Santa Clara Valley Water District

File No.: 25-0604

Agenda Date: 7/30/2025
Item No.: 4.2.

COMMITTEE AGENDA MEMORANDUM
Recycled Water Committee

Government Code § 84308 Applies: Yes ☐ No ☒
(If "YES" Complete Attachment A - Gov. Code § 84308)

SUBJECT:
Receive Update on the Expansion of Non-Potable Recycled Water Use.

RECOMMENDATION:
Receive and discuss information on the potential for expanding non-potable recycled water use in the County.

SUMMARY:
At the June 10, 2025, Valley Water Board of Directors meeting, the Board referred discussion of the potential opportunities to expand non-potable recycled water use in the county to the Recycled Water Committee (Committee). This item was added to the Committee's workplan at the June 2025 Committee meeting.

Over the past decades, Valley Water has advanced non-potable water reuse in the county by leading water reuse planning efforts, providing funding and technical support for system expansion, developing wholesale recycled water programs, and constructing new infrastructure. About 11% of wastewater generated in the county is recycled, with an average recycled water use of 17,000 acre-feet per year (AFY), or about 5% of the county's water supply, and distributed for non-potable uses such as landscape irrigation, industrial cooling, and dual plumbed facilities. This recycled water is produced at four wastewater treatment plants in the county - Palo Alto Regional Water Quality Control Plant (RWQCP), City of Sunnyvale Water Pollution Control Plant (WPCP), San Jose-Santa Clara Regional Wastewater Facility (RWF), and South County Regional Wastewater Authority (SCRWA).

Countywide Water Reuse Master Plan
The Board accepted the Countywide Water Reuse Master Plan (CoRe Plan) in 2021. The CoRe Plan was developed following the Water Supply Master Plan 2040 and Board direction to develop a potable reuse project. The CoRe Plan was a collaborative effort with our four wastewater partners, retailers, state regulators and interested stakeholders to identify opportunities for both potable and non-potable reuse (NPR). One of the key planning objectives was to integrate existing recycled water

systems and expand NPR. The focus of the CoRe plan, however, was on developing potable reuse portfolios given the direction of the Board and findings from a joint study with the City of San Jose (South Bay Water Recycling Strategic Master Planning, 2014) which found that the development of potable reuse to add to the base water supply is more economically favorable as opposed to further development of a supplemental water supply, i.e. NPR. The CoRe Plan is available at https://fta.valleywater.org/fl/XNyG7Fja6T#folder-link/ <https://fta.valleywater.org/fl/XNyG7Fja6T>

Current NPR System and Valley Water Support
Each of the wastewater treatment plants in our county has an NPR system that was developed over time to reach large water users, such as industrial and landscape customers. Much of the NPR system in the county was developed through requirements for developers to expand NPR, as new development projects are approved by cities. Several cities require new developments to connect to nearby recycled water systems, require dual plumbing of larger buildings, or require specific users including data centers to connect to the system. Users must obtain a recycled water use permit before receiving NPR water. The cost of recycled water is lower than potable water to incentivize its use. For the South Bay Water Recycling (SBWR) program, the cost of recycled water is discounted $105 per acre-foot from Valley Water's North County groundwater rate.

SBWR, managed by the City of San Jose, was initially developed to divert wastewater in response to a regulatory directive to reduce wastewater discharge and protect salt marsh habitat. At this time, according to the SBWR Master Plan, there is no longer a need to expand the system for wastewater purposes, and future expansion will need to be focused on water supply benefits. Valley Water has supported water recycling at the RWF since the 1950s, contributed to SBWR financially until 2014, and has since completed the construction of the Silicon Valley Advanced Water Purification Center (SVAWPC) to enhance the SBWR recycled water and expand its uses. Valley Water now operates the SVAWPC and cost-shares with SBWR. Valley Water also collaborated on SBWR master plan development. SBWR is the wholesaler who provides recycled water to retailers in San Jose, Santa Clara and Milpitas. SBWR serves over 900 commercial customers, delivering on average 11 million gallons per day (mgd). About 75% of the customers are landscape customers.

The Palo Alto RWQCP, in addition to a purple pipe network serving users in Palo Alto and Mountain View, has a truck filling station that allows permitted users to receive recycled water to be used for construction and landscape uses via a water truck. Valley Water and the Cities of Palo Alto and Mountain View entered into a partnership agreement to reserve treated wastewater for Valley Water to construct a future potable reuse project. This agreement also included Valley Water funding for a portion ($16 million) of a local advanced water treatment facility designed to enhance the recycled water quality distributed by the RWQCP. This local advanced water treatment facility is anticipated to cost $63 million, will produce 1.125 mgd of purified water, and be completed in 2028.

The Sunnyvale WPCP provides recycled water locally and is currently working on updating its recycled water master plan. Valley Water has financially supported NPR in Sunnyvale, collaborated on constructing the Wolfe Road Pipeline to bring recycled water to the Apple campus, and is currently working with Sunnyvale on studying additional future water reuse opportunities.

Valley Water has partnered with SCRWA since the 1970s and is the wholesaler of recycled water in

South County receiving about $440,000 annually in revenue from the sale of recycled water. Currently the system has a capacity of 8.5 mgd with 12 customers. Valley Water works with the City of Gilroy to ensure development in the city assists with expanding the recycled water network, which is currently just over 17 miles of pipelines. Valley Water recently completed a collaborative master planning effort by updating the 2015 master plan which Valley Water also led. This recent planning effort included analyzing wastewater availability, potential new customers, and expansion opportunities. At peak demand during the summer months, SCRWA recycles all its treated wastewater. In addition, Valley Water has been expanding recycled water infrastructure in South County and will perform a grant funded feasibility study that will evaluate future improvements to the current system to maximize reuse.

WSMP NPR expansion assumption
The CoRe Plan found that NPR demands could increase to about 40,000 AFY by 2040. However, since then, our County has experienced a severe drought, lowering overall water demand as well as wastewater availability. Wastewater, and its availability for reuse has trended downward due to water conservation inside homes and businesses. In addition, the COVID-19 pandemic and rising inflation have significantly increased costs for new infrastructure including new pipelines, resulting in little to no expansion of the current NPR system.

Recycled water use in the county has diminished slightly since 2015 and remained relatively constant over the last five years. While it is anticipated that water recycling
programs in the county may be expanded, these expansions are highly dependent upon
funding and new development. Currently, landscape irrigation is the highest use, however, new ordinances are also requiring data centers and other large users to connect to the recycled water system. NPR expansion requires an additional pipe network to reach new customers. The existing network already serves most of the large users. For the water supply needs assessment in the WSMP 2050, NPR is assumed to increase to 23,000 AFY by 2030 with 5,000 AFY of planned increase in San Jose and remain stable through 2050. The non-potable reuse growth assumption is warranted during this time but should be reviewed through the annual Monitoring and Assessment Program (MAP) or the next WSMP update to ensure it accurately reflects the reuse development. In addition, if any major recycled water projects are developed in the future, they will be incorporated into the WSMP portfolios and analysis.

Regulatory Requirements and Water Quality
The recycled water producers and distributors must meet strict regulatory requirements for water quality, reporting, and training of users of recycled water. California regulates recycled water according to California Code of Regulations Title 22, including treatment, discharge, end use, and cross-connection control. Site Supervisors of recycled water systems must attend training to learn about appropriate water reuse application and avoiding cross connections. In addition, signage, annual inspections and reporting are required.

Many trees and plants are sensitive to high salt content of the recycled water and salts can build up in soil, which can affect plant growth. Several golf courses in the county use recycled water but salinity, nutrient levels, and variable quality as well as the need for investment in infrastructure can be significant barriers. Data centers require high quality water to prevent corrosion, scaling, and

microbial growth. The SBWR 500 mg/L goal for Total Dissolved Solids (TDS) provides an acceptable water quality for landscape and industrial uses, which the SVAWPC helps to ensure by blending purified water with recycled water from the RWF. As described above, Palo Alto is developing a facility to purify a portion of the recycled water for blending to also lower TDS and expand uses of recycled water. Valley Water has restricted the use of NPR in some areas to protect groundwater basin water quality (see next section).

Benefits and Challenges of NPR
NPR can reduce wastewater discharges into the sensitive South Bay environment and lower pollutant loads, while also providing a drought resilient water supply. Recently promulgated nutrient regulations for wastewater discharge into the South Bay, in particular, can be an incentive for wastewater plants to promote NPR. Recycled water use is often not affected by drought restrictions, providing an incentive for its use by NPR customers. Using NPR for industrial and irrigation purposes is generally supported by the public.

NPR can provide water supply for uses that do not require the level of treatment necessary for drinking, therefore reducing treatment costs. However, since a separate “purple pipe” distribution system is required and water quality concerns have increased the need for advanced purification of at least a portion of the recycled water, these cost advantages are being diminished. For example, a recent engineers’ estimate for a 36-inch diameter recycled water pipe was $3 million per mile just for pipe materials.

For Valley Water, increased NPR will result in less water available for potable reuse as analyzed in the CoRe Plan. Water conservation results in less wastewater available as well. As described above, potable reuse was deemed a more effective investment for Valley Water.

While recycled water is safe for many uses, to protect Coyote Valley aquifers and well users, Valley Water previously established a position that tertiary treated recycled water should not be used for irrigation in areas overlying the groundwater basin (Valley Floor).

Conclusion
The CoRe Plan summarizes the potential expansion and interconnection of the NPR systems, and Valley Water continues to support all our wastewater partners in expanding and improving the NPR system through infrastructure investment, planning, studies, and support for grant funding. For purposes of the WSMP 2050, a moderate growth in NPR was assumed. Additional expansion would be included via the annual MAP process.

Next steps for non-potable reuse include:

- Continue to collaborate with Palo Alto on their local facility to improve non-potable recycled water quality
- Collaborate with Sunnyvale on a study of future wastewater availability for recycling and continue to collaborate on the Wolfe Road pipeline
- Continue successful operation of SVAWPC and collaborate with SBWR and participate in master planning
- Collaborate with SCRWA and the South County cities on the grant funded feasibility study,

construct needed pipelines to serve the Amazon data center and continue working with the cities and developers to expand the system.

ENVIRONMENTAL JUSTICE AND EQUITY IMPACT:
There are no environmental justice and equity impacts associated with this item. This action is unlikely to or will not result in adverse impacts and is not associated with an equity opportunity.

ATTACHMENTS:
Attachment 1: PowerPoint

UNCLASSIFIED MANAGER:
Kirsten Struve, 408-630-3138

THIS PAGE INTENTIONALLY LEFT BLANK