

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

ALTERNATIVE WATER SUPPLY

ANNUAL PROGRESS REPORT

2023-2024



San Antonio Reservoir, 2008



San Francisco
Water Power Sewer
Services of the San Francisco Public Utilities Commission

Table of Contents

Report Overview and Organization	3
Section 1: AWS Program and Plan Background	4
1.1. Water Supply Availability	4
1.2. SFPUC Obligations and Demands	5
1.3. The Water Supply Gap	6
1.4. AWS Projects & Recommendations	8
1.5. Local Water Supply Projects	10
1.6. San Joaquin Valley & Upcountry Projects	12
Section 2: Program Highlights and Updates	13
2.1 Progress on AWS Plan Recommendations	13
2.2 Financial Update	15
2.3 Programmatic Updates	17
2.3.1 Negotiations Related to the Agreements to Support Healthy Rivers and Landscapes	17
2.3.2 Consideration of Permanent Status with San Jose and Santa Clara	17
2.3.3 Forecasting Future Demand Scenarios	18
2.3.4 Staffing Support	18
2.3.5 Supporting Demand Reduction on the Regional Water System	19
2.4 Update on AWS Projects	19
Daly City Recycled Water Expansion	21
PureWater Peninsula	24
ACWD-USD Purified Water	27
South Bay Purified Water	30
Los Vaqueros Reservoir Expansion – Storage	33
Conveyance Alternatives for Los Vaqueros Expansion Project	40
Supply Alternatives for Los Vaqueros Expansion Project	43
Calaveras Reservoir Expansion Project	46
2.5 Looking Ahead	48

Report Overview and Organization

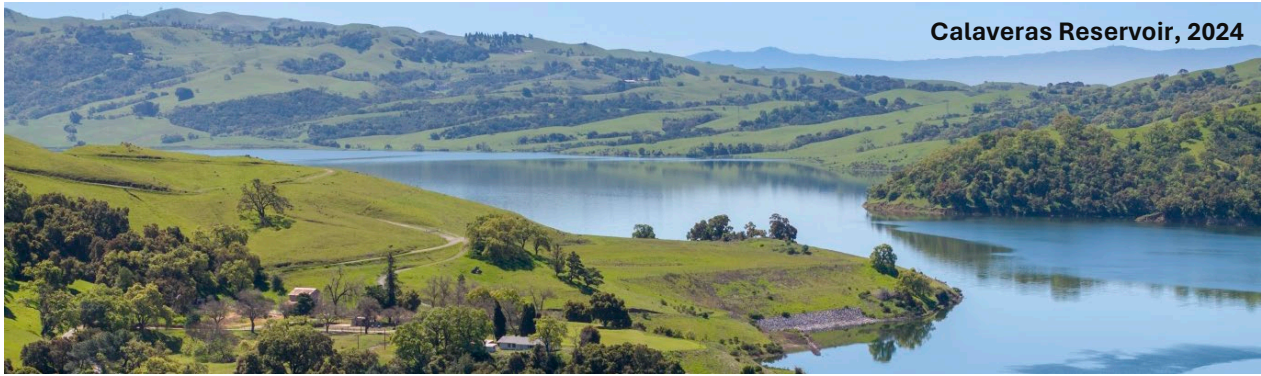
This Progress Report provides a status update on the Alternative Water Supply (AWS) Program, replacing the Quarterly Reports that were prepared from June 2020 through June 2023. Since that time, the AWS Plan has been published (February 2024), which provides a roadmap for the AWS Program and serves as a primary reference document for current planning related to new dry year water supply projects. This and subsequent progress reports will serve as a companion to the AWS Plan, providing annual updates on the program and individual projects.

This report is organized in two main sections.

Section 1 provides a brief introduction to the AWS Program. This section is not intended to fully summarize the AWS Plan, but rather provide sufficient context about the program to support the information presented in Section 2. For a more complete description of the AWS Program guidance and priorities, readers are encouraged to review the AWS Plan in its entirety, which can be found online at www.sfpuc.org/awsplan.

Section 2 provides AWS programmatic and project-specific updates for the period between **July 2023 and May 2024**, including achievements on AWS projects, financial expenditures, and planned future activities. This section also identifies progress made on the recommendations that were included in the AWS Plan.





Section 1: AWS Program and Plan Background

In 2019, the San Francisco Public Utilities Commission (SFPUC) established the Alternative Water Supply (AWS) Program to identify and plan water supply and storage projects that increase the dry-year reliability of Regional Water System (RWS). Based on a 2045 planning horizon, the SFPUC anticipates a water supply gap in future dry years. The AWS Program is designed to help fill this gap by supplementing demand management actions and ongoing developments of local and regional capital projects.

The AWS Plan, published in February 2024, is the main reference document for the AWS Program and includes:

- ✓ Calculation of and context for the projected water supply gap in the 2045 planning horizon
- ✓ Description of ongoing efforts to reduce demands and optimize supply availability
- ✓ Details of AWS Projects that can augment RWS supply and address future water supply gap
- ✓ Recommendations that will further advance the AWS Program and its objectives

This section includes some of the key elements of the AWS Plan. Any updates that have occurred since the publication of the AWS Plan are explicitly noted as such in this document.

1.1. Water Supply Availability

The SFPUC's water supply planning methodology for dry-year conditions estimates the total system yield (or water availability), which includes water supply and demands that can be addressed through rationing. While there are several drivers that may limit water supply in the future, instream flow requirements associated with the State Water Resources Control Board's San Francisco Bay/Sacramento-San Joaquin Delta Estuary Water Quality Control Plan as amended in 2018 (Bay-Delta Plan Amendment) could have the most pronounced impact on water availability for the 2045 planning horizon.

The Bay-Delta Plan Amendment, if implemented as adopted by the State in 2018, would result in new instream flow requirements that would significantly reduce the SFPUC's available water supply. These new instream flow requirements result in a projected water availability in dry years (expressed as total system yield) of 152 mgd, see **Table 1**.

Section 1 – AWS Program and Plan Background

Table 1. Projected 2045 Water Availability during Dry Years with the Bay-Delta Plan Amendment

	Scenario with Bay-Delta Plan Amendment
Baseline Water Supply with WSIP Implemented	227
New Instream Flow Release Requirements from the Bay-Delta Plan Amendment	-93
Water Supply ^a (Firm Yield)	134
Demands Addressed through Implementation of Rationing Policy ^b	18
Water Availability (Total System Yield)^c	152

a Firm yield includes implemented WSIP Projects, current instream flow releases, and 93 mgd of additional instream flow releases associated with implementation of the Bay-Delta Plan Amendment.

b The water supply benefit realized through rationing is proportional to the available water supply (firm yield). Because the instream flow requirements called for in the Bay-Delta Plan Amendment would reduce the firm yield, the supply benefit realized through rationing is also reduced.

c Total system yield is the sum of system firm yield plus the water demand addressed through rationing during extended drought.

1.2. SFPUC Obligations and Demands

The SFPUC has a legal and contractual obligation to deliver a maximum of 184 mgd annually (Supply Assurance) to 24 of the 26 wholesale customers represented by the Bay Area Water Supply and Conservation Agency (BAWSCA). The Water Supply Agreement between the SFPUC and its customers carries forward the Supply Assurance, which is perpetual and survives the expiration of the agreement. Customers who are included in the Supply Assurance are referred to as Wholesale Customers. San Jose and Santa Clara are the two customers who are provided water on a temporary and interruptible basis.

San Jose and Santa Clara have received deliveries from the SFPUC continuously since the 1970s. Based on their historical purchases, the AWS Program includes 9 mgd as both a projected demand and potential future obligation for San Jose and Santa Clara, enabling the Commission to understand the future total obligations if it were to make this commitment in the future. In accordance with the Water Supply Agreement, the Commission will have to make a policy decision by December 31, 2028 on whether to provide a permanent water supply to the two cities.

In addition to wholesale obligations, the SFPUC provides an allocation of up to 81 mgd (Retail Allocation) to customers in San Francisco and suburban retail customers (Retail Customers). The combined Supply Assurance and Retail Allocation (265 mgd) along with the consideration to make San Jose and Santa Clara permanent customers (9 mgd) are current and potential future obligation drivers that affect the magnitude of the future water supply gap.

Customer projected demands for 2045 reflected in the AWS Plan were from the SFPUC 2020 Urban Water Management Plan (retail demand) and the FY 2021-2022 BAWSCA Annual Survey (wholesale demand). Since then, the SFPUC has released the 2023 Interim Water Demand Projections Update due to new housing unit projections from the certified Housing Element 2022 Update which projects slightly higher multi-family housing units than those used in the 2020 Urban Water Management Plan. Additionally, BAWSCA has published its FY 2022-23 Annual Survey which includes minor updates to the 2045 demand projections. As a result, the retail demand in 2045 has increased by 0.5 mgd and the wholesale service area demand has decreased by 0.1 mgd. While AWS staff will continue to track interim changes to the demand projections, no changes are being made to the water supply gap calculation from the AWS Plan until planned demand forecasts are completed in preparation for the 2025 Urban Water Management Plan.

To avoid overbuilding new water supply projects, the approach reflected in the AWS Program is to Plan for Obligations and Build for Demands. This approach recognizes the importance of contemplating water supplies to meet obligations while prioritizing investments that focus on the most imminent need of meeting customer demands. As demands are lower than current and potential obligations, investment recommendations will continue to focus on the gap between demands and projected supply availability. It is expected that any water supply gap would be addressed by a combination of new water supplies and rationing. Meanwhile, staff will continue to monitor and track changes to demand and supply estimates.

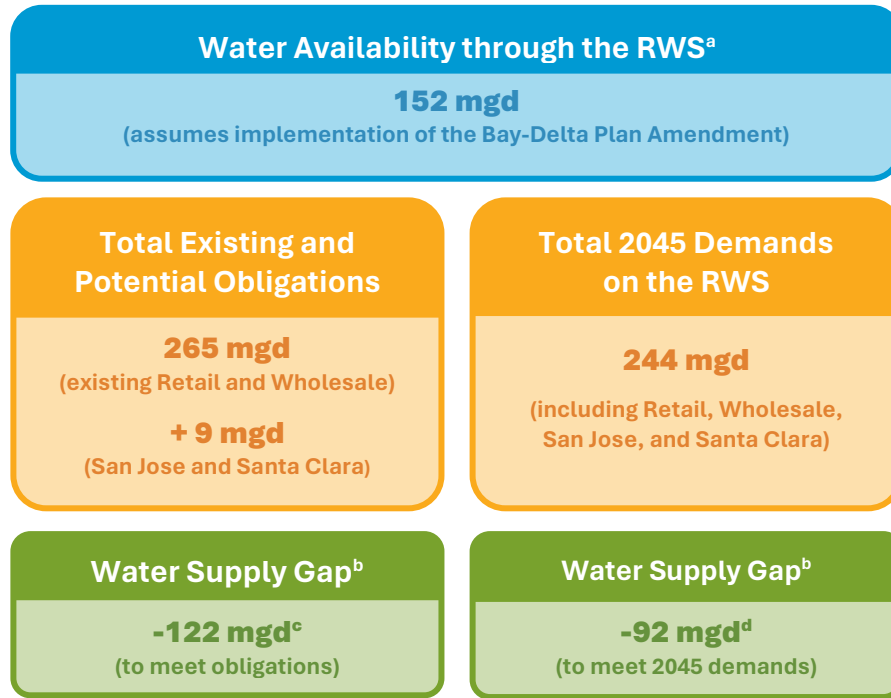
1.3. The Water Supply Gap

The anticipated water supply gap is characterized as the difference between water availability and a) existing and potential future obligations or b) estimated future customer demands. **Figure 1** shows the future water supply gap for meeting obligations and 2045 demands in dry-year conditions, as described in the AWS Plan. The future water supply gap is characterized as a range of 92 mgd to meet 2045 customer demands to 122 mgd to meet obligations.

If the Bay-Delta Plan Amendment is implemented as adopted in 2018, the SFPUC could immediately experience a water supply shortfall and be unable to meet customer demands in dry years. While the AWS Plan uses a planning horizon of year 2045, impacts to water supply could occur much sooner and create an urgency to address the projected water supply gap.

Based on the SFPUC's rationing policy, rationing could contribute to filling approximately 12% of the water supply gap. The remaining gap would need to be addressed through the development of new regional alternative water supply projects. The volume of demands that rationing can address is dependent on water supply. If estimated new water supplies to fill the future water supply gap are less than what is needed, the estimated contribution of rationing would also be proportionately less. **Figure 2** illustrates how rationing and new alternative water supplies work together to address the water supply gap.

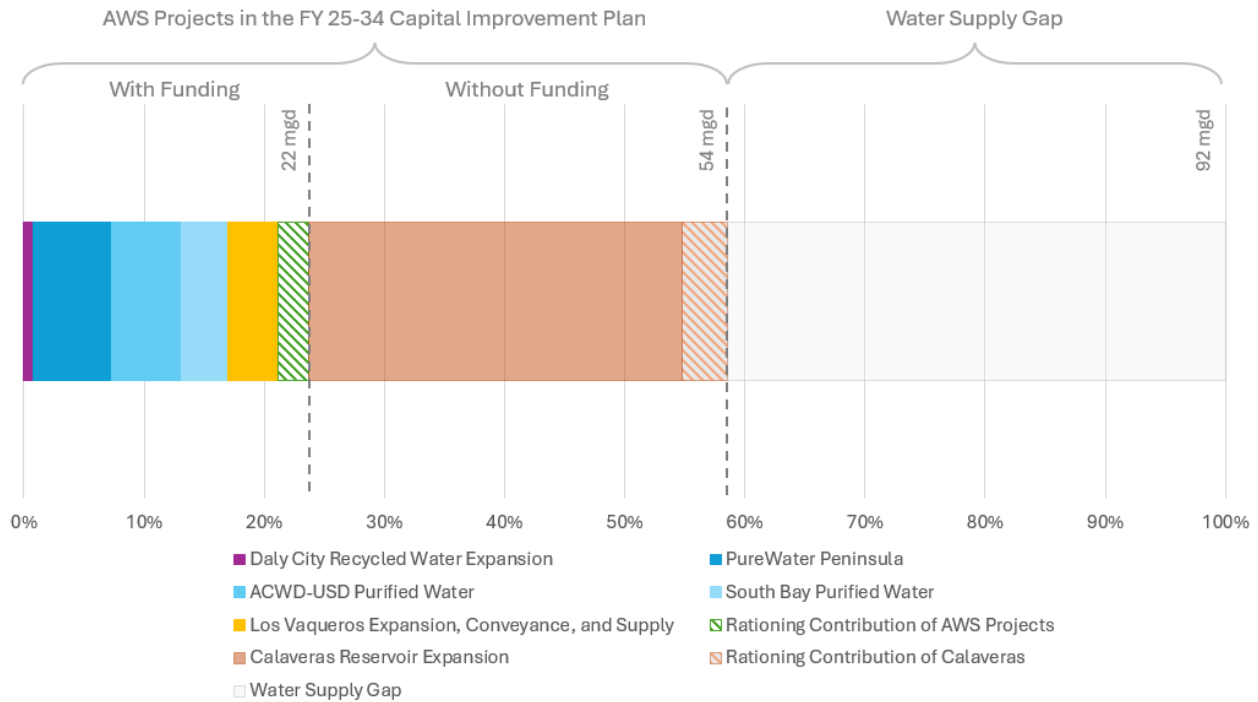
Figure 1. Anticipated Water Supply Gap



- a Represents the total system yield. The total system yield is the sum of the firm yield of the RWS plus rationing (134 mgd firm yield and 18 mgd of demands addressed by implementing the rationing policy).
- b The water supply gap estimates: 1) the total difference between water availability and obligations and 2) the difference between water availability and customer demands on the RWS in 2045.
- c As rationing is a function of water supply availability, to close the gap with new supplies and rationing, new supplies of 107 mgd would be required. Up to 15 mgd of the water supply gap can then be met by rationing.
- d As rationing is a function of water supply availability, to close the gap with new supplies and rationing, new supplies of 81 mgd would be required. Up to 11 mgd of the water supply gap can then be met with rationing.

Section 1 – AWS Program and Plan Background

Figure 2. SFPUC’s Planned Investment to Fill the Projected Water Supply Gap



1.4. AWS Projects & Recommendations

The AWS Program has identified six AWS Projects to address the future water supply gap. They include two storage expansion projects with associated conveyance (and supply, if needed), one recycled water project that increases the availability of potable groundwater in dry years, and three purified water projects that would provide a new source of supply, including in dry years. Based on current planning estimates, these projects can augment supplies from 19.5 mgd to 48 mgd in future dry years. Increases in supply would also result in additional benefits from corresponding increases in rationing as shown above.

The SFPUC continues to evaluate a wide range of water supply sources from small, community-based applications to large-scale groundwater banking in our upcountry watershed. These efforts are grouped as either Local Water Supply Projects or San Joaquin Valley & Upcountry Projects in the following pages.

The significant range from 19.5 mgd to 48 mgd reflects the uncertainty related to the expansion of Calaveras Reservoir. As explained in Section 2, funding for the further development of this project has been deferred in the SFPUC’s capital plan. Thus, while the AWS Plan recognizes the Calaveras Reservoir Expansion could supply up to 28.6 mgd, the SFPUC is currently only funding planning and implementation for projects that could yield approximately 19.5 mgd. It is important to note that as the negotiation of institutional agreements and planning continue for these AWS Projects, the scope and size of these projects is also subject to change and there remains uncertainty around this projected volume as well. Section 2 provides a status update on each of the AWS Projects, including work that the SFPUC is currently engaged in to address project uncertainties.

Section 1 – AWS Program and Plan Background



Regardless of the ultimate total yield of the six AWS Projects, there remains a large supply gap that must be addressed to meet both 2045 dry-year demands and obligations. In recognition of this, the AWS Program recommendations are not only about filling the water supply gap, but also to avoid widening the gap and to implement strategies that reduce the gap. It's critical that these three key objectives work together to address the future water supply gap. Because no single objective will be the only solution, the SFPUC is focused on making progress toward each of these three objectives as it continues to implement the AWS Program. Section 2 discusses the progress made on the three key objectives.



1.5. Local Water Supply Projects

This section describes new projects and initiatives in SFPUC's retail service area that can offset future retail purchases from the RWS, thereby helping to reduce the water supply gap. This list supplements the SFPUC's robust efforts in conservation, non-potable water reuse (both centralized and decentralized), and local and regional groundwater that have been underway for many years. The SFPUC has implemented conservation programs to minimize both indoor and outdoor retail water demands, resulting in a per capita residential water consumption rate of under 42 gallons per person per day, a rate that is half the statewide average.

The San Francisco Groundwater Supply Project has been underway to provide 4 mgd of local supply before 2045. However, to fully realize this water supply benefit, new treatment will be required to address organic compounds that were detected at three locations. Funding of \$13.5 million was allocated in the FY25-34 CIP. Planning for the treatment project is underway.

PureWaterSF is a project that envisions providing a new, local drinking water supply in San Francisco of 4 mgd by treating recycled water from the Oceanside and Southeast Treatment Plants. In 2020, the SFPUC successfully completed a small-scale research and demonstration purified water project at its headquarters. With the absence of large remaining non-potable applications in San Francisco, the SFPUC has evaluated the maximum potential for recycling water for drinking or producing purified water that can be blended in San Francisco's drinking water reservoirs consistent with draft regulations that are being developed by the State Water Resources Control Board.

The proposed project could also provide supply of 1.2 mgd to meet the non-potable demands of dual-plumbed buildings in San Francisco that do not currently have a non-potable water supply source (previously reported as the Satellite Recycled Water Project). The supply would serve irrigation and toilet and urinal flushing needs, as well as commercial and industrial uses not addressed by the Non-Potable Ordinance.

This fiscal year, the SFPUC developed an outreach and public engagement plan, and initiated education and engagement first among SFPUC staff. In the summer of 2023, a broad cross-section of staff participated in a series of three focus groups on a voluntary basis. Information about purified water is also being shared on a quarterly basis through articles and both internal and external speaking engagements. In coordination with Communications staff, the AWS team also continued collaborating with other utilities that are planning purified water projects throughout California.

The Water Resources Division's **Innovations Program** supports development of new technologies and initiatives to demonstrate the feasibility of atmospheric water generation technology, heat recovery in non-potable systems, expanded leak detection, and breweries treating process water for reuse. Included in the Innovations Program are demonstration of new technologies and grant funds to support partnership opportunities. Examples of projects within the Innovations Program include a grant program to treat process water in breweries and grants to support onsite reuse projects with heat recovery systems. The SFPUC is also pursuing a prospective project to expand leak detection and a project to test atmospheric water generation technology.

This year, the SFPUC concluded the 2-year atmospheric water generation pilot project, and the panels were decommissioned. The project completion report is underway. The SFPUC continues to

Section 1 – AWS Program and Plan Background

use several technologies and approaches to detect potential leaks in its system. This includes an ongoing pilot of the Echologics acoustic leak detection platform.

Stormwater Capture & Reuse focuses on the collection and harvest of stormwater for reuse. The efforts range from capital investments in green infrastructure projects to city-wide mandates for new construction to manage stormwater runoff. The SFPUC also incentivizes collection and reuse of rainwater through rebates and encourages stormwater management through grant programs.

Under the **Vista Grande Drainage Basin Improvement Project**, the SFPUC is coordinating with the City of Daly City to divert stormwater from the Vista Grande Watershed to South Lake Merced. The project is aimed toward improving stormwater management, increasing lake levels, improve lake water quality, and restoring the Lake Merced Drainage Basin’s natural hydrology.

San Francisco’s **Onsite Water Reuse Program** allows for the collection, treatment, and use of alternate water sources for non-potable applications in individual buildings and at the district-scale. The SFPUC also administers the **Non-Potable Ordinance** that requires onsite water reuse systems for new development projects of 100,000 gross square feet or greater in San Francisco and the **Stormwater Management Ordinance** that outlines the mandatory requirements for managing post-construction stormwater runoff and provides guidance on how to incorporate green infrastructure into site design.

The SFPUC continues to explore opportunities to capture and reuse stormwater by developing and advancing projects, partnering with other agencies, and administering incentive programs for its customers. Some of the grant programs include the Green Infrastructure Grant Program, Floodwater Management Grant Assistance Program, Urban Watershed Stewardship Grants, and Onsite Water Reuse Grant Program.

Since the launch of the **Green Infrastructure Grant Program** in February 2019, the SFPUC has awarded \$17.8 million in grants to 17 projects. When completed, the projects are designed to capture and divert about 11 million gallons of stormwater per year. On Feb. 7, 2023, the SFPUC announced new investments totaling \$7.25 million for stormwater management projects as part of the Green Infrastructure Grant Program. The investments in this grant cycle are the largest since the program’s inception in 2019. The program funded six new projects to transform local outdoor spaces, reduce flood risk, improve urban habitat, increase climate resilience, and improve coastal water quality.



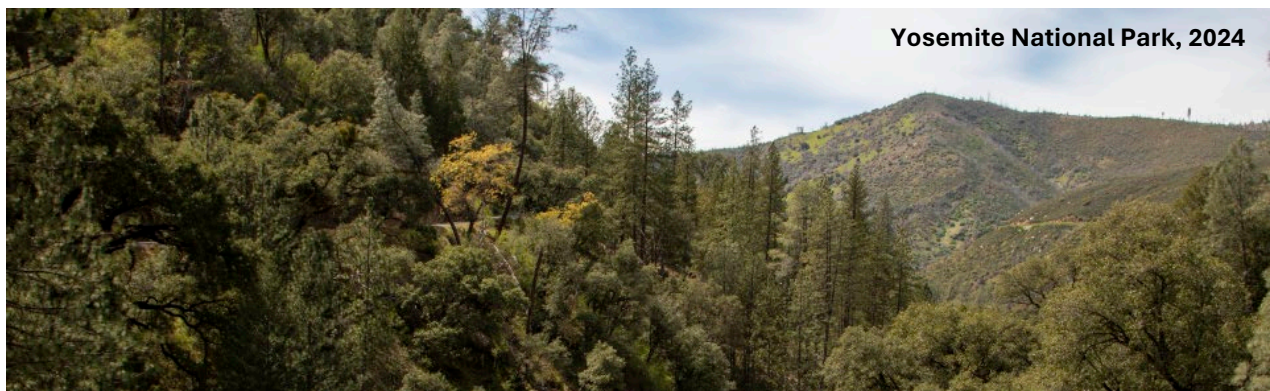
1.6. San Joaquin Valley & Upcountry Projects

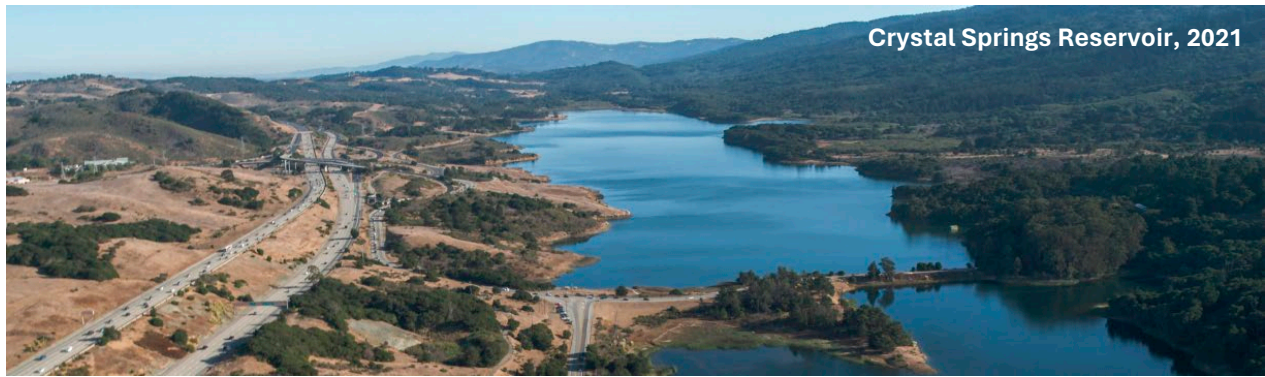
In addition to projects that are being implemented locally and regionally in the San Francisco Bay Area, the SFPUC is also exploring projects that would extend the availability of existing surface water supplies from the Tuolumne River watershed under dry-year conditions. The following three projects are described in the AWS Plan and will continue to be updated as more information become available.

Groundwater Banking in the Modesto Irrigation District and Turlock Irrigation District service areas could be used to provide some additional water supply to meet instream releases in dry years reducing water supply impacts to the SFPUC service area. For example, additional surface water could be provided to irrigators in wet years, which would offset the use of groundwater, thereby allowing the groundwater to remain in the basin rather than be consumptively used. The groundwater that remains in the basin can then be used in a subsequent dry year for irrigation, freeing up surface water that would have otherwise been delivered to irrigators to meet instream flow requirements. Feasibility study of this option is included in the Agreements to Support Healthy Rivers and Landscapes (previously referred to as the Tuolumne River Voluntary Agreement). Progress on this potential water supply option will be guided by scientific monitoring and collaborative decision making.

Inter-Basin Collaborations could include establishing a partnership between interests on the Tuolumne River and those on the Stanislaus River, which would allow responsibility for streamflow to be assigned variably based on the annual hydrology. The Tuolumne system tends to spill more excess flow in wetter years than the Stanislaus, and this excess flow could be shaped and credited to meet Stanislaus system requirements, while New Melones Reservoir in the Stanislaus system is refilling. Then the stored water could be partially used to provide required streamflow to meet Stanislaus and Tuolumne requirements in future dry years.

Dry-Year Transfers have long been pursued by the SFPUC. During the planning and implementation of the Phased Water System Improvement Program, the SFPUC pursued a long-term agreement to transfer 2 mgd from Modesto Irrigation District in dry years only. The negotiations were terminated in 2012. Subsequently, the SFPUC has initiated discussions with Oakdale Irrigation District to secure a similar dry year transfer. While no transfer has been secured to date, the SFPUC continues to engage in discussions with partners to explore potential transfer opportunities on the Tuolumne River and throughout the San Joaquin Valley.





Crystal Springs Reservoir, 2021

Section 2: Program Highlights and Updates

Section 2 presents the AWS program’s accomplishments and key milestones achieved throughout the 2023-2024 reporting period and the anticipated next steps.

2.1 Progress on AWS Plan Recommendations

The AWS Plan recognizes the potential for a significant future water supply gap and has identified recommendations that aim to (1) avoid widening the water supply gap, (2) fill the water supply gap, and (3) reduce the water supply gap. **Table 2** lists the 15 recommendations outlined in Chapter 6 of the AWS Plan along with a status update.

Table 2. Current State of Each AWS Plan Recommendation

Recommendation	Current Status
1. Support funding in the FY 2025-2034 CIP to evaluate alternatives for additional treatment, infrastructure, and associated staffing needed to achieve 6.2 mgd of dry-year supply by 2045 from the Regional Groundwater Storage and Recovery project. Staffing needs will be re-evaluated in a future CIP development process.	Funding approved, evaluation of alternatives will begin once funding is released in the coming months.
2. Include the Phase 2 re-design of the Alameda Creek Recapture Project as a new project in the FY 2025-2034 CIP.	Funding approved, the re-design effort will begin once funding is released in the coming months.
3. Continue reporting progress on negotiations related to the Proposed Voluntary Agreement [now referred to as Agreements to Support Healthy Rivers and Landscapes] and potential transfers and projects in the San Joaquin Valley that could contribute to instream flow releases. Identify resource and funding needs, as and when appropriate. No new funding or additional resources are needed to support this recommendation.	Update anticipated in 2025. See Section 2.3.1.

Section 2 – AWS Program Highlights and Updates

Recommendation	Current Status
4. Provide updates to the AWS Plan, beginning in FY 2026-2027 and periodically thereafter, to align with AWS Project milestones, changes to regulatory requirements, and CIP planning. No new funding or resource allocation for this effort is anticipated.	Update to the AWS Plan will be prepared in FY 2026-27.
5. Based on its assessment in 2024, the SFPUC will develop 1-2 additional demand scenarios for the retail service area including a sensitivity analysis as appropriate to understand the key inputs driving changes in demand. Past projections should be compared to actual deliveries to calibrate the new demand scenario(s). Staff should also collaborate closely with BAWSCA in this effort to track retail and wholesale assumptions	Planning for the development of demand scenarios has begun. See Section 2.3.3.
6. Evaluate infrastructure and operational needs and estimate any additional funding necessary to achieve 4 mgd of dry-year supply by 2045 from the San Francisco Groundwater Supply Project, which is a retail project in San Francisco.	Funding approved. Status on the SF Groundwater Supply Project is included in the callout on Local Projects in Section 1.
7. Following the development of a water supply strategy, AWS staff will recommend whether to approve participation in the LVE Project before scheduled financial closing in 2024. Based on feasibility analysis to date and in anticipation of a positive staff recommendation, support the SFPUC’s share of funding for the full implementation of the LVE Project. Participation in the LVE Project will also require continued planning for two companion projects: Conveyance Alternatives for LVE and Supply Alternatives for LVE.	Planning for water supply and institutional agreements are underway. See Section 2.4.
8. Continue developing terms of agreement with project partners and prospective recycled water customers. Assuming that terms of agreement will be reached, support funding for completion for final design and construction of the Daly City Recycled Water Expansion Project in the FY 2025-2034 CIP.	Ongoing. See Section 2.4.
9. Include the South Bay Purified Water Project as a new project with funding support through 10% design and environmental review in the FY 2025-2034 CIP. This project supports the evaluation needed to help the SFPUC Commission make a decision regarding the permanent status for the Cities of San Jose and Santa Clara.	Funding approved and project included in Capital Plan; project planning is underway. See Section 2.4.

Section 2 – AWS Program Highlights and Updates

Recommendation	Current Status
<p>10. Support funding in the FY 2025-2034 CIP to continue planning through environmental review and 10% design for the PureWater Peninsula and ACWD-USD Purified Water. Support the use of existing funds to continue planning through the Alternatives Analysis for the Calaveras Reservoir Expansion Project.</p>	<p>Funding approved for purified water projects. See Section 2.4 for updates. Additional funding for Calaveras Expansion planning deferred.</p>
<p>11. Prioritize planning for operational integration by working with SFPUC operations staff. Support hiring an Operations Planning Manager to begin preparing for system integration, staffing, maintenance, and planning to support development of the AWS Program in the future.</p>	<p>There is currently no proposed budget related to this recommendation. See Section 2.3.4.</p>
<p>12. Support hiring a Purified Water Program Manager who will be responsible for tracking and ensuring compliance with new regulations, coordination with stakeholders, and establishing a technical advisory panel to support the successful demonstration and implementation of purified water projects within the AWS Program.</p>	<p>Funding approved. See Section 2.3.4.</p>
<p>13. Prioritize continued coordination with Finance to help track and address long-term project financing options and affordability.</p>	<p>Ongoing. There is no budget associated with this recommendation. See Section 2.2.</p>
<p>14. Support planning the technical analyses, demonstration, and outreach for PureWaterSF, a local supply project in the retail service area. This work will be supported by the new Purified Water Program Manager and no additional staffing would be needed to support this recommendation at this time.</p>	<p>Funding for initial planning approved. Status on the PureWaterSF Project is included in the callout in Section 1.</p>
<p>15. In partnership with BAWSCA, explore the feasibility of a grant program to support local projects that reduce demands on the RWS. No funding or additional resources are needed for this effort at this time.</p>	<p>Scoping for this recommendation is underway and discussions are planned. See Section 2.3.5.</p>

Section 2 – AWS Program Highlights and Updates

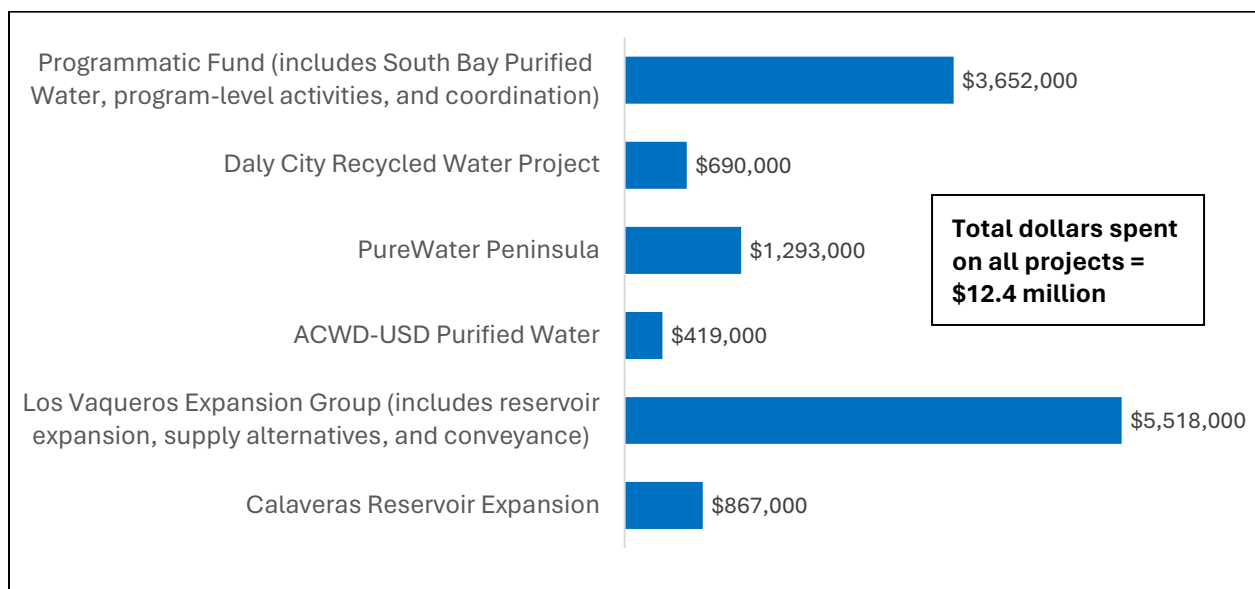
2.2 Financial Update

The AWS Plan, which was submitted to the Commission in February 2024, made specific project recommendations and associated funding requests for the Commission to consider. Projects intended to fill the water supply gap had new funding requests totaling \$137.8 million and were to further develop the Los Vaqueros Expansion, Daly City Recycled Water Expansion, South Bay Purified Water, PureWater Peninsula, and ACWD-USD Purified Water projects. The requested funding would support construction of the first two projects and planning through environmental review and 10% design for the three regional purified water projects. Additionally, the AWS Plan included recommendations to develop new demand scenarios and prioritize planning in three strategic areas (operational integration, funding and affordability, and purified water) to support the AWS Program. Separately, the AWS Plan also identified recommendations to support projects intended to avoid widening the water supply gap; these existing projects would require approximately \$49.2 million of additional funding over the 10-year CIP window and include projects such as the Regional Groundwater Storage and Recovery Project and the Alameda Creek Recapture Project. On February 13, 2024, the SFPUC approved a 10-year Capital Improvement Plan, which includes funding for the AWS Plan recommendations as described above.

The SFPUC is committed to tracking and addressing long-term project financing options and affordability. In FY 2023-24, staff started to develop a cost model tool to determine costs for each AWS Project based on a common set of assumptions derived from past SFPUC projects and industry standards. By using consistent assumptions that are based on actual SFPUC capital projects, this cost model will be used to inform future water rate forecasting efforts. Ongoing work to develop the cost model will continue through FY 2024-25.

Figure 3 shows the dollars spent or encumbered on AWS projects from July 2020 to May 2024.

Figure 3. Dollars Spent or Encumbered on Projects to Date (July 2020 – May 2024)



2.3 Programmatic Updates

2.3.1 Negotiations Related to the Agreements to Support Healthy Rivers and Landscapes

RECOMMENDATION 3

Continue reporting progress on negotiations related to the Proposed Voluntary Agreement and potential transfers and projects in the San Joaquin Valley that could contribute to instream flow releases. Identify resource and funding needs, as and when appropriate. No new funding or additional resources are needed to support this recommendation.

The Agreements to Support Healthy Rivers and Landscapes is a watershed-wide approach to increase river flows, restore ecosystems, and strengthen water supply reliability across the state. This approach was previously referred to as the “Voluntary Agreements” in the AWS Plan and recommendations. This approach is being developed in an ongoing collaborative decision-making process with the State Water Board and no changes to the current in-stream flow are anticipated until 2025.

2.3.2 Consideration of Permanent Status with San Jose and Santa Clara

Planning for alternative water supplies is proceeding with the intention to be able to make the Cities of San Jose and Santa Clara permanent customers of the SFPUC by providing at least 9 mgd of additional water supply guarantees to the two cities collectively based on historic deliveries. In addition, San Jose and Santa Clara have requested that the SFPUC consider its anticipated normal year demands for RWS supply of up to 15.5 mgd; this represents 6.5 mgd in excess of the requested combined supply guarantees in years when sufficient RWS supplies are more likely to be available. Given the magnitude of the projected water supply gap, the SFPUC is not planning for any supply guarantee scenario above 9 mgd at this time.

Consistent with the SFPUC’s planning priorities, when evaluating potential AWS supplies, the SFPUC’s existing commitments to meet instream flow requirements and meet ongoing obligations to existing permanent customers must be considered when deciding to make interruptible customers permanent or meeting increased demands of existing and interruptible customers. Distinct from San Jose and Santa Clara’s all-year needs, meeting existing obligations requires securing dry-year supplies, which is the primary objective of the AWS Program.

Since August 2020, BAWSCA has facilitated monthly discussions with San Jose and Santa Clara to collectively consider project opportunities and interests. In addition to reviewing projects that are already listed in the AWS Program, the agencies worked together on other project opportunities that may provide multiple water supply benefits.

In July of 2022 the SFPUC, San Jose, and Santa Clara initiated a feasibility study to evaluate a purified water project concept that can potentially meet both the all-year needs of San Jose and Santa Clara and produce dry-year supplies for the benefit of all RWS customers. Progress on the analysis is described as part of the South Bay Purified Water Project in Section 2.4 of this report.

2.3.3 Forecasting Future Demand Scenarios

RECOMMENDATION 5

Based on its assessment in 2024, the SFPUC will develop 1-2 additional demand scenarios for the retail service area including a sensitivity analysis as appropriate to understand the key inputs driving changes in demand. Past projections should be compared to actual deliveries to calibrate the new demand scenario(s). Staff should also collaborate closely with BAWSCA in this effort to track retail and wholesale assumptions.

The SFPUC has started planning for updates to its demand forecasting model to develop 1-2 additional retail demand scenarios. This work will inform the calculation of the Water Supply Gap and also the SFPUC's 2025 Urban Water Management Plan. This planning document is required by the California Water Code and supports water suppliers' long-term resource planning to ensure that adequate water supplies are available to meet existing and future water needs. For this effort, the SFPUC will use an econometric model to estimate future water demands using the latest available housing data, employment projection data, and water consumption data. Implementation of this recommendation is in the early stages and additional demand scenarios are expected to be finalized in 2025.

Concurrent with this effort, BAWSCA is also starting a new demand study to update future water demands for its member agencies. Demands from BAWSCA's study will also be included in future revisions to the Water Supply Gap calculation.

2.3.4 Staffing Support

RECOMMENDATION 11

Prioritize planning for operational integration by working with SFPUC operations staff. Support hiring an Operations Planning Manager to begin preparing for system integration, staffing, maintenance, and planning to support development of the AWS Program in the future.

A position was proposed in the budget process, but it was ultimately not approved. It will likely be proposed again as planning progresses. In the meantime, AWS staff meet regularly with the Water Supply and Treatment Division and the Water Quality Division on a programmatic and project-level to identify future operational needs.

RECOMMENDATION 12

Support hiring a Purified Water Program Manager who will be responsible for tracking and ensuring compliance with new regulations, coordination with stakeholders, and establishing a technical advisory panel to support the successful demonstration and implementation of purified water projects within the AWS Program.

Three of the six AWS Projects are purified water projects, in addition to the SFPUC developing a local purified water program (i.e., PureWaterSF). Purified water projects will require a specialized set of

technical, regulatory, and communication skills for successful implementation. As the scope of these projects expands, the SFPUC continues to make planned investments to support hiring a Purified Water Program Manager who can track new regulations, communicate with stakeholders, provide expertise in the design and quality control of future project demonstration sites.

2.3.5 Supporting Demand Reduction on the Regional Water System

RECOMMENDATION 15

In partnership with BAWSCA, explore the feasibility of a grant program to support local projects that reduce demands on the RWS. No funding or additional resources are needed for this effort at this time.

SFPUC staff are in the initial stage of researching and outlining components of this grant program and will be in discussions with BAWSCA on this joint effort.

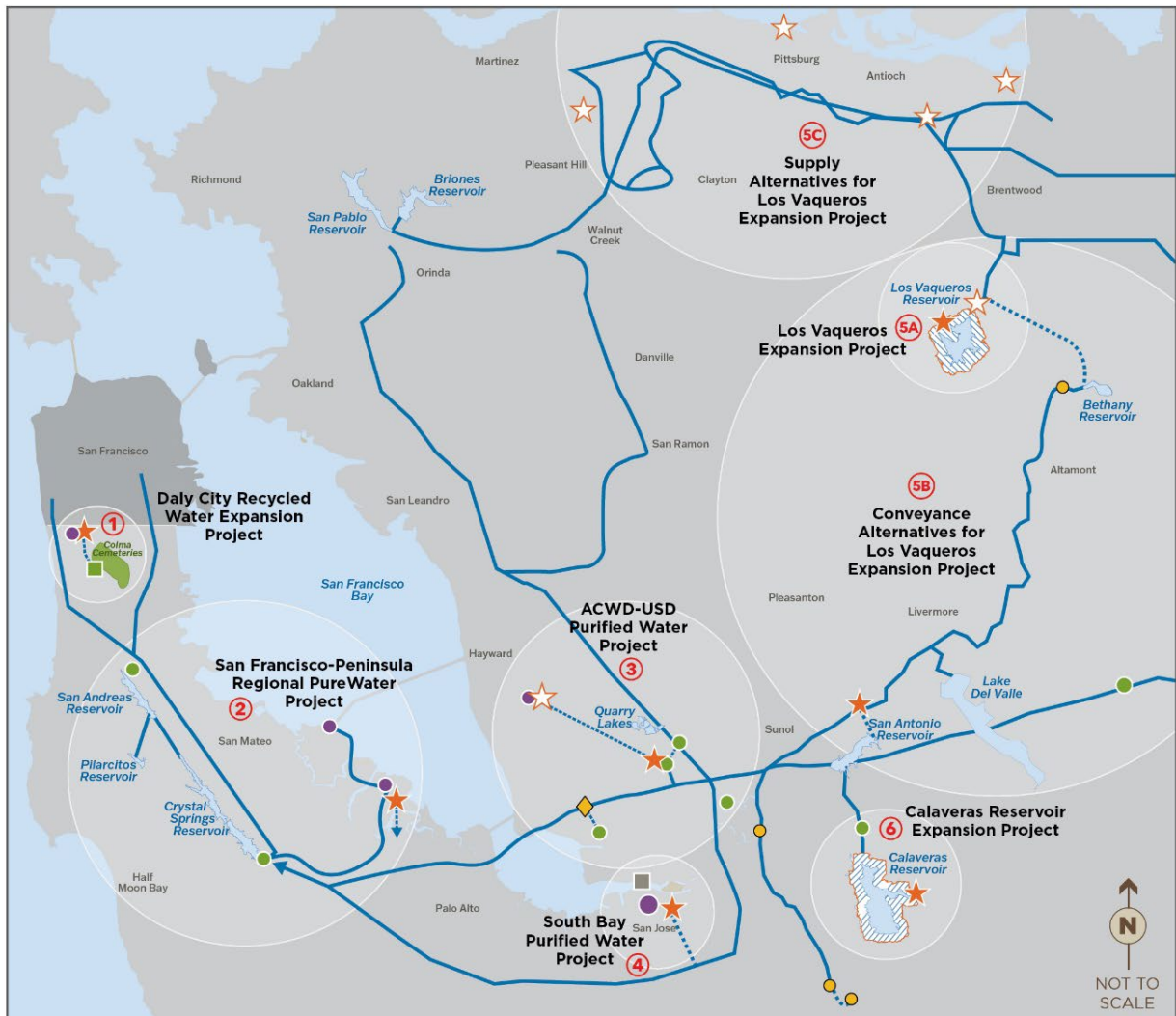
In addition to reducing demands regionally, the SFPUC has launched several local supply projects and initiatives. They include PureWaterSF, the Innovations Program, and stormwater capture & reuse projects. Refer to Section 1.5 for more information about these projects.

2.4 Update on AWS Projects

The AWS Program has identified six regional AWS projects that can address the future water supply gap and the priorities for this planning effort. A map of the six regional AWS projects is shown in **Figure 4**. Beyond these AWS projects, there are additional regional and local efforts that can impact either the projected water supply availability or the demands on the RWS. While these efforts are not specifically part of the AWS Program, there are opportunities for collaboration in the San Joaquin Valley and local initiatives in San Francisco which are described in Section 1.6.

Section 2 – AWS Program Highlights and Updates

Figure 4. Map of AWS Project Locations



LEGEND All locations and sizes shown are approximate and represent the general vicinity for potential facilities. Shaded circles serve to indicate project facilities associated with each project; they do not indicate project size or volume of water produced.

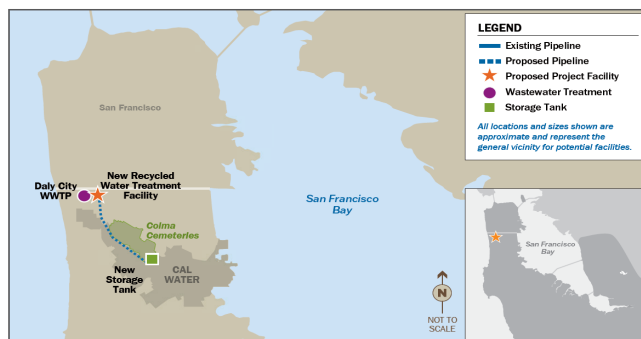
	Existing Pipeline		1 Daly City Recycled Water Expansion Project
	Potential/Proposed Pipeline		2 San Francisco-Peninsula Regional PureWater Project
	Potential/Proposed Project Facility		3 ACWD-USD Purified Water Project
	Alternate Potential/Proposed Project Facility		4 South Bay Purified Water Project
	Water Treatment		5A Los Vaqueros Expansion Project
	Water Storage		5B Conveyance Alternatives for Los Vaqueros Expansion Project
	Potential New Outfall		5C Supply Alternatives for Los Vaqueros Expansion Project
	Wastewater Treatment		6 Calaveras Reservoir Expansion Project
	Intertie		
	Turnout		

Daly City Recycled Water Expansion

SFPUC Project Manager: YinLan Zhang

PROJECT DESCRIPTION

This project can make 0.7 mgd available in the South Westside Basin for drought supply. The project is envisioned to serve 13 cemeteries and other smaller irrigation customers with an average annual recycled water supply of 1.25 mgd, offsetting existing groundwater pumping from the South Westside Basin. This will free up groundwater, enhancing the reliability of the Basin. The project has been a regional partnership between the SFPUC, Daly City, and the California Water Service Company (Cal Water), in coordination with the Town of Colma and the irrigation customers who are located largely within Cal Water's service area. As a private water utility, Cal Water's participation in the project is subject to approval by the California Public Utilities Commission (CPUC). SFPUC customers will benefit from the increased reliability of the South Westside Basin for additional drinking water supply during droughts. In this way, this project supports the Groundwater Storage and Recovery (GSR) Project, which is under construction.



GENERAL PROJECT INFORMATION

Average Annual Supply	Availability	Supply Type	Local or Regional?	Capital Cost/Acre-Foot
0.7 MGD	Drought and All Years	Recycled Water / Groundwater Offset	Regional	\$4,203

PROJECT PARTNERS AND INTERESTS

SFPUC	Daly City (Sanitation District)	Cal Water
Increase dry-year supply reliability	Reduce ocean discharges	Develop local supplies

INSTITUTIONAL COMPLEXITY

SFPUC Only Multi-Party Partnership

Institutional complexity is a relative measure that takes into account project service area, project facilities ownership, number of project partners, cost share, and whether SFPUC is construction and design lead.

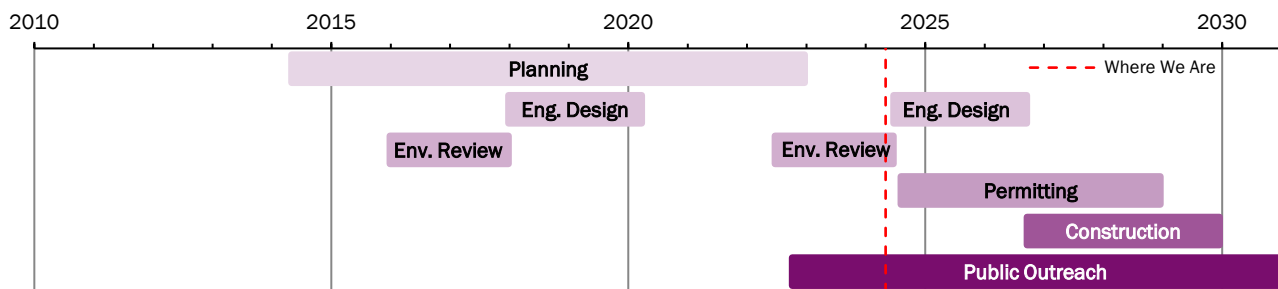
TOTAL PROJECT COST

Estimated Capital Cost	Estimated Annual O&M
\$120.0M	TBD

SFPUC BUDGET INFORMATION

10-Yr CIP Budget Allocation	Current Allocation
\$114.7M	\$10.0M

ESTIMATED PROJECT SCHEDULE (NOT A BASELINE SCHEDULE)



BENEFITS

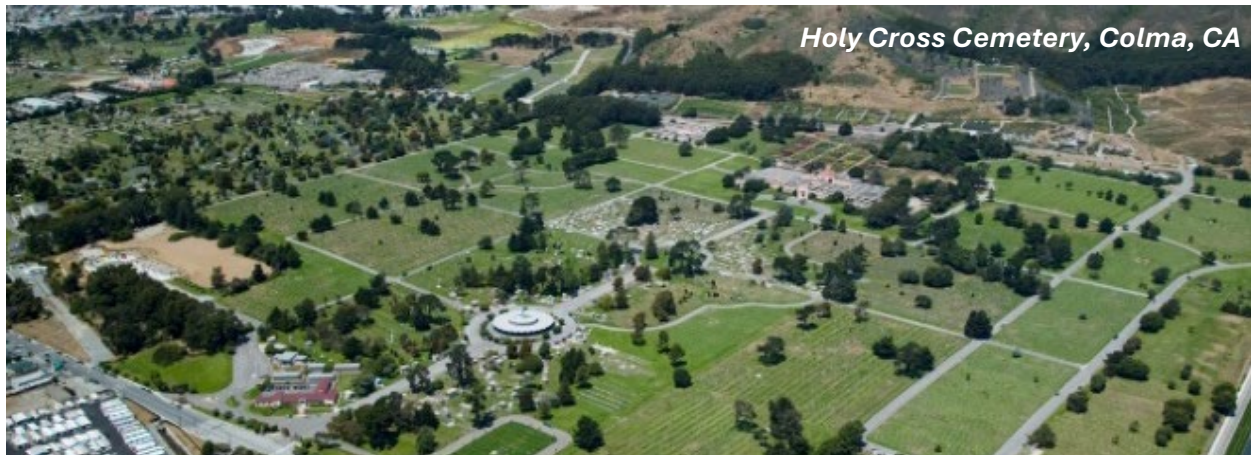
- Enhance basin sustainability and groundwater supply availability for GSR project by reducing groundwater pumping by cemeteries
- Avoid mitigation requirements for the GSR project
- Offset approx. 0.05 mgd of potable water used for irrigation
- Supply may be available for additional customers (to be identified)

RISKS AND UNCERTAINTIES

- Securing customers (cemeteries and others)
- Partner buy-in and involvement
- Finalizing and securing storage tank location
- Realizing groundwater offset benefits through GSR
- Potential loss of 1-2 SFPUC retail customers, dependent on negotiations with partners

Daly City Recycled Water Expansion

Current Status - Design



Current Planning Considerations

The current planning questions driving near-term project activities include:

1. How will the responsibilities and costs be allocated among the project partners?
2. How can project partners collaborate with potential customers to realize water supply benefits for all parties?

Activities Conducted this Past Year

The AWS Plan recommended full funding of the Daly City Recycled Water Expansion Project if agreements were reached among the partners and with the main recycled water users, the cemeteries in Colma. This year, the SFPUC focused on working with the Daly City and Cal Water on partnership agreements that would allocate the project benefits and define the roles and responsibilities during different phases of the project, from planning to operations, and the associated financial obligations.



At the end of 2023, Cal Water completed its regional water supply reliability assessment and affirmed its commitment to advancing the project partnership. Daly City also reaffirmed its commitment. For the latter part of the fiscal year, SFPUC staff concentrated on working out the details of roles and responsibilities, asset ownership, and cost-share with staff and the partners via two different draft agreements, 1) a Memorandum of Agreement (MOA) between SFPUC, Cal Water and Daly City to complete design of the project; and 2) a term sheet that covers the roles and responsibilities of the partners through the construction and operation phases of the project. The partners agreed that an MOA for design could be completed for the near term while everyone works on the overarching, more complex term sheet that covers multiple phases of the project and require greater financial commitments.

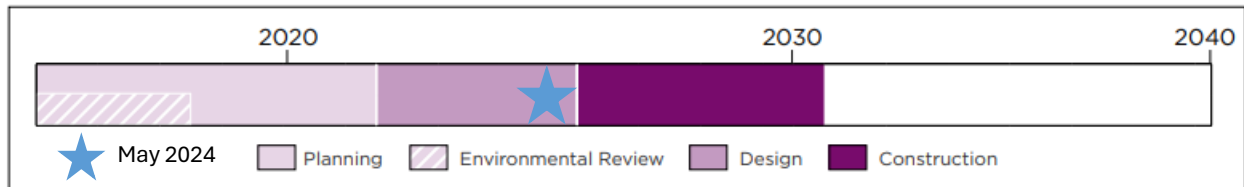
Section 2 – AWS Program Highlights and Updates

Expenditures this year have been on staff and City Attorney time due to ongoing negotiations and coordination with the project partners.

Upcoming Activities in 2024-2025

Activities to take place in the next fiscal year are as follows:

- ✓ SFPUC will finalize the MOA for design with the partners and begin contracting for a design consultant.
- ✓ SFPUC staff will negotiate agreement terms for the construction, operation, and maintenance of the project with its partners based on proportionate benefits and needs.
- ✓ SFPUC staff will also re-engage with prospective recycled water customers on the next steps for user agreements.



PureWater Peninsula

SFPUC Project Manager: YinLan Zhang

PROJECT DESCRIPTION

PureWater Peninsula could provide 6-12 mgd of water supply through either a combination of reservoir water augmentation at Crystal Springs Reservoir, which is a facility of the RWS, and direct potable water reuse through raw water augmentation or treated water augmentation to partner agencies or treated water augmentation to the RWS. Treated wastewater from Silicon Valley Clean Water and/or the City of San Mateo would be conveyed to an advanced water treatment plant to produce purified water that meets state and federal drinking water quality standards. The purified water would then be delivered via pipelines to Crystal Springs Reservoir and directly to water purveyors on the Peninsula, or it could be connected directly to one of the main RWS transmission pipelines. Purified water that goes to Crystal Springs Reservoir would be blended with regional surface water supplies and treated again at Harry Tracy Water Treatment Plant. In addition to the SFPUC and the wastewater agencies, Cal Water, Redwood City, Mid-Peninsula Water District and BAWSCA are also participating in the project. Initial feasibility analyses have been completed. Additional planning and preliminary design, including analysis of feasible operational scenarios, impacts to RWS operations and water quality as well as treatment train options, are needed to further develop the project and evaluate its impacts.



GENERAL PROJECT INFORMATION

Average Annual Supply	Availability	Supply Type	Local or Regional?	Capital Cost/Acre-Foot
6 MGD	All Years	Purified Water	Regional	\$1,868

PROJECT PARTNERS AND INTERESTS

SFPUC	Silicon Valley Clean Water & City of San Mateo
Increase dry-year supply reliability	Reduce Bay discharges
Cal Water	BAWSCA / Redwood City / Mid-Peninsula Water District
Develop local supplies	Increase dry-year supply

INSTITUTIONAL COMPLEXITY

SFPUC Only Multi-Party Partnership

Institutional complexity is a relative measure that takes into account project service area, project facilities ownership, number of project partners, cost share, and whether SFPUC is construction and design lead.

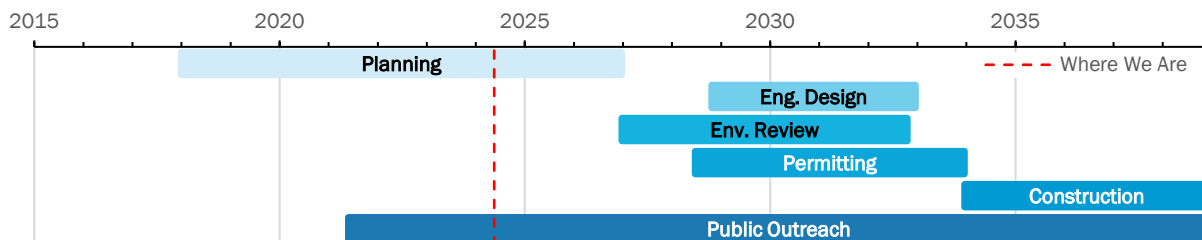
TOTAL PROJECT COST

Estimated Capital Cost	Estimated Annual O&M
\$1,168.0M	TBD

SFPUC BUDGET INFORMATION

10-Yr CIP Budget Allocation	Current Allocation
\$5.3M	\$6.8M

ESTIMATED PROJECT SCHEDULE (NOT A BASELINE SCHEDULE)



BENEFITS

- Reduces Bay discharges
- Provides a new drought-resistant water supply

RISKS AND UNCERTAINTIES

- Operational and water quality challenges
- Water supply during non-drought years would impact operations and storage availability in the Regional Water System
- Institutional complexities due to number of partners

PureWater Peninsula

Current Status – Planning



Current Planning Considerations

To evaluate the merits of the project to produce dry-year water supply, the SFPUC has focused on answering the following near-term planning questions:

1. How will partners share in the cost and long-term benefits of the project?
2. How will a new water supply in Crystal Springs Reservoir affect water quality, operational needs, and distribution of RWS supplies?
3. Will a 12-mgd alternative that would directly connect to the RWS be feasible?

Activities Conducted this Past Year

The Phase 3 feasibility study, completed at the end of 2022, recommended a phased hybrid Indirect Potable Reuse (IPR) / Direct Potable Reuse (DPR) project where between 6 to 8 mgd of purified water would be conveyed to Crystal Springs as IPR and 4-6 mgd would connect to local water agencies on the peninsula as DPR.

This concept became the focus of the Basis of Design Report (BODR), which SFPUC, along with our six other partner agencies and the consultant team completed this year. At the same time, with the passing of the DPR regulations by the State (December 2023), SFPUC studied the feasibility of a DPR-only project using the same advanced water treatment plant as the phased hybrid approach, but with different conveyance alignments that would take the purified water directly into the RWS. The DPR alternatives would distribute purified water to a broader portion of the service area on the peninsula and reduce the amount of conveyance infrastructure that would be needed compared to the IPR alternatives. Through its own as-needed contracting, the SFPUC worked with a consultant to help evaluate the feasibility of three different connection points to the RWS. Parameters evaluated included blending ratios, water quality needs, infrastructure needs and land availability, discharge options, and high-level cost estimates. This feasibility study was also completed this year.



\$811,000
Dollars spent in
2023-24

Section 2 – AWS Program Highlights and Updates

While the phased hybrid and DPR-only concepts would both rely on the same advanced treatment, the conveyance options for each cover very different geographic areas and would also result in different considerations for SFPUC operations staff. To have a clearer scope and defined direction prior to embarking on design, the SFPUC is carrying out additional technical analysis to clarify the potential benefits and challenges of the phased hybrid and DPR-only concepts to determine which project concept the Alternatives Analysis Report for the project should include. Making this decision would also enable the project team to formulate project-specific outreach strategies and plan for more comprehensive public engagement.

On the public engagement front, as part of the BODR scope of work, the project consultant team created the “Initial Strategic Outreach Plan” and helped the project partners conduct a naming exercise that resulted in a new project logo and name, PureWater Peninsula (previous title for the project was SF-Peninsula Regional PureWater). This exercise helps establish the project’s identity for future funding and communications efforts and will help ensure consistency of final planning and design support documentation. The partners have agreed to begin developing a coordinated outreach plan by identifying communications staff from each agency.

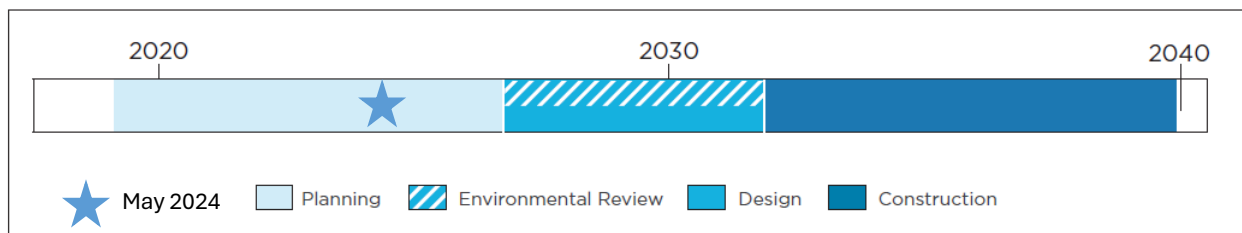
Another significant consideration for the project this year has been the question of how partner agencies would participate in the project and what the governance structure would be. The partners were briefed on the benefits and complexities of different governance models, including JPAs and non-profit corporations, and held discussions on ways in which the water agencies could obtain direct or indirect water supplies from the project and how that could potentially affect the governance structure. Each agency also refined its own water supply objectives for continued participation in the project.

Expenditures this year covered the consultant costs for completion of the BODR and the DPR-only feasibility study, as well as staff time.

Upcoming Activities in 2024-2025

The SFPUC will carry out additional technical analysis to determine whether to pursue the phased hybrid or DPR-only option for the Alternatives Analysis Report. The partners will further explore public engagement strategies and options for project governance. The planning questions that will frame planning in the coming year will therefore be:

1. Which purified water concept, IPR into Crystal Springs or DPR into the RWS, should the SFPUC pursue for the Alternatives Analysis Report?
2. How should the partners initiate public engagement on the regional purified project?

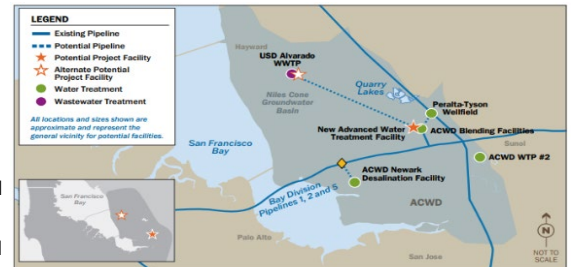


SFPUC-Alameda County Water District - Union Sanitary District Purified Water Partnership

SFPUC Project Manager: YinLan Zhang

PROJECT DESCRIPTION

This project will provide a new purified water supply utilizing Union Sanitary District (USD)'s treated wastewater and further treating it through a multi-barrier advanced treatment process to meet or exceed drinking water standards. While the potential volume of supply will be determined through a feasibility evaluation, prior studies indicate the potential for at least 4 mgd of new supply. Purified water produced at USD could be transmitted to the Quarry Lakes Groundwater Recharge Area to supplement recharge into the Niles Cone Groundwater Basin or for other uses in Alameda County Water District's (ACWD's) service area. With the additional water supply to ACWD, an in lieu exchange with the SFPUC would result in more water left in the SFPUC's Regional Water System. Additional water supply could also be directly transmitted to the SFPUC through a new intertie between ACWD and SFPUC. A range of scenarios considering treatment capacity, distribution potential and feasibility are being considered through an evaluation between the three partner agencies.



GENERAL PROJECT INFORMATION

Average Annual Supply	Availability	Supply Type	Local or Regional?	Capital Cost/Acre-Foot
5.4 mgd	All Years	Purified Water	Regional	\$4,541

PROJECT PARTNERS AND INTERESTS

SFPUC	Alameda County Water District (ACWD)	Union Sanitary District (USD)
Increase dry-year supply reliability	Reduce dependence on SFPUC Regional Water System	Reduce Bay discharges

INSTITUTIONAL COMPLEXITY

SFPUC Only Multi-Party Partnership

Institutional complexity is a relative measure that takes into account project service area, project facilities ownership, number of project partners, cost share, and whether SFPUC is construction and design lead.

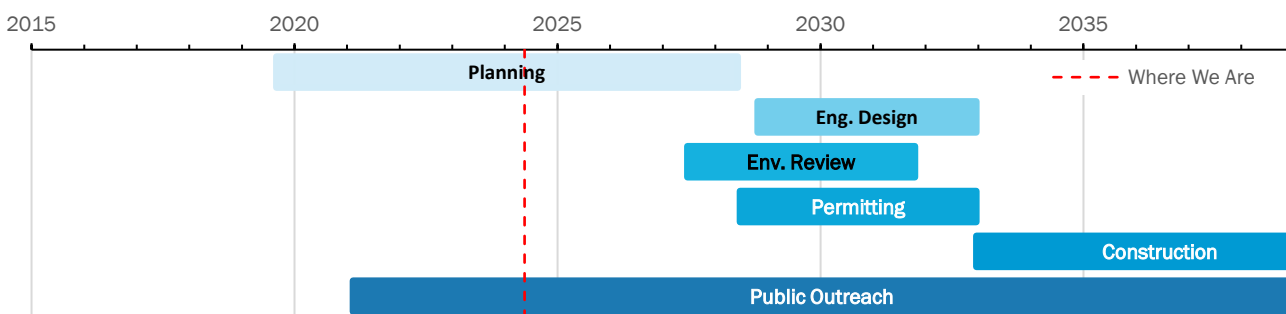
TOTAL PROJECT COST

Estimated Capital Cost	Estimated Annual O&M
\$1,301.0M	TBD

SFPUC BUDGET INFORMATION

10-Yr CIP Budget Allocation	Current Allocation
\$8.0M	\$2.4M

ESTIMATED PROJECT SCHEDULE (NOT A BASELINE SCHEDULE)



BENEFITS

- Leverages existing facilities to provide water supply

RISKS AND UNCERTAINTIES

- Uncertainty of planned capital improvements at wastewater treatment plant may affect purified water treatment requirements
- Potential water quality change to Quarry Lakes
- Finding suitable site for advanced water purification facility

ACWD-USD Purified Water

Current Status – Planning



Quarry Lakes, Alameda County

Current Planning Considerations

The current planning questions driving project activities include:

1. What is the maximum potential purified water that can be produced and put to beneficial use from this project?
2. What are the considerations and tradeoffs, such as costs and infrastructure need, of the two selected alternatives that the partners wish to study?

Activities Conducted this Past Year

During FY 2023-2024, the project partners including Alameda County Water District (ACWD), Union Sanitary District (USD), and the SFPUC completed the Purified Water Feasibility Study with a project consultant team. The study evaluated two alternatives for purified water sourced from USD’s wastewater that could recharge the groundwater basin through Quarry Lakes as a first phase and provide

water supply to ACWD and/or the SFPUC directly as a second phase. The main difference between the alternatives is the anticipated treatment steps at the advanced water purification facility: one alternative assumed additional treatment to nitrify the wastewater effluent at USD and the other alternative assumed no upgrades to the current secondary treatment. The feasibility analysis included evaluation of the advanced water purification facility, multiple conveyance lines, connection points where purified water could be introduced in the ACWD water supply system, and options for expanding regional water supplies.



After completion, the study was submitted to the US Bureau of Reclamation for review for Title XVI funding eligibility. USBR determined that the feasibility study was not yet ready for review and the partners decided to postpone the report submission for consideration by the Bureau of Reclamation. ACWD indicated that it would not be ready to make any more progress on the project until it completes its ongoing Water Supply Master Plan in 2025. Meanwhile, USD is determining its own

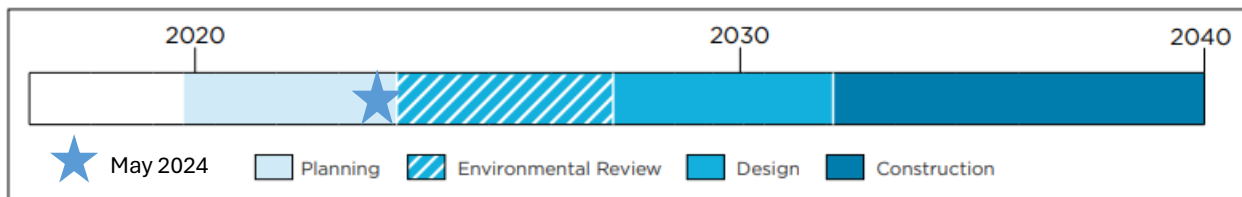
Section 2 – AWS Program Highlights and Updates

secondary treatment improvements that would affect the selection of an alternative for the purified water project.

Expenditures this year focused on completion of the feasibility study and allocation of staff time. As the feasibility study contract is administered by ACWD, there is a lag in the SFPUC’s cost-share contributions. The final payment for the completion of the feasibility study will be forthcoming in the following fiscal year.

Upcoming Activities in 2024-2025

In the coming year, SFPUC will research funding opportunities for the project and continue to work with USD and ACWD on how the concepts in the study could be refined to benefit the partners.

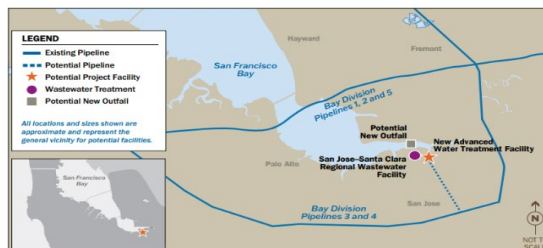


South Bay Purified Water

SFPUC Project Manager: Fan Lau

PROJECT DESCRIPTION

In collaboration with the Cities of San Jose and Santa Clara, the SFPUC is evaluating a joint purified water project. A Feasibility Study was completed in July 2023 for the initial concept of this project, in which the project would provide a dry year supply of 3.5 mgd to the RWS. Additionally, this project will provide a local benefit to San Jose and Santa Clara by providing 6.5 mgd to during all water years to serve demands in their service areas beyond what is requested from the SFPUC as a future supply guarantee. Only the 3.5 mgd of dry year supply is considered as a regional supply, and this regional benefit would be realized only if San Jose and Santa Clara are made permanent customers of the SFPUC, a decision which is to be made by the SFPUC by 2028. This initial concept and corresponding volumes in normal, wet, and dry years to each project partner are continuing to be discussed and refined.



San Jose and Santa Clara jointly own a Regional Wastewater Facility in San Jose that would provide the source water for the advanced treatment project as well as the land needed for project facilities. The feasibility of this concept based on current draft regulations for Direct Potable Reuse, including review of the potential capacity, sharing of supply, operations and distribution, was evaluated as part of the Feasibility Study described above.

GENERAL PROJECT INFORMATION

Average Annual Supply	Availability	Supply Type	Local or Regional?	Capital Cost/Acre-Foot
3.5 mgd	Drought and All Years	Purified Water	Regional	\$1,264

PROJECT PARTNERS AND INTERESTS

SFPUC	City of San Jose City of Santa Clara
Increase dry-year reliability	Develop local supplies, increase all-year and dry-year supplies

INSTITUTIONAL COMPLEXITY

SFPUC Only Multi-Party Partnership

Institutional complexity is a relative measure that takes into account project service area, project facilities ownership, number of project partners, cost share, and whether SFPUC is construction and design lead.

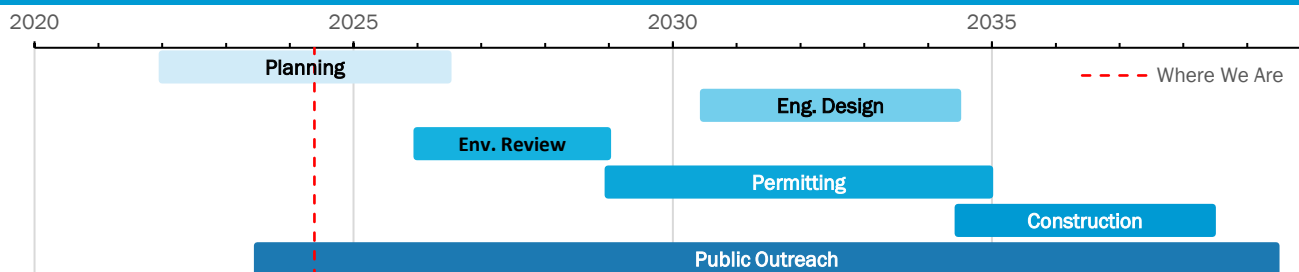
TOTAL PROJECT COST

Estimated Capital Cost	Estimated Annual O&M
\$658.0M	TBD

SFPUC BUDGET INFORMATION

10-Yr CIP Budget Allocation	Current Allocation
\$6.7M	\$0.0M

ESTIMATED PROJECT SCHEDULE (NOT A BASELINE SCHEDULE)



BENEFITS

- Provides a new drought-resistant supply to San Jose and Santa Clara
- Provides a water supply option to support San Jose's and Santa Clara's request for permanent status
- Provides a dry-year supply to the Regional Water System

RISKS AND UNCERTAINTIES

- Operational and water quality challenges in RWS transmission system
- Public acceptance of non-traditional water supply
- NPDES compliance related to discharge to receiving waters
- Environmental impacts to receiving waters
- Impacts of enhanced source water control

South Bay Purified Water

Current Status – Planning



Current Planning Considerations

To evaluate the merits of the project to produce dry-year water supply, the SFPUC considered the following near-term planning questions:

1. Is there a technically viable project that can provide purified water for the Regional Water System customers as well as for local customers of San Jose and Santa Clara?
2. How can benefits be characterized proportionately?

Activities Conducted this Past Year

The project partners—SFPUC, City of San Jose, and City of Santa Clara—explored an initial concept of a 10-mgd advanced water treatment facility that would use source water from the San Jose-Santa Clara Regional Wastewater Facility and operate at 6.5-mgd capacity during wet and normal years. During dry years, the facility would ramp up to the full 10-mgd capacity. The additional 3.5 mgd of purified water produced during dry years would be fed into the RWS to increase dry-year reliability for all SFPUC customers. A feasibility study was conducted this past year to explore this initial concept in addition to a larger project intended to maximize available production capacity. The study also considered various options for blending and distribution. The source water flow and quality were characterized based on actual dry-year data to provide a conservative approach and to ensure that the project would be able to operate during dry years.

The final feasibility study was delivered in July 2023. After closing out the corresponding task order, the SFPUC invoiced and received reimbursement payments from San Jose and Santa Clara for their respective shares of the completed study in accordance with the Memorandum of Agreement that was executed by the project partners in January 2023.

As the project feasibility study neared completion, monthly meetings between the project partners and BAWSCA as well as broader AWS Program planning continued. Meanwhile, San Jose and Santa

Section 2 – AWS Program Highlights and Updates

Clara were also considering additional water supply alternatives for long-term water security. While the feasibility study concluded that the project concept is technically viable, as it was framed, the 10-mgd project concept was not necessarily optimized to meet the needs of each of the partners.

Beginning in December 2023, the partner agencies began discussing a framework and key objectives for pursuing a permanent water supply. The project concept may be modified as a result of these ongoing discussions.

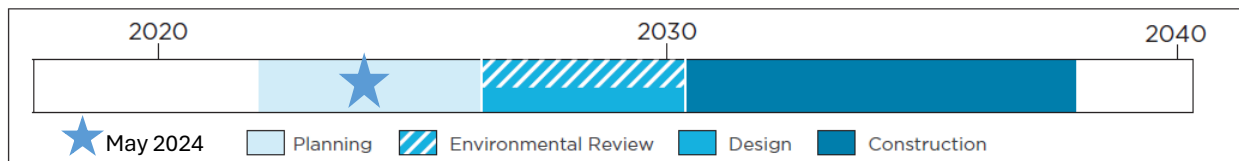
During development of the 10-Year CIP for FY 2024-25 through FY 2033-34, AWS staff proposed the South Bay Purified Water Project as a candidate project to be identified as a new standalone project in the CIP with its own dedicated budget. The initial budget that was requested accounts for support through 10% design and environmental review, consistent with the other purified water projects in the AWS Program. This proposal was accepted and included in the FY 2024-2034 CIP approved in February 2024.

As noted above, this project will not be identified with its own dedicated project number in the CIP until FY 2024-2025. As such, while expenditures during the reporting period for this specific project are not readily available, they are included under program-level activities and staff coordination (see **Figure 3**). Expenditures account for AWS staff time and invoices for the feasibility study task order that were paid by SFPUC during the reporting period. Two-thirds of the expenses for the feasibility study task order were reimbursed by San Jose and Santa Clara.

Upcoming Activities in 2024-2025

The project partners will continue to discuss how the project concept can be updated to more fully meet the critical needs of each partner. No timeline has been identified, but SFPUC's primary driver continues to be its Commission's 2028 deadline to decide whether or not San Jose and Santa Clara will be made permanent customers. Once a project concept is solidified, the project partners will likely proceed with developing a project description for environmental review and pursue operational feasibility studies. Looking ahead, the key current planning questions for the project are:

1. How can the project be structured to optimize benefits of each partner and possibly accommodate another partner?
2. Where should the new water supply tie into the RWS? How will this affect water quality, operational needs, and distribution of RWS supplies?
3. How does the timeline for the project align with San Jose and Santa Clara's demand projections?

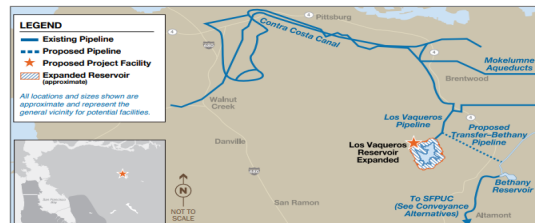


Los Vaqueros Reservoir Expansion

SFPUC Project Manager: Senobar Lanigan

PROJECT DESCRIPTION

The Los Vaqueros Reservoir Expansion (LVE) Project is a storage project that will enlarge the existing reservoir located in Contra Costa County from 160,000 acre-feet to 275,000 acre-feet. The main objectives of the expansion include increasing water supply reliability for municipal, industrial and agricultural customers as well as ecosystem benefits to south-of-Delta wildlife refuges and Delta fisheries. While the existing reservoir is owned and operated by Contra Costa Water District (CCWD), the expansion will have regional benefits and will be managed by a Joint Powers Authority that was formed in October 2021. Meanwhile, CCWD is leading the planning, design and environmental review efforts. The LVE Project includes construction of new pipelines, upgrades to existing facilities and reoperation of some facilities. Storage in LVE can provide a dry year water supply benefit to the SFPUC's Regional Water System (RWS). Currently, SFPUC staff are pursuing scenarios of 20,000 - 40,000 acre-feet of storage. In addition, water supply and conveyance to the RWS need to be determined before the SFPUC determines the extent of participation in the LVE Project. Conveyance Alternatives and Brackish Water Desalination are planning efforts that are linked directly to this project.



GENERAL PROJECT INFORMATION

Average Annual Supply	Availability	Supply Type	Local or Regional?	Capital Cost/Acre-Foot
3.9 mgd	Drought and/or All Years	Storage	Regional	\$1,700-\$4,027

PROJECT PARTNERS AND INTERESTS

CCWD & EBMUD	ACWD & Zone 7 Water Agency & Valley Water	SFPUC (with BAWSCA)
Increase water supply reliability	Increase water supply reliability	Increase dry-year supply reliability
San Luis & Delta Mendota Water Authority	Grassland Water District	DWR (State) & USBR (Federal)
Increase water supply irrigation	Protect wildlife refuges	Provide approvals and funding

INSTITUTIONAL COMPLEXITY

SFPUC Only Multi-Party Partnership

Institutional complexity is a relative measure that takes into account project service area, project facilities ownership, number of project partners, cost share, and whether SFPUC is construction and design lead.

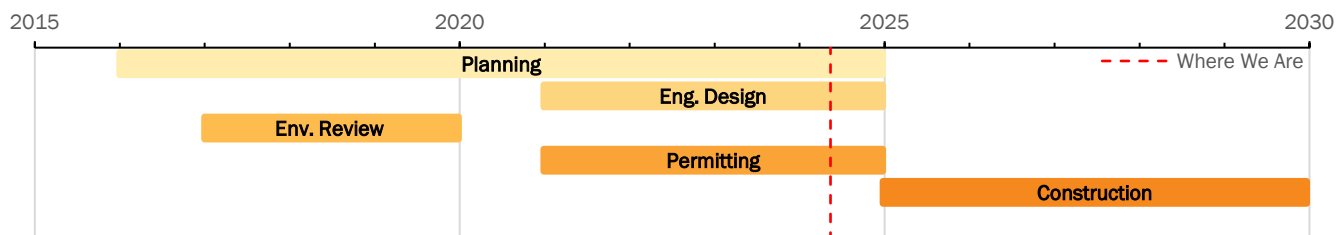
TOTAL PROJECT COST

Estimated Capital Cost	Estimated Annual O&M
\$286M-\$792M	\$7M-\$15M

SFPUC BUDGET INFORMATION

10-Yr CIP Budget Allocation	Current Allocation
\$42.5M	\$12.0M

ESTIMATED PROJECT SCHEDULE (NOT A BASELINE SCHEDULE)



BENEFITS

- Provides operational flexibility, particularly in drier years
- Allows the SFPUC to manage existing supply more efficiently

RISKS AND UNCERTAINTIES

- Capacity and institutional constraints for conveyance to RWS
- Firm source of water supply
- Water quality risks and treatment needs, depending upon conveyance pathway

Los Vaqueros Reservoir Expansion - Storage

Current Status - Design



Current Planning Considerations

1. How much storage should the SFPUC reserve from LVE (Los Vaqueros Expansion Project)? How do water supply and conveyance constraints impact the need for storage?
2. Do elements of the LVE Storage project such as the Transfer-Bethany Pipeline have independent value for the SFPUC?
3. What are the implications of permit conditions, State and federal funding requirements, and institutional agreements among partners on water supply benefits from the LVE Project?

Activities Conducted this Past Year

From executive participation at the Los Vaqueros Reservoir Expansion Joint Powers Authority (JPA) Board of Directors to staff engagement and participation in technical, financial, operational, and legal committees for the Los Vaqueros Expansion Project, the SFPUC continues to engage with the other regional partners to contribute to the development of this regional project.



This past year, the Los Vaqueros Reservoir Expansion Project has seen significant progress and sizable challenges. The progress has been in advancing key project agreements that lay the foundation for the Service Agreement, which will represent financial commitment to the project. Notably, these agreements include the Contra Costa Water District (CCWD) Backstop Agreement (which secures water supply for CCWD customers during dam construction), CCWD Design and Construction Agreement, and CCWD Facilities Usage Agreement. SFPUC staff have been working diligently to represent the interests of all SFPUC customers in negotiating agreement terms.

Section 2 – AWS Program Highlights and Updates

Major project milestones and accomplishments achieved in the last year are:

- ✓ Transitioned administrative and financial services from CCWD to the JPA
- ✓ Procured program management team, accounting, auditing, and bond counsel
- ✓ Received \$10 million allocation in Bipartisan Infrastructure Law funding
- ✓ Developed and submitted Water Infrastructure Finance and Innovation Act (WIFIA) loan application to U.S. Environmental Protection Agency
- ✓ Established Ad Hoc Committees for CCWD Design and Construction Agreement and CCWD Facilities Usage Agreement
- ✓ Developed operational models and tools to support member agency allocation methodology
- ✓ Established monthly leadership meetings with U.S. Bureau of Reclamation to facilitate issue resolution around federal investment

The challenges that face the project are mostly institutional and can be categorized as follows:

Partnership Risks

- JPA agreements are needed with CCWD (the owner and operator of the Los Vaqueros Reservoir) on (1) the approach for managing and sharing cost risks during dam construction, and (2) terms of access to CCWD facilities.
- Participation of JPA members is contingent on a positive outcome of each of their independent feasibility analyses.

Cost Risks

- Short-term: Program cost escalation will occur due to schedule delays in completing agreements with the JPA Members, State agencies, and federal agencies.
- Long-term: Cost escalation due to implementation risks associated complex project elements (e.g., delays in land acquisition for Transfer-Bethany Pipeline).

Funding Risks

- Short-term: JPA Members are limiting the contribution of additional project development funds until there is more clarity on their business cases (costs, benefits, and risks).
- Long-term: Securing the authorized State and Federal funds for the Project, along with potential inflation adjustments, is contingent on complicated negotiations.

There are also some technical and operational risks that are less critical than the above risks. The finalizing of CCWD Incidental Take Permit will provides more clarity on the operational limitations of the project and there are some outstanding questions related to the coordinated operations agreement with DWR and Reclamation. There are not likely to affect SFPUC benefits.

Planning, Permitting, and Design

Coordination continues for several permit applications that were previously submitted to the U.S. Fish and Wildlife Service, the California Department of Fish and Wildlife, the U.S. Army Corps of Engineers, and other regulatory agencies. Draft water rights change petitions have been submitted to the State Water Resources Control Board for preliminary review. In February 2024, the Department of

Section 2 – AWS Program Highlights and Updates

Fish and Wildlife issued the Incidental Take Permit to CCWD which reduces the project’s benefit to the refuges and partners. The State Office of Historic Preservation issued its permit in March 2024.

The Los Vaqueros Dam design is complete. A Basis of Design Report was submitted to the California Division of Safety of Dams for review in early 2023. Review is anticipated to be complete by summer 2024. Electrical and SCADA design are progressing Independent of DSOD approval. Design of Pumping Plant 1 is still progressing with the goal of achieving 90% design. Transfer-Bethany Pipeline’s preliminary work continues with respect to geotechnical analysis, right-of-way needs, alignment planning, permitting, 30% design, draft agreements and MOU with agencies, and identifying precise right-of-way needs on parcels under conservation easements.

The 90% design of the Transfer-Bethany Pipeline Turn-In to the California Aqueduct is under review by DWR. CCWD team continues working on the terms of a Turn-In Agreement between the JPA and DWR which will define roles and responsibilities for design, construction and long-term operation, maintenance, and ownership of facilities within the DWR right-of-way.

Financing

Approximately \$11.8 million in expenditures are expected in FY 2024-25. The expenditures include cost of services procured by the JPA, services procured and managed by CCWD, CCWD labor, and contingency. The JPA is attempting to proceed through FY 2024-25 without further cash contributions from its Members. This results in the JPA adopting a “Capital Preservation Strategy” which was approved by the JPA Board in March 2024. The biggest impact of the Capital Preservation Strategy is in putting further design of project components on hold.

In terms of financing, the JPA Board has directed staff to explore interim financing options, such as loans or medium-term bonds, as a prudent measure while awaiting a WIFIA Loan. This proactive approach underscores the JPA’s commitment to managing costs effectively and ensuring financial sustainability. Collaborative efforts with financial experts from various agencies are underway to develop sound recommendations for the JPA Board, while SFPUC staff is exploring how to finance a potential participation in the LVE with most favorable financing terms for the agency.

State Funding

The project was awarded State funding under the Water Storage Investment Program. An Early Funding Agreement with the California Water Commission (CWC) provides for a 50% cost share of eligible project costs during pre-construction. This agreement is complete and was fully billed as of December 31, 2023, therefore, no state funding is expected in 2025. CCWD is continuing work on project completion reports and other close-out tasks as required by the agreement.

Federal Funding

Congress approved \$174 million under both the Bipartisan Infrastructure Law and the Water Infrastructure Improvements for the Nation Act for construction of the Project. Funding for pre-construction activities was available in FY 2023-24. However, those funds will be fully expended by June 30, 2024, therefore, no additional federal funding for pre-construction is expected in FY 2024-25.

Section 2 – AWS Program Highlights and Updates

JPA Debt Financing

The JPA applied for a WIFIA loan in FY 2023-24 for approximately \$675 million. If project agreements are completed and the WIFIA application is accepted, it is anticipated that the loan could close in FY 2024-25. However, the JPA's FY 2024-25 budget assumes that WIFIA funds may not be available in FY 2024-25 due to the timing of the CWC funding.

The sequencing and timing of various agreements is a critical part of planning for the LVE Project. It is expected that the WIFIA Loan will close prior to the CWC Final Funding Agreement, and that the EPA will establish CWC Final Funding and Service Agreement effectiveness as conditions-precendent to the WIFIA Loan drawdown. The executed Service Agreements will only become effective after a successful CWC Final Funding.

Partner Funding

Partner agencies have been contributing funds to the LVE Project since 2017 through a series of cost share agreements with CCWD. The current Multi-party Cost Share Agreement was executed in 2019 and has been amended 5 times. A no-cost Amendment No. 6 to the Multi-party Cost Share Agreement was approved by the SFPUC on May 28, 2024. Amendment No. 6 extends the agreement term through June 30, 2025.

Construction Cost and Schedule

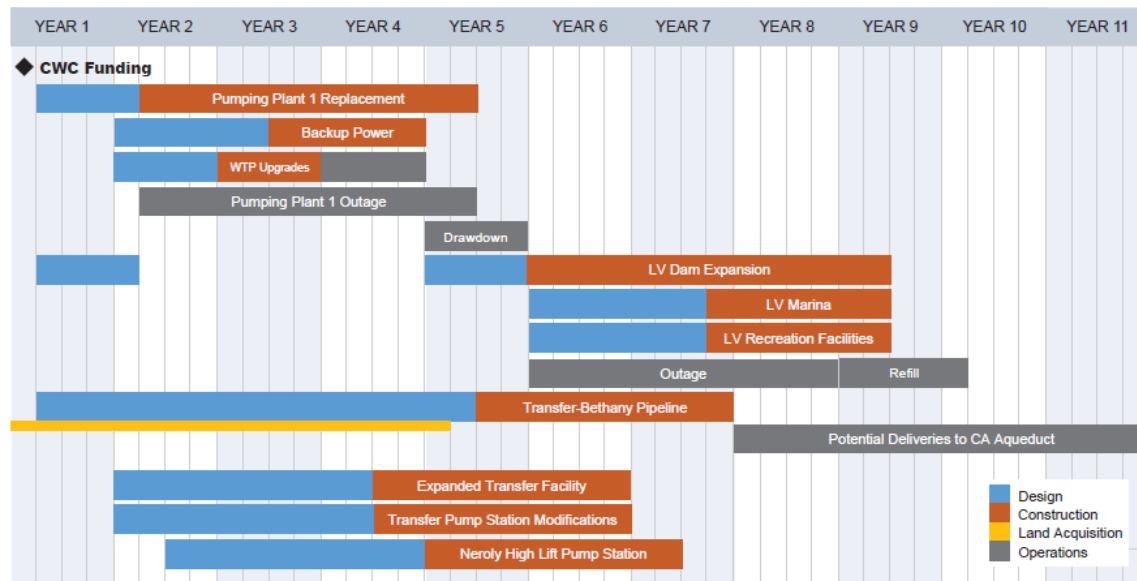
The estimated development and construction cost at completion for the project is \$1,327,000 as outlined in the latest proforma model for the project dated March 2024. The estimated costs including project reserves and financing and WIFIA costs are estimated at \$1,495,000. These costs have been escalated to reflect the project schedule assuming 4% annual inflation.

A revised construction schedule was released in April 2024 which reflects changes resulting from delays in completing the partner agreements, implementation of the Capital Preservation Strategy and delays in CWC funding that impacts the ability to proceed with various pre-construction activities (such as land acquisition for the Transfer-Bethany Pipeline). The schedule also includes new project components relating to the CCWD water supply backstop requirements and the fact the Transfer-Bethany Pipeline right-of-way process will take longer to complete than originally anticipated. Those factors have resulted in delays of one year for the Pumping Plant 1 replacement, 3.25 years for the Transfer-Bethany Pipeline and 1.75 years for the Los Vaqueros Dam expansion.

Section 2 – AWS Program Highlights and Updates

LVE Construction Schedule Summary

March 2024



As outlined in the updated schedule, construction would begin, upon securing CWC funding, with Pumping Plant No. 1 and take up to 3 years. Once the approval to construct for the dam is obtained, the Pumping Plant No.1 replacement is commissioned, and the final drawdown of the reservoir is complete, the dam construction can start. The dam construction will take 3.5 years to complete, followed by a 1 to 2 years of reservoir refill depending on the hydrology.

CCWD and JPA Coordination

The JPA and CCWD's Executive Management Teams continue to meet to further discuss and address the major project agreements, along with any other outstanding critical path issues requiring coordination among the JPA and CCWD. There has also been significant CCWD staffing transition that may impact the project in the near term. Other items that are coordinated between the JPA and CCWD are:

- ✓ CCWD Backstop Plan and timeline
- ✓ Discussion on Contract for Administration of Public Benefits with DWR and Reclamation
- ✓ Transfer Bethany Pipeline mitigation and coordination

Coordination on Contract for Administration of Public Benefits with DFW and DWR

Close coordination continues with the Department of Fish and Wildlife (DFW) on the development of the ecosystem for the administration of public benefits. Weekly meetings are scheduled and held with DFW as needed. The JPA staff has been providing additional technical information in response to DFW requests and meet regularly to address additional questions while DFW continues to develop the next draft, anticipated shortly following this reporting period.

The JPA and CCWD representatives coordinate with DWR to review initial comments on the Contract for Administration of Public Benefits for emergency response and recreation. Once drafts are provided to the JPA, corresponding briefings will be held with Member Agencies. Looking ahead, the SFPUC continues to navigate regulatory matters, including concerns raised regarding the potential impact of the Incidental Take Permit on project benefits. Collaborative efforts with project partners

Section 2 – AWS Program Highlights and Updates

aim to address these concerns and seek reconsideration of permit conditions, underscoring the SFPUC's commitment to maximizing project benefits while adhering to regulatory requirements.

In parallel, efforts to finalize operational and cost allocation rules, along with capacity shares, are ongoing, reflecting the SFPUC's focus on optimizing project operations and resource utilization. These discussions are complemented by ongoing activities related to budget planning and milestone tracking, emphasizing the importance of achieving key agreements and financing milestones to ensure project success.

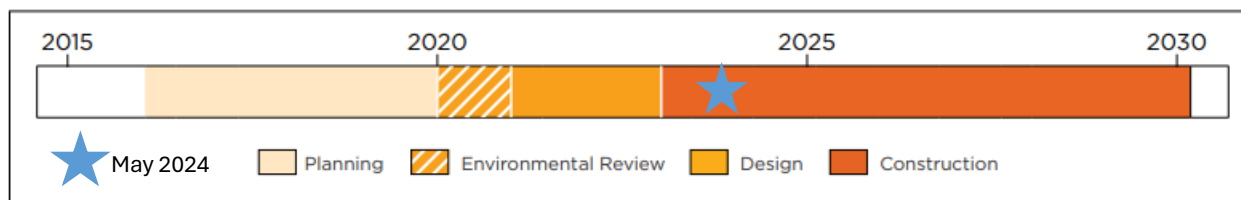
Overall, the SFPUC's proactive approach and collaborative efforts with project partners demonstrate a steadfast commitment to advancing the Los Vaqueros Reservoir Expansion Project.

The Los Vaqueros Reservoir Expansion Joint Powers Authority (JPA) Board continues to meet monthly at Zone 7 Water Agency offices. The agenda and supporting information for the JPA Board Meetings are available on the JPA website: <http://www.losvaquerosjpa.com>.

Upcoming Activities in 2024-2025

Activities expected to take place in the next year are as follows:

- ✓ Construction cost update for the project including dam expansion and the Transfer-Bethany Pipeline
- ✓ Technical analysis and negotiation among the JPA members to secure capacity usage rights and draft a Facility Usage Agreement
- ✓ Negotiation among the JPA members for storage allocation
- ✓ Drafting of the Contract for Administration of Public Benefits, a requirement for obtaining CWC Funding
- ✓ Drafting of the Design and Construction Term Sheet and Agreement
- ✓ Preparation of the WIFIA application for the U.S. EPA
- ✓ Development of a Project Plan of Finance and methodology for grant funding allocation
- ✓ Continuation of work on the identification and preliminary feasibility of water supply options for SFPUC



LVE Conveyance Alternatives

SFPUC Project Manager: Senobar Lanigan

PROJECT DESCRIPTION

This project is dependent on the SFPUC's participation in the Los Vaqueros Reservoir Expansion (LVE) Project in Contra Costa County. Through this evaluation, SFPUC staff will evaluate the potential mechanism(s) available to transfer or exchange water for the benefit of SFPUC's Regional Water System (RWS) customers. The volume of water that can be transferred would be the same volume of water that is stored by the SFPUC in LVE Project (to be determined).

The three conveyance alternatives that will be explored as part of this project using the South Bay Aqueduct (SBA) include 1) a transfer with ACWD; 2) a transfer with Valley Water; and 3) delivery to SFPUC's San Antonio Reservoir. Partners will include the SBA Contractors (ACWD, Zone 7 Water Agency, Valley Water), particularly any agency identified as a feasible transfer partner. Of the three options along the SBA, only one (delivery to San Antonio) provides a water supply directly into the RWS. Any conveyance option utilizing the SBA will likely include pipeline improvements and may also include pretreatment and/or pumping, depending on the option pursued. Reliability of the SBA is critical to the viability of these options.

In addition to the SBA, SFPUC is also considering other alternatives, including the potential for a new intertie with the East Bay Municipal Utility District (EBMUD).



GENERAL PROJECT INFORMATION

Average Annual Supply	Availability	Supply Type	Local or Regional?	Capital Cost/Acre-Foot
See Los Vaqueros Reservoir Expansion	All Years	Transfer	Regional	\$1,700-\$4,027

PROJECT PARTNERS AND INTERESTS

DWR	ACWD and Valley Water or EBMUD
Provides conveyance and approvals	Provide water exchange and treatment opportunities

INSTITUTIONAL COMPLEXITY

SFPUC Only Multi-Party Partnership

Institutional complexity is a relative measure that takes into account project service area, project facilities ownership, number of project partners, cost share, and whether SFPUC is construction and design lead.

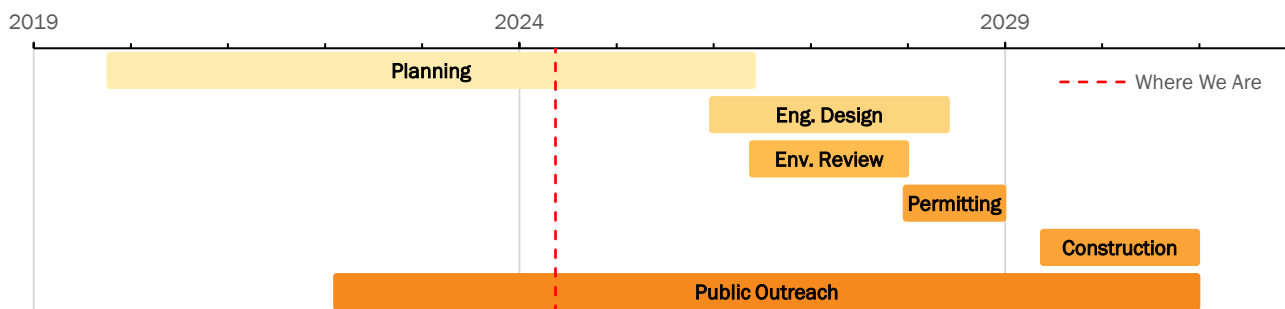
TOTAL PROJECT COST

Estimated Capital Cost	Estimated Annual O&M
\$7M-\$9M	\$0.1M- \$5M

SFPUC BUDGET INFORMATION

10-Yr CIP Budget Allocation	Current Allocation
\$4.3M	\$2.0M

ESTIMATED PROJECT SCHEDULE (NOT A BASELINE SCHEDULE)



BENEFITS

- Leverages existing infrastructure
- For exchanges (with ACWD and VW) treatment will be delegated to a partner familiar with SBA as a source

RISKS AND UNCERTAINTIES

- Evaluation of existing infrastructure requires full SBA shut down, which impacts existing users
- Institutional arrangements / willingness of stakeholders
- Treatment and pre-treatment in some cases
- WQ challenges associated with new source of supply

Conveyance Alternatives for Los Vaqueros Expansion Project

Current Status – Planning



Current Planning Considerations

As indicated under the LVE Project, identifying a viable conveyance pathway is critical for the SFPUC’s participation. The primary focus of this task has been to understand the capacity within the South Bay Aqueduct (SBA) and evaluate an alternative through the East Bay Municipal Utility District service area.

Activities Conducted this Past Year

Staff has initiated contact with DWR and submitted an official request for modification for use of an existing South Bay Aqueduct turn-out near San Antonio Reservoir located at SBA’s milepost 21.82. The San Antonio Turnout was built in the late 1980s and has not been operated for over 30 years. A joint site visit conducted by staff from DWR, CCWD, and SFPUC in March 2022 confirmed that the 30” turn-out and supporting structures are in good condition and that the San Antonio Turnout could be operational with minor modifications, including bringing power to and communication to/from the site. However, some of the investigations or testing that may ultimately need to be done would require an outage of the SBA, which will impact other users of the SBA and must be scheduled with close coordination. The SFPUC will work with DWR and the SBA contractors to identify windows of opportunity that may exist for such evaluation or other more advanced inspection techniques with use of remote operated vehicles that can eliminate the need for an SBA outage.



Upcoming Activities in 2024-2025

Activities expected to take place in the next year are as follows:

- ✓ Staff will continue to engage with DWR to develop an estimate of the flow rate for the existing 30” San Antonio Turnout

Section 2 – AWS Program Highlights and Updates

- ✓ Staff will work with DWR to understand the process for turn-out modification requests and explore ways of funding any future modifications
- ✓ Coordination with ACWD and Valley Water will continue to discuss the constraints and condition of exchanges
- ✓ Changes in the LVE storage allocation may result in changes to previously modeled SBA spare capacity. Additional analysis maybe needed to evaluate the impact of these changes on SFPUC’s ability to receive deliveries through the SBA



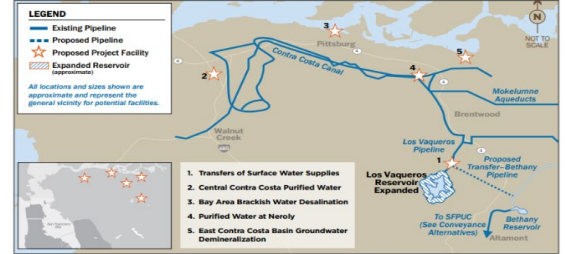
LVE Supply Alternatives (Bay Area Brackish Water Desalination Project)

SFPUC Project Manager: Senobar Lanigan

PROJECT DESCRIPTION

In conjunction with the LVE Project, the SFPUC is evaluating water supply alternatives that can provide a long-term reliable source to be stored in the expanded Los Vaqueros Reservoir. The SFPUC is evaluating two main categories of supplies: 1) transfers and 2) new water supplies generated by advanced treatment of wastewater, brackish water or groundwater. This supply would provide 4 to 5 mgd of storage in normal and dry years. One alternative that has been studied extensively is the Bay Area Brackish Water Desalination (Regional Desalination) Project, which is a partnership between CCWD, SFPUC, the Santa Clara Valley Water District, and Zone 7 Water Agency. The East Bay Municipal Utility District may also be involved.

The project could provide a new drinking water supply to the region by treating brackish water from CCWD's existing Mallard Slough intake in Contra Costa County. The project relies primarily on available capacity in an extensive network of existing pipelines and interties that already connect the agencies, as well as existing wastewater outfalls and pump stations. The SFPUC would not directly receive desalinated water but would take delivery of water through a series of exchanges through LVE.



GENERAL PROJECT INFORMATION

Average Annual Supply	Availability	Supply Type	Local or Regional?	Capital Cost/Acre-Foot
See Los Vaqueros Reservoir Expansion	Dry Years (with storage) and/or All Years	Desalination / Transfers	Regional	\$1,700-\$4,027

PROJECT PARTNERS AND INTERESTS

Water Sellers in the Delta	CCWD
Generate revenue	Facilitate Los Vaqueros project's water supply benefit for partners

INSTITUTIONAL COMPLEXITY

SFPUC Only Multi-Party Partnership

Institutional complexity is a relative measure that takes into account project service area, project facilities ownership, number of project partners, cost share, and whether SFPUC is construction and design lead.

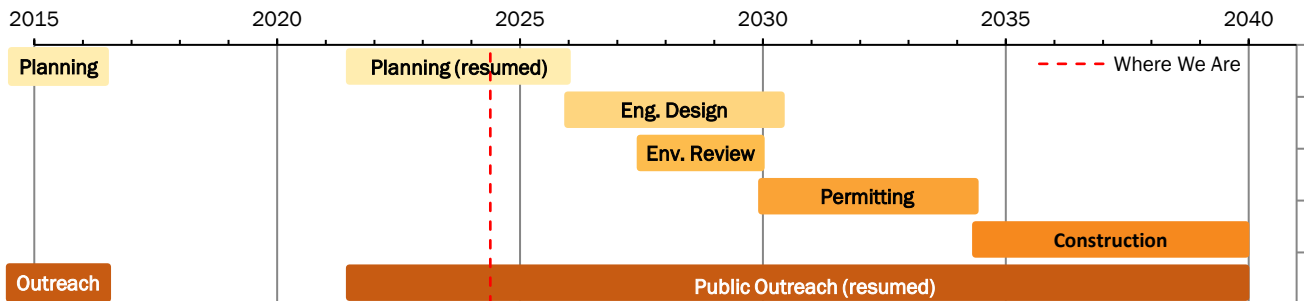
TOTAL PROJECT COST

Estimated Capital Cost	Estimated Annual O&M
\$3-\$10M	\$3-\$10M

SFPUC BUDGET INFORMATION

10-Yr CIP Budget Allocation	Current Allocation
\$6.7M	\$3.5M

ESTIMATED PROJECT SCHEDULE (NOT A BASELINE SCHEDULE)



BENEFITS

- Availability during dry years
- Lower GHG emissions than seawater desalination
- Leverages existing infrastructure
- Storage option in Los Vaqueros provide dry year benefits

RISKS AND UNCERTAINTIES

- Some impacts to sensitive fish may be unavoidable
- Water rights and permitting likely to be challenging
- Conveyance options are limited to transfer water to Regional Water System
- Exchange ratio is unclear/ under evaluation with Central Valley Project

Supply Alternatives for Los Vaqueros Expansion Project

Current Status – Planning



Current Planning Considerations

The SFPUC is considering potential water supply sources for storage in LVE. When considering the options, the current planning questions include:

1. What are the conditions needed to make an exchange of water to fill SFPUC storage in LVE in wet years possible?
2. What are the losses associated with an exchange and related conveyance?
3. What are the alternatives to desalination for water supply storage in LVE?

Activities Conducted this Past Year

The SFPUC has initiated the Los Vaqueros Water Supply Feasibility Analysis to evaluate this project along with other water supply alternatives that can be stored in an expanded Los Vaqueros Reservoir. Following the initial screening of technically feasible “new” water source alternatives, in the last year, the second phase of the Water Supply Feasibility Analysis has been advancing. The objective of this phase is to develop an understanding of the water transfers and the water that can be purchased and stored in the expanded Los Vaqueros reservoir and used as a short-term strategy while a long-term “new” water supply is under development.



\$229,000
Dollars spent in
2023-24

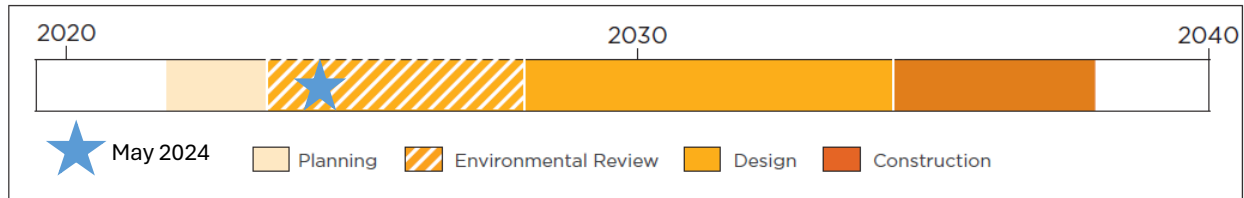
In collaboration with CCWD, staff will continue outreach efforts to coordinate with potential regional transfer partners and others to verify supply availability and operational constraints.

Section 2 – AWS Program Highlights and Updates

Upcoming Activities in 2024-2025

Staff is working on development of a strategy report to pursue water supply for storage in Los Vaqueros Reservoir that includes both long-term and short-term opportunities.

Additional analysis of feasible short-term supplies through water transfers and pilot water transfers with potential sellers in the Sacramento-San Joaquin Delta will continue in the next year.

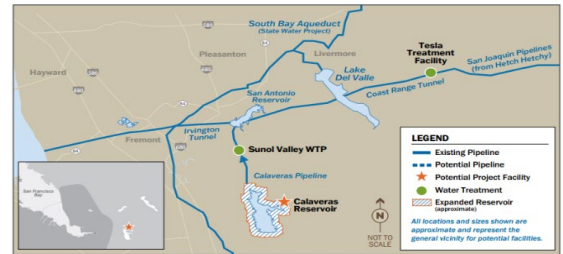


Calaveras Reservoir Expansion

SFPUC Project Manager: Susan Hou

PROJECT DESCRIPTION

This storage project envisions the expansion of Calaveras Reservoir to store excess Regional Water System (RWS) supplies or other source water in wet/normal years. No expansion of water rights from the local watershed is anticipated. With the Calaveras Dam Replacement project in place, Calaveras Dam holds a capacity of 96,850 acre-feet, or 31 billion gallons of water. Through an expansion, up to an additional 289,000 acre-feet, or 94 billion gallons of storage could be realized. Calaveras Reservoir is owned and operated by the SFPUC for the benefit of RWS customers. No external partners are anticipated at this time. The expansion of Calaveras Reservoir would provide storage for additional water that can be available in all water year types. The proposed project would include raising the dam, increasing the capacity of the outlet structures and the spillway, and the addition of any transmission and pumping needed to bring water to Calaveras Reservoir. Constraints including water availability and conveyance will need to be evaluated.



GENERAL PROJECT INFORMATION

Average Annual Supply	Availability	Supply Type	Local or Regional?	Capital Cost/Acre-Foot
2.7 - 28.6 mgd	Drought Years and/or All Years	Local Storage	Regional	\$2,831-\$3,960

PROJECT PARTNERS AND INTERESTS

SFPUC
Increase dry-year supply reliability

INSTITUTIONAL COMPLEXITY

SFPUC Only	<input type="checkbox"/>	Multi-Party Partnership
Institutional complexity is a relative measure that takes into account project service area, project facilities ownership, number of project partners, cost share, and whether SFPUC is construction and design lead.		

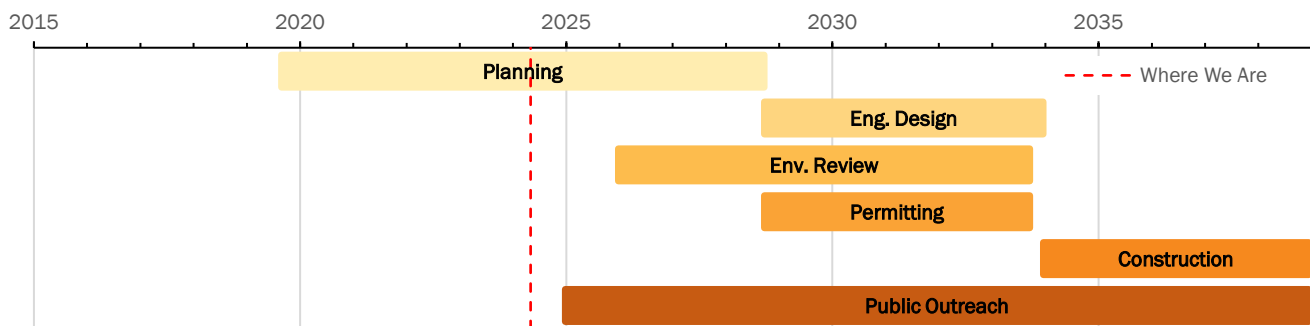
TOTAL PROJECT COST

Estimated Capital Cost	Estimated Annual O&M
\$346M-\$6,011M	TBD

SFPUC BUDGET INFORMATION

10-Yr CIP Budget Allocation	Current Allocation
\$0.0M	\$4.5M

ESTIMATED PROJECT SCHEDULE (NOT A BASELINE SCHEDULE)



BENEFITS

- Provides operational flexibility, particularly in dry years
- Increases storage capacity in the SFPUC's largest reservoir
- Increases utilization of Tuolumne River and other wet/normal year supply

RISKS AND UNCERTAINTIES

- Availability of additional water from the Tuolumne River to divert to storage

Calaveras Reservoir Expansion Project

Current Status – Planning (deferred)



Current Planning Considerations

The planning questions over the past year included:

1. What are the conveyance alternatives, including infrastructure and operational considerations, for an expanded Calaveras Reservoir?
2. How can different water supply alternatives be integrated to maximize efficient use of expanded storage at Calaveras?

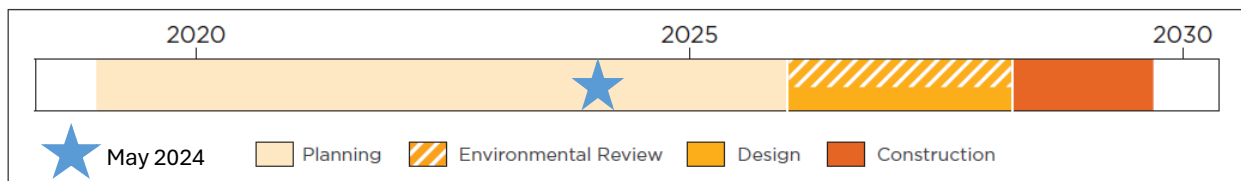
Activities Conducted this Past Year

During this past year, the project team continued to meet with different divisions of the SFPUC to discuss the feasibility of various conveyance alternatives. The comments received were reflected in technical memoranda documenting the feasibility analysis.



Upcoming Activities in 2024-2025

In the coming year, remaining encumbered funds may be used to determine whether a smaller project may be feasible without significant new conveyance facilities. No additional planning work is envisioned at this time.



2.5 Looking Ahead

The AWS Program identifies, screens, and plans for new dry year water supply opportunities that can help address the SFPUC’s future water supply gap based on anticipated demands and obligations in 2045. This program necessarily builds on the ongoing work to promote water use efficiency and local water supply diversification. Recognizing that these projects would also introduce new sources of supply and require new partnerships, this program requires an integrated and holistic planning approach, both within the SFPUC and with external partners. Given the uncertain nature of planning needs, it also requires some built-in adaptability and flexibility. As this section described, the AWS Program has the infrastructure and resources needed to continue to plan in a changing environment.

