



EBMUD-Central San Recycled Water Feasibility Evaluation

East Bay Leadership Council

Water, Energy, & Environment Task Force

April 16, 2024

Agenda

- Background
- Summary of Recycled Water Project Concepts
- Project Evaluation and Rankings
- Next Steps

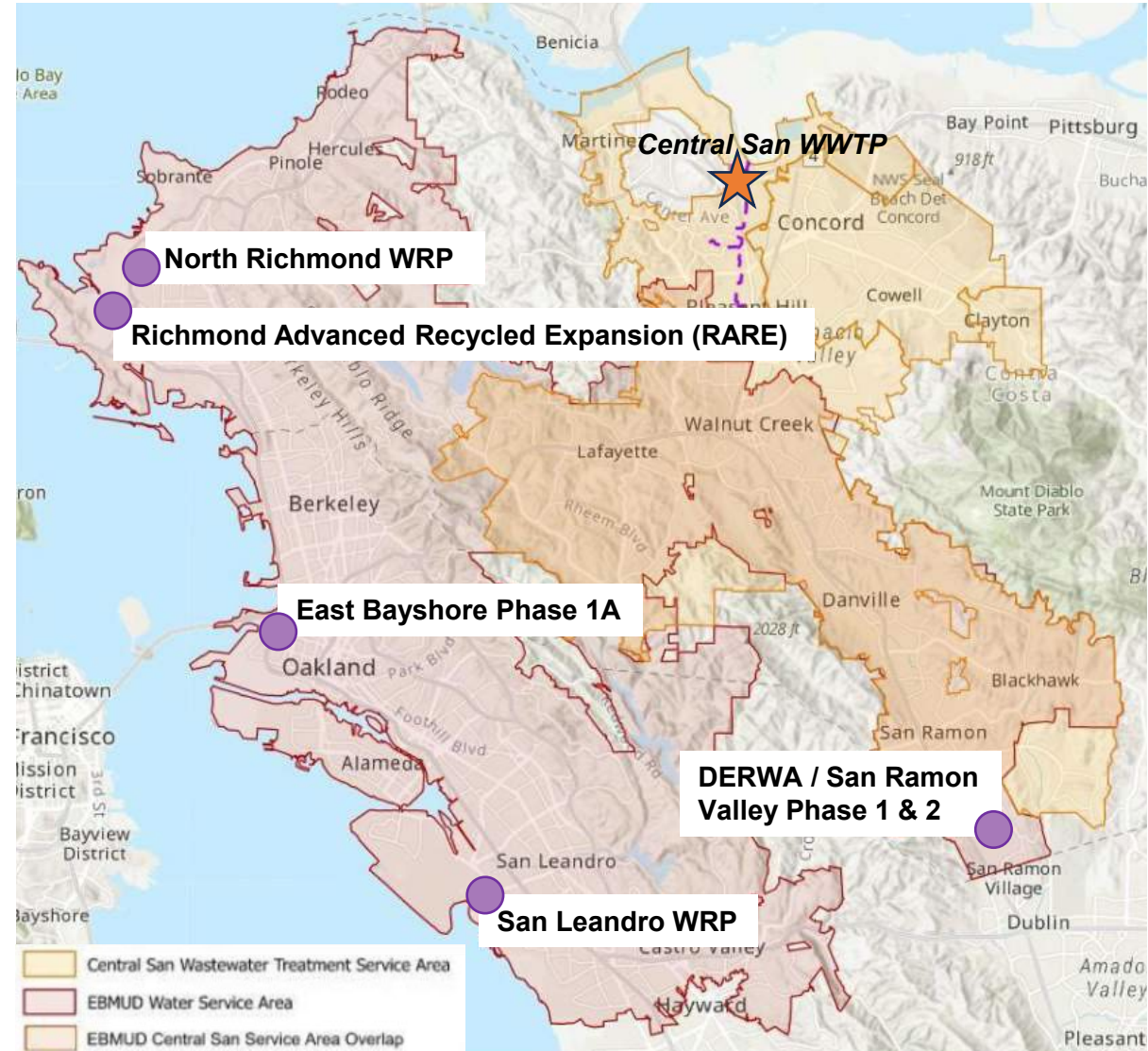
EBMUD's Recycled Water Program

- Existing recycled water projects serve irrigation and industrial customers in EBMUD's water service area
- Current capacity: 9 million gallons per day (MGD)
- Goal: 20 MGD by 2040

WRP = water recycling plant

WWTP = wastewater treatment plant

DERWA = Dublin San Ramon Services District – EBMUD Recycled Water Authority



Feasibility Evaluation Background

- Central San identified as potential partner for regional recycled water opportunities in EBMUD's 2019 Recycled Water Master Plan Update
- Memorandum of Understanding between EBMUD and Central San executed in October 2022 to further explore recycled water partnership opportunities
 - Evaluate non-potable and potable reuse project concepts
 - EBMUD to lead development of the feasibility study

Summary of Recycled Water Project Concepts



Non-Potable Reuse Project Summary

Project Concept	Average Capacity/Yield	Estimated Every Year Unit Cost (\$/AF)	Recommended for Consideration of Near-Term Implementation?
Lamorinda Project	<1 MGD/1,000 AFY	\$18,500	No – significant cost, low amount of potable water savings
Satellite Water Recycling Facilities	<0.5 MGD/250 AFY per customer	\$9,500	Continue to support customers considering self-funding satellite projects
DERWA Expansion	Up to 3 MGD/2,200 AFY	\$1,350	Yes – lower cost project, proof of concept through temporary diversions
Refinery Recycled Water Exchange	Up to 13 MGD to refineries Yield to EBMUD through exchange: Up to 6.5 MGD/ 7,300 AFY	\$5,600*	No – water supply benefit to EBMUD is limited, uncertainty associated with future refinery demands/operations

*Cost of Central San’s upgrades for nutrient removal not included

MGD = million gallons per day

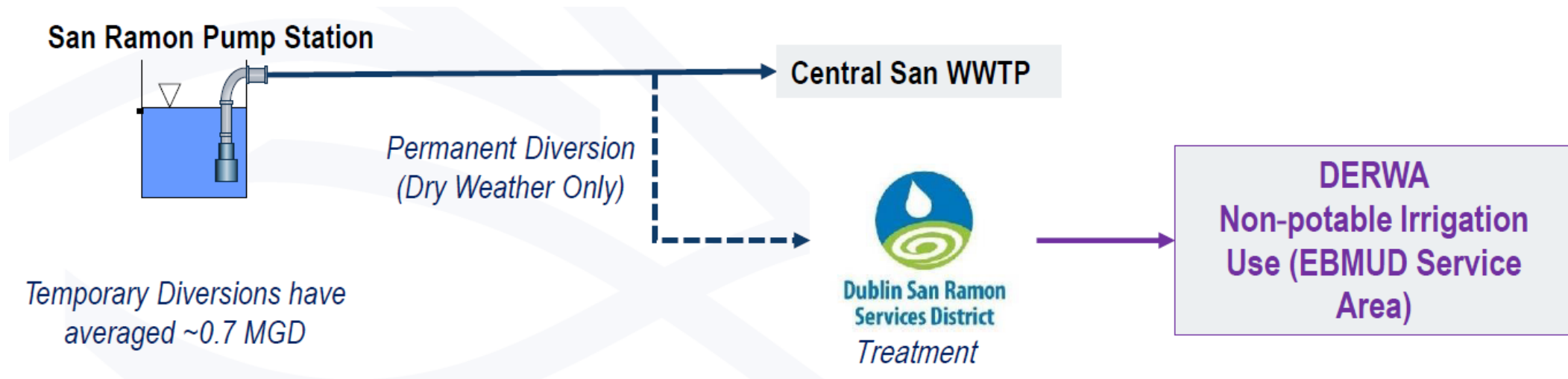
AF = acre-feet

AFY = acre-feet per year

DERWA = Dublin San Ramon Services District – EBMUD Recycled Water Authority

DERWA-Central San Diversion Project

- Benefits: utilizes existing facilities, provides up to 3 MGD in supplemental supply to DERWA to serve EBMUD/Central San customers, potential to provide nutrient discharge reduction benefits to Central San
- Challenge: potential institutional and technical issues



Potable Reuse Project Summary

Project Concept	Average Capacity/Yield	Estimated Every Year Unit Cost (\$/AF)	Recommended for Further Evaluation?
Indirect Potable Reuse – Los Vaqueros Reservoir	Up to 17.9 MGD/20,000 AFY in supply to Los Vaqueros	\$4,700*	No – significant institutional and permitting challenges
Indirect Potable Reuse – Briones Reservoir	17.9 MGD/20,000 AFY	\$3,700*	Yes – compare against other IPR alternatives
Direct Potable Reuse – Mokelumne Aqueducts	17.9 MGD/20,000 AFY	\$3,600*	Yes – compare against other DPR alternatives
Direct Potable Reuse – Walnut Creek WTP	17.9 MGD/20,000 AFY	\$3,900*	Yes – compare against other DPR alternatives

*Cost of Central San’s upgrades for nutrient removal not included

MGD = million gallons per day

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WTP = water treatment plant

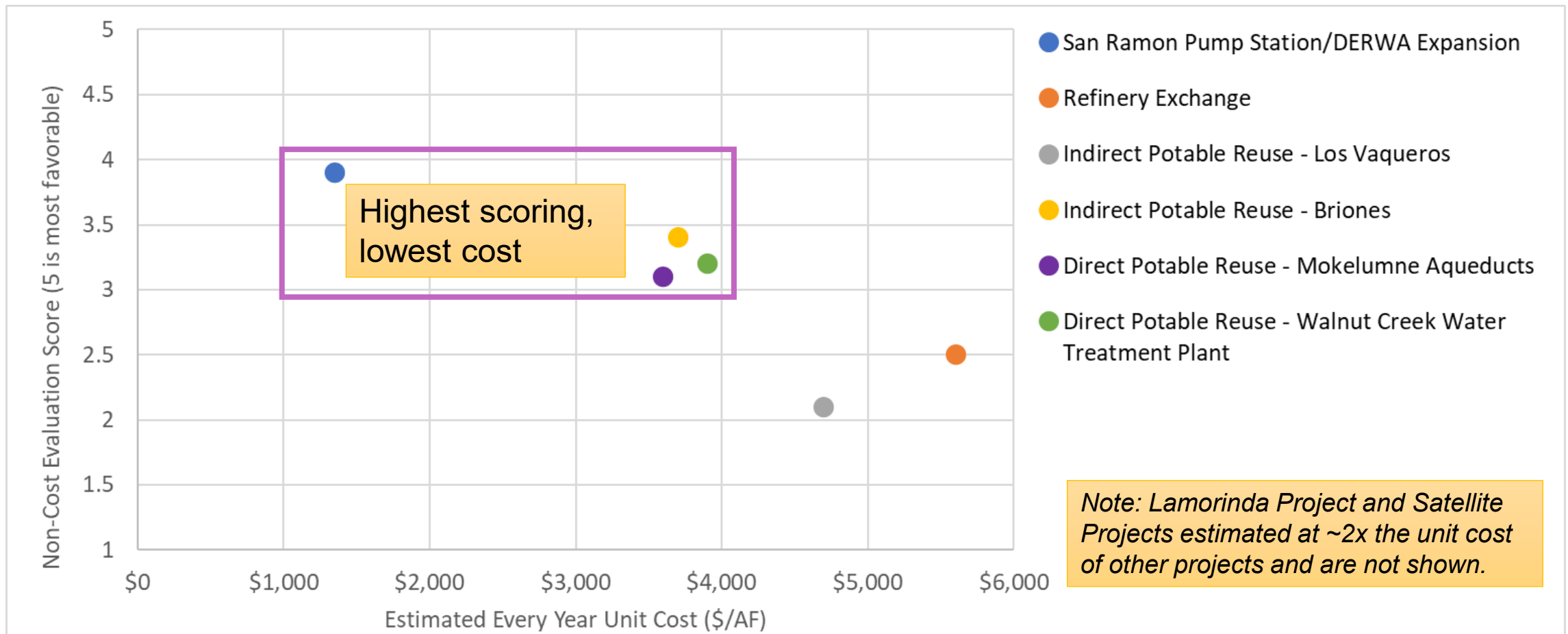
Project Evaluation and Rankings



Evaluation Criteria

Criteria	Assessment
Regulatory requirements	Challenges, requirements, and time to implement the project from a planning and permitting perspective.
Treatment requirements	Additional treatment needs for beneficial use.
Implementation challenges	Impact on EBMUD operations, complexity of the alternative, and how challenging it will be to implement.
Environmental justice/equity	Customer base impacted by new supply and percentage of EBMUD’s service area served with new supply.
Public outreach needs	Level of outreach needed for public acceptance.
Institutional complexities	Number of institutional partners needed (additional agencies involved).
Climate change resiliency	Project resiliency to climate change.

Projects for Further Consideration



Potable Reuse Challenges

While potable reuse presents opportunities, there are significant challenges to address, including:

- Potable reuse treatment and operational requirements not conducive to seasonal or dry year operations
 - Potential need for potable reuse supply is intermittent and primarily during droughts
- High project cost compared to other water supply/management options
- Strict regulations and complex permitting for DPR and IPR
- Lack of precedent for DPR projects – regulations approved in December 2023, but no approved projects
- Operator certification challenge for advanced water treatment train and water treatment plants, complex operations requirements for DPR and IPR (reservoir augmentation)
- Significant lead time and costs for public outreach and additional technical studies

Next Steps

- Evaluate the DERWA-Central San diversion project, address issues identified and develop long-term agreement
- Recommended long-term projects to be further evaluated in EBMUD's Recycled Water Strategic Plan (RWSP) Update – to be completed by fall 2024
- EBMUD to conduct additional analysis on need for water, demands update, and comparison of supplemental water supplies (including recycled water) for update of Urban Water Management Plan with water supply portfolio recommendation by 2026

Questions?

