



COUNCIL REPORT

DATE: January 28, 2025

CATEGORY: Consent

DEPT.: Public Works

TITLE: **Recycled Water System Expansion,
Phase I, Project 23-40—Reservoir Siting
Study and Professional Design Services
Contract Amendment**

RECOMMENDATION

1. Approve Charleston Park as the site for a new recycled water reservoir.
2. Authorize the City Manager or designee to amend the professional design services agreement with Wood Rodgers, Inc. (Business Entity No. 2000350) to provide final design services for Recycled Water Reservoir, Project 23-40, increasing compensation by \$1,962,000 for a total not-to-exceed contract amount of \$2,519,000.

BACKGROUND

Recycled water is an integral component of the City of Mountain View (City)'s water supply portfolio. The City receives recycled water from the City of Palo Alto Regional Water Quality Control Plant (RWQCP), which treats the City's wastewater. The wastewater is either discharged into the San Francisco Bay or further treated to meet recycled water standards. In Mountain View, recycled water is used for irrigation, toilet flushing, and cooling towers.

The current agreement with the RWQCP allows the City to receive a maximum peak-flow rate of 3 million gallons of recycled water per day (MGD) through 2060. The City's historical recycled water use typically remains under 0.5 MGD, serving approximately 4% of the City's water needs. However, with the growing impacts of climate change and limitations on imported supplies from the City's water wholesalers (San Francisco Public Utilities Commission and Santa Clara Valley Water District), recycled water remains a reliable and drought-proof water source crucial for meeting the needs of the City's residents and businesses.

To strengthen the City's water resilience and meet future demands, the City completed the 2022 Recycled Water Feasibility Study Update ([Update](#)) report, which was presented to the City Council on March 22, 2022. The Update concluded that the 3 MGD contract amount of recycled water from the RWQCP meets existing maximum-day demand for over 60 customers in North Bayshore but falls short of meeting peak-hour demand. The Update also outlined system expansion alternatives to serve additional customers within North Bayshore, NASA, and potential

future customers in the East Whisman Precise Plan Area. Based on the findings, Council directed staff to proceed with full build-out of the recycled water system in North Bayshore and to evaluate future expansion to East Whisman via Middlefield Road. Figure 1 highlights these expansion alternatives from the Update.

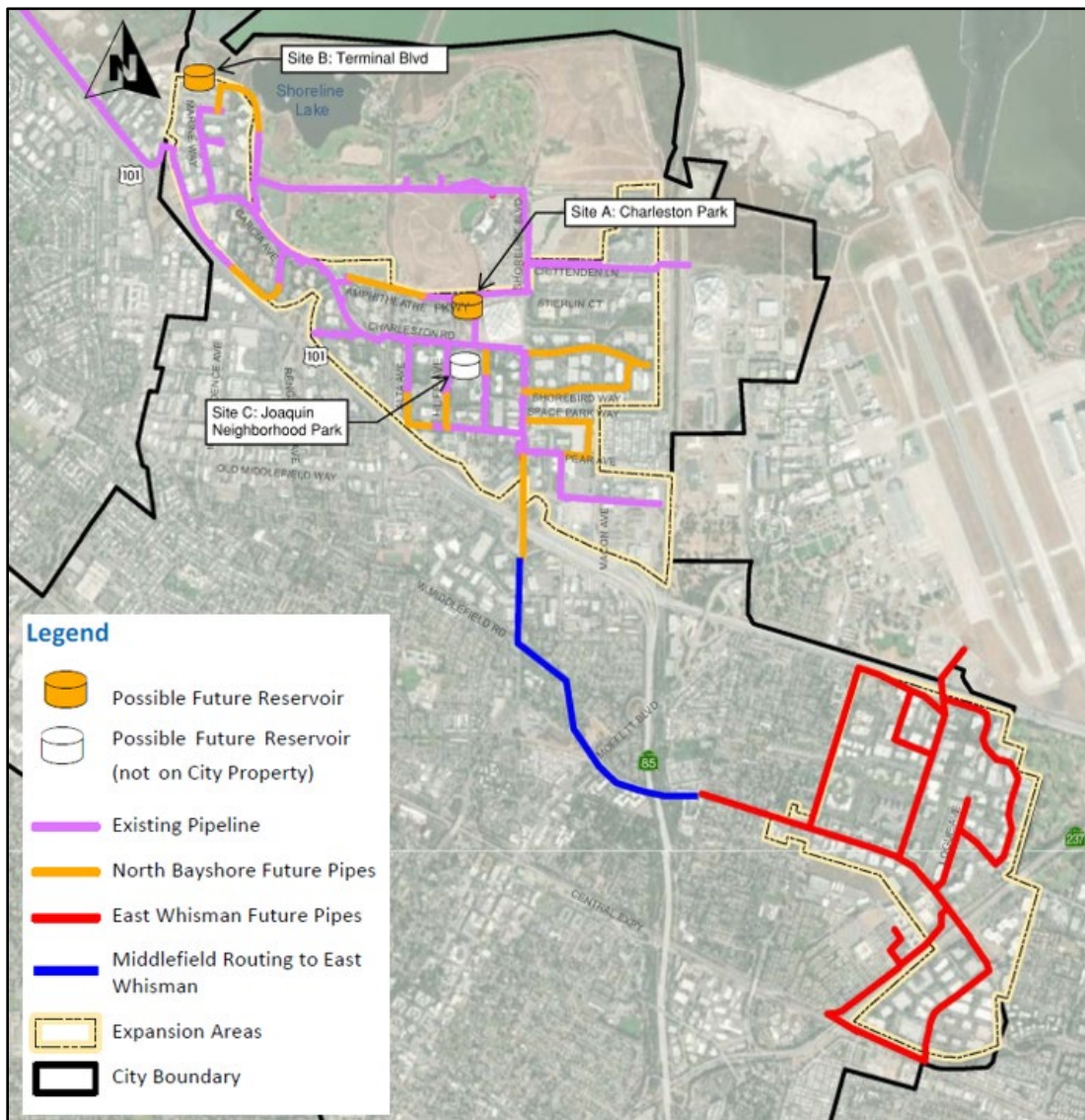


Figure 1: Recycled Water Expansion Alternatives and Potential Recycled Water Reservoir Locations

As the City currently lacks recycled water storage, the Update emphasized the need for a reservoir to meet future maximum-day and peak-hour demands. The City's recycled water system is heavily reliant on the operational schedule of the RWQCP resulting in service suspensions to customers during planned and unplanned plant shutdowns. The addition of a

reservoir to the City's recycled water system will provide essential storage capability and improve reliability, operational flexibility, and system pressure regulation. This infrastructure will significantly reduce the City's dependence on the RWQCP and enable consistent, uninterrupted recycled water service. The Update proposed various locations in the North Bayshore Area for the new reservoir. In approving the Update, the City Council also directed staff to conduct a Recycled Water Storage Reservoir Siting Study (Study) to consider and evaluate these locations.

Subsequently, on April 3, 2023, the City Council authorized the City Manager to execute an agreement with Wood Rodgers to prepare the Study and recommend a suitable location for the reservoir. The three potential reservoir locations (also shown in Figure 1) are identified on current and potential future City property and City right-of-way. The locations include an area in north Charleston Park (a public City park), Terminal Boulevard (a City public street), and a future neighborhood park to be dedicated as part of Google's North Bayshore Master Plan.

ANALYSIS

Potential Sites

The Study identified three reservoir alternatives at each site: buried, semi-buried, and above-grade. The estimated size of reservoir depends on the location and is noted in the description of the analysis of each option. In conjunction with the reservoir, a pump station is required to boost water pressure to deliver recycled water to existing customers and the future expansion of the system in East Whisman. Although the pump equipment can be housed in either an above-grade or below-grade building, the electrical equipment must be located above grade to prevent potential flood damage. The proposed pump station building will be approximately 51'x28' and accommodate three pumps. The specifics of the pump station layout, spacing, and sizing will be refined during project design.

Each site alternative has been evaluated based on the following criteria:

- Land Acquisition/Easements;
- Permitting/Stakeholder Coordination;
- Constructability;
- Construction Schedule;
- Off-Site Utility Improvements;
- Environmental Impacts;
- Operation and Maintenance;
- Community Impact;
- Capital Costs; and
- Operations and Maintenance Costs.

Certain alternatives were excluded from the assessment due to excessive spatial requirements or unacceptable levels of encroachment within the public right-of-way. Although above-ground options were initially considered, soil borings and geotechnical analyses confirmed that underground or semi-buried options are feasible for all three sites. As a result, the above-ground options were eliminated from further consideration for their visual impact and negative effect on the intended use of each site.

The three sites are described in the figures and discussion below:

Site A—Charleston Park

Charleston Park is approximately seven acres, with two acres on land under a long-term ground lease to Google, which was required to be an extension of the park as part of the project approval of 1600 Amphitheatre Parkway in 1995 (Figure 2). The City public park includes open lawn space, a waterfall fountain, trees and landscaping, concrete walkways and stairs, restroom facility, and a bus transit center. The park topography is gently sloped, ranging from approximately 12' to 21' in elevation. North of the park is a closed landfill (Vista Slope) with an earthen cap that includes areas considered as burrowing owl habitat. Adjacent to the landfill to the east resides the Shoreline Amphitheatre, which hosts large events and concerts throughout the year. The park and surrounding area are heavily trafficked by pedestrians and bicyclists.

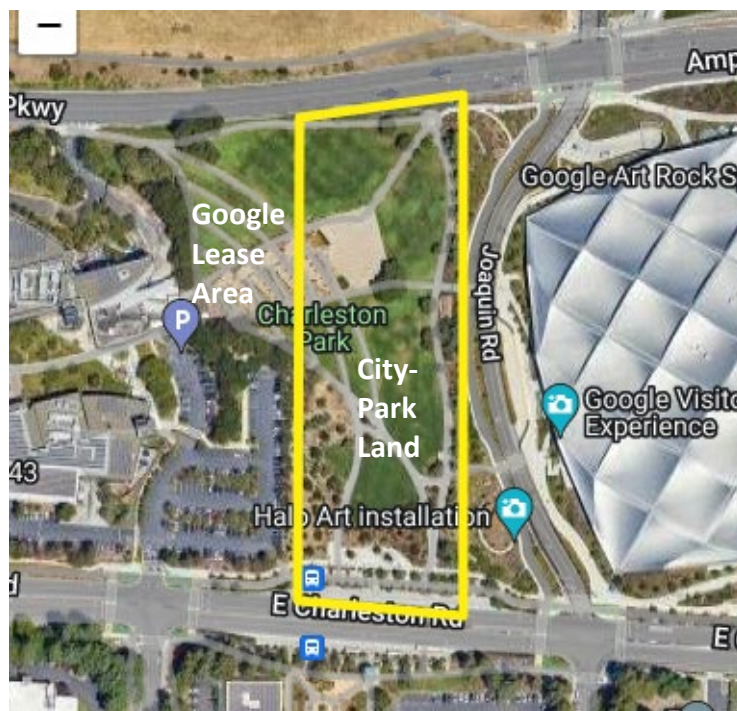


Figure 2: Charleston Park Location

Site A is located on the northwest side of the park, south of Amphitheatre Parkway and west of Joaquin Road. Semi-buried and below ground options are shown in Figures 3 and 4 respectively. The reservoir will be approximately 125' in diameter. The area under evaluation is between Googleplex headquarters and the recently constructed Google Gradient Canopy, where the waterfall fountain feature is currently located. Due to frequent breakdowns and ongoing maintenance challenges associated with the existing waterfall fountain, staff is reevaluating its use and the potential incorporation of a new buried or semi-buried recycled water reservoir as part of replacing the fountain with landscaping and park features.

This decorative waterfall fountain, installed over 30 years ago by Silicon Graphics when the area was originally developed, has become increasingly costly to maintain. Annual expenses for specialized fountain vendors exceed \$10,000 for regular cleaning, maintenance, and general repairs. Additionally, the fountain's aging equipment necessitates ongoing replacements and more extensive repairs, with the cost of the most recent repair estimated at over \$27,000. Beyond the financial costs, staff spends significant time during the fall and winter cleaning goose debris from the fountain and surrounding areas. The open water attracts geese, creating unsightly conditions along the public walkway and within the fountain itself. Furthermore, in light of recent water shortages and droughts, maintaining such a large and aging fountain no longer aligns with the City's environmental and sustainability initiatives.

Staff is considering installing the reservoir at this location because it would preserve park use without interfering with any recreation activities and will provide an opportunity to redesign and update the park. A buried reservoir option would be located underneath the existing waterfall fountain area, with improvements to ensure park users can enjoy the space above it as they would any other park area. A semi-buried option would be situated in the hillside further west within the existing fountain's footprint, with a portion of the reservoir exposed while allowing the integration of other park features, such as landscaping, hilly areas, pathways, and park benches. The exposed portion of the reservoir in this option could have a height ranging from 5' to 10'. Site A is sloped and will most likely straddle the City park land and area leased to Google. Therefore, use of this area would require Google's concurrence. Google representatives have indicated a willingness to collaborate with the City if the City selects Site A for the reservoir.

The pump station building could be designed to match the aesthetics of the existing park restroom building or be based on community feedback. Currently, a pump station building is planned to be adjacent to the proposed reservoir location as shown (Figure 3 and Figure 4). This site was selected to minimize impacts on the existing park uses. However, to accommodate maintenance access, this location may impact trees and require mitigation measures. The proposed site is tentative and will require further design development and discussions.

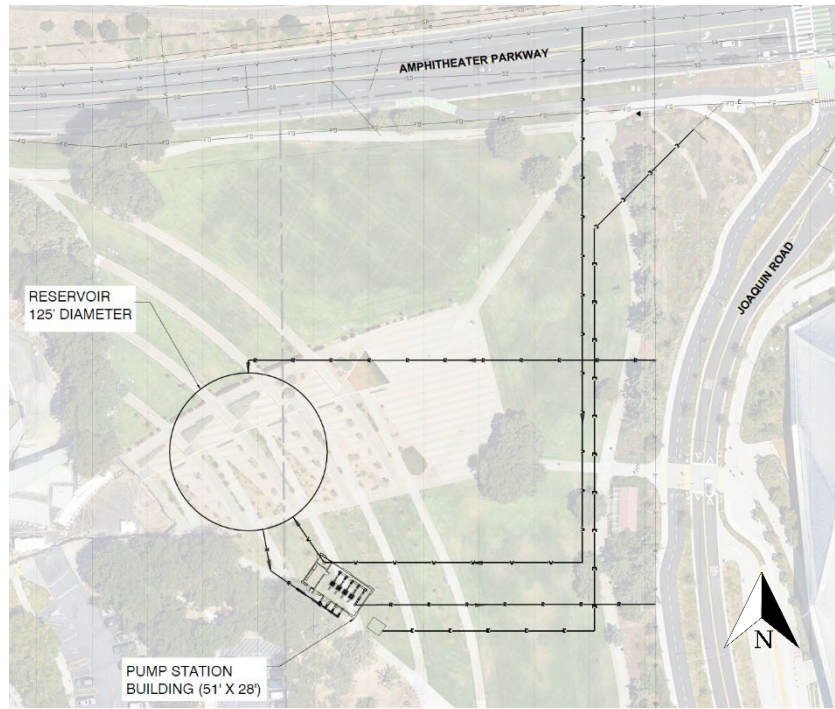


Figure 3: Semi-Buried Option at Charleston Park

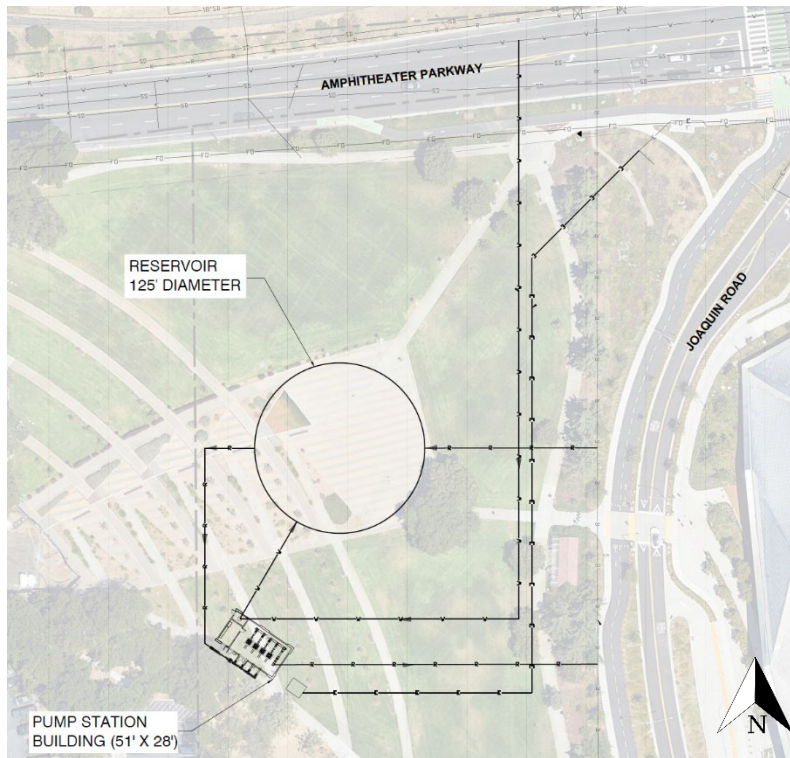


Figure 4: Buried Option at Charleston Park

Site B—Terminal Boulevard

Site B is located at the terminus of Terminal Boulevard, west of Shoreline Lake, east of San Antonio Road, and south of Coast Casey Forebay. The businesses in the area are predominately technology-based and are located on the south side of the roadway with paved driveway access, parking lots, utilities, and landscaping. The north side of Terminal Boulevard includes public access to the Palo Alto Baylands Nature Preserve Trail, including parking stalls. The topography is relatively flat at an elevation of approximately 5', and the proposed site is approximately 25' east of the Coast-Casey Drainage Canal (Figure 5).

The above-grade and semi-buried options at this location are not feasible due to the need to remove a significant portion of parking in the public right-of-way and block access to nearby trails. Additionally, these options would create challenges for through traffic on the street, including egress from Shoreline Amphitheatre events and access for City maintenance vehicles. A rectangular reservoir would be required at this location in order to fit within the limitations of the street. While a buried reservoir (approximate width of 60' and length of 900') is potentially viable for Site B, it is not recommended. This option would occupy nearly all underground space under the roadway and present significant challenges, including utility conflicts and damaging impact to the reservoir due to corrosive soils. In addition, a rectangular reservoir is less ideal compared to a circular shape because its corners can lead to inefficient water flow, maintenance challenges, and structural complexities. These factors could result in increased costs, extended construction timelines, and potential disruptions to essential services and access.

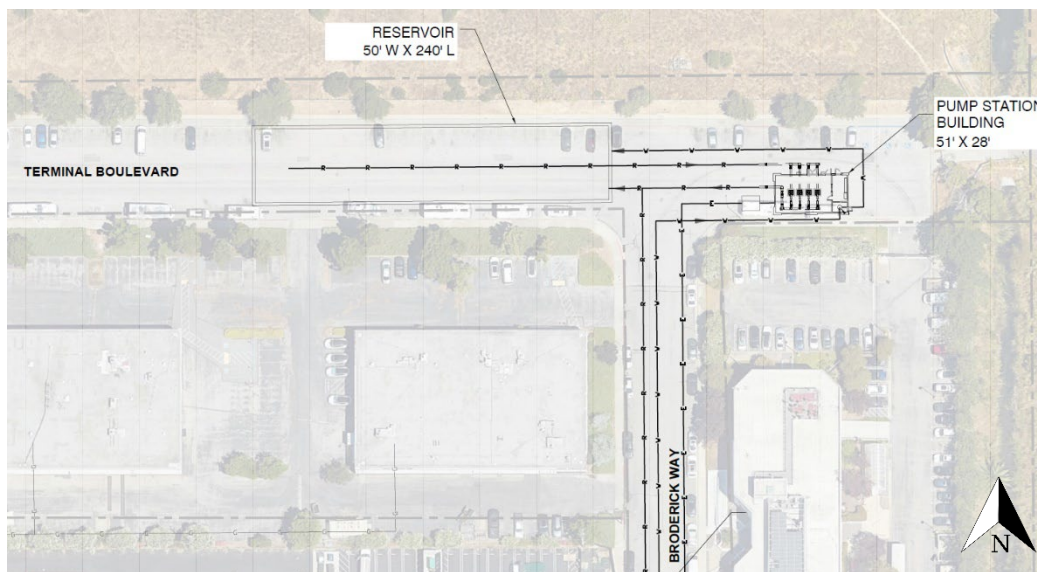


Figure 5: Buried Option at Terminal Boulevard

Site C—Joaquin Neighborhood

Site C is located in the future Joaquin Neighborhood park to be dedicated to the City as part of the Google North Bayshore Master Plan conditions of approval (Figure 6). The future park, currently referred to as Joaquin Commons, will cover an area of approximately 323'x344' (2.55 acres) on the northeast corner of Joaquin Road and the future Monarch Street. The existing topography is relatively flat at an elevation of approximately 14'. Currently, the size and location of Joaquin Commons are conceptual, and there are plans to integrate the existing Green Loop bike path through the park. The most viable option for this site is a buried or semi-buried reservoir as an above-grade reservoir would reduce the available future park area.

A buried reservoir would likely be located underneath the grass, so park users could enjoy the space above it as they would any other park area. The reservoir is estimated to have a diameter of 125'. A semi-buried option would have a portion of the reservoir exposed while allowing the integration of other park features, such as landscaping, hilly areas, pathways, and park benches. The exposed portion of the reservoir in this option could have a height ranging from 5' to 10'.

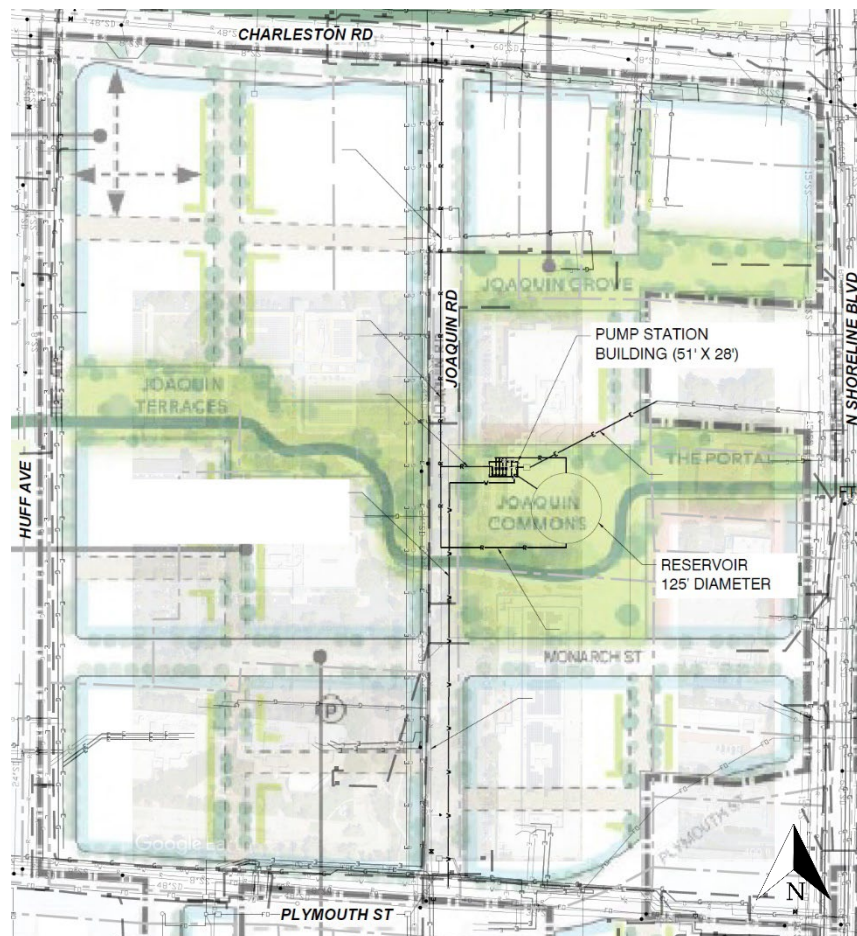


Figure 6: Buried/Semi-Buried Option at the Future Joaquin Neighborhood Park

A major challenge with this location is the uncertainty around when the land will be available. The Google North Bayshore Master Plan is planned to take up to 30 years to complete and the Joaquin area is one of the latter phases for the Master Plan.

Siting Study Results

Results of the project team’s analysis indicate that a fully buried reservoir at Charleston Park ranks highest based on the established criteria (Table 1). Sample renderings of the two reservoir options at Charleston Park are shown in Attachment 1. As noted earlier in this report, certain alternatives were excluded due to feasibility issues. As a result, Site Options A3 (Site A aboveground), B2 (Site B semi-buried), B3 (Site B aboveground), and C3 (Site C aboveground) were not scored as an option for the reservoir and pump station.

Table 1: Site Ranking

Criteria	Priority Weighting (%)	Rank (1-5)**					Weighted Rank				
		A1	A2	B1	C1	C2	A1	A2	B1	C1	C2
Land Acquisition/Easements	5	5	5	4	1	1	0.25	0.25	0.2	0.05	0.05
Permitting/Stakeholder Coordination	5	2	2	2	3	3	0.1	0.1	0.1	0.15	0.15
Constructability	20	2	3	1	3	4	0.4	0.6	0.2	0.6	0.8
Construction Schedule	5	2	2	3	1	1	0.1	0.1	0.15	0.05	0.05
Off-Site Improvements/Utilities	10	4	4	1	2	2	0.4	0.4	0.1	0.2	0.2
Environmental Impacts	5	3	3	1	3	3	0.15	0.15	0.05	0.15	0.15
Operation and Maintenance	10	3	3	2	3	3	0.3	0.3	0.2	0.3	0.3
Community Impact	20	5	3	2	4	3	1.0	0.6	0.4	0.8	0.6
Capital Costs	10	2	3	1	2	3	0.2	0.3	0.1	0.2	0.3
O&M Costs	10	4	4	3	4	4	0.4	0.4	0.3	0.4	0.4
Total:	100	Total Weighted Score:					3.3	3.2	1.8	2.9	3.0

- A1 Fully buried reservoir at Site A—Charleston Park
- A2 Semi-buried reservoir at Site A—Charleston Park
- ~~A3 Aboveground reservoir at Site A—Terminal Boulevard (not feasible)~~
- B1 Fully buried reservoir at Site B—Terminal Boulevard
- ~~B2 Semi-buried reservoir at Site B—Terminal Boulevard (not feasible)~~
- ~~B3 Aboveground reservoir at Site B—Terminal Boulevard (not feasible)~~
- C1 Fully buried reservoir at Site C—Joaquin Park
- C2 Semi-buried reservoir at Site C—Joaquin Park
- ~~C3 Aboveground reservoir at Site C—Joaquin Park (not feasible)~~

** Scores for each category range from 1 to 5, with higher scores indicating a more favorable assessment.

Staff presented the siting study at the November 13, 2024 Parks and Recreation Commission (PRC) at which the PRC supported the preliminary findings for the buried recycled water reservoir option at Charleston Park. The PRC unanimously preferred the below-grade option and supported a design to include meandering pathways, native plantings, and preservation of open space to integrate with other areas of the park. The PRC also commented that if the cost of the buried reservoir was much more expensive or exceeded the project budget, they would be open to a semi-buried alternative. Staff's recommendation is to proceed with schematic design for both the buried and semi-buried option at Charleston Park.

Professional Design Services Agreement Amendment

In November 2022, a Request for Proposal for engineering services was issued for the preparation of a recycled water reservoir siting study and final design for the recycled water reservoir and pump station. A review panel of Public Works staff deemed Wood Rodgers to be the best-qualified firm based on the merits of their written proposal, experience in completing the design of similar recycled water infrastructure and pump station projects, demonstrated competence, and understanding of the project goals. On [April 3, 2023](#), Council approved the professional services agreement with Wood Rodgers for \$557,000 to prepare a reservoir siting study. Staff indicated that upon Council approval of a reservoir site, staff would seek Council approval to amend the agreement with Wood Rodgers to complete the final design and provide construction support services. With the preliminary findings from the site selection and general ideas for the park reconstruction, staff was able to work with Wood Rodgers to define the scope of work for the agreement amendment which consists of:

- Schematic design plans for the buried and semi-buried reservoir options and pump station, including topographic survey and CEQA documentation.

- Preliminary and final civil, mechanical, structural, electrical, and landscape architect design, including technical specifications and an engineer's cost estimate. The design includes improvements to Charleston Park.
- Permit submittals to regulatory agencies as required and City's Building Division.
- Bidding and construction support.

The recommended amendment aligns with the original project goals and will add \$1,962,000 to the agreement, which includes \$1,705,600 for basic services, including reimbursable expenses, and \$256,400 for additional services for a new total not-to-exceed agreement amount of \$2,519,000. Staff reviewed the design fees and scope of work in detail and considers the fees to be fair and reasonable.

If the staff recommendation is approved, Wood Rodgers can begin design in early 2025. With the completion of the schematic design of both the buried and semi-buried alternatives, staff will present the options to the PRC for further input, which will be followed by review with the City Council and approval of the ultimate option (buried or semi-buried) and the surrounding landscaping and pathways. Current estimated completion for final design is 2027. Project construction funding will be included in the upcoming Five-Year Capital Improvement Program for Fiscal Year 2026-27.

FISCAL IMPACT

Recycled Water System Expansion, Phase I, Project 23-40, is funded with \$4,190,000 from the Water Fund, which is sufficient for the recommended design service amendment. The professional services agreement fee, with the inclusion of the recommended amendment, is \$2,189,330 for basic services and reimbursable expenses and \$329,670 for additional services, for a total not-to-exceed amount of \$2,519,000.

LEVINE ACT

California Government Code Section 84308 (also known as the Levine Act) prohibits city officials from participating in any proceeding involving a "license, permit, or other entitlement for use" if the official has received a campaign contribution exceeding \$500 from a party, participant, or agent of a party or participant within the last 12 months. The Levine Act is intended to prevent financial influence on decisions that affect specific, identifiable persons or participants. For more

information see the Fair Political Practices Commission website: www.fppc.ca.gov/learn/pay-to-play-limits-and-prohibitions.html

Please see below for information about whether the recommended action for this agenda item is subject to or exempt from the Levine Act.

SUBJECT TO THE LEVINE ACT

Material contract modification or amendment

CONCLUSION

After evaluating three potential sites for a recycled water reservoir (Charleston Park, Terminal Boulevard, and Joaquin Neighborhood Park), Charleston Park emerged as the preferred option. The PRC supports staff's recommendation to build a new recycled water reservoir and pump station at Charleston Park to enable the expansion of the recycled water system. This project will increase the City's capacity to meet future water demands amidst climate change and water supply constraints. The installation of this reservoir will enhance operational flexibility, improve system pressure regulation, and minimize recycled water service interruptions.

The existing waterfall fountain at Charleston Park, which is costly to maintain and misaligned with the City's sustainability goals, will be replaced by the new reservoir, offering an opportunity to renovate the park. A fully buried reservoir beneath the current fountain area would preserve the park's recreational use, while a semi-buried option could integrate new landscaping and park features. Staff recommends approving Charleston Park as the reservoir site and amending the professional services agreement with Wood Rodgers to continue the design efforts of the buried and semi-buried options.

ALTERNATIVES

1. Provide another area of Charleston Park to locate the new recycled water reservoir.
2. Provide other direction.

PUBLIC NOTICING

In addition to the standard agenda posting, notices were mailed to property owners and residents within 750' of the proposed project sites.

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Attachment: 1. Recycled Water Reservoir and Pump Station Renderings at Charleston Park

cc: APWD—Au, USM, PCE—Tseng, SCE—Chou, ACE—Husaini, SMA—Doan, File (Project 23-40)