

Project	Average Annual Yield (AFY)	District Lifecycle Cost (Present Value, 2017) ¹	Cost/AF
No Regrets Package: All the water supply strategies under consideration include the following water conservation and stormwater projects.	Total: 11,000	Total: \$100 million	\$400
<u>Advanced Metering Infrastructure (AMI)</u> : Implements a cost share program with water retailers to install AMI throughout their service area. AMI would alert customers of leaks and provide real-time water use data that allows users to adjust water use.	4,000	\$26 million	\$200
<u>Graywater Rebate Program Expansion</u> : Expand the District's existing rebate program for laundry-to-landscape graywater systems. Potentially could include a direct installation program and/or rebates for graywater systems that reuse shower and sink water. .	< 1,000	\$1 million	\$2,200
<u>Leak Repair Incentive</u> : Provides financial incentivizes homeowners to repair leaks.	< 1,000	\$2 million	\$7,800
<u>New Development Model Ordinance</u> : Encourages municipalities to adopt an ordinance for enhancing water efficiency standards in new developments. Potential components include submetering multi-family residences, onsite water reuse (rainwater, graywater, black water), and point-of use hot water heaters.	5,000	\$1 million	\$100
<u>Stormwater - Agricultural Land Recharge</u> : Flooding or recharge on South County agricultural parcels during the winter months.	1,000	\$14 million	\$1,000
<u>Stormwater - Rain Barrels</u> : Provides rebates for the purchase of a rain barrels.	< 1,000	\$36 million	\$15,100
<u>Stormwater - Rain Gardens</u> : Initiates a District rebate program to incentivize the construction of rain gardens in residential and commercial landscapes.	< 1,000	\$14 million	\$2,800
<u>Stormwater - San Jose</u> : Constructs a stormwater infiltration system in San Jose. Assumes 5 acres of ponds. Potential partnership with the City of San Jose.	1,000	\$4 million	\$100
<u>Stormwater - Saratoga</u> : Constructs a stormwater infiltration system in Saratoga. Assumes 5 acres of ponds. Assumes easement rather than land purchase. Close to Stevens Creek Pipeline, so could also potentially be used as a percolation pond.	< 1,000	\$4 million	\$1,100

¹ The District Lifecycle Cost (Present Value, 2017) includes capital, operations, maintenance, rehabilitation, and replacement costs, as applicable, for the life-cycle of the project (typically 100 years), discounted back to 2017 dollars. All costs are subject to change pending additional planning and analysis.

Project	Average Annual Yield (AFY) ²	District Lifecycle Cost (Present Value, 2017)	Cost/AF	Relative Risk
California WaterFix: Constructs alternative conveyance (one or two tunnels) capable of diverting up to 9,000 cubic feet-per-second from the Sacramento River and delivering it to the federal and state pumps. This would result in less impactful diversions, help maintain existing deliveries, improve the ability to do transfers, and protect water quality from sea level rise. The project has implementation complexity, uncertainty, and stakeholder opposition.	41,000	\$620 million	\$600	High
Potable Reuse -Los Gatos Ponds: Constructs a facility to purify water treated at wastewater treatment plants for groundwater recharge. Potable reuse water is a high-quality, local drought-proof supply that is resistant to climate change impacts. Assumes up to 24,000 AFY of advanced treated recycled water would be available for groundwater recharge at existing recharge ponds in the Los Gatos Recharge System. Some of the outstanding issues with the project are reverse osmosis concentrate management and agreements with the City of San Jose.	19,000	\$1.2 billion	\$2,000	Medium

² The average annual yield of many projects depends on which projects they are combined and the scenario being analyzed. For example, groundwater banking yields are higher in portfolios that include wet year supplies. Similarly, they would be lower in scenarios where demands exceed supplies and excess water is unavailable for banking.

Project	Average Annual Yield (AFY) ³	District Lifecycle Cost (Present Value, 2017)	Cost/AF	Relative Risk
Dry Year Options / Transfers: Provides 12,000 AF of State Water Project transfer water during critical dry years. Amount can be increased or decreased. Can also include long-term option agreements. There are uncertainties with long-term costs and ability to make transfers in critical dry years.	2,000	\$100 million	\$1,400	Low
Groundwater Banking: Provides 120,000 AF of banking capacity for Central Valley Project and State Water Project contract water. Sends excess water to a groundwater bank south of the Delta during wet years and times of surplus for use during dry years and times of need. Amount could be increased or decreased. There are uncertainties with the ability to make transfers in critical dry years and Sustainable Groundwater Management Act implementation.	2,000	\$60 million	\$1,300	Low
Groundwater Recharge – Morgan Hill Recharge: Extends the Madrone Pipeline from Madrone Channel to Morgan Hill's Butterfield Channel and Pond near Main Street. Would help optimize the use of existing supplies. Would need to be operated in conjunction with the City's stormwater operations.	2,000	\$20 million	\$400	Low
Groundwater Recharge – Saratoga: Constructs a new groundwater recharge facility in the West Valley, near the Stevens Creek pipeline. Would help optimize the use of existing supplies. Land availability and existing land uses limit potential project locations.	1,000	\$50 million	\$1,300	Low

³ The average annual yield of many projects depends on which projects they are combined and the scenario being analyzed. For example, groundwater banking yields are higher in portfolios that include wet year supplies. Similarly, they would be lower in scenarios where demands exceed supplies and excess water is unavailable for banking.

Project	Average Annual Yield (AFY) ³	District Lifecycle Cost (Present Value, 2017)	Cost/AF	Relative Risk
Lexington Pipeline: Constructs a pipeline between Lexington Reservoir and the raw water system to provide greater flexibility in using local water supplies. The pipeline would allow surface water from Lexington Reservoir to be put to beneficial use elsewhere in the county and increase utilization of existing water rights, especially in combination with the Los Gatos Ponds Potable Reuse project. In addition, the pipeline will enable the District to capture some wet-weather flows that would otherwise flow to the Bay. Water quality issues would require pre-treatment/management.	3,000	\$90 million	\$1,000	Low
Los Vaqueros Reservoir: Secures an agreement with Contra Costa Water District and other partners to expand the off-stream reservoir by 115 TAF (from 160 TAF to 275 TAF) and construct a new pipeline (Transfer-Bethany) connecting the reservoir to the South Bay Aqueduct. Assumes District's share is 35 TAF of storage, which includes an emergency storage pool of 20 TAF for use during droughts. District would also receive Delta surplus supplies when there is capacity to take. The flexibility provided by the Transfer-Bethany Pipeline provides a majority of the project benefits. Would require funding and operating agreements with multiple parties.	3,000	\$40 million ⁴	\$400	Medium
Pacheco Reservoir: Enlarges Pacheco Reservoir to about 140,000 AF. Assumes local inflows and ability to store Central Valley Project supplies in the reservoir. Construction would be in collaboration with Pacheco Pass Water District and San Benito County Water District. Would help manage San Luis Reservoir low-point problems. The project would be operated to provide water for fisheries downstream of the reservoir. Potentially significant environmental and cultural impacts are associated with the project.	6,000	\$450 million ⁵	\$2,700	High

⁴ Assumes Proposition 1 Water Storage Investment Program funding. Costs would be about double without the funding.

⁵ Assumes Proposition 1 Water Storage Investment Program funding. Costs would be about double without the funding.

Project	Average Annual Yield (AFY) ³	District Lifecycle Cost (Present Value, 2017)	Cost/AF	Relative Risk
Potable Reuse – Ford Pond: Constructs potable reuse facilities for 4,000 AFY of groundwater recharge capacity at/near Ford Ponds. Potable reuse water is a high-quality, local drought-proof supply that is resistant to climate change impacts. The project would require agreements with the City of San Jose and may require moving existing water supply wells.	3,000	\$300 million	\$2,800	Medium
Potable Reuse – Injection Wells: Constructs potable reuse facilities for 15,000 AFY of groundwater injection capacity. Potable reuse water is a high-quality, local drought-proof supply that is resistant to climate change impacts. The injection wells could be constructed in phases and be connected to the pipeline carrying purified water to the Los Gatos Ponds. The project would require agreements with the City of San Jose and reverse osmosis concentrate management. Injection well operations are more complex than recharge pond operations.	12,000	\$1.2 billion	\$3,100	High
Sites Reservoir: Establishes an agreement with the Sites JPA to build an off-stream reservoir (up to 1,800 TAF) north of the Delta that would collect flood flows from the Sacramento River and release them to meet water supply and environmental objectives. Assumes District's share is 24 TAF of storage, which is used to prorate yields from the project. The project would be operated in conjunction with the SWP and CVP, which improve flexibility of the statewide water system but be subject to operational complexity. The project would increase reliance on the Delta.	8,000	\$170 million ⁶	\$800	High
Water Contract Purchase: Purchase 20,000 AF of SWP Table A contract supply from other SWP agencies. Would increase reliance on the Delta and be subject to willing sellers' availability.	12,000	\$360 million	\$800	Medium

⁶ Assumes Proposition 1 Water Storage Investment Program funding. Costs would be about double without the funding.

Project	Average Annual Yield (AFY)	District Lifecycle Cost (Present Value, 2017)	Cost/AF
Anderson Reservoir Expansion: Would increase reservoir storage by 100,00 AF to about 190,000 AF, increasing the District's ability to capture and store local runoff. Planning for reconstruction of Anderson Reservoir to meet seismic standards is currently underway. Consideration of also expanding the reservoir would likely delay the required work.	10,000	\$1.2 billion	\$4,800
Calero Reservoir Expansion: Would expand Calero Reservoir storage by about 14,000 AF to 24,000 AF. Other water storage options under consideration provide better yield for the cost.	3,000	\$300 million	\$3,800
Church Avenue Pipeline: Diverts water from the Santa Clara Conduit to the Church Avenue Ponds. The Morgan Hill Recharge project provides better yield for less cost and is enough to meet projected Llagas Subbasin demands.	1,000	\$30 million	\$800
Conservation Rate Structures: Many retailers implement conservation rate structures. Given recent court rulings on rate structure, retailers are reluctant to add new conservation rate structures at this time.	TBD	TBD	TBD
Countywide Water Reuse Master Plan: The District is working with local recycled water producers, retailers, and other stakeholders to develop a Countywide Water Reuse Master Plan that will address key challenges in potable water reuse, including: (1) identification of how much water will be available for potable reuse and recycled water expansion, (2) evaluation of system integration options, (3) identification of specific potable reuse and recycled water projects, and (4) development of proposals for governance model alternatives including roles and responsibilities. The Countywide Water Reuse Master Plan will also incorporate proposed infrastructure upgrades that would improve capacity; analyze seasonal, daily, and hourly demand trends to determine the opportunities to optimize flows during peak periods; update the existing and projected future demands of users and retailers; identify land requirements; and prioritize actions and improvements needed to meet the projected demands, including cost estimates of recommended improvements.	TBD	TBD	TBD

Project	Average Annual Yield (AFY)	District Lifecycle Cost (Present Value, 2017)	Cost/AF
Del Valle Reoperations: This project, as currently envisioned, would allow for more storage in Lake Del Valle, a State Water Project facility in Del Valle Regional Park that is operated by East Bay Regional Park District. The benefits of the additional storage are primarily related to operational flexibility and water quality. The project may not increase long-term water supply yields or drought year yields. Staff is continuing to evaluate Del Valle reoperations in partnership with Alameda County Water District and Zone 7 Water Agency. If long-term water supply benefits are identified, staff will evaluate it as part of the Water Supply Master Plan.	TBD	TBD	TBD
Local Land Fallowing: Launches program to pay growers not to plant row crops in critical dry years. This would primarily save water in the South County. The Groundwater Recharge – Morgan Hill project provides better yield for less cost and is more consistent with County land use policy and grower interests.	1,000	\$50 million	\$2,400
Morgan Hill Recycled Water: Constructs a 2.25 MGD scalping plant in Morgan Hill. Would need to replace a lower cost recycled water project in Gilroy due to capacity constraints on the system.	3,000	\$80 million	\$1,000
Regional Desalination: Secures a partnership with other Bay Area agencies to build a Bay Delta desalination plant in Contra Costa County. District would receive up to 5 MGD of water in critical dry years. There are concerns about the complexity of permitting a desalination plant and the availability of water rights during dry periods when such a facility would be most needed. This project will require collaboration among multiple agencies and requires partners for moving forward. The District is a member of Bay Area Regional Reliability and will continue to work on regional solutions to water reliability.	1,000	\$50 million	\$2,000
Retailer System Leak Detection/Repair: Recent legislation requires retailers to complete annual water loss audits, which will then be used by the State to establish water loss standards. Staff will reconsider this alternative after the standards are developed.	TBD	TBD	TBD

Project	Average Annual Yield (AFY)	District Lifecycle Cost (Present Value, 2017)	Cost/AF
San Francisco Public Utilities Commission (SFPUC) Purchases: Increasing San Francisco Public Utilities Commission water deliveries to Santa Clara County is an on-going potential opportunity that is being evaluated through SFPUC's planning processes, the Bay Area Regional Reliability project, and potable reuse feasibility studies. The results of these efforts will be considered in future Water Supply Master Plan updates and/or subsequent annual reviews.	TBD	TBD	TBD
San Pedro Ponds: Retires the septic systems around the San Pedro Ponds and extends the City of Morgan Hill sewer system to these homes so the District can operate the groundwater recharge facility without high groundwater constraints. The Groundwater Recharge – Morgan Hill project provides better yield for less cost.	1,000	\$20 million	\$1,000
Shallow Groundwater Reuse: A feasibility study for the recovery and beneficial use of shallow groundwater was completed in 2009. Although potential sites for shallow groundwater reuse were identified, staff has identified several concerns. These concerns include water quality, sustainable yields, and lack of infrastructure for convey the water to reuse areas. In addition, several reuse sites are in areas where recycled water is already delivered for non-potable use.	TBD	TBD	TBD
Shasta Reservoir Expansion: A Feasibility Study and Environmental Impact Statement have been completed for a Shasta Reservoir Expansion. The United States Bureau of Reclamation concluded the project is technically feasible, but that non-federal partners would need to pay for project implementation. State law prohibits Prop 1 storage funding for the project and restricts funding for any studies. Staff will continue to monitor opportunities related to Shasta Reservoir Expansion.	TBD	TBD	TBD
Stormwater – Saratoga 2: Constructs a stormwater infiltration system on a parcel in Saratoga. Assumes 5 acres of ponds. Currently zoned as ag land; assumes land purchase. About 0.6 miles from the Stevens Creek Pipeline. The cost and cost-effectiveness are low due to the land purchase requirement. Other stormwater projects are included in the "No Regrets" package.	<1,000	\$50 million	\$10,000

Project	Average Annual Yield (AFY)	District Lifecycle Cost (Present Value, 2017)	Cost/AF
Temperance Flat Reservoir: Temperance Flat Reservoir would be located upstream of Friant Dam on the San Joaquin River. Staff's current analysis is that any water supply benefits to the District from the project would be indirect, largely manifested by lowered requirements for Delta pumping for delivery to the San Joaquin Exchange contractors at the Delta-Mendota Pool. The project is being considered for Prop 1 Water Storage Investment Program funding.	TBD	TBD	TBD
Uvas Pipeline: Captures excess water (e.g., water that would spill) from Uvas Reservoir and diverts the water to Church Ponds and a 25 acre-foot pond near Highland Avenue. The new pond would be adjacent to and connected by a pipe to West Branch Llagas Creek. The Groundwater Recharge - Morgan Hill project provides better yield for less cost	1,000	\$80,000	\$2,000
Uvas Reservoir Expansion: Would expand Uvas Reservoir by about 5,100 AF to 15,000 AF, reducing reservoir spills. Project would be located on Uvas Creek, which currently provides good steelhead habitat. Other water storage options under consideration provide better yield for the cost.	1,000	\$320,000	\$21,000

THIS PAGE INTENTIONALLY LEFT BLANK