Santa Clara County Multi-Jurisdictional Hazard Mitigation Plan 2023 Update

Santa Clara Valley Water District - DRAFT

February 21, 2024

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16. Santa Clara Valley Water District

16.1. Hazard Mitigation Plan Points of Contact

The point of contact during the County of Santa Clara Multi-Jurisdictional Hazard Mitigation Action Plan planning process for the Santa Clara Valley Water District was the Program Administrative Supervisor in the Office of Emergency Services. This annex within the MJHMP was developed using information provided by the Santa Clara Valley Water District's Local Planning Team.

Table 264: Santa Clara Valley Water District Local Planning Team Members

Name	Position	Department	Role on Team and in Planning Process
Juan Ledesma	Program Administrative Supervisor	Office of Emergency Services	General oversight, hazard identification, and plan development; program management and floodplain management as appropriate
Andres Acevedo	Senior Management Analyst	Santa Clara Valley Water District	Hazard identification and plan development
Jack Xu	Senior Engineer - Hydro, Hydra & Geo	Hydrology, Hydraulics, and Geomorphology Unit	Hazard identification and plan development
Liang Xu	Hydro, Hydra & Geomorph Manager	Hydrology, Hydraulics, and Geomorphology Unit	Hazard identification and plan development
Jay Lee	Watershed Field Ops Manager	Field Operations Unit	Hazard identification and plan development
Devin Mody	Ops & Maintenance Engineer Support Manager	Watersheds O&M Engineering Support	Hazard identification and plan development
Greg Meamber	Senior Engineer - Operations & Maintenance	Watersheds O&M Engineering Support	Hazard identification and plan development
Nina Merrill	Senior Water Resources Specialist	Water Utility	Hazard identification and plan development
Steven Wu	Senior Engineer - Geotechnical	Santa Clara Valley Water District	Hazard identification and plan development

The District's Local Planning Team Members participated in the MJHMP by attending meetings on the Plan Kick-Off, Risk Assessment, Capabilities Assessment, Mitigation Strategy, Wrap-up, and four one-on-one meetings with the planning consultant. In addition, the district filled out the requested forms on each

section. The district also shared information regarding public opportunities to participate in the draft plan update utilizing the digital survey and seven in-person and virtual public outreach meetings. Further, the District team was provided the opportunity to review the draft plan prior to submittal to Cal OES and FEMA and also provided additional comments multiple times during plan revisions.

The district supported a "whole community" approach to this plan update. Neighboring communities, local and regional agencies involved in mitigation activities, agencies that have the authority to regulate development as well as businesses, academia, and other private and nonprofit interests were invited to be involved in the planning process by participating in planning meetings, public meetings, or reviewing the draft plan. Santa Clara Valley recommended including included the City of San Jose, City of Gilroy, City of Morgan Hill, City of Palo Alto, and Santa Clara County. Table 265 lists additional stakeholders invited to participate in the Planning Process. Valley Water stakeholders reach across the OA as the district serves multiple cities in the county, including Campbell, Cupertino, Los Altos, Los Gatos, Milpitas, Monte Sereno, Morgan Hill, Mountain View, Palo Alto, San Jose, Santa Clara, Saratoga, Sunnyvale, and the unincorporated county. Any disruption to Valley Water's services, and consequently any hazards that impact these areas, could have consequences across the OA. Therefore, a wide variety of stakeholders were provided the opportunity to support Valley Water in developing this plan update. Two stakeholder meetings were held. A list of stakeholders that were able to participate is included in Volume 1 of this plan.

Table 265: Valley Water Stakeholders Invited to Be Involved in the Planning Process

Agency or Organization	Stakeholder Type	Description
American Red Cross	Representatives of nonprofit organizations, including community-based organizations, that work directly with and/or provide support to underserved communities and socially vulnerable populations, among others.	A nonprofit humanitarian organization that provides emergency assistance, disaster relief, and disaster preparedness education in the United States.
American Red Cross – Silicon Valley Chapter	Representatives of nonprofit organizations, including community-based organizations, that work directly with and/or provide support to underserved communities and socially vulnerable populations, among others.	A nonprofit humanitarian organization that provides emergency assistance, disaster relief, and disaster preparedness education in Silicon Valley.
Amateur Radio Emergency Service (ARES)	Representatives of businesses, academia, and other private organizations.	A corps of trained amateur radio operator volunteers organized to assist in public service and emergency communications.
Avenidas	Representatives of nonprofit organizations, including community-based organizations, that work directly with and/or provide support to underserved communities and socially vulnerable populations.	Non-profit dedicated to helping older adults find critical programs and services.

Agency or Organization	Stakeholder Type	Description
CADRE - Collaborating Agencies' Disaster Relief Effort	Representatives of nonprofit organizations, including community-based organizations, that work directly with and/or provide support to underserved communities and socially vulnerable populations.	A leading network of organizations that provide community services that are essential.
California Office of Emergency Services (Cal OES)	Local and regional agencies involved in hazard mitigation activities.	Office responsible for overseeing and coordinating emergency preparedness, response, recovery, and homeland security activities within the state.
California Department of Forestry and Fire Protection	Local and regional agencies involved in hazard mitigation activities.	The fire department of the California Natural Resources Agency.
California Department of Transportation	Agencies that have the authority to regulate development.	An executive department of the U.S. state of California.
Campbell Community Emergency Response Team	Representatives of nonprofit organizations, including community-based organizations, that work directly with and/or provide support to underserved communities and socially vulnerable populations.	A program that helps train people to be better prepared to respond to emergency situations in their communities.
Campbell Union School District	Representatives of businesses, academia, and other private organizations.	An American school district for Primary schools in the greater San Jose, California area.
Cattlemen's Association	Representatives of businesses, academia, and other private organizations.	A nonprofit trade association that represents California's ranchers and beef producers in political affairs.
City of East Palo Alto	Neighboring communities.	A city in San Mateo County, California, United States.
City of Menlo Park	Neighboring communities.	Menlo Park is a city at the eastern edge of San Mateo County.
Cooper-Garrod Estate Vineyards	Representatives of businesses, academia, and other private organizations.	Garrod Farms is a family-owned and operated estate winery and stables.
Cupertino Sanitation District	Agencies that have the authority to regulate development.	Providing wastewater collection and conveyance to the City of Cupertino and areas of Saratoga.
Department of Homeland Security	Agencies that have the authority to regulate development.	The U.S. federal executive department responsible for public security, roughly comparable to the interior or home ministries of other countries.

Agency or Organization	Stakeholder Type	Description
Department of Toxic Substances	Agencies that have the authority to regulate development.	An agency of the government of the state of California that protects public health and the environment from hazardous waste.
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Downtown Streets Team	Representatives of nonprofit organizations, including community-based organizations, that work directly with and/or provide support to underserved communities and socially vulnerable populations.	Teams that restore dignity, inspire hope, and provide a pathway to recover from homelessness.
Emergency Medical Services	Agencies that have the authority to regulate development.	Provides statewide coordination and leadership for the planning, development, and implementation of local EMS systems.
Emergency Services Volunteer Representative	Local and regional agencies involved in hazard mitigation activities.	Organization that ensures public safety, security, and health by addressing and resolving different emergencies.
Federal Aviation Administration	Agencies that have the authority to regulate development.	Offers civil aviation safety enforcement services.
Fellowship Plaza	Representatives of businesses, academia, and other private organizations.	Housing in Saratoga, CA.
Foothill - De Anza Community College District	Representatives of businesses, academia, and other private organizations.	Community college district headquartered on the grounds of Foothill College in Los Altos Hills, California, United States
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Agency or Organization	Stakeholder Type	Description
Foothill - De Anza Community College District Police Department	Representatives of businesses, academia, and other private organizations.	Services include providing and presenting crime prevention information, college outreach programs, patrolling campuses and parking lots, proactive crime suppression, investigating all offenses that occur on the campuses, and informing campus users of the occurrence of crimes specified by federal statute.
Gavilan College	Representatives of businesses, academia, and other private organizations.	A public community college in Gilroy, California.
Gilroy Unified School District	Representatives of businesses, academia, and other private organizations.	Located in the southernmost tip of Santa Clara Valley, California.
Gilroy/Hollister California Highway Patrol	Agencies that have the authority to regulate development.	Has primary patrol jurisdiction over all California highways and roads and streets outside city limits, and can exercise law enforcement powers anywhere within the state.
Google	Representatives of businesses, academia, and other private organizations.	American multinational technology company focusing on artificial intelligence, online advertising, search engine technology, cloud computing, computer software, quantum computing, e-commerce, and consumer electronics.
Hidden Villa Farm	Representatives of nonprofit organizations, including community-based organizations, that work directly with and/or provide support to underserved communities and socially vulnerable populations, among others.	Nonprofit educational organization teaching programs on environmental and multicultural awareness.
Intel Corporation	Representatives of businesses, academia, and other private organizations.	An American multinational corporation and technology company headquartered in Santa Clara, California.
Kaiser Permanente—Santa Clara	Representatives of businesses, academia, and other private organizations.	An American integrated managed care consortium.
Life Moves	Representatives of businesses, academia, and other private organizations.	Provides interim housing and supportive services for homeless families and individuals to rapidly return to stable housing.

Agency or Organization	Stakeholder Type	Description
Loma Prieta Volunteer Fire Department	Local and regional agencies involved in hazard mitigation activities.	Responds to all 911 calls in response area 24 hours a day.
Los Altos Hills County Fire District	Local and regional agencies involved in hazard mitigation activities.	In addition to direct fire suppression and prevention, the District performs support functions such as Water Mains and Hydrant Operations.
Los Altos Hills County Fire District	Local and regional agencies involved in hazard mitigation activities.	In addition to direct fire suppression and prevention, the District performs support functions such as Water Mains and Hydrant Operations.
Los Altos School District	Representatives of businesses, academia, and other private organizations.	Los Altos School District serves the elementary and intermediate educational needs of Los Altos, Los Altos Hills, Mountain View and Palo Alto, United States.
Loma Prieta Resource Conservation District	Local and regional agencies involved in hazard mitigation activities.	Develop and administer a program of soil, water, and related resource conservation in Southern Santa Clara County
Morgan Hill Unified School District	Representatives of businesses, academia, and other private organizations.	A public school district operating eight elementary schools, two middle schools, and three high schools in southern Santa Clara County, California.
Moffett Field Ames Research Center, National Aeronautics and Space Administration (NASA)	Representatives of businesses, academia, and other private organizations.	Major NASA research center at Moffett Federal Airfield in California's Silicon Valley.
National Weather Service, National Oceanic and Atmospheric Administration (NOAA)	Agencies that have the authority to regulate development.	Scientific and regulatory agency within the U.S. Department of Commerce.
Pacheco Pass Water District	Neighboring communities.	Independent special water district.
Palo Alto Chamber of Commerce	Representatives of businesses, academia, and other private organizations.	an association of businesspeople designed to promote and protect the interests of its members in Palo Alto.
Palo Alto Medical Foundation	Representatives of businesses, academia, and other private organizations, and neighboring communities.	A not-for-profit health care organization with medical offices in more than 15 cities in the Bay Area.
Palo Alto Planning and Transportation Commission	Local and regional agencies involved in hazard mitigation activities.	Responsible for making recommendations to City Council regarding development, public facilities, and transportation.

Agency or Organization	Stakeholder Type	Description
Palo Alto Unified School District	Representatives of businesses, academia, and other private organizations, and neighboring communities.	A public school district located near in Palo Alto, California.
Pacific Gas and Electric (PG&E)	Representatives of businesses, academia, and other private organizations, and neighboring communities.	One of the largest combination natural gas and electric utilities in the United States.
Purissima Hills Water District	Local and regional agencies involved in hazard mitigation activities.	Purissima Hills Water District serves roughly 2/3's of Los Altos Hills consisting mostly of residential customers.
Ravenswood Family Health Center	Representatives of businesses, academia, and other private organizations.	A federally qualified health center headquartered in the low-income East Palo Alto area of San Mateo County.
Regional Water Quality Control Board	Agencies that have the authority to regulate development.	Provides government regulatory services related to water pollution and control.
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Regional Water Quality Control Board	Agencies that have the authority to regulate development.	Provides government regulatory services related to water pollution and control.
Rotating Safe Car Park	Local and regional agencies involved in hazard mitigation activities, and neighboring communities.	Allows for temporary overnight parking for homeless individuals or families living out of their cars as a safe alternative to sleeping on the streets or in a homeless shelter.
San Francisquito Creek Joint Powers Authority	Local and regional agencies involved in hazard mitigation activities, and neighboring communities.	The agency works to address the cities' flooding, environmental and recreational concerns.
San José Water	Agencies that have the authority to regulate development.	An investor-owned public utility.
Santa Clara County CERT	Representatives of nonprofit organizations, including community-based organizations, that work directly with and/or provide support to underserved communities and socially vulnerable populations.	Trains residents to prepare for and respond to life-threatening events in their community.
Santa Clara County FireSafe Council	Representatives of nonprofit organizations, including community-based organizations, that work directly with and/or provide support to underserved communities and socially vulnerable populations.	A nonprofit, grassroots organization that provides education and project assistance for homeowners.

Agency or Organization	Stakeholder Type	Description
Santa Clara County FireSafe Council	Representatives of nonprofit organizations, including community-based organizations, that work directly with and/or provide support to underserved communities and socially vulnerable populations.	A nonprofit, grassroots organization that provides education and project assistance for homeowners.
Santa Clara County Local Oversight Program	Local and regional agencies involved in hazard mitigation activities.	Program to oversee assessment and mitigation of contaminated sites to protect groundwater resources, human health, safety, and the environment.
Santa Clara County Local Oversight Program	Local and regional agencies involved in hazard mitigation activities.	Program to oversee assessment and mitigation of contaminated sites to protect groundwater resources, human health, safety, and the environment.
Santa Clara County Parks	Agencies that have the authority to regulate development, and neighboring communities.	Provide, protect, and preserve regional parklands for the enjoyment and education.
Santa Clara County Planning & Development	Agencies that have the authority to regulate development, and neighboring communities.	Plays a key role in supporting economic development and ensuring opportunities for the public to participate in land development.
Santa Clara County Sheriff's Office	Agencies that have the authority to regulate development, and neighboring communities.	A local law enforcement agency that serves Santa Clara County, California.
Santa Clara University	Representatives of businesses, academia, and other private organizations.	A private Jesuit university in Santa Clara, California.
Santa Clara Valley Open Space Authority	Neighboring communities.	An independent special district in Santa Clara County.
Santa Cruz County	Neighboring communities.	A county on the Pacific coast of the U.S. state of California.
Saratoga Amateur Radio Association	Representatives of businesses, academia, and other private organizations.	Provides emergency communications for the City of Saratoga, and promotes amateur radio in the community.
Saratoga Area Senior Coordinating Council	Local and regional agencies involved in hazard mitigation activities.	Help seniors remain physically and mentally active while offering opportunities for socialization and personal growth.
Saratoga CERT	Representatives of nonprofit organizations, including community-based organizations, that work directly with and/or provide support to underserved communities and socially vulnerable populations.	Trains residents to prepare for and respond to life-threatening events in their community.

Agency or Organization	Stakeholder Type	Description
Saratoga Fire Protection District	Local and regional agencies involved in hazard mitigation activities, neighboring communities.	Provide the community with the most efficient and effective fire and emergency service.
Saratoga Fire Protection District	Local and regional agencies involved in hazard mitigation activities, neighboring communities.	Provide the community with the most efficient and effective fire and emergency service.
Saratoga Fire Protection District	Local and regional agencies involved in hazard mitigation activities, and neighboring communities.	Provide the community with the most efficient and effective fire and emergency service.
Saratoga Retirement Community	Representatives of businesses, academia, and other private organizations, and neighboring communities.	Resident-centered, not-for-profit organization managed by PRS Management, Inc., a subsidiary of Pacific Retirement Services.
Silicon Valley Animal Control Authority (SVACA)	Representatives of businesses, academia, and other private organization.	Provides local cities with care of sick, injured, lost & abandoned animals and has an adoption program.
Silicon Valley Clean Energy	Representatives of businesses, academia, and other private organizations, and neighboring communities.	Not-for-profit agency that provides clean electricity for residential and business customers.
San José Police Department, San José Mineta International Airport	Local and regional agencies involved in hazard mitigation activities, neighboring communities.	Specialized team of firefighters trained specifically to handle Aircraft Rescue and Fire Fighting.
Spring Valley Volunteer Fire Department	Representatives of nonprofit organizations, including community-based organizations, that work directly with and/or provide support to underserved communities and socially vulnerable populations.	staffed and operated by men and women volunteers.
St. Louise Hospital (Santa Clara County Hospital System)	Representatives of nonprofit organizations, including community-based organizations, that work directly with and/or provide support to underserved communities and socially vulnerable populations.	Community hospital.
Stanford Healthcare	Representatives of businesses, academia, and other private organizations, and neighboring communities.	Multispecialty clinic that provides convenient access to advanced, specialty care in the South Bay.
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Agency or Organization	Stakeholder Type	Description
Stanford Healthcare	Representatives of businesses, academia, and other private organizations, and neighboring communities.	Multispecialty clinic that provides convenient access to advanced, specialty care in the South Bay.
Stanford University	Representatives of businesses, academia, and other private organizations, and neighboring communities.	A private research university in Stanford, California.
Stanford University Board of Trustees	Representatives of businesses, academia, and other private organizations, and neighboring communities.	Board members of the university.
Stanford University Office of Emergency Management	Representatives of businesses, academia, and other private organizations, and neighboring communities.	The administrative function charged with creating the framework within which the University can reduce vulnerability and sensitivity to hazards and cope with crisis and disasters.
Stanford University, IT Facilities, Infrastructure, and Resilience	Representatives of businesses, academia, and other private organizations, and neighboring communities.	Defines procedures, creates tools, and leverages partnerships to increase emergency response preparedness.
Stanford University, Water Resources and Civil Infrastructure	Representatives of businesses, academia, and other private organizations, and neighboring communities.	Manages and maintains Stanford's civil infrastructure: water, sewer, and storm drainage systems.
Stanford University/Real Estate	Representatives of businesses, academia, and other private organizations, and neighboring communities.	Performs asset and property management, leasing, sales and acquisition, and development services.
The Villas	Neighboring communities	A neighborhood.
Valley Water Flood Information Team	Representatives of nonprofit organizations, including community-based organizations, that work directly with and/or provide support to underserved communities and socially vulnerable populations, local agencies.	A group of volunteer district employees who are willingly dispatched before, during, or after large storms to flooded or at-risk sites to assist the water district's EOC.
Vista Center for the Blind and Visually Impaired	Representatives of businesses, academia, and other private organizations.	Empowers individuals who are blind or visually impaired to embrace life to the fullest through evaluation, counseling, education, and training.
West Valley Clean Water Program Authority	Local and regional agencies involved in hazard mitigation activities.	Serves as the Stormwater Pollution Prevention Authority.

Agency or Organization	Stakeholder Type	Description
West Valley College	Representatives of businesses, academia, and other private organizations.	Public community college in Saratoga, California.
West Valley Sanitation District	Local and regional agencies involved in hazard mitigation activities.	Provides wastewater collection, transport, and disposal services.
Westwind Barn	Representatives of businesses, academia, and other private organizations.	State-of-the-art horse boarding and training facility.
County of Santa Clara	Neighboring jurisdiction, local agency involved in hazard mitigation.	Response for engaging the whole community in assessing needs and developing strategies to achieve stronger mitigation capabilities within the Santa Clara County Operational Area.
City of Campbell	Neighboring communities.	A city in Santa Clara County.
City of Cupertino	Neighboring communities.	Located in Silicon Valley.
City of Gilroy	Neighboring communities.	A city in Santa Clara County.
City of Los Altos	Neighboring communities.	A city in Santa Clara County.
Town of Los Altos Hills	Neighboring communities.	A city in Santa Clara County.
Town of Los Gatos	Neighboring communities.	A city in Santa Clara County.
City of Milpitas	Neighboring communities.	A city in Santa Clara County.
City of Morgan Hill	Neighboring communities.	A city in Santa Clara County.
City of Mountain View	Neighboring communities.	A city in Santa Clara County.
City of Palo Alto	Neighboring communities.	Located in Silicon Valley.
City of San José	Neighboring communities.	Located in Silicon Valley.
City of Santa Clara	Neighboring communities.	A city near San Jose, in California's Silicon Valley.
City of Saratoga	Neighboring communities.	Located in Silicon Valley.
City of Sunnyvale	Neighboring communities.	Located in the Santa Clara Valley.
Midpeninsula Regional Open Space District	Representatives of businesses, academia, and other private organizations, and neighboring communities.	A non-enterprise special district in the San Francisco Bay Area.
Santa Clara County Fire Department	Local and regional agencies involved in hazard mitigation activities, and neighboring communities.	A California Fire Protection District serving Santa Clara County.

16.1.1. Public Outreach and Engagement

In addition to inviting a wide range of stakeholders, the district supported public outreach and engagement through distributing a digital survey utilizing social media. This survey reached members of underserved populations, including primarily non-English speaking households. Valley Water coordinated with the County and other participating jurisdictions in distributing this survey. Following the public survey

period, Valley Water also reviewed the comments, with particular attention given to comments regarding flood, drought, and dam failure, which are of significant importance to maintaining Valley Water operations. It was determined concerns expressed by the public were either addressed by existing programs or in the vulnerabilities identified in section 16.7 of this annex and thus incorporated into the current and new mitigation actions identified herein.

In addition, the MJHMP was discussed at two virtual and five in-person public meetings across Santa Clara County. These public meetings were held in partnership with the Santa Clara County Multi-Jurisdicitional Hazard Mitigation Planning team. These in-person meetings were targeted towards areas with socially vulnerable populations. These meetings were also designed to be accessible for AFN (access and functional needs) populations. The public was also provided the opportunity to comment on the draft plan.

Valley Water had staff representation in the audience to respond and capture all inquiries pertaining to Valley Water's jurisdictions, including the two areas with vulnerable populations mentioned above. Those public meetings were conducted at the Campbell Community Center, targeting vulnerable populations in the City of San Jose and central Santa Clara Valley. The County geographically designed this approach to ensure that those residents who could not travel to the South County community outreach event in Gilroy still had an opportunity to have their voices heard. The Campbell Community outreach event included presentations from the Multi-Jurisdicitional Hazard Mitigation Planning team on the planning process, how hazards and vulnerabilities are identified in the County, and how residents can interact with the planning team to ensure their concerns about their communities are heard and reflected in the planning process. More than 40 residents from across the County, including vulnerable pockets in the City of San Jose and the Santa Cruz mountain range, interacted and worked with the MJHMP team to voice their concerns.

The participation of the Santa Clara Valley Water District and its stakeholders helped inform the development of the MJHMP and this annex in accordance with current priorities. The new plan continues to expand upon the work of the prior plan including emphasizing partnerships both within jurisdictions and special districts as well as with external stakeholders. Further, there is an increased emphasis on climate change, reflecting the increased understanding of the risk this hazard poses to the OA. The District did not identify additional changes in priorities to be highlighted in their annex.

16.2. Valley Water Profile

The following is a summary of key information about the district and its history:

Since 1929, Santa Clara Valley Water (SCVW) has provided safe, clean water, flood protection, and stewardship of streams. The district oversees ten dams/reservoirs, three water treatment plants, and conducts water tests in their state-of-the-art water quality laboratory. SCVWD also manages different water sources, like the snowmelt from Sierra Nevada, which travels hundreds of miles to the Santa Clara County treatment plants, where it accounts for half of the water usage. Valley Water regulates the groundwater basins, which hold more water than the ten surface reservoirs combined. These basins are replenished with local and imported water through the percolation ponds and stream beds.

The SCVWD purifies recycled water to provide a drought-proof, locally controlled water supply that will help meet the needs of Silicon Valley now and in the future. Water conservation efforts are also essential in providing a reliable water supply and the district's long-term water supply plan calls for annual water savings of more than 32 billion gallons per year by 2030.

The district looks after 294 miles of creeks in Santa Clara County and manages the flood protection infrastructure. They build projects such as the Guadalupe River and Lower Silver Creek Project, while maintaining all streams and waterways to provide maximum flood protection.

Approximately 1/3 of the 800 miles of creeks and rivers in Santa Clara County are owned by Valley Water. Valley Water's environmental work protects and restores habitats and encourages the return of endangered species such as the red-legged frog, steelhead trout, and salt marsh harvest mouse. Valley Water also partners with cities and the county to provide open space and recreational opportunities at

many of its ten reservoirs and along creeks throughout the county. Since 2000, public access to more than 70 miles of new creekside trails have been made available in the county.

16.3. Development Trends

The Santa Clara Valley Water District serves several cities in the county, Campbell, Cupertino, Los Altos, Los Altos Hills, Los Gatos, Milpitas, Monte Sereno, Morgan Hill, Mountain View, Palo Alto, San Jose, Santa Clara, Saratoga, Sunnyvale and unincorporated areas. The Santa Clara Valley Water District is currently retrofitting dams to protect from seismic activity; however, there are no new developments that would affect the population in hazard zones.

16.4. Capability Assessment

16.4.1. Resources for the 2023 Planning Initiative

The following technical reports, plans, and regulatory mechanisms were reviewed to provide information for inclusion into the 2023 Multi-Jurisdiction Hazard Mitigation Plan for both Volume 1 and Volume 2 (Santa Clara Valley Water District Annex). All the below items were additionally reviewed as part of the full capability assessment for the Santa Clara Valley Water District.

- **Operating Area Programs** – Programs including the Dam Safety Program and the Water Conservation Program were reviewed to identify cross-planning initiatives for inclusion as mitigation projects.
- **Additional Plans** – Additional plans such as the Climate Action Plan, Water Supply Master Plan, Urban Water Management Plan, and One Water Plan were reviewed to assess existing and potential mitigation strategies.
- **Technical Reports and Local Information** - Additional resources such as maps, existing local documentation, and other resources were used to complete the Santa Clara Valley Water District Annex.

16.4.2. Full Capability Assessment

An assessment of planning capabilities is presented in Table 266. An assessment of fiscal capabilities is presented in Table 267. An assessment off staffing capabilities is presented in Table 268. An assessment of administrative and technical capabilities is presented in Table 269. Information on National Flood Insurance Program (NFIP) compliance is presented in Table 270. An assessment of education and outreach capabilities is presented in Table 271, and the community's adaptive capacity for the impacts of climate change is presented in Table 272. SCVWD's transition of its hazard mitigation plan under the County was in part to leverage the knowledge gained from the planning process and other Planning Partners. It is expected that not only will Valley Water be able to refine the expansion and improvement opportunities listed, but also add additional ones over time.

Table 266: Planning Capabilities

Planning, Legal, or Regulatory Capability	Local Authority	Other Jurisdiction Authority	State Mandated	Integration Opportunity?
Capital Improvement Plan	Yes	No	No	Yes
How often is the plan updated? *Every five years.*				
Local Emergency Operations Plan	Yes	No	No	Yes

Planning, Legal, or Regulatory Capability	Local Authority	Other Jurisdiction Authority	State Mandated	Integration Opportunity?
Comment: The EOP was adopted in 2017.				
Continuity of Operations Plan	Yes	No	No	Yes
Comment: The plan formerly is a Business Continuity plan as reflected by multiple business units not one that encompasses the whole enterprise.				
Green Infrastructure Plan	Yes	No	No	Yes
Comment: Valley Water participated in development of the Santa Clara County Stormwater Resources Plan as well as the South County Stormwater Resources Plan. These are similar to municipality green infrastructure plans but at a broader scale.				
Other Plans	Yes	No	No	Yes
Comment: Other Valley Water plans that identify projects to include in the mitigation strategy and that could be used to implement mitigation actions include: Water Supply Master Plan, County Water Reuse Master Plan, 2015 South Bay Water Recycling Strategic and Master Planning, 2022 South County Recycled Water Master Plan, Dam Safety Program, and the San Francisco Bay Area Integrated Regional Water Management Plan.				

Table 267: Financial Capabilities

Financial Capability	Could the resource be used to fund future mitigation activities?	Has the funding resource been used in the past for mitigation activities? If yes, for what type of mitigation activities?
Capital Improvements Project Funding	Yes	Yes. Many of Valley Water's past and present projects in the CIP are identified as hazard mitigation projects. For example: • Anderson seismic retrofit, Guadalupe and Calero seismic retrofits. • Pipeline rehabilitation/replacement projects: Cross Valley Pipeline, Almaden Valley Pipeline, and Calero Pipeline rehabilitation. • Flood protection projects: Cunningham flood detention, Rancho San Antonio flood detention, McKelvey Park flood detention, and Llagas.
Authority to Levy Taxes for Specific Purposes	Yes	Yes. Flood management, dam seismic projects and vegetation management.
Incur Debt through General Obligation Bonds	No	N/A
Incur Debt through Special Tax Bonds	No	N/A

Financial Capability	Could the resource be used to fund future mitigation activities?	Has the funding resource been used in the past for mitigation activities? If yes, for what type of mitigation activities?
State Funding Programs	Yes	Yes. Valley Water manages multiple federal and state grants and has technical grant writing capabilities to implement grant-funded projects. Valley Water's grant writing capacity has been used to assess and mitigate risk in the past and will continue to do so into the future. Valley Water has obtained grants to provide drought relief and managed grants associated with the Anderson Dam Seismic Retrofit. Many of the grants administered by Valley Water include flood risk reduction grants.
Public or Private Partnership Funding Sources	No	N/A
Other Federal Funding Programs	Yes	Yes. Valley Water manages multiple federal and state grants and has technical grant writing capabilities to implement grant-funded projects. Valley Water has obtained grants to provide drought relief and managed grants associated with the Anderson Dam Seismic Retrofit. Many of the grants administered by Valley Water include flood risk reduction grants
Other Funding Sources	No	N/A

Table 268: Staffing Capability

Staffing Capability	Have Capability?	Is staffing adequate to enforce regulations?	Is staff trained on natural hazards and mitigation?
Emergency Manager	Yes Full Time Office of Emergency Services	Yes	Yes
Civil Engineer	Yes Full Time Water Utility & Watersheds Divisions	Yes	Yes
Engineers or professionals trained in building or infrastructure construction practices	N/A	N/A	N/A

Staffing Capability	Have Capability?	Is staffing adequate to enforce regulations?	Is staff trained on natural hazards and mitigation?
Planners or engineers with knowledge of land development and land management practices	N/A	N/A	N/A
Planners or engineers with an understanding of natural hazards	Yes	Yes	Staff is trained on natural hazards and responding to incidents.
Surveyors	Yes	Yes	No
GIS Coordinator or personnel skilled or trained in GIS applications	Yes Full Time The Software Services Unit	N/A	Yes
Staff with training in benefit/cost analysis	**Yes**	**Yes**	Staff is trained on natural hazards and responding to incidents.
Scientist familiar with natural hazards in local area	N/A	N/A	N/A

Table 269: Administrative and Technical Capabilities

Administrative or Technical Capability	Have Capability?	Has the capability been used to assess or mitigate risk in the past? If yes, what type of hazard event?
Maintenance programs to reduce risk	No	N/A
Mutual aid agreements	No	N/A
Hazard data and information	Yes	Yes, for flooding. The Hydrology Hydraulics & Geomorphology is very capable in running water flow models on the various creeks that Valley Water has jurisdiction over. ALERT real time data can be viewed at the link below. https://www.valleywater.org/your-water/alert-system-real-time-data
Hazus analysis or GIS software	Yes	GIS Software: Yes, for flooding and drought. Valley Water's GIS team conducts the following: • Maintain and update a GIS layer of localized flooding "hot spots" throughout the County. • Maintain and update GIS to evaluate catastrophic dam failure scenarios. • Develop, update, and maintain GIS inventories of essential facilities.

Administrative or Technical Capability	Have Capability?	Has the capability been used to assess or mitigate risk in the past? If yes, what type of hazard event?
Grant writing	Yes	Yes. Valley Water has obtained grants to provide drought relief and managed grants associated with the Anderson Dam Seismic Retrofit. Many of the grants administered by Valley Water include flood risk reduction grants, mitigation planning grants, and flood protection grants, including a $3 million Hazard Mitigation Grant to replace the Pope Chaucer Bridge in Palo Alto. https://aqua.valleywater.org/organization/divisions-offices/administration/financial-planning-management-services-division/unit/treasury-debt-mgt-program
Does your district have any established warning systems or services for hazard events?	No	N/A

Valley Water has a unique position in the NFIP. As a special district, they do not have permit authorities to regulate development within the floodplain and are not a recognized participating community by the FEMA Community Status Book. However, they have been included as a community under the CRS program because many of their programs are creditable for the cities they serve under the CRS. Valley Water also has their own audit process for verifying their CRS programs. Valley Water supports NFIP communities through water management and flood control practices and providing information for improved CRS scores but is not a direct participant.

Because of these unique conditions, Valley Water:

- Has not adopted NFIP minimum floodplain management criteria;
- Has not adopted the latest effective Flood Insurance Rate Map;
- Does not implement or enforce floodplain management regulations;
- Does not have a designee agency to implement commitments and requirements of NFIP; and
- Does not have a description of how participants implement substantial improvement/substantial damage provisions of floodplain management regulations after an event.

Table 270: National Flood Insurance Program (NFIP) Support

Topic	Response
Does Valley Water participate in the NFIP?	No, the District is not eligible to participate in the NFIP. However, the communities and unincorporated areas within the OA the District serves do participate and have adopted, implemented, and enforced all local floodplain management regulations.
Does Valley Water have CFMs?	Valley Water has Certified Floodplain Managers on staff who can support NFIP and flood-risk related activities.

Topic	Response
Does Valley Water support NFIP-related initiatives?	Yes, Valley Water actively supports public outreach and engagement including educating the public on their flood risk and options for flood insurance. This successful approach to public outreach is coordinated with jurisdictions across the OA. Members of the public can also get help from Valley Water on understanding basic flood information including insurance, zones, and mapping questions.
Does Valley Water support Community Rating System (CRS)-related initiatives?	Yes, Valley Water is a leader in supporting local CRS programs. Valley Water is the only special district in the nation that helps operate CRS including providing technical assistance for jurisdictions that participate in the NFIP. Valley Water is committed to mitigation as well as the CRS program. Floodplain Management Planning helps communities receive additional CRS credit which can directly relate to decreased insurance premiums around the OA. Valley Water is currently in the process of developing a Floodplain Management Plan which will meet this requirement for the CRS communities.

Table 271: Education and Outreach Capabilities

Education or Outreach Capability	Response	How does the personnel, program, or organization relate to disaster resilience and mitigation?	Could the personnel, program, or organization help implement future mitigation activities?
Does your district have a Public Information Officer or Communications Office?	Yes	Valley Water has ongoing public education or information program (e.g., responsible water use, fire safety, household preparedness, environmental education)	Unknown, would need to have a full discussion on specifics.
Does your district have personnel skilled or trained in website development?	Yes	It would likely be in a roll of support services.	Unknown
Does your district have hazard mitigation information available on your website?	Yes	The Office of Emergency Services maintain the external site that the public has access to information on the Valley Water Hazard Mitigation Program	Yes
Does your district utilize social media for hazard mitigation education and outreach?	No	N/A	N/A

Education or Outreach Capability	Response	How does the personnel, program, or organization relate to disaster resilience and mitigation?	Could the personnel, program, or organization help implement future mitigation activities?
Does your district have any ongoing public education or information programs that could be used to communicate hazard-related information?	Yes	Each year, Education Outreach engages over 15,000 students, teachers and members of the public in learning about water and Valley Water's role in Santa Clara County. Our virtual and in-person classroom and tour programs engage students in hands-on learning to promote water conservation, watershed stewardship, pollution reduction and flood awareness. Water 101 Academy is a 5-session program that is open to residents of Santa Clara County who want to gain an understanding of local water issues and learn about current and future water projects going on in their local communities. • Water 101 Academy | Santa Clara Valley Water • Water Education Programs and Events | Santa Clara Valley Water • Library Programs | Santa Clara Valley Water • Distance Learning Programs | Santa Clara Valley Water	Yes

Education or Outreach Capability	Response	How does the personnel, program, or organization relate to disaster resilience and mitigation?	Could the personnel, program, or organization help implement future mitigation activities?
Does your district have natural disaster or safety related school programs?	Yes	Valley Water's Education Outreach Team offers a hybrid water education program for the 2022-2023 year, with both virtual and in-person program options. • School Classroom Programs | Santa Clara Valley Water • Teacher Resources | Santa Clara Valley Water • Outdoor Classroom Field Trips | Santa Clara Valley Water • After School Groups and Clubs | Santa Clara Valley Water	Yes

Table 272: Adaptive Capacity for Climate Change

Adaptive Capacity Assessment Question	District Rating
Technical Capacity	
District-level understanding of potential climate change impacts	
Comment: Valley Water Board of Directors adopted a **Climate Change Action Plan (CCAP)** in July 2021. The CCAP includes goals for mitigation (greenhouse gas reduction) and adaptation (for water supply, flood risk, environmental stewardship, and emergency preparedness); considers high priority actions for implementation, and tracks flagship metrics to demonstrate success. An assessment of climate related risks and vulnerabilities underlies the CCAP's goals, strategies and actions.	
District-level monitoring of climate change impacts	
Comment: Valley Water will track quantitative metrics for a select group of metrics, covering aspects of water supply, flood risk, environmental stewardship, and emergency preparedness that are influenced by climate-related impacts.	
Technical resources to assess proposed strategies for feasibility and externalities	
Comment: Valley Water engages its staff across all divisions, including water utility and watersheds, to track high priority actions, and incorporate climate change into existing activities.	
District-level capacity for development of greenhouse gas emissions inventory	

Adaptive Capacity Assessment Question	District Rating
Comment: Valley Water currently developing a Greenhouse Gas Reduction Plan with final expected in late 2023. A comprehensive inventory of scope 1,2, and 3 emissions will form the basis of quantified reduction measures included in the plan.	
Capital planning and land use decisions informed by potential climate impacts	
Comment: Valley Water working on how to address climate change for existing and new planned efforts, including CIP, asset management, and hydrologic modeling.	
Participation in regional groups addressing climate risks	
Comment: We participate in regional efforts like the County Climate Collaborate and Coastal Hazards Adaptation Resiliency Group (CHARG) and coordinate with other entities such as City of San Jose and City of Campbell.	
Implementation Capacity	
Clear authority/mandate to consider climate change impacts during public decision-making processes	
Comment: We participate in regional efforts like the County Climate Collaborate and Coastal Hazards Adaptation Resiliency Group (CHARG) and coordinate with other entities such as City of San Jose and City of Campbell.	
Identified strategies for greenhouse gas mitigation efforts	
Comment: Currently developing a Greenhouse Gas Reduction Plan but already implementation mitigation efforts such as fleet electrification and procurement of electricity from renewable sources.	
Identified strategies for adaptation to impacts	
Comment: Examples: Diversify local water supply; Increase water conservation efforts; Improve flood preparedness of people, property, and habitat; Protect and enhance ecosystems to improve climate change resilience; Maximize Valley Water's emergency preparedness for climate related impacts.	
Champions for climate action in local government departments	
Comment: Coordinating with local departments such as cities and the County of Santa Clara.	
Political support for implementing climate change adaptation strategies	
Comment: Board of Directors support given our Ends Policy E-5 and adoption of the Climate Change Action Plan (2021).	
Financial resources devoted to climate change adaptation	
Comment: Valley Water has annual budget for the Climate Change Action Plan as well as dedicated funding for development of its Greenhouse Gas Reduction Plan.	
Local authority over sectors likely to be negative impacted	
Comment: Riparian corridors and reduced connectivity for habitat that may be impacted by climate change and increased temperatures.	
Public Capacity	
Local residents' knowledge of and understanding of climate risk	
Comment: Several local efforts are ongoing including Valley Water work and that of County of Santa Clara. These efforts all include outreach to the public.	
Local residents' support of adaptation efforts	
Comment: Through outreach efforts it appears the public is aware and supportive of climate action. Valley Water received dozens of comments from individuals and organizations during public review of CCAP.	

Adaptive Capacity Assessment Question	District Rating
Local residents' capacity to adapt to climate impacts	
Comment: Various local organizations including nonprofit environmental groups and open space agencies are working on climate change.	
Local economy current capacity to adapt to climate impacts	
Comment: Adaptation such as an increase in electric vehicles seems to be growing in popularity locally.	
Local ecosystems capacity to adapt to climate impacts	
Comment: This is a challenge given increased development pressure from the state as well as impacts from a large, unhoused population, compounded by drought and flood conditions that appear to be more significant due to climate change.	

16.4.3. Opportunities to Expand Upon and Improve Existing Capabilities

The hazard mitigation planning process presented the opportunity for the community to discuss and evaluate their current capabilities however, building mitigation capabilities is an ongoing process. New capabilities can be added which will support mitigation. Current capabilities can also be enhanced to actively support mitigation and reduce risk. Significant efforts have been made to increase the capabilities of jurisdictions across the OA. By participating in this plan update, each participant is reinforcing their support for mitigation and understanding of the capabilities they need to successfully implement mitigation measures. Actions that can expand and improve existing authorities, plans, policies, and resources for mitigation include:

- Budgeting and passing policies and procedures for mitigation actions.
- Adopting and implementing stricter mitigation regulations.
- Approving the training of staff for mitigation activities.
- Approving mitigation updates to existing plans as new needs are recognized.
- Continuing to update plans as necessary to ensure they are current and reflect the needs of the community or special district.
- Further developing warning systems and messaging.
- Creating and implementing additional public education and outreach offerings and increasing the volume of translated materials.
- Ensuring grant opportunities are capitalized upon to meet mitigation goals.

Each type of the four FEMA-identified capabilities were evaluated, in addition to OA-priority capabilities like adaptive capacity. Gaps and limitations, if any, are discussed in the tables above. Additional special district-specific opportunities to expand on and improve capabilities for reducing risk include:

16.4.3.1. Regulatory and Planning

- Budgeting and passing policies and procedures for mitigation actions.
- Adopting and implementing stricter mitigation regulations.
- Continuing to participate in the Community Rating System and identify additional actions to reduce both flood risk and flood insurance premiums.
- Approving mitigation updates to existing plans as new needs are recognized.

- Continuing to update plans as necessary to ensure they are current and reflect the needs of the special district.

16.4.3.2. Administrative and Technical

- Approving the hiring and training of staff for mitigation activities. Ensure staff have time, resources, and technical expertise to support implementation of the mitigation plan.
- Increasing the number of dedicated grant writing staff.

16.4.3.3. Financial

- Ensuring grant opportunities are capitalized upon to meet mitigation goals, including new opportunities like the Building Resilient Infrastructure and Communities (BRIC) grant program.
- Continuing to identify projects that qualify for HMA, HMGP, and BRIC assistance to accomplish additional mitigation actions. This year Valley Water has already applied for HMA grants for the Coyote Creek Flood Protection Project and Sunnyvale East and West Channel Project (East Channel Only). Valley Water is also currently considering applying for HMA grants for at least four other flood control projects over the next few years and considering others in the future. Valley Water will continue to consider other new or current federal or state grant programs that may become available.

16.4.3.4. Education and Outreach

- Further developing warning systems and messaging.
- Creating and implementing additional public education and outreach offerings and increasing the volume of translated materials.

Valley Water's transition of its Local Hazard Mitigation Plan under the County was in part to leverage the knowledge gained from the process and other member agencies. It is expected that not only will Valley Water be able to refine the listed examples above but also include others to the list over time. The plan maintenance process outlined in this plan will provide Valley Water the opportunity to continue to identify gaps and opportunities to expand upon them through this capability analysis and the identification of related mitigation actions.

16.5. Integration with Other Planning Initiatives

This section describes the process for integrating the hazard mitigation plan into local planning mechanisms.

16.5.1. Past and Existing Integration

Santa Clara Valley Water District is dedicated to hazard mitigation and hazard mitigation planning. Valley Water's 2017 Local Hazard Mitigation Plan was integrated into the 2020 Urban Water Management Plan (UWMP). This plan is a long-term water resource planning document that ensures adequate water supplies are available to meet existing and future water needs within its service area. A Water Shortage Contingency Plan is a part of the UWMP, which establishes actions and procedures for managing water supplies and demands during water shortages due to drought or other emergencies. The 2017 LHMP was reviewed as part of this planning process to identify capabilities and resources and maintain consistency in efforts to develop strategies to reduce vulnerability to disaster. The 2017 LHMP was also integrated into the 2021 Climate Change Action Plan, which identified plans with recommended actions related to addressing climate change.

Existing plans that reflect the goals, risk assessment and/or recommendations of the hazard mitigation plan include:

- **Dam Safety Program -** The water district recognizes the catastrophic nature of potential dam failure and operates a comprehensive dam safety program to protect the public. This program ensures dams are compliant with the latest design regulations, with special emphasis for seismic risks. The program also ensures surveillance, monitoring, inspections, maintenance, and emergency preparedness. As the owner of 10 dams in the OA, Valley Water participates in monthly meetings and ongoing program efforts.
- **Water Conservation Program –** Valley Water offers a variety of water conservation programs related to outdoor conservation, landscaping, indoor conservation, laundry to landscape, and water waste. These programs mitigate drought risk by addressing future drought induced water shortages.
- **Santa Clara Basin Storm Water Resource Plan –** This plan identifies and prioritizes potential stormwater and dry weather runoff capture projects in the Santa Clara Basin of Santa Clara County.
- **San Francisco Bay Area Integrated Regional Water Management Plan (2019)** – This plan outlines objectives to protect watershed health, improve flood management, and protect environmental resources.
- **Water Supply Master Plan 2040** – This plan presents Valley Water's strategy for meeting the county's future water needs with consideration for future droughts and climate change impacts. In addition, the Countywide Water Reuse Master Plan developed portfolios for potable and nonpotable reuse expansion in the County.
- **2021 Climate Change Action Plan** – The CAP outlines climate change mitigation goals (Chapter 4), identifies vulnerability and risk future risk to Santa Clara's water system.
- **2020 Urban Water Management Plan** – The plan addresses drought risk, includes a water shortage contingency plan, and provides details about the county's water conservation program.
- **One Water Plan** - The One Water Plan integrates the water supply, flood protection, and stream stewardship missions of Valley Water and looks for opportunities to further protect and enhance water resources.

16.5.2. Opportunities for Future Integration

The following plans and programs do not currently integrate the goals, risk assessment and/or recommendations of the hazard mitigation plan, but provide an opportunity for future integration:

- **Floodplain Management Plan** – Valley Water is currently in the process of updating the Floodplain Management Plan. This plan will expand upon some of the existing vulnerability data, information, and mitigation actions in this plan. Since the update is ongoing, the County provided information to Valley Water's plan developer at Valley Water's request. This plan is anticipated to be completed by the end of 2024.
- **Emergency Plans** – An opportunity exists for SCVWD to coordinate with local jurisdictions to integrate the district's mitigation strategies and goals into existing COOP, EOP, and other plans.

While Valley Water has already taken significant steps to integrate information on hazard mitigation into other planning mechanisms, there is still the opportunity to coordinate with other jurisdictions to integrate into their plans including a multijurisdictional Floodplain Management Plan. Valley Water has a plan developer identified for this plan and will be leading the update. Risk assessment data was already provided which will be integrated into this forthcoming plan.

16.6. Valley Water-Specific Natural Hazard Event History

Table 273 lists all past occurrences of natural hazards within the district.

Table 273: Natural Hazard Events

Type of Event	FEMA Disaster # (if applicable)	Date	Preliminary Damage Assessment
California Severe Winter Storm	DR-4301	02/14/2017	$ 450,047

16.7. Valley Water-Specific Vulnerabilities

Limited data on the exact location and values of Valley Water assets was available to the contractor at the time of completion of the risk assessment. Those that were available were included on the maps at the end of this annex, but these may not include all Valley Water assets.

Valley Water has a unique position in the planning process as a water utility rather than a municipality. Valley Water positively impacts communities throughout the OA by providing safe, clean drinking water on a daily basis. Flood protection and other hazard mitigation measures are essential to continue to provide a reliable water supply to communities in the OA. As a special district, Valley Water works cooperatively with the municipalities to identify risks and vulnerabilities to infrastructure and population. Valley Water vulnerabilities and actions in the following section are focused on its objective to provide water to the OA. Other population and infrastructure vulnerabilities outside the purview of Valley Water will be addressed in the other jurisdictional annexes.

16.7.1. Vulnerable Population

Valley Water has two underserved socially vulnerable communities that are ranked according to their estimated hazard exposure and social vulnerability. The largest area is in San Jose east of Highway 87, shown in Figure 154, and a much smaller area is in south Santa Clara County, specifically the City of Gilroy. In addition, by using the CalEMA GIS dashboard, these two areas are also identified as having a median household income of less than 80% of the statewide average and for having significant earthquake ground shaking potential.

These two areas are comprised of multiethnic populations and fall within the FEMA definitions of socially vulnerable and underserved communities. To that end, Valley Water reached out to these communities by way of traditional media: Chinese News, El Observador, Mercury News, Metro, Nextdoor, and Vietnam Daily. In addition, Valley Water also accomplished outreach via social media; five Twitter and four Facebook posts were deployed as a multiprong strategy.

Vulnerable populations may have a more difficult time obtaining alternative resources if water supply or other services and infrastructure are disrupted by a disaster. Valley Water has evaluated the following hazard vulnerabilities with these populations in consideration. Valley Water meets regularly with emergency managers from the jurisdictions regarding dam safety programs and other emergency planning efforts to implement dam safety programs and a coordinate effort to maintain adequate water supply for these populations.

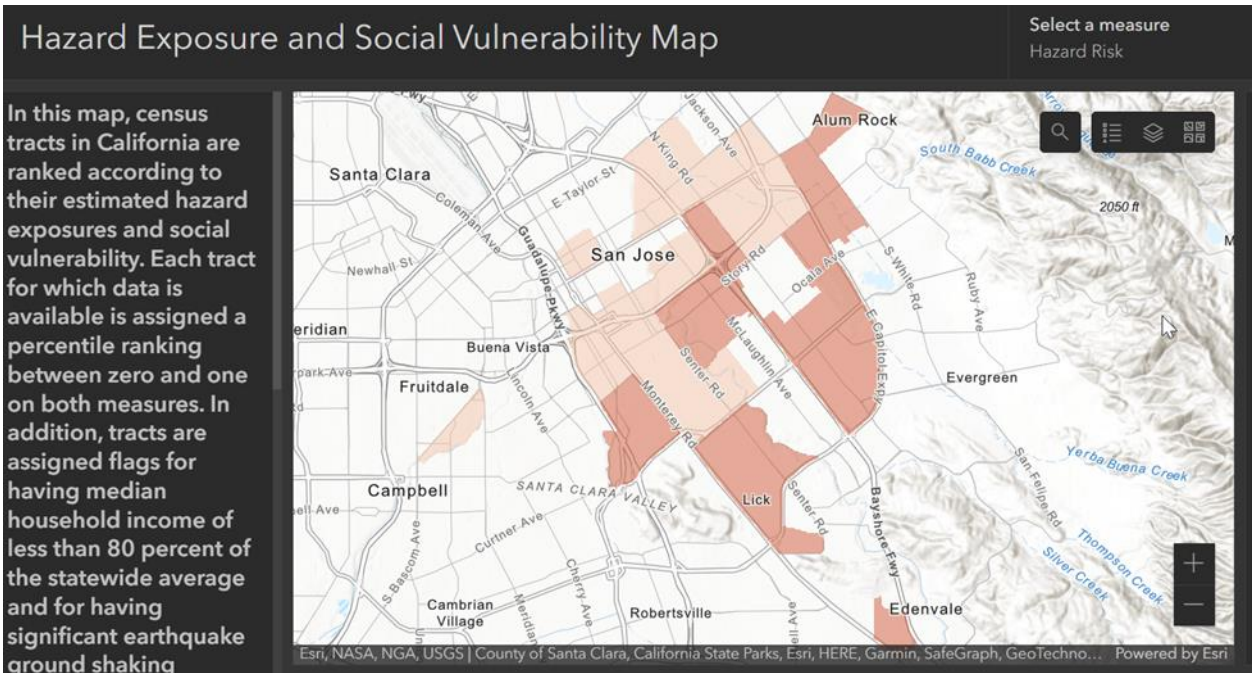

Figure 154: California Hazard Exposure and Social Vulnerability Map

District facilities include 17 administrative and operations facilities, 3 pumping stations, 4 treatment centers, 10 dams, 20 levees, and 30 major pipelines.

- Valley Water provides water to all of Santa Clara County, including a population of over 1.9 million. Disruptions of Valley Water facilities, pipelines, or operations could subsequently impact water retailers and users throughout the County. Population and development growth is currently slow, but any future growth would have a corresponding increase in water supply demands.
- Valley Water uses awareness campaigns, such as the annual flood awareness campaign, to distribute information about the risk to various hazards, but this information needs to be refreshed frequently to make sure residents remain aware of the risk, and to ensure the information reaches vulnerable populations using a variety of methods and languages.
- Valley Water has identified areas of flooding concern along Lower Penitencia Creek, Coyote Creek (Montague to Tully Road), Hale Creek, Palo Alto flood basin tide gate, Sunnyvale East and West channels, Llagas Creek, and the Bay shoreline near Alviso Marina County Park.
- Ground shaking from earthquake poses a risk of damage to all Valley Water structures and facilities. Although specific loss estimates are not available for these facilities, it can be anticipated that a large magnitude earthquake could cause damage to physical structures and pipelines and disrupt water treatment and distribution to residents in the OA and the Valley Water service area. Liquefaction potential is often higher near streams and water bodies, where many Valley Water facilities are located, which could contribute to facility damage. Intense ground shaking could have cascading effects, such as damage to district-owned dams, which could possibly lead to dam failure and flooding downstream.
- Dam failure: many of the district facilities are downstream of lakes and reservoirs and could potentially be impacted by dam failure. Treatment centers and pipelines are not considered to be at risk to damage, but operations facilities, pumping stations, and dam and levee structures in inundation zones could be damaged and services disrupted. High water volumes associated with dam failure can cause extensive damage downstream, including washing out roads, bridges, or structures, erosion of stream channels and potential exposure of underground utilities networks,

and possibly loss of life to people located in areas of potential inundation. Vulnerable populations are identified in Figure 136. Vulnerability data at the census block or tract level cannot always identify all individuals with unique vulnerabilities such as access and functional needs (AFN) who are located downstream of high hazard dams. As owner of 10 dams, Valley Water participates in various programs dedicated to promoting dam safety and continues to identify ways to protect infrastructure and people from dam failure. Informing populations at risk and the appropriate actions to take in the event of a dam failure is a critical component of dam safety plans.

- Drought is not likely to directly damage district facilities, but extended drought could impact the water supply for the OA and disrupt District operations for water distribution. The risk of drought is likely to increase in the future because of climate change. Redundancies for water supply with other water companies or other suppliers, reductions in water waste, and efforts to reduce water use or recycle water are important to limit the impacts of drought. Populations at risk of the impacts of drought can assist in water conservation efforts if they have information on appropriate actions.
- Many of the district facilities are adjacent to water bodies and streams, placing them within or near flood hazard zones. In addition to Valley Water assets potentially exposed to flooding, flood protection is also part of its mission for the communities it serves. Specific loss estimates were not generated for Valley Water assets as the data was not shared at the time of preparing Hazus runs. The 2017 Valley Water mitigation plan shows 14 administrative and operations facilities, 3 pumping stations, 2 treatment centers, 10 dams, 20 levees, and 29 pipelines in or near the 1% annual chance floodplain.
- Heavy rain and associated increases in runoff along streams is a primary cause of flooding in the OA. Flooding can also occur in localized low-lying areas with poor drainage or floodwaters that exceed stormwater drainage capacity. Flooding could weaken building foundations, remove soil, or erode banks near Valley Water assets or in areas it serves. Levees may be susceptible to overtopping if floodwaters exceed their capacity, which may result in breaches and additional flooding in surrounding areas. If floodwaters reach Valley Water structures, they can damage both the structures and contents of the buildings the water comes in contact with. Swift moving floodwaters can wash away structures and vehicles and cause injury or death to those caught in the flow. Floodwaters can submerge or damage transportation systems or disrupt power or communications systems, which would further disrupt Valley Water's ability to conduct operations in affected areas.
- Climate change could potentially affect long-term temperature and precipitation patterns, which could alter the potential impacts from drought, flood, wildfire, or heavy rain hazards. Extreme events like atmospheric rivers may be impacted by climate change and are expected to increase in frequency. Climate change also contributes to sea level rise. According to the 2017 Valley Water LHMP, sea level rise has the potential to impact 10 levels and 1 pipeline. The amount of damage will vary depending on the height of sea-level rise, which is expected to increase over time. Damage to levees could have cascading impacts for flood control in some of the cities in the OA.
- Impacts from heavy rain are likely to be very similar across the OA. Individual events may impact only limited areas, but the entire OA is at risk to similar conditions. Heavy rain may cause localized flooding on roadways and low-lying areas which may disrupt transportation for the general public and can also delay emergency response. Heavy rain can also have cascading impacts on landslide potential or strain the capacity of dams. If dam spillways are inadequate to meet additional runoff, overtopping of the dam and potential failure could occur, resulting in significant downstream flooding.
- High winds can occur in the OA but have not directly affected Valley Water in historic events. Because of low risk to Valley Water assets, high wind is not profiled in this annex. Risk of high wind to other assets or vulnerable populations from this hazard are addressed in other jurisdictional annexes.

- Extreme heat or cold do occur in the OA but are unlikely to directly affect Valley Water assets and services provided and are not profiled in this annex due to low risk. Vulnerable populations' risk of extreme heat or cold is addressed in other jurisdictional annexes.
- Most Valley Water facilities are in the urban parts of the county and not at direct risk of wildfire. However, some pipelines are in the rural, hilly parts of the county where wildfire risk is higher and damage to these assets might be possible. Some treatment facilities are in proximity to the WUI and may be impacted if vegetation is unmanaged in these areas. Climate change may contribute to an increasing number of hot and dry days, which may increase wildfire risk in the future.
- Landslide susceptibility is highest in the hilly areas of the county, where less urban development has been established. The 2017 Valley Water LHMP noted one treatment center, one dam, and five pipelines are located where historic landslides are present. Figure 118 shows deep-seated landslide susceptibility. Several of Valley Water dams and pipelines are near areas with moderate to high susceptibility. SCVWD has identified water transmission, storage, and treatment facilities within the Penitencia Creek Landslide area located in the foothills of Northeast San Jose that are at risk of damage from landslide.

Other noted vulnerabilities include:

- Increasing frequency and intensity of drought followed by extreme wet years. The two extremes mean it is critical to work across divisions within our organization and work toward improved multi-benefit solutions. Valley Water has a diverse water supply, and its interconnections to other state and regional water supply networks may offer Valley Water less vulnerability to drought. However, long-term drought conditions both in Santa Clara County and the Sierra Nevada pose a potential risk, as a lack of precipitation in either location may reduce the amount of water available to Valley Water. Conservation of water by consumers is an important component of maintaining water supply in times of drought, which requires public education and outreach efforts.
- Potential damage to major populated areas downstream of Valley Water Dams including portions of Santa Clara County, San Benito County, Santa Cruz County, Monterey County, Alameda County, and unincorporated regions. Stakeholders refer to individual dam EAPs for jurisdictions/cities affected.
- The greatest vulnerabilities are the lack of emergency water supply storage in Anderson Dam, our largest reservoir, while seismic retrofits occur. In addition, imported water accounts for half of Santa Clara County's water supply, making our water supply vulnerable when imported water allocations are low. In response, Valley Water has implemented aggressive water conservation programs and is developing potable reuse as a drought proof, locally controlled water supply. These vulnerabilities can lead to dry drinking water wells, and water supply shortage.
- Valley Water owns and operates several high hazard dams constructed prior to 1960. Many have not undergone seismic retrofits and may be potentially vulnerable to large earthquakes. The inundation zone impacts many downstream communities in the South Bay Area. Mitigation measures, such as restricting the reservoir level, has been implemented at Valley Water's potentially vulnerable dams.
- Most floods in the Valley Water service territory have been the result of severe rain storms, and this is expected to continue. The flood events of particular concern to Valley Water are brought on by atmospheric rivers (ARs), narrow corridors of very moist air. The Pineapple Express, a phenomenon that brings warm moist air from near Hawaii to California and often cause heavy precipitation, is an example of an AR. This flood hazard creates some vulnerabilities as the examples that follow briefly articulate.
- Uvas Creek flooding near Highway 101 in Gilroy has a high probability of requiring the closure of a major highway and evacuation of nearby residences. This requires close monitoring and communication with public safety agencies during high flows and utilization of Uvas Creek Emergency Action Plan.

- High flows, primarily on Guadalupe River and Coyote Creek in the City of San Jose, have potential of requiring evacuation of unhoused encampments that are located within the creek banks. This requires inspections to identify locations of encampments so that notifications and evacuations can be conducted prior to flooding. Valley Water assists other local jurisdictions and landowners in this effort.
- Flash urban flooding can occur on West Little Llagas Creek, Sunnyvale East Channel, Guadalupe River, and Ross Creek. This requires regular inspections and removal of blockages before and during storm events, deployment of Field Information Teams to visually monitor hot spots, monitoring of weather forecasts, and estimating potential stream stage to determine level of flood threat. This information is then provided to other agencies who are responsible for evacuations.
- Flooding on San Francisquito Creek is a threat. Response to this threat is addressed in the San Francisquito Creek Multi-Agency Coordination Plan (Joint Powers Authority) and the Valley Water San Francisquito Creek Emergency Action Plan.
- Flooding in south Santa Clara County (SCC) over agricultural land can cause road closures and some evacuations. This is addressed by monitoring the area and communicating the flood threat level with the County of Santa Clara.
- An updated geologic hazards vulnerability assessment is not currently available and therefore an assessment of landslide/mass movement is a risk to be included in the next Valley Water vulnerability assessment. However, in general, within Valley Water's service territory, landslide risk may exist in the hilly, rural areas of Santa Clara County. One example is the aforementioned Penitencia Creek Landslide located in the foothills of Northeast San Jose, listed within this Valley Water annex. The specific level of risk will likely rely on any historic landslide events. Facilities in areas with few historical landslide events likely face a lower risk. Facilities showing no historical landslides would likely not be deemed at risk. Facilities found in the hillier areas of Valley Water's territory would face a generally higher risk from landslides. Again, to ensure an assessment methodology is sound and better able to identify the "greatest" vulnerability to landslide/mass movement, a current in-depth vulnerability assessment will need to be an objective moving forward by Valley Water.
- Power outages and their ripple effects (although most of the public infrastructure has generators, we still need to be concerned about redundancy and backups. E.g., water treatment plants and sewage treatment plants need to be staffed and running 24/7.)
- Flooding due to channel overtopping, backups behind downed trees/debris piles (which Valley Water may not have permission to remove), flooding of low-lying areas due to inadequate capacity of storm drain system (not Valley Water's domain of responsibility but a vulnerability within the county – most storm drains were designed for 10-year flow and some individual sites may have increased risk if the pipes are undersized).
- Based on the Tsunami hazard maps for California, the only areas within Santa Clara County which have an evacuation risk for Tsunamis are within the existing salt ponds' footprints, i.e., the largest risks would be for any homeless residing in the area and pedestrians along trails in this area such as the Bay Trail, sanctioned or not. The risk could extend to include urbanized areas if the existing system of levees and salt pond berms, currently protecting the coast, were to have significant breaching, or are not replaced by other structures in the future. Due to the low frequency risk of tsunamis in this area, the major risk of coastal flooding for the South Bay is likely controlled by wind wave action (U.S. Army Corps of Engineers 1984).
- As reported in Valley Water's 2017 LHMP, Valley Water has areas that "face elevated wildfire risks." Fires occur occasionally in the Valley Water service area, such as the 2002 Croy Fire, which burned over 3,000 acres in the mountains west of Morgan Hill and destroyed 31 homes (CalFire 2002); the 2008 Summit Fire, which forced the evacuation of 1,200 people and destroyed 42 homes along the border of Santa Clara and Santa Cruz Counties (CalFire 2008a); and the 2016 Loma Fire which burned 4,474 acres of the mountains west of Morgan Hill and destroyed 12 residences and 16 outbuildings. In recent history, the Santa Clara Unit (SCU) Lightning Complex fires in the summer of 2020 had an impact on multiple counties including

Santa Clara County. This fire burned just under 400,000 acres from August to October of 2020. Lick Observatory on the east foothills on Mount Hamilton was at risk but was not directly impacted. The Penintencia and Santa Teresa Treatment Plants are in relatively close proximity to areas of moderate wildfire hazard classification.

- Wildfires are also an increasing occurrence along the riparian corridors in Santa Clara County. Past monitoring of creek fires has seen dozens of small fires a month during the dry season of August – October. It is becoming more common to have 2+ fires a year that extend beyond 1 acre in size along the creeks.
- According to the State of California Multi-Hazard Mitigation Plan and the California Department of Forestry and Fire Protection, Santa Clara County experiences wildfires every two to three years, and the incidents of significant wildfires are expected to increase as a result of the impacts of climate change. Wildfires are likely to continue to affect the more mountainous areas (most vulnerable) of Valley Water's service territory and the communities in these locations, although more urbanized areas near the Wildland Urban Interface (WUI) may be threatened in some circumstance.
- Areas where high or very high wildfire hazard zones and landslide hazard zones intersect will be most prone to soil instability and should be a focus for future risk assessments and mitigation.
- Valley Water facilities (e.g., three water treatment plants), especially those within or bordering high wildfire risk areas, could be threatened directly by wildfire as well as the secondary effects, such as loss of power from public safety power shutoffs, the impacts of post-fire debris flows on streams, structures, and treatment systems, or the damage to supporting infrastructure. Encroachment of weeds or other fuels toward these facilities would increase wildfire risk.

Valley Water doesn't have any repetitive loss/severe repetitive loss structures; however, the areas that Valley Water services do. Those records are as follows:

- Number of Federal Emergency Management Agency (FEMA)-identified Repetitive-Loss Properties (RL): 25 in the OA
- Number of FEMA-identified Severe-Repetitive-Loss (SRL) Properties: 9
- Number of RL Properties or SRL Properties that have been mitigated: 0

16.8. Hazard Risk Index

Table 274 presents the hazards of concern in order of the hazard risk index number assigned by Valley Water, from highest risk index number to lowest.

Table 274: Hazard Risk Index

Hazard	Probability	Life Impact	Property Impact	Percentage of Area Impacted	Maximum Probable Extent
Flood	Occasional	Minor	Limited	Minimal	Weak
Earthquake	Unlikely	Catastrophic	Catastrophic	Extensive	Major
Drought	Likely	Minor	Minor	Significant	Weak
Climate Change	Highly Likely	Minor	Critical	Significant	Moderate
Landslide/Mass Movement	Occasional	Minor	Minor	Minimal	Weak
Heavy Rain	Highly Likely	Limited	Minor	Extensive	Weak
Wildfire	Occasional	Minor	Minor	Minimal	Weak

16.9. Status of Previous Plan Actions

Participants were asked to report the status of their mitigation actions listed in the previous plan as a part of this plan update. Where further information isn't provided, the answers are defined as follows:

- *Completed* – work on this action is totally complete.
- *Completed and ongoing* – work on this action is complete; however, it is an ongoing project that will continue to be implemented. An example is a public outreach campaign that was created and will continue to be implemented.
- *In progress* – work on this action has begun and is in progress, but the action is not yet complete.
- *Retain* – work on this action has not begun yet, the action is still relevant, and it should be in the 2023 MJHMP.
- *No longer relevant* – Action item is no longer relevant due to reduce or eliminated risk, it no longer being feasible, there has been a change in jurisdictional or organizational priorities, or another reason as stated.

Unless specifically requested otherwise, only those actions listed as "retain" are incorporated into the 2023 action plan.

Table 275: Status of Action Items from the 2017 Santa Clara Valley Water District

Action Item Number*	Action Item Description	Hazard(s) Mitigated	Current Status and Comments
Infr d-2* Infr d-3	Continue to stockpile repair materials portable pumps and hydrants, and other supplies to assist with rapid and functional repairs to water watershed infrastructure	All Hazards	In progress
Infr a-7* Infr a-8 Infr a-11 Env b-5	Continue to incorporate the effects of climate change into water utility and watershed infrastructure vulnerability studies	All Hazards	Completed and ongoing
Infr g-4* Infr g-5 Infr g-7	Improve the energy independence of the District's facilities and infrastructure through energy efficiency, on-site or local renewable energy systems, microgrids, and energy storage facilities. Ensure adequate emergency power is available in the interim	All Hazards	In progress
Govt a-1* Govt a-9 Govt a-12	Continue to distribute information about disaster preparations through mailings, printed notifications, educational campaigns, social media, digital devices, addressing media inquiries, and in-person events and workshops. This information should be distributed widely and in all commonly spoken languages within the District's service territory.	All Hazards	In progress
Govt c-7* Govt c-8	Conduct hazard vulnerability studies, including anticipated climate changes impacts, in advance of all new infrastructure siting and construction.	All Hazards	In progress

Action Item Number*	Action Item Description	Hazard(s) Mitigated	Current Status and Comments
Govt a-11*	Continue to participate in the Silicon Valley Regional Interoperability Partnership to improve emergency communications between the District and other Santa Clara County jurisdictions.	All Hazards	In progress
Infr a-1*	When siting new infrastructure, try to avoid locating facilities in areas of high hazard risk. If this is unavoidable, integrate extensive mitigation measures into the facility to reduce vulnerability from all applicable hazards. The excel tool drop down menu had 3 options, “no longer relevant” was the best choice. However, infrastructure hazard mitigation is best addressed in “Mitigation number 8.3” as identified in the Valley Water Mitigation Actions excel workbook, i.e., this item was transferred to mitigation strategy 8.3.	All Hazards	No longer relevant. This action was transferred to mitigation strategy 8.3
Infr a-13* Govt c-12 Govt c-22 Env a-1	Improve estimates of potential damage to Valley Water (VW) facilities from various potential emergency situations and integrate these estimates into appropriate planning efforts.	All Hazards	Completed and ongoing
Infr d-5* Govt a-1 Govt a-9 Env a-3 Land f-4	Update all emergency planning documents every five years to ensure consistency with state and federal laws, eligibility for hazard mitigation grant funding, best practices, local conditions, and updated science.	All Hazards	In progress
Infr a-22*	Regularly monitor and pursue funding opportunities for hazard mitigation activities.	All Hazards	In progress
Infr a-4* Infr b-7	Assess the capability and feasibility of using inter-organizational and public/private water distribution infrastructure ("water-wheeling") as an alternate or backup.	All Hazards	Completed
Infr a-4*	Install pipeline isolation valves to enable smaller geographic service outages and shorter recovery periods.	All Hazards	In progress
Infr a-4*	Conduct a Retailer Intertie Study to explore the capacity and interconnectivity of retailer interties.	All Hazards	Retain
Infr a-5* Infr a-22	Install interties and connections to public and private groundwater wells for redundancy, including connections between the Snell Pipeline and the Great Oaks Water Company wells, the Santa Clara Distributary, and the planned Santa Clara Water Company Serra Tank well, and the Mountain View Distributary and the planned Mountain View Water Company Miramonte well.	All Hazards	In progress
Infr a-19* Infr a-20 Govt b-2 Govt c-13	Support regional and state efforts to improve resiliency and increase redundancy in water supply and safety infrastructure.	All Hazards	In progress

Action Item Number*	Action Item Description	Hazard(s) Mitigated	Current Status and Comments
Govt d-1* Govt d-3 Infr a-5 Infr a-7 Infr d-18 Govt a-8 Govt c-22 Govt c-23	Work with local jurisdictions in dam inundation zones to ensure residents and businesses are aware of the potential risk, and that dam inundation mitigation strategies are integrated into local planning efforts. Use GIS mapping for risk analysis and communication as appropriate.	Dam Failure	Ongoing
Govt a-2*	If appropriate, identify critical infrastructure at heightened risk from dam failure and develop a plan to protect or retrofit those facilities.	Dam Failure	Ongoing
Env a-4* Env b-1 Env b-10	Evaluate the long-term impact of climate change on future water supplies and include more severe drought conditions in water supply planning documents.	Drought	In progress
Govt d-2*	Work with retail water suppliers to offer free or low-cost water audits for residents and businesses within the District's service territory.	Drought	In progress
Govt d-2*	Work with retail water suppliers to support real-time water monitoring for all customers.	Drought	In progress
Infr d-16* Infr g-3 Env b-13	In coordination with retail water suppliers, host regular workshops and classes on water conservation, including providing information on drought-tolerant landscaping, available rebates for water retrofits, and water efficiency strategies in new buildings. Continue to offer workshops and classes even when drought conditions are not present. Develop outreach materials for water conservation.	Drought	In progress
Env b-11*	Increase recycled and purified water supplies and expand the existing recycled and purified water infrastructure.	Drought	In progress
Env b-11*	Explore opportunities to recycle water for non-potable and potable uses.	Drought	In progress
Infr a-5* Govt d-1 Govt d-2 Govt d-3 Env a-2 Env a-4	As identified in the Capital Improvement Program (CIP), continue to prioritize water supply improvements as they relate to the risks outlines in this Plan. Coordinate future updates to the CIP to support mitigation actions outlined in this Plan.	Drought	In progress
Infr a-22*	Implement projects that increase the resiliency or reliability of future water supplies. This measure has been discontinued; however, the associated work is covered in measure 1.15 which is the Mitigation Number in the excel workbook submitted with Mitigation Strategies.	Drought	No longer relevant

Action Item Number*	Action Item Description	Hazard(s) Mitigated	Current Status and Comments
Infr d-6*	Continue to repair and improve storm drainage systems owned and maintained by SCVWD to better accommodate sudden large volumes of water.	Flood	In progress
Infr d-7* Infr d-8 Env a-2 Env a-5 Env a-7	Monitor creek infrastructure for obstructions and remove any obstructions as quickly as possible.	Flood	In progress
	Retrofit hardscaped areas on District property, including parking lots and plazas, to use permeable paving, green infrastructure, and other low-impact development design features to allow for increased infiltration, even in heavy rain.	Flood	In progress
Infr d-14* Env a-5 Env a-7	Identify and implement effective flood protection measures around water supply facilities and pumping stations, prioritizing facilities located within the 100-year floodplain. This measure is being discontinued, as Valley Water has only one pumping station and no other water supply facilities within the 100-year floodplain. During flood season, water supply is at low demand and the system can operate without the pump station (Mitigation Strategy #4.4 in excel workbook).	Flood	No longer relevant
Infr b-5* Infr d-4 Infr d-11 Infr d-17 Govt d-1 Govt d-2 Govt d-3 Govt c-20 Env a-2	As identified in the Capital Improvement Program (CIP), continue to prioritize flood protection improvements as they relate to the risks outlined in this Plan. Coordinate future updates to the CIP to support mitigation actions outlined in this Plan.	Flood	In progress
Infr g-4* Infr g-5 Infr g-7	Develop outreach materials for extreme flood conditions and events.	Flood	In progress
Infr b-8* Infr d-9 Infr d-10 Env a-2	Use erosion and sediment control features that provide protection beyond those required by local or state standards for all District construction activities.	Geologic Hazards	In progress
Infr a-2* Infr d-7	Prevent landslide and debris flows from compromising the structure and function of Valley Water (VW) infrastructure.	Geologic Hazards	In progress
	Continue to monitor the rate of groundwater pumping within the District, and coordinate groundwater pumping and increase groundwater recharge if subsidence begins to occur.	Land Subsidence	In progress

Action Item Number*	Action Item Description	Hazard(s) Mitigated	Current Status and Comments
Env b-1*	Develop and implement plans to protect key facilities within the sea level rise hazard area as sea levels increase.	Sea Level Rise	In progress
Govt d-1* Govt d-2 Govt d-3 Env b-1	Coordinate with Santa Clara County, ABAG, and the Bay Conservation and Development Commission to defend against and retreat from sea level rise.	Sea Level Rise	In progress
Infr b-5* Infr d-12	Maintain existing levee inspection and repair program to address seismic vulnerabilities of levee systems.	Seismic Activity	In progress
Infr a-1* Infr b-5 Govt a-2	Secure funding to conduct necessary seismic strengthening work on District-owned dams as identified in seismic evaluations. This measure is part of the work performed under mitigation number 8.3 (excel workbook with Mitigation Strategies) which is the item listed just below here.	Seismic Activity	No longer relevant
Infr a-1* Infr a-2 Govt a-2 Infr a-4 Infr b-5 Infr d-9 Infr d-12	Replace or retrofit structures that are determined to be structurally deficient including levees, dams, reservoirs, and tanks. Continue to analyze and identify needs for future upgrades. Evaluate, reinforce, and/or enhance district facilities to mitigate seismic risk.	Seismic Activity	In progress
Govt a-1* Govt a-9 Govt a-12	Conduct evaluations of District facilities (Offices, Ancillary Structures) to determine seismic vulnerability.	Seismic Activity	In progress
Infr b-8*	Avoid siting of new infrastructure in areas of highest liquefaction, ground shaking, and/or fault rupture risk. If siting new infrastructure in these high-risk zones is unavoidable, include significant mitigation measures to reduce the vulnerability to earthquake hazards. This mitigation number #8.5 was discontinued as the work addressing this mitigation action is captured in mitigation number #1.5 as numbered in the Valley Water excel workbook submitted to the County (2023).	Seismic Activity	No longer relevant
Infr a-4* Infr b-3 Infr b-4	Replace seismically vulnerable sections of the Almaden Valley Pipeline.	Seismic Activity	In progress
Infr d-7*	Monitor trees, telephone poles, and other large objects that may threaten nearby District infrastructure in high wind events and maintain or reinforce as appropriate.	Severe Winds	In progress
Infr c-3*	Frequently monitor the status of dry vegetation of District property and around District facilities in wildland and WUI zones, and conduct weed abatement and pesticide application activities as needed.	Wildfires	In progress

Action Item Number*	Action Item Description	Hazard(s) Mitigated	Current Status and Comments
Infr c-3* Infr c-7 Infr c-8	Work with surrounding landowners to ensure adequate fire road access to District facilities. This mitigation action was removed as Valley Water already has access to its facilities (building and infrastructure), and waterways. Additional access through private landowners is not needed.	Wildfires	No longer relevant
Infr c-3* Env a-1	Identify District-owned waterways and water sources adjacent to any high-fire risk areas and prepare for increased turbidity as a result of vegetation loss and increased erosion. Conduct mitigation measure as appropriate to reduce turbidity. This mitigation action was removed as at the time of removal, there was not any identifiable mitigation work that could be performed at the time.	Wildfires	No longer relevant
Infr c-3* Env a-2	Design and implement mitigation measures to reduce turbidity in waterways and water sources near high-fire risk areas. This mitigation measure (#10.4 Valley Water excel provided) was discontinued as turbidity resulting from fires and vegetation loss that enter waterways will be addressed utilizing best management practices by Operations and Maintenance (or day-to-day operations).	Wildfires	No longer relevant

* Number given to action item in 2017 Santa Clara County Operational Area Hazard Mitigation Plan

16.10. Future Needs to Better Understand Risk/Vulnerability

Valley Water's current preparedness, including EOC personnel as well as subject matter experts throughout the enterprise, represent a strong formal structure of organizational preparedness to effectively manage its risks currently, and into the future. The concerted effort across the enterprise as reflected in Valley Water's LHMP in past years identifies vulnerabilities and mitigates the impact of future hazard incidents proactively. Valley Water is a technically sound organization that continues to demonstrate its effectiveness throughout the stages of natural hazard management from mitigation to recovery. As examples of hazard management, such as wildfires and droughts, please refer to the relevant sections of this MJ-LHMP Risk Assessment report. The current seismic retrofit of the Anderson Dam capital project will provide many decades of modern dam infrastructure water supply management that ensures downstream communities are at low risk of impact from an incident. Other similar risk management and mitigation efforts are identified throughout Valley Water's mitigation strategies within this year's Santa Clara County MJ-HMP strategic mitigation section. Programmatically enhancing these and other efforts across Valley Water will continue to help increase Valley Water's understanding of its risks and vulnerabilities to natural hazards.

16.11. Hazard Mitigation Action Plan and Evaluation of Recommended Actions

Table 276 lists the actions that make up the Santa Clara Valley Water District hazard mitigation action plan.

Descriptions of the expected time frames for actions are provided below:

- Short term: 1–5 years
- Medium term: 5–10 years
- Long term: Over 10 years
- Ongoing: Currently being funded and implemented under existing programs

The planning partners utilized the following criteria to prioritize action items into the categories of high, medium, or low.

- High Priority— A project that:
  - Meets multiple goals and objectives (i.e., multiple hazards);
  - Addresses multiple hazards;
  - Has benefits that exceed cost;
  - Has funding secured or is an ongoing project;
  - Meets eligibility requirements for Hazard Mitigation Assistance grants;
  - Can be completed in the short term (1 to 5 years);
  - Addresses immediate short-term impacts of climate change;
  - Benefits underserved and/or socially vulnerable populations; AND
  - Considers the Multi-Benefit Criteria utilized by the Santa Clara County Climate Collaborative, including equity, long-term value, ecosystem benefit, community benefit, and cross-jurisdictional alignment.
- Medium Priority— A project that:
  - Meets multiple goals and objectives;
  - Addresses multiple hazards;
  - Has benefits that exceed costs;
  - Has funding has not been secured, but that is grant eligible under Hazard Mitigation Assistance grants or other grant programs;
  - Project can be completed in the short term (1-5 years), once funding is secured. Medium priority projects will become high priority projects once funding is secured;
  - Addresses immediate short-term impacts of climate change;
  - Benefits underserved and/or socially vulnerable populations; AND
  - Considers the Multi-Benefit Criteria utilized by the Santa Clara County Climate Collaborative, including equity, long-term value, ecosystem benefit, community benefit, and cross-jurisdictional alignment.
- Low Priority— A project that:
  - Will mitigate the risk of at least one hazard;
  - Has benefits that do not exceed the costs or are difficult to quantify:
  - Does not have secured funding;
  - Is not eligible for Hazard Mitigation Assistance grant funding;

- Has a timeline for completion that is long term (greater than 5 years). Low priority projects may be eligible for other sources of grant funding from other programs;
- May address impacts of climate change;
- May benefit underserved and/or socially vulnerable populations; AND
- Considers the Multi-Benefit Criteria utilized by the Santa Clara County Climate Collaborative, including equity, long-term value, ecosystem benefit, community benefit, and cross-jurisdictional alignment.

Table 276: Santa Clara Valley Water District 2023 Action Items

Action Item Number	Action Item Description	Additional Details	Hazard(s) Mitigated	Lead Position, Office, Department, or Division Responsible for Implementation	Potential Funding Sources	Expected Timeline for Completion	Priority
Infr g-4*, g-5, g-7	Continue to distribute information about disaster preparations through mailings, printed notifications, educational campaigns, social media, digital devices, addressing media inquiries, and in-person events and workshops. This information should be distributed widely and in all commonly spoken languages within the District's service territory.	Valley Water's annual flood awareness campaign continued to serve as the outreach engagement effort, which included general disaster preparedness tips provided through an annual mailer. Informational postcards, web/blog posts and social media paid ads were also part of the additional public relations effort. Messages were shared in English, Chinese, Spanish, and Vietnamese. Many of these underserved communities are located east of highway 87 and the South County. Valley Water's latest iteration of this campaign focused on a series of direct mailings to households and	Floods, Earthquakes	Office of Communications	San Francisco Bay Area Water Multi-agency Coordination Group General District Funds	Annually	High

Action Item Number	Action Item Description	Additional Details	Hazard(s) Mitigated	Lead Position, Office, Department, or Division Responsible for Implementation	Potential Funding Sources	Expected Timeline for Completion	Priority
		businesses in the FEMA Special Flood Hazard Area. The mailings offered recipients a detachable phone list and magnet with key flood preparedness websites, along with QR codes to access to relevant online information.					
Infr a-13, Govt c-12, Govt c-22, Env a-1	Update all emergency planning documents every five years to ensure consistency with state and federal laws, eligibility for hazard mitigation grant funding, best practices, local conditions, and updated science.	To operationalize this action across the organization and ensure organizational-wide capability, further effort will continue with communications and meetings to gain a concerted effort.	All Hazards	Divisions: Administration, Watersheds, Water Utility	General Valley Water Funds	Ongoing	High
Infr a-4, Infr b-7	Install pipeline isolation valves to enable smaller geographic service outages and shorter recovery periods.	As required by the AWIA, Valley Water submitted certification to the EPA that a Risk and Resiliency Analysis (RRA) of our system was completed by March 31, 2020, and that an Emergency Response Plan (ERP) was completed in March. The 5-year time frame for emergency plan	All Hazards	Water Utility Division	Bonds, Capital Improvement Program	31-July-26	High

Action Item Number	Action Item Description	Additional Details	Hazard(s) Mitigated	Lead Position, Office, Department, or Division Responsible for Implementation	Potential Funding Sources	Expected Timeline for Completion	Priority
		updates is being adhered to. Valley Water's Emergency Operations Plan was updated Dec.'21. The LHMP annual report is being finalized in '23, with County of Santa Clara & local cities. Development and maintenance of creek- or location-specific Emergency Action Plans (EAPs) continues, this includes the annual update of the Joint Emergency Action Plan with the City of San Jose that includes Coyote creek where historically socially vulnerable populations live such as in the Rock Springs community.					
Infr a-4	Install interties and connections to public and private groundwater wells for redundancy, including connections between the Snell Pipeline and the Great Oaks Water Company wells, the Santa Clara Distributary and the planned Santa Clara Water Company Serra Tank well, and the Mountain View Distributary and the planned Mountain View Water Company Miramonte well.	Proposed interties are being evaluated during the Distribution System Master Plan Implementation Project, currently scheduled to be complete in 2025. In addition, the City of Santa Clara and City	Earthquake	Water Utility Division	General District Funds, Grant Funding, Regional Water Agencies	31-Jul-25	High

Action Item Number	Action Item Description	Additional Details	Hazard(s) Mitigated	Lead Position, Office, Department, or Division Responsible for Implementation	Potential Funding Sources	Expected Timeline for Completion	Priority
		of Mountain View are continuing to investigate well sites, and partnership on future connections is pending the outcome of those studies.					
Govt d-1 Govt d-3 Infr a-5 Infr a-7 Infr d-18 Govt a-8 Govt c-22 Govt c-23	Work with local jurisdictions in dam inundation zones to ensure residents and businesses are aware of the potential risk, and that dam inundation mitigation strategies are integrated into local planning efforts. Work with local jurisdictions to identify vulnerable populations and unique information needs to communicate their risk. Use GIS mapping for risk analysis and communication as appropriate.	In October 2022 an orientation slide show on dam EAPs and inundation map interpretation was presented to the Santa Clara County Emergency Management Association. The public agencies that attend these meetings are in turn communicating to their communities with pertinent information from Valley Water.	Dam Failure, Earthquake, Heavy Rain, Flood	Watersheds Division	General District Funds, Local jurisdictions	Ongoing	High
Infr a-5 Govt d-1 Govt d-2 Govt d-3 Env a-2 Env a-4	Coordinate future updates to the CIP to support mitigation actions outlined in this Plan.	Lower Penitencia Creek project started construction in June 2021 and civil construction will be completed by August 2023. USACE South San Francisco Bay Shoreline Phase I Project (Reaches 1-3 from Alviso Marina County Park to the	Flood	Watersheds & Water Utility Divisions	Bonds Capital Improvement Program DWR General District Funds	Ongoing	High

Action Item Number	Action Item Description	Additional Details	Hazard(s) Mitigated	Lead Position, Office, Department, or Division Responsible for Implementation	Potential Funding Sources	Expected Timeline for Completion	Priority
		Artesian Slough) began construction in December 2021 and is anticipated to be completed by January 2024. Hale Creek Enhancement Pilot Project began construction in June 2022 and completed in channel construction in January 2023.					
Infr a-5 Govt d-1 Govt d-2 Govt d-3 Env a-2 Env a-4	As identified in the Capital Improvement Program (CIP), continue to prioritize flood protection improvements as they relate to the risks outlines in this Plan.	Design of the Coyote Creek Flood Management Measures Project (one of the FERC Order Compliance Projects) completed design in February 2023 and construction will begin in June 2023. Design and permitting of Llagas Creek Phase 2B, Sunnyvale East/West Channels, Palo Alto Flood Basin Tide Gate Structure Replacement, and Coyote Creek (Montague to Tully Road) is continuing.	Flood	Watersheds	Bonds Capital Improvement Program DWR General District Funds	Ongoing	High
Infr b-5 Infr d-4	As identified in the Capital Improvement Program (CIP), continue to prioritize	Lower Penitencia Creek project started construction in June	Flood	Watersheds & Water Utility Divisions	Bonds	Ongoing	High

Action Item Number	Action Item Description	Additional Details	Hazard(s) Mitigated	Lead Position, Office, Department, or Division Responsible for Implementation	Potential Funding Sources	Expected Timeline for Completion	Priority
Infr d-11 Infr d-17 Govt d-1 Govt d-2 Govt d-3 Govt c-20 Env a-2	flood protection improvements as they relate to the risks outlined in this Plan.	2021 and civil construction will be completed by August 2023. USACE South San Francisco Bay Shoreline Phase I Project (Reaches 1-3 from Alviso Marina County Park to the Artesian Slough) began construction in December 2021 and is anticipated to be completed by January 2024. Design of the Coyote Creek Flood Management Measures Project (one of the FERC Order Compliance Projects) completed design in February 2023 and construction will begin in June 2023. This project will have a positive impact with flooding for some of the underserved populations near Coyote Creek. Design and permitting of Llagas Creek Phase 2B, Sunnyvale East/West Channels, Palo Alto Flood Basin Tide Gate Structure			Capital Improvement Program General District Funds		

Action Item Number	Action Item Description	Additional Details	Hazard(s) Mitigated	Lead Position, Office, Department, or Division Responsible for Implementation	Potential Funding Sources	Expected Timeline for Completion	Priority
		Replacement, and Coyote Creek (Montague to Tully Road) is continuing.					
Infr a-2 Infr d-7	Prevent landslide and debris flows from compromising the structure and function of Valley Water (VW) infrastructure by implementing any applicable mitigation techniques.	The Santa Clara Valley Water District (SCVWD) and the California Department of Water Resources (DWR) have water transmission, storage and treatment facilities within the Penitencia Creek Landslide located in the foothills of Northeast San Jose. Since the original construction, both agencies have actively monitored geotechnical monitoring infrastructure such as piezometers, inclinometers, survey monuments, and the like to assess the movements of the Penitencia Creek Landslide and its impact on the referenced facilities. SCVWD, in coordination with DWR, recently replaced significant	All Hazards, including Landslide, Mass Movement, Earthquake		General Valley Water Funds	Ongoing	High

Action Item Number	Action Item Description	Additional Details	Hazard(s) Mitigated	Lead Position, Office, Department, or Division Responsible for Implementation	Potential Funding Sources	Expected Timeline for Completion	Priority
		portions of the water transmission pipelines that serve the treatment and storage facilities with Earthquake Resistance Ductile Iron Pipe (ERDIP) in an effort to mitigate the effects of the landslide and to extend the useful life of the facilities. Additional advanced geotechnical monitoring infrastructure was installed in conjunction with the ERDIP pipeline replacement effort. The SCVWD and DWR have established monitoring and assessment protocols and procedures for this geologic feature to help ensure the continued safe operation of the critical water transmission, storage and treatment facilities and will continue to advance our landslide monitoring and					

Action Item Number	Action Item Description	Additional Details	Hazard(s) Mitigated	Lead Position, Office, Department, or Division Responsible for Implementation	Potential Funding Sources	Expected Timeline for Completion	Priority
		assessment efforts as technology allows.					
Infr a-1 Infr a-2 Govt a-2 Infr a-4 Infr b-5 Infr d-9 Infr d-12	Replace or retrofit structures that are determined to be structurally deficient including levees, dams, reservoirs, and tanks.	Seismic retrofit projects are underway at Anderson, Calero, and Guadalupe dams. Seismic improvements are underway at Almaden Dam.	Earthquakes	Water Utility Division	Bonds Capital Improvement Program General District Funds	Ongoing	High
Infr a-1 Infr a-2 Govt a-2 Infr a-4 Infr b-5 Infr d-9 Infr d-12	Continue to analyze and identify needs for future upgrades to structures.	Seismic evaluations are currently being performed at the Coyote, Chesbro, Uvas, Lenihan, and Stevens Creek dams.	Earthquakes	Water Utility Division	Bonds Capital Improvement Program General District Funds	Ongoing	High
Infr a-1 Infr a-2 Govt a-2 Infr a-4 Infr b-5 Infr d-9 Infr d-12	Evaluate, reinforce, and/or enhance district facilities to mitigate seismic risk.	Seismic improvements are underway at Almaden Dam. Other seismic evaluations are currently being performed at Coyote, Chesbro, Uvas, Lenihan, and Stevens Creek dams.	Earthquakes	Water Utility Division	Bonds Capital Improvement Program General District Funds	Ongoing	High
Govt a-2	Address gaps in data and missing information within this Annex for the next plan update.		All Hazards	All Departments	General fund	Short term	Medium

Action Item Number	Action Item Description	Additional Details	Hazard(s) Mitigated	Lead Position, Office, Department, or Division Responsible for Implementation	Potential Funding Sources	Expected Timeline for Completion	Priority
Env a-4 Env b-1 Env b-10	Evaluate the long-term impact of climate change on future water supplies and address severe drought conditions in water supply planning documents	The Water Supply Master Plan informs investment decisions by describing the type and level of water supply investments VW is planning to make to meet its level of service goal, emphasizing drought-resilience strategies using historical water supply data. As part of ongoing water supply planning, VW conducted a Climate Change Assessment to evaluate the impacts of climate change on local reservoir inflows, precipitation, temperatures, and imported water supplies. Additionally, VW updated the project risk assessment to reflect new information on VW's understanding of water supply projects. The goal of the risk assessment is to determine where and what types of risk exist for projects so that Valley Water can	Drought	Watersheds, Water Utility	General District Funds, Grant Funding	Ongoing, Every 5 years	Medium

Action Item Number	Action Item Description	Additional Details	Hazard(s) Mitigated	Lead Position, Office, Department, or Division Responsible for Implementation	Potential Funding Sources	Expected Timeline for Completion	Priority
		mitigate or adapt to the risks. The Water Supply Master Plan is currently being updated to continue to evaluate potential risks to our water supply system and develop measures to mitigate them.					
Infr d-16 Infr g-3 Env b-13	In coordination with retail water suppliers, host regular workshops and classes on water conservation, including providing information on drought-tolerant landscaping, available rebates for water retrofits, and water efficiency strategies in new buildings. Continue to offer workshops and classes even when drought conditions are not present. Develop outreach materials for water conservation.	VW's water conservation campaign, which includes paid ads, outreach materials, videos, social media posts and web/blog posts, was expanded to be year-round. Known as "Conservation is a Way of Life," this latest campaign promoted VW rebate and conservation programs. VW participates in a number of workshops and classes year-round and supports a multiagency effort called South Bay Green Gardens to promote sustainable landscaping classes and events. Additional efforts	Drought	Water Utility	General District Funds, Regional Water Agencies	Ongoing	High

Action Item Number	Action Item Description	Additional Details	Hazard(s) Mitigated	Lead Position, Office, Department, or Division Responsible for Implementation	Potential Funding Sources	Expected Timeline for Completion	Priority
		include development and distribution of a variety of outreach material to promote water conservation, including the launch of an irrigation scheduling tool. New developments include launching several vendor-supported pilot programs, including a webinar series for the public, hosting the annual Landscape Summit, launching a leak assessment and repair pilot and a toilet repair and replacement pilot for low-income community members, and launching a professional training for Qualified Water Efficient Landscapers (QWEL).					
Env b-11	Increase recycled and purified water supplies and expand the existing recycled and purified water infrastructure to further protect water supply from shortages during drought.	The Purified Water Program is part of VW's strategy to respond to future drought and is consistent with Board of Director's direction to expand the county's water	Drought	Water Utility	Public-private partnerships, grants, low interest loans	Long term	Medium

Action Item Number	Action Item Description	Additional Details	Hazard(s) Mitigated	Lead Position, Office, Department, or Division Responsible for Implementation	Potential Funding Sources	Expected Timeline for Completion	Priority
		supply. Valley Water secured an average of 9 MGD of treated effluent from City of Palo Alto and negotiations are underway with the City of Palo Alto on a long-term lease agreement and an Operations and Maintenance agreement, which will include Reverse Osmosis concentrate management for the construction of a future purification facility. On December 14, 2021, the Board directed staff to focus the development of a Public Private Partnership (P3) project for Indirect Potable Reuse on Palo Alto while continuing discussion with the cities of San Jose and Santa Clara for a potential future project. The project in Palo Alto will have a purified water capacity of 10-12 Million Gallons per Day (MGD). The project includes a					

Action Item Number	Action Item Description	Additional Details	Hazard(s) Mitigated	Lead Position, Office, Department, or Division Responsible for Implementation	Potential Funding Sources	Expected Timeline for Completion	Priority
		new purification facility and 20 miles of pipeline to the Los Gatos Recharge system for groundwater replenishment. Staff is working with regulators on Reverse Osmosis concentrate management and the Indirect Potable Reuse, working with cities along the pipeline route, and leading the procurement effort, which has included shortlisting four P3 teams. In addition, an Environmental Impact Report (EIR) is being developed. This is the first phase of implementing the Countywide Water Reuse Master Plan approved by the Board.					
Infr c-3	Frequently monitor the status of dry vegetation of District property and around District Facilities, particularly those in proximity to wildland and WUI, and conduct fuel reduction to lower risk of wildfire.	Valley Water Complies with California Government Code section 51182, which requires the maintenance of a	Wildfire	Watersheds	External fire partners, FireSafe Council, General District Funds	Ongoing	Medium

Action Item Number	Action Item Description	Additional Details	Hazard(s) Mitigated	Lead Position, Office, Department, or Division Responsible for Implementation	Potential Funding Sources	Expected Timeline for Completion	Priority
		firebreak within 30 feet of occupied structures on its property by removing flammable vegetation or combustible growth. An enhanced fuel assessment/reduction policy is being considered for natural areas managed by Valley Water in light of recent droughts, climate change, public concerns regarding wildfire, and increased presence of unhoused people and invasive plant species in these areas.					

* Number given to action item in 2017 Santa Clara County Operational Area Hazard Mitigation Plan.

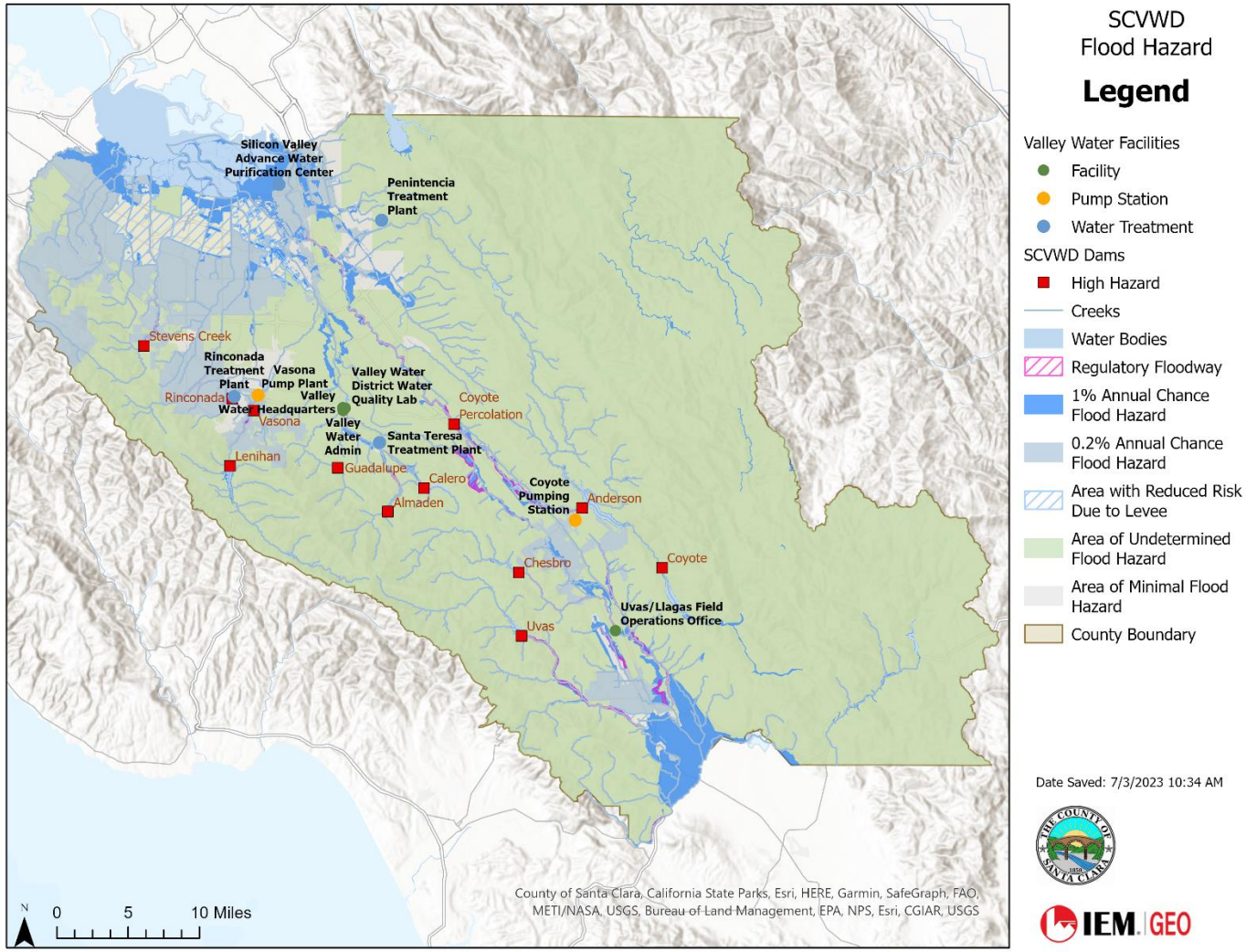

Figure 155: SCVWD Flood Hazard Area Map

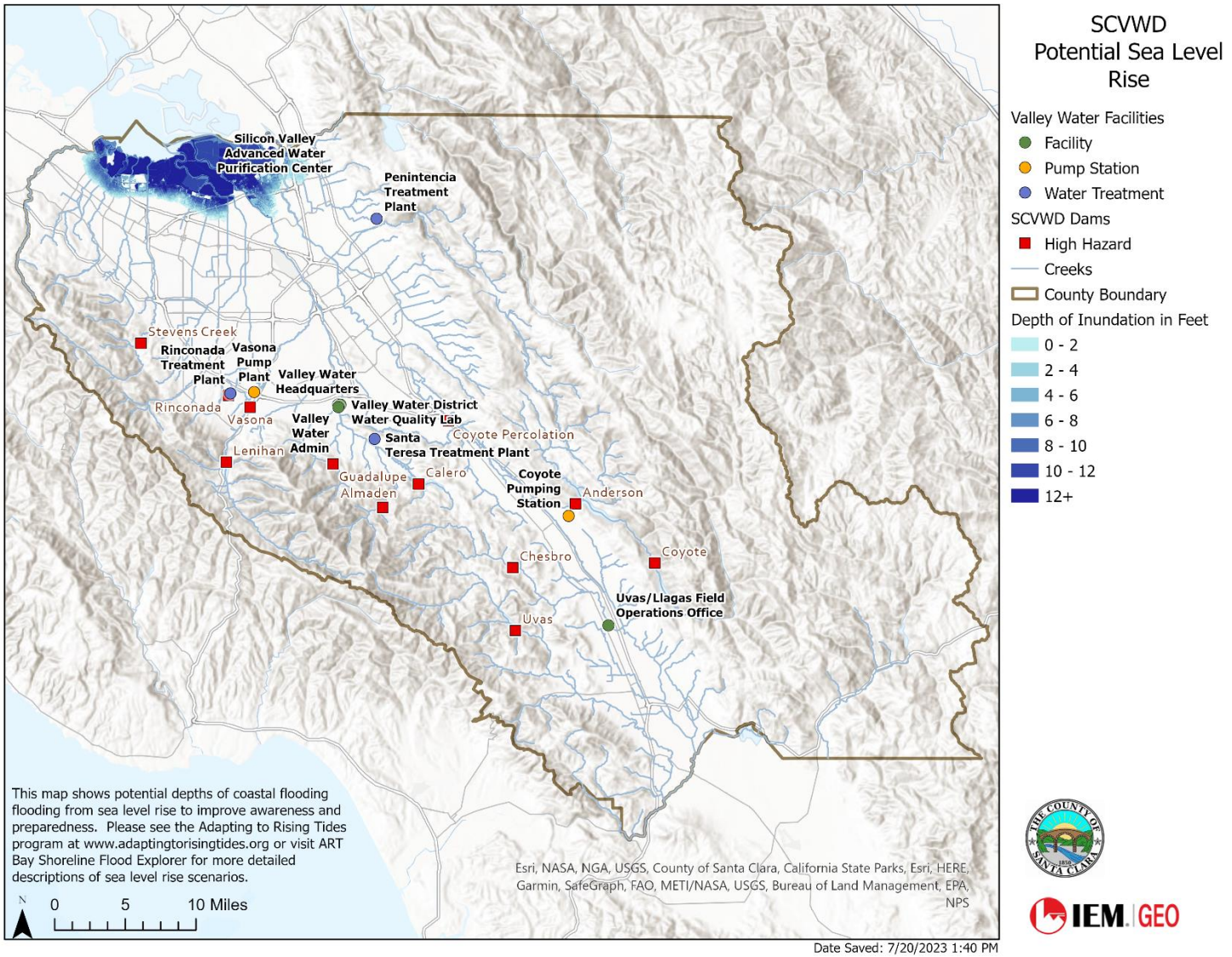

Figure 156: SCVWD Potential Sea Level Rise Map

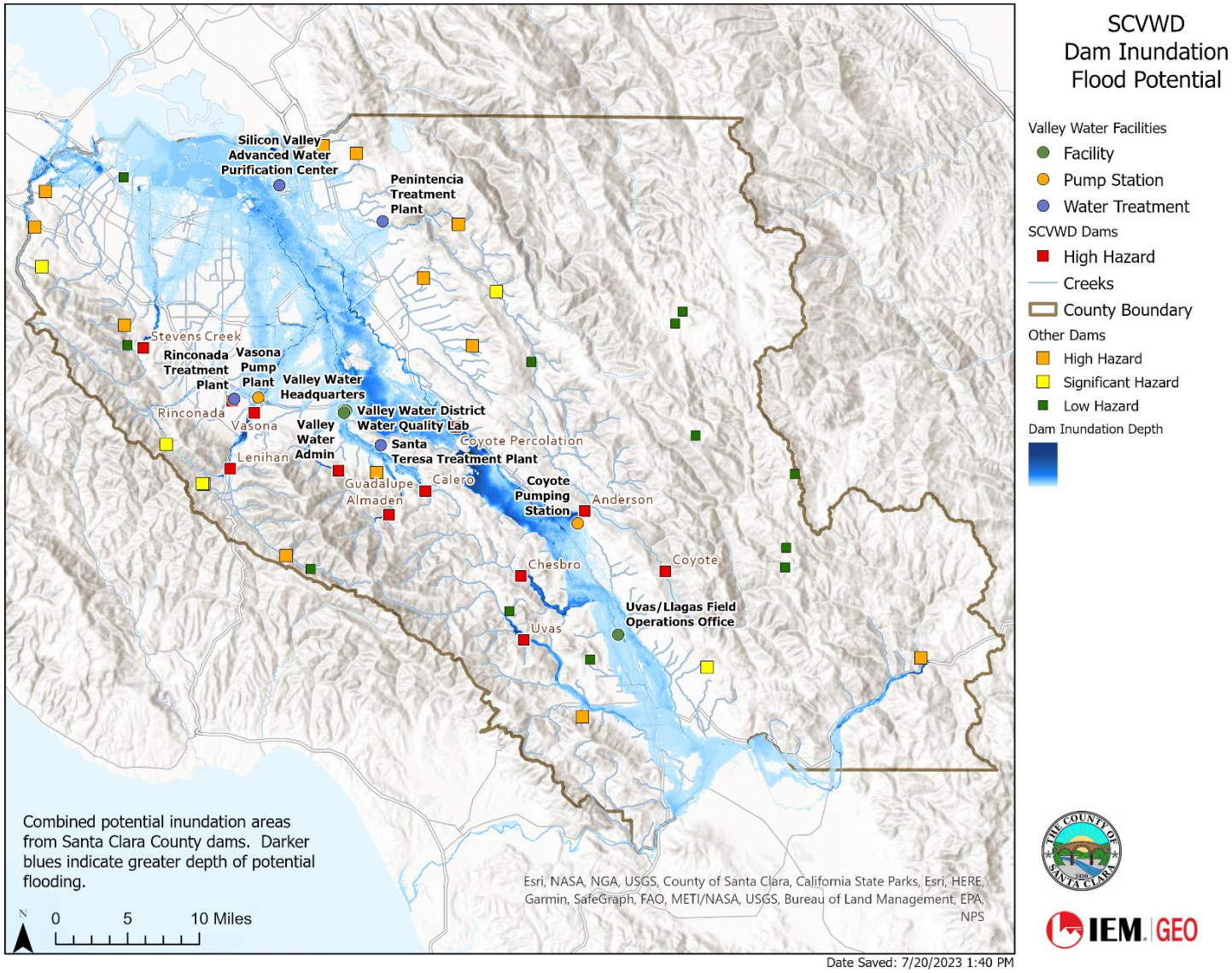

Figure 157: SCVWD Dam Inundation Flood Potential Map

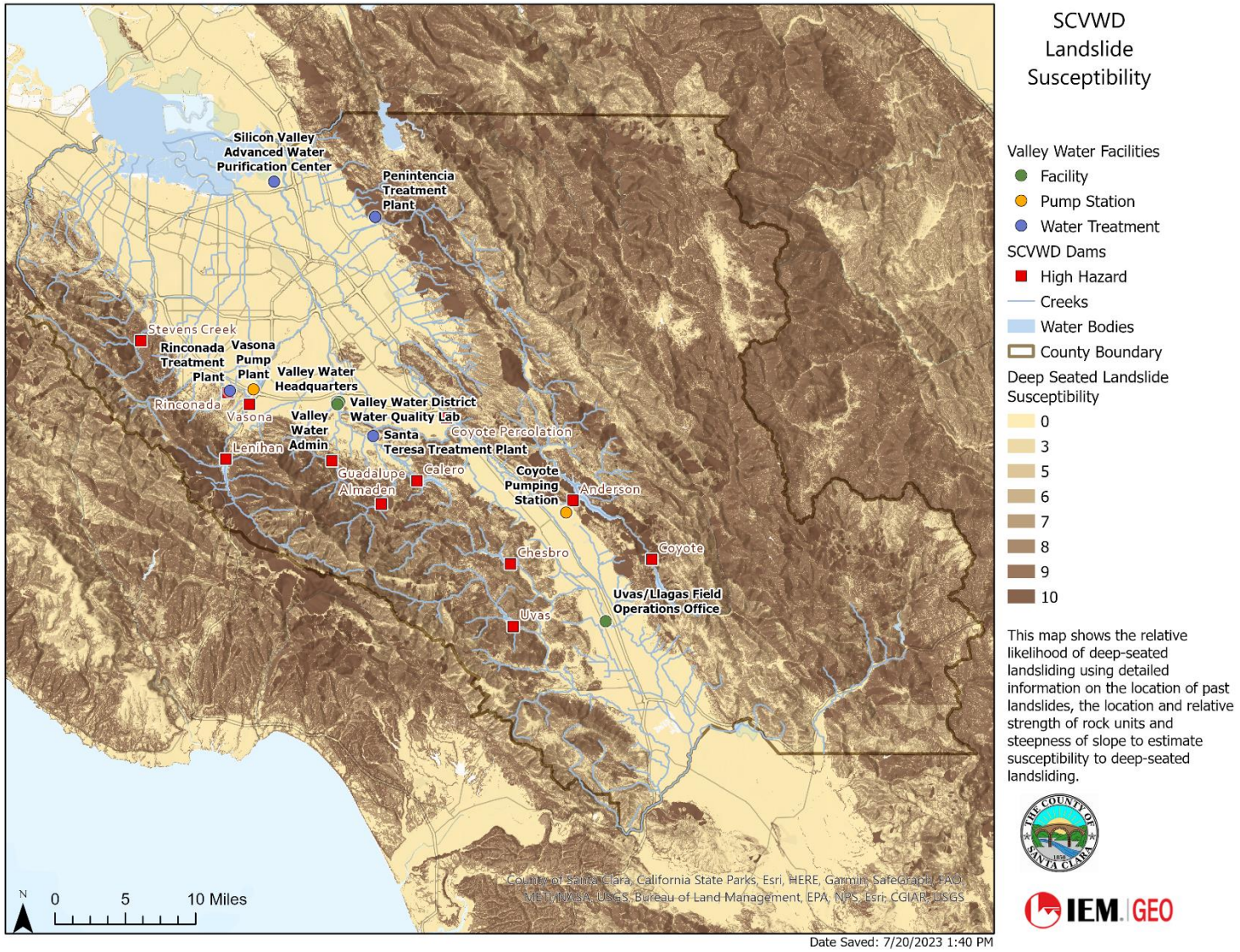

Figure 158: SCVWD Deep Seated Landslide Susceptibility Map

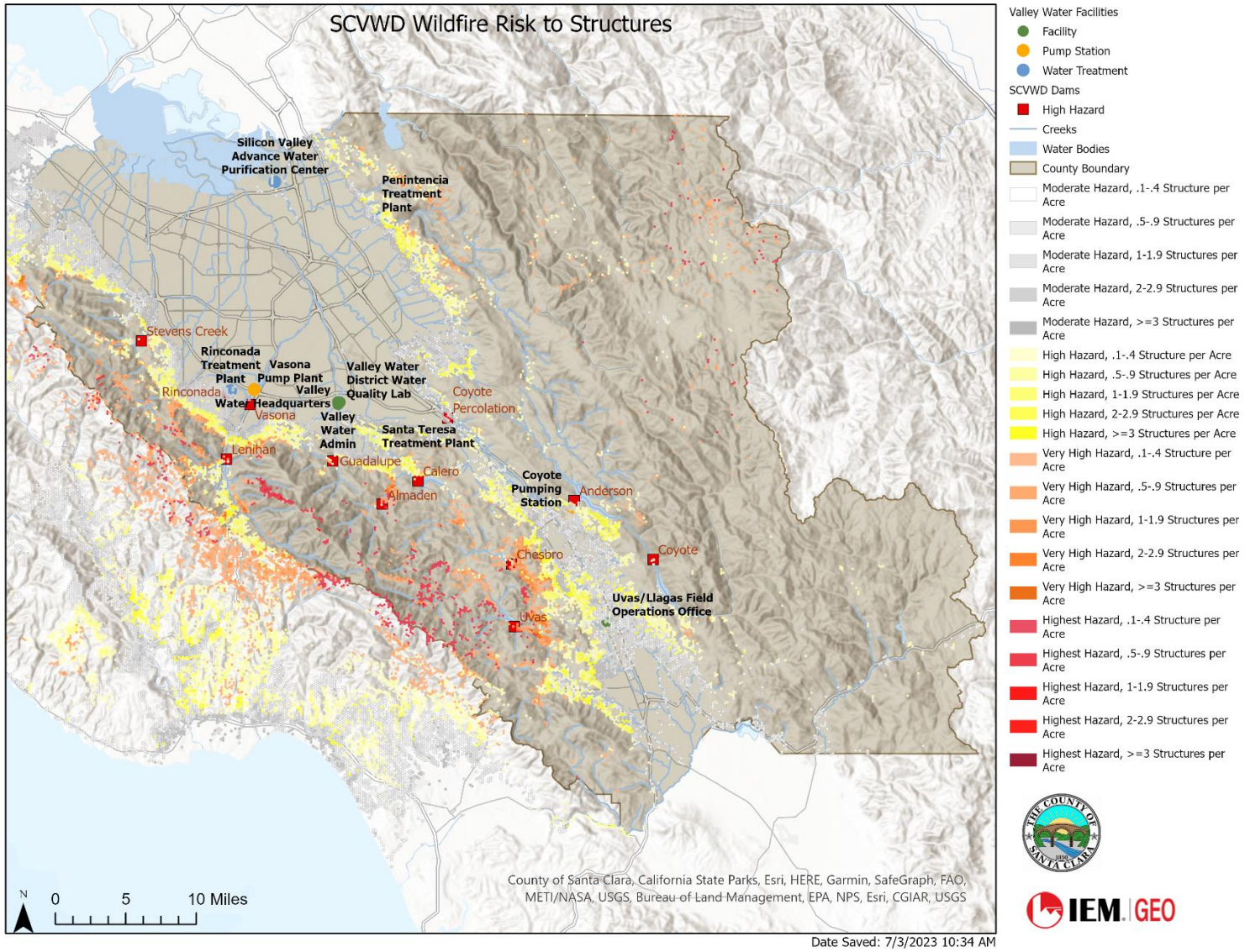

Figure 159: SCVWD Wildfire Risk to Facilities

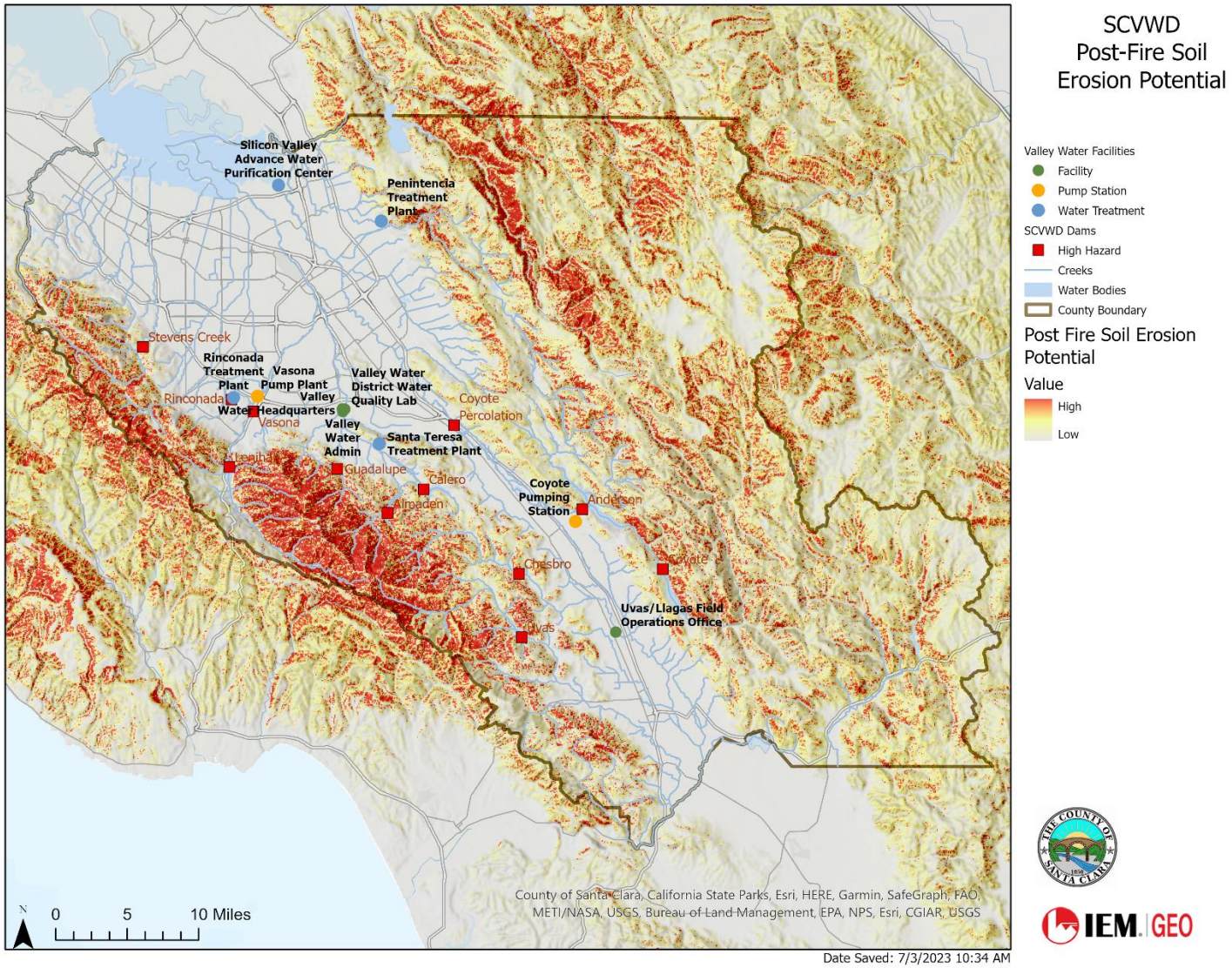

Figure 160: SCVWD Post-Fire Soil Erosion Potential Map

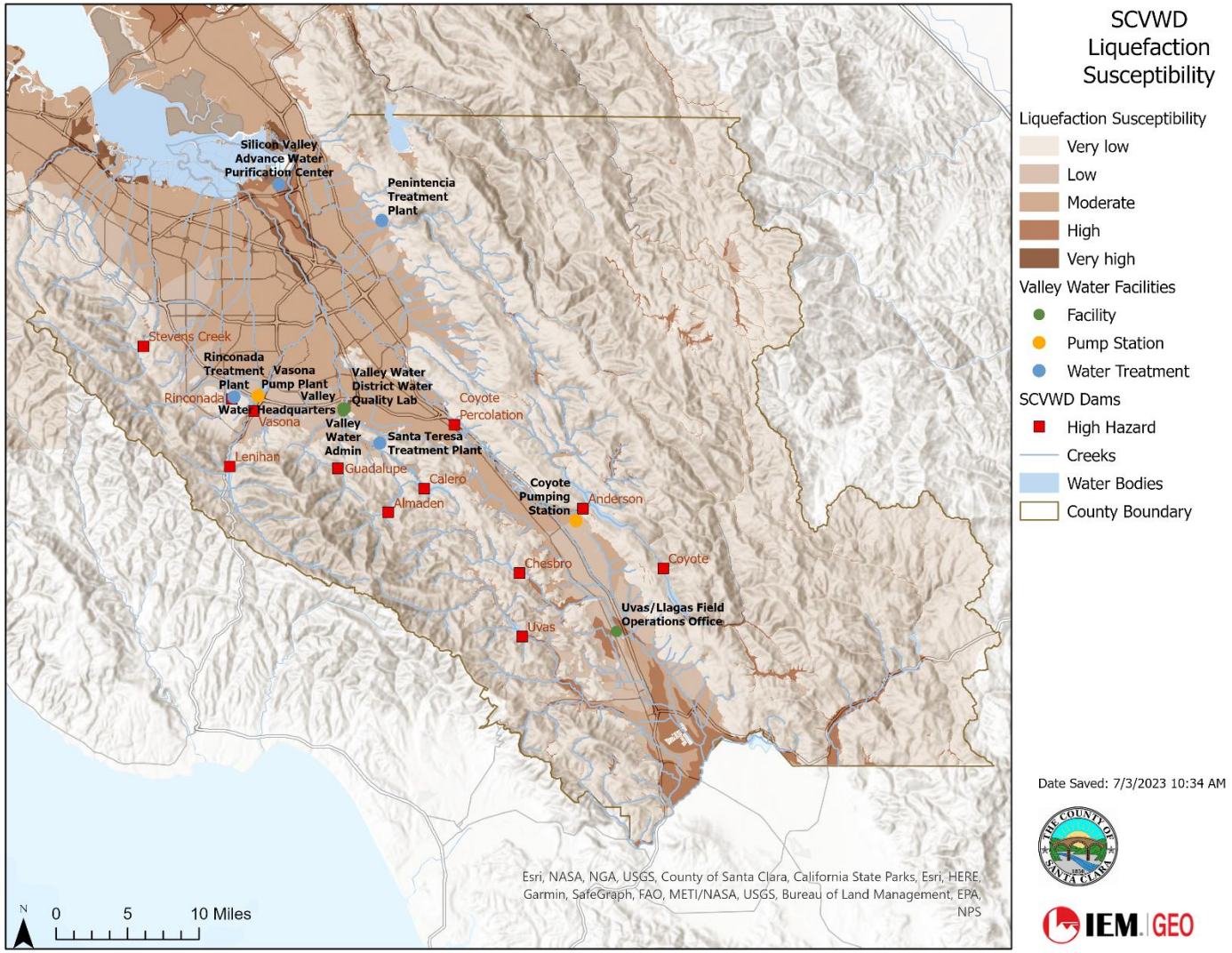

Figure 161: SCVWD Liquefaction Susceptibility Map

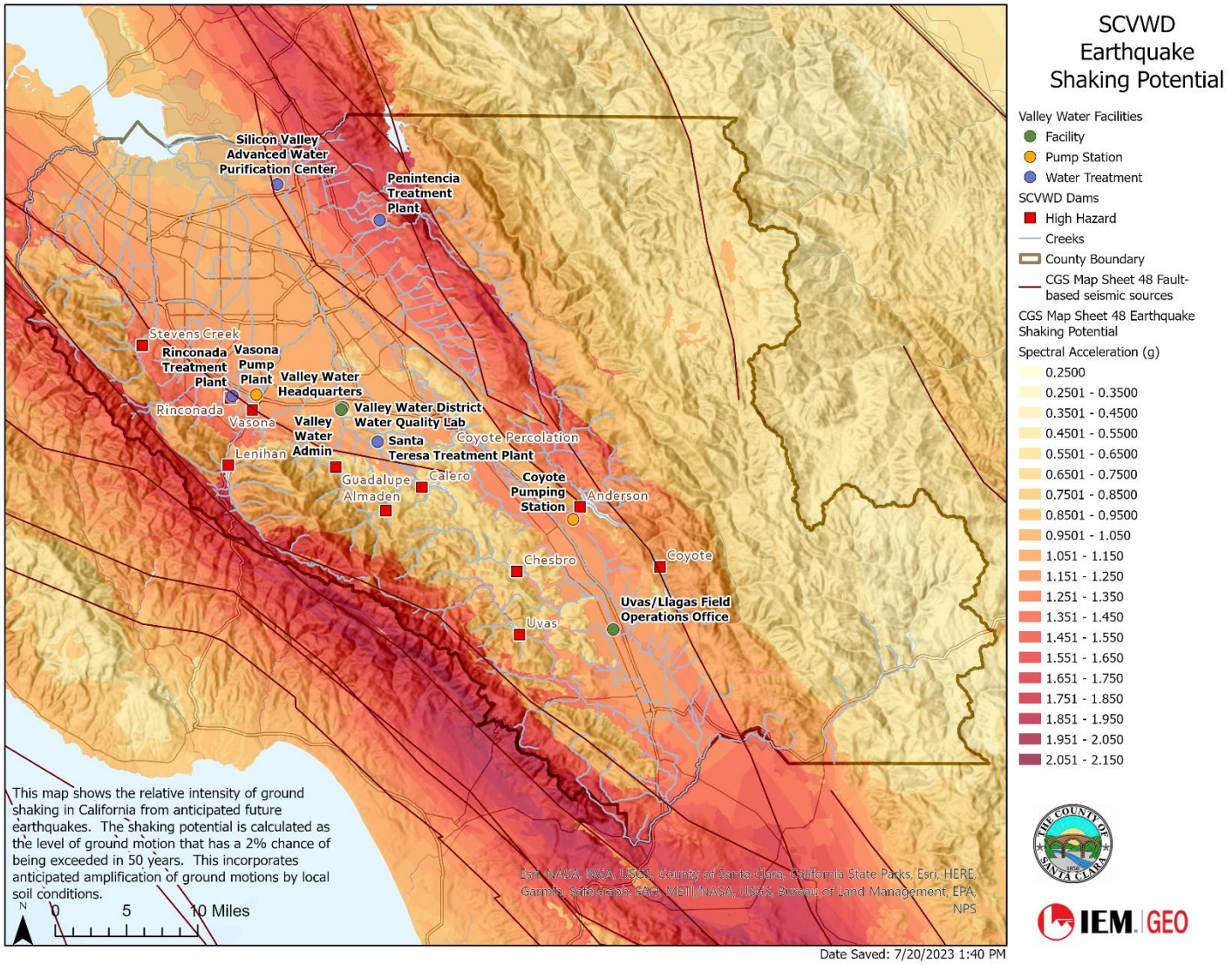

Figure 162: SCVWD Earthquake Shaking Potential Map