

SANTA CLARA VALLEY WATER DISTRICT LOCAL HAZARD MITIGATION PLAN 2019 ANNUAL REPORT

Local Hazard Mitigation Plan Background

The Federal Emergency Management Agency (FEMA) defines Hazard Mitigation as any action taken to reduce or eliminate the long-term risk to human life and property from natural hazards.

Flood, drought, earthquake, and severe weather are just a few of the hazards to the District's service territory. While natural hazards such as these cannot be prevented, a Hazard Mitigation Plan forms the foundation for a long-term strategy to reduce disaster losses by breaking the repeated cycle of disaster damage and reconstruction.

The federal Disaster Mitigation Act of 2000 (DMA 2000) requires state and local governments to develop hazard mitigation plans as a condition for federal disaster grant assistance. The Santa Clara Valley Water District (the district) has developed a local hazard mitigation plan (LHMP) which was last updated in October, 2017. To prepare the plan, the district organized resources, assessed risks from natural hazards within the district's service territory, developed planning goals and objectives, reviewed mitigation alternatives, and developed an action plan to address probable impacts from natural hazards. By completing this process, the district maintained compliance with the DMA 2000, achieving eligibility for mitigation grant funding opportunities* afforded under the Robert T. Stafford Act. The district's full plan can be viewed online at: https://www.valleywater.org/LHMP

Changes That May Impact Implementation of the Plan / Natural Hazard Events within the Planning Area

During the reporting period, there were no natural hazard events in the planning area that had a measurable impact on people or property. There were no significant changes in the planning area that would have a profound impact on the implementation of the plan.

^{*}Communities with a FEMA-approved LHMP are eligible for FEMA pre- and post-disaster grant funding and for lower costs of flood insurance to residents through the National Flood Insurance Program's (NFIP) Community Rating System (CRS).

Summary Overview of the Plan's Progress

The district received final approval of the 2017 Local Hazard Mitigation Plan (LHMP) on May 2, 2018. The initial performance period for this plan will be five (5) years, with an anticipated update to the plan to occur before May 2023. The Hazard Mitigation Plan targeted 48 hazard mitigation initiatives to be pursued during the five-year performance period. Upon reviewing the initiatives for progress during this first reporting period, it was determined that five (5) of the initiatives were either already being addressed as part of or were best addressed as part of other exiting initiatives. Four (4) initiatives were discontinued because it was determined that mitigation was not necessary or could not be performed at this time. This resulted in lowering the overall number of mitigation initiatives to thirty-nine (39). As of this reporting period, the following overall progress can be reported:

- 36 out of 39 initiatives (92%) reported ongoing action toward completion.
- 2 out of 39 initiatives (5%) reported no progress.
- 1 out of 39 initiatives (3%) was completed.

The table below reports the status of each of the initiatives that constitute the district's LHMP Mitigation Action Plan.

	SCVWD LOCAL HAZARD MITIGATION PLAN ACTION PLAN MATRIX – 2019 ANNUAL REPORT					
Action Taken?	Timeline	Priority Changed?	Comment (Describe progress or changed priority)	Status		
Santa C	Clara Valley Water D	District				
	1.1—Continue to stockp d infrastructure.	ile repair ma	terials, portable pumps and other supplies to assist with rapid and functional repairs to wat	er utility and		
Yes	Ongoing	No	The district has a supply of equipment and materials, including pipe repair materials, large diameter pipe, valves, boulders (to arrest erosion), portable pumps, hoses, generators and other equipment and materials needed to respond to hazards and outages. Filled sandbags are stocked at sandbag sites annually, in October.	Ongoing		
Initiative	1.2—Continue to incorp	orate the effe	cts of climate change into water utility and watershed infrastructure vulnerability studies.			
Yes	Ongoing	No	This measure has been discontinued as it is addressed in measure 1.5	Discontinue (comment required)		
			ce of the district's facilities and infrastructure through energy efficiency, on-site or local reies. Ensure adequate emergency power is available in the interim.	enewable energy		
Yes	Ongoing	No	The district continues to implement the energy optimization measures (EOMs) recommended by the 2013 Energy Optimization Plan. Thirty-seven of the original forty-nine EOMs have been completed since 2013 and there are currently 7 EOMs in progress. The district is replacing the solar panels at its Headquarters campus solar installation with new and more efficient panels, which will increase power generation and extend the life of the facility. The district is continuing to explore ways to make these projects more cost competitive and to develop more renewable energy projects. The district has back-up power sources available at its primary facilities in the event of emergencies.	Ongoing		
digital de	Initiative 1.4—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.					
Yes	Ongoing	No	The district conducts an annual flood awareness campaign which includes general disaster preparedness tips. Efforts include paid ads, web/blog posts, media interviews, social media, speaking presentations and community events. Ads are in English, Chinese, Spanish and Vietnamese.	Ongoing		

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Action Taken?	Timeline	Priority Changed?	Comment (Describe progress or changed priority)	Status		
Initiative constructi		nerability st	udies, including anticipated climate change impacts, in advance of all new infrastructure si	ting and		
Yes	Ongoing	No	This is an ongoing district effort. Site analysis is included as part of the capital project planning and design process.	Ongoing		
	1.6—Continue to particip t and other Santa Clara C		ilicon Valley Regional Interoperability Authority (SVRIA) to improve emergency communications.	nications between		
Yes	Ongoing	No	The district regularly communicates with SVRIA leadership. The district will migrate to the SVRIA environment following completion of South-County radio sites, most notably Pacheco Peak.	Ongoing		
			try to avoid locating facilities in areas of high hazard risk. If this is unavoidable, integrate ty from all applicable hazards.	extensive mitigation		
Yes	Ongoing	No	This measure is discontinued as associated work is captured in measure 1.5	Discontinue (comment required)		
	1.8—Improve estimates of the planning efforts.	of potential of	damage to district facilities from various potential emergency situations, and integrate thes	e estimates into		
Yes	Ongoing	No	July 2018, the district completed retro-fit project work on the Penitencia Delivery Main and Penitencia Force Main pipelines utilizing earthquake resistant ductile iron pipe (ERDIP) material. This pipe is segmented in a way that allows for movement of the pipe during seismic events, thus reducing potential damage during earthquakes and other geologic hazards. Potential seismic damage to pipelines was recently assessed and will be further developed in a pipeline risk model to be completed by December 2019. Estimates of repair costs for watershed division assets are located in the 5-year O&M plan and asset management plans.	Ongoing		

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	1.9—Update all emerger ding, best practices, local		documents every five years to ensure consistency with state and federal laws, eligibility for and updated science.	or hazard mitigation
Yes	Ongoing	No	The district updated its Local Hazard Mitigation Plan in 2017 and its Emergency Operations Plan in 2018. The district complies with updating its' Dam EAPs on a continuous 5-year review cycle. The district created 2 new EAPs (West Little Llagas creek and Uvas creek). Under the new America's Water Infrastructure Act of 2018, the district will review and revise as necessary, all applicable emergency planning documents no less than every 5 years.	Ongoing
Initiative	1.10—Regularly pursue	funding oppo	ortunities for hazard mitigation activities.	
Yes	Ongoing	Yes	Pursued funding for Stevens Creek Erosion Repair (approved) and Pope Chaucer Bridge Replacement at San Francisquito Creek. The district also submitted and received approval of grant funding for the San Francisco Bay Shoreline Study Project.	Ongoing
	1.11—Assess the capabi ate or backup.	ility and feasi	bility of using inter- organizational and public/private water distribution infrastructure ("v	vater-wheeling") as
Yes	Short Term (<5yrs.)	No	The district has developed agreement templates that can be used in an emergency to wheel retailer water supplies through SCVWD pipelines.	Complete
Initiative	1.12—Install pipeline is	olation valve	s to enable smaller geographic service outages and shorter recovery periods.	
Yes	Long Term (5+yrs.)	No	Two capital projects are underway with completion slated for 2024.	Ongoing
Initiative	1.13—Conduct a Retaile	er Intertie Stu	dy to explore the capacity and interconnectivity of retailer interties.	
No	Short Term (<5yrs.)	No	The district supports this study but has determined it needs to be a retailer led effort.	No Progress
and the C	Great Oaks Water Compa	ny wells, the	ns to public and private groundwater wells for redundancy, including connections between Santa Clara Distributary and the planned Santa Clara Water Company Serra Tank well, and Yiew Water Company Miramonte well.	
No	Long Term (5+yrs.)	No	The city of Santa Clara is investigating alternative well sites. The city of Mountain View has indicated they do not have plans to construct a Miramonte Well at this time. The Great Oaks project has not yet started.	No Progress

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Action Taken?		Priority Changed?	Comment (Describe progress or changed priority)	Status
Initiative infrastruc		and suppor	rt regional and state efforts to increase the resiliency, redundancy and reliability in water so	upply and safety
Yes	Ongoing	No	California WaterFix: Construction and financing governance structures established in mid-2018. Planning documents and contract amendments in development. Sites Reservoir: Planning documents and project operations are being developed. Phase 1 nearing completion and project seeking funding for Phase 2. Los Vaqueros Reservoir: Design, permitting, and project operations are being developed. Project seeking funding for next phase and development of JPA governance structure. Main-Madrone pipeline: Pipeline replacement is under construction and is scheduled to be completed by summer 2019.	Ongoing
Initiative	1.16—Develop interagency	y mutual-a	id agreements and emergency assistance protocols between the district and surrounding jui	risdictions
Yes	Ongoing	No	The district maintains an agreement with Cal Fire to provide water tenders for emergency assistance and maintains partnerships with CAMAL Net (laboratory service) and CalWARN (water agencies) for emergency assistance and mutual aid.	Ongoing
	•		dam inundation zones to ensure residents and businesses are aware of the potential risk, a into local planning efforts. Use GIS mapping for risk analysis and communication as appro-	
Yes	Ongoing	No	The district facilitated an EAP orientation with Park Rangers in February 2018. In October 2018, a call down drill was conducted with the downstream agencies for all Dam EAPs.	Ongoing
Initiative	2.2—If appropriate, identif	fy critical d	lam infrastructure at heightened risk from dam failure and develop a plan to protect or retro	ofit those facilities.
Yes	Ongoing	No	The district has/is performing seismic studies to identify dams at heightened risk to failure and is performing seismic retrofits / improvements as applicable.	Ongoing

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Action Taken?	Timeline	Priority Changed?	Comment (Describe progress or changed priority)	Status		
	nitiative 3.1—Evaluate the long-term impact of climate change on future water supplies, and include more severe drought conditions in water supply planning documents.					
Yes	Ongoing	No	As part of the update to the District's Water Supply Master Plan (Master Plan), the Board adopted staff's recommended level of service goal to "develop water supplies designed to meet at least 100 percent of average annual water demand identified in the district's Water Supply Master Plan during non-drought years and at least 80 percent of average annual water demand in drought years." Drought conditions considered in the Master Plan and other water supply documents include all historical droughts that occurred between the years 1922-2015. As part of the Master Plan update, the district also conducted a late-century analysis to better understand the impacts of climate change on the projects being evaluated.	Ongoing		
Initiative	3.2—Work with retail wa	ater suppliers	s to offer free or low-cost water audits for residents and businesses within the district's ser	vice territory.		
Yes	Ongoing	No	The district works with retailers to offer a free Water Wise Survey Program, which includes two components: an outdoor irrigation survey and an indoor water audit do-it-yourself kit.	Ongoing		
Initiative	3.3—Work with retail wa	ater suppliers	s to support real-time water monitoring for all customers.			
Yes	Short Term (<5yrs.)	No	The Water Supply Planning and Conservation Unit have been working with water retailers to promote AMI meter technology. The district also includes messaging on home water use reports that are sent out in collaboration with water retailers.	Ongoing		
drought-t	Initiative 3.4—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.					
Yes	Ongoing	No	The district conducts an annual water conservation campaign which includes paid ads, outreach materials, videos, social media posts and web/blog posts. These efforts promote district rebate and conservation programs. The district participates in a number of workshops and classes, year-round and supports a multi-agency effort to promote sustainable landscaping classes and events, called South Bay Green Gardens.	Ongoing		

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Initiative	3.5—Increase recycled a	nd purified v	water supplies and expand the existing recycled and purified water infrastructure.			
Yes	Short Term (<5yrs.)	No	The Expedited Purified Water Program is part of the district's strategy to respond to future drought and is consistent with Board of Director's direction to expand the county's water supply. As currently conceived, the program will provide up to 24,000 acre-feet per year (AFY) of purified water for potable reuse to reduce reliance on the other existing sources such as imported and locally-stored water supply.	Ongoing		
Initiative	3.6—Explore opportuniti	es to recycle	e water for non- potable and potable uses.			
Yes	Ongoing	No	The district is developing a Countywide Water Reuse Master Plan in collaboration with recycled water producers, wholesalers, retailers, users, and other interested parties. The Master Plan will identify: the volume of water available for potential potable reuse (PR) development and non-potable reuse (NPR) expansion; the optimal allocation between PR and NPR; options for system integration; recommendations for building upon NPR projects; potential new PR projects; and proposals for governance model alternatives including roles and responsibilities.	Ongoing		
			rovement Program (CIP), continue to prioritize water supply improvements as they relate IP to support mitigation actions outlined in this Plan.	to the risks outlined		
Yes	Ongoing	No	This is an ongoing district effort.	Ongoing		
Initiative	Initiative 3.8—Implement projects that increase the resiliency or reliability of future water supplies.					
Yes	Ongoing	No	This work is covered in measure 1.15	Discontinue (comment required)		

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Initiative flows.	4.1—Continue to repair a	nd improve	storm drain and flood protection systems owned and maintained by SCVWD to better acc	ommodate flood
Yes	Ongoing	No	Improved facilities are maintained to design flow capacity. Those that are in arrears are included in the 5-year Watershed O&M plan. Completed projects include the following: October 2018 - Coyote Creek Levee Rodent Damage Repair Project: Re-established levee as-built condition due to rodent damage (Upstream and Downstream); October 2018 - Matadero Creek Sediment Removal and Erosion Repair Project: Removed 3,000 cubic yard of sediment, repaired concrete lining under West Bayshore Road, repaired the concrete bed from Virginia Avenue to Smith Creek confluence and from Williams Road to USGS Gage; November 2018 - Stevens Creek Bank and Access/Trail Road Repair: Restored undermined trail due to severe creek erosion.	Ongoing
Initiative	4.2—Monitor creek infras	structure for	obstructions and remove any obstructions as quickly as possible.	
Yes	Ongoing	No	Facilities are routinely inspected, blockages cleared and known hot-spots are monitored throughout the rainy season. Trash and debris are removed when safe to do so and in accordance with regulatory permits. Sediment is removed periodically from streams and erosion repaired as resources allow.	Ongoing
			trict property, including parking lots and plazas, to use permeable paving, green infrastructrical infiltration, even in heavy rain events.	ture, and other low-
Yes	Short Term (<5yrs.)	No	Retrofits to hardscape areas are planned and carried out as needed based on site and operational requirements.	Ongoing
	4.4—Identify and impleme 100-year floodplain.	ent effective	e flood protection measures around water supply facilities and pumping stations, prioritizing	ng facilities located
No	Ongoing	No	This measure is being discontinued, as the district 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.	Discontinue (comment required)

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Action Taken? Initiative	Timeline 4.5—As identified in the	Priority Changed? Capital Imp	Comment (Describe progress or changed priority) rovement Program (CIP), continue to prioritize flood protection improvements as they rela	Status ate to the risks		
		•	to the CIP to support mitigation actions outlined in this Plan.			
Yes	Ongoing	No	San Francisquito Creek Flood Protection from the Bay to HWY 101 (Completed December 2018); Permanente Creek Channel Flood Protection (Completed December 2018); continued construction of: McKelvey Park Flood Detention Facility, Rancho San Antonio Park Flood Detention Facility, Lower Berryessa Creek Phase 2 Flood Protection; Cunningham Flood Detention Certification (began construction in June 2018); Upper Llagas Creek Flood Protection (received Regional Water Quality Control Board construction permit in July 2018 and California Department of Fish & Wildlife Incidental Take Permit in October 2018); Sunnyvale East and West Channels Flood Protection (continuing to negotiate construction permits with regulatory agencies);	Ongoing		
Initiative 4	4.6—Develop outreach n	naterials for	extreme flood conditions and events.			
Yes	Ongoing	No	The district prepares an annual "Floodplain Mailer" which is sent to every household in a 100-year flood zone (sent Nov 2018). It's in Spanish, English, Chinese and Vietnamese. The district also develops a winter preparedness flyer every year which is distributed in floodprone areas near San Francisquito Creek (sent Nov 2018). The district also maintains a "Flood Ready" web page with tools, tips and helpful resources for emergency preparedness.	Ongoing		
Initiative 3	5.1—Use erosion and sed	liment contro	ol features that provides protection as required by local or state standards for all district co	nstruction activities.		
Yes	Ongoing	No	Ongoing for district construction projects. Best Management Practices (BMPs) have been developed and are modified on an ongoing basis. Completed projects include the following: Stevens Creek Erosion Repair (October 2018); Coyote Creek Upstream of HWY 237 Erosion Repair (October 2018); Coyote Creek Downstream of HWY 237 Erosion Repair (October 2018); San Tomas Creek Erosion Repair and Matadero Creek Sediment Removal & Erosion Repair (November 2018). The Uvas Creek Outboard Levee Erosion Repair project began in August 2018 and is expected to complete in May 2019.	Ongoing		
Initiative :	5.2—Mitigate landslide a	nd debris flo	ows to minimize damage to structure and function of district infrastructure.			
Yes	Ongoing	No	District is monitoring known landslide area. Pipes crossing the Penitencia landslide have been replaced with landslide resistant pipes and structures.	Ongoing		

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Action Taken?	Timeline	Priority Changed?	Comment (Describe progress or changed priority)	Status	
	6.1—Continue to monitor of subsidence begins to or		groundwater pumping within the district, and coordinate groundwater pumping and increa	se groundwater	
Yes	Ongoing	No	No permanent subsidence has been observed for many decades due to comprehensive groundwater management. During droughts, adherence to the district's Water Shortage Contingency Plan helps minimize the risk of subsidence. Groundwater and land subsidence monitoring and conditions are described each year in the district's Annual Groundwater Report.	Ongoing	
Initiative	7.1—Develop and imple	ment plans to	protect key facilities within the sea level rise hazard area as sea levels increase.		
Yes	Ongoing	No	Palo Alto Flood Basin Tide Gate Structure Replacement (completed geotechnical investigation in November 2018); South San Francisco Bay Shoreline Study (Completed 95% design of Reach 1 levee in November 2018).	Ongoing	
	7.2—Coordinate with Sa om sea level rise.	inta Clara Co	ounty, ABAG, Bay Conservation and Development Commission and other agencies, to def	end against and	
Yes	Ongoing	No	South San Francisco Bay Shoreline Project pre-construction activities began September 2018. Construction to begin FY2020	Ongoing	
Initiative	8.1—Maintain existing l	evee inspecti	on and repair program to address seismic vulnerabilities of levee systems.		
Yes	Ongoing	No	The district performs regular inspections and repairs are made as required.	Ongoing	
Initiative	8.2—Secure funding to c	conduct nece	ssary seismic strengthening work on district-owned dams as identified in seismic evaluation	ons.	
Yes	Ongoing	No	This measure is part of the work performed under measure 8.3	Discontinue (comment required)	
	nitiative 8.3—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.				
Yes	Ongoing	No	Seismic retrofit projects are underway at Anderson, Calero, and Guadalupe dams. Other seismic evaluations are currently being performed at Coyote, Chesbro, and Uvas dams. Future studies are planned for Lenihan and Stevens Creek dam spillways.	Ongoing	

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Action Taken?	Timeline	Priority Changed?	Comment (Describe progress or changed priority)	Status	
Initiative	8.4—Conduct evaluation	s of district	facilities (Offices, Ancillary Structures) to determine seismic vulnerability.		
Yes	Short Term (<5yrs.)	No	The district completed a seismic assessment of the South County Yard facility in October 2018. Facility assessments are conducted based on operational need.	Ongoing	
			re in areas of highest liquefaction, ground shaking, and/or fault rupture risk. If siting new gnificant mitigation measures to reduce the vulnerability to earthquake hazards.	infrastructure in	
Yes	Ongoing	No	This measure is discontinued. Work addressing this measure is captured in measure 1.5	Discontinue (comment required)	
Initiative	8.6—Replace seismically	vulnerable	sections of the Almaden Valley Pipeline.		
Yes	Short Term (<5yrs.)	No	Pipeline condition is being continuously monitored with Acoustic Fiber Optic technology. Conceptual level planning for replacing sections of Almaden Valley Pipeline has begun.	Ongoing	
Initiative appropria		other large ob	ojects that may threaten nearby district infrastructure in high wind events, and maintain or	reinforce as	
Yes	Ongoing	No	The district conducts facility inspections. When threats are identified (including hazardous trees), work orders are submitted to mitigate the problem.	Ongoing	
	10.1—Frequently monitor tement and pesticide apple		of dry vegetation on District property and around district facilities in wildland and WUI zo ities as needed.	ones, and conduct	
Yes	Ongoing	No	The district adheres to annual fire code compliance requirements.	Ongoing	
Initiative	10.2—Work with surrou	nding landov	wners to ensure adequate fire road access to district facilities.		
No	Short Term (<5yrs.)	No	This mitigation action is being removed because the district already has access to its facilities (buildings and infrastructure), and waterways. Additional access through private land owners is not needed.	Discontinue (comment required)	
			vays and water sources adjacent to any high-fire risk areas, and prepare for increased turbi mitigation measures as appropriate.	dity as a result of	
No	Short Term (<5yrs.)	No	This mitigation action is being removed as there is no identifiable mitigation work that can be performed at this time.	Discontinue (comment required)	

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Action Taken?	Timeline	Priority Changed?	Comment (Describe progress or changed priority)	Status			
Initiative	10.4—Design and imple	ment mitigat	ion measures to reduce turbidity in waterways and water sources near high-fire risk areas.				
No	Short Term (<5 yrs.)	No	This measure is being discontinued because turbidity as a result from fires and vegetation loss that enter waterways will be addressed utilizing Best Management Practices by Operations and Maintenance (same as day-to-day operations).	Discontinue (comment required)			

Recommendations for Changes or Enhancements

Based on the review of this report by the Hazard Mitigation Plan Team, the following items were recommendations for future changes or enhancements to the plan:

- Incorporate information from the district's Climate Change Action Plan once it is completed.
- Consider developing green storm water infrastructure / water quality related measures