



# Santa Clara Valley Water District

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**File No.:** 21-0798

**Agenda Date:** 7/28/2021

**Item No.:** 4.3.

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## COMMITTEE AGENDA MEMORANDUM

### Recycled Water Committee

**SUBJECT:**

Update on Refinery Recycled Water Exchange Project with Central Contra Costa Sanitary District and Contra Costa Water District

**RECOMMENDATION:**

Receive and discuss information on the Refinery Recycled Water Exchange Project.

**SUMMARY:**

The Santa Clara Valley Water District (Valley Water) is evaluating the benefits of the Refinery Recycled Water Exchange Project (RRWE), a regional recycled water project with Central Contra Costa Sanitary District (Central San) and Contra Costa Water District (CCWD). RRWE involves Central San partnering with Valley Water to design, build and operate a recycled water facility to provide recycled water to CCWD to serve to their two existing oil refinery customers and CCWD providing Valley Water the Central Valley Project (CVP) contract supply that would have otherwise gone to those refineries. Central San and Valley Water would share the costs to design, build and operate the recycled water facility; cost allocation would need to be negotiated among the partners. Valley Water would pay for costs to convey CCWD's CVP water to Valley Water. Preliminary work on cost allocation will be presented by Central San at the July 28, 2021 Recycled Water Committee.

In April 2018, Valley Water entered into a Memorandum of Understanding (MOU) with Central San and CCWD to explore the possibility of a regional water exchange project. The main tasks under the MOU are to estimate potential yield, develop potential treatment trains that could produce the appropriate recycled water quality for the refineries, and determine the costs of the RRWE. Project partners (i.e. Valley Water, Central San and CCWD) have extended the MOU twice and are currently working on a third extension through June 30, 2022 to provide sufficient time to refine project yield and cost estimates given new information on refinery demands.

This project could provide up to approximately 9 thousand acre-feet (TAF) per year of additional supply to Valley Water that may help Valley Water meet its level of service goal, especially during dry years. However, since Valley Water would be receiving CVP water that is subject to water allocation by the U.S. Bureau of Reclamation (Bureau), rather than the recycled water produced by the project, RRWE would increase Valley Water's reliance on imported water and the associated risk of reduced future allocations. In addition, the imported water exchange associated with RRWE has regulatory and operational uncertainties that could impact the reliability of Valley Water receiving the project water.

To support project progress, a Board Liaison Committee was set up in August 2020 that includes a Board member representative, the general manager/CEO, and key staff from each partner agency. Central San has led each Board Liaison Committee meeting, providing updates on the project design alternatives, yield, and cost analysis and the cost allocation study.

### **Project Yield Evaluation**

The original project definition assumed the refineries would have 22 TAF of annual demand that could be met with Central San's recycled water. However, since the 2018 MOU, one refinery has shifted operations such that the expected future refinery demands are now approximately 18 TAF/year. To determine how much of the 18 TAF/year of freed up CVP water that CCWD could transfer to Valley Water, CCWD completed CalSim II modeling and analysis. The CalSim II analysis indicated that the long-term average yield to Valley Water (i.e., volume of transferred CVP supply) for the RRWE is approximately 9 TAF/year (approximately 50% of the recycled water production of 18 TAF/year). Project yield to Valley Water is less than the recycled water production because of constraints in the Delta, CVP and SWP operations, and CCWD operations.

While Valley Water may be able to have access to approximately 9 TAF/year of CVP transfer supplies through this project, the amount of water Valley Water can use is further dependent on Valley Water's operational and physical capacity constraints during the time periods CCWD is able deliver the CVP water. Valley Water's capacity constraints through the Los Vaqueros Reservoir Expansion Project's Transfer Bethany Pipeline, South Bay Aqueduct, surface storage reservoirs, treatment plants, and recharge ponds could all reduce the amount of transfer water Valley Water can use. Evaluating Valley Water's constraints on receiving the transfers will depend on Los Vaqueros Reservoir Expansion Project operations and on which other projects Valley Water decides to participate in.

### **Project Yield Uncertainties**

While the project may yield up to 9 TAF/year to Valley Water in the form of CVP transfer supplies, there are several factors that could decrease the project water available, including:

- Low CVP allocations during severe droughts that curtail the amount of water CCWD transfers to Valley Water.
- Per Bureau CVP transfer rules, water is only available for transfer if offset via another supply or conservation; thus, decreased refinery demands would reduce the amount of CVP transfer water available.
- Physical capacity constraints (e.g., Delta pumping and Transfer Bethany Pipeline capacity constraints for conveying CCWD's CVP water to Valley Water were not yet considered in the yield study).
- Uncertainties related to the completion of Los Vaqueros Reservoir Expansion facilities, including Transfer Bethany Pipeline, which are required to transfer the water to Valley Water.
- Potential physical and operational constraints in Valley Water's system that limit the amount of CVP water that can be brought into the Valley Water service area or placed into storage.

### **Cost Estimate**

The preliminary 100-year net present value lifecycle unit cost by Central San for the 18 TAF/year RRWE project is currently estimated to be approximately \$1,800/AF. The costs include recycled

water production and distribution and CVP water conveyance to Valley Water. Project costs would primarily be allocated among Central San and Valley Water, but the allocation approach needs to be negotiated. CCWD is a facilitator of the water exchange and not receiving a water supply benefit from this project, thus they will only pay for RRWE operational costs that benefit CCWD. Valley Water is expected to cost share in the full project to produce the 18 TAF/year that will be provided to the refineries, but as described above, Valley Water would only receive up to 9 TAF of CVP water supply from CCWD.

Central San and Valley Water entered into a cost share agreement not to exceed \$35,000 in February 2021 to begin preliminary work on cost allocation. Central San and Valley Water hired Raftelis Financial Consultants, Inc. to conduct the cost allocation evaluation. The cost allocation was evaluated based on the economic value of the benefits provided by the project to both partners. While this study is still ongoing, preliminary analysis found that based on the current 100-year lifecycle cost estimate and project benefits, approximately \$800/AF may be allocated to Central San with the remaining \$1000/AF being the responsibility of Valley Water. Central San's preliminary allocated cost represents approximately 50% of the cost to design, build and operate a recycled water facility, including conveying the recycled water to the refineries, but not to convey CVP supplies to Valley Water. Since Valley Water will only receive 50% of the project yield but cost share for all recycled water produced, the effective unit cost to Valley Water is approximately \$1,800/AF.

### **Needs, Challenges, and Next Steps**

The RRWE project faces challenges and uncertainties that require further evaluation. These uncertainties and associated challenges can be addressed at the next phase of the feasibility analysis and/or in collaboration with other regional projects that have similar needs and challenges. Parties are amending the existing MOU to continue this work. The issues requiring additional assessment and clarification include but are not limited to:

- Identify conveyance capacity competition with other regional projects
- Evaluate CCWD CVP contract and water transfer constraints
- Perform further yield analysis that includes drought curtailment considerations informed by guidance from the Bureau
- Evaluate potential Transfer Bethany Pipeline conveyance capacity constraints
- Analyze Valley Water's effective utilization rate
- Confirm that the refineries are a willing customer for the recycled water
- Identify potential for future reductions in refinery customer demands
- Finalize conveyance, storage, and commodity costs
- Finalize the cost and benefit allocation between Central San and Valley Water

### **ATTACHMENTS:**

Attachment 1: Powerpoint

### **UNCLASSIFIED MANAGER:**

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