



Las Virgenes – Triunfo Joint Powers Authority
4232 Las Virgenes Road, Calabasas, CA 91302
818.251.2100



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**Call and Notice of Special Meeting of the Governing Board of the
Las Virgenes – Triunfo Joint Powers Authority**

A Special Meeting of the Governing Board of the Las Virgenes – Triunfo Joint Powers Authority (JPA) is hereby called, and notice of said Special Meeting is hereby given for **10:00 a.m. on Wednesday, January 31, 2024**, at Las Virgenes Municipal Water District, 4232 Las Virgenes Road, Calabasas, California 91302, to consider the following:

1. Call to Order
2. Special Meeting of January 31, 2024 (see attached agenda)
3. Adjourn

By Order of the Board of Directors
JANE NYE, Chair

A handwritten signature in blue ink that reads "Josie Guzman".

Josie Guzman, MMC
Deputy Secretary

Dated: January 24, 2024

Jane Nye
Chair, Las Virgenes-Triunfo
Joint Powers Authority
Chair, Triunfo Water & Sanitation District
Board of Directors

Jay Lewitt
Vice Chair, Las Virgenes-Triunfo
Joint Powers Authority
President, Las Virgenes Municipal Water District
Board of Directors

LAS VIRGENES TRIUNFO JOINT POWERS AUTHORITY
Las Virgenes Municipal Water District Board Room, 4232 Las Virgenes Road,
Calabasas, CA 91302

AGENDA
JOINT POWERS AUTHORITY - SPECIAL MEETING
WEDNESDAY, JANUARY 31, 2024 – 10:00 AM

PUBLIC PARTICIPATION: The public may join this meeting virtually or attend in person in the Board Room. Teleconference participants will be muted until recognized at the appropriate time by the Chair. To join via teleconference, please use the following Webinar ID:

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885 8765 1929

For members of the public wishing to address the Board during Public Comment or during a specific agenda item, please press "Raise Hand" if you are joining via computer; or press *9 if you are joining via phone; or inform the Executive Assistant/Clerk of the Board if attending in person.

Members of the public can also access and request to speak at meetings live on-line, with audio and limited video, at www.lvmwd.com/livestream. To ensure distribution of the agenda, please submit comments 24 hours prior to the day of the meeting. Those comments, as well as any comments received during the meeting, will be distributed to the members of the Board of Directors and will be made part of the official public record of the meeting. Contact Josie Guzman, Executive Assistance/Clerk of the Board, at (818) 251-2123 or jguzman@lvmwd.com with any questions.

ACCESSIBILITY: If requested, the agenda and backup materials will be made available in appropriate alternative formats to persons with a disability, as required by Section 202 of the Americans with Disabilities Act of 1990 (42 U.S.C. Sec. 12132), and the federal rules and regulations adopted in the implementation thereof. Any person who requires a disability-related modification or accommodation, in order to attend or participate in a meeting, including auxiliary aids or services, may request such reasonable modification or accommodation by contacting the Executive Assistant/Clerk of the Board by telephone at (818) 251-2123 or via email to jguzman@lvmwd.com at least 48 hours prior to the meeting.

Members of the public wishing to address the Board of Directors are advised that a statement of Public Comment Protocols is available from the Clerk of the Board. Prior to speaking, each speaker is asked to review these protocols, complete a speakers' card, and hand it to the Clerk of the Board. Speakers will be recognized in the order the cards are received. A live webcast of the meeting will be available at LVMWD.com. Also, a web-based version of the speaker card is available for those who would like to submit written comments electronically or request to make public comment by telephone during the meeting.

PLEDGE OF ALLEGIANCE

1. **CALL TO ORDER AND ROLL CALL**
2. **APPROVAL OF AGENDA**
3. **PUBLIC COMMENTS**

Members of the public may now address the Board of Directors ON MATTERS NOT APPEARING ON THE AGENDA, but within the jurisdiction of the Board. No action shall be taken on any matter not appearing on the agenda unless authorized by Subdivision (b) of Government Code Section 54954.2.

4. **PURE WATER PROJECT LAS VIRGENES-TRIUNFO**
 - 4.A **Pure Water Project Las Virgenes-Triunfo: Program Update and Elements (Pg. 4)**
Review and provide feedback on the Pure Water Project Las Virgenes-Triunfo program update and elements.
5. **ADJOURNMENT**

Pursuant to Section 202 of the Americans with Disabilities Act of 1990 (42 U.S.C. Sec. 12132), and applicable federal rules and regulations, requests for a disability-related modification or accommodation, including auxiliary aids or services, in order to attend or participate in a meeting, should be made to the Executive Assistant/Clerk of the Board in advance of the meeting to ensure availability of the requested service or accommodation. Notices, agendas, and public documents related to the Board meetings can be made available in appropriate alternative format upon request.

DATE: January 31, 2024
TO: JPA Board of Directors
FROM: Engineering and External Affairs

SUBJECT: Pure Water Project Las Virgenes-Triunfo: Program Update and Elements

SUMMARY:

The Pure Water Project Las Virgenes-Triunfo (PWP) represents a unique opportunity to proactively address the challenges facing the Las Virgenes-Triunfo Joint Powers Authority (JPA) through an indirect potable reuse program utilizing surface water source (reservoir) augmentation. Planning for the project has resulted in refinement of the project scope and elements since the program's inception in 2015, and many decisions have been made along the way based on the JPA's goals, project cost, schedule and technical feasibility. Staff will conduct a workshop with the JPA Board to discuss various project decisions and pending project elements to ensure alignment of staff efforts with the JPA Board prior to moving forward with the design and construction phase of the program.

RECOMMENDATION(S):

Review and provide feedback on the Pure Water Project Las Virgenes-Triunfo program update and elements.

ITEM BUDGETED:

Yes

FINANCIAL IMPACT:

There is no financial impact associated with this report.

DISCUSSION:

The Pure Water Project Las Virgenes-Triunfo (PWP) represents a unique opportunity to proactively address the challenges facing the Las Virgenes-Triunfo Joint Powers Authority (JPA) through an indirect potable reuse program utilizing surface water source (reservoir) augmentation.

The PWP program has been incrementally refined since its inception in 2015 and throughout the pre-planning and planning processes. Along the way, a variety of decisions have been made to guide the program and accomplish the goals as set forth by the JPA Board and regulatory requirements. In 2021, Jacobs Engineering (Jacobs) was contracted to serve as the JPA's Owner's Advisor/Program Manager to provide detailed planning and environmental

compliance for the program. As part of their work, Jacobs conducted multiple workshops with the Board and key staff members to define the project elements and establish a conceptual design for use by the selected progressive design build (PDB) firm.

As the PWP has progressed and industry innovation has continued, a variety of project options have presented themselves, and staff has made every effort to consider potential project alternatives to the extent they would advance the goals established by the JPA Board. As staff nears the time to recommend a PDB firm for design and construction of the Advanced Water Purification Facility (AWPF) and Reverse Osmosis Concentrate (ROC) pipeline, it is important to revisit some of these project alternatives and decisions for the PWP to ensure alignment of staff efforts with the JPA Board prior to moving forward with the design and construction phase of the program.

The topics staff intends to cover at this workshop include:

- Updates and Review
 - Pure Water Project Review
 - Water Augmentation Update
 - Architectural Update
 - Conveying Water to Triunfo Water & Sanitation District

- Primary Discussion Topics
 - Dual ROC/Brine Line
 - Direct Potable Reuse
 - Zero Liquid Discharge
 - Inclusion of other Pipelines

Board input and feedback is encouraged for development of the Pure Water Project with the selected PDB firm during the early design phases of the contract.

GOALS:

Construct, Manage and Maintain all Facilities and Provide Services to Assure System Reliability and Environmental Compatibility

Prepared by: Oliver Slosser, Engineering Program Manager

ATTACHMENTS:

[Pure Water Project Las Virgenes-Triunfo: Program Update and Elements](#)



PURE WATER PROJECT
LAS VIRGENES-TRIUNFO

Bringing Our Water Full Circle

Pure Water Project Las Virgenes-Triunfo

Pure Water Project Las Virgenes-Triunfo
Project Update and Key Decision Points
Oliver Slosser, PE – Program Manager

January 2024

Agenda

➤ Updates and Review

- *Pure Water Project Review*
- *Water Augmentation Update*
- *Architectural Update*
- *Conveying Water to Triunfo
Water and Sanitation District*

➤ Primary Discussion Topics

- *Dual Brine Line*
- *Direct Potable Reuse*
- *Zero Liquid Discharge*
- *Including other projects into
the PDB contract*



PURE WATER PROJECT
LAS VIRGENES-TRIUNFO

Bringing Our Water Full Circle

Pure Water Project Updates and Review

JPA's Pure Water Project has Three Core Objectives

Protect Malibu Creek

- Comply with more stringent regulatory requirements for discharging to Malibu Creek
- Divert flows from Tapia WRF

Create a Local Drinking Water Source

- Maximize reuse with reservoir water augmentation
- Create a viable resource to supplement the region's water supplies

Balance Seasonal Variation

- Balance seasonal variation of recycled water demand
- Manage salinity in the region with new Advanced Water Purification Facility (AWPF), conveyance, and concentrate management



Key Project Milestones

2021-2022

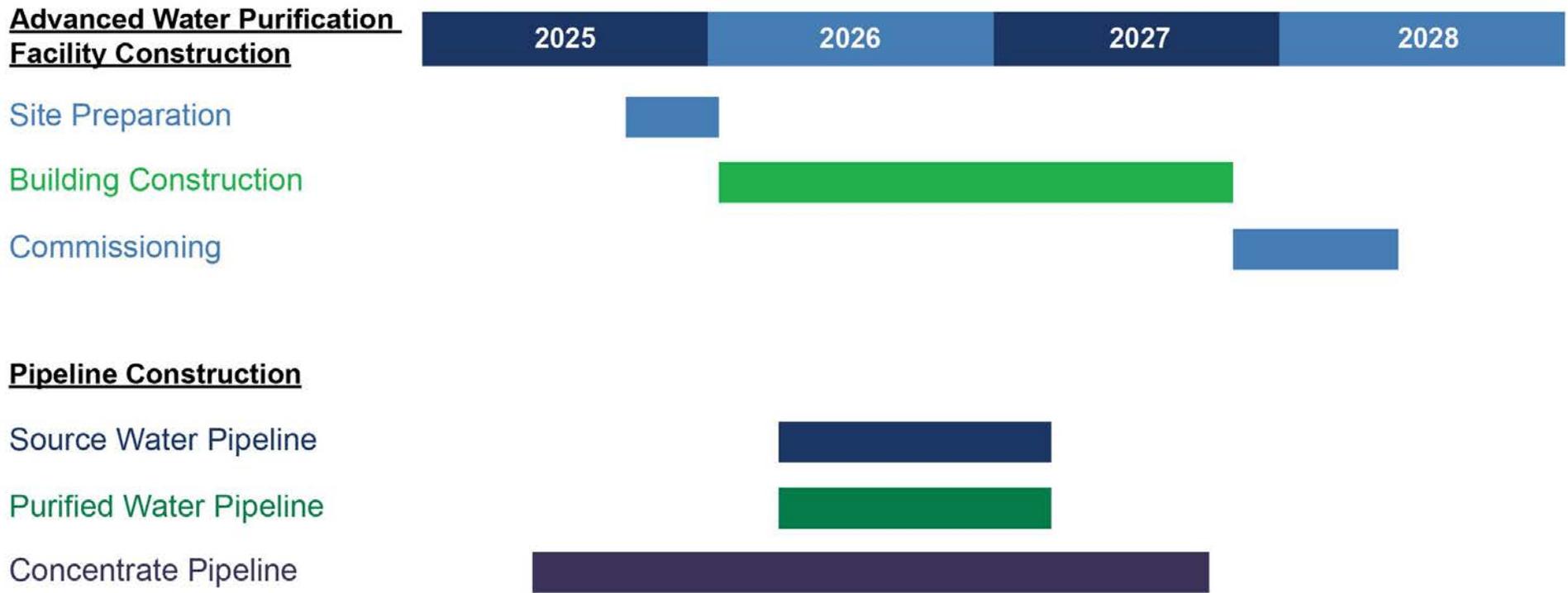
- Program Implementation Plan
- Regional Brine Study
- Purification Facility Performance Report
- Completion of the Programmatic Environmental Impact Report
- Project Adoption by JPA Board

2023

- Release of Conceptual Design Report
- Release of Conveyance Alignment Study
- Flow Equalization Study, Year 2 and 3 Demonstration Facility Data
- Procurement of AWPF and ROC Pipeline Progressive Design Build Firm
- Award of Title XVI Grant



Project Construction Schedule



Current Activities

- Advanced Water Purification Facility and Reverse Osmosis Concentrate Line Progressive Design Build Contract
- Three Additional Pipelines (Purified Line, Raw Water Line, Residuals Line)
- Pump Station Upgrades (Effluent Pump Station, RWPS West)
- Recycled Water Transmission Analysis
- Independent Advisory Panel, Reservoir Modeling and Tracer Study
- 1211 Application
- DDW and RWQCB Permitting
- Funding and Financing: SRF, WIFIA, Title XVI, MWD LRP
- Source Water Augmentation
- Public Outreach

Water Augmentation Update - Sources



- Additional Sources of water for the AWPF are currently being investigated including:
 - *Stormwater and dry water diversions that may help neighboring cities meet their MS4 requirements*
- These sources will help maximize use of the AWPF, create more local water, improve operability of the AWPF, and help neighboring cities and agencies meet their regulatory requirements
- Initial expansion is maximizing seasonal utilization

Water Augmentation Update



- Staff have had multiple discussion with City of Thousand Oaks staff regarding Hill Canyon effluent and Los Robles Wellfield
 - *Hill Canyon effluent is subject to previous agreement with Camrosa Water District and it is unclear whether there is any available effluent to send to the AWPF.*
 - *Conveyance costs would be high due to location of the plant and inability for a source water line to share a trench with the ROC brineline due to regulatory separation requirements*
 - *KJ has performed an evaluation for City of Thousand Oaks and found the construction of a source line to the AWPF is the highest cost per AF compared to local treatment of the water*
- Stormwater Diversions
 - *Pilot program with City of Agoura Hills is being developed*
 - *Talks have begun with City of Thousand Oaks and Ventura County for additional diversion*
 - *Westlake Village, Hidden Hills and Calabasas also have opportunities to divert water*
 - *Water is sent through Tapia before going to AWPF with presents treatment and conveyance challenges*

Utilization and Plant Expansion

- JPA Board Presentation on Plant Utilization in September, 2023

- *Plant will initially be roughly 30% utilized based on the amount of excess water available from Tapia*
- *Source Water Augmentation is first step to expanding the project*

Yearly Production (AFY)	Description
2,100	Initial capacity based on historical record. This is an average of what is available excess from Tapia WRF
3,100	2035 goal for AWPf with development of augmentation sources
5,000	2040 (ultimate) goal for AWPf production based on development of multiple augmentation sources regionally
6,730	Theoretical capacity of a 6 MGD plant running at 100% capacity for a full year. Due to the need for plant maintenance, water quality variations, changing influent water, and other logistical considerations, this is not a realistic target.

Architectural Update

- JPA has an obligation to have a facility that blends with Agoura Rd. corridor and Ladyface Mountain specific plan.
- During the 16-month Phase 1 design, staff will work with the PDB firm to hone the architectural approach and will update the Board on the advancement of the architectural elements for the facility.
- All potential PDB firms have identified an architectural subconsultant to perform the work



AWPF at Agoura Road Site





AWPF at Agoura Road Site

Conveying Water to Triunfo Water and Sanitation District

- Staff has begun discussions with Triunfo staff of how best to convey water or compensate TWSD for their portion of the PWP and water created
- Kennedy Jenks is initiating a model evaluation of the TWSD – LVMWD interconnection to assess the capacity and ability to physically transfer water to TWSD
- Calleguas-Las Virgenes Interconnection (2024 completion) is also a possibility to wheel water to TWSD through CMWD
- Storage of TWSD water in Las Virgenes Reservoir is also being considered





PURE WATER PROJECT
LAS VIRGENES-TRIUNFO

Bringing Our Water Full Circle

Primary Discussion Topics

Dual Brine Line

- Previously considered by the JPA as part of the latest cost estimate update
- Was not pursued due to additional cost of pipeline
- Additional cost of a dual pipeline estimated to be 75-95% of cost of a single pipeline
- Dependent of intended use of the pipeline, pipeline separation criteria, and cost of materials



Dual Brine Line Considerations

➤ Intended Use:

- *If used a secondary brine line only, pipe separation and trench width can be minimized and cost will be lower (approx. +75%)*
- *If intended for other uses, such as conveying raw water to the facility, it must be assumed that full pipeline separation is needed, essentially requiring a double wide trench*

➤ Environmental

- *Increasing the pipe trench could trigger reopening of the PEIR which would delay schedule and could open the project to challenges of the environmental document*

➤ Source Augmentation

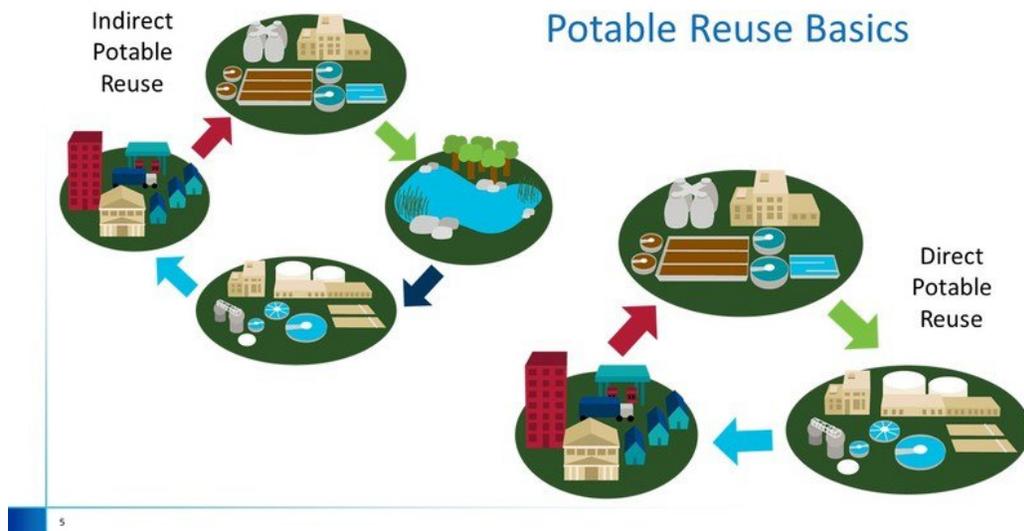
- *There are limited opportunities for sources along the pipeline other than Hill Canyon Treatment Plant, which thus far does not appear to be feasible*

➤ Cost

- *Cost of the single pipeline is estimate to be roughly \$65M for Design, Construction, ESDC and CM. Secondary line could be an additional \$49M-\$62M*

Direct Potable Reuse Background and Considerations

- Draft DPR regulations released July 21, 2023
- AB 574 required the State Water Board to adopt uniform water recycling criteria for DPR through raw water augmentation on or before December 31, 2023.
- Draft Regulations indicate a much higher level of treatment (and cost) will be required
- Level of monitoring (no environmental buffer)
- Public Perception

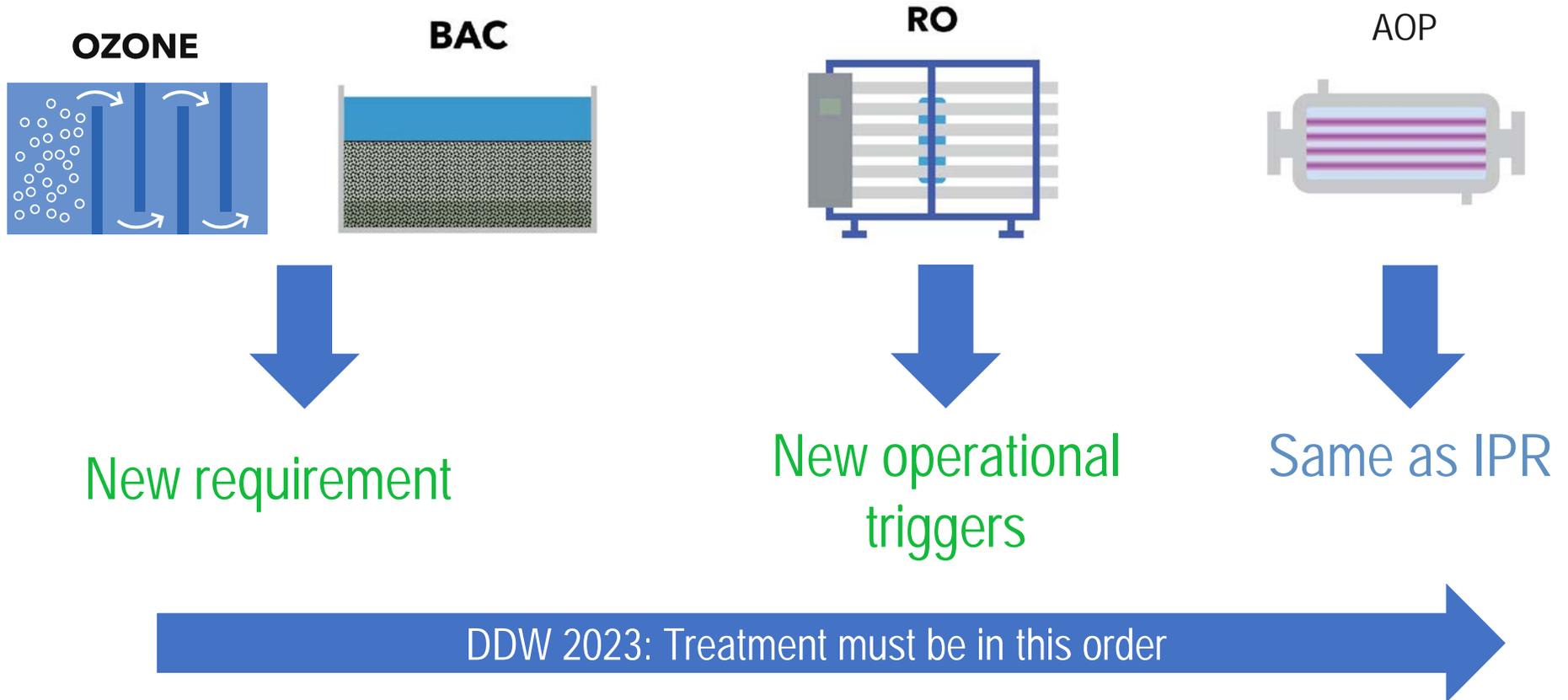


Pathogen Control (2022)

	Groundwater Recharge	Surface Water Augmentation	Direct Potable Reuse
Virus 	12	12 to 14	20
Giardia 	10	10 to 12	14
Cryptosporidium 	10	10 to 12	15

- 4 processes providing at least 1-log for each pathogen
 - GWR is 3 processes total
 - SWA is 2-3 processes total
- 3 mechanisms for each pathogen including:
 - UV disinfection (300 mJ/cm²)
 - Physical separation
 - Chemical disinfection

Chemical Control – Treatment (2023)

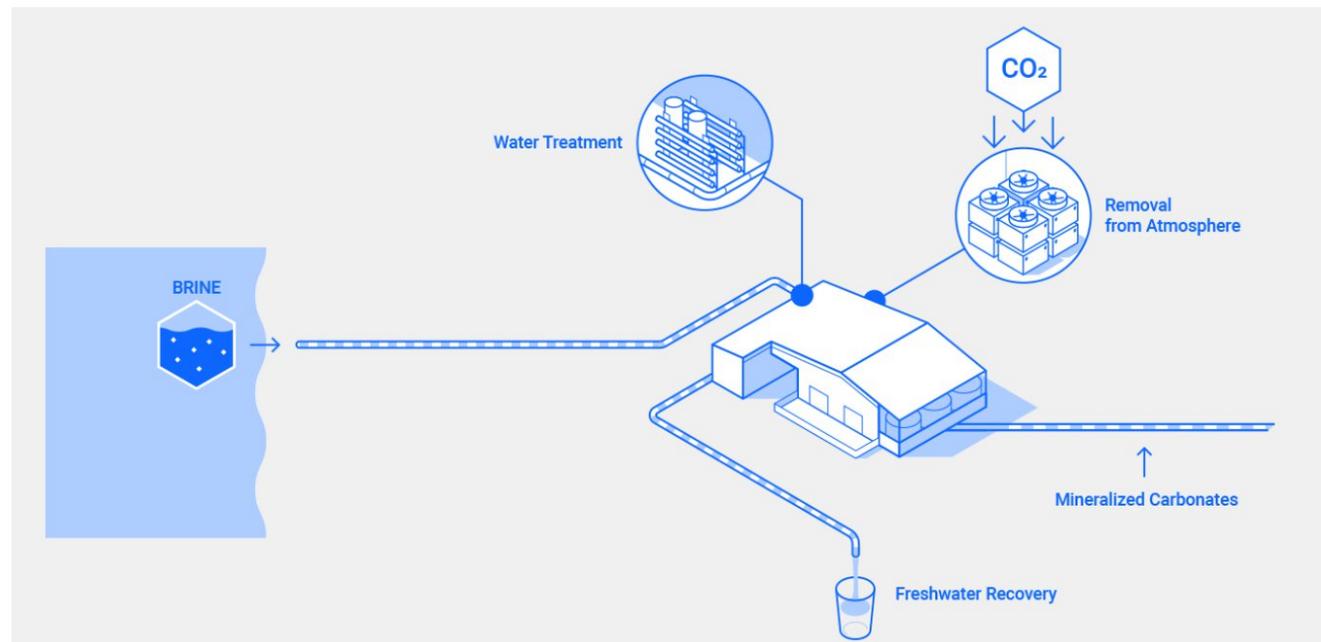


Direct Potable Reuse Considerations

- Additional Treatment and Facility Space
 - *Additional treatment processes needed to meet the DPR regulations may not be able to fit within the footprint of the AWWPF*
- Location of AWWPF Relative to the Calabasas Feeder
 - *Required mixing and maximum amount of DPR water relative to current supply may limit the yield of the facility to less than what is needed to remove flow from Malibu Creek. Location of the AWWPF relative to the Calabasas feeder may mean mixing requirements cannot be met*
- Public Perception and lack of Environmental Buffer
 - *Lack of an environmental buffer and “flange to flange” may meet resistance from customers*
- Permitting and Schedule
 - *Final regulations released in December and no previous projects permitted in CA, leading to higher schedule risk in implementation for early adopters compare the Surface Water Augmentation*
- Operational complexity

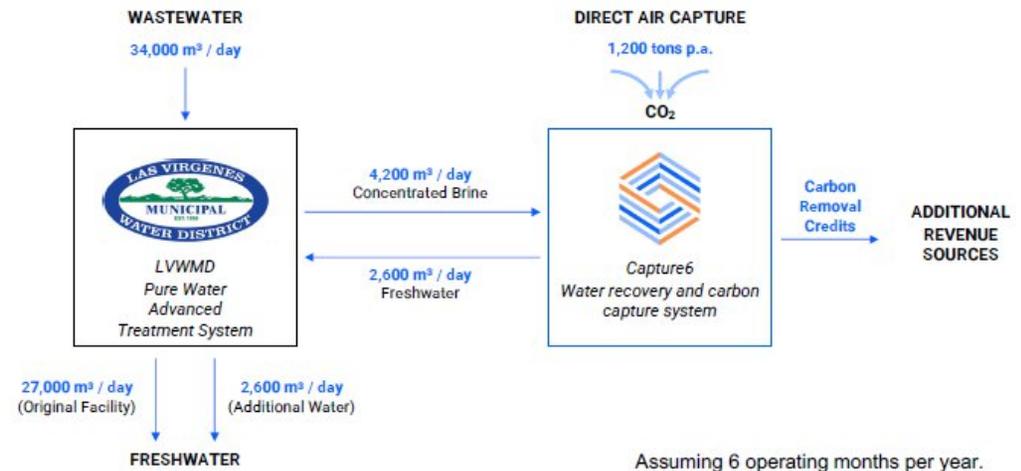
Zero Liquid Discharge

- Met with Capture6 on September 12, 2023.
- Jacobs has also investigated other forms of Zero Liquid Discharge
- Benefits include elimination of one of the highest cost items of the project with the longest schedule (ROC Pipeline)



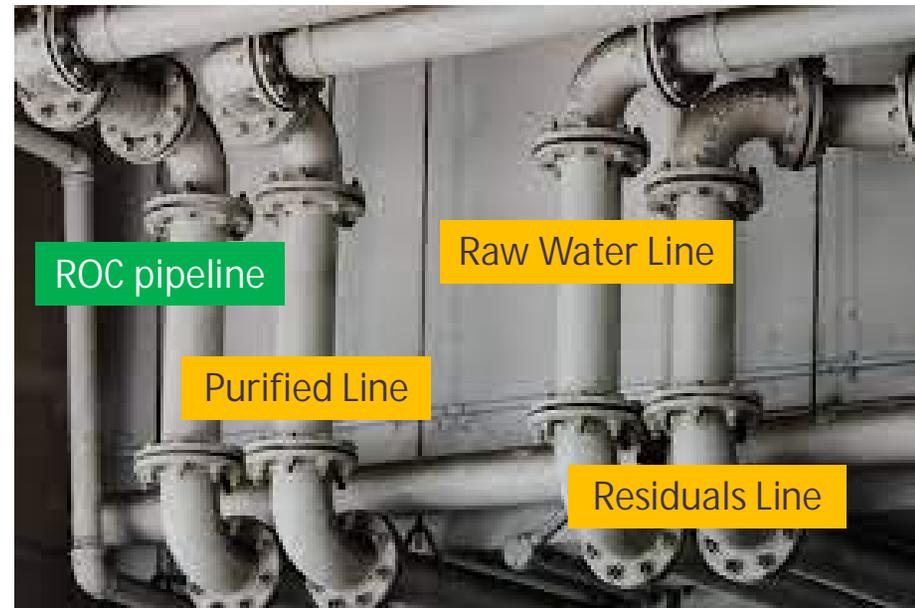
Zero Liquid Discharge Considerations

- Most technologies are new with limited current applications
- ZLD adds a new facility that must have the same reliability as the AWPf
- There is not currently space at the AWPf site to add the facilities needed for ZLD
- Many of the technologies do not have an established permitting pathway



Inclusion of other pipelines in PDB scope

- Staff has had discussions with PDB team on feasibility of including three other pipelines into their scope of work
- Construction would still be competitively bid
- Possible savings in traffic control, material procurement, construction management, etc.
- Schedule benefits of including under the PDB umbrella, and ease in coordination of when the lines are connected to the AWPf
- Minimization of construction impacts and possibility of shared trenches pending coordination with DDW





Malibu Creek

Thank You

Constraints to Physical Expansion

- Existing Infrastructure
- Stranded Assets
- Maintenance and Operation of the AWWPF
- Site Constraints

JPA is Building a “Right-Sized” Facility



Artificial Intelligence

- Demo Facility work has included Artificial Intelligence (AI) and Machine Learning (ML) studies covered by federal and international grant funding evaluation of water quality and membrane process performance as part of grants from MWD and METI (Japanese Ministry of Economy, Trade and Industry).
- AI was not used as a selection criteria for the teams, but it is assumed that this will be a feature of the facility and will be pursued through grants
- AI and ML is rapidly evolving, and eventual technology employed will likely be selected later in the design and construction process

