Santa Clara Valley Water District
Water Supply Master Plan
Strengths, Weakness, Opportunities, and Threats Analysis

	Strengths (Internal District)	Weaknesses (Internal District)	Opportunities (External)	Threats (External)
Groundwater	• Retailer systems/countywide pumping capacity is sufficient to meet minimum and average demands (infrastructure is available) • Several natural channels used for recharge are undergoing flood protection or erosion improvement projects • Size of the groundwater basin provides opportunity for soil aquifer treatment	• Potential for subsidence • Limited ability to manage groundwater pumping • Limited recharge capacity • Nitrate in Llagas/ South County • South county supplies less diverse than north county supplies • Need to better inform policy makers and leaders about the relationship between groundwater management and local/surface water supply and facilities	• Expand recharge • Add imported water pipeline to Church Ave ponds • Sustainable Groundwater Management Act • Sewer around San Pedro Ponds • Land use changes and policies that increase natural recharge • High quality stormwater infiltration	• Groundwater basin contamination (existing and potential) • Environmental flow regulations in natural channels may limit water supply/recharge operations • Land use changes that reduce natural recharge • Reduced natural recharge as a result of climate change • Major demand increase in groundwater dependent areas
Local Surface Water	• District's complex system and multiple sources allow for great operational flexibility in most areas • Multiple raw water sources are available to supply the water treatment plants (WTPs) and groundwater recharge operations	• Agreements with USACE for Downtown Guadalupe flood protection project requires District to maintain operations on Guadalupe, Almaden, and Calero • DSOD operating restrictions on several reservoirs • Several irrigators on raw water pipelines are not well documented or monitored, which leads to inefficient system operations • Several dam outlet structures may need rehab • Several dam hydraulic operating systems are in poor condition and at risk of failure • Specific facilities in notably poor condition include Vasona and Almaden-Calero Canals, Vasona Pumps, Church Diversion Dam • Special water quality related raw water blends to the treatment plants reduce amount of water that can go to recharge • Flood and erosion control projects could result in loss of recharge or include environmental requirements that limit the ability to manage the flows for water supply benefits.	• Expand existing in-county reservoirs • Connect local storage reservoirs to the raw water pipelines or improve operations to increase beneficial use of water (Uvas, Lexington) • Maximize use of Calero reservoir, as it can receive water from five sources • Implement new technologies to make system more efficient (automated valves, electronic data transfer, visual monitoring, etc.) • More off-stream recharge ponds and conveyance	• Reliability and cost of power or Federal regulations on GHG emissions could limit District operations • Additional regulatory constraints on using creeks for conveyance and recharge • Potential seismic and spillway and freeboard upgrades at several dams due to DSOD • Invasive species could degrade infrastructure • Reduced runoff from climate change • Increased evaporation of surface water and reservoirs from increased temp
Recycled and Purified Water	• Recycled water use at 5% • Silicon Valley Advanced Water Purification Center • Outreach efforts on recycled water • Long term agreements with San Jose	• Gilroy reclamation pipeline has had many leaks and needs replacement in 2038 or earlier • Need to define internal policies about District's role as sole wholesaler of purified water • Need to establish MOU's with partner agencies defining roles and responsibilities re: ownership and O&M of recycled water systems • Possible unknown water quality issues could affect ability to use • Required changes to current operations may have significant impacts	• Expansion of SCRWA system based on South County Recycled Water Master Plan • Potable reuse through integration of fully advanced treated water into District's water supply system • Partnerships on potable reuse • Partnerships on non-potable reuse	• Public perception about potable reuse, especially direct potable reuse • Ability to secure water for purification • Balancing non-potable and potable reuse • Energy requirements for purification • Availability of land for AWPF expansion Projects • Conflict/competition for recycled /purified water with other agencies/organizations • Direct potable reuse regulations still unavailable • Partnerships w/local wastewater treatment agencies that have inadequate Master Plans and investment analysis • Concentrate management for fully advanced treatment • Uncertainties and potential high cost
San Francisco Public Utilities Commission (SFPUC)	• SFPUC Intertie is available for system outages • SFPUC system is resilient to earthquake as a result of the Water System Improvement project and 1 day outage level of service goal. Some retailers can rely on SFPUC as a backup to District TW outage		• West Pipeline extension or west side SFPUC connection • Individual supply guarantees • Water management agreement, exchange agreement, and/or incentives • Regional desal or other Bay Area Regional Reliability projects	• Climate change effects on supply and reduced deliveries • High cost of SFPUC water to retailers • High quality water is hard to replace with other supplies • Interruptible SFPUC contracts

	Strengths (Internal District)	Weaknesses (Internal District)	Opportunities (External)	Threats (External)
Delta-Conveyed Imported Water	• Relationships with current partners • Diversity of sources (transfer partners, contracts, etc) • Good quality in most years and main supply to drinking WTPs • Relationships with current partners	• Pacheco pump efficiency and San Felipe system capacity constraints can limit District capabilities to take max CVP contract allotment • Pacheco, Santa Clara and Santa Teresa Tunnels have leakage that may require repair • Semitropic accessibility is limited • Internal operational limitations/inefficiencies	• California WaterFix • Additional and improved groundwater banking opportunities, e.g., review Semitropic banking agreement and determine if it can be better used • Los Vaqueros expansion including Transfer-Bethany Pipeline • Sites Reservoir • Del Valle Reservoir • San Luis Reservoir LPIP, including reservoir expansion • Long-term transfer/option agreements • Purchase of permanent water rights • CPOU/Contract Amendment • Develop relationships with new partners • Improved agreements w/USBR for replacing failing infrastructure (PCCP) • Ensure Shasta and North of District water supply in San Luis Reservoir low point years	• Decreased availability of CVP and SWP sources due to environmental restrictions, drought, pumping constraints or infrastructure failure (seismic or age) • San Luis low point problem can limit District abilities to take CVP water • Uncertainty of water market (volatile costs) • Decreased availability of CVP and SWP supplies due to climate change • Reduced water quality due to climate change • SBA in requires substantial maintenance and PCCP pipe may be reaching end of life (Pacheco and SCC) • Cost overruns on Capital Projects and uncertainty and potential high cost of Delta improvements • Delta levee failure and natural disaster (including earthquakes)
Water Conservation	• District has successful water conservation programs	• Unpredictability of funding • Unpredictability/limited control (many users/people's efforts)	• Potential to decrease demands though land use policies that limit impervious surfaces, require recycled water use, increase on-site retention, and require demand management measures beyond code • Increase agricultural water conservation programs	• Increases in demands from climate change, population growth/housing development • Potential impact on meeting short term demand reduction needs
Treated Drinking Water	• East treated water system has redundant sources and a redundant delivery pipeline • Multiple raw water sources are available to supply the WTPs and groundwater recharge operations • Pipelines that have been inspected are in acceptable condition for their ages • Control systems reliability is being improved with completion of master plan and radio and microwave communications upgrades • Currently working on upgrading infrastructure and adding required service factor capacity at RWTP • Advanced treatment processes (Ozone) were added at STWTP and PWTP	• No redundancy in some parts of system, especially on the west side treated system • Most pipelines do not have cathodic protection. Also, the Pipeline Maintenance Plan is underfunded, and permit constraints for pipeline work is an issue • Need pre-stressed concrete cylinder pipe (PCCP) management program for all raw water • Line valves needed for isolation • Pipelines are vulnerable at creek crossings and road under crossings • Inherent seismic risk to PTWP • Water treatment complexities in severe shortages and drought	• Partnerships with SJWC on recycled water or Montevina WTP	• New potable water treatment regulations could impose new plant improvements including fluoridation and emerging contaminants • Deteriorating relationships with retailers and cities • Reduced source water quality due to contamination
Other Issues and Institutional	• Stockpile of pipeline repair materials available for emergency repairs • Most retailers have sufficient back up supplies for District treated water for short duration outages ~30 days • Asset Management Program • District is monitoring GHG reduction and energy efficiency strategies • The electrical system master plan is underway to streamline electrical improvements and improve energy efficiency throughout the District	• The Infrastructure Reliability Plan has not been fully implemented. • Pipeline stockpile security (threat of vandalism) • District customer service for well owners is not strong • Lack of resources • Overinvesting in costly new infrastructure, combined with lack of master planning and under-investing in existing assets	• Retailer exchanges or use of retailer systems to transfer water • Implement newly recommended IRP projects (SCVWD & retailer projects) • Continue to improve the asset management program that replaces and rehabs infrastructure at appropriate times	• Conflict or competition with other agencies • Funding risk & uncertainties and potential for overinvestment • Politics • Conflicts between recreation interests and District operations • Regulatory/environmental requirements; need to speak with one District voice • San Benito financial constraints may limit ability to cost share • SWRCB restricts or changes water rights (through FAHCE or other processes) to require more environmental water (affects local, but also imported) • Infrastructure failure taking 5-10 years to repair