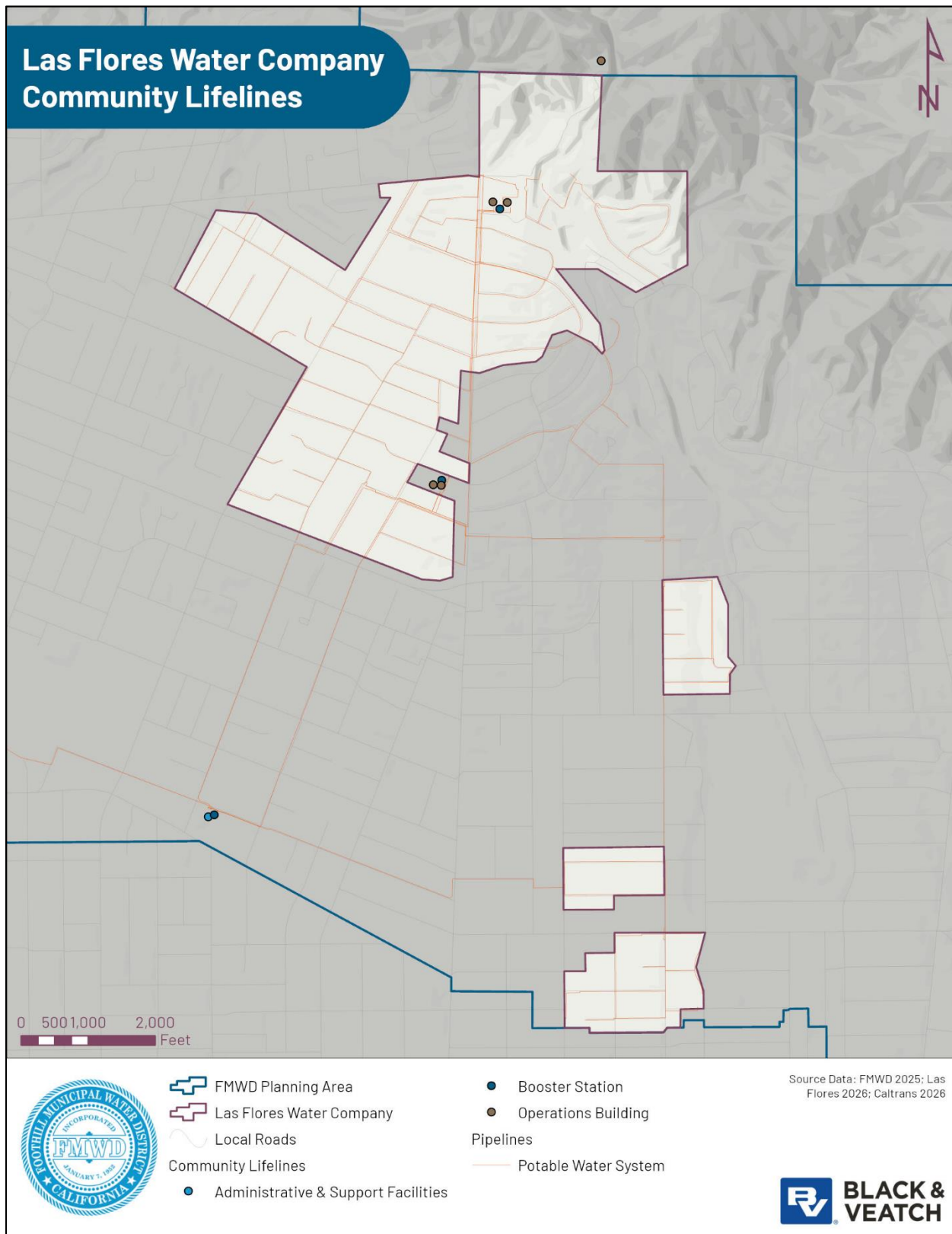


Figure 5-12. Potable Water Community Lifelines

## 6. LINCOLN AVENUE WATER COMPANY



Figure 6-1. Lincoln Avenue Water Company

### 6.1 LOCAL HAZARD MITIGATION PLANNING TEAM

Table 6-1. Local Planning Team

|                          | Primary Point of Contact                                                                                                                         | Alternate Point of Contact           |
|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|
| Name and Title:          | Jennifer Betancourt Torres, General Manager                                                                                                      | Taijha Capellan, Office Supervisor   |
| Address:                 | 564 W Harriet St., Altadena CA 91001                                                                                                             | 564 W Harriet St., Altadena CA 91001 |
| Phone Number:            | (626) 798-9101 X 213                                                                                                                             | (626) 798-9101 X 218                 |
| Email:                   | jennifer@lawc.org                                                                                                                                | Tcapellan@lawc.org                   |
| <b>Contributors:</b>     |                                                                                                                                                  |                                      |
| Name and Title:          | Taijha Capellan, Office Supervisor                                                                                                               |                                      |
| Method of Participation: | Reviewing insurance records for replacement cost values                                                                                          |                                      |
| Name and Title:          | Jennifer Betancourt Torres, General Manager                                                                                                      |                                      |
| Method of Participation: | Served on the CPT for the MJHMP planning process; attended meetings; provided input throughout the planning process and development of the MJHMP |                                      |

### 6.2 JURISDICTIONAL PROFILE

#### 6.2.1 Overview

Lincoln Avenue Water Company (LAWC) provides water service to the northwest section of Altadena which encompasses an area of approximately 2.5 square miles. The service area is bounded on the west by The Arroyo Seco, east to Marengo Avenue, on the south by Figueroa Street, and on the north by the San Gabriel Mountains (LAWC 2026a).

LAWC has three sources of water supply: groundwater, imported water purchased from the Foothill Municipal Water District, and surface water.





- **Groundwater** – LAWC’s primary source of water is provided by two deep groundwater production wells located in the Monk-Hill sub-area of the Raymond Basin. Lincoln operates in a designated Superfund CERCLA site and treats an extremely impaired groundwater source that has been contaminated with perchlorate and volatile organic chemicals (LAWC 2026b).
- **Imported Water** - Their imported water is provided by the Foothill Municipal Water District, a member agency of the Metropolitan Water District (MWD). The water is a blend of two sources. One source originates in the mountain ranges in seven western states. It travels down the Colorado River into Lake Havasu, Arizona where it is then diverted to California through the Municipal Water District’s 242-mile Colorado River Aqueduct. The second source comes from Northern California lakes, rivers, and streams. The water flows to Southern California through the State Water Project’s 444-mile California Aqueduct (LAWC 2026b).
- **Surface Water** - Lincoln also operates a surface water treatment plant. Canyon water is diverted to our North Coulter raw water reservoir and then treated at the South Coulter Surface Water Treatment Plant where it is stored at our South Coulter reservoir before being introduced into the distribution system. This is a seasonal source of water and production depends on rainfall. Since the construction of the surface water plant in 1997 the production process of production has been over 2,500 acre feet of water for domestic use (LAWC 2026c).

### 6.2.2 Service Area

LAWC provides water to over 16,000 people through 4,500 service connections. The company continues its groundwater clean-up efforts to provide safe, high quality drinking water to the community (Foothill Municipal Water District 2026b).

### 6.2.3 Governance

LAWC is a mutual water company. This means that the Company is owned entirely by the homeowners it serves. As a private non-profit water company, Lincoln Avenue is able to provide its shareholders with high quality drinking water at a minimal cost (LAWC 2026c).

### 6.2.4 Assets

The table below summarizes the critical assets of the district and their value.

Table 6-2. Water District Assets

| Asset                                        | Value               |
|----------------------------------------------|---------------------|
| <b>Property</b>                              |                     |
| Administrative & Support Facilities          | \$1,184,561         |
| <b>Critical Infrastructure and Equipment</b> |                     |
| 4 Booster Stations                           | \$1,360,000         |
| <b>Critical Facilities</b>                   |                     |
| 11 Reservoirs                                | \$26,732,000        |
| Treatment Plant                              | \$2,000,000         |
| <b>TOTAL:</b>                                | <b>\$31,276,561</b> |





## 6.3 CURRENT TRENDS

The 2025 Eaton fire resulted in severe damage or complete destruction of nearly 60 percent of the customer homes in the Lincoln Avenue Water Company service area. While the region is being rebuilt, the reduction in service was one of the prompts for a consolidation study with Las Flores and Rubio Cañon Land & Water Association

## 6.4 CAPABILITY ASSESSMENT

### 6.4.1 Planning and Regulatory Capabilities

Jurisdictions can develop policies and programs and implement rules and regulations to protect and serve residents. Local policies are typically identified in community plans, implemented through local ordinance, and enforced through a governing body. An assessment of planning and regulatory capabilities is presented in the table below.

Table 6-3. Planning and Regulatory Capabilities

| Plan, Study, or Program     | Date of Most Recent Update | Comment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-----------------------------|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Urban Water Management Plan | 2020                       | <p>The Urban Water Management Plan (UWMP) is prepared by Lincoln Avenue Water Company to support our long-term resource planning, and ensure adequate water supplies are available to meet existing and future water demands.</p> <p>Required under Water Code Sections 10610 through 10657 of the Urban Water Management Planning Act every urban water supplier that either provides over 3,000 acre-feet of water annually, or serves more than 3,000 urban connections is required to assess the reliability of its water sources over a 20-year planning horizon.</p> <p>The plan must be prepared every 5 years and submitted to the Department of Water Resources (DWR).</p> |
| Capital Improvement Plan    | December 2024              | Updated annually                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

### *Opportunities to Expand Planning and Regulatory Capabilities*

### 6.4.2 Administrative and Technical Capabilities

Planning, regulatory, and fiscal capabilities provide the backbone for successfully developing a mitigation strategy; however, without the appropriate personnel, the strategy may not be implemented. Administrative and technical capabilities focus on the availability of personnel resources responsible for implementing all the facets of hazard mitigation. These resources include technical experts, such as engineers and scientists, as well as personnel with capabilities that may be found in multiple departments, such as grant writers. An assessment of administrative and technical capabilities is presented in Table 6-4.



Table 6-4. Administrative and Technical Capabilities

| Staff / Personnel Resources                                                             | Available? | Description                                                                                                      |
|-----------------------------------------------------------------------------------------|------------|------------------------------------------------------------------------------------------------------------------|
| Planners or engineers with knowledge of land development and land management practices  | N/A        | LAWC lacks the authorities to regulate or dictate land use. Therefore this capability is not applicable to LAWC. |
| Engineers or professionals trained in building or infrastructure construction practices | No         | Can contract for these services when needed.                                                                     |
| Planners or engineers with an understanding of natural hazards                          | No         | Can contract for these services when needed.                                                                     |
| Staff with training in benefit-cost analysis                                            | No         | Can contract for these services when needed.                                                                     |
| Surveyors                                                                               | No         | Can contract for these services when needed.                                                                     |
| Personnel skilled or trained in GIS applications                                        | Yes        | General Manager, Field Department, Contract Support                                                              |
| Scientist familiar with natural hazards in local area                                   | No         | Can contract for these services when needed.                                                                     |
| Emergency manager                                                                       | Yes        | General Manager                                                                                                  |
| Grant writers                                                                           | No         | Can contract for these services when needed.                                                                     |
| Procurement Services and Management                                                     | Yes        | General Manager & Officer Supervisor                                                                             |

### Opportunities to Expand Administrative and Technical Capabilities

#### 6.4.3 Fiscal Capabilities

Assessing a jurisdiction's fiscal capability provides an understanding of the ability to fulfill the financial needs associated with hazard mitigation projects. This assessment identifies both outside resources, such as grant funding eligibility and local jurisdictional authority to generate internal financial capability, such as through impact fees. An assessment of fiscal capabilities is presented in the table below.

Table 6-5. Fiscal Capabilities

| Financial Resource                                                      | Accessible or Eligible to Use? |
|-------------------------------------------------------------------------|--------------------------------|
| Community Development Block Grants                                      | N/A                            |
| Capital Improvements Project Funding                                    | Yes                            |
| Authority to Levy Taxes for Specific Purposes                           | Yes                            |
| User Fees for Water, Sewer, Gas or Electric Service<br>If yes, specify. | Yes                            |
| Incur Debt through General Obligation Bonds                             | Yes                            |
| Incur Debt through Special Tax Bonds                                    | Yes                            |
| Incur Debt through Private Activity Bonds                               | No                             |
| Withhold Public Expenditures in Hazard-Prone Areas                      | No                             |
| State-Sponsored Grant Programs                                          | Yes                            |
| Development Impact Fees for Homebuyers or Developers                    | No                             |

### Opportunities to Expand Fiscal Capabilities

Lincoln Water will continue using its existing budget and CIP to support and integrate hazard mitigation. They will also pursue state and federal grant funding opportunities to help offset project costs, as shown in Table 2-20. This will allow the Water Company to increase long-term resilience, implement mitigation



actions with its current budget and CIP, and leverage other resources to implement infrastructure upgrades, reduce risk, and maintain reliable service delivery.

#### 6.4.4 Education and Outreach Capabilities

Regular engagement with the public on issues regarding hazard mitigation provides an opportunity to directly interface with community members. Assessing the education and outreach capability illustrates the connection between the government and community members, which opens a two-way dialogue that can result in a more resilient community, based on awareness and engagement. An assessment of education and outreach capabilities is presented in the table below.

Table 6-6. Education and Outreach Capabilities

| Outreach Capability                                                                  | Description and Role in Risk Reduction                           |
|--------------------------------------------------------------------------------------|------------------------------------------------------------------|
| Public Information Officer                                                           | No                                                               |
| Personnel skilled or trained in website development                                  | No                                                               |
| Hazard mitigation information on website                                             | Yes, wildfire and water conservation recommendations for drought |
| Social media for hazard mitigation education and outreach                            | No                                                               |
| Citizen boards or commissions that address issues related to hazard mitigation       | No                                                               |
| Other programs in place that could be used to communicate hazard-related information | No                                                               |
| Warning systems for hazard events                                                    | No                                                               |

#### Opportunities to Expand Education and Outreach Capabilities

Lincoln Water will continue to expand current education and outreach capabilities on the website. In doing so, the agency will increase community-wide awareness of natural hazard risk and preparedness that can reduce vulnerability and support overall resilience.

#### 6.4.5 Community Classifications

Other programs, such as NWS StormReady, can enhance a jurisdiction's ability to mitigate, prepare for, and respond to natural hazards. These programs indicate a jurisdiction's desire to go beyond minimum regulatory requirements in order to create a more resilient community. These programs focus on communication, mitigation, and community preparedness to minimize the impact of natural hazards on a community. Classifications under various community mitigation programs are presented in the table below.

Table 6-7. Community Classifications

|                | Participating? | Classification or Number | Date Classified |
|----------------|----------------|--------------------------|-----------------|
| FIPS Code      | Unknown        | -                        | -               |
| UEI#           | Yes            | 95-0937105               | N/A             |
| NWS StormReady | No             | N/A                      | N/A             |
| Firewise       | No             | N/A                      | N/A             |



### Opportunities to Expand Community Classification Capabilities

Any expansion to the local capabilities identified in this section are likely to benefit the community classifications listed in this sub-section. Currently, there is no need to identify specific community classifications for expansion.

#### 6.4.6 Adaptive Capacity for Climate Change

An adaptive capacity assessment evaluates a jurisdiction's ability to anticipate impacts from future conditions. By looking at public support, technical adaptive capacity, and other factors, jurisdictions identify their core capability for resilience against issues such as extreme heat. The adaptive capacity assessment provides jurisdictions with an opportunity to identify areas for improvement by ranking their capacity as high, medium, or low. The District's adaptive capacity for the impacts of climate change is presented in the table below.

Table 6-8. Adaptive Capacity for Climate Change

| Criterion                                                                                          | Jurisdiction Rating <sup>a</sup> | Comment |
|----------------------------------------------------------------------------------------------------|----------------------------------|---------|
| <b>Technical Capacity</b>                                                                          |                                  |         |
| Jurisdiction-level understanding of potential climate change impacts                               | Low                              | -       |
| Jurisdiction-level monitoring of climate change impacts                                            | Low                              | -       |
| Technical resources to assess proposed strategies for feasibility and externalities                | Low                              | -       |
| Jurisdiction-level capacity for development of greenhouse gas emissions inventory                  | Low                              | -       |
| Capital planning and land use decisions informed by potential climate impacts                      | Low                              | -       |
| Participation in regional groups addressing climate risks                                          | Low                              | -       |
| <b>Implementation Capacity</b>                                                                     |                                  |         |
| Clear authority/mandate to consider climate change impacts during public decision-making processes | Low                              | -       |
| Identified strategies for greenhouse gas mitigation efforts                                        | Low                              | -       |
| Identified strategies for adaptation to impacts                                                    | Low                              | -       |
| Champions for climate action in local government departments                                       | Low                              | -       |
| Political support for implementing climate change adaptation strategies                            | Low                              | -       |
| Financial resources devoted to climate change adaptation                                           | Low                              | -       |
| Local authority over sectors likely to be negative impacted                                        | Low                              | -       |
| <b>Public Capacity</b>                                                                             |                                  |         |
| Customers' knowledge of and understanding of climate risk                                          | Low                              | -       |
| Customers' support of adaptation efforts                                                           | Low                              | -       |
| Customers' capacity to adapt to climate impacts                                                    | Low                              | -       |
| Local economy current capacity to adapt to climate impacts                                         | Low                              | -       |
| Local ecosystems capacity to adapt to climate impacts                                              | Low                              | -       |

a. High = Capacity exists and is in use; Medium = Capacity may exist but is not used or could use some improvement; Low = Capacity does not exist or could use substantial improvement; Unsure= Not enough information is known to assign a rating.

### Opportunities to Expand Adaptive Capacity Capabilities

The Lincoln Avenue Water Company has not identified a need to expand adaptive capacity capabilities.





## 6.5 NATIONAL FLOOD INSURANCE PROGRAM COMPLIANCE

Districts are not eligible to participate in the National Flood Insurance Program (NFIP). However, any new assets or infrastructure developed by the District are in compliance with the floodplain regulations established by the surrounding municipal entities.

## 6.6 INTEGRATION

For hazard mitigation planning, “integration” means that hazard mitigation information is used in other relevant planning mechanisms, such as capital facilities planning, and that relevant information from those sources is used in hazard mitigation. This section identifies where such integration is already in place, and where there are opportunities for further integration in the future. Resources listed at the end of this annex were used to provide information on integration. The progress reporting process described in Volume 1 of the hazard mitigation plan will document the progress of hazard mitigation actions related to integration and identify new opportunities for integration.

### 6.6.1 Opportunities for Future Integration

The capability assessment in this annex indicates opportunities to integrate this mitigation plan with other jurisdictional planning/regulatory capabilities. Capabilities were identified as integration opportunities if they can support or enhance the actions identified in this plan or be supported or enhanced by components of this plan. The capability assessment identified the following plans and programs that do not currently integrate hazard mitigation information but provide opportunities to do so in the future.

- AWIA Risk and Resilience Assessment (RRA): Under AWIA, water utilities must perform a Risk and Resilience Assessment (RRA) every five years to identify vulnerabilities in infrastructure, physical security, and cybersecurity systems. Information on hazard risk and vulnerabilities from this mitigation plan can be used to update the RRA.
- Emergency Response Plan (ERP): Information on hazard events developed in this mitigation plan can be used to update emergency response planning.
- CA Senate Bill 1153: This bill requires urban retail water suppliers to include wildfire mitigation actions in disaster preparedness plans. This plan includes actions to mitigate wildfire risk.

## 6.7 RISK ASSESSMENT

### 6.7.1 Agency-Specific Natural Hazard Event History

Table 2-9 lists past occurrences in the last five years of natural hazards for which specific damage was recorded in this jurisdiction. Other hazard events that broadly affected Los Angeles County, including this jurisdiction, are listed in the risk assessments in Volume 1 of this hazard mitigation plan.



Table 6-9. Past Natural Hazard Events

| Type of Event | Declaration Title | State or Federal Disaster # | Declaration Date                 | Damage Assessment                                                                         |
|---------------|-------------------|-----------------------------|----------------------------------|-------------------------------------------------------------------------------------------|
| Biological    | COVID-19 Pandemic | EM-3428-CA<br>DR-4482-CA    | March 13, 2020<br>March 22, 2020 | The Water Company was subject to closures and masking and social distancing requirements. |
| Fire          | Palisades Fire    | FM-5549-CA                  | January 7, 2025                  | As a result of damages, the Water Company lost more than half of its 4,500 connections.   |

### 6.7.2 Hazard Ranking

The prioritization and categorization of identified hazards for the Lincoln Avenue Water Company is based principally on the Priority Risk Index (PRI), a tool used to measure the degree of risk for identified hazards in a particular planning area. The PRI was used to assist the District in identifying hazards that pose the most significant threat. Table 6-10 presents a local ranking of all hazards of concern for which this hazard mitigation plan provides complete risk assessments. As described in detail in Volume 1, the ranking process involves an assessment of the likelihood of occurrence for each hazard, along with its potential impacts on people, property and the economy.

Table 6-10. Hazard Risk Ranking Summary

| Hazard                                | Weighted Risk Factors |        |                |              |                | PRI | Risk Ranking |
|---------------------------------------|-----------------------|--------|----------------|--------------|----------------|-----|--------------|
|                                       | Probability           | Impact | Spatial Extent | Warning Time | Climate Change |     |              |
| Dam Failure                           | 0                     | 0      | 0              | 0            | 0              | 0   | None         |
| Drought                               | 1.2                   | 1.2    | .8             | .1           | .4             | 3.7 | High         |
| Earthquake                            | 1.2                   | 1.2    | .8             | .4           | .3             | 3.9 | High         |
| Extreme Temperature                   | 1.2                   | 1.2    | .8             | .1           | .4             | 3.7 | High         |
| Flood*                                | 1.2                   | .3     | .4             | .1           | .4             | 2.4 | Medium       |
| Landslide, Subsidence & Mass Movement | .6                    | 1.2    | .4             | .1           | .3             | 2.6 | Medium       |
| Strong Wind                           | 1.2                   | 1.2    | .8             | .1           | .4             | 3.7 | High         |
| Wildfire                              | 1.2                   | 1.2    | .8             | .1           | .4             | 3.7 | High         |

Note: PRI Value 1 to 1.9 = Low Hazard Risk Ranking

PRI Value 2.0 to 2.9 = Medium Hazard Risk Ranking

PRI Value 3.0 to 4.0 = High Hazard Risk Ranking

\*Flood risk is based on localized urban flooding, not regulated mapped floodplains

### 6.7.3 Agency-Specific Vulnerabilities

Volume 1 of this hazard mitigation plan provides a summary of risk assessments for hazards of concern that may have similar impacts on each agency in the planning area. This section provides information on key vulnerabilities for this agency including a summary of count and replacement cost values of agency assets. Available agency-specific risk maps of the hazards are provided at the end of this annex.



### Vulnerability and Risk Assessment

The following information applies to the quantitative risk assessment results for Lincoln Avenue Water Company. Summarized vulnerability and risk assessment results for the entire planning area are contained in the applicable hazard chapters of Volume 1.

### Earthquake

Table 6-11. Earthquake Hazard Estimated Average Probability of Damage State of Facilities

| Scenario           | Probability of Damage State |               |                 |                  |                 |               |                 |                  | Complete Replacement Cost Value |
|--------------------|-----------------------------|---------------|-----------------|------------------|-----------------|---------------|-----------------|------------------|---------------------------------|
|                    | No Damage                   | Slight Damage | Moderate Damage | Extensive Damage | Complete Damage | Exceed Slight | Exceed Moderate | Exceed Extensive |                                 |
| Puente Hills M6.95 | 0%                          | 4%            | 27%             | 43%              | 26%             | 100%          | 95%             | 69%              | \$50,430,988                    |
| Sierra Madre M7.16 | 0%                          | 2%            | 21%             | 40%              | 37%             | 100%          | 98%             | 77%              | \$54,346,155                    |
| Verdugo M6.90      | 0%                          | 1%            | 18%             | 40%              | 40%             | 100%          | 99%             | 80%              | \$54,433,672                    |

Figure 6-2. Average Percent Functionality of Facilities After Earthquake Scenarios by Day

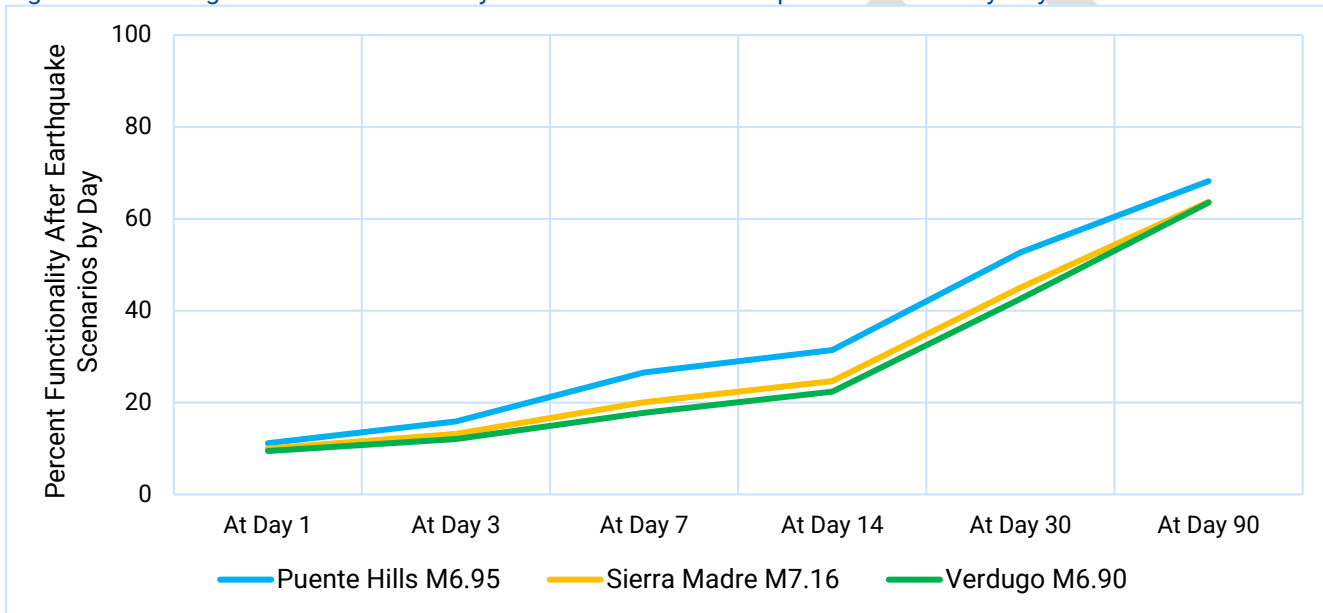


Table 6-12. Estimated Pipe Leaks and Breaks from Earthquake Hazard

| Scenario           | Number of Leaks | Number of Breaks | Total Number of Repairs | Hours to Repair Leaks | Hours to Repair Breaks | Total Hours to Repair | Economic Loss |
|--------------------|-----------------|------------------|-------------------------|-----------------------|------------------------|-----------------------|---------------|
| Puente Hills M6.95 | 2               | 0.5              | 2.5                     | 9.2                   | 4.6                    | 13.8                  | \$71,537      |
| Sierra Madre M7.16 | 4.3             | 1.1              | 5.4                     | 19.1                  | 9.5                    | 28.6                  | \$151,614     |
| Verdugo M6.90      | 4.4             | 1.1              | 5.5                     | 19.6                  | 9.8                    | 29.4                  | \$154,761     |



Table 6-13. Estimated Liquefaction and NEHRP D Soils Exposure to Pipelines

| Scenario      | Total Miles of Pipeline | Miles of Pipeline Exposed to Hazard | Percent of Pipeline Exposed |
|---------------|-------------------------|-------------------------------------|-----------------------------|
| Liquefaction  | 12                      | 3.1                                 | 26.1%                       |
| NEHRP D Soils | 12                      | 4.1                                 | 34.2%                       |

Table 6-14. Estimated Liquefaction and NEHRP D Soils Exposure to Facilities

| Scenario                            | Type of Facility | Number of Facilities | Replacement Cost Value |
|-------------------------------------|------------------|----------------------|------------------------|
| Liquefaction                        | Pump Station     | 1                    | \$536,813              |
| <b>Total Liquefaction Exposure</b>  |                  | <b>1</b>             | <b>\$536,813</b>       |
| NEHRP D Soils                       | Building         | 2                    | \$1,082,539            |
| NEHRP D Soils                       | Pump Station     | 1                    | \$536,813              |
| NEHRP D Soils                       | Reservoir        | 2                    | \$20,000,000           |
| <b>Total NEHRP D Soils Exposure</b> |                  | <b>5</b>             | <b>\$21,619,352</b>    |

## Landslide

Table 6-15. Estimated Landslide Exposure to Pipelines

| Scenario                           | Total Miles of Pipeline | Miles of Pipeline Exposed to Hazard | Percent of Pipeline Exposed |
|------------------------------------|-------------------------|-------------------------------------|-----------------------------|
| Very High Landslide Susceptibility | 12.0                    | 0.1                                 | 0.4%                        |
| High Landslide Susceptibility      | 12.0                    | 4.3                                 | 35.7%                       |
| Moderate Landslide Susceptibility  | 12.0                    | 0.3                                 | 2.9%                        |
| <b>Total</b>                       | <b>36.0</b>             | <b>4.7</b>                          | <b>39.00%</b>               |

Table 6-16. Facilities Exposed to the High Susceptibility Landslide Hazard Area

| Type of Facility | Number of Facilities Exposed | Replacement Cost Value |
|------------------|------------------------------|------------------------|
| Pump Station     | 1                            | \$536,813              |
| Reservoir        | 4                            | \$40,000,000           |
| <b>Total</b>     | <b>5</b>                     | <b>\$40,536,813</b>    |

## Wildfire

Table 6-17. Estimated Wildfire Exposure to Pipelines

| Scenario                            | Total Miles of Pipeline | Miles of Pipeline Exposed | Percent of Pipeline Exposed |
|-------------------------------------|-------------------------|---------------------------|-----------------------------|
| Very High Fire Hazard Severity Zone | 12.0                    | 7.7                       | 64.3%                       |
| High Fire Hazard Severity Zone      | 12.0                    | 0.2                       | 1.9%                        |
| Moderate Fire Hazard Severity Zone  | 12.0                    | 0.4                       | 3.1%                        |
| <b>Total</b>                        | <b>36.0</b>             | <b>8.3</b>                | <b>69.30%</b>               |

Table 6-18. Facilities Exposed to the Very High Fire Hazard Severity Zone

| Type of Facility | Number of Facilities Exposed | Replacement Cost Value |
|------------------|------------------------------|------------------------|
|------------------|------------------------------|------------------------|





|              |          |                        |
|--------------|----------|------------------------|
| Building     | 2        | \$1,082,539            |
| Pump Station | 2        | \$871,988              |
| Reservoir    | 4        | \$40,000,000           |
| <b>Total</b> | <b>8</b> | <b>\$41,954,527.00</b> |

### ***Other Noted Vulnerabilities***

The following jurisdiction-specific issues have been identified based on a review of the results of the risk assessment, public involvement strategy, and other available resources:

- Permanently mounted backup generators with automatic transfer switches are needed at critical groundwater well sites, booster pump stations, and treatment facilities to ensure uninterrupted water production and pressure during power outages caused by wildfires, severe storms, earthquakes, or utility failures. Fuel supply reliability, sound attenuation, flood protection, and routine testing should be incorporated into system design.
- Fire-hardening measures are necessary around critical water facilities to reduce wildfire exposure and improve facility survivability during extreme fire events.

Mitigation actions addressing these issues were prioritized for consideration in the action plan presented in this annex.

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## 6.8 HAZARD MITIGATION STRATEGY

This section includes the following components of the mitigation strategy for this jurisdiction:

- Hazard Mitigation Action Plan Matrix
- Mitigation Action Prioritization
- Mitigation Action Classification and Natural Hazards Addressed

Table 6-19. Hazard Mitigation Action Plan Matrix

| Action Number      | Action Description                                                                                                                                                                                                                                                                                                                                                                                                                                           | Lead and Support Implementers | Goals Met        | Benefits New or Existing Assets | Estimated Cost                 | Potential Funding Sources                    | Timeline                       | Community Lifeline Addressed |
|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|------------------|---------------------------------|--------------------------------|----------------------------------------------|--------------------------------|------------------------------|
| 001-Lincoln Avenue | Where appropriate, support retrofitting, purchase or relocation of structures located in hazard areas, prioritizing those that have experienced repetitive losses and/or are in high- or medium-risk hazard areas.                                                                                                                                                                                                                                           | Lead: General Manager         | 1, 2             | Existing                        | Very High (>\$1 million)       | Staff Time, CIP Budget, FEMA HMGP, FEMA BRIC | Long Term (5+ years)           | Water Systems                |
| 002-Lincoln Avenue | Integrate the hazard mitigation plan into other plans that address natural hazards within the service area including: <ul style="list-style-type: none"> <li>• CIP</li> <li>• Urban Water Management Plan</li> </ul>                                                                                                                                                                                                                                         | Lead: General Manager         | 1, 2, 3, 4, 5, 6 | Both                            | Low (>\$50,000)                | Staff Time, General Budget                   | Short Term (less than 5 years) | N/A                          |
| 003-Lincoln Avenue | Actively participate in the plan maintenance protocols outlined in Volume 1 of this hazard mitigation plan.                                                                                                                                                                                                                                                                                                                                                  | Lead: General Manager         | All              | N/A                             | Low (>\$50,000)                | Staff Time, General Budget                   | Long Term (5+ years)           | All                          |
| 004-Lincoln Avenue | Upgrade aging SCADA systems at existing sites. These systems enhance situational awareness, enable remote operations during emergencies, support early detection of system failures, and reduce staff exposure during hazardous conditions.                                                                                                                                                                                                                  | Lead: General Manager         | 1, 2, 5          | Both                            | Medium (\$50,000 - \$250,000)  | Staff Time, CIP Budget, FEMA HMGP, FEMA BRIC | Long Term (5+ years)           | Water Systems                |
| 005-Lincoln Avenue | Install permanently mounted backup generators with automatic transfer switches at critical groundwater well sites, booster pump stations, and treatment facilities. These systems ensure uninterrupted water production and pressure during power outages caused by wildfires, severe storms, earthquakes, or utility failures. Fuel supply reliability, sound attenuation, flood protection, and routine testing should be incorporated into system design. | Lead: General Manager         | 1, 2, 5, 6       | Existing                        | High (\$250,000 - \$1 million) | Staff Time, CIP Budget, FEMA HMGP, FEMA BRIC | Long Term (5+ years)           | Water Systems                |
| 006-Lincoln Avenue | Upgrade and replace aging or undersized water pipelines to meet current and projected fire flow and pressure requirements within designated high fire severity zones. Improvements should focus on increasing pipe                                                                                                                                                                                                                                           | Lead: General Manager         | 1, 2, 5, 6       | New and Existing                | High (\$250,000 - \$1 million) | Staff Time, CIP Budget, FEMA HMGP, FEMA BRIC | Long Term (5+ years)           | Water Systems                |



| Action Number          | Action Description                                                                                                                                                                                                                                                                                                                                                                                 | Lead and Support Implementers | Goals Met  | Benefits New or Existing Assets | Estimated Cost                    | Potential Funding Sources                    | Timeline             | Community Lifeline Addressed |
|------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|------------|---------------------------------|-----------------------------------|----------------------------------------------|----------------------|------------------------------|
|                        | diameter, strengthening materials, improving redundancy, and eliminating bottlenecks to ensure adequate water supply for firefighting and emergency response during wildfire events.                                                                                                                                                                                                               |                               |            |                                 |                                   |                                              |                      |                              |
| 007-<br>Lincoln Avenue | Replace obsolete water meters with modern meters capable of automated or remote reading. This enhances operational resilience by reducing site visits during emergencies, improving leak detection, supporting water conservation efforts during droughts, and allowing rapid system assessments following hazard events. Integration with billing and data management systems should be included. | Lead: General Manager         | 1, 2, 5, 6 | Existing                        | High<br>(\$250,000 - \$1 million) | Staff Time, CIP Budget, FEMA HMGP, FEMA BRIC | Long Term (5+ years) | Water Systems                |
| 008-<br>Lincoln Avenue | Evaluate existing reservoirs and replace or rehabilitate those that are structurally deficient, undersized, or vulnerable to seismic activity, wildfire exposure, or slope instability. Improvements may include seismic retrofits, lining replacement, roof upgrades, vent protection, and fire-resistant materials to maintain emergency storage capacity during disasters.                      | Lead: General Manager         | 1, 2, 5, 6 | Existing                        | High<br>(\$250,000 - \$1 million) | Staff Time, CIP Budget, FEMA HMGP, FEMA BRIC | Long Term (5+ years) | Water Systems                |
| 009-<br>Lincoln Avenue | Rehabilitate or replace aging booster pumps to ensure reliable system pressure during high-demand and emergency conditions. Upgrades may include energy-efficient motors, fire-resistant components, vibration control, surge protection, and integration with backup power and monitoring systems to reduce failure risks during hazard events.                                                   | Lead: General Manager         | 1, 2, 5, 6 | Existing                        | High<br>(\$250,000 - \$1 million) | Staff Time, CIP Budget, FEMA HMGP, FEMA BRIC | Long Term (5+ years) | Water Systems                |
| 010-<br>Lincoln Avenue | Rehabilitate existing groundwater wells to improve reliability, water quality, and pumping efficiency. Where feasible, incorporate aquifer storage and recovery (ASR) capabilities to allow excess water to be stored underground during wet periods and recovered during droughts, wildfires, or supply disruptions, enhancing long-term drought and emergency resilience.                        | Lead: General Manager         | 1, 2, 5, 6 | Existing                        | High<br>(\$250,000 - \$1 million) | Staff Time, CIP Budget, FEMA HMGP, FEMA BRIC | Long Term (5+ years) | Water Systems                |
| 011-<br>Lincoln Avenue | Replace inoperable, outdated, or inaccessible system valves to improve isolation capabilities during emergencies such as pipeline failures, earthquakes, or contamination events. Modern, well-documented valves reduce service interruptions, support rapid repairs, and minimize water loss during hazard response operations.                                                                   | Lead: General Manager         | 1, 2, 5, 6 | Existing                        | High<br>(\$250,000 - \$1 million) | Staff Time, CIP Budget, FEMA HMGP, FEMA BRIC | Long Term (5+ years) | Water Systems                |
| 012-<br>Lincoln Avenue | Perform slope stabilization and erosion control improvements near pipelines, tanks, pump stations, and access roads threatened by landslides, erosion, or wildfire-related soil instability. Mitigation may include                                                                                                                                                                                | Lead: General Manager         | 1, 2, 5, 6 | New and Existing                | Medium<br>(\$50,000 - \$250,000)  | Staff Time, CIP Budget, FEMA HMGP, FEMA BRIC | Long Term (5+ years) | Water Systems                |



| Action Number          | Action Description                                                                                                                                                                                                                                                                                                                                                  | Lead and Support Implementers | Goals Met  | Benefits New or Existing Assets | Estimated Cost                 | Potential Funding Sources                    | Timeline             | Community Lifeline Addressed |
|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|------------|---------------------------------|--------------------------------|----------------------------------------------|----------------------|------------------------------|
|                        | retaining structures, drainage improvements, vegetation management, and geotechnical monitoring to reduce hazard-related damage.                                                                                                                                                                                                                                    |                               |            |                                 |                                |                                              |                      |                              |
| 013-<br>Lincoln Avenue | Implement ongoing fire-hardening measures around critical water facilities by maintaining defensible space, removing flammable vegetation, using fire-resistant plants and ground cover, and coordinating vegetation management with local fire agencies. These actions reduce wildfire exposure and improve facility survivability during extreme fire events.     | Lead: General Manager         | 1, 2, 5, 6 | New and Existing                | Medium (\$50,000 - \$250,000)  | Staff Time, CIP Budget, FEMA HMGP, FEMA BRIC | Long Term (5+ years) | Water Systems                |
| 014-<br>Lincoln Avenue | Enhance GIS system mapping to accurately document water infrastructure, valves, hydrants, and critical assets. Develop and maintain a calibrated hydraulic model to support fire flow analysis, emergency planning, system upgrades, and post-disaster recovery efforts. These tools support informed decision-making during hazard events.                         | Lead: General Manager         | 1, 2, 3    | Existing                        | Medium (\$50,000 - \$250,000)  | Staff Time, CIP Budget, FEMA HMGP, FEMA BRIC | Long Term (5+ years) | Water Systems                |
| 015-<br>Lincoln Avenue | Evaluate existing and potential interconnections with neighboring water agencies to improve emergency water supply reliability. Where feasible, construct or upgrade interties, clarify operational agreements, and establish protocols for mutual aid during disasters, droughts, or system failures.                                                              | Lead: General Manager         | 1, 2, 4    | New and Existing                | Medium (\$50,000 - \$250,000)  | Staff Time, CIP Budget, FEMA HMGP, FEMA BRIC | Long Term (5+ years) | Water Systems                |
| 016-<br>Lincoln Avenue | Conduct comprehensive condition assessments of water system assets, including pipelines, tanks, wells, pumps, and controls. Results should be used to prioritize hazard mitigation projects, reduce failure risks, and guide capital improvement planning focused on resilience and service continuity.                                                             | Lead: General Manager         | 1, 2, 5, 6 | Existing                        | Medium (\$50,000 - \$250,000)  | Staff Time, CIP Budget, FEMA HMGP, FEMA BRIC | Long Term (5+ years) | Water Systems                |
| 017-<br>Lincoln Avenue | Make targeted improvements to raw water source pipelines, reservoirs, and associated facilities at Lincoln Avenue to enhance reliability during floods, droughts, wildfires, and seismic events. Improvements may include structural upgrades, redundancy, access improvements, erosion protection, and integration with monitoring and emergency response systems. | Lead: General Manager         | 1, 2, 5, 6 | Existing                        | High (\$250,000 - \$1 million) | Staff Time, CIP Budget, FEMA HMGP, FEMA BRIC | Long Term (5+ years) | Water Systems                |





Table 6-20. Mitigation Action Prioritization

| Action Number      | Life Safety | Property Protection | Cost-Effectiveness | Technically Feasible | Legal Authority | Funding Available | Grant Eligible | Environmental | Climate Change | Equity Priority Community | Administrative Capacity | Multi-Hazard | Timeline | Other Local Objective | Support Policies | Total Score | Priority |
|--------------------|-------------|---------------------|--------------------|----------------------|-----------------|-------------------|----------------|---------------|----------------|---------------------------|-------------------------|--------------|----------|-----------------------|------------------|-------------|----------|
| 001-Lincoln Avenue | 3           | 3                   | 3                  | 3                    | 3               | 3                 | 3              | 1             | 3              | 3                         | 3                       | 3            | 1        | 3                     | 3                | 41          | High     |
| 002-Lincoln Avenue | 3           | 3                   | 3                  | 3                    | 3               | 3                 | 3              | 1             | 3              | 3                         | 3                       | 3            | 3        | 3                     | 3                | 43          | High     |
| 003-Lincoln Avenue | 3           | 3                   | 3                  | 3                    | 3               | 3                 | 3              | 1             | 3              | 3                         | 3                       | 3            | 1        | 3                     | 3                | 41          | High     |
| 004-Lincoln Avenue | 3           | 3                   | 3                  | 3                    | 3               | 3                 | 3              | 1             | 3              | 3                         | 3                       | 3            | 1        | 3                     | 3                | 41          | High     |
| 005-Lincoln Avenue | 3           | 3                   | 3                  | 3                    | 3               | 3                 | 3              | 1             | 3              | 3                         | 3                       | 3            | 1        | 3                     | 3                | 41          | High     |
| 006-Lincoln Avenue | 3           | 3                   | 3                  | 3                    | 3               | 3                 | 3              | 1             | 3              | 3                         | 3                       | 3            | 1        | 3                     | 3                | 41          | High     |
| 007-Lincoln Avenue | 3           | 3                   | 3                  | 3                    | 3               | 3                 | 3              | 1             | 3              | 3                         | 3                       | 3            | 1        | 3                     | 3                | 41          | High     |
| 008-Lincoln Avenue | 3           | 3                   | 3                  | 3                    | 3               | 3                 | 3              | 1             | 3              | 3                         | 3                       | 3            | 1        | 3                     | 3                | 41          | High     |
| 009-Lincoln Avenue | 3           | 3                   | 3                  | 3                    | 3               | 3                 | 3              | 1             | 3              | 3                         | 3                       | 3            | 1        | 3                     | 3                | 41          | High     |
| 010-Lincoln Avenue | 3           | 3                   | 3                  | 3                    | 3               | 3                 | 3              | 1             | 3              | 3                         | 3                       | 3            | 1        | 3                     | 3                | 41          | High     |
| 011-Lincoln Avenue | 3           | 3                   | 3                  | 3                    | 3               | 3                 | 3              | 1             | 3              | 3                         | 3                       | 3            | 1        | 3                     | 3                | 41          | High     |
| 012-Lincoln Avenue | 3           | 3                   | 3                  | 3                    | 3               | 3                 | 3              | 3             | 3              | 3                         | 3                       | 3            | 1        | 3                     | 3                | 43          | High     |
| 013-Lincoln Avenue | 3           | 3                   | 3                  | 3                    | 3               | 3                 | 3              | 3             | 3              | 3                         | 3                       | 1            | 1        | 3                     | 3                | 41          | High     |
| 014-Lincoln Avenue | 3           | 1                   | 3                  | 3                    | 3               | 3                 | 3              | 1             | 3              | 3                         | 3                       | 3            | 1        | 3                     | 3                | 39          | High     |
| 015-Lincoln Avenue | 3           | 3                   | 3                  | 3                    | 3               | 3                 | 3              | 1             | 3              | 3                         | 3                       | 3            | 1        | 3                     | 3                | 41          | High     |
| 016-Lincoln Avenue | 3           | 3                   | 3                  | 3                    | 3               | 3                 | 3              | 1             | 3              | 3                         | 3                       | 3            | 1        | 3                     | 3                | 41          | High     |
| 017-Lincoln Avenue | 3           | 3                   | 3                  | 3                    | 3               | 3                 | 3              | 1             | 3              | 3                         | 3                       | 3            | 1        | 3                     | 3                | 41          | High     |

Note: 31 or more = High Priority  
 15 to 30 = Medium Priority  
 0 to 14 = Low Priority

Table 6-21. Mitigation Action Classification and Natural Hazards Addressed

| Action             | Mitigation Classification   |                    |                                       |                                  |                            |                    |                             | Natural Hazards |         |            |                     |       |           |             |          |
|--------------------|-----------------------------|--------------------|---------------------------------------|----------------------------------|----------------------------|--------------------|-----------------------------|-----------------|---------|------------|---------------------|-------|-----------|-------------|----------|
|                    | Local Plans and Regulations | Emergency Services | Structure and Infrastructure Projects | Education and Awareness Programs | Natural Systems Protection | Climate Resilience | Community Capacity Building | Dam Failure*    | Drought | Earthquake | Extreme Temperature | Flood | Landslide | Strong Wind | Wildfire |
| 001-Lincoln Avenue |                             |                    |                                       |                                  |                            | ■                  |                             |                 |         | ■          | ■                   | ■     | ■         | ■           | ■        |
| 002-Lincoln Avenue | ■                           |                    |                                       |                                  |                            | ■                  | ■                           |                 | ■       | ■          | ■                   | ■     | ■         | ■           | ■        |
| 003-Lincoln Avenue |                             |                    |                                       |                                  |                            |                    | ■                           |                 | ■       | ■          | ■                   | ■     | ■         | ■           | ■        |



| Action             | Mitigation Classification   |                    |                                       |                                  |                            |                    |                             | Natural Hazards |         |            |                     |       |           |             |          |
|--------------------|-----------------------------|--------------------|---------------------------------------|----------------------------------|----------------------------|--------------------|-----------------------------|-----------------|---------|------------|---------------------|-------|-----------|-------------|----------|
|                    | Local Plans and Regulations | Emergency Services | Structure and Infrastructure Projects | Education and Awareness Programs | Natural Systems Protection | Climate Resilience | Community Capacity Building | Dam Failure*    | Drought | Earthquake | Extreme Temperature | Flood | Landslide | Strong Wind | Wildfire |
| 004-Lincoln Avenue |                             | ■                  |                                       |                                  |                            |                    | ■                           |                 | ■       | ■          | ■                   | ■     | ■         |             | ■        |
| 005-Lincoln Avenue |                             | ■                  |                                       |                                  |                            |                    | ■                           |                 | ■       | ■          | ■                   | ■     | ■         | ■           | ■        |
| 006-Lincoln Avenue |                             |                    | ■                                     |                                  |                            |                    |                             |                 | ■       | ■          | ■                   | ■     | ■         |             | ■        |
| 007-Lincoln Avenue |                             |                    | ■                                     |                                  |                            |                    |                             |                 | ■       | ■          | ■                   | ■     | ■         |             | ■        |
| 008-Lincoln Avenue |                             |                    | ■                                     |                                  |                            |                    |                             |                 |         | ■          |                     | ■     | ■         |             | ■        |
| 009-Lincoln Avenue |                             |                    | ■                                     |                                  |                            |                    |                             |                 | ■       | ■          | ■                   | ■     | ■         | ■           | ■        |
| 010-Lincoln Avenue |                             |                    | ■                                     |                                  |                            |                    |                             |                 | ■       |            |                     |       |           |             | ■        |
| 011-Lincoln Avenue |                             |                    | ■                                     |                                  |                            |                    |                             |                 | ■       | ■          | ■                   | ■     | ■         | ■           | ■        |
| 012-Lincoln Avenue |                             |                    |                                       |                                  | ■                          |                    |                             |                 |         |            |                     |       | ■         |             | ■        |
| 013-Lincoln Avenue |                             |                    |                                       |                                  | ■                          |                    |                             |                 |         |            |                     |       |           |             | ■        |
| 014-Lincoln Avenue |                             | ■                  |                                       |                                  |                            |                    | ■                           |                 | ■       | ■          | ■                   | ■     | ■         | ■           | ■        |
| 015-Lincoln Avenue | ■                           | ■                  |                                       |                                  |                            |                    | ■                           |                 | ■       | ■          | ■                   | ■     | ■         | ■           | ■        |
| 016-Lincoln Avenue | ■                           |                    |                                       |                                  |                            |                    | ■                           |                 | ■       | ■          | ■                   | ■     | ■         | ■           | ■        |
| 017-Lincoln Avenue |                             | ■                  | ■                                     |                                  |                            |                    |                             |                 | ■       | ■          | ■                   | ■     | ■         | ■           | ■        |

Note: The dam failure hazard does not impact LAWC assets.

## 6.9 PUBLIC OUTREACH

Lincoln Avenue supported the overall public outreach for the entire planning effort, but capacity was limited to do individual outreach due to a focus on disaster recovery activities.

## 6.10 INFORMATION SOURCES USED FOR THIS ANNEX

The following technical reports, plans, and regulatory mechanisms were reviewed to provide information for this annex.

- **Urban Water Management Plan**—This plan was used to inform the capability assessment.
- **Capital Improvement Program**—The Capital Improvement Program prioritizes projects that have been identified to improve District facilities, infrastructure, and equipment, including potential mitigation projects. The Capital Improvement Program was used as a source of information while preparing this annex.

The following outside resources and references were reviewed:

- **Hazard Mitigation Plan Annex Development Toolkit**—The toolkit was used to support the identification of past hazard events and noted vulnerabilities, the risk ranking, and the development of the mitigation action plan.

## 6.11 AGENCY HAZARD MAPPING

Agency-specific risk maps of the hazards are provided on the following pages. For a complete description of each hazard, please see the applicable chapters in Volume 1 of this plan. These maps are based on the vulnerability and risk assessment results for this plan.

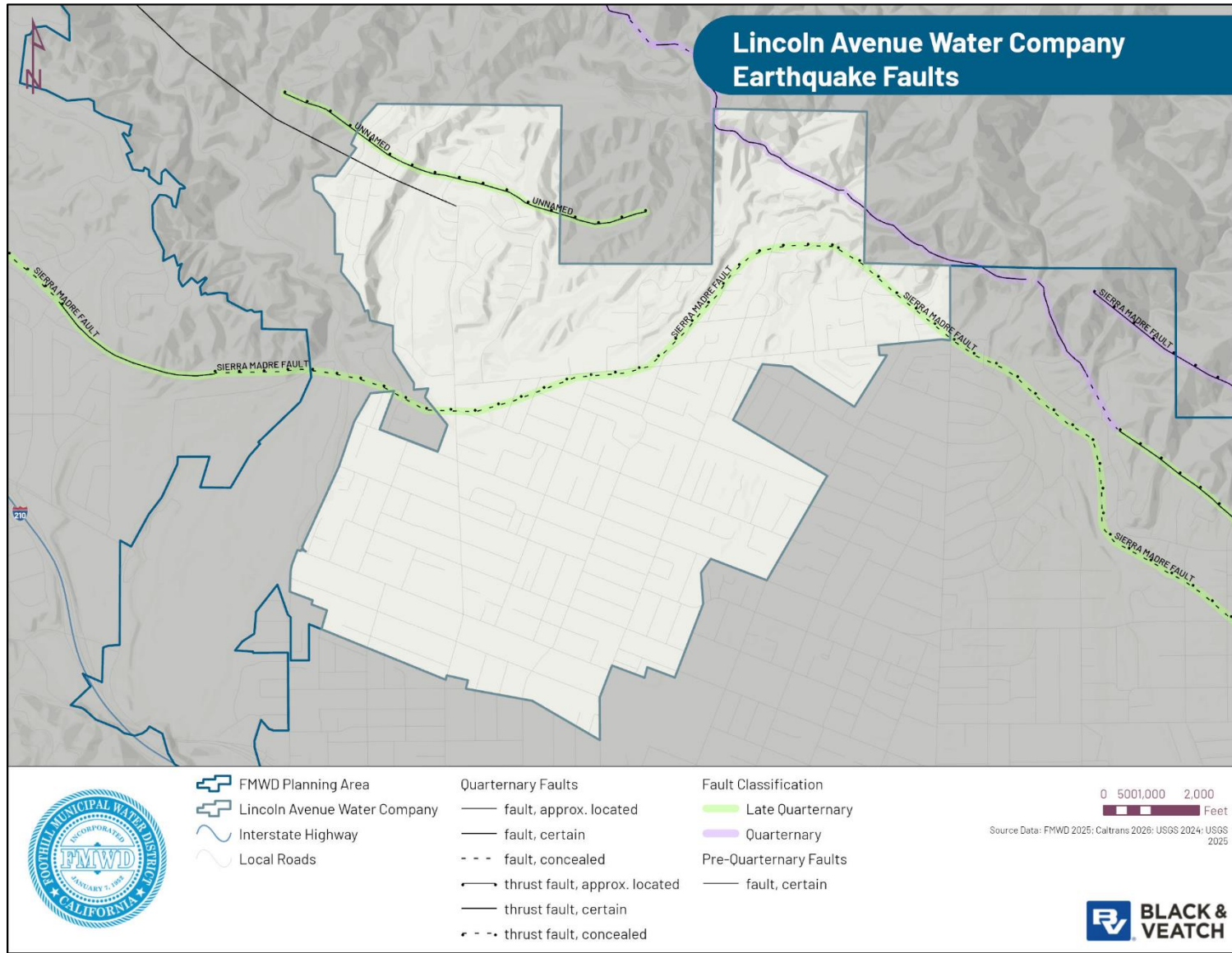


Figure 6-3. Earthquake Faults



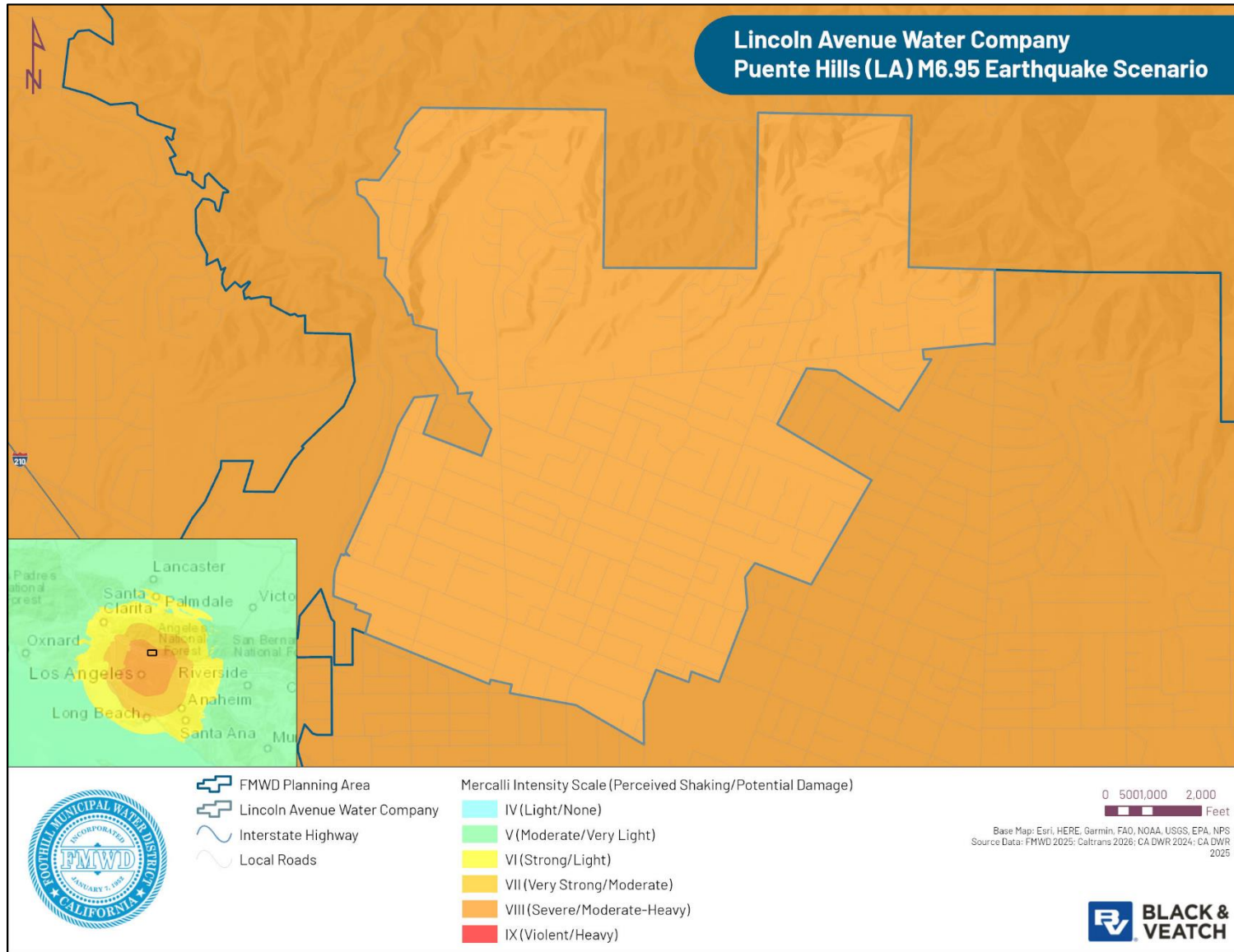


Figure 6-4. Earthquake Hazard Map – Puente Hills M6.95 Scenario

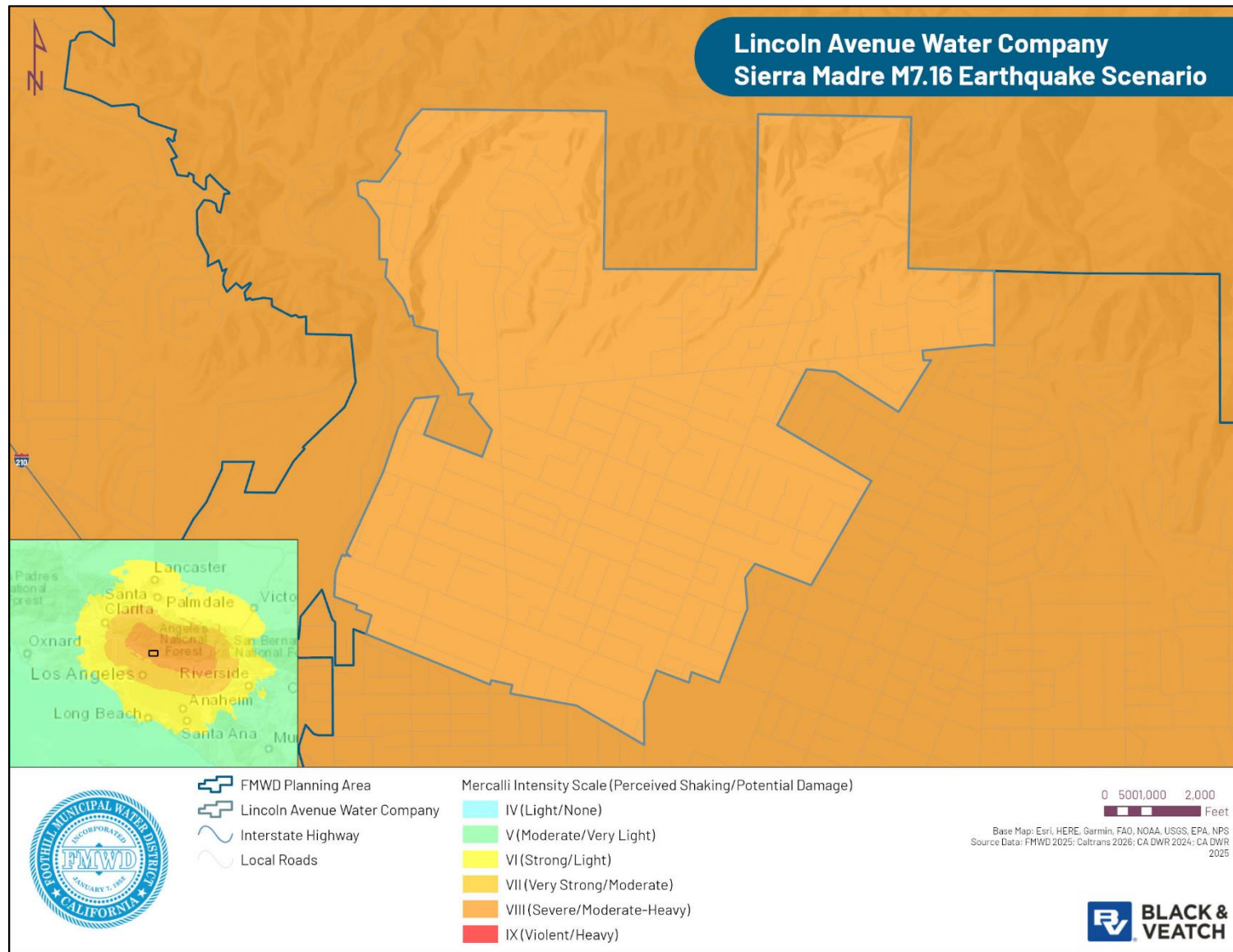


Figure 6-5. Earthquake Hazard Map – Sierra Madre M7.16 Scenario

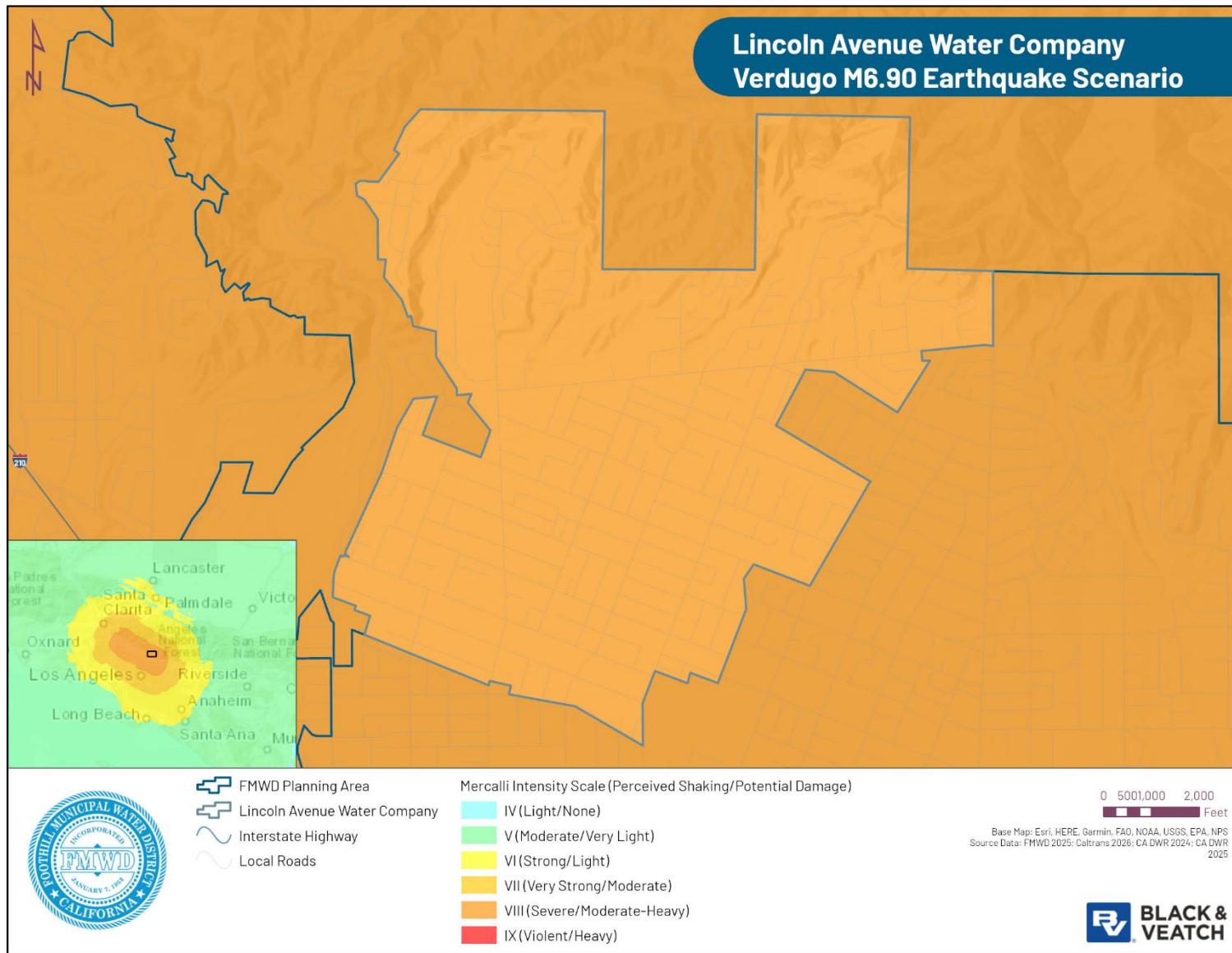


Figure 6-6. Earthquake Hazard Map – Verdugo M6.90 Scenario



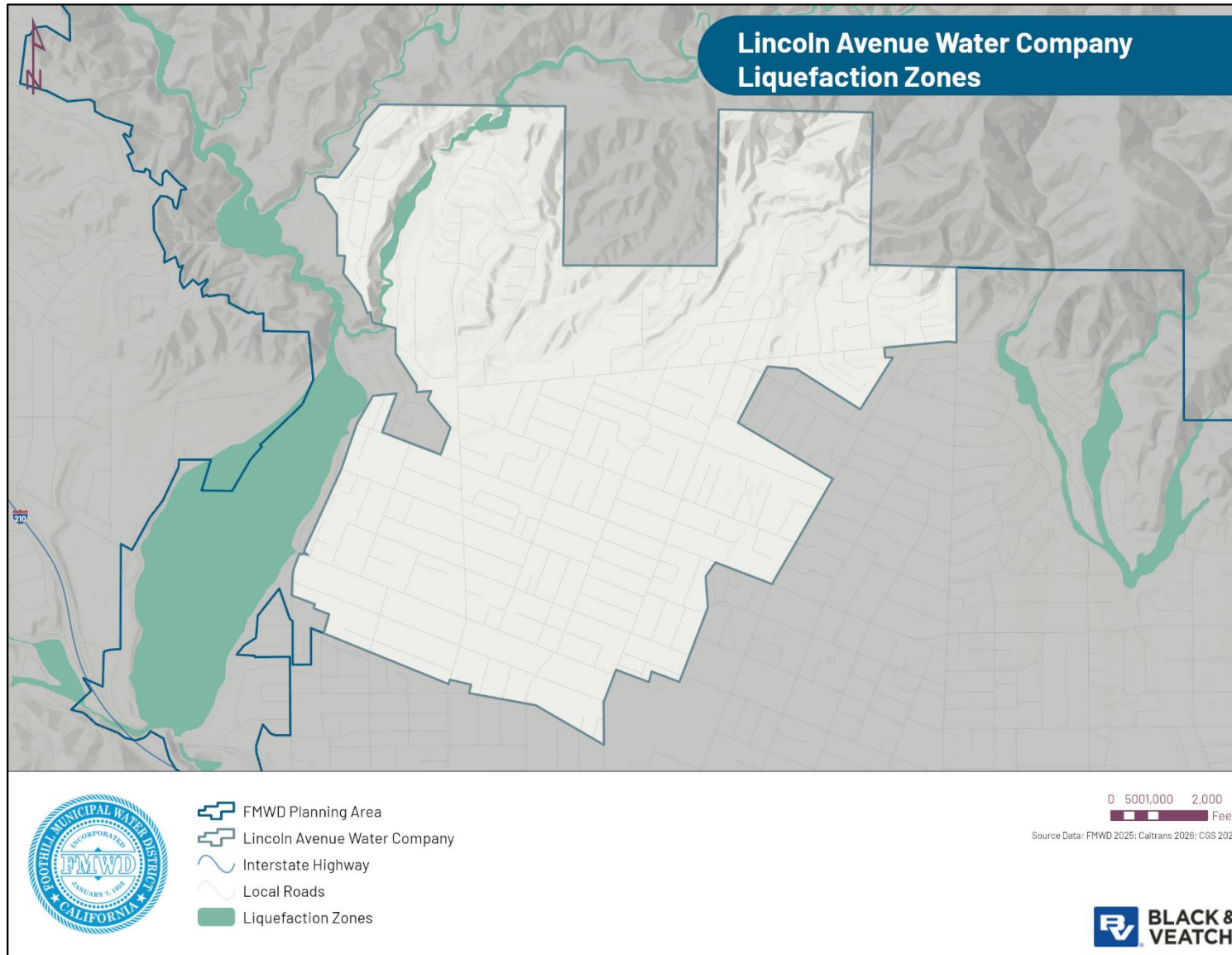


Figure 6-7. Liquefaction Hazard Map – Liquefaction Zones



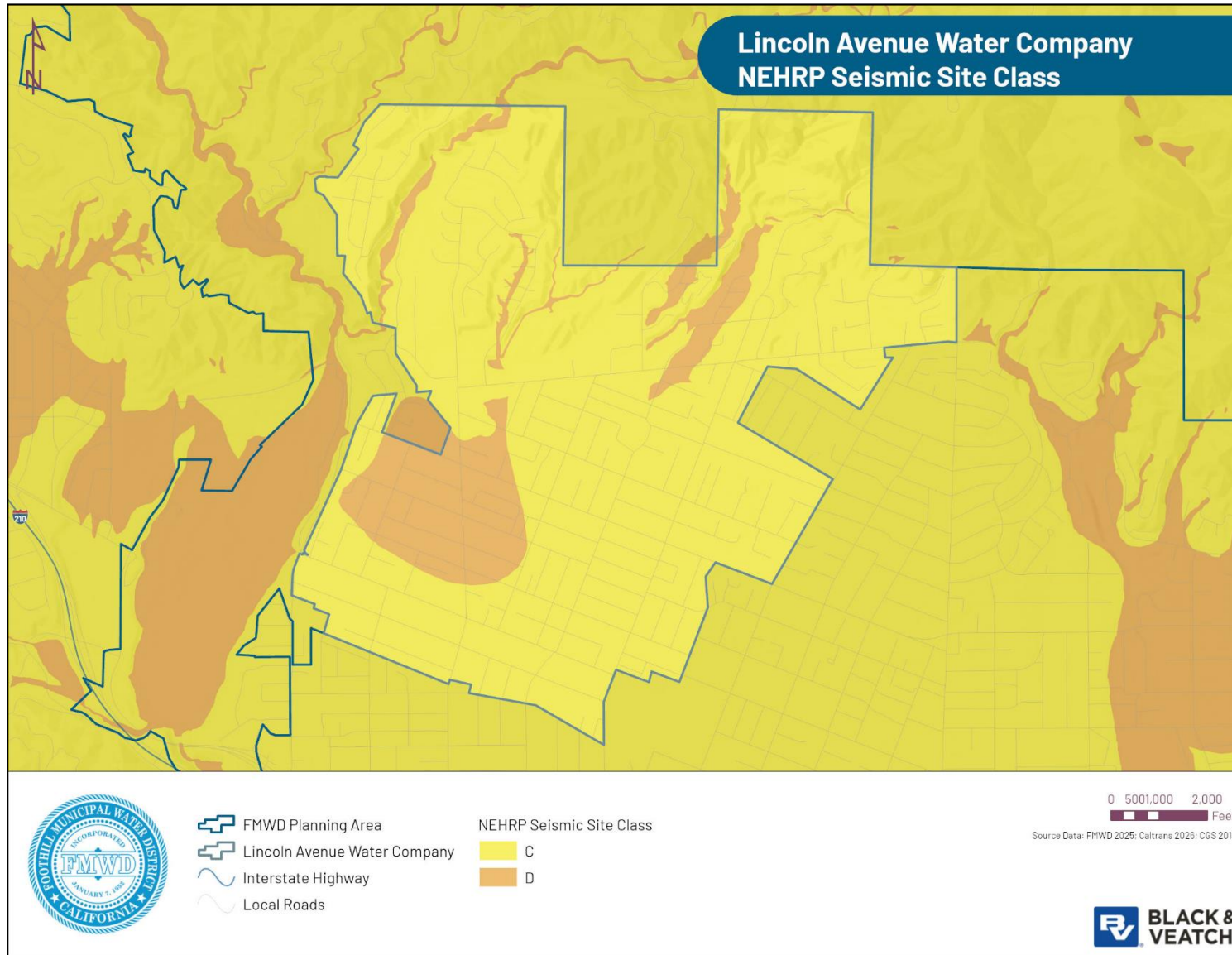


Figure 6-8. Liquefaction Hazard Map – NEHRP Seismic Site Class

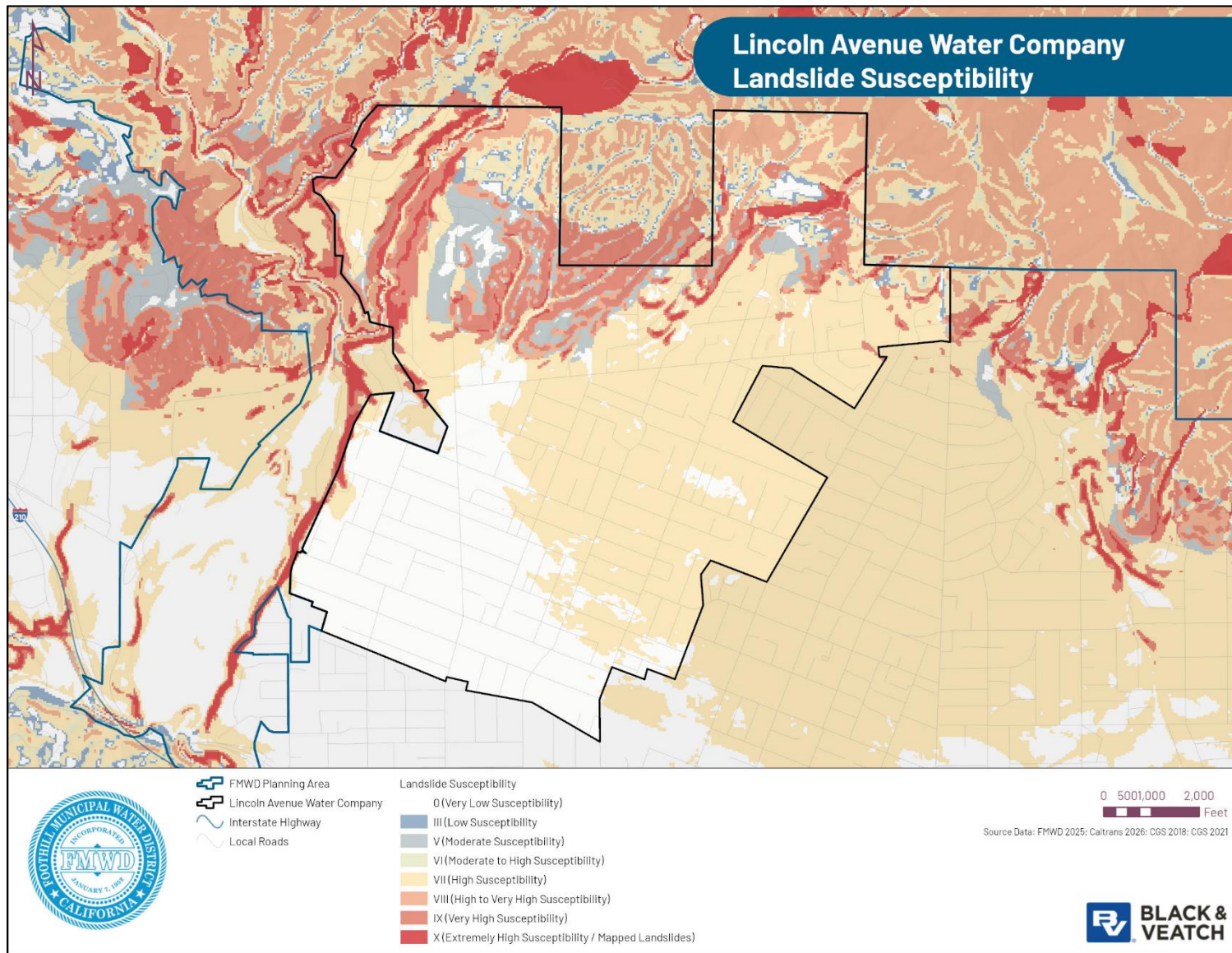


Figure 6-9. Landslide Hazard Map – Landslide Susceptibility



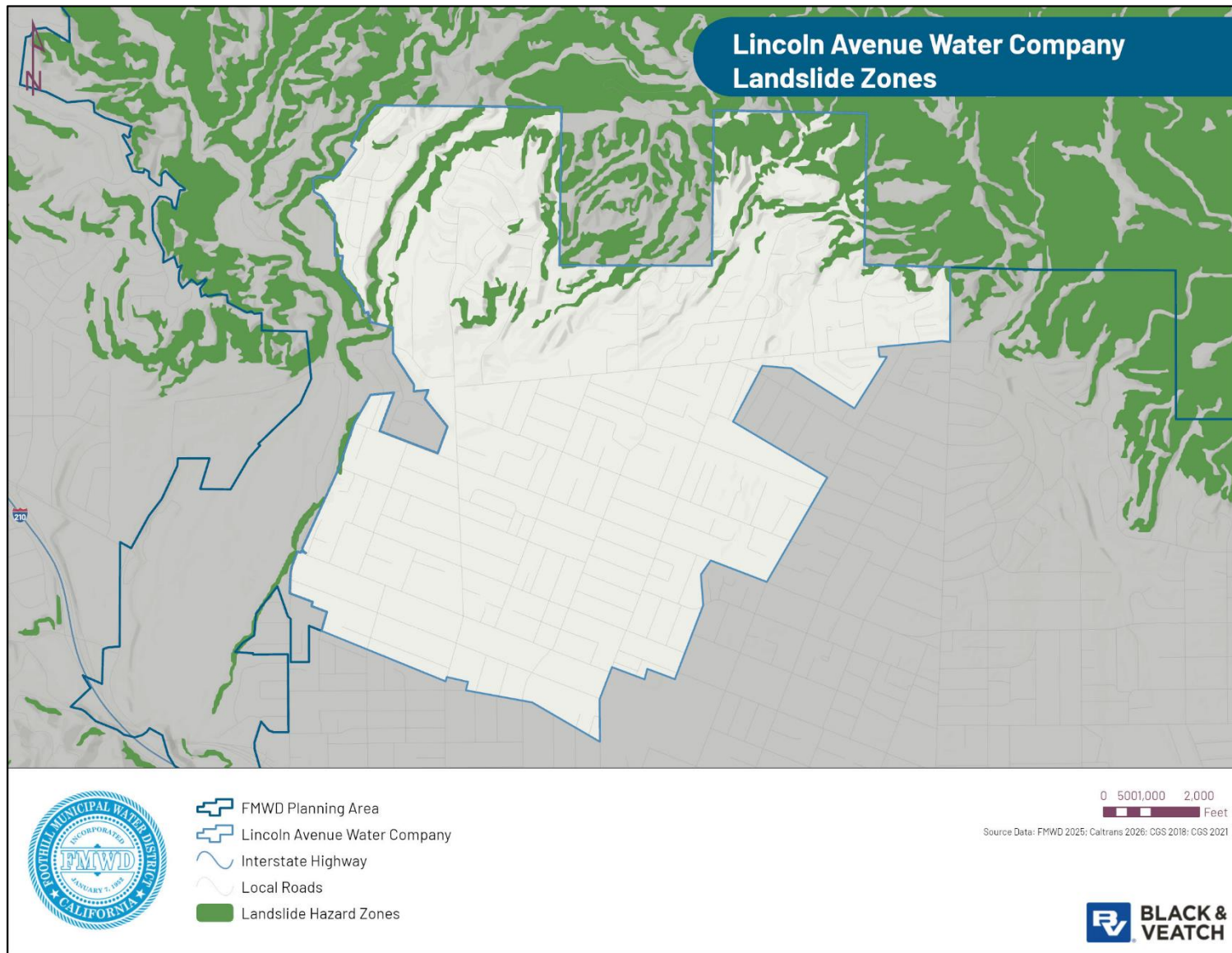


Figure 6-10. Landslide Hazard Map – Landslide Zones

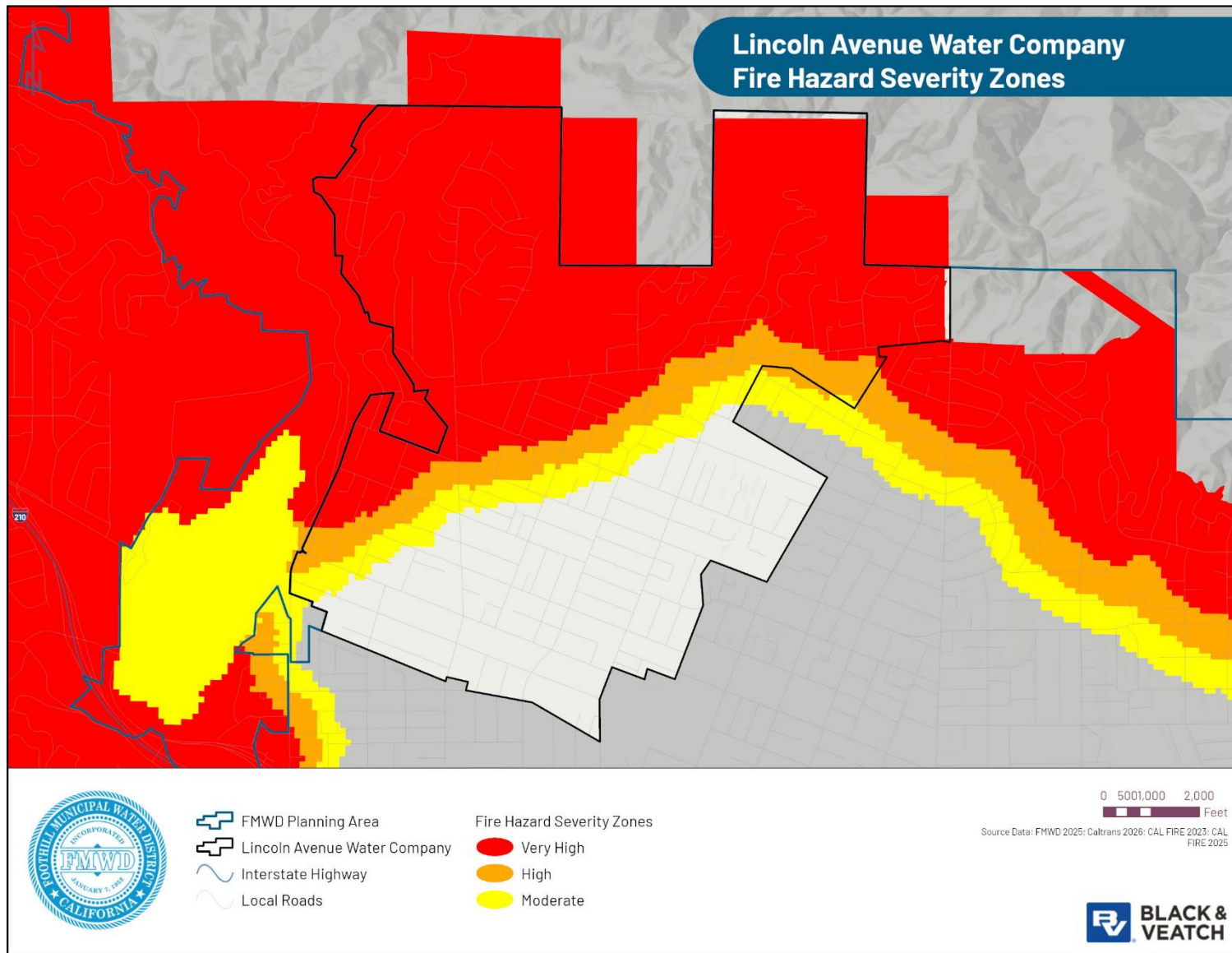


Figure 6-11. Wildfire Hazard Map – Fire Hazard Severity Zones



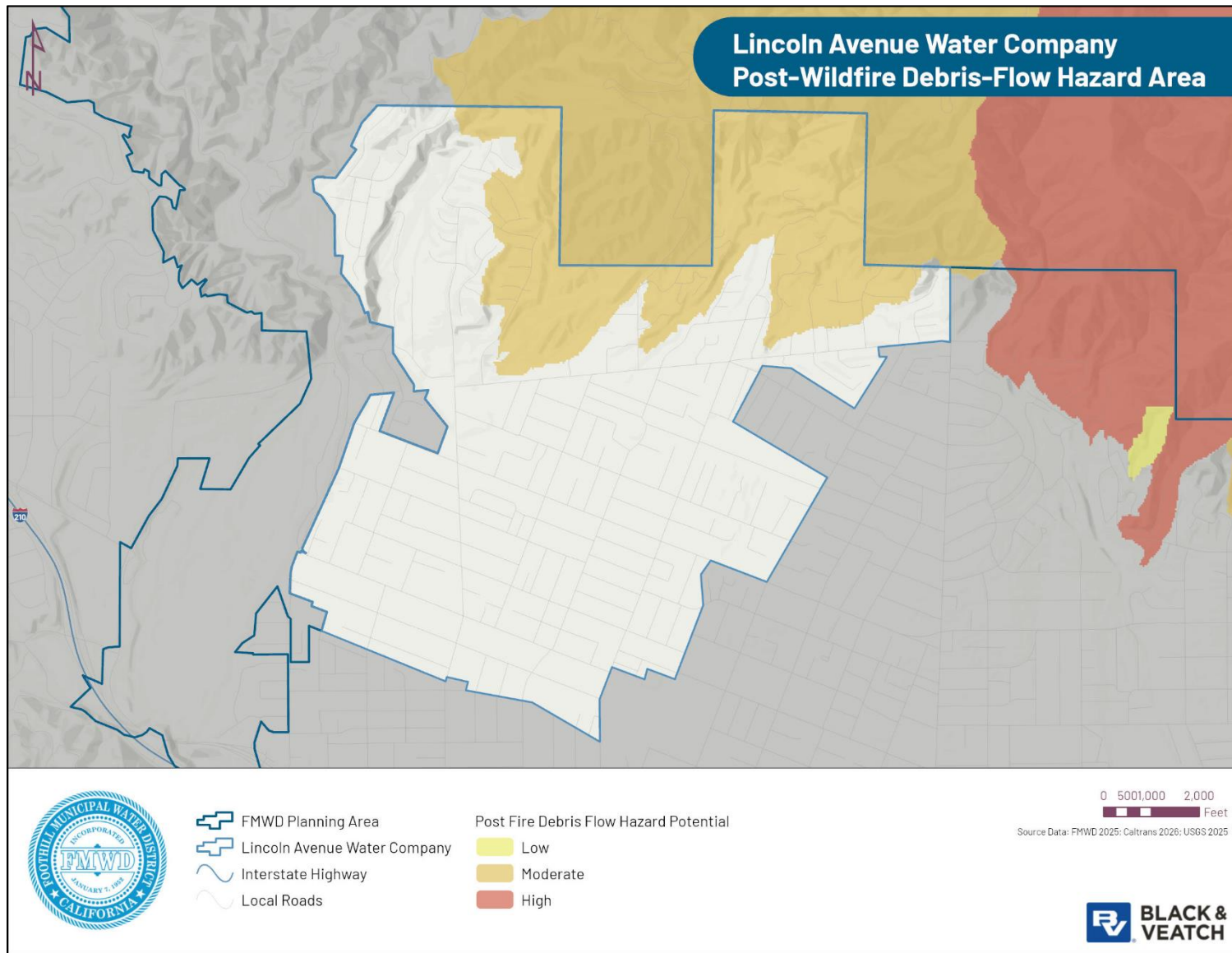


Figure 6-12. Eaton Fire Post-Fire Debris Flow Hazard Map – Hazard Potential

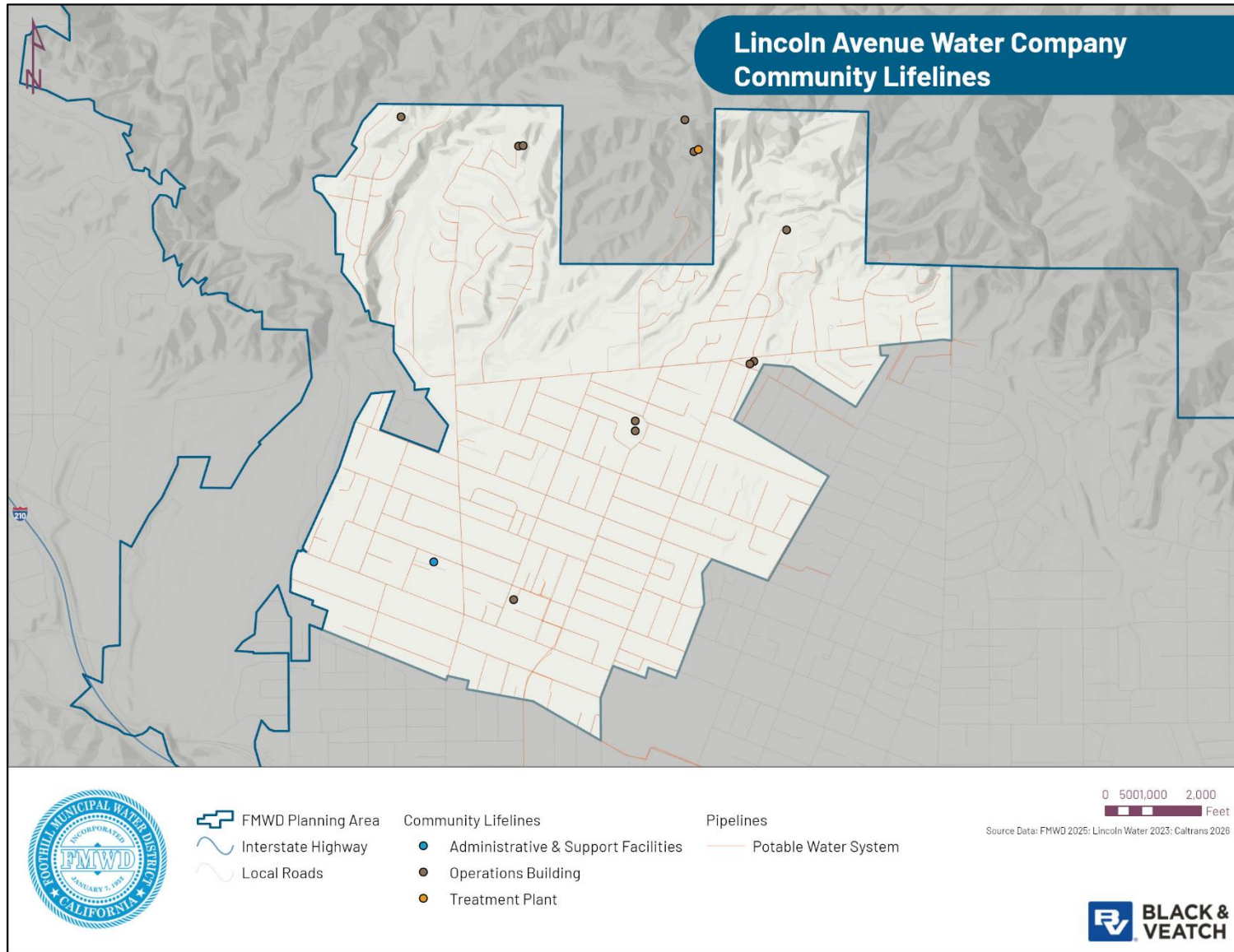


Figure 6-13. Community Lifelines

## 7. VALLEY WATER COMPANY



### 7.1 LOCAL HAZARD MITIGATION PLANNING TEAM

Table 7-1. Local Planning Team

|                          | Primary Point of Contact                                                                                                                                                                           | Alternate Point of Contact                                                         |
|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
| Name and Title:          | Bob Fan, General Manager                                                                                                                                                                           | Doug Sarbum, Field Superintendent                                                  |
| Address:                 | 4524 Hampton Road<br>La Canada Flintridge, CA 91011                                                                                                                                                | 4524 Hampton Road<br>La Canada Flintridge, CA 91011                                |
| Phone Number:            | (818) 790-5516                                                                                                                                                                                     | (818) 790-5516                                                                     |
| Email:                   | <a href="mailto:BFan@valleywatercompany.com">BFan@valleywatercompany.com</a>                                                                                                                       | <a href="mailto:dsarbum@valleywatercompany.com">dsarbum@valleywatercompany.com</a> |
| <b>Contributors:</b>     |                                                                                                                                                                                                    |                                                                                    |
| Name and Title:          | Maelyn Felipe, Bookkeeper                                                                                                                                                                          |                                                                                    |
| Method of Participation: | Contributed to fiscal capability review                                                                                                                                                            |                                                                                    |
| Name and Title:          | Bob Fan, General Manager                                                                                                                                                                           |                                                                                    |
| Method of Participation: | Served on the CPT for the MJHMP; served as the primary point of contact for Valley Water Company; attended meetings; provided input this annex including mitigation strategies; reviewed the MJHMP |                                                                                    |



## 7.2 JURISDICTIONAL PROFILE

### 7.2.1 Overview

Valley Water Company (Valley Water) is a nonprofit mutual water company, incorporated in 1910. The company's service area is about 2,400 acres in the City of La Canada Flintridge, bordering the City of Pasadena to the east, and the City of Glendale to the south.



With approximately 3,600 service connections, composed mainly of residential service, Valley Water's average annual water demand is about 3,100 acre-feet. Valley Water relies on approximately 70 percent imported water, purchased from Foothill Municipal Water District, which purchases water from the Metropolitan Water District of Southern California; and 30 percent local groundwater, pumped from the Monk Hill portion of the Raymond Basin, which has an area of approximately 40 square miles bounded by the San Gabriel Mountains to the north, the San Rafael Hills to the west, and the Raymond Fault on the south and east. Valley Water's service area is located within the Raymond Basin boundary.

### 7.2.2 Service Area

Valley Water's service area is in Los Angeles County, approximately 13 miles northeast of downtown Los Angeles. Valley Water is surrounded by the City of Pasadena to the east and the City of Glendale to the south and it is located within the South Coast Air Basin (Basin). The Basin is a 6,600 square mile area bounded by the Pacific Ocean to the west, and the San Gabriel, San Bernardino, and San Jacinto mountains to the north and east, which includes all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino counties.

### 7.2.3 Governance

Valley Water is governed by a five-person Board of Directors. A shareholders meeting is held in April each year.

### 7.2.4 Assets

The table below summarizes the critical assets of the Valley Water and their value.

Table 7-2. Valley Water Assets

| Asset                                               | Value          |
|-----------------------------------------------------|----------------|
| <b>Property</b>                                     |                |
| 10.3 Acres (est.)                                   | \$44.6 million |
| <b>Critical Infrastructure and Equipment</b>        |                |
| Reservoirs                                          | \$21.4 million |
| Booster Stations, Including Groundwater Wells       | \$15.7 million |
| Backup Generators                                   | \$1.4 million  |
| Watermains, including appurtenances (i.e. Services) | \$96.3 million |
| Water Rights                                        | \$1 million    |
| <b>Critical Facilities</b>                          |                |





| Asset                                                                     | Value                  |
|---------------------------------------------------------------------------|------------------------|
| Office Buildings and Water Equipment (i.e. Water Treatment) at Main Plant | \$5.4 million          |
| <b>TOTAL:</b>                                                             | <b>\$185.8 million</b> |

## 7.3 CURRENT TRENDS

Significant growth is not expected due to Valley Water's service area considering that the service area is basically built out.

## 7.4 CAPABILITY ASSESSMENT

### 7.4.1 Planning and Regulatory Capabilities

Jurisdictions can develop policies and programs and implement rules and regulations to protect and serve residents. Local policies are typically identified in community plans, implemented through local ordinance, and enforced through a governing body. An assessment of planning and regulatory capabilities is presented in the table below.

Table 7-3. Planning and Regulatory Capabilities

| Plan, Study, or Program      | Date of Most Recent Update | Comment                                                                         |
|------------------------------|----------------------------|---------------------------------------------------------------------------------|
| Capital Improvement Projects | 2024, 2025                 | The CIP includes projects that may integrate with this HMP.                     |
| Regulatory Requirements      | Ongoing                    | USEPA, State Division of Drinking Water, a LA County, AMQD, , City of LCF, RBMB |

### Opportunities to Expand Planning and Regulatory Capabilities

Future updates to the CIP will continue to integrate the HMP, where appropriate, to strengthen alignment between long-term planning, regulatory compliance, and infrastructure resilience.

### 7.4.2 Administrative and Technical Capabilities

Planning, regulatory, and fiscal capabilities provide the backbone for successfully developing a mitigation strategy; however, without the appropriate personnel, the strategy may not be implemented. Administrative and technical capabilities focus on the availability of personnel resources responsible for implementing all the facets of hazard mitigation. These resources include technical experts, such as engineers and scientists, as well as personnel with capabilities that may be found in multiple departments, such as grant writers. An assessment of administrative and technical capabilities is presented in Table 7-4.

Table 7-4. Administrative and Technical Capabilities

| Staff / Personnel Resources                                                            | Available? | Description                                                                                                                      |
|----------------------------------------------------------------------------------------|------------|----------------------------------------------------------------------------------------------------------------------------------|
| Planners or engineers with knowledge of land development and land management practices | N/A        | Valley Water lacks the authorities to regulate or dictate land use. Therefore this capability is not applicable to Valley Water. |



| Staff / Personnel Resources                                                             | Available? | Description                                       |
|-----------------------------------------------------------------------------------------|------------|---------------------------------------------------|
| Engineers or professionals trained in building or infrastructure construction practices | Yes        | General Manager                                   |
| Planners or engineers with an understanding of natural hazards                          | Yes        | General Manager; Field Superintendent             |
| Staff with training in benefit-cost analysis                                            | Yes        | General Manager; Bookkeeper                       |
| Surveyors                                                                               | Yes        | Krieger and Stewart                               |
| Personnel skilled or trained in GIS applications                                        | Yes        | General Manager; Krieger and Stewart              |
| Scientist familiar with natural hazards in local area                                   | No         | Can contract for these services when needed.      |
| Emergency manager                                                                       | Yes        | General Manager; Field Superintendent             |
| Grant writers                                                                           | Yes        | General Manager, Board of Directors               |
| Procurement Services and Management                                                     | Yes        | General Manager; Bookkeeper; Field Superintendent |

### **Opportunities to Expand Administrative and Technical Capabilities**

Valley Water's current administrative and technical capabilities can be expanded to further reduce risk to the service area and its customers. To support this effort, Valley Water has identified a series of mitigation actions (see Table 2-20) focused on improving infrastructure resilience and protecting critical community lifelines. These actions emphasize ongoing inspections, targeted upgrades, and routine maintenance to enhance system reliability and ensure continued delivery of essential services during and after natural hazard events.

### **7.4.3 Fiscal Capabilities**

Valley Water is a private not-for-profit mutual water agency. Government funding and grants are generally not available. Valley Water's finance for operation and system improvements are through careful planning and shareholders and customers water rates.

Table 7-5. Fiscal Capabilities

| Financial Resource                                                      | Accessible or Eligible to Use? |
|-------------------------------------------------------------------------|--------------------------------|
| Community Development Block Grants                                      | N/A                            |
| Capital Improvements Project Funding                                    | Yes                            |
| Authority to Levy Taxes for Specific Purposes                           | N/A                            |
| User Fees for Water, Sewer, Gas or Electric Service<br>If yes, specify. | Yes, water                     |
| Incur Debt through General Obligation Bonds                             | N/A                            |
| Incur Debt through Special Tax Bonds                                    | N/A                            |
| Incur Debt through Private Activity Bonds                               | N/A                            |
| Withhold Public Expenditures in Hazard-Prone Areas                      | N/A                            |
| State-Sponsored Grant Programs                                          | N/A                            |
| Development Impact Fees for Homebuyers or Developers                    | N/A                            |

### **Opportunities to Expand Fiscal Capabilities**

The primary objective for Valley Water to participate in this planning process is to pursue FEMA HMA grant funding opportunities. HMA funding streams typically require a 25 percent match. Valley Water has



identified potential match funding sources in the assessment of capabilities. The overall plan maintenance strategy includes an annual agenda item to seek contract support for grant-writing when needed to pursue HMA grants.

#### 7.4.4 Education and Outreach Capabilities

Regular engagement with the public on issues regarding hazard mitigation provides an opportunity to directly interface with community members. Assessing the education and outreach capability illustrates the connection between the government and community members, which opens a two-way dialogue that can result in a more resilient community, based on awareness and engagement. An assessment of education and outreach capabilities is presented in the table below.

Table 7-6. Education and Outreach Capabilities

| Criterion                                                                            | Available? | Description and Role in Risk Reduction                                                                                                                   |
|--------------------------------------------------------------------------------------|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Public Information Officer                                                           | Yes        | General Manager, public outreach, discussions with concerned customers on water-related matters.                                                         |
| Personnel skilled or trained in website development                                  | Yes        | IT Consultant                                                                                                                                            |
| Hazard mitigation information on website                                             | No         | While Valley Water has a website, it does not include information on hazard mitigation. This information is available by contacting Valley Water Company |
| Social media for hazard mitigation education and outreach                            | No         | This information is available by contacting Valley Water Company                                                                                         |
| Citizen boards or commissions that address issues related to hazard mitigation       | Yes        | Ongoing meetings with various agencies, i.e. City, LA County.                                                                                            |
| Other programs in place that could be used to communicate hazard-related information | Yes        | Currently under review                                                                                                                                   |
| Warning systems for hazard events                                                    | Yes        | Currently under review                                                                                                                                   |

#### Opportunities to Expand Education and Outreach Capabilities

Valley Water can expand on their current education and outreach methods to their customers by identifying and utilizing the most effective methods for communicating with and reaching customers (see action 008-Valley Water in Table 2-20). Additionally, they can identify and implement targeted emergency outreach methods to reach affected customers, while increasing community-wide awareness of the risks associated with potential service disruptions (see action 009-Valley Water in Table 2-20).

#### 7.4.5 Community Classifications

Other programs, such as NWS StormReady, can enhance a jurisdiction's ability to mitigate, prepare for, and respond to natural hazards. These programs indicate a jurisdiction's desire to go beyond minimum regulatory requirements in order to create a more resilient community. These programs focus on communication, mitigation, and community preparedness to minimize the impact of natural hazards on a community. Classifications under various community mitigation programs are presented in the table below.



Table 7-7. Community Classifications

|                | Participating? | Classification or Number | Date Classified |
|----------------|----------------|--------------------------|-----------------|
| FIPS Code      | Yes            | 06037                    | N/A             |
| UEI#           | Yes            | Unavailable              | N/A             |
| NWS StormReady | No             | -                        | -               |
| Firewise       | No             | -                        | -               |

### ***Opportunities to Expand Community Classification Capabilities***

Any expansion to the local capabilities identified in this section are likely to benefit the community classifications listed in this sub-section. Currently, there is no need to identify specific community classifications for expansion.

### **7.4.6 Adaptive Capacity for Climate Change**

An adaptive capacity assessment evaluates a jurisdiction's ability to anticipate impacts from future conditions. By looking at public support, technical adaptive capacity, and other factors, jurisdictions identify their core capability for resilience against issues such as extreme heat. The adaptive capacity assessment provides jurisdictions with an opportunity to identify areas for improvement by ranking their capacity high, medium, or low. Valley Water's adaptive capacity for the impacts of climate change is presented in the table below.

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Table 7-8. Adaptive Capacity for Climate Change

| Criterion                                                                                          | Jurisdiction Rating <sup>a</sup> | Comment                                                                                    |
|----------------------------------------------------------------------------------------------------|----------------------------------|--------------------------------------------------------------------------------------------|
| <b>Technical Capacity</b>                                                                          |                                  |                                                                                            |
| Jurisdiction-level understanding of potential climate change impacts                               | Medium                           | Working with the RBMB on local groundwater conditions and MWD on regional impacts.         |
| Jurisdiction-level monitoring of climate change impacts                                            | Medium                           | Working with the RBMB on local groundwater conditions and MWD on regional impacts.         |
| Technical resources to assess proposed strategies for feasibility and externalities                | High                             | Staff knowledge with the RBMB on local groundwater conditions and MWD on regional impacts. |
| Jurisdiction-level capacity for development of greenhouse gas emissions inventory                  | Low                              | Dialog and system inspection by AQMD.                                                      |
| Capital planning and land use decisions informed by potential climate impacts                      | High                             | Permit requirements, including Federal, State, and local agencies.                         |
| Participation in regional groups addressing climate risks                                          | Medium                           | General discussion Federal, State, and local agencies for permit consideration.            |
| <b>Implementation Capacity</b>                                                                     |                                  |                                                                                            |
| Clear authority/mandate to consider climate change impacts during public decision-making processes | High                             | Permit requirements, including Federal, State, and local agencies.                         |
| Identified strategies for greenhouse gas mitigation efforts                                        | Low                              | Dialog and system inspection by AQMD.                                                      |
| Identified strategies for adaptation to impacts                                                    | Medium                           | Working with the RBMB on local groundwater conditions and MWD on regional impacts.         |
| Champions for climate action in local government departments                                       | Low                              | General discussion with regulatory agencies.                                               |
| Political support for implementing climate change adaptation strategies                            | Low                              | General discussion with regulatory agencies.                                               |
| Financial resources devoted to climate change adaptation                                           | High                             | Projects and operations meeting regulatory requirements.                                   |
| Local authority over sectors likely to be negative impacted                                        | Low                              | General discussion with regulatory agencies.                                               |
| <b>Public Capacity</b>                                                                             |                                  |                                                                                            |
| Customers' knowledge of and understanding of climate risk                                          | High                             | Local and regional news media.                                                             |
| Customers' support of adaptation efforts                                                           | Medium                           | Understanding of escalating costs, for compliance and planning.                            |
| Customers' capacity to adapt to climate impacts                                                    | Medium                           | Understanding of escalating costs, for compliance and planning.                            |
| Local economy current capacity to adapt to climate impacts                                         | Medium                           | Understanding of escalating costs, for compliance and planning.                            |
| Local ecosystems capacity to adapt to climate impacts                                              | Medium                           | Understanding of escalating costs, for compliance and planning.                            |

a. High = Capacity exists and is in use; Medium = Capacity may exist but is not used or could use some improvement;  
 Low = Capacity does not exist or could use substantial improvement; Unsure= Not enough information is known to assign a rating.



### ***Opportunities to Expand Adaptive Capacity Capabilities***

Valley Water has not identified a need to expand adaptive capacity capabilities.

## **7.5 NATIONAL FLOOD INSURANCE PROGRAM COMPLIANCE**

Water agencies are not eligible to participate in the National Flood Insurance Program (NFIP). However, any new assets or infrastructure developed by the Valley Water is in compliance with the floodplain regulations established by the surrounding municipal entities.

## **7.6 INTEGRATION**

For hazard mitigation planning, “integration” means that hazard mitigation information is used in other relevant planning mechanisms, such as capital facilities planning, and that relevant information from those sources is used in hazard mitigation. This section identifies where such integration is already in place, and where there are opportunities for further integration in the future. Resources listed at the end of this annex were used to provide information on integration. The progress reporting process described in Volume 1 of the hazard mitigation plan will document the progress of hazard mitigation actions related to integration and identify new opportunities for integration.

### **7.6.1 Existing Integration**

Some level of integration has already been established between local hazard mitigation planning and the following other local plans and programs.

#### ***Planning and Regulatory***

Valley Water’s planning and regulatory capabilities and functions are integrated into its hazard mitigation efforts to ensure infrastructure improvements and operational strategies are consistent with local, state, and federal requirements. For example, Valley Water’s Capital Improvements Plan (CIP) identifies projects that prioritize mitigation of natural hazard risks and protection of community lifelines within the service area.

### **7.6.2 Opportunities for Future Integration**

The capability assessment in this annex indicates opportunities to integrate this mitigation plan with other jurisdictional planning/regulatory capabilities. Capabilities were identified as integration opportunities if they can support or enhance the actions identified in this plan or be supported or enhanced by components of this plan. The capability assessment identified the following plans and programs that do not currently integrate hazard mitigation information but provide opportunities to do so in the future.

- **AWIA Risk and Resilience Assessment (RRA):** Under AWIA, water utilities must perform a Risk and Resilience Assessment (RRA) every five years to identify vulnerabilities in infrastructure, physical security, and cybersecurity systems. Information on hazard risk and vulnerabilities from this mitigation plan can be used to update the RRA.



- Emergency Response Plan (ERP): Information on hazard events developed in this mitigation plan can be used to update emergency response planning.
- CA Senate Bill 1153: This bill requires urban retail water suppliers to include wildfire mitigation actions in disaster preparedness plans. This plan includes actions to mitigate wildfire risk.

## 7.7 RISK ASSESSMENT

### 7.7.1 Jurisdiction-Specific Natural Hazard Event History

The table below lists past occurrences in the last five years of natural hazards for which specific damage was recorded in this jurisdiction. Other hazard events that broadly affected Los Angeles County are listed in the risk assessments in Volume 1 of this hazard mitigation plan.

Table 7-9. Past Natural Hazard Events

| Type of Event | Declaration Title | Disaster #               | Declaration Date                 | Damage Assessment                                                                                                        |
|---------------|-------------------|--------------------------|----------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| Biological    | COVID-19 Pandemic | EM-3428-CA<br>DR-4482-CA | March 13, 2020<br>March 22, 2020 | Valley Water Company was subject to closures and masking and social distancing requirements as a result of the pandemic. |

### 7.7.2 Hazard Ranking

The prioritization and categorization of identified hazards for Valley Water is based principally on the Priority Risk Index (PRI), a tool used to measure the degree of risk for identified hazards in a particular planning area. The PRI was used to assist Valley Water in identifying hazards that pose the most significant threat. Table 7-10 presents a local ranking of all hazards of concern for which this hazard mitigation plan provides complete risk assessments. As described in detail in Volume 1, the ranking process involves an assessment of the likelihood of occurrence for each hazard, along with its potential impacts on people, property and the economy.

Table 7-10. Hazard Risk Ranking Summary

| Hazard                                | Weighted Risk Factors |        |                |              |                | PRI | Risk Ranking |
|---------------------------------------|-----------------------|--------|----------------|--------------|----------------|-----|--------------|
|                                       | Probability           | Impact | Spatial Extent | Warning Time | Climate Change |     |              |
| Dam Failure                           | 0                     | 0      | 0              | 0            | 0              | 0   | None         |
| Drought                               | 1.2                   | 1.2    | .8             | .1           | .4             | 3.7 | High         |
| Earthquake                            | 1.2                   | 1.2    | .8             | .4           | .3             | 3.9 | High         |
| Extreme Temperature                   | 1.2                   | 1.2    | .8             | .1           | .4             | 3.7 | High         |
| Flood*                                | 1.2                   | .3     | .4             | .1           | .4             | 2.4 | Medium       |
| Landslide, Subsidence & Mass Movement | .6                    | 1.2    | .4             | .1           | .3             | 2.6 | Medium       |
| Strong Wind                           | 1.2                   | 1.2    | .8             | .1           | .4             | 3.7 | High         |
| Wildfire                              | 1.2                   | 1.2    | .8             | .1           | .4             | 3.7 | High         |

Note: PRI Value 1 to 1.9 = Low Hazard Risk Ranking

PRI Value 2.0 to 2.9 = Medium Hazard Risk Ranking

PRI Value 3.0 to 4.0 = High Hazard Risk Ranking

\*Flood risk is based on localized urban flooding, not regulated mapped floodplains

### 7.4.7 Agency-Specific Vulnerabilities

Volume 1 of this hazard mitigation plan provides complete risk assessments for each identified hazard of concern. This section provides information on a few key vulnerabilities for this jurisdiction. Available jurisdiction-specific risk maps of the hazards are provided at the end of this annex.

#### Vulnerability and Risk Assessment

The following information applies to the quantitative risk assessment results for the Valley Water service area. Summarized vulnerability and risk assessment results for the entire planning area are contained in the applicable hazard chapters of Volume 1.

#### Earthquake

Table 7-11. Earthquake Hazard Estimated Average Probability of Damage State of Facilities

| Scenario           | Probability of Damage State |               |                 |                  |                 |               |                 |                  | Complete Replacement Cost Value |
|--------------------|-----------------------------|---------------|-----------------|------------------|-----------------|---------------|-----------------|------------------|---------------------------------|
|                    | No Damage                   | Slight Damage | Moderate Damage | Extensive Damage | Complete Damage | Exceed Slight | Exceed Moderate | Exceed Extensive |                                 |
| Puente Hills M6.95 | 3%                          | 11%           | 41%             | 37%              | 8%              | 97%           | 86%             | 45%              | \$25,539,567                    |
| Sierra Madre M7.16 | 6%                          | 13%           | 38%             | 30%              | 13%             | 94%           | 81%             | 43%              | \$26,274,042                    |
| Verdugo M6.90      | 2%                          | 7%            | 36%             | 41%              | 14%             | 98%           | 92%             | 55%              | \$28,641,698                    |

Figure 7-1. Average Percent Functionality of Facilities After Earthquake Scenarios by Day

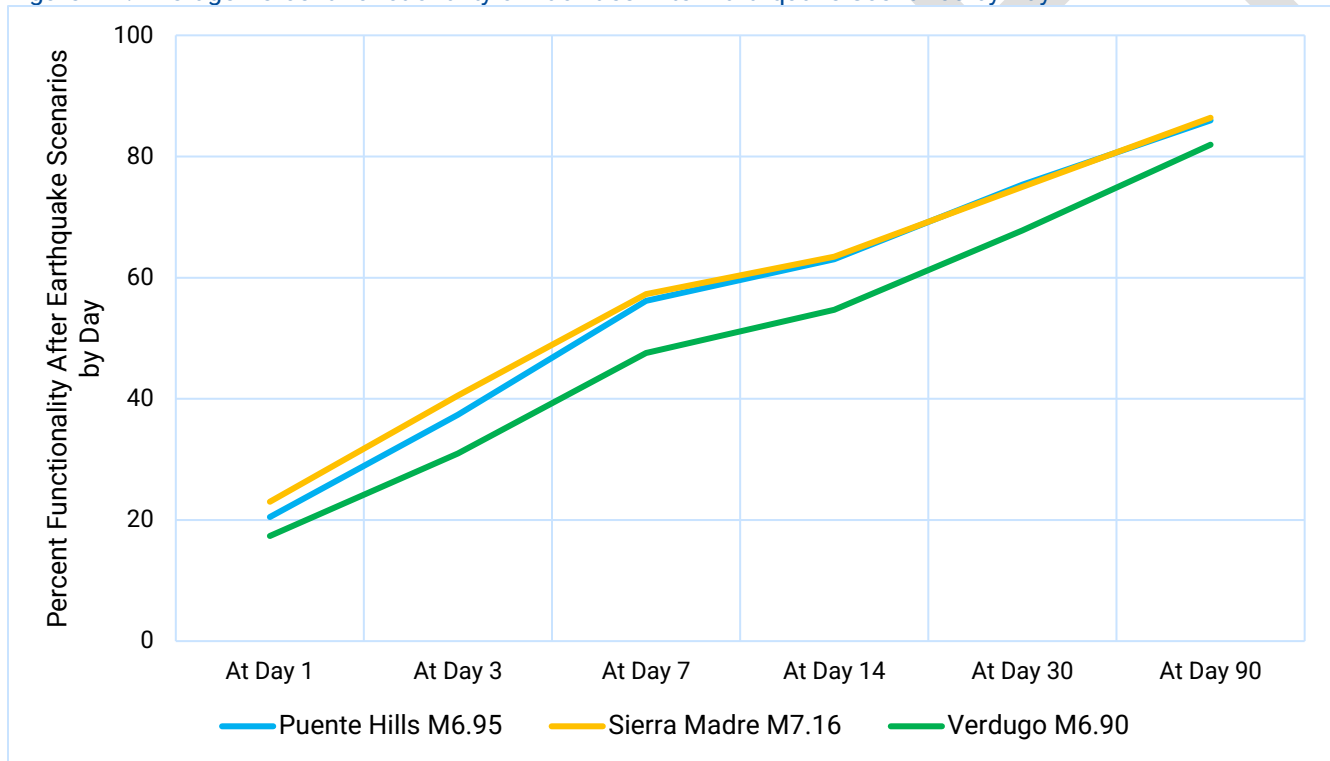






Table 7-12. Estimated Pipe Leaks and Breaks from Earthquake Hazard

| Scenario           | Number of Leaks | Number of Breaks | Total Number of Repairs | Hours to Repair Leaks | Hours to Repair Breaks | Total Hours to Repair | Economic Loss |
|--------------------|-----------------|------------------|-------------------------|-----------------------|------------------------|-----------------------|---------------|
| Puente Hills M6.95 | 8.2             | 2.1              | 10.3                    | 50.4                  | 24.0                   | 74.4                  | \$102,692     |
| Sierra Madre M7.16 | 19.3            | 4.8              | 24.2                    | 115.2                 | 57.6                   | 172.8                 | \$241,741     |
| Verdugo M6.90      | 16.0            | 4.0              | 20.0                    | 96.0                  | 48.0                   | 144.0                 | \$200,357     |

Table 7-13. Estimated Liquefaction and NEHRP D Soils Exposure to Pipelines

| Scenario      | Total Miles of Pipeline | Miles of Pipeline Exposed to Hazard | Percent of Pipeline Exposed |
|---------------|-------------------------|-------------------------------------|-----------------------------|
| Liquefaction  | 55.6                    | 5.4                                 | 9.8%                        |
| NEHRP D Soils | 55.6                    | 25.1                                | 45.1%                       |

Table 7-14. Estimated Liquefaction and NEHRP D Soils Exposure to Facilities

| Scenario                            | Type of Facility | Number of Facilities | Replacement Cost Value |
|-------------------------------------|------------------|----------------------|------------------------|
| NEHRP D Soils                       | Building         | 1                    | \$2,400,000            |
| NEHRP D Soils                       | Pump Station     | 2                    | \$9,500,000            |
| NEHRP D Soils                       | Reservoir        | 2                    | \$10,500,000           |
| NEHRP D Soils                       | Treatment Plant  | 1                    | \$2,950,000            |
| <b>Total NEHRP D Soils Exposure</b> |                  | <b>6</b>             | <b>\$25,350,000</b>    |

## Flood

Table 7-15. Estimated Flood Exposure to Pipelines

| Total Miles of Pipeline | Miles of Pipeline Exposed to Hazard | Percent of Pipeline Exposed |
|-------------------------|-------------------------------------|-----------------------------|
| 55.6                    | 2.9                                 | 5.3%                        |

## Landslide

Table 7-16. Estimated Landslide Exposure to Pipelines

| Scenario                           | Total Miles of Pipeline | Miles of Pipeline Exposed to Hazard | Percent of Pipeline Exposed |
|------------------------------------|-------------------------|-------------------------------------|-----------------------------|
| Very High Landslide Susceptibility | 55.6                    | 0.1                                 | 0.2%                        |
| High Landslide Susceptibility      | 55.6                    | 17.1                                | 30.8%                       |
| Moderate Landslide Susceptibility  | 55.6                    | 3.2                                 | 5.7%                        |
| <b>Total</b>                       | <b>166.8</b>            | <b>20.4</b>                         | <b>36.70%</b>               |

Table 7-17. Facilities Exposed to the High Susceptibility Landslide Hazard Area

| Type of Facility | Number of Facilities Exposed | Replacement Cost Value |
|------------------|------------------------------|------------------------|
| Pump Station     | 1                            | \$700,000              |
| Reservoir        | 4                            | \$13,000,000           |
| <b>Total</b>     | <b>5</b>                     | <b>\$13,700,000</b>    |



## Wildfire

Table 7-18. Estimated Wildfire Exposure to Pipelines

| Scenario                            | Total Miles of Pipeline | Miles of Pipeline Exposed | Percent of Pipeline Exposed |
|-------------------------------------|-------------------------|---------------------------|-----------------------------|
| Very High Fire Hazard Severity Zone | 55.6                    | 55.5                      | 99.9%                       |
| High Fire Hazard Severity Zone      | 55.6                    | 0.0                       | 0.0%                        |
| Moderate Fire Hazard Severity Zone  | 55.6                    | 0.1                       | 0.1%                        |
| <b>Total</b>                        | <b>166.8</b>            | <b>55.6</b>               | <b>100.00%</b>              |

Table 7-19. Facilities Exposed to the Very High Fire Hazard Severity Zone

| Type of Facility | Number of Facilities Exposed | Replacement Cost Value |
|------------------|------------------------------|------------------------|
| Building         | 1                            | \$2,400,000            |
| Pump Station     | 5                            | \$15,700,000           |
| Reservoir        | 9                            | \$21,400,001           |
| Treatment Plant  | 1                            | \$2,950,000            |
| <b>Total</b>     | <b>16</b>                    | <b>\$42,450,001</b>    |

## Other Noted Vulnerabilities

The following jurisdiction-specific issues have been identified based on a review of the results of the risk assessment, public involvement strategy, and other available resources:

- Maintenance and upgrades continues for the SCADA system.
- Ember intrusion points are investigated for structures.
- Stormwater capture projects are needed to enhance basin replenishment.
- Additional outreach is needed to communicate and educate the public on hazard risks and mitigation.
- Emergency outreach methods are being identified to increase the efficiency of reaching customers during emergency events.

Mitigation actions addressing these issues were prioritized for consideration in the action plan presented in this annex.



## 7.8 HAZARD MITIGATION STRATEGY

This section includes the following components of the mitigation strategy for Valley Water:

- Hazard Mitigation Action Plan Matrix
- Mitigation Action Prioritization
- Mitigation Action Classification and Natural Hazards Addressed

Table 7-20. Hazard Mitigation Action Plan Matrix

| Action Number      | Action Description                                                                                                                                                                                                                 | Lead and Support Implementers                                                                                    | Goals Met  | Benefits New or Existing Assets | Estimated Cost                 | Potential Funding Sources       | Timeline                       | Community Lifeline Addressed                |
|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|------------|---------------------------------|--------------------------------|---------------------------------|--------------------------------|---------------------------------------------|
| 001 – Valley Water | Ongoing maintenance and upgrades for monitoring and operation of SCADA system.                                                                                                                                                     | Lead: General Manager, Valley Water Company                                                                      | 1, 2, 5, 6 | Both                            | Medium (\$50,000 - \$250,000)  | CIP Budget, Staff Time          | Short Term (less than 5 years) | Safety and Security, Energy, Communications |
| 002 – Valley Water | Conduct regular inspections of all structures to identify potential ember intrusion points; maintain existing protective measures (such as fine-mesh screens) and evaluate additional mitigation options as they become available. | Lead: General Manager, Valley Water Company                                                                      | 1, 2, 5, 6 | Both                            | Medium (\$50,000 - \$250,000)  | Maintenance Budget              | Short Term (less than 5 years) | Water Systems                               |
| 003 – Valley Water | Conduct regular inspections of roof materials on wood-framed structures and perform timely repair or replacement of damaged roofing components, including tiles, to reduce vulnerability to hazard impacts.                        | Lead: General Manager, Valley Water Company                                                                      | 1, 2, 5, 6 | Both                            | Medium (\$50,000 - \$250,000)  | Maintenance Budget              | Short Term (less than 5 years) | Water Systems, Hazardous Materials          |
| 004 – Valley Water | Conduct regular site inspections, debris removal, and brush clearance activities to reduce fuel loads and minimize hazard risk.                                                                                                    | Lead: General Manager, Valley Water Company                                                                      | 1, 2, 5, 6 | Both                            | Medium (\$50,000 - \$250,000)  | Maintenance Budget              | Short Term (less than 5 years) | Water Systems, Hazardous Materials          |
| 005 – Valley Water | Conduct regular inspection, maintenance, repair, and retrofitting of all structures to ensure structural integrity, and obtain engineering analysis or technical support as needed.                                                | Lead: General Manager, Valley Water Company                                                                      | 1, 2, 5, 6 | Both                            | High (\$250,000 - \$1 million) | CIP Budget                      | Short Term (less than 5 years) | Water Systems                               |
| 006 – Valley Water | Continue implementation of water mainline replacement and improvement projects.                                                                                                                                                    | Lead: General Manager, Valley Water Company                                                                      | 1, 2, 5, 6 | Both                            | High (\$250,000 - \$1 million) | CIP Budget                      | Short Term (less than 5 years) | Water Systems                               |
| 007 – Valley Water | Support and advance stormwater capture projects to enhance basin replenishment, in coordination with regional partners and planning efforts. Coordinates with Action 014 – Foothill Municipal Water District                       | Lead: District Engineer, Foothill Municipal Water District<br><br>Support: General Manager, Valley Water Company | 5          | New                             | Very High (>\$1 million)       | LA County Measure W, Staff Time | Long Term (5+ years)           | Water Systems                               |



| Action Number      | Action Description                                                                                                                                                                               | Lead and Support Implementers               | Goals Met  | Benefits New or Existing Assets | Estimated Cost                | Potential Funding Sources  | Timeline                       | Community Lifeline Addressed |
|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|------------|---------------------------------|-------------------------------|----------------------------|--------------------------------|------------------------------|
| 008 – Valley Water | Continue outreach efforts to identify and utilize the most effective methods for communicating with and reaching customers.                                                                      | Lead: General Manager, Valley Water Company | 5          | Both                            | Low (>\$50,000)               | Staff Time                 | Short Term (less than 5 years) | Communications               |
| 009 – Valley Water | Identify and implement targeted emergency outreach methods to reach affected customers, while increasing community-wide awareness of the risks associated with potential service disruptions.    | Lead: General Manager, Valley Water Company | 3          | Both                            | Medium (\$50,000 - \$250,000) | Office Budget              | Short Term (less than 5 years) | Communications               |
| 010 – Valley Water | Maintain an ongoing onsite generator inspection and maintenance program and evaluate the need for additional or replacement generator units to support continuity of operations.                 | Lead: General Manager, Valley Water Company | 1, 2, 5, 6 | Both                            | Medium (\$50,000 - \$250,000) | Maintenance and CIP Budget | Short Term (less than 5 years) | Water Systems                |
| 011 – Valley Water | Integrate the hazard mitigation plan into other plans that address natural hazards within the service area including: <ul style="list-style-type: none"> <li>Capital Improvement Plan</li> </ul> | Lead: General Manager, Valley Water Company | 1, 2, 5    | Both                            | Low (>\$50,000)               | Staff Time                 | Short Term (less than 5 years) | N/A                          |

Table 7-21. Mitigation Action Prioritization

| Action Number      | Life Safety | Property Protection | Cost-Effectiveness | Technically Feasible | Legal Authority | Funding Available | Grant Eligible | Environmental | Climate Change | Equity Priority Community | Administrative Capacity | Multi-Hazard | Timeline | Other Local Objective | Support Policies | Total Score | Priority |
|--------------------|-------------|---------------------|--------------------|----------------------|-----------------|-------------------|----------------|---------------|----------------|---------------------------|-------------------------|--------------|----------|-----------------------|------------------|-------------|----------|
| 001 – Valley Water | 1           | 3                   | 3                  | 3                    | 3               | 3                 | 1              | 0             | 0              | 0                         | 3                       | 3            | 3        | 0                     | 3                | 29          | Medium   |
| 002 – Valley Water | 3           | 3                   | 3                  | 3                    | 3               | 3                 | 1              | 0             | 0              | 0                         | 3                       | 3            | 3        | 0                     | 3                | 31          | High     |
| 003 – Valley Water | 3           | 3                   | 3                  | 3                    | 3               | 3                 | 1              | 0             | 0              | 0                         | 3                       | 3            | 3        | 0                     | 3                | 31          | High     |
| 004 – Valley Water | 3           | 3                   | 3                  | 3                    | 3               | 3                 | 1              | 0             | 0              | 0                         | 3                       | 3            | 3        | 3                     | 3                | 34          | High     |
| 005 – Valley Water | 3           | 3                   | 3                  | 3                    | 3               | 3                 | 1              | 0             | 0              | 0                         | 3                       | 3            | 3        | 0                     | 3                | 31          | High     |
| 006 – Valley Water | 3           | 3                   | 3                  | 3                    | 3               | 3                 | 1              | 0             | 0              | 0                         | 3                       | 3            | 3        | 0                     | 3                | 31          | High     |
| 007 – Valley Water | 0           | 0                   | 1                  | 3                    | 0               | 0                 | 1              | 3             | 1              | 3                         | 3                       | 0            | 0        | 1                     | 0                | 16          | Medium   |
| 008 – Valley Water | 0           | 0                   | 1                  | 3                    | 3               | 3                 | 1              | 0             | 1              | 0                         | 3                       | 0            | 3        | 0                     | 0                | 18          | Medium   |
| 009 – Valley Water | 3           | 0                   | 3                  | 1                    | 3               | 3                 | 1              | 0             | 0              | 0                         | 3                       | 3            | 1        | 0                     | 3                | 24          | Medium   |
| 010 – Valley Water | 3           | 3                   | 3                  | 3                    | 3               | 3                 | 1              | 0             | 0              | 0                         | 3                       | 3            | 3        | 0                     | 3                | 31          | High     |
| 011 – Valley Water | 3           | 3                   | 3                  | 3                    | 3               | 3                 | 1              | 1             | 1              | 3                         | 3                       | 3            | 3        | 0                     | 1                | 34          | High     |

Note: 31 or more = High Priority  
15 to 30 = Medium Priority  
0 to 14 = Low Priority





Table 7-22. Mitigation Action Classification and Natural Hazards Addressed

| Action             | Mitigation Classification   |                    |                                       |                                  |                            |                    |                             | Natural Hazards |         |            |                     |       |           |             |          |
|--------------------|-----------------------------|--------------------|---------------------------------------|----------------------------------|----------------------------|--------------------|-----------------------------|-----------------|---------|------------|---------------------|-------|-----------|-------------|----------|
|                    | Local Plans and Regulations | Emergency Services | Structure and Infrastructure Projects | Education and Awareness Programs | Natural Systems Protection | Climate Resilience | Community Capacity Building | Dam Failure*    | Drought | Earthquake | Extreme Temperature | Flood | Landslide | Strong Wind | Wildfire |
| 001 – Valley Water |                             | ■                  |                                       |                                  |                            |                    |                             |                 |         | ■          | ■                   |       |           | ■           | ■        |
| 002 – Valley Water |                             |                    | ■                                     |                                  |                            |                    |                             |                 |         |            |                     |       |           |             | ■        |
| 003 – Valley Water |                             |                    | ■                                     |                                  |                            |                    |                             |                 |         | ■          |                     |       |           | ■           | ■        |
| 004 – Valley Water |                             |                    |                                       | ■                                | ■                          |                    |                             |                 |         |            |                     |       |           | ■           | ■        |
| 005 – Valley Water |                             |                    | ■                                     |                                  |                            |                    |                             |                 |         | ■          |                     |       |           | ■           |          |
| 006 – Valley Water |                             |                    | ■                                     |                                  |                            |                    |                             |                 | ■       | ■          |                     |       |           |             | ■        |
| 007 – Valley Water | ■                           |                    |                                       | ■                                | ■                          | ■                  | ■                           |                 | ■       |            |                     |       |           |             |          |
| 008 – Valley Water | ■                           |                    |                                       | ■                                |                            |                    | ■                           |                 | ■       |            |                     |       |           |             |          |
| 009 – Valley Water |                             | ■                  |                                       | ■                                |                            |                    |                             |                 | ■       | ■          | ■                   |       |           | ■           | ■        |
| 010 – Valley Water |                             | ■                  |                                       |                                  |                            |                    |                             |                 |         | ■          | ■                   |       |           | ■           | ■        |
| 011 – Valley Water | ■                           |                    |                                       |                                  |                            |                    | ■                           |                 | ■       | ■          | ■                   | ■     | ■         | ■           | ■        |

Note: The dam failure hazard does not impact VWC assets.



7.9 PUBLIC OUTREACH

Table 7-23. Public Outreach

| Local Outreach Activity                                            | Date                            | Number of People Involved |
|--------------------------------------------------------------------|---------------------------------|---------------------------|
| Agency staff supported the areawide outreach efforts for this plan | Throughout the planning process | 150+                      |

7.10 INFORMATION SOURCES USED FOR THIS ANNEX

The following technical reports, plans, and regulatory mechanisms were reviewed to provide information for this annex.

- **Capital Improvement Program**—The Capital Improvement Program prioritizes projects that have been identified to improve Valley Water’s facilities, infrastructure, and equipment, including potential mitigation projects. The Capital Improvement Program was used as a source of information while preparing this annex.

The following outside resources and references were reviewed:

- **Hazard Mitigation Plan Annex Development Toolkit**—The toolkit was used to support the identification of past hazard events and noted vulnerabilities, the risk ranking, and the development of the mitigation action plan.

7.11 AGENCY HAZARD MAPPING

Agency-specific risk maps of the hazards are provided on the following pages. For a complete description of each hazard, please see the applicable chapters in Volume 1 of this plan. These maps are based on the vulnerability and risk assessment results for this plan.

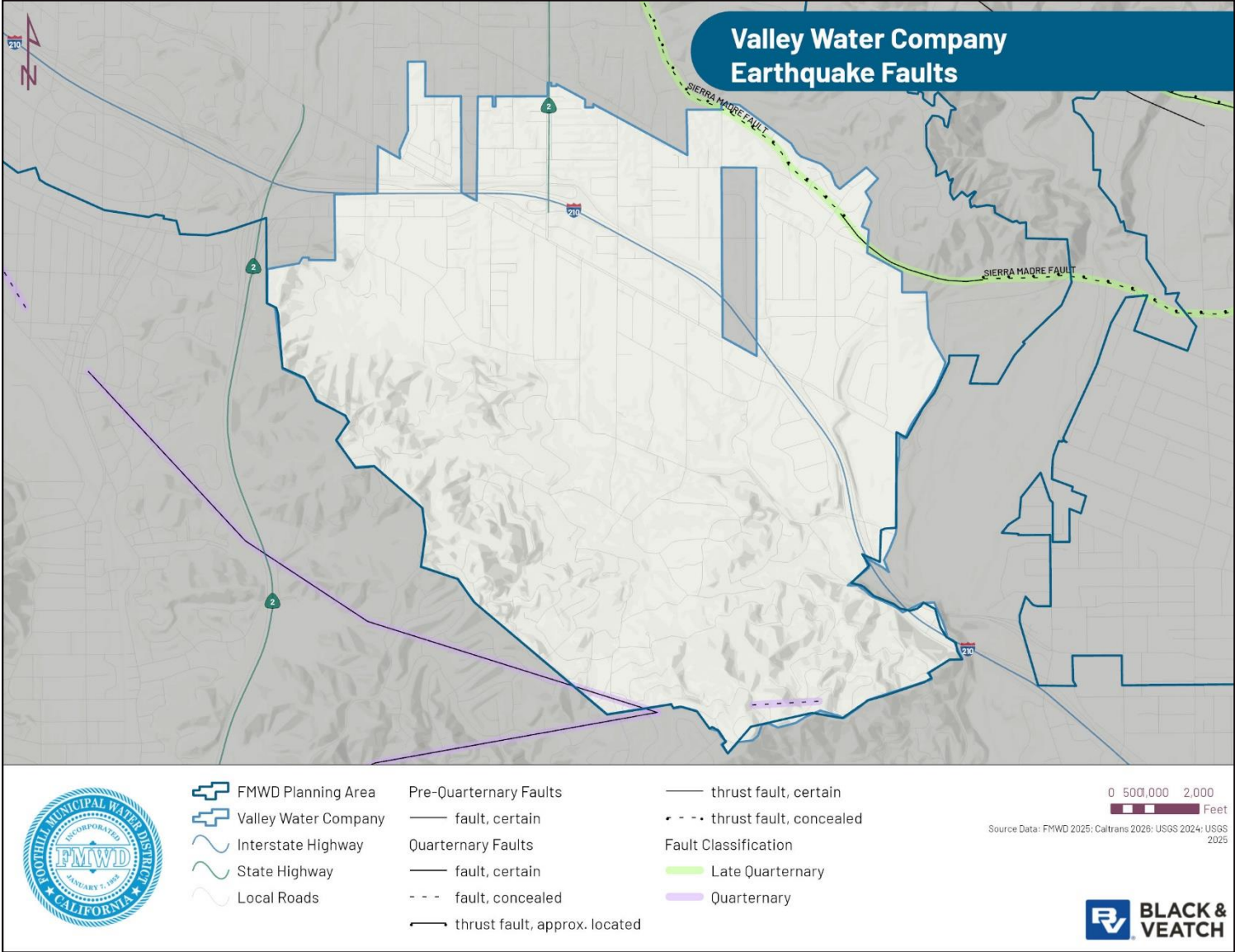


Figure 7-2. Earthquake Faults

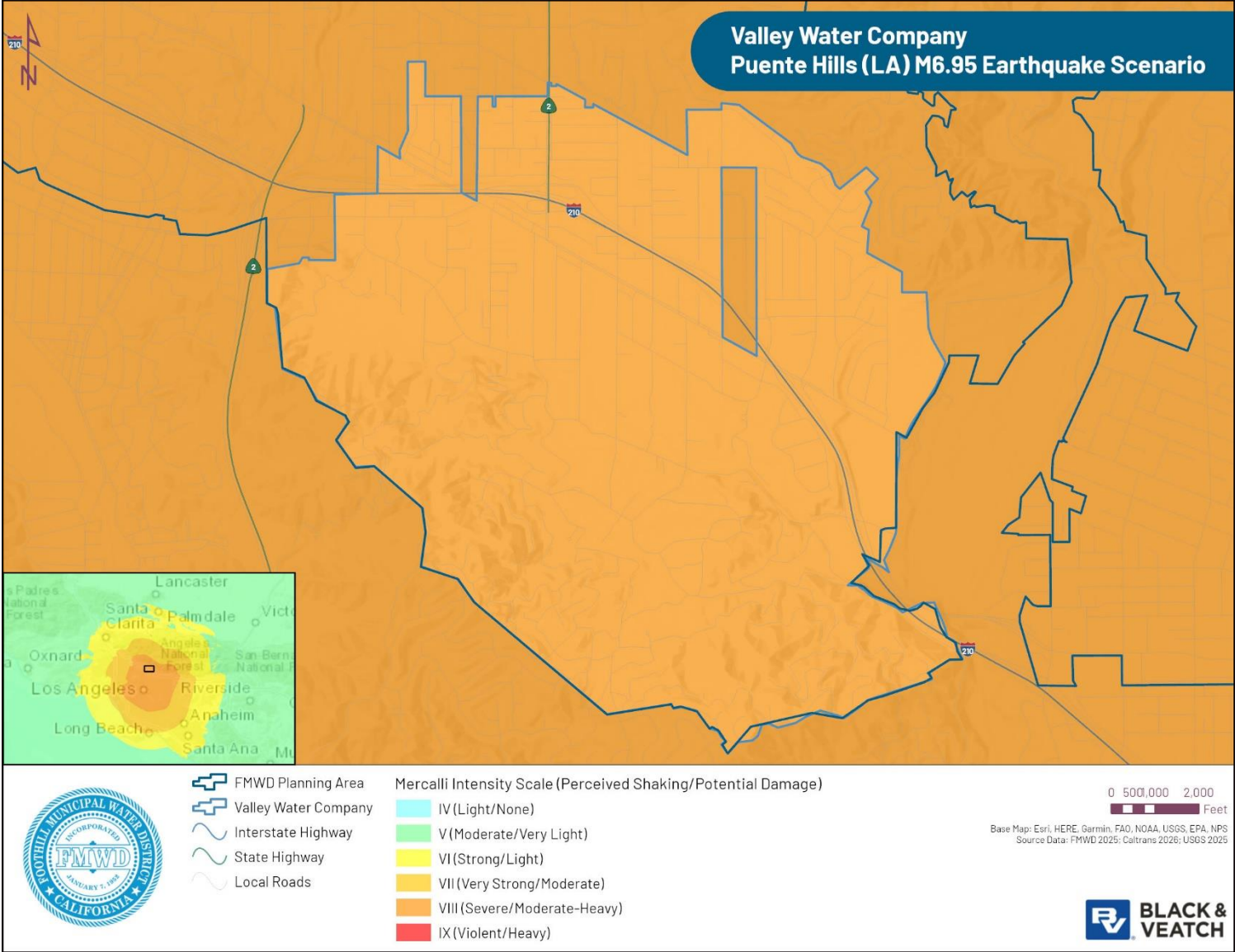


Figure 7-3. Earthquake Hazard Map – Puente Hills M6.95 Scenario



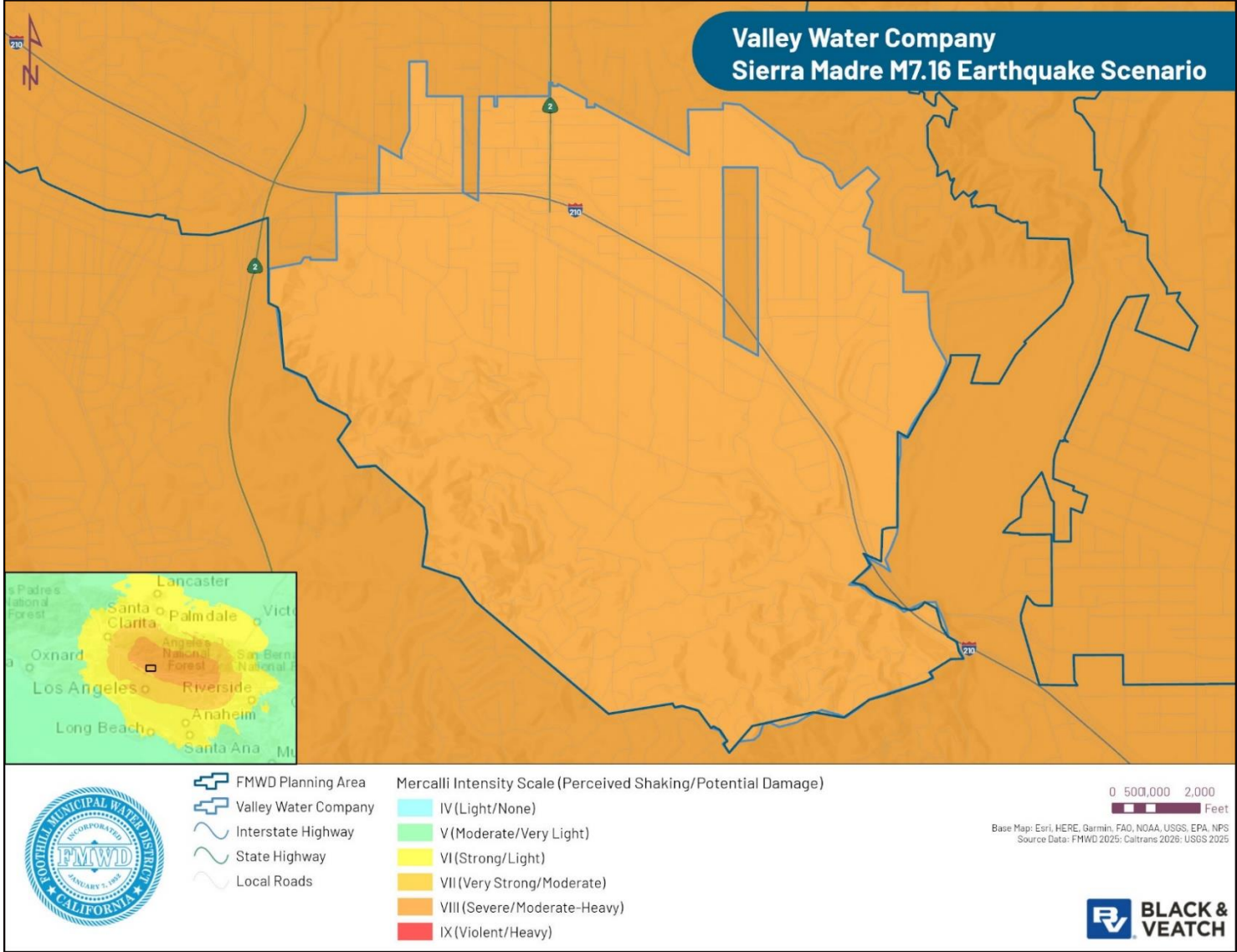


Figure 7-4. Earthquake Hazard Map – Sierra Madre M7.16 Scenario

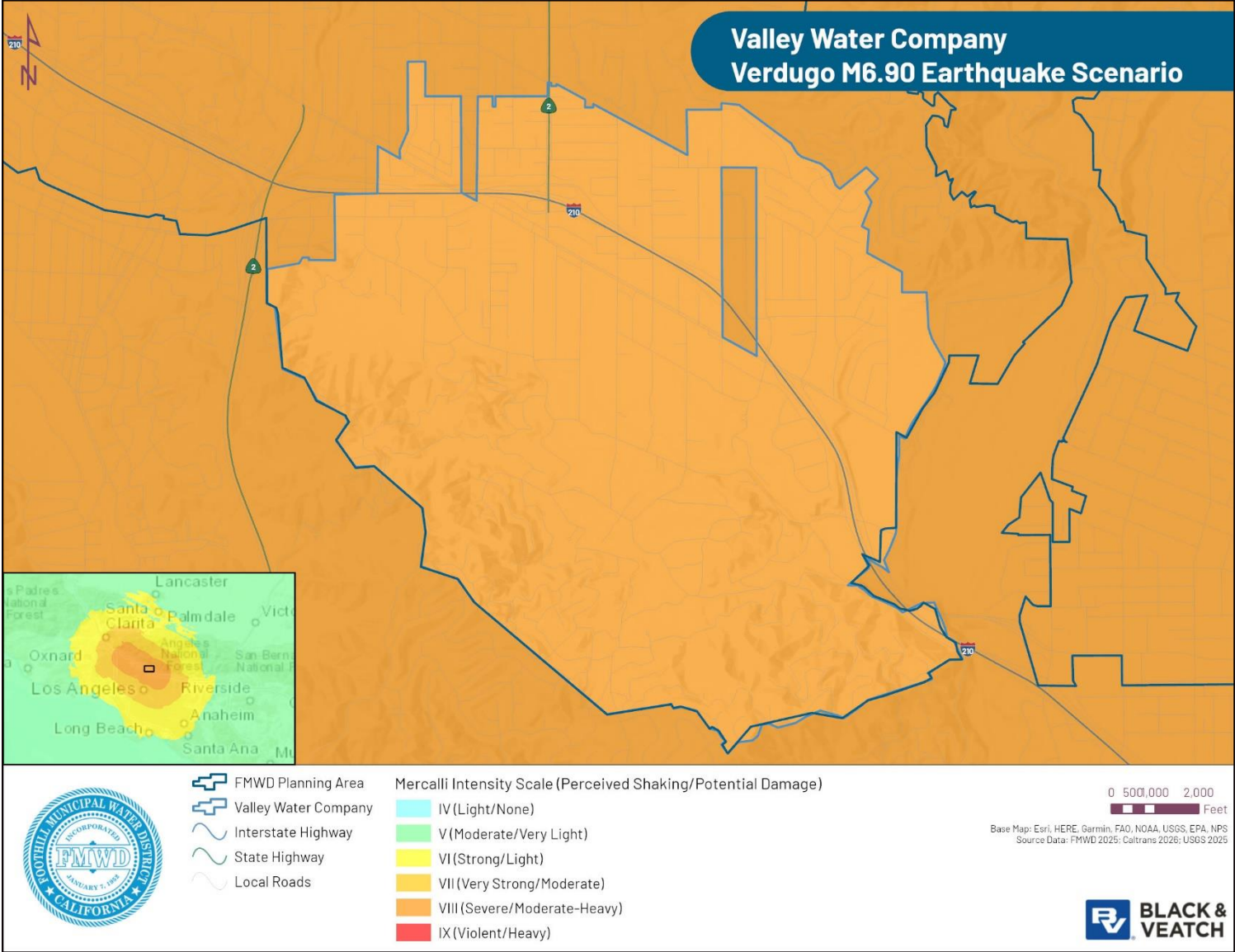


Figure 7-5. Earthquake Hazard Map – Verdugo M6.90 Scenario

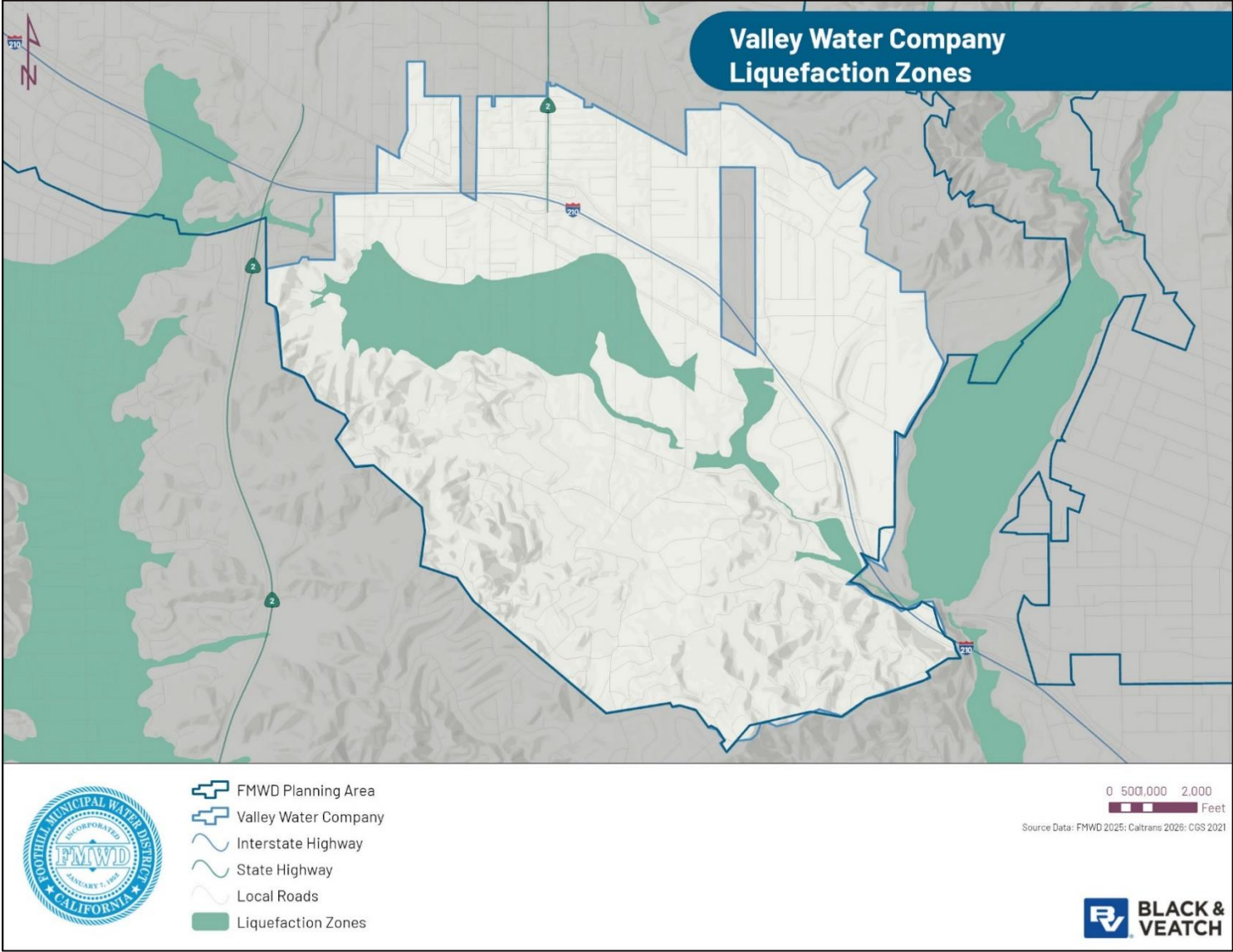


Figure 7-6. Liquefaction Hazard Map – Liquefaction Susceptibility



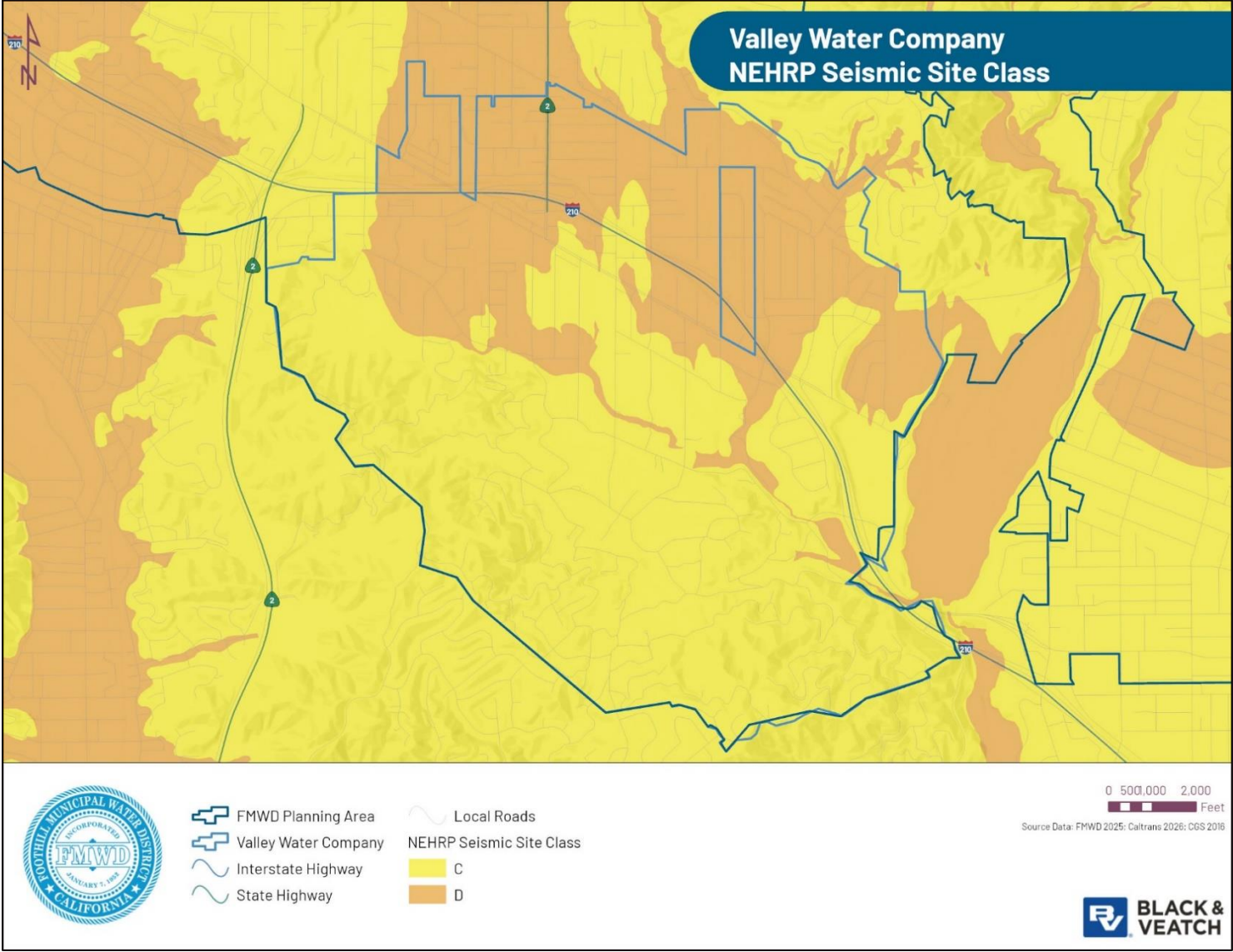


Figure 7-7. Liquefaction Hazard Map – NEHRP Seismic Site Class



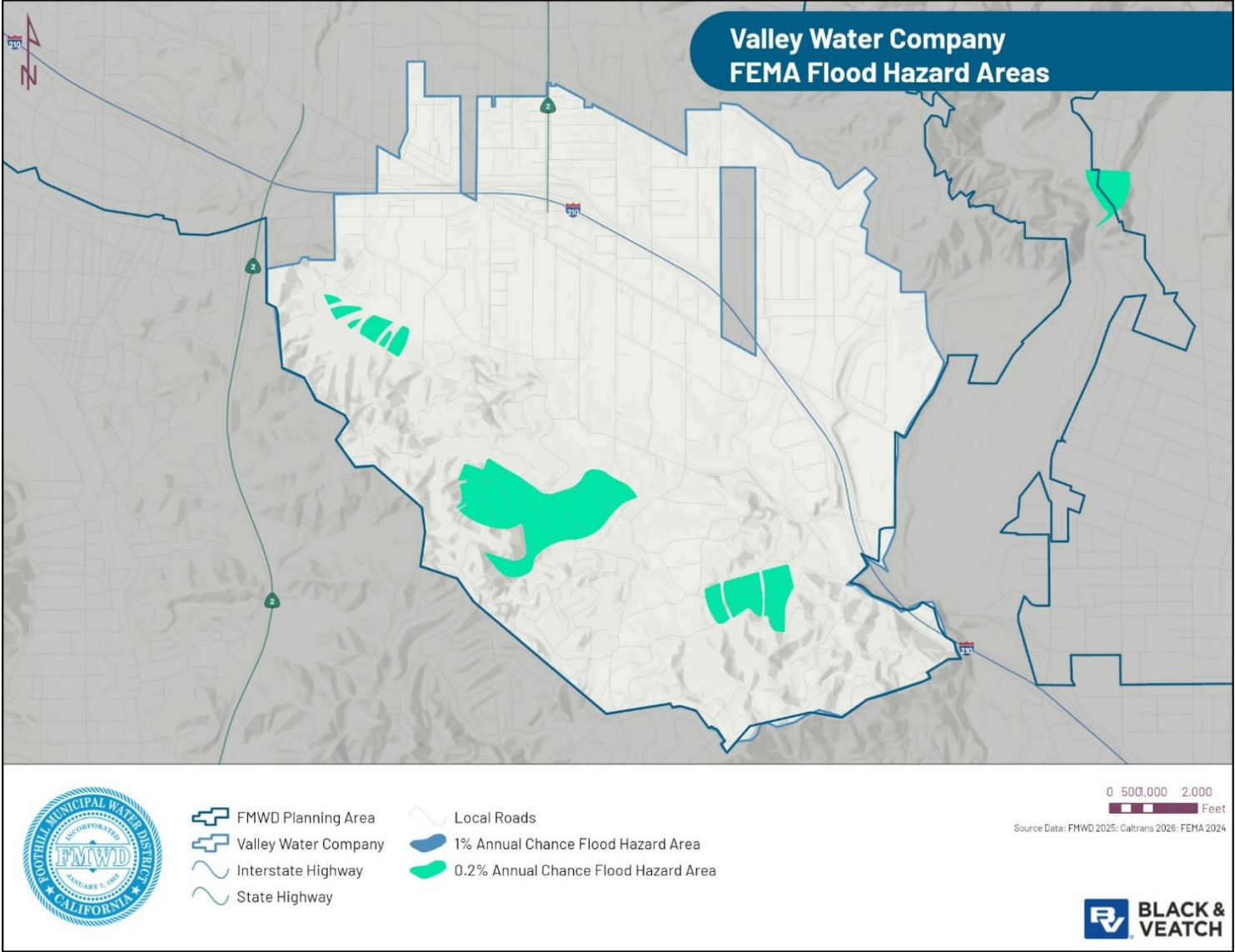


Figure 7-8. Flood Hazard Map – FEMA Flood Hazard Areas

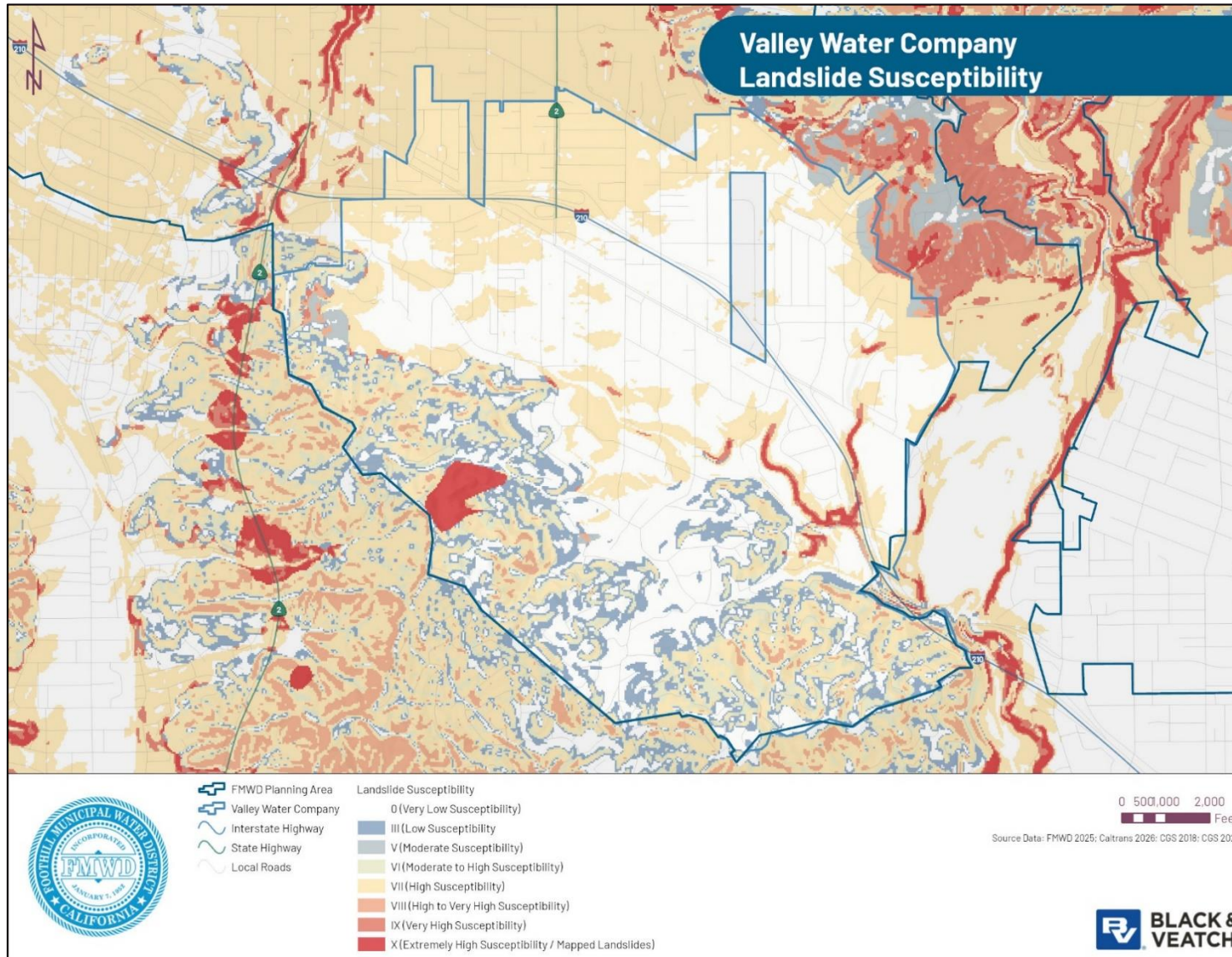


Figure 7-9. Landslide Hazard Map – Landslide Susceptibility



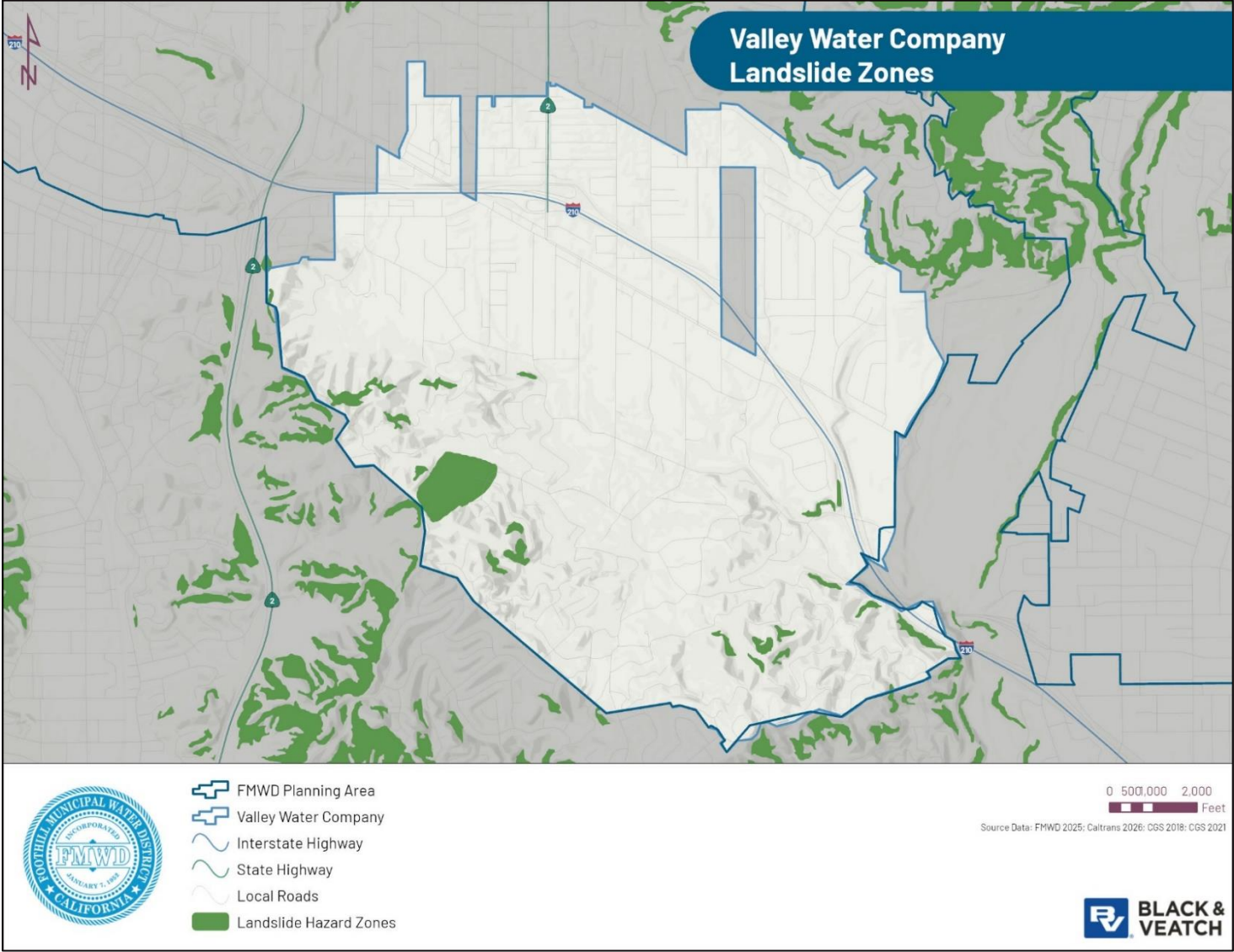


Figure 7-10. Landslide Hazard Map – Zones

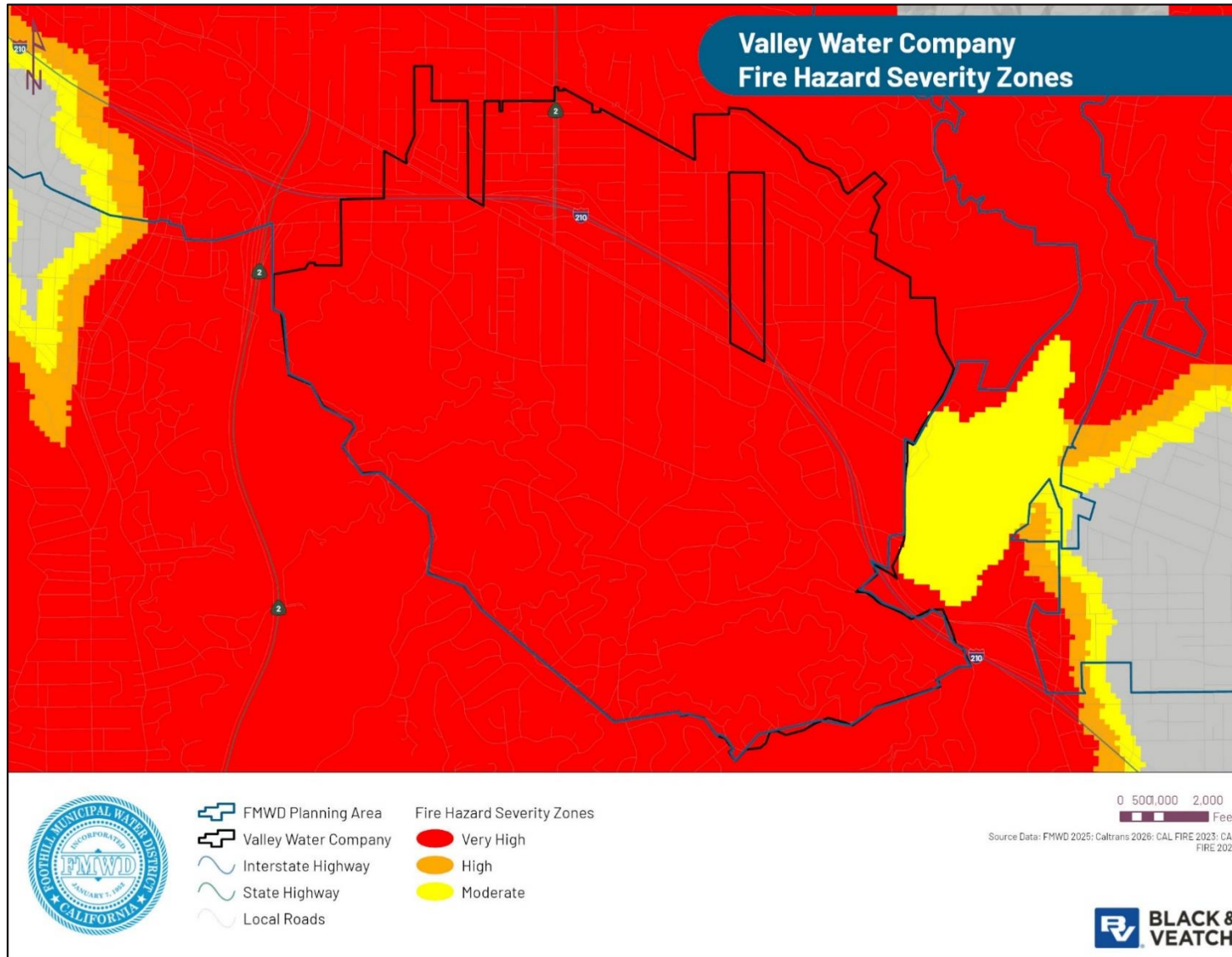


Figure 7-11. Wildfire Hazard Map – Fire Hazard Severity Zones



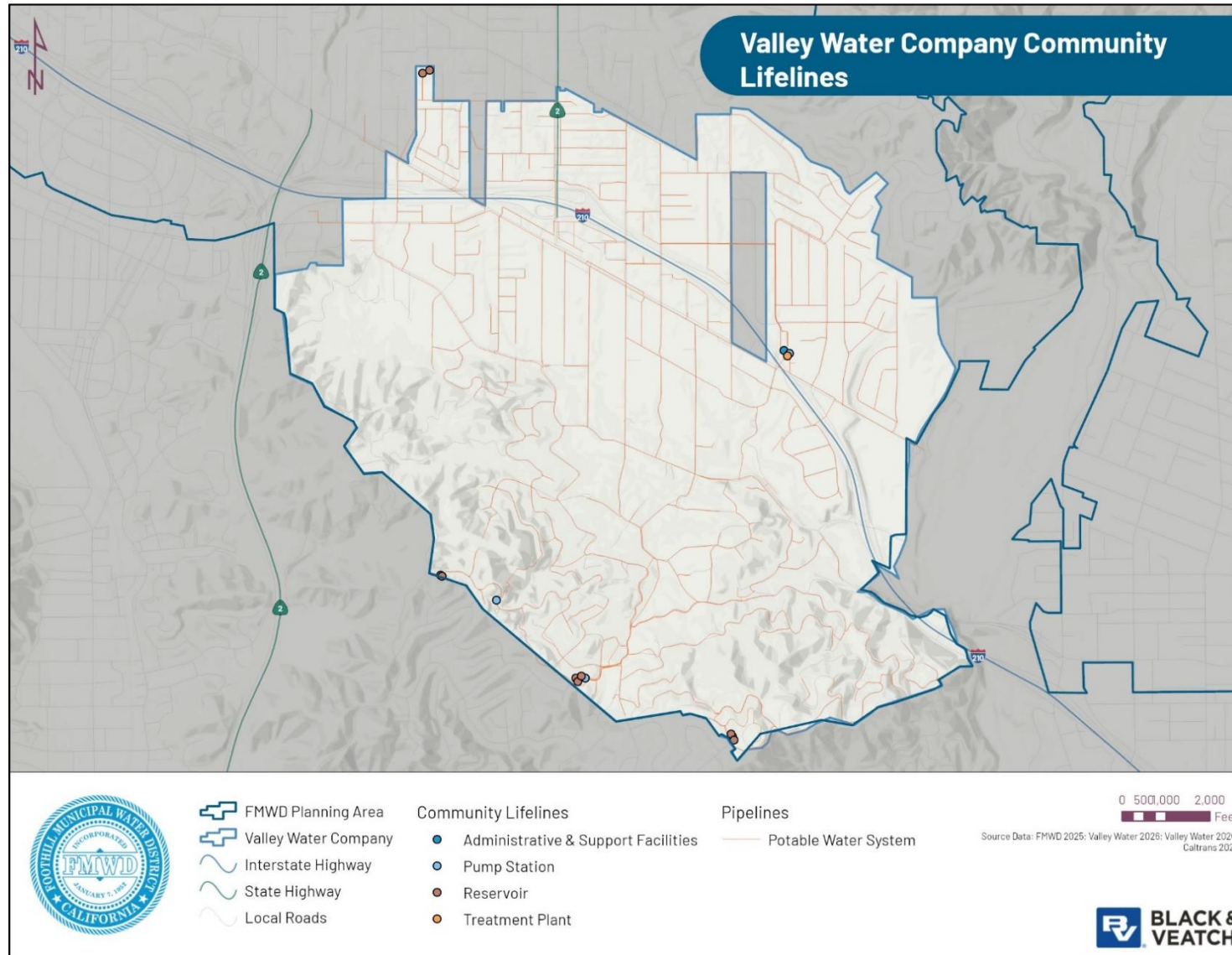


Figure 7-12. Community Lifelines