CITY OF SAN JOSE
CAPITAL OF SILICON VALLEY

Memorandum

TO: TRANSPORTATION AND ENVIRONMENT COMMITTEE

FROM: Kerrie Romanow

SUBJECT: SCVWD PURFIED WATER PROGRAM UPDATE

DATE: March 14, 2018

Approved KHLum

Date 23 MARCH 2018

RECOMMENDATION

Accept the informational report on the Santa Clara Valley Water District's Expedited Purified Water Program.

OUTCOME

Provide general information and background to the Transportation and Environment (T&E) Committee on the status of the Santa Clara Valley Water District's Expedited Purified Water Program to aid in future discussions.

BACKGROUND

The mission of the Santa Clara Valley Water District (SCVWD) is to provide Silicon Valley safe, clean water for a healthy life, environment and economy. To meet water demands, the SCVWD operates an integrated water supply system that includes, among other components, approximately 400 acres of groundwater recharge ponds, a system of raw (untreated) and drinking water pipelines, ten dams and surface water reservoirs, three pump stations, three drinking water treatment plants with a total capacity exceeding 210 million gallons per day (MGD), and the Silicon Valley Advanced Water Purification Center (SVAWPC).

Almost half of the water used in County is pumped from groundwater basins. To help offset groundwater pumping and prevent overdraft, the SCVWD uses local and imported surface water to replenish the groundwater basins through recharge facilities, which include recharge ponds and creeks.

In 2015, SCVWD observed significant groundwater net extractions, which occurred when groundwater pumping exceeded the natural and SCVWD-performed groundwater replenishment efforts. The lowering of groundwater levels may lead to irreversible subsidence of the land. The threat of subsidence has prompted the SCVWD to review timing and implementation of recycled and purified water projects throughout the County. To achieve this, SCVWD implemented an

Expedited Purified Water Program (EPWP) to deliver 24,000 acre-feet per year (AFY) of potable reuse by 2025, with the potential to provide up to 45,000 AFY in the future. By 2025, the additional 24,000 FY of water supply accounts for approximately 6% of total County water usage.

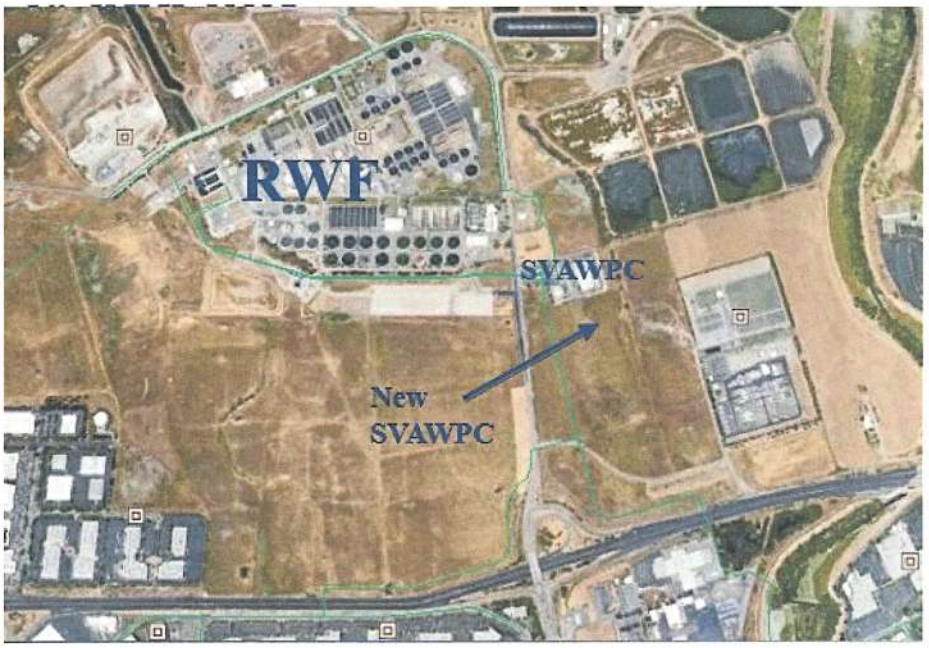
The EPWP evaluated two different methods of potable reuse:

(1) *Indirect Potable Reuse (IPR)* – using purified water to replenish groundwater basins;
(2) *Direct Potable Reuse (DPR)* - delivering purified water directly to the SCVWD's raw water sources and subsequently to surface water treatment plants for additional treatment and delivery to potable water consumers.

In addition to considering IPR versus DPR methods, the EPWP evaluated multiple potable reuse scenarios and costs. *See Attachment A.* These include the Ford Recharge Ponds Indirect Potable Reuse Facility ($198 M), Mid-Basin Injection Wells ($699 M), Los Gatos Recharge Ponds ($8 M), Sunnyvale Indirect Potable Reuse ($210 M), Purified water production at the Palo Alto Regional Water Quality Control Plant, and the Central Pipeline ($4.7 M) or Vasona Pump Station Direct Potable Reuse ($606 M) as future alternatives.

In December 2017, the SCVWD Board selected the IPR method of potable reuse, and approved their staff recommendation for further evaluation of IPR to the Los Gatos groundwater recharge ponds. This potential project includes construction of a New Silicon Valley Advanced Water Purification Center (New SVAWPC), a pump station, and a transmission main.

If ultimately constructed, the *New* SVAWPC will serve a different purpose than the *existing* SVAWPC. The existing SVAWPC was constructed to demonstrate that highly purified water can be produced from wastewater, and blended with existing recycled water supplies to expand irrigation and industrial use of recycled water in Santa Clara County (County), and is considered part of the Regional Wastewater Facility (RWF). The *New* SVAWPC would produce advanced purified water for potable reuse within the SCVWD's boundaries, thereby increasing the supply of available local water and reducing the region's reliance upon imported water deliveries. Furthermore, the New SVAWPC would be considered a water supply asset and not part of the RWF. The New SVAWPC is anticipated to be located adjacent to the existing facility (*see below*). In December 2017, the SCVWD Board approved a $640M commitment to pursue further evaluation of the IPR project.



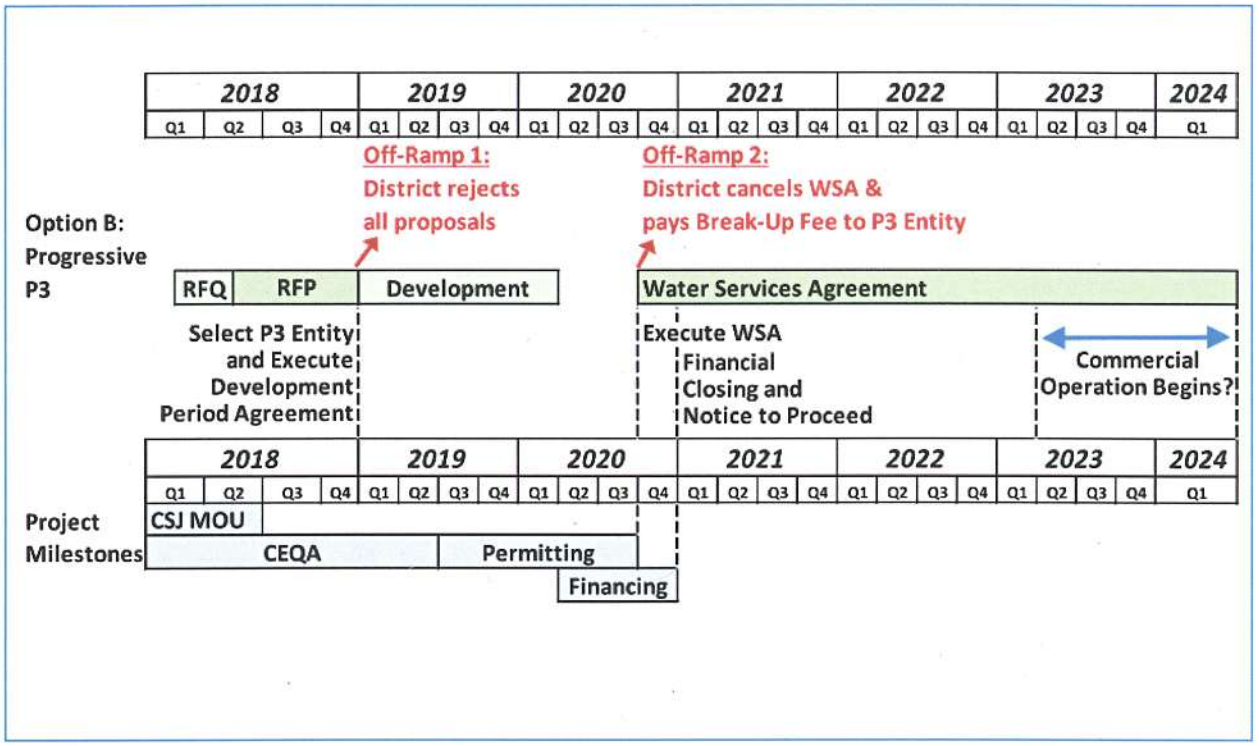
In the future, the SCVWD may consider the DPR method, in which purified water would be blended with raw surface water prior to existing conventional water treatment plants. Once the blended supply is treated, the drinking water would be distributed through the potable water delivery system.

ANALYSIS

While the information contained in this memorandum is comprised of the most current details available, the EPWP project continues to evolve. The information provided is preliminary and is anticipated to change as the project scope becomes more defined.

Transmission Pipeline:
The SCVWD completed a Conveyance System Facility Plan Report in November 2017. This report presents planning, preliminary design, and cost estimates to construction a pipeline that will convey purified water from a potential expanded SVAWPC to the Los Gatos Percolation Ponds complex. The report recommended construction of a 48-inch diameter pipeline, 24.8 miles in length, through the Cities of San José, Santa Clara, and Campbell. *See attachment B.*

Schedule:
On February 13, 2018, the SCVWD Board directed staff to initiate a Request for Qualifications from prospective bidders utilizing a Progressive Public-Private Partnership (P3) method of design, financing, construction and ownership. The schedule for selecting a P3 entity and executing a development agreement is in January 2019, with final project completion in approximately year 2024 (*see below*).



Preliminary Cost Estimates:

Most recent preliminary estimates project the total cost will be approximately $1.0 billion, which includes $300 million allocated to design and construction of the transmission pipeline, and pump station, to convey purified water from North San Jose to the Los Gatos Ponds. While information is still preliminary, it is anticipated that approximately 60% of this cost will be funded through the P3 process, resulting in ongoing payments averaging approximately $100 million per year over the term of the P3 agreement. As the project scope and terms of the P3 agreement are more fully defined, it is expected that these preliminary numbers will be revised.

Excluding the initial construction cost, based upon ongoing annual payments of $100 million per year to produce 24,000 acre-feet of purified water, the cost to develop this water supply is approximately $4,200 per acre-foot. In comparison, the current wholesale water rate for SCVWD treated water is $1,275 per acre-foot.

Memorandum of Understanding:

SCVWD continues to progress on key aspects of the project, including a County-wide Water Reuse Master Plan and a Reverse Osmosis Concentrate Management study. City staff has supported the SCVWD to identify items that need further investigation, research, and discussion to achieve the SCVWD's goals. SCVWD engaged City staff to negotiate a Memorandum of Understanding (MOU) regarding each agencies role in further evaluating an IPR project. Items of consideration in the MOU include reverse osmosis concentrate management, quantity and quality of treated wastewater, location and land value, and financial considerations. As a co-owner of the RWF, the City of Santa Clara is also a participant in the MOU discussion.

EVALUATION AND FOLLOW-UP

A key objective of Climate Smart San Jose, in alignment with the Paris Agreement, is to reduce greenhouse gas emissions by 2050. This project has yet to conduct an evaluation for greenhouse gas emissions. As the project progresses, staff will continue to collaborate with SCVWD and return to T&E periodically with updates. Once negotiations of a draft MOU are complete, staff will return to the Treatment Plant Advisory Committee (TPAC) and Council for review and approval.

PUBLIC OUTREACH/INTEREST

This memorandum will be posted on the City's website for the April 2, 2018 Transportation and Environmental Committee Agenda.

COORDINATION

This project has been coordinated with the City Attorney's Office and Budget Office.

COMMISSION RECOMMENDATION/INPUT

No commission recommendation or input is associated with this action.

CEQA

Not a project, File No. PP10-069

/s/
KERRIE ROMANOW
Director, Environmental Services

For questions please contact Jeff Provenzano, Deputy Director, at (408) 277-3671.