# NOTICE OF SPECIAL MEETING
# OF THE
# SOUTH ORANGE COUNTY WASTEWATER AUTHORITY
# PROJECT COMMITTEE 2

## October 26, 2026
## 2:00 pm

NOTICE IS HEREBY GIVEN that a Special Meeting of the South Orange County Wastewater Authority (SOCWA) Project Committee 2 was called to be held on **October 26, 2026, at 2:00 pm.** SOCWA staff will be present and conducting the meeting at the SOCWA Administrative Office located at 34156 Del Obispo Street, Dana Point, California.

THE SOCWA MEETING ROOM IS WHEELCHAIR ACCESSIBLE. IF YOU REQUIRE ANY SPECIAL DISABILITY RELATED ACCOMMODATIONS, PLEASE CONTACT THE SOUTH ORANGE COUNTY WASTEWATER AUTHORITY SECRETARY'S OFFICE AT (949) 234-5400 AT LEAST TWENTY-FOUR (24) HOURS PRIOR TO THE SCHEDULED MEETING TO REQUEST SUCH ACCOMMODATIONS. THIS AGENDA CAN BE OBTAINED IN ALTERNATE FORMAT UPON REQUEST TO THE SOUTH ORANGE COUNTY WASTEWATER AUTHORITY'S SECRETARY AT LEAST TWENTY-FOUR (24) HOURS PRIOR TO THE SCHEDULED MEETING. MEMBERS OF THE PUBLIC HAVE THE OPTION TO PARTICIPATE IN AND MAY JOIN THE MEETING REMOTELY VIA VIDEO CONFERENCE FOR VISUAL INFORMATION ONLY (USE ZOOM LINK BELOW) AND BY TELECONFERENCE FOR AUDIO PARTICIPATION (USE PHONE NUMBERS BELOW). THIS IS A PHONE-CALL MEETING AND NOT A WEB-CAST MEETING, SO PLEASE REFER TO AGENDA MATERIALS AS POSTED ON THE WEBSITE AT WWW.SOCWA.COM. ON YOUR REQUEST, EVERY EFFORT WILL BE MADE TO ACCOMMODATE PARTICIPATION. FOR PARTIES PARTICIPATING REMOTELY, PUBLIC COMMENTS WILL BE TAKEN DURING THE MEETING FOR ORAL COMMUNICATION IN ADDITION TO PUBLIC COMMENTS RECEIVED BY PARTIES PARTICIPATING IN PERSON. COMMENTS MAY BE SUBMITTED PRIOR TO THE MEETING VIA EMAIL TO ASSISTANT SECRETARY LYNDA MAY AT LMAY@SOCWA.COM WITH THE SUBJECT LINE "REQUEST TO PROVIDE PUBLIC COMMENT." IN THE EMAIL, PLEASE INCLUDE YOUR NAME, THE ITEM YOU WISH TO SPEAK ABOUT, AND THE TELEPHONE NUMBER YOU WILL BE CALLING FROM SO THAT THE COORDINATOR CAN UN-MUTE YOUR LINE WHEN YOU ARE CALLED UPON TO SPEAK. THOSE MAKING PUBLIC COMMENT REQUESTS REMOTELY VIA TELEPHONE IN REAL-TIME WILL BE ASKED TO PROVIDE YOUR NAME, THE ITEM YOU WISH TO SPEAK ABOUT, AND THE TELEPHONE NUMBER THAT YOU ARE CALLING FROM SO THE COORDINATOR CAN UN-MUTE YOUR LINE WHEN YOU ARE CALLED UPON TO SPEAK. ONCE THE MEETING HAS COMMENCED, THE CHAIR WILL INVITE YOU TO SPEAK AND ASK THE COORDINATOR TO UN-MUTE YOUR LINE AT THE APPROPRIATE TIME.

AGENDA ATTACHMENTS AND OTHER WRITINGS THAT ARE DISCLOSABLE PUBLIC RECORDS DISTRIBUTED TO ALL, OR A MAJORITY OF, THE MEMBERS OF THE SOUTH ORANGE COUNTY WASTEWATER AUTHORITY PROJECT COMMITTEE 2 IN CONNECTION WITH A MATTER SUBJECT FOR DISCUSSION OR CONSIDERATION AT AN OPEN MEETING OF THE PROJECT COMMITTEE 2 ARE AVAILABLE FOR PUBLIC INSPECTION IN THE AUTHORITY ADMINISTRATIVE OFFICE LOCATED AT 34156 DEL OBISPO STREET, DANA POINT, CA ("AUTHORITY OFFICE") OR BY PHONE REQUEST MADE TO THE AUTHORITY OFFICE AT 949-234-5400. IF SUCH WRITINGS ARE DISTRIBUTED TO MEMBERS OF THE PROJECT COMMITTEE 2 LESS THAN TWENTY-FOUR (24) HOURS PRIOR TO THE MEETING, THEY WILL BE AVAILABLE IN THE RECEPTION AREA OF THE AUTHORITY OFFICE AT THE SAME TIME AS THEY ARE DISTRIBUTED TO THE PROJECT COMMITTEE 2 AND SENT TO ANY REMOTE PARTICIPANTS REQUESTING EMAIL DELIVERY OR POSTED ON SOCWA'S WEBSITE. IF SUCH WRITINGS ARE DISTRIBUTED IMMEDIATELY PRIOR TO, OR DURING, THE MEETING, THEY WILL BE AVAILABLE IN THE MEETING ROOM OR IMMEDIATELY UPON VERBAL REQUEST TO BE DELIVERED VIA EMAIL TO REQUESTING PARTIES PARTICIPATING REMOTELY.

**THE PUBLIC MAY PARTICIPATE REMOTELY BY VIRTUAL MEANS. FOR AUDIO OF MEETING USE THE CALL IN PHONE NUMBERS BELOW AND FOR VIDEO USE THE ZOOM LINK BELOW.**

Join Zoom Meeting
https://socwa.zoom.us/

Meeting ID: 835 3545 3121
Passcode: 892819

One Tap Mobile
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+16699006833,, 83535453121#,,,,*892819# US (San Jose)

# AGENDA

1. Call Meeting to Order

2. Public Comments

*THOSE WISHING TO ADDRESS THE PROJECT COMMITTEE ON ANY ITEM LISTED ON THE AGENDA WILL BE REQUESTED TO IDENTIFY AT THE OPENING OF THE MEETING AND PRIOR TO THE CLOSE OF THE MEETING. THE AUTHORITY REQUESTS THAT YOU STATE YOUR NAME WHEN MAKING THE REQUEST IN ORDER THAT YOUR NAME MAY BE CALLED TO SPEAK ON THE ITEM OF INTEREST. THE CHAIR OF THE MEETING WILL RECOGNIZE SPEAKERS FOR COMMENT AND GENERAL MEETING DECORUM SHOULD BE OBSERVED IN ORDER THAT SPEAKERS ARE NOT TALKING OVER EACH OTHER DURING THE CALL.*

3. JB Latham Facility Plan Assessment Update – Wastewater Alternatives Analysis .....1

   ACTION: Staff recommends the PC2 Board 1) Remove the Option B "without OCWRP" alternatives from further consideration based on the recent SMWD Board approval to reconstruct the OCWRP; and 2) Receive and File HDR's presentation.

4. JB Latham Facility Plan Assessment Update – Draft Evaluation Criteria, Weighting, and Scoring Methodology.....100

   ACTION: Staff recommends that the PC 2 Board adopt the weighting criteria proposed by SOCWA staff as shown in Table 1 of this report.

Adjournment

I hereby certify that the foregoing Notice was personally emailed or mailed to each member of the SOCWA Project Committee 2 at least 24 hours prior to the scheduled time of the Special Meeting referred to above.

I hereby certify that the foregoing Notice was posted at least 24 hours prior to the time of the above-referenced Project Committee meeting at the usual agenda posting location of the South Orange County Wastewater Authority and at www.socwa.com.

Dated this 22nd day of October 2026.

Lynda May

Lynda May, Assistant Secretary
SOUTH ORANGE COUNTY WASTEWATER AUTHORITY

# Agenda Item 3

**Project Committee 2 Special Meeting**

**Meeting Date:** October 26, 2026

**TO:** Project Committee 2 Board of Directors

**FROM:** Amber Boone, General Manager

**STAFF CONTACT:** Jim Burror, Deputy General Manager / Chief Engineer
Roni Grant, Capital Improvement Program Manager

**SUBJECT:** J.B. Latham Facility Plan Assessment Update – Wastewater Alternatives Analysis [Project Committee 2]

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## Executive Summary

HDR will present an update on the J.B. Latham (JBL) Treatment Plant Facility Planning Assessment (FPA), including a review of the preliminary wastewater treatment and solids management alternatives. The scope of work for this JBL FPA considers PC2 reviewing a range of feasible alternatives suitable for JBL. This presentation provides information on the fifteen feasible alternatives currently being considered. The Project scope is to narrow the treatment alternatives down to four alternatives.

## Background

The J.B. Latham Treatment Plant (JBL) provides wastewater treatment services to SOCWA member agencies and stakeholders representing a significant long-term infrastructure investment. SOCWA retained HDR to prepare a Facility Planning Assessment (FPA) to evaluate the condition and capacity of existing facilities, identify future treatment requirements, and develop alternatives for the long-term operation and improvement of JBL. The FPA will establish the technical and economic basis for recommending improvements to be further developed during Phase 2, the Facility Master Plan.
The FPA includes evaluation of existing facilities, projected wastewater flows and loads, liquid treatment processes, solids management, effluent utilization, facility reliability and resiliency, and associated capital and operating costs. The planning effort considers a 30-year horizon.

## Discussion

HDR began the wastewater treatment alternatives planning by conducting an initial condition assessment. HDR's condition assessment identified rehabilitation and replacement needs involving major liquid treatment, solids handling, structural, and electrical facilities.

SOCWA's existing capital improvement program includes approximately $50 million in planned JBL improvements, as referenced in HDR's presentation. The FPA will consider how these improvements relate to the proposed treatment alternatives, including opportunities to coordinate projects, avoid duplicative investments, and identify improvements that may no longer be necessary under certain alternatives.

HDR then began liquids and solids treatment alternatives that would be implementable within the JBL facility footprint. HDR developed preliminary wastewater treatment alternatives addressing the continued use, rehabilitation, and modification of existing JBL facilities. The alternatives evaluate different treatment technologies and configurations within Plant 1 and Plant 2, including membrane bioreactors (MBR), modified Ludzack-Ettinger (MLE) treatment, moving-bed and integrated fixed-film activated sludge (IFAS) processes, and conventional treatment with nitrification and partial denitrification.

The treatment alternatives also considered potential recycled water production and associated tertiary and advanced treatment improvements.

Two principal regional wastewater flow scenarios are being evaluated:

- OCWRP is reconstructed or "With OCWRP": This scenario includes the reconstruction of SMWD's OCWRP, with JBL continuing to receive solids for treatment and not serving as a backup for liquids processing. This scenario also includes receiving 1.5mgd from MNWD starting 2029.

- OCWRP is not reconstructed or "Without OCWRP": Wastewater flows (liquids and solids) from the OCWRP would continue to be directed to JBL. This scenario also includes receiving 1.5mgd from MNWD starting 2029.

The alternatives include combinations of treatment technologies, facility configurations, and recycled water production. The evaluation considers the ability to reuse existing infrastructure, accommodate future flows, maintain treatment reliability, and meet potential future regulatory and beneficial reuse requirements. Preliminary capital cost estimates for the liquid treatment alternatives range from approximately $40 million to $107 million (Liquids Cost Summary slide), depending on treatment technology, plant configuration, and effluent utilization requirements.

HDR has also developed alternatives addressing the long-term management of primary sludge, waste activated sludge, anaerobic digestion, and Biosolids processing. The alternatives range from continued operation with limited improvements to additional thickening, digestion, and dewatering improvements intended to achieve Class B Biosolids treatment requirements, increase treatment capacity, and improve long-term Biosolids management flexibility. Preliminary capital cost estimates for the solids management alternatives range from approximately $0.6 million to $22.9 million (Solids Cost Summary slide). The alternatives also consider opportunities to improve Biosolids management flexibility, reduce long-term disposal risks, and evaluate emerging treatment technologies.

The SMWD Board of Directors awarded the construction of the OCWRP at its October 19, 2026, meeting. Staff concludes from this decision that the "Without OCWRP" alternatives would be removed from further consideration to narrow the wastewater treatment scenarios being evaluated.

**Financial Impact**

There is no immediate financial impact associated with receiving the presentation and providing direction regarding the alternatives and evaluation methodology.

**Recommendation**

Staff recommends the PC2 Board 1) Remove the Option B “without OCWRP” alternatives from further consideration based on the recent SMWD Board approval to reconstruct the OCWRP; and 2) Receive and File HDR's presentation.

**Attachment:**

HDR – J.B. Latham Treatment Plant Facility Planning Assessment, PC 2 Board Meeting Presentation, October 26, 2026.

# PC2 Board Meeting

***JBL FPA Project Update***

*SOCWA*
*J.B. Latham Treatment Plant*
*Facility Planning Assessment*







October 26, 2026

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AGENDA

**01** Purpose, Goals, & Objective

**02** Review Project To-Date

**03** Liquids Alternatives

**04** Solids Alternatives

**05** Draft Evaluation Criteria

# 01



# Purpose, Goals, and Objective

# JBL FPA Project Purpose

- Phase 1: Facility Planning Assessment
  - To identify a range of treatment options, shortlist alternatives, and evaluate the alternatives to identify recommendation to advance to Phase 2 (Facility Master Plan).
- Existing Facilities Evaluation and Condition Assessment
- Wastewater Treatment Alternatives Development and Evaluation
  - Liquids Alternatives
  - Solids Alternatives

# JBL FPA Project Goals

1. Strengthen system resiliency to maintain reliable wastewater treatment over the long-term to reduce vulnerabilities and mitigate climate, regulatory, and operational risks.
2. Maximize reuse, both liquids and solids, for regional benefit while reducing effluent disposal risk.
3. Right-size treatment facilities for average and peak flow to develop an equitable Capital and O&M cost-sharing model for regional reliability.

# Objective

Obtain PC2 Board input and feedback on the SOCWA JBL FPA project to-date, liquids and solids treatment alternatives, and draft evaluation criteria and weighting.



**Review Project To-Date**



**Treatment Alternatives**



**Evaluation Criteria & Weighting**

# 02

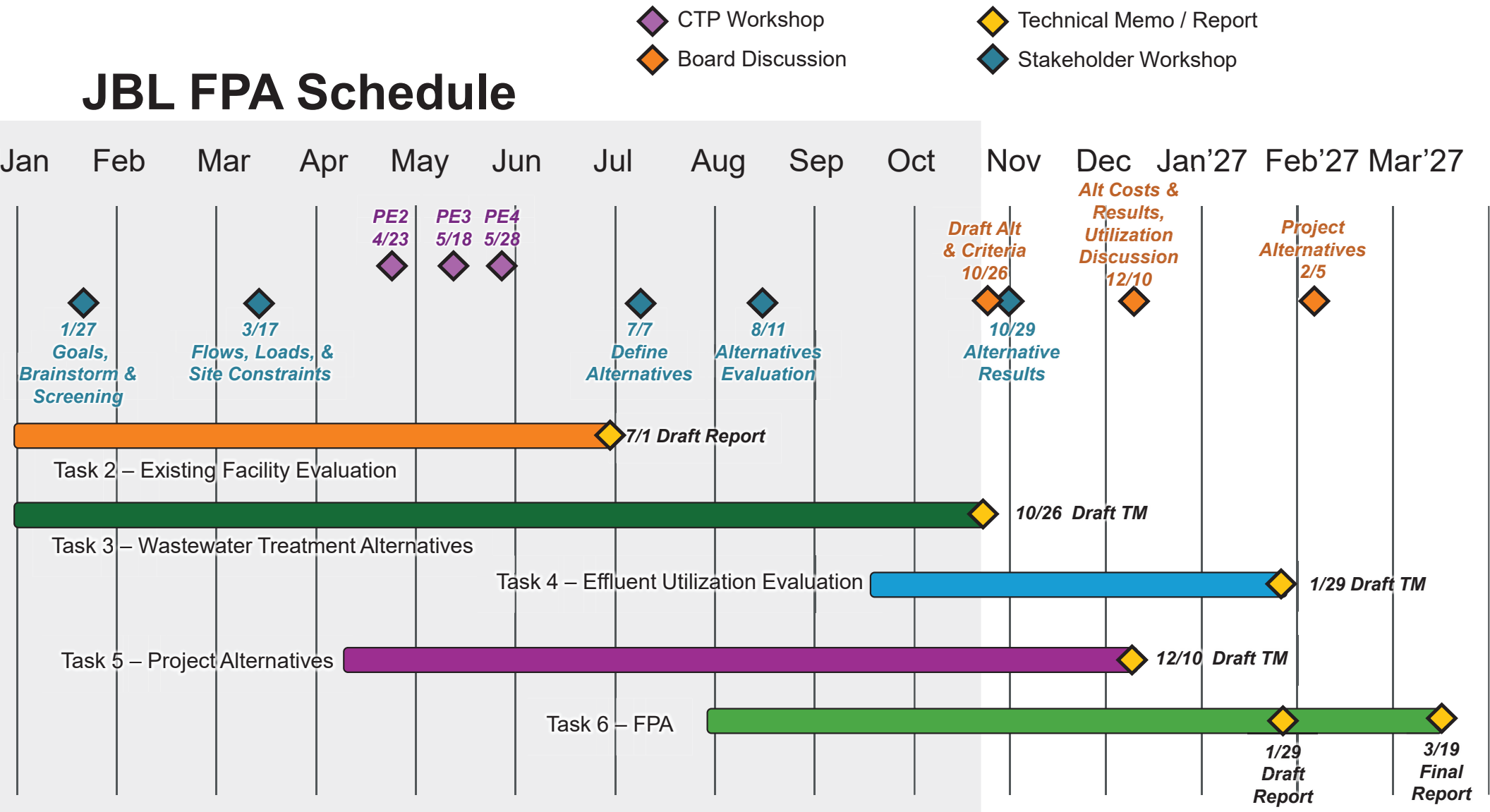


# Review Project To-Date

# Scope of Work

| | |
|---|---|
| **Task 1**<br>Project Management | • Project initiation & closeout<br>• Scope, schedule, budget management |
| **Task 2**<br>Existing Facility Evaluation | • Flows and loading<br>• **Condition Assessment Report**<br>• Process modeling<br>• Existing facility analysis<br>• **Prepare Technical Memo** |
| **Task 3**<br>Wastewater Treatment Alternatives | • Risk and resilience planning<br>• Regulatory assessment<br>• Treatment technology screening<br>• Site planning evaluation<br>• Development of treatment alternatives<br>• **Prepare Technical Memo** |
| **Task 4**<br>Effluent Utilization Evaluation | • Reuse infrastructure assessment<br>• Development of effluent alternatives<br>• Cost-Benefit analysis<br>• Draft and final screening and evaluation criteria<br>• **Prepare Technical Memo** |
| **Task 5**<br>Project Alternatives | • Define evaluation criteria<br>• Development of recommended alternatives<br>• **Prepare Technical Memo** |
| **Task 6**<br>Facility Planning Assessment | • **Prepare Draft Report**<br>• **Prepare Final Report** |

# JBL FPA Schedule



# Condition Assessment of Existing

- Performed a high-level assessment of major structural, process-mechanical, and electrical facilities at JBL.
  - Visual site inspection
  - Input from plant operations staff
  - Reviewed available asset records and previous condition assessments.
- Evaluated condition, obsolescence, and remaining useful life to identify rehabilitation and replacement needs.
- Used the findings to determine which existing facilities could be retained, rehabilitated, repurposed, or replaced.
- Carried the results into the facility planning alternatives to support practical, cost-effective improvements and lifecycle cost development.

**Headworks**





**Secondary Clarifier**

# Overall Site Liquids & Solids Condition Assessment

## SOLIDS ASSETS

**5 Years to Replace**

- Digester Heat Loops 1-4: Age and Corrosion
- Dewatering Centrifuges: Obsolete
- Flare: Corrosion
- WAS Pumps: Age
- Primary Sludge Pumps: Age

**10 Years to Replace**

- Digested Sludge Pumps and Sludge Grinder: Age
- Solids Handling Conveyor 1-4: Age
- Ferric Chloride System: Age
- Odor Control Scrubber: Age

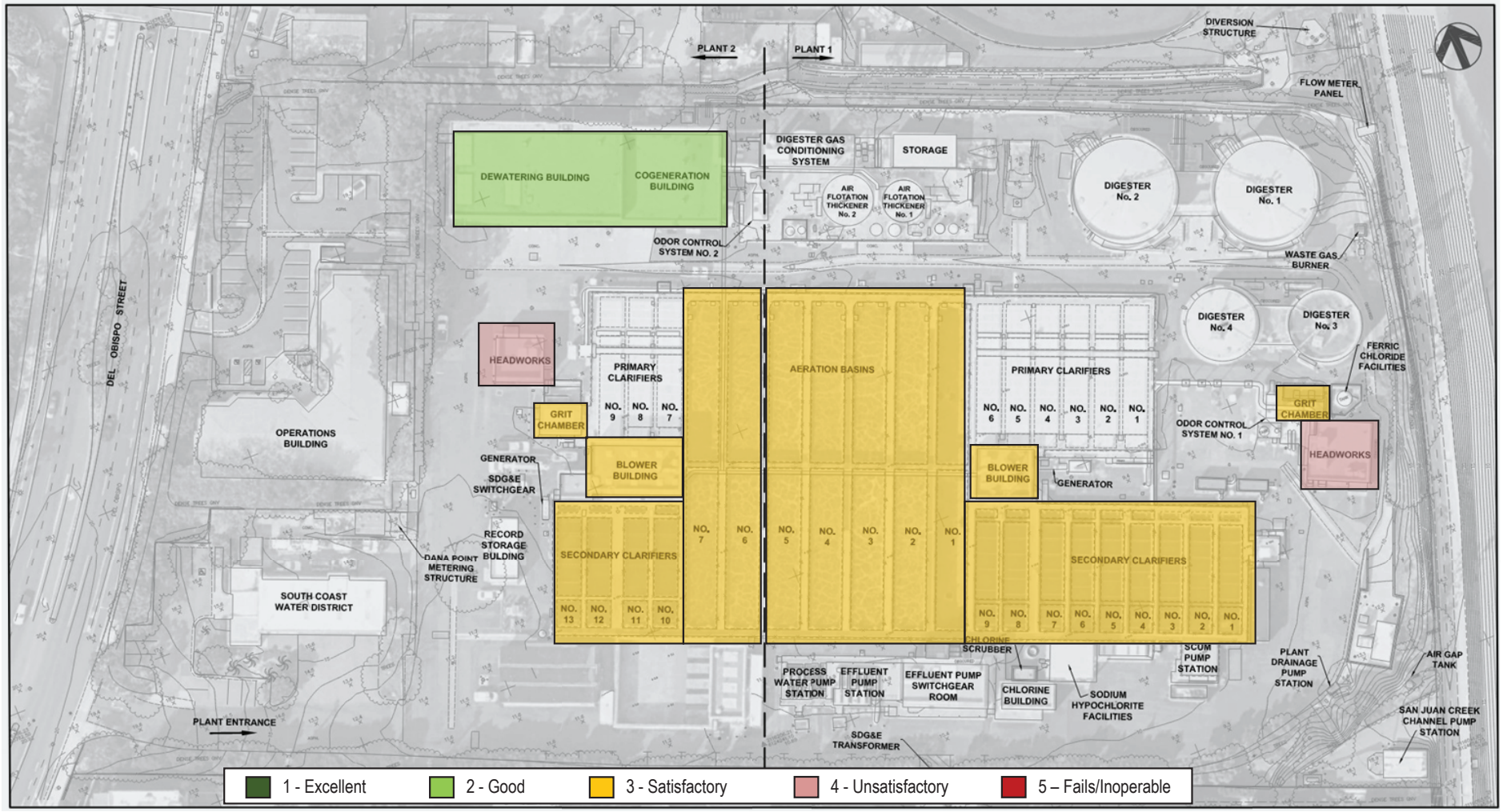
**15 Years to Replace**

- Digesters 1-4: Age
- Cogen Heat Pumps: Age
- Cogen Gas Treatment System: Age
- Centrifuge Polymer System: Age

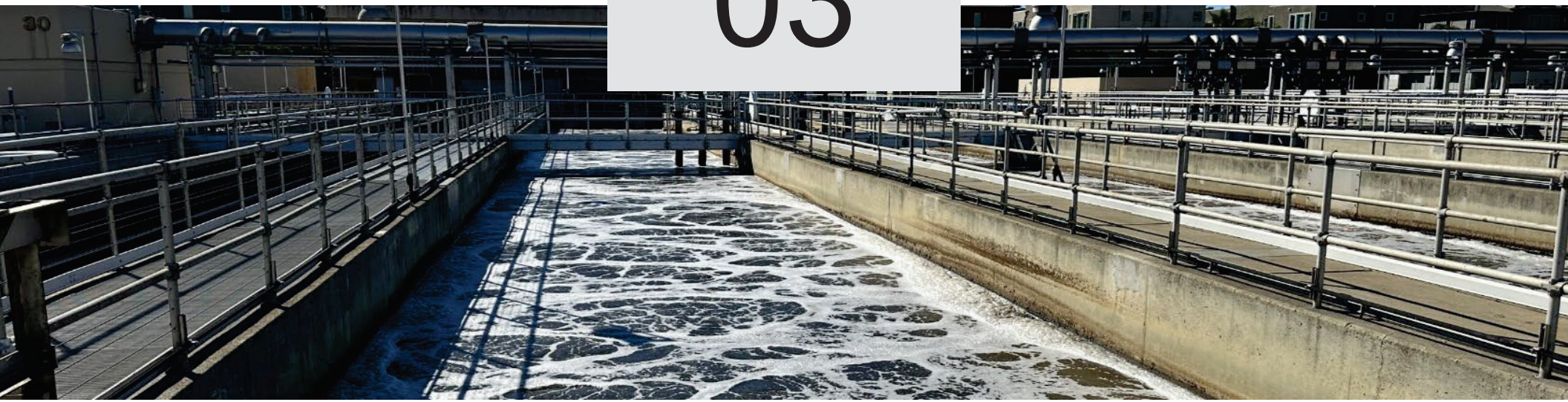


Corroded Chain and Flight in Secondary Clarifier

# Overall Site Structural Condition Assessment



# 03



# Liquids Alternatives Evaluation

# JBL Liquids Treatment Drivers

Key needs guiding liquids treatment improvements.



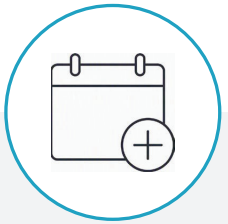
## Condition & Operations

Address facility condition and operational challenges.



## End-Use Requirements

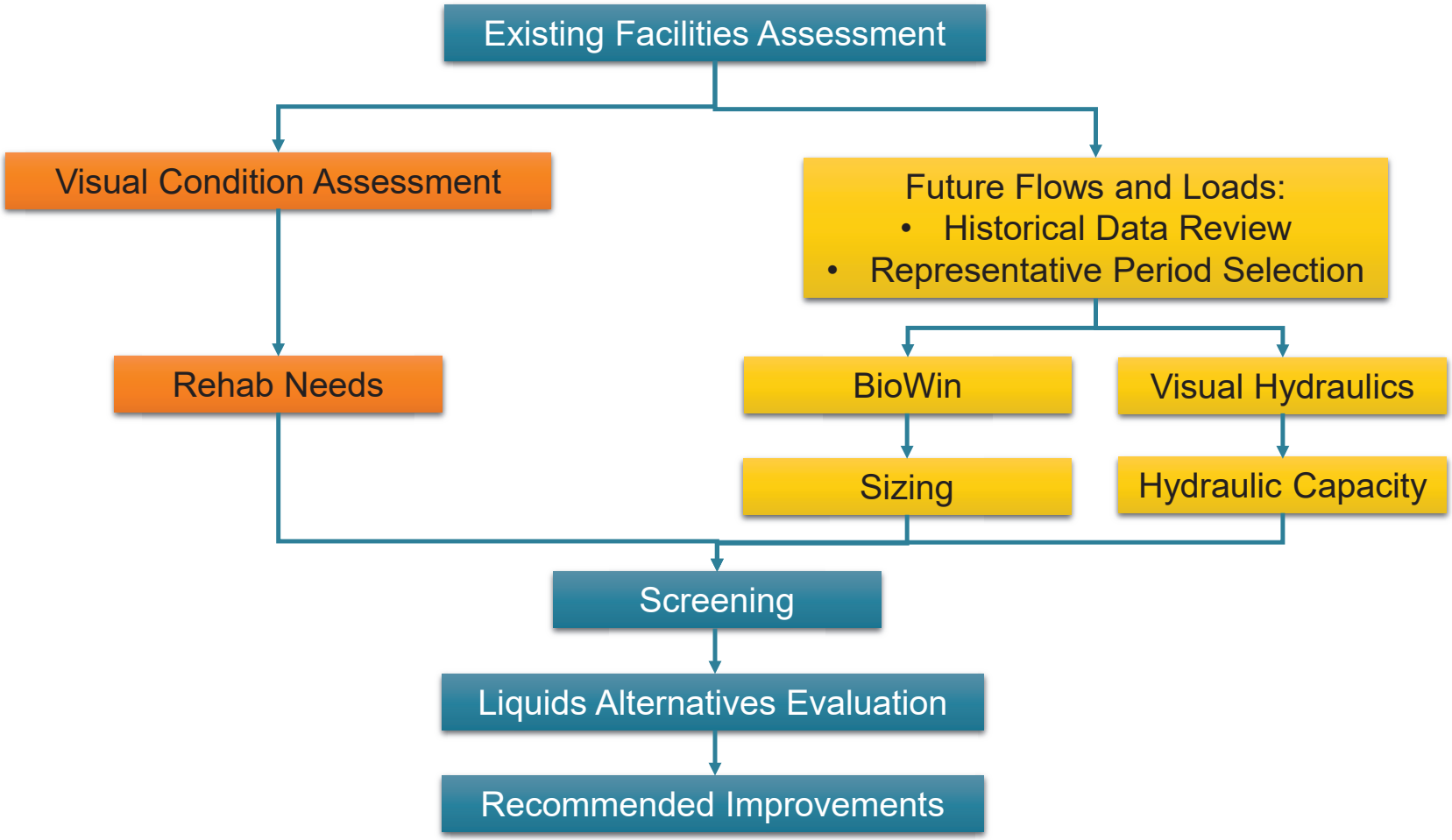
Provide treatment that meets waters end-use requirements.



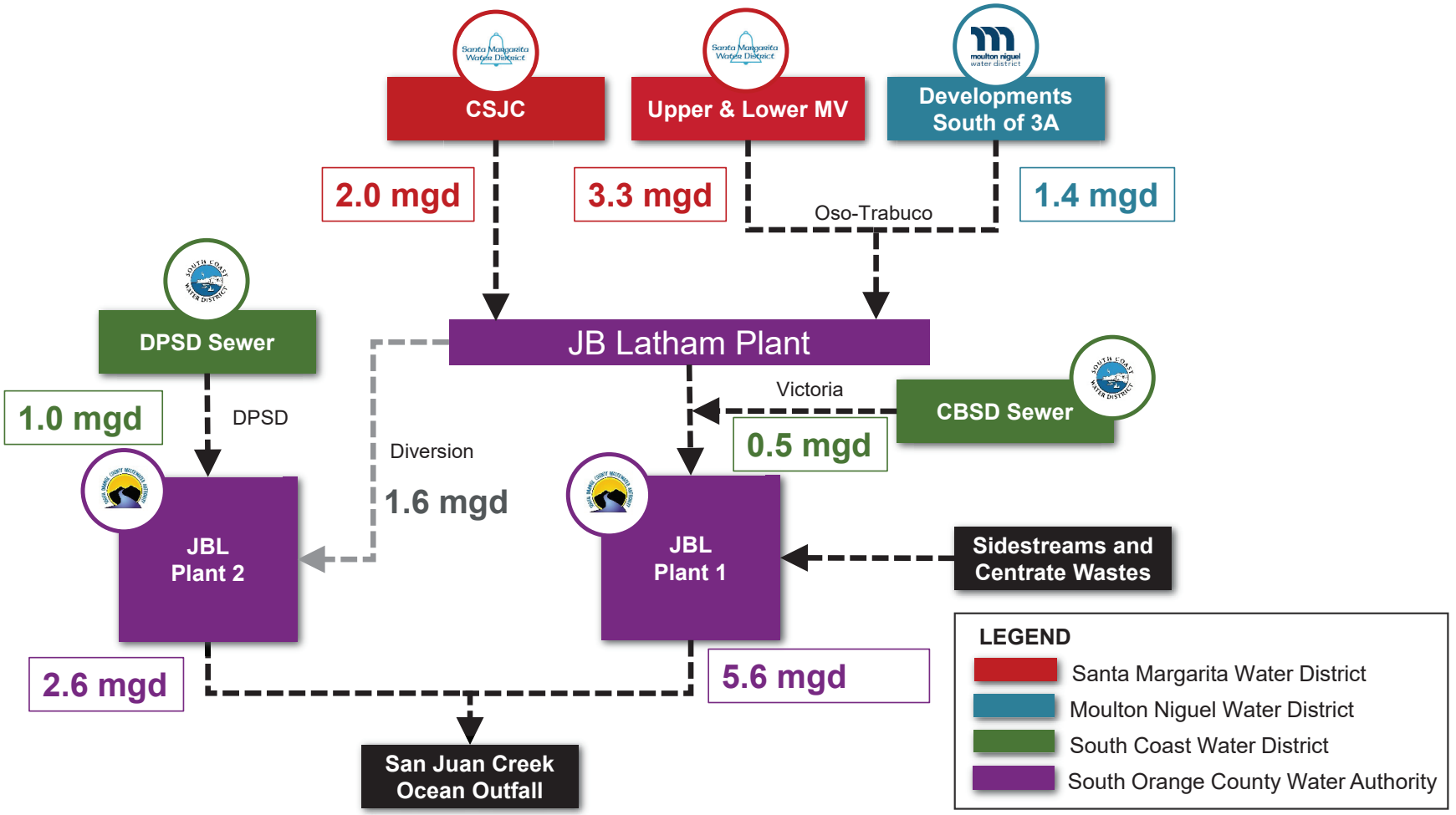
## Right-Size Facility

Plan facility size and layout to add treatment for anticipated future needs.

# Liquids Alternatives Planning Methodology

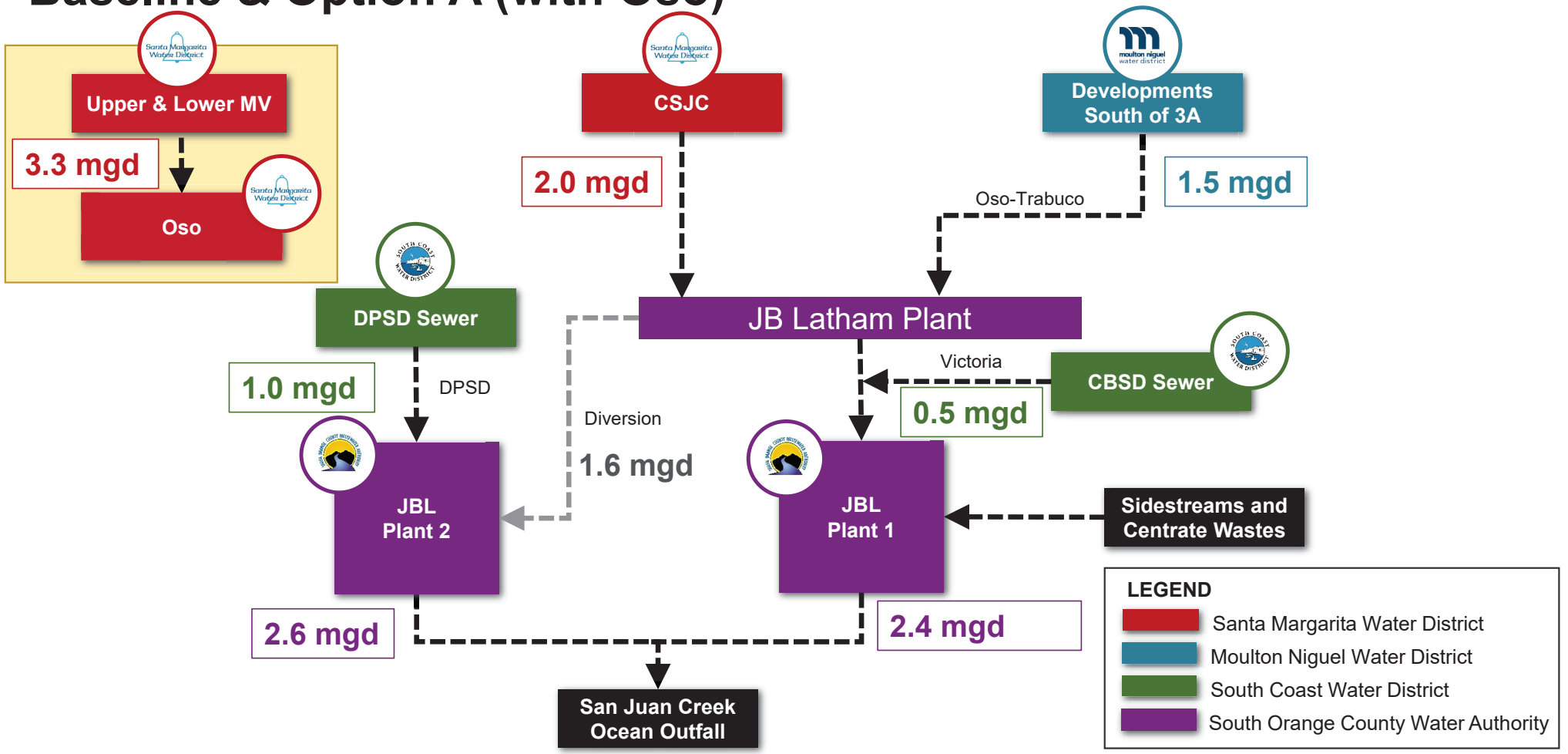


# Current Member Agency Contributions to JBL



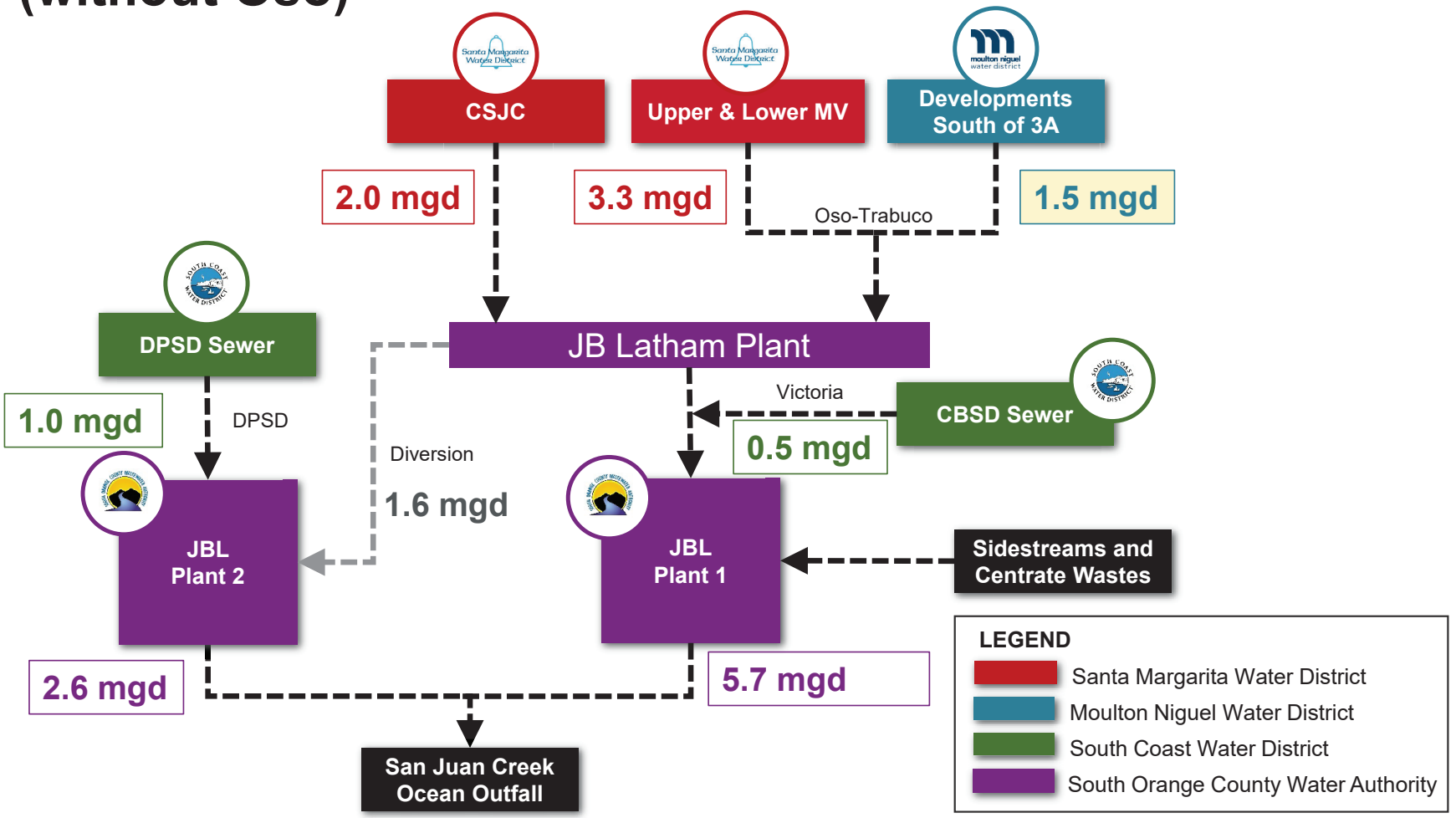

2024-2025 Agency Flows Dataset.
SMWD Upper and Lower MV Flows: Assume 3.25 mgd, rounded to 3.3 mgd, based on SMWD Master Plan.

# Future Member Agency Contributions to JBL: Baseline & Option A (with Oso)




2024-2025 Agency Flows Dataset.
SMWD Upper and Lower MV Flows: Assume 3.25 mgd, rounded to 3.3 mgd, based on SMWD Master Plan.

# Future Member Agency Contributions to JBL: Option B (without Oso)




2024-2025 Agency Flows Dataset.
SMWD Upper and Lower MV Flows: Assume 3.25 mgd, rounded to 3.3 mgd, based on SMWD Master Plan.

# Baseline and JBL Treatment Alternative Flows

| Option | Agency Sewage Flow to JBL (mgd) | | | | | | | OCWRP (mgd) | JBL Treatment (mgd) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | SCWD (DPSD Sewer) | SCWD (CBSD Sewer) | MNWD | SMWD (Upper & Lower MV) | SMWD (CSJC) | Total Influent | OCWRP WAS | NPR (MBR) | Ocean Discharge (cBOD-Only) | NPR (Tertiary + Disinfection) | IPR / DPR (AWP) |
| Baseline (A.1) | 1.0 | 0.5 | 1.5 | 0.0 | 2.0 | 5.0 | ✓ | 3.3 | 5.0 | 0.0 | 0.0 |
| A - Option with OCWRP | | | | | | | | | | | |
| A.2 | 1.0 | 0.5 | 1.5 | 0.0 | 2.0 | 5.0 | ✓ | 3.3 | 3.0 | 2.0 | 0.0 |
| B - Options without OCWRP | | | | | | | | | | | |
| B.2 | 1.0 | 0.5 | 1.5 | 3.3 | 2.0 | 8.3 | | 0.0 | 6.3 | 2.0 | 0.0 |

Highlighted = Changes from Top Down

**JBL Treatment Distinctions**

1. Baseline and A.2: With Oso, JBL plant will receive WAS from Oso
2. A.2: 2.0 mgd Title 22 non-potable reuse at JBL (add tertiary and disinfection train)
3. B.2: Includes sewage from SMWD's Upper and Lower MV (without Oso); therefore, higher ocean discharge to JBL

2024-2025 Agency Flows Dataset.
SMWD Upper and Lower MV Flows: Assume 3.25 mgd, rounded to 3.3 mgd, based on SMWD Master Plan.

# Technology Screening Considerations – Fatal Flaw Analysis

| Criterion | Description |
|---|---|
| Technology Maturity | Is the technology established? |
| Land Requirements/Site Constraints | Can the technology fit onsite? |
| Permitting | Can the technology be permitted? Does the technology have potential to push District to Title V Air Permit? |
| Financial | Does the technology increase annual operating costs or increase capital projects (e.g., biosolids management, biogas production, struvite formation potential, etc) |
| Vendor Competition | Does the technology have multiple vendors or is it a sole-source technology? |
| End Use Diversification | Does the technology limit end use options and/or limit options to status quo? |
| Regulatory | Will the technology provide ability to meet potential future regulatory requirements |

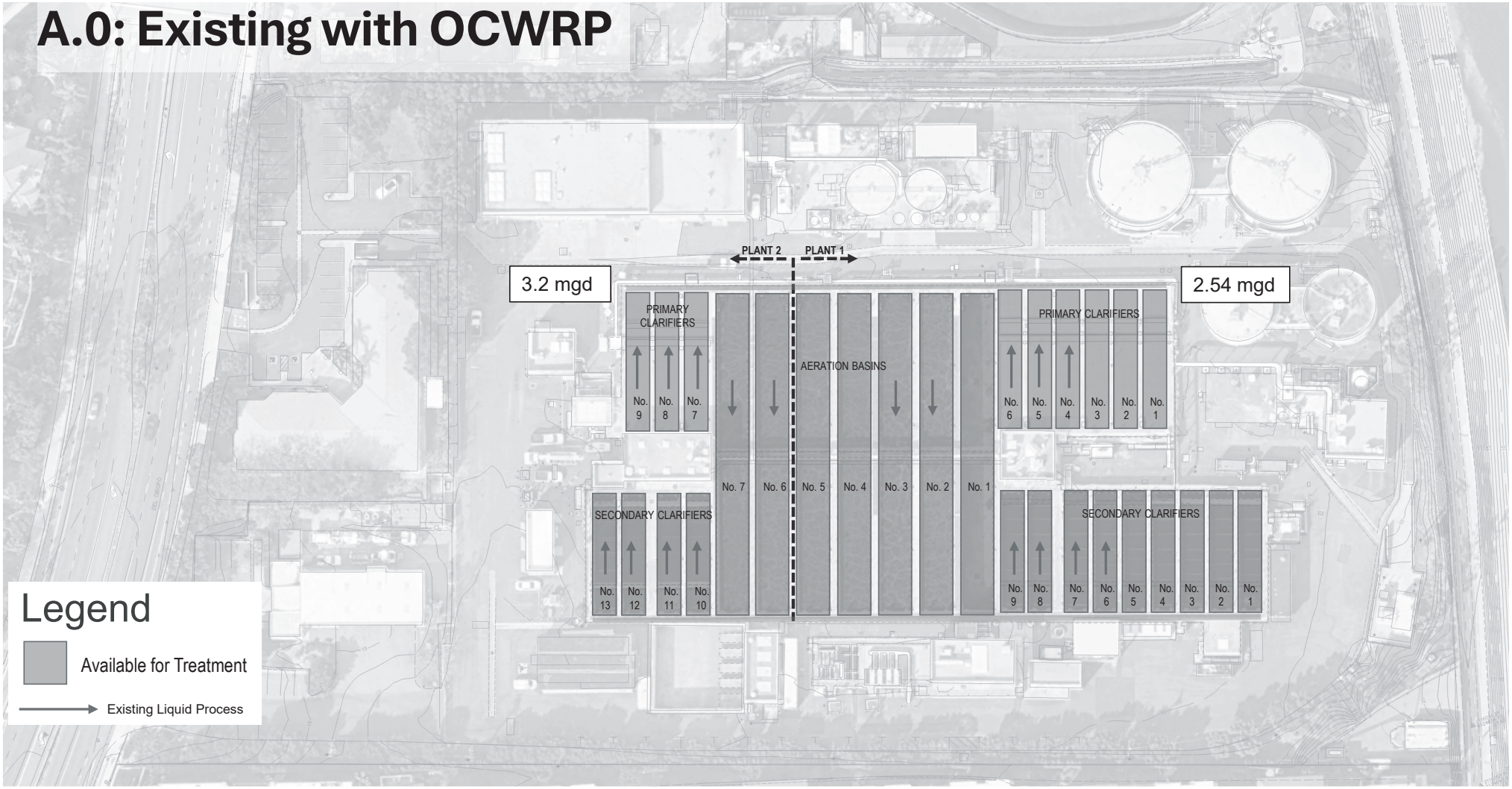
# Model Alternatives Summary

| Option | Ocean Discharge | Non-Potable Reuse | Total |
|---|---|---|---|
| | | | |
| E - Existing (Baseline) | | | |
| A.0 (A, with OCWRP) | 5.3 mgd (cBOD) | - | 5.3 mgd |
| B.0 (B, without OCWRP) | 8.3 mgd (cBOD) | - | 8.3 mgd |
| A - Options with OCWRP | | | |
| 1A.1 | 3.3 mgd (cBOD) | 2.0 mgd (MBR) | 5.3 mgd |
| 1A.2 | 3.3 mgd (cBOD) | 2.0 mgd (MLE) | 5.3 mgd |
| 1A.3 | 3.3 mgd (cBOD) | 2.0 mgd (MOB/IFAS) | 5.3 mgd |
| 1A.4 | 3.3 mgd (cBOD) | 2.0 mgd (Nitrif) | 5.3 mgd |
| 2A.1 | 3.3 mgd (cBOD) | 2.0 mgd (MBR) | 5.3 mgd |
| 2A.4a | 3.3 mgd (cBOD) | 2.0 mgd (Nitrif) | 5.3 mgd |
| 2A.4b | 3.3 mgd (cBOD) | 2.0 mgd (Nitrif, Designated Use) | 5.3 mgd |
| B - Options without OCWRP | | | |
| 1B.1 | 6.3 mgd (cBOD) | 2.0 mgd (MBR) | 8.3 mgd |
| 1B.3 | 6.3 mgd (cBOD) | 2.0 mgd (MOB/IFAS) | 8.3 mgd |
| 1B.4 | 6.3 mgd (cBOD) | 2.0 mgd (Nitrif) | 8.3 mgd |
| 2B.1 | 6.3 mgd (cBOD) | 2.0 mgd (MBR) | 8.3 mgd |
| 2B.4a | 6.3 mgd (cBOD) | 2.0 mgd (Nitrif) | 8.3 mgd |
| 2B.4b | 6.3 mgd (cBOD) | 2.0 mgd (Nitrif, Designated Use) | 8.3 mgd |

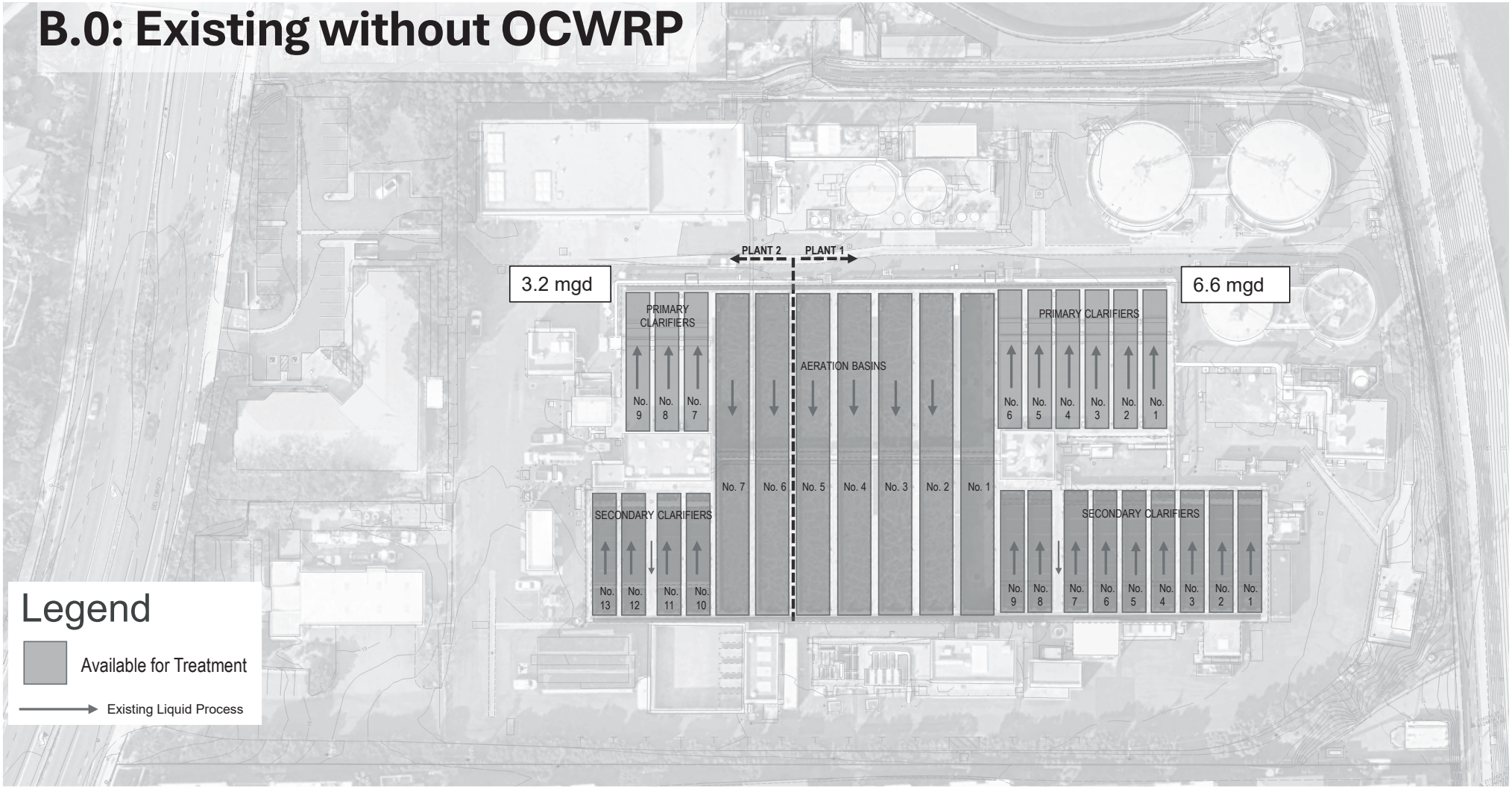
# Model Alternatives Summary

| Option | Ocean Discharge | Non-Potable Reuse | Total |
|---|---|---|---|
| | | | |
| **E - Existing (Baseline)** | | | |
| **A.0 (A, with OCWRP)** | **5.3 mgd (cBOD)** | **-** | **5.3 mgd** |
| **B.0 (B, without OCWRP)** | **8.3 mgd (cBOD)** | **-** | **8.3 mgd** |
| A - Options with OCWRP | | | |
| 1A.1 | 3.3 mgd (cBOD) | 2.0 mgd (MBR) | 5.3 mgd |
| 1A.2 | 3.3 mgd (cBOD) | 2.0 mgd (MLE) | 5.3 mgd |
| 1A.3 | 3.3 mgd (cBOD) | 2.0 mgd (MOB/IFAS) | 5.3 mgd |
| 1A.4 | 3.3 mgd (cBOD) | 2.0 mgd (Nitrif) | 5.3 mgd |
| 2A.1 | 3.3 mgd (cBOD) | 2.0 mgd (MBR) | 5.3 mgd |
| 2A.4a | 3.3 mgd (cBOD) | 2.0 mgd (Nitrif) | 5.3 mgd |
| 2A.4b | 3.3 mgd (cBOD) | 2.0 mgd (Nitrif, Designated Use) | 5.3 mgd |
| B - Options without OCWRP | | | |
| 1B.1 | 6.3 mgd (cBOD) | 2.0 mgd (MBR) | 8.3 mgd |
| 1B.3 | 6.3 mgd (cBOD) | 2.0 mgd (MOB/IFAS) | 8.3 mgd |
| 1B.4 | 6.3 mgd (cBOD) | 2.0 mgd (Nitrif) | 8.3 mgd |
| 2B.1 | 6.3 mgd (cBOD) | 2.0 mgd (MBR) | 8.3 mgd |
| 2B.4a | 6.3 mgd (cBOD) | 2.0 mgd (Nitrif) | 8.3 mgd |
| 2B.4b | 6.3 mgd (cBOD) | 2.0 mgd (Nitrif, Designated Use) | 8.3 mgd |

# A.0: Existing with OCWRP



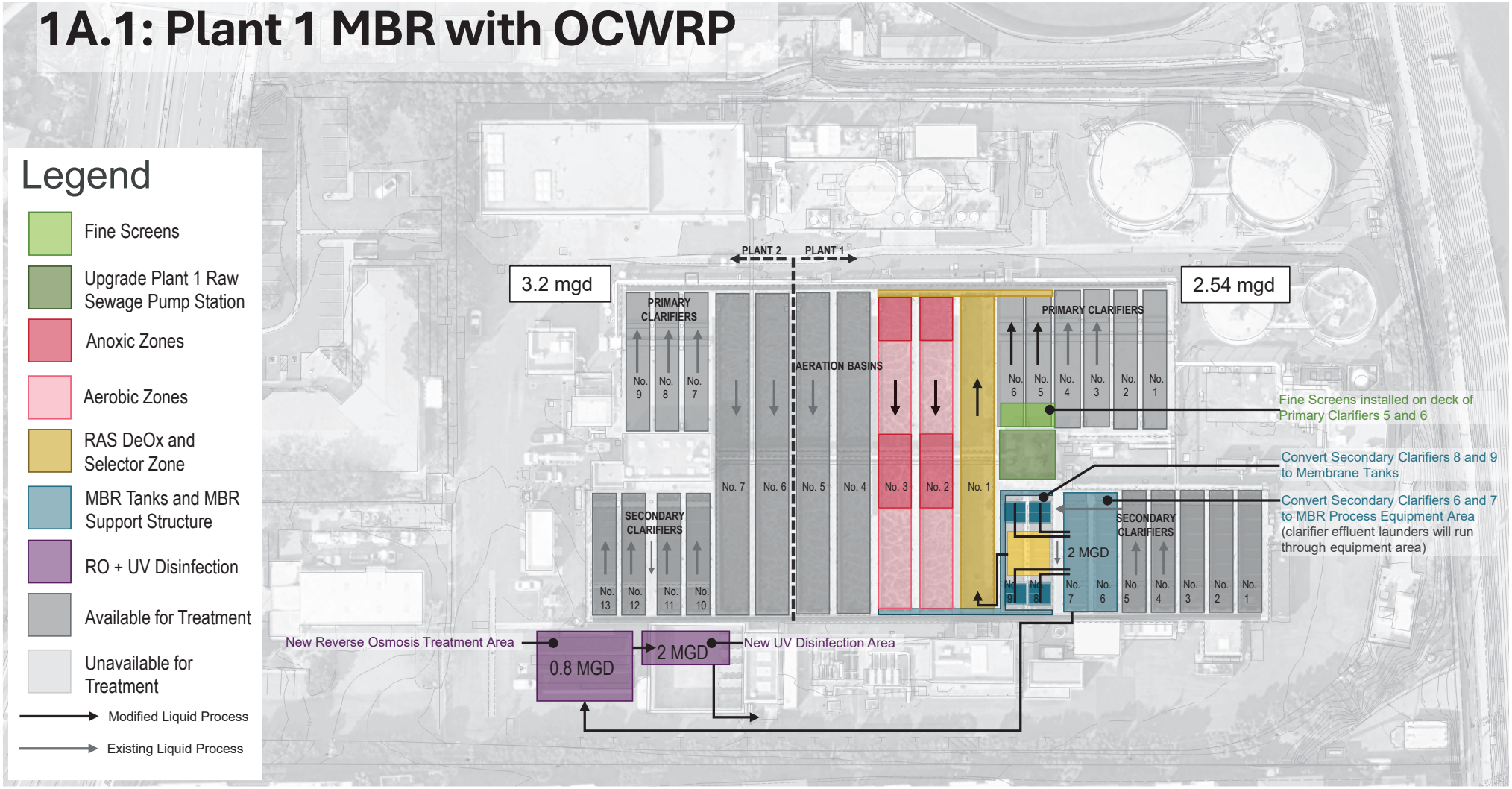
# B.0: Existing without OCWRP



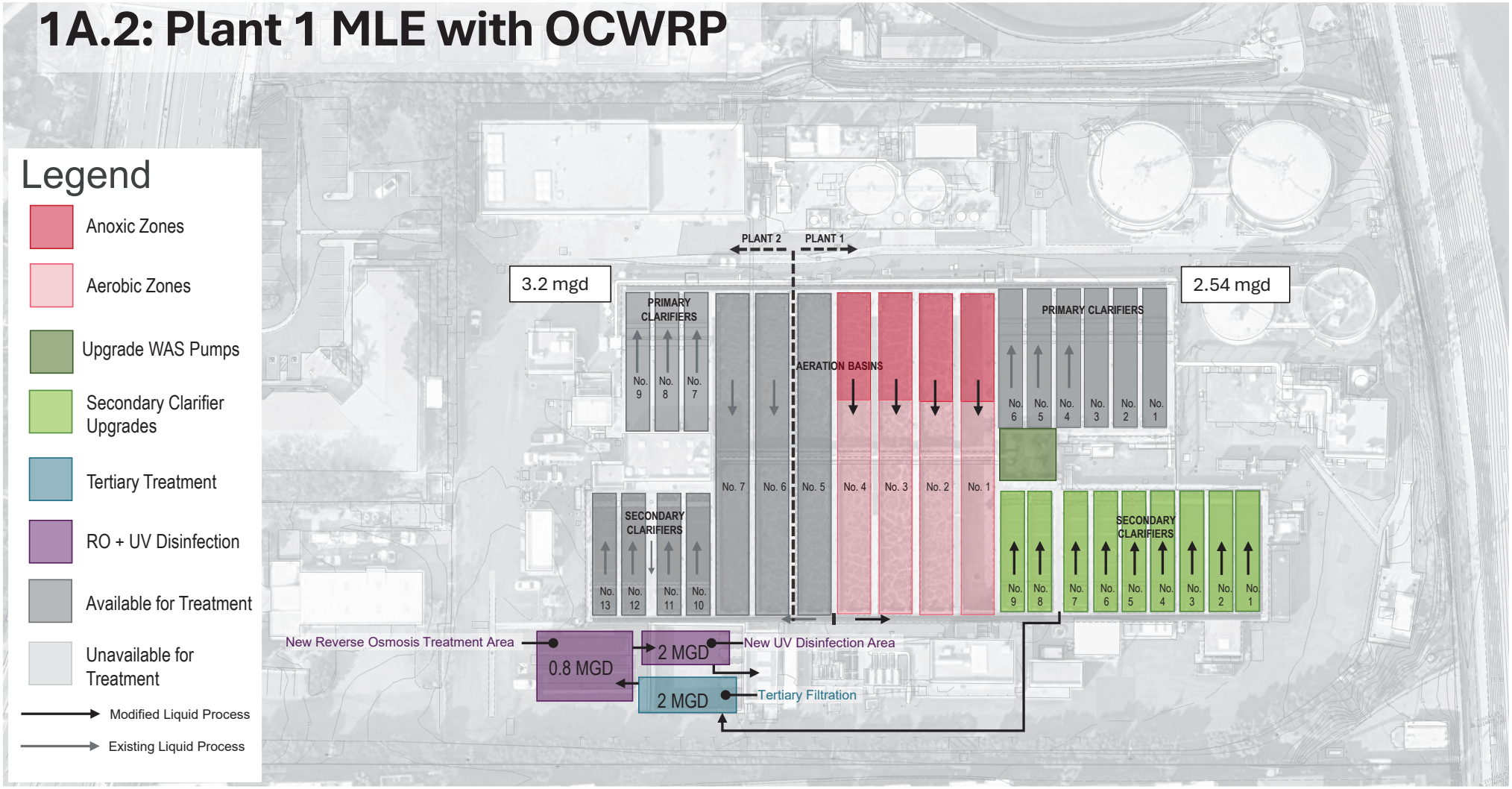
# Model Alternatives Summary

| Option | Ocean Discharge | Non-Potable Reuse | Total |
|---|---|---|---|
| | | | |
| E - Existing (Baseline) | | | |
| A.0 (A, with OCWRP) | 5.3 mgd (cBOD) | - | 5.3 mgd |
| B.0 (B, without OCWRP) | 8.3 mgd (cBOD) | - | 8.3 mgd |
| **A - Options with OCWRP** | | | |
| **1A.1** | **3.3 mgd (cBOD)** | **2.0 mgd (MBR)** | **5.3 mgd** |
| **1A.2** | **3.3 mgd (cBOD)** | **2.0 mgd (MLE)** | **5.3 mgd** |
| **1A.3** | **3.3 mgd (cBOD)** | **2.0 mgd (MOB/IFAS)** | **5.3 mgd** |
| **1A.4** | **3.3 mgd (cBOD)** | **2.0 mgd (Nitrif)** | **5.3 mgd** |
| **2A.1** | **3.3 mgd (cBOD)** | **2.0 mgd (MBR)** | **5.3 mgd** |
| **2A.4a** | **3.3 mgd (cBOD)** | **2.0 mgd (Nitrif)** | **5.3 mgd** |
| **2A.4b** | **3.3 mgd (cBOD)** | **2.0 mgd (Nitrif, Designated Use)** | **5.3 mgd** |
| B - Options without OCWRP | | | |
| 1B.1 | 6.3 mgd (cBOD) | 2.0 mgd (MBR) | 8.3 mgd |
| 1B.3 | 6.3 mgd (cBOD) | 2.0 mgd (MOB/IFAS) | 8.3 mgd |
| 1B.4 | 6.3 mgd (cBOD) | 2.0 mgd (Nitrif) | 8.3 mgd |
| 2B.1 | 6.3 mgd (cBOD) | 2.0 mgd (MBR) | 8.3 mgd |
| 2B.4a | 6.3 mgd (cBOD) | 2.0 mgd (Nitrif) | 8.3 mgd |
| 2B.4b | 6.3 mgd (cBOD) | 2.0 mgd (Nitrif, Designated Use) | 8.3 mgd |

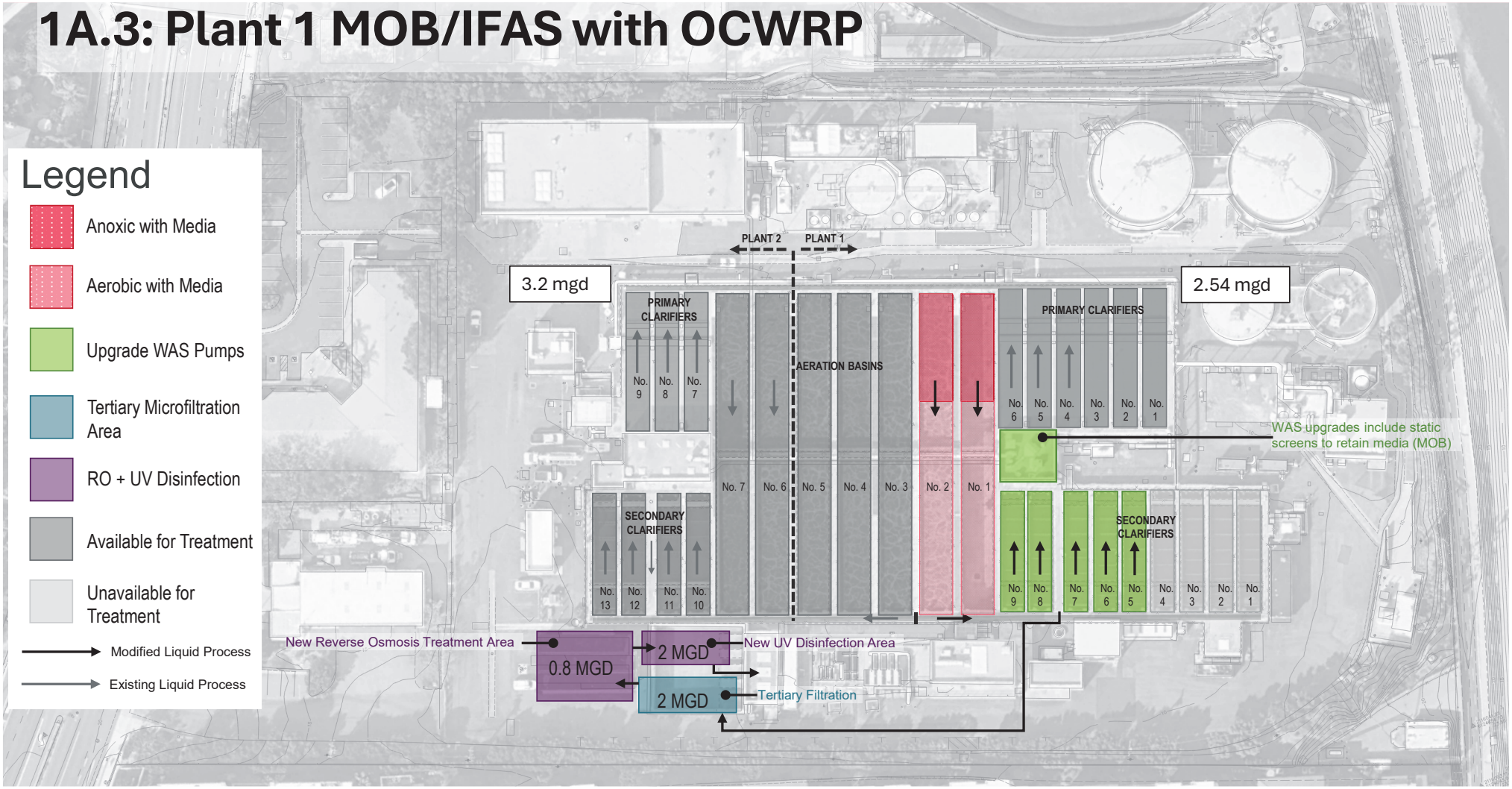
# 1A.1: Plant 1 MBR with OCWRP



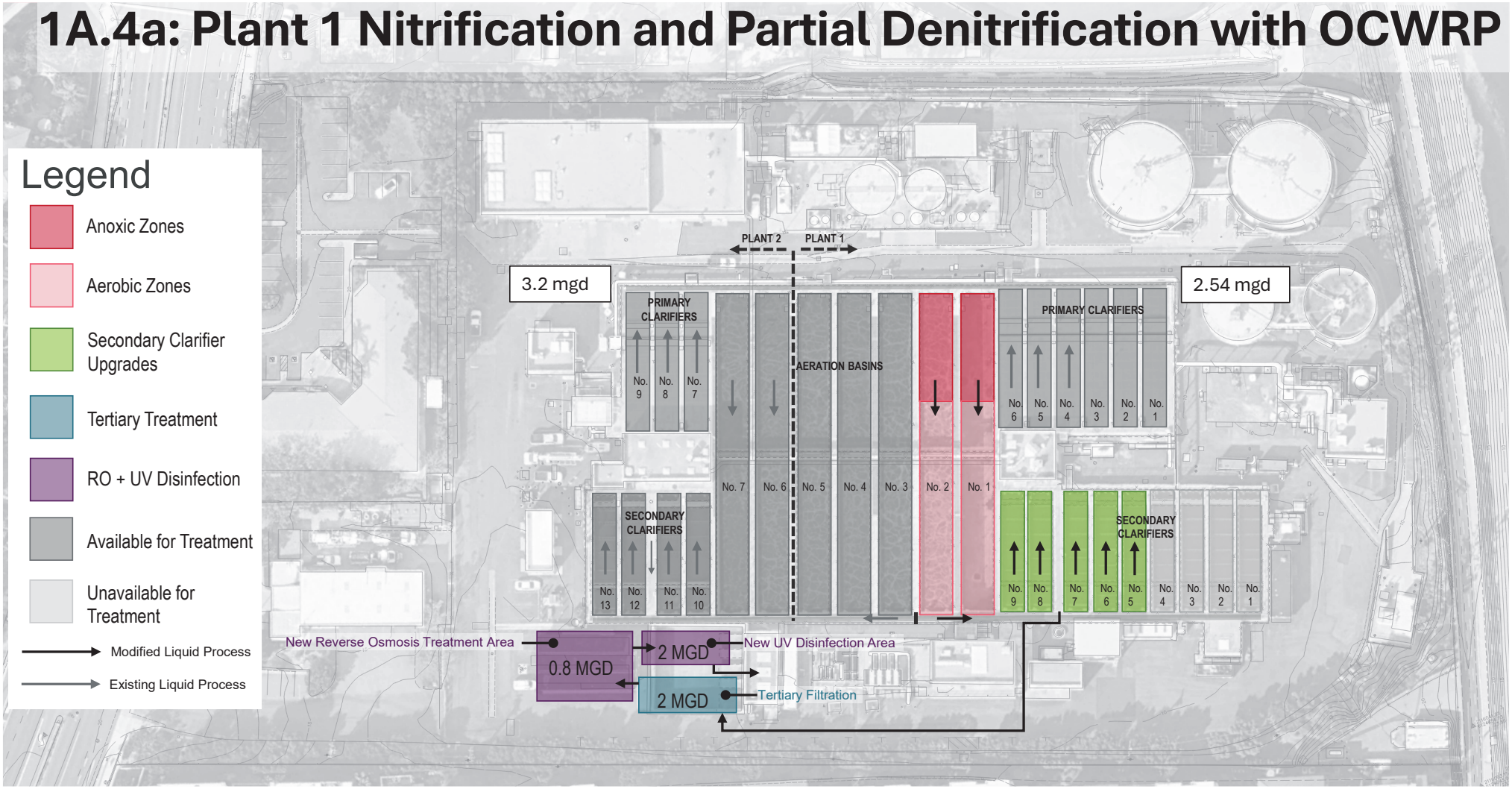
# 1A.2: Plant 1 MLE with OCWRP



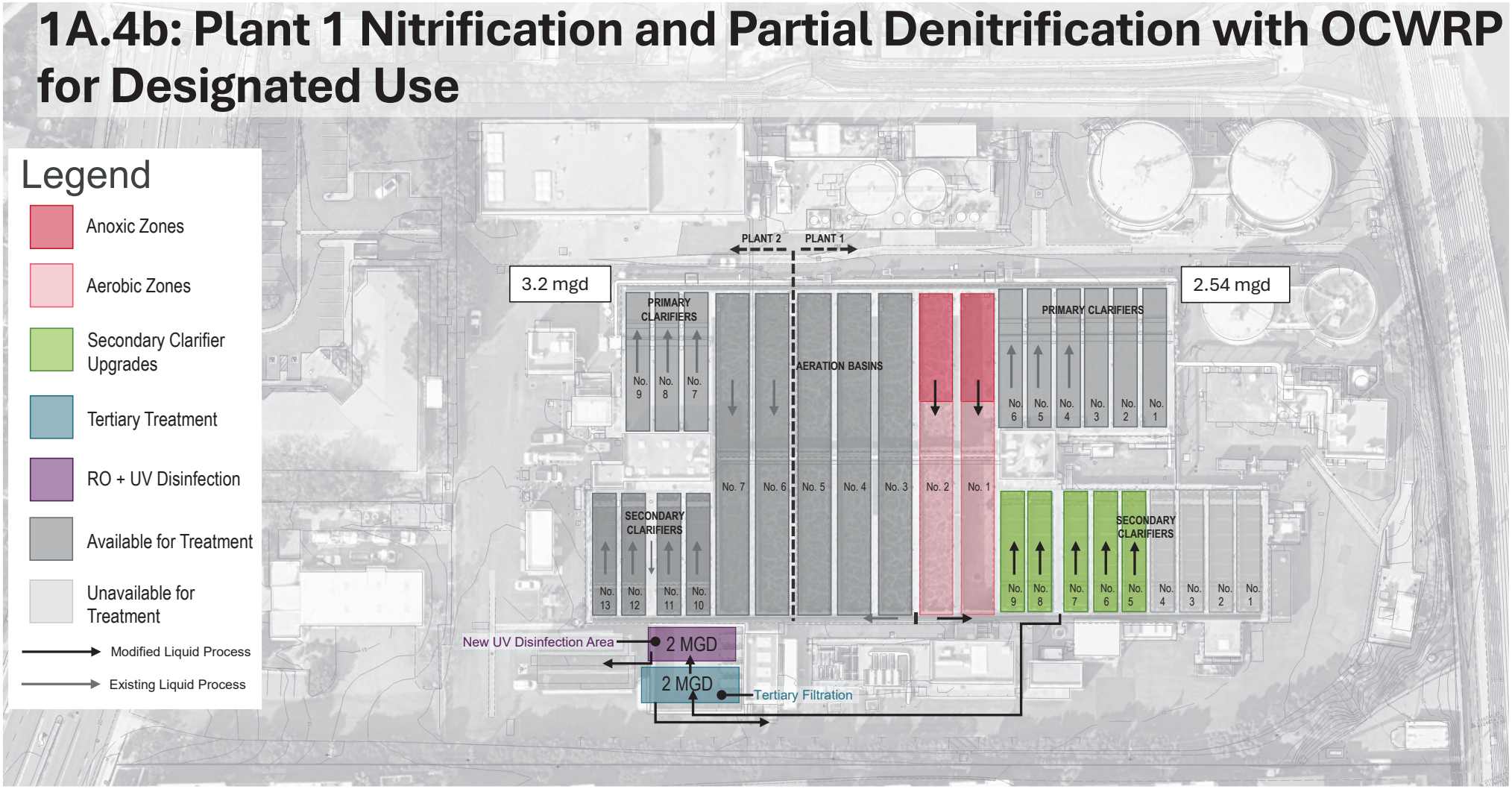
# 1A.3: Plant 1 MOB/IFAS with OCWRP



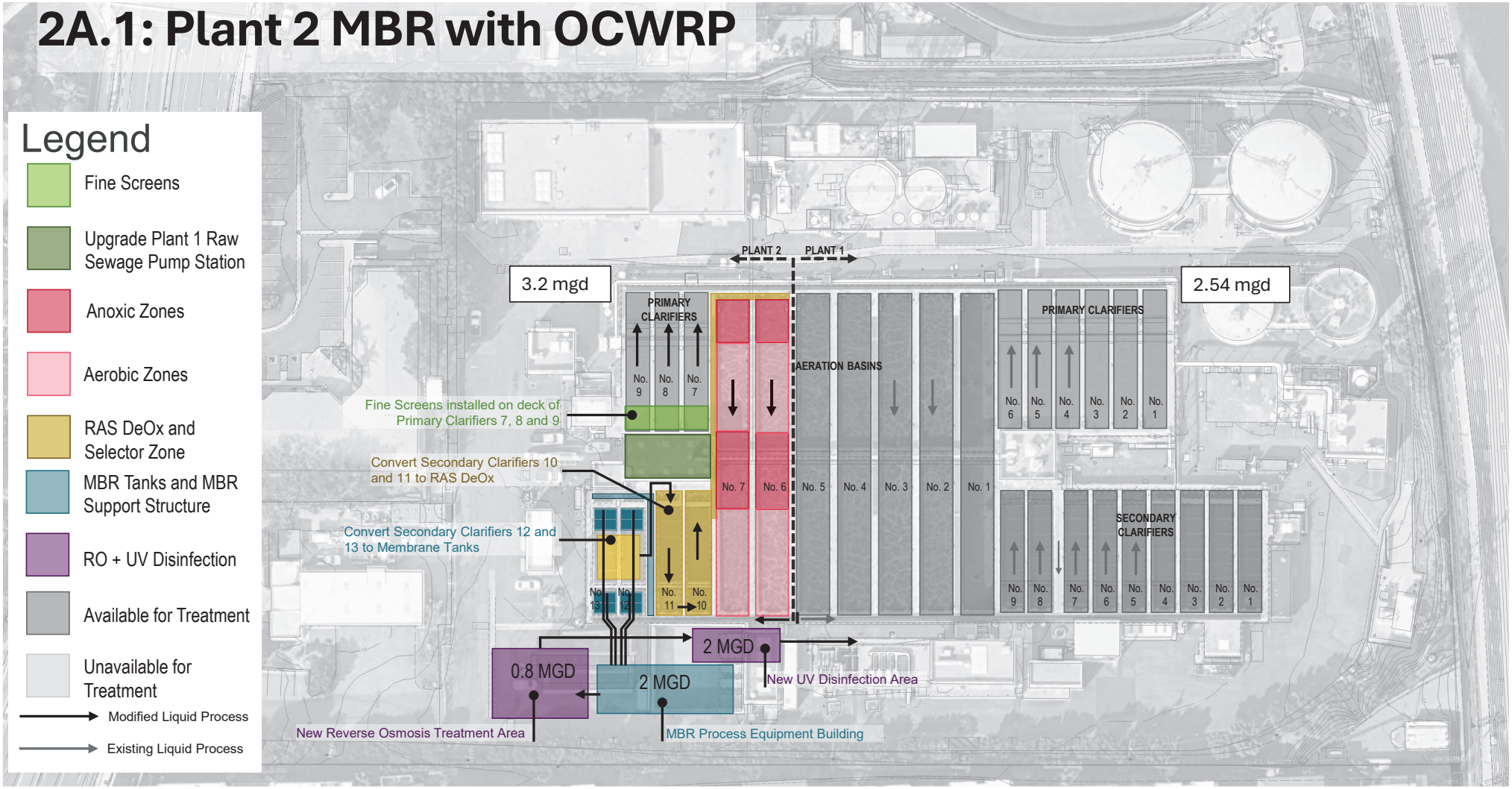
# 1A.4a: Plant 1 Nitrification and Partial Denitrification with OCWRP



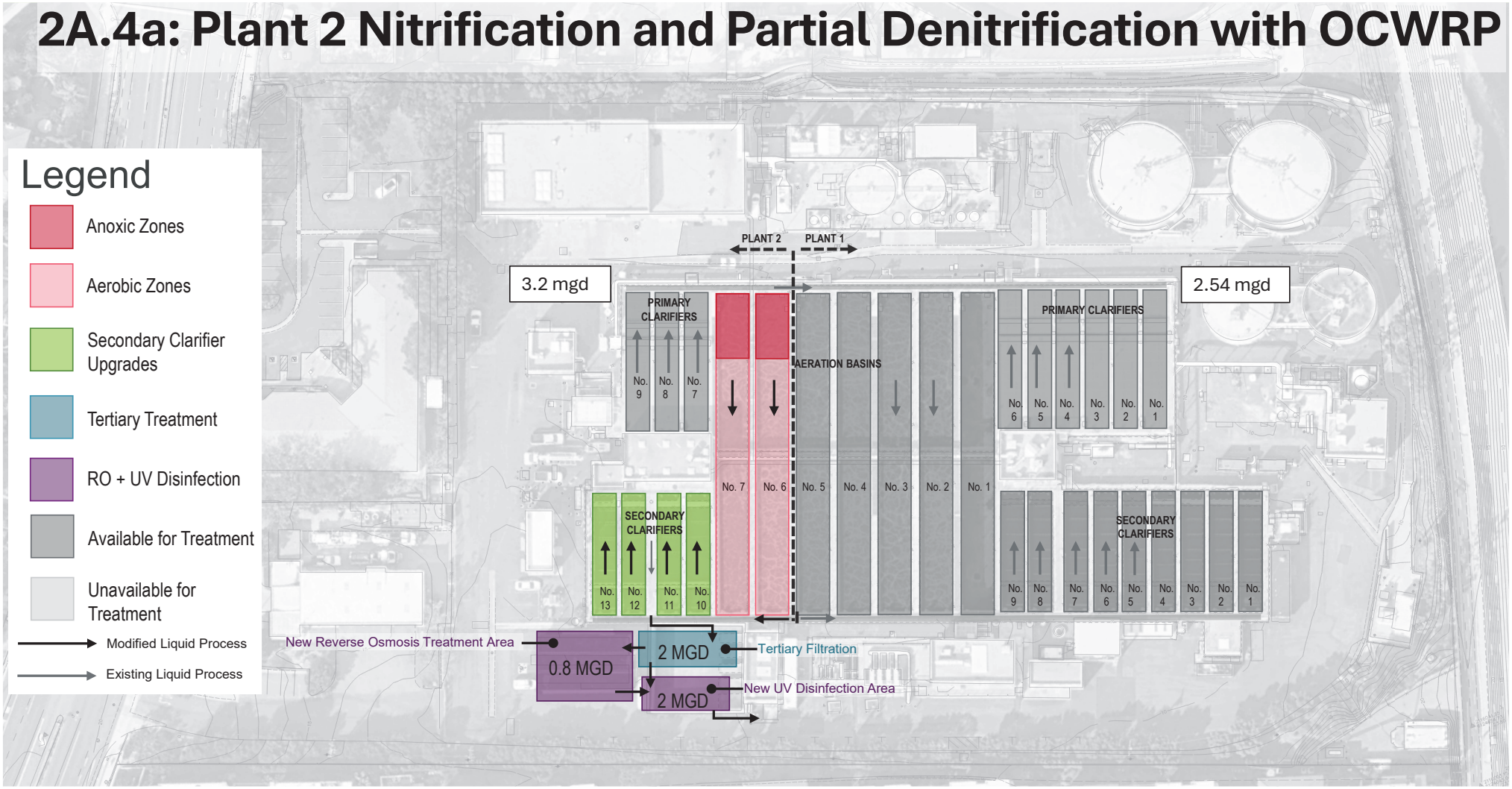
# 1A.4b: Plant 1 Nitrification and Partial Denitrification with OCWRP for Designated Use



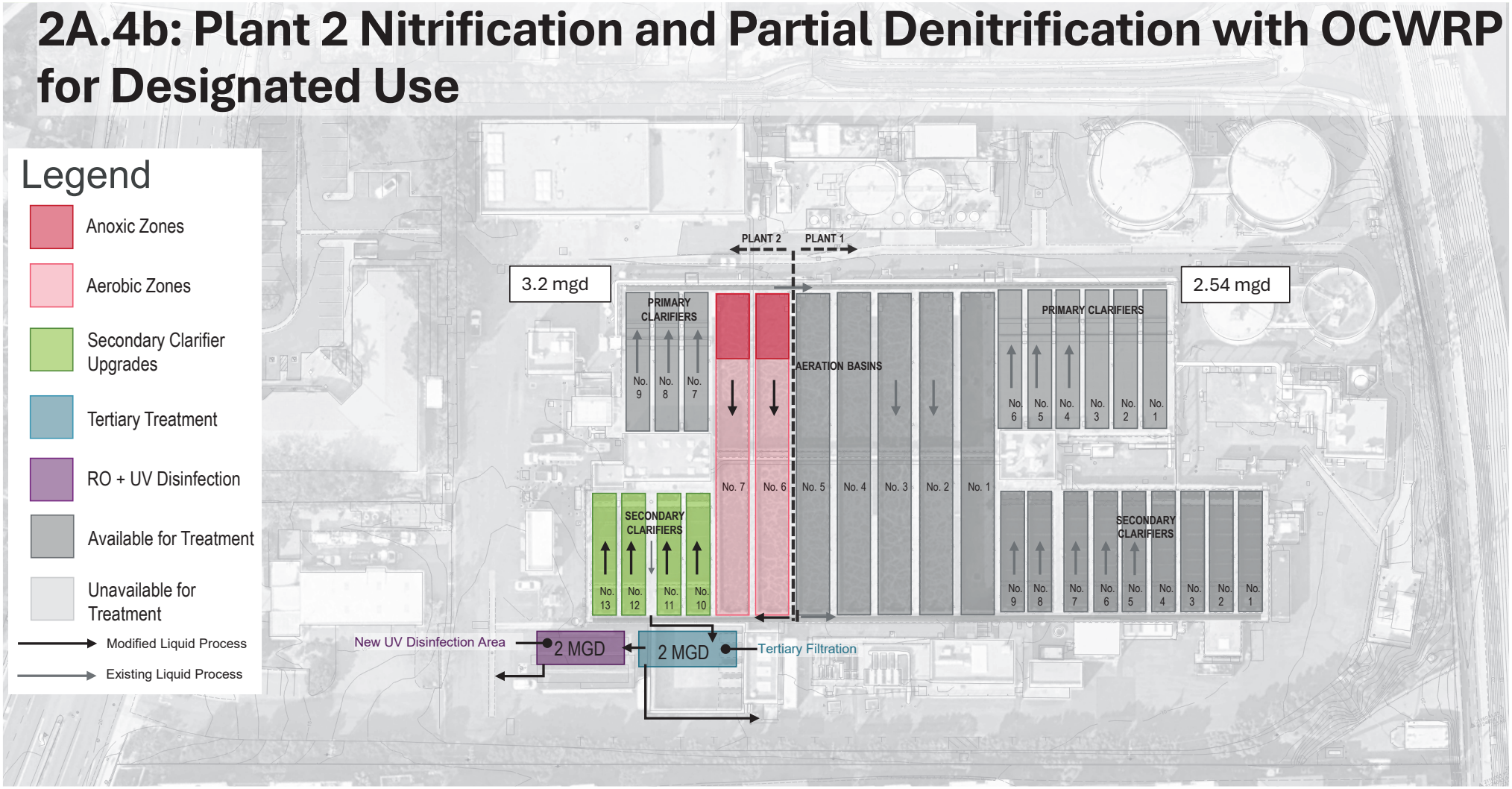
# 2A.1: Plant 2 MBR with OCWRP



# 2A.4a: Plant 2 Nitrification and Partial Denitrification with OCWRP



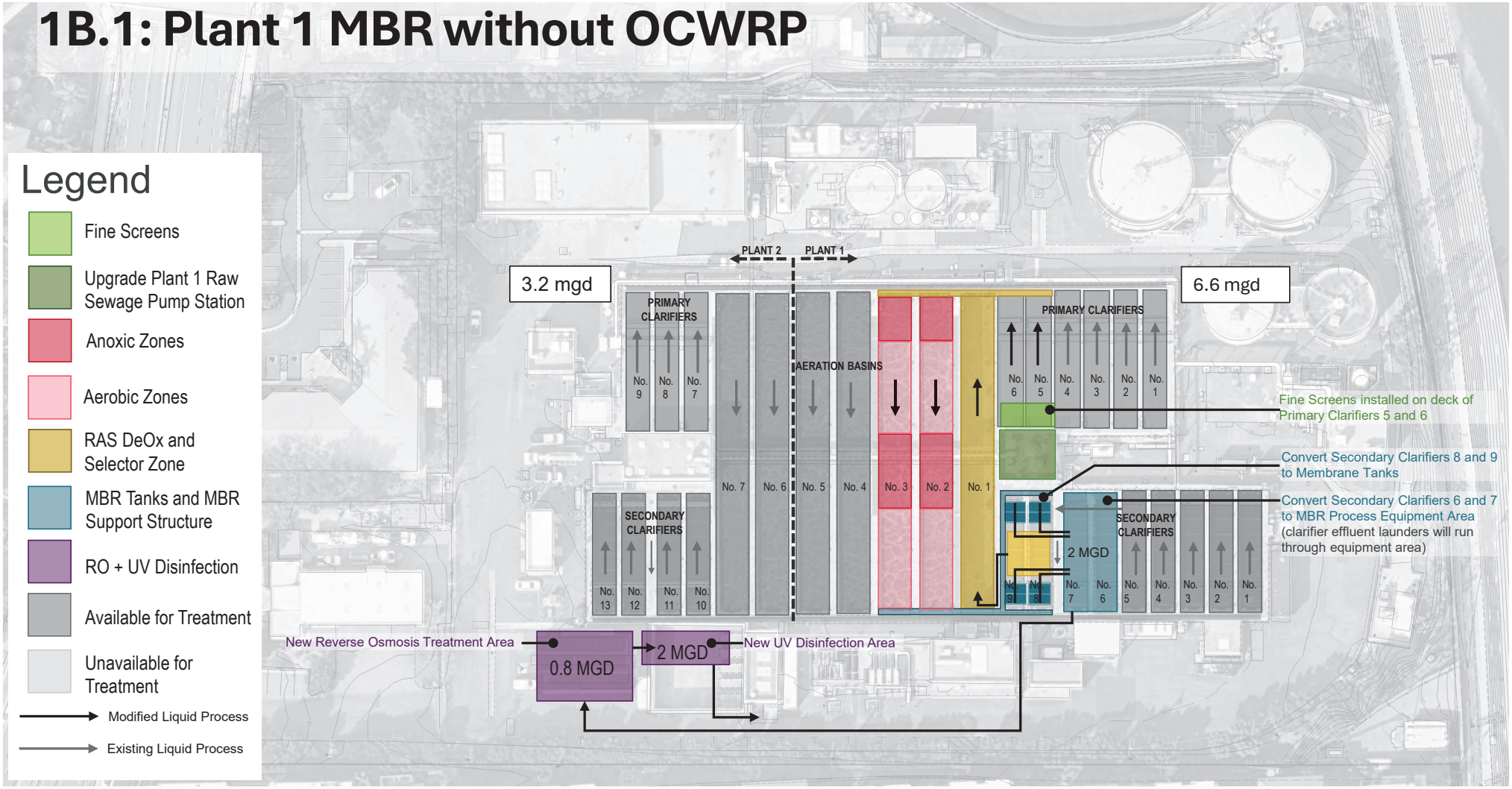
# 2A.4b: Plant 2 Nitrification and Partial Denitrification with OCWRP for Designated Use



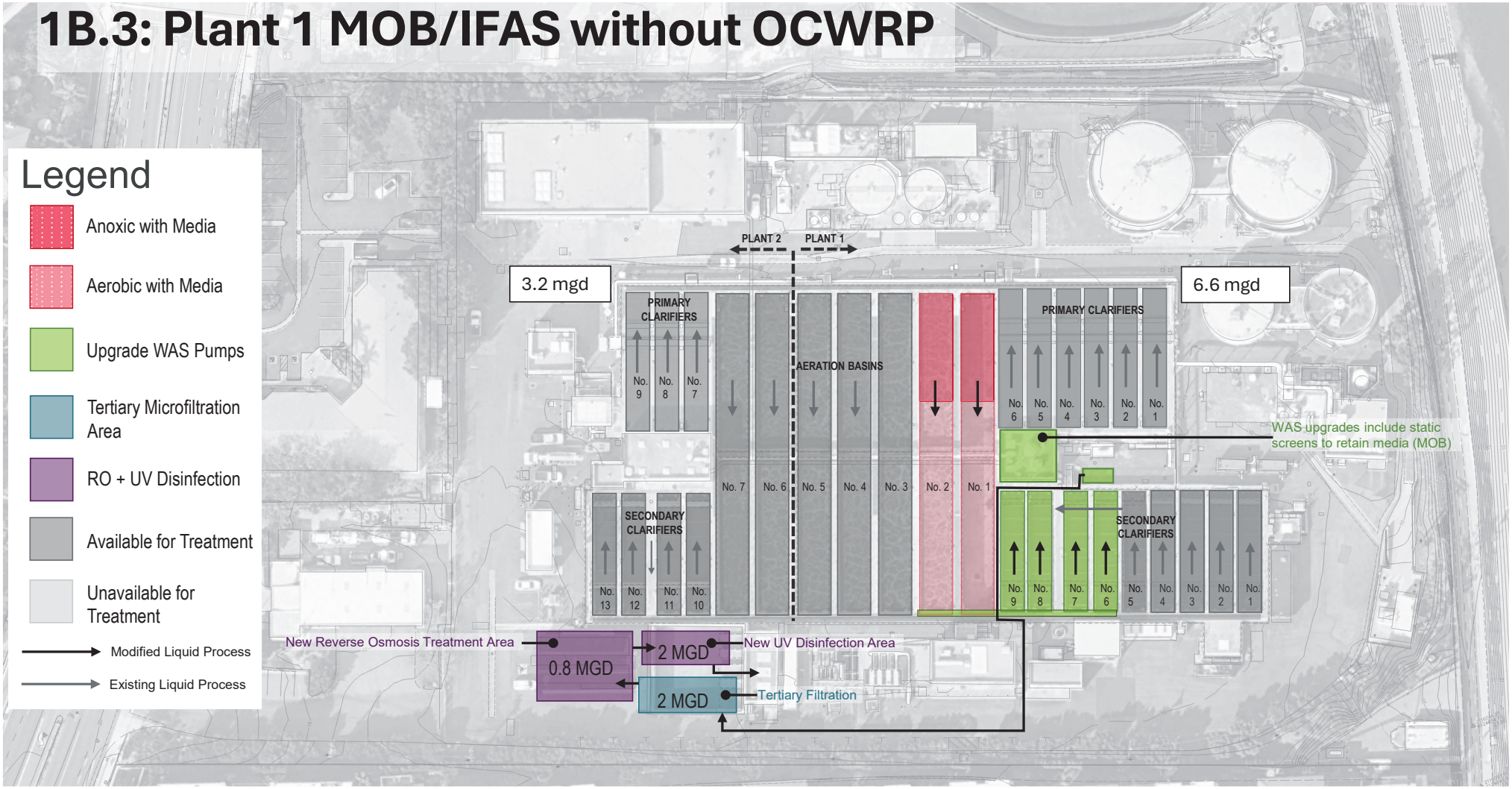
# Model Alternatives Summary

| Option | Ocean Discharge | Non-Potable Reuse | Total |
|---|---|---|---|
| | | | |
| E - Existing (Baseline) | | | |
| A.0 (A, with OCWRP) | 5.3 mgd (cBOD) | - | 5.3 mgd |
| B.0 (B, without OCWRP) | 8.3 mgd (cBOD) | - | 8.3 mgd |
| A - Options with OCWRP | | | |
| 1A.1 | 3.3 mgd (cBOD) | 2.0 mgd (MBR) | 5.3 mgd |
| 1A.2 | 3.3 mgd (cBOD) | 2.0 mgd (MLE) | 5.3 mgd |
| 1A.3 | 3.3 mgd (cBOD) | 2.0 mgd (MOB/IFAS) | 5.3 mgd |
| 1A.4 | 3.3 mgd (cBOD) | 2.0 mgd (Nitrif) | 5.3 mgd |
| 2A.1 | 3.3 mgd (cBOD) | 2.0 mgd (MBR) | 5.3 mgd |
| 2A.4a | 3.3 mgd (cBOD) | 2.0 mgd (Nitrif) | 5.3 mgd |
| 2A.4b | 3.3 mgd (cBOD) | 2.0 mgd (Nitrif, Designated Use) | 5.3 mgd |
| **B - Options without OCWRP** | | | |
| **1B.1** | **6.3 mgd (cBOD)** | **2.0 mgd (MBR)** | **8.3 mgd** |
| **1B.3** | **6.3 mgd (cBOD)** | **2.0 mgd (MOB/IFAS)** | **8.3 mgd** |
| **1B.4** | **6.3 mgd (cBOD)** | **2.0 mgd (Nitrif)** | **8.3 mgd** |
| **2B.1** | **6.3 mgd (cBOD)** | **2.0 mgd (MBR)** | **8.3 mgd** |
| **2B.4a** | **6.3 mgd (cBOD)** | **2.0 mgd (Nitrif)** | **8.3 mgd** |
| **2B.4b** | **6.3 mgd (cBOD)** | **2.0 mgd (Nitrif, Designated Use)** | **8.3 mgd** |

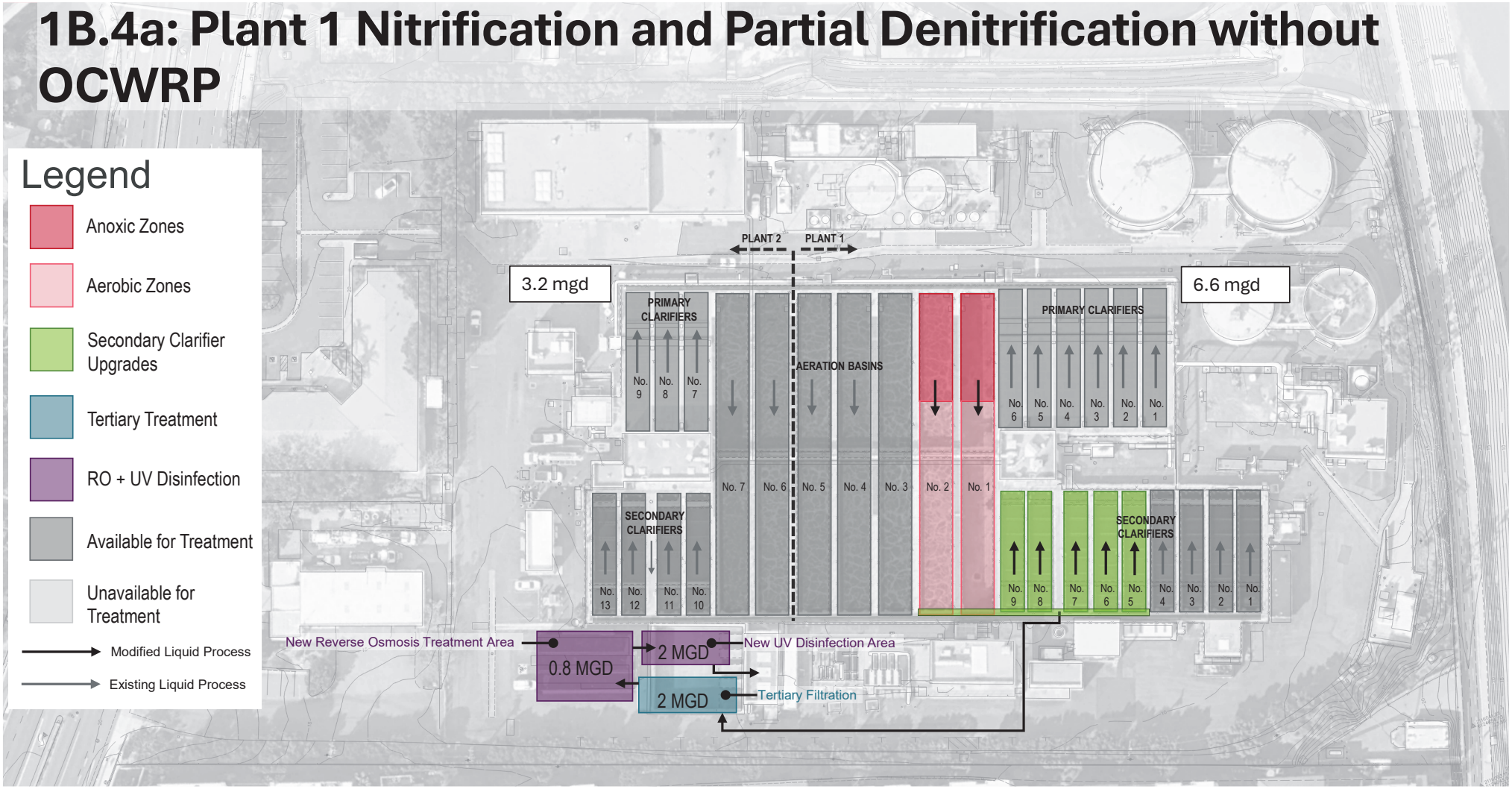
# 1B.1: Plant 1 MBR without OCWRP



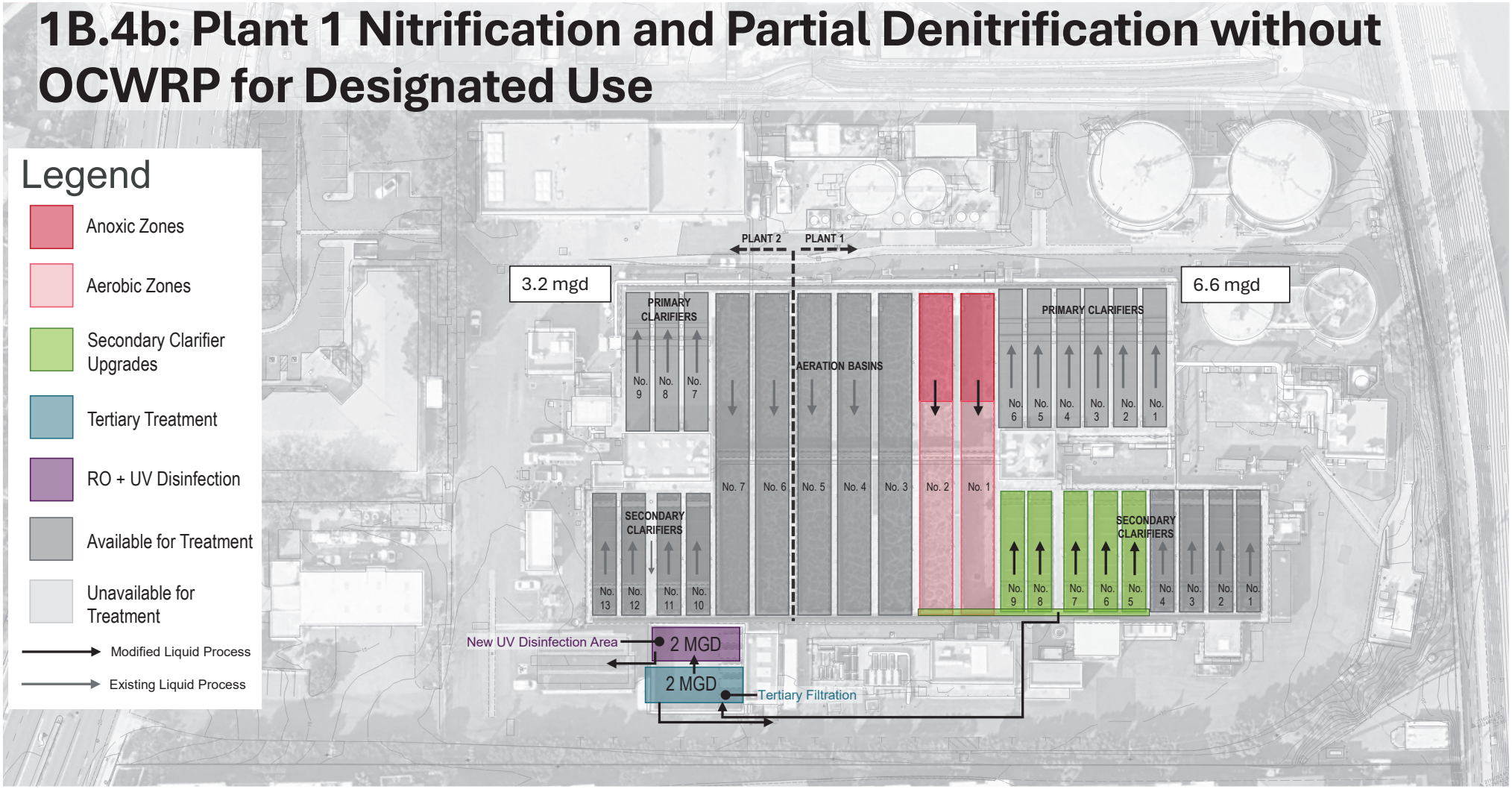
# 1B.3: Plant 1 MOB/IFAS without OCWRP



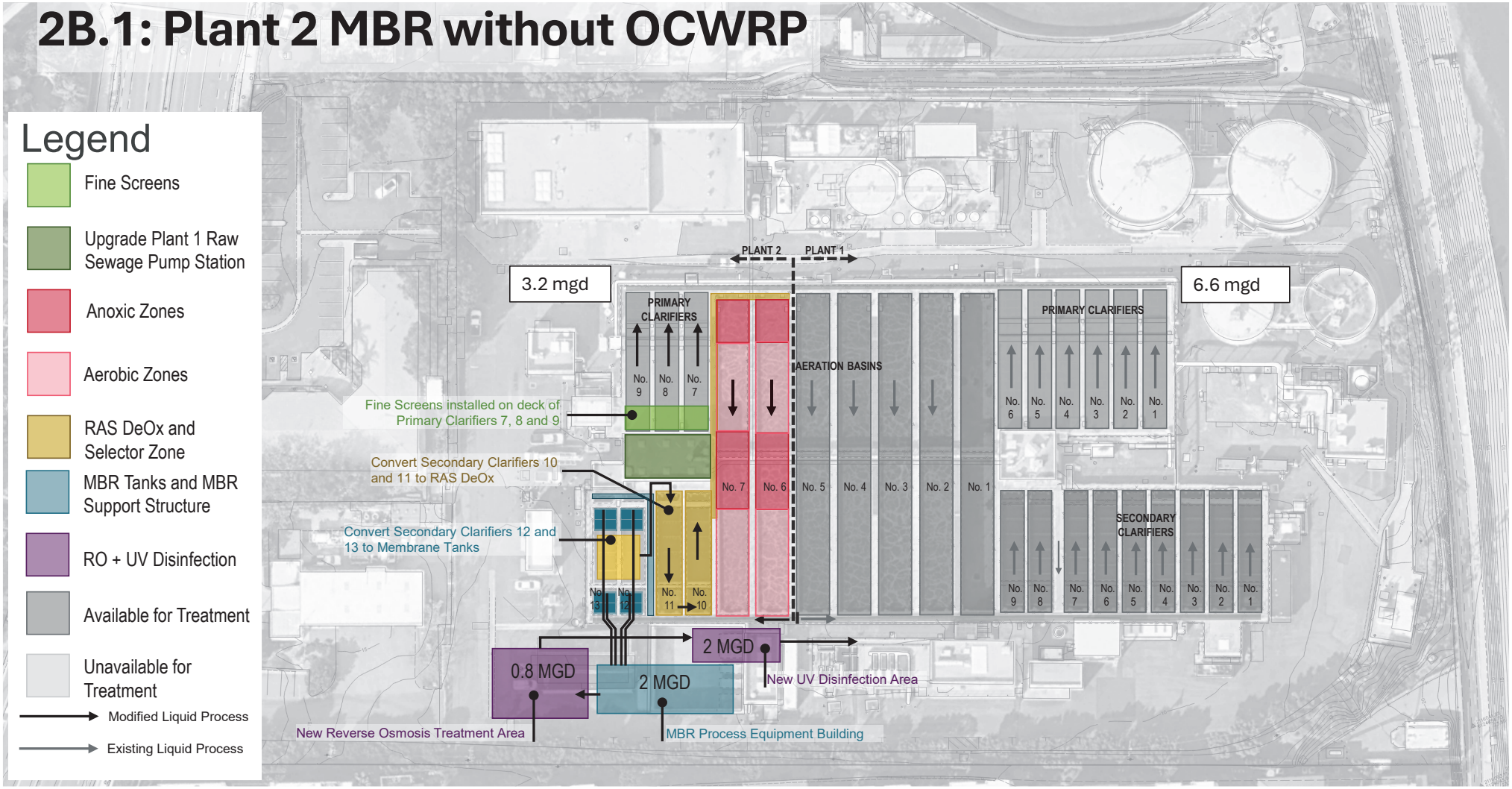
# 1B.4a: Plant 1 Nitrification and Partial Denitrification without OCWRP



# 1B.4b: Plant 1 Nitrification and Partial Denitrification without OCWRP for Designated Use



# 2B.1: Plant 2 MBR without OCWRP



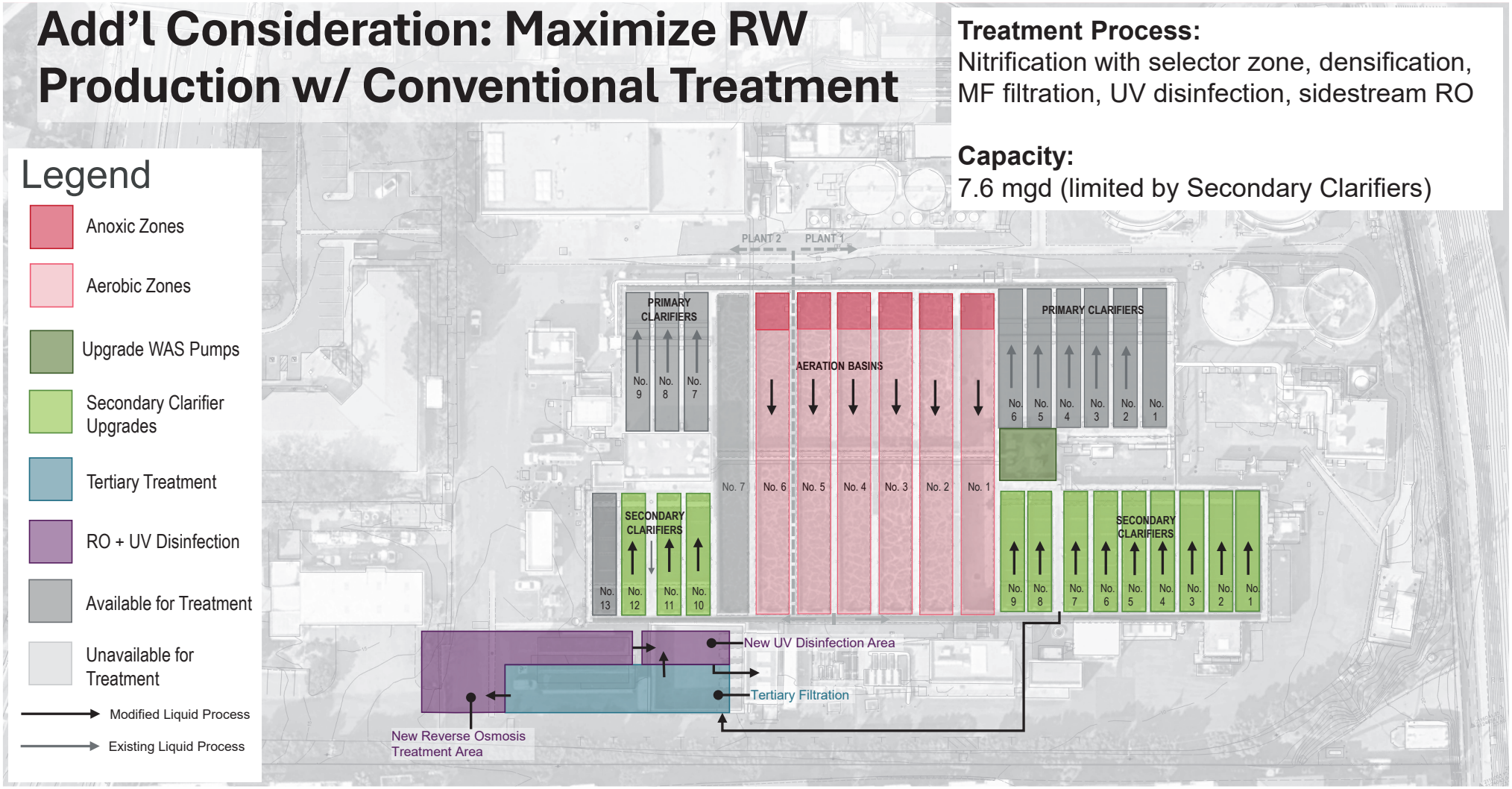
# Model Alternatives Summary

| Option | Ocean Discharge | Non-Potable Reuse | Total |
|---|---|---|---|
| | | | |
| E - Existing (Baseline) | | | |
| A.0 (A, with OCWRP) | 5.3 mgd (cBOD) | - | 5.3 mgd |
| B.0 (B, without OCWRP) | 8.3 mgd (cBOD) | - | 8.3 mgd |
| A - Options with OCWRP | | | |
| 1A.1 | 3.3 mgd (cBOD) | 2.0 mgd (MBR) | 5.3 mgd |
| 1A.2 | 3.3 mgd (cBOD) | 2.0 mgd (MLE) | 5.3 mgd |
| 1A.3 | 3.3 mgd (cBOD) | 2.0 mgd (MOB/IFAS) | 5.3 mgd |
| 1A.4 | 3.3 mgd (cBOD) | 2.0 mgd (Nitrif) | 5.3 mgd |
| 2A.1 | 3.3 mgd (cBOD) | 2.0 mgd (MBR) | 5.3 mgd |
| 2A.4a | 3.3 mgd (cBOD) | 2.0 mgd (Nitrif) | 5.3 mgd |
| 2A.4b | 3.3 mgd (cBOD) | 2.0 mgd (Nitrif, Designated Use) | 5.3 mgd |
| B - Options without OCWRP | | | |
| 1B.1 | 6.3 mgd (cBOD) | 2.0 mgd (MBR) | 8.3 mgd |
| 1B.3 | 6.3 mgd (cBOD) | 2.0 mgd (MOB/IFAS) | 8.3 mgd |
| 1B.4 | 6.3 mgd (cBOD) | 2.0 mgd (Nitrif) | 8.3 mgd |
| 2B.1 | 6.3 mgd (cBOD) | 2.0 mgd (MBR) | 8.3 mgd |
| 2B.4a | 6.3 mgd (cBOD) | 2.0 mgd (Nitrif) | 8.3 mgd |
| 2B.4b | 6.3 mgd (cBOD) | 2.0 mgd (Nitrif, Designated Use) | 8.3 mgd |

# Add'l Consideration: Maximize RW Production w/ Conventional Treatment

**Treatment Process:**
Nitrification with selector zone, densification, MF filtration, UV disinfection, sidestream RO

**Capacity:**
7.6 mgd (limited by Secondary Clarifiers)



| Discipline | FY26/27 CIP Workplan<br>Planned Capital Improvements | 2026 FPA R&R | Past Studies R&R |
|---|---|---|---|
| **Electrical** | • MCC A-1<br>• MCC-M<br>• Plant 1 Generator<br>• MCC-2<br>• MCC-CF<br>• Misc. Electrical Updates in Plant 2 Headworks Rehabilitation | • Confirm building classification<br>  • MCC-EA1<br>  • MCC-A-1<br>  • EMCC-J1<br>  • ESBD-J<br>  • MCC-J<br>• Replace MCC-F<br>• Replace MCC-1 | • Assets incorporated under FY26/27 CIP Workplan |
| **Structural** | • Plant 2 Headworks<br>• Energy Building Roof Upgrades | • Rehabilitate Plant 1 Headworks:<br>  • Delaminated protective coatings and exposed aggregate<br>• Rehabilitate Plant 1 and 2 secondary clarifiers<br>  • Concrete deterioration<br>• Rehabilitate Plant 1 and 2 RSPS/Blower Building<br>  • Localized coating failures and corrosion<br>• Rehabilitate Aeration Tanks/Grit basin<br>  • Failed protective coatings sand corrosion<br>• Rehabilitate Grit Chamber<br>  • Corrosion | • Plant 1 and 2 Primary Clarifier<br>  • Repair cracks, leakage, deteriorated concrete, and areas of exposed concrete<br>• Digester 1 and 2<br>  • Repair localized concrete and pipe corrosion and rehabilitate protective coatings |
| **Process Mechanical** | • Plant 1 Grit Upgrades<br>• Effluent Pump Station and Energy Building Upgrades | • Replace Aerzen Turbo Blowers<br>• Plant 2 Secondary Clarifier<br>  • Corrosion on chain and flight system, replace<br>• Replace centrifuges | • Replace WAS Pumps<br>• Replace RAS Pumps |

# R&R Project Costs

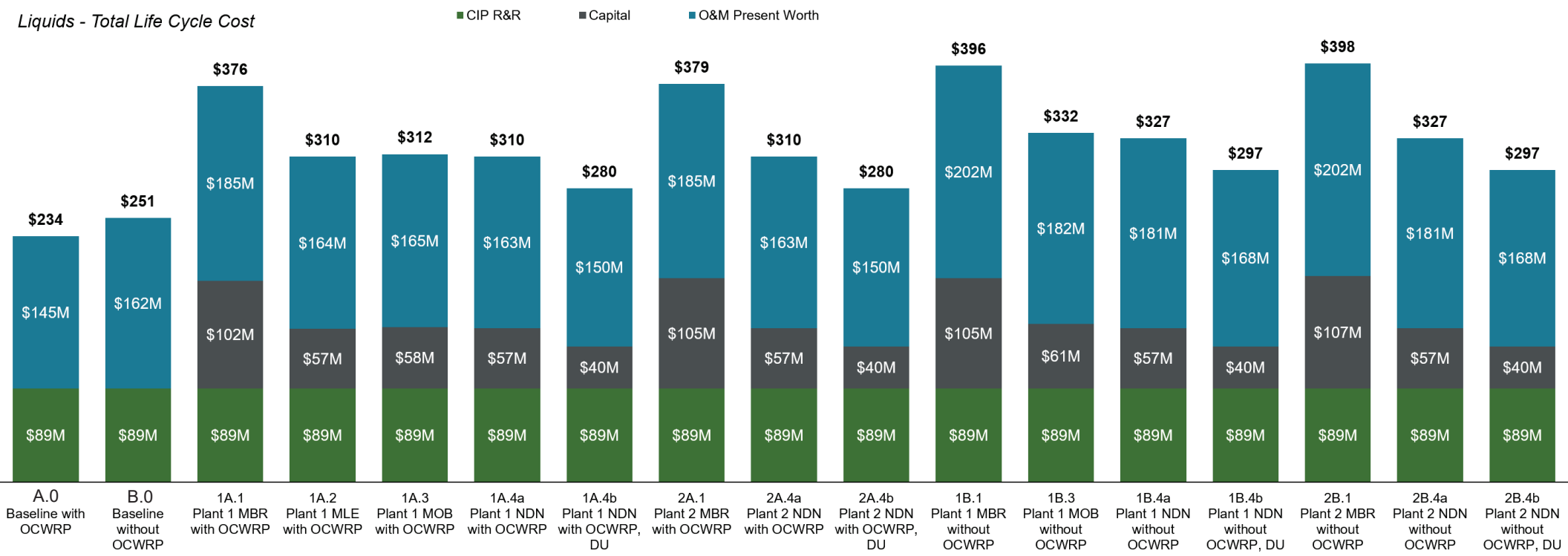
| Project Name | FY26/27 CIP Workplan | Ten-Year Capital Improvement Program 2019-2028 |
|---|---|---|
| MCC M and Plant 1 Generator Replacement | $4,232,843 | - |
| Plant 1 Grit, MCC A-1, and Blower Building Upgrades | $6,256,220 | - |
| Effluent Pump Station Upgrades | $1,877,000 | - |
| Plant 2 Headworks Rehabilitation | $1,500,000 | - |
| Energy Building Roof Upgrades | $1,163,000 | - |
| Gas Flare Replacement | $1,500,000 | - |
| Digester 3 and 4 Upgrades and Coating | $1,000,000 | - |
| MCC 2 and CF Replacement | - | $761,000 (Year '21/22) |
| MCC-A-1 Replacement | - | $581,000 (Year '22/'23) |
| Plant 1 Headworks Upgrade | - | $2,006,000 (Year '25/'26) |
| Dewatering System Replacement | - | $5,080,000 (Year '25/'26) |
| Plant 1 RAS Pump Station Upgrade | | $1,781,000 (Year '22/23) |
| Plant 2 RAS Pump Station Upgrade | - | $1,293,000 (Year '28/'29) |
| Dewatering Polymer System Upgrade | - | $341,000 (Year '26/'27) |

1. Costs were extracted from the source document without further escalation to 2026 dollars.
2. The 2019–2028 CIP timing reflects the schedule presented in the source document and may differ from the current implementation schedule.
3. Ten-Year Capital Improvement Program costs are derived from "Project Cost Inflation Adjusted"

# Liquids Cost Summary (2026 Dollars)

| No. | Name | Capital Cost at Base Year | Annual O&M at Base Year |
|---|---|---|---|
| **E - Existing (Baseline)** | | | |
| **A.0** | Baseline with OCWRP | - | $5.98M |
| **B.0** | Baseline without OCWRP | - | $6.70M |
| **A – Options with OCWRP** | | | |
| **1A.1** | Plant 1 MBR | $102.4M | $7.64M |
| **1A.2** | Plant 1 MLE | $56.5M | $6.77M |
| **1A.3** | Plant 1 MOB/IFAS | $58.1M | $6.80M |
| **1A.4a** | Plant 1 N/Partial DN | $57.0M | $6.76M |
| **1A.4b** | Plant 1 N/Partial DN Designated Use | $40.0M | $6.21M |
| **2A.1** | Plant 2 MBR | $104.8M | $7.64M |
| **2A.4a** | Plant 2 N/Partial DN | $57.0M | $6.76M |
| **2A.4b** | Plant 2 N/Partial DN Designated Use | $40.0M | $6.21M |
| **B – Options without OCWRP** | | | |
| **1B.1** | Plant 1 MBR | $104.7M | $8.36M |
| **1B.3** | Plant 1 MOB/IFAS | $61.1M | $7.52M |
| **1B.4a** | Plant 1 N/Partial DN | $57.0M | $7.47M |
| **1B.4b** | Plant 1 N/Partial DN Designated Use | $40.0M | $6.93M |
| **2B.1** | Plant 2 MBR | $106.9M | $8.36M |
| **2B.4a** | Plant 2 N/Partial DN | $57.0M | $7.47M |
| **2B.4b** | Plant 2 N/Partial DN Designated Use | $40.0M | $6.93M |

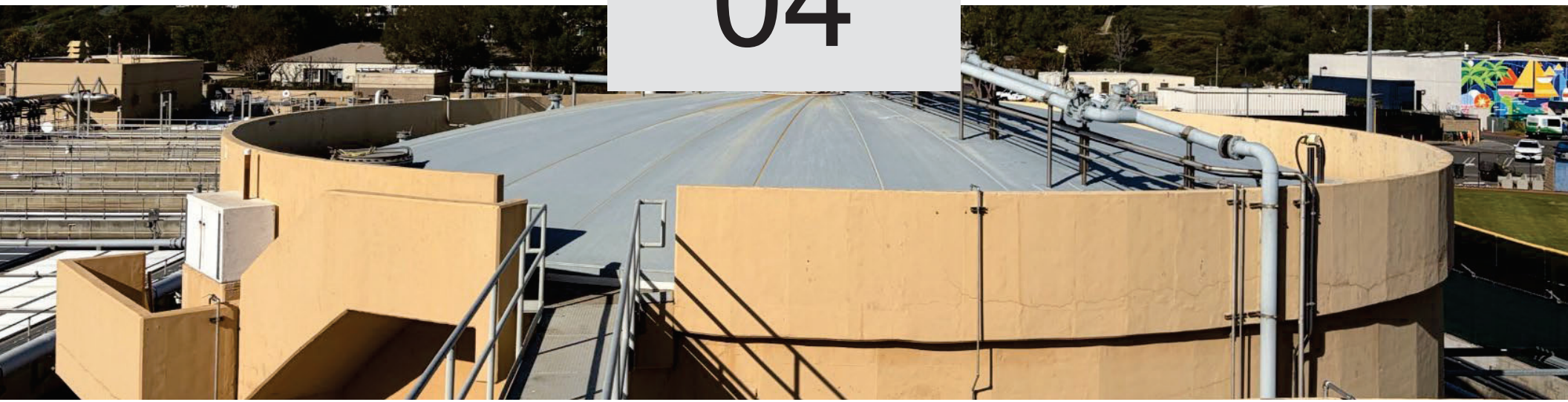
# Liquids 30-Year Life Cycle Costs




* CIP R&R provided by SOCWA.

| | |
|---|---|
| Escalation | 3.5% |
| Discount Rate | 5.0% |

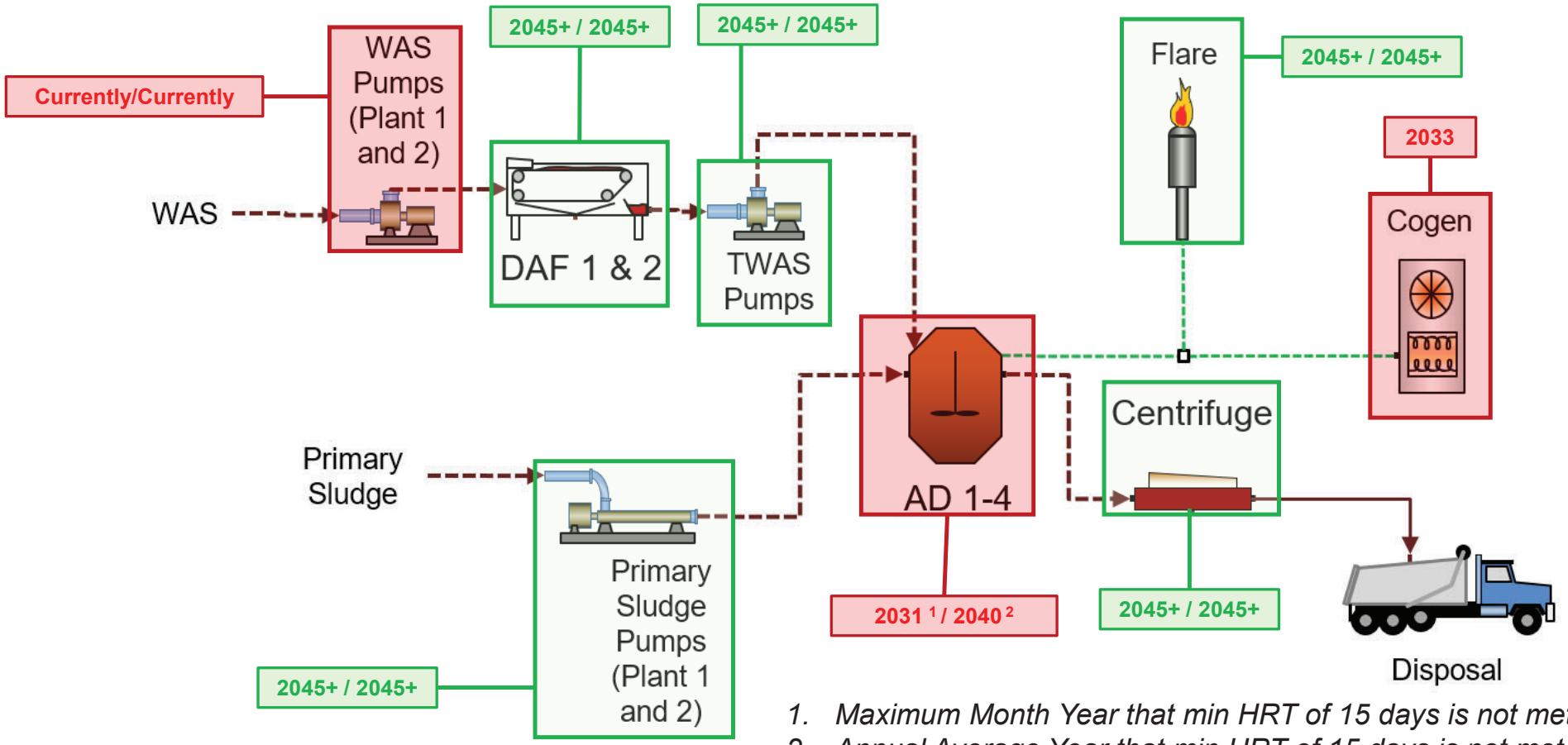
# 04



# Solids Alternatives Evaluation

# Summary of JBL Solids Capacity

**Years shown indicate:**
Firm Capacity is exceeded/ Total Capacity is exceeded




1. *Maximum Month Year that min HRT of 15 days is not met*
2. *Annual Average Year that min HRT of 15 days is not met*

# Solids Goals, Objectives and Drivers

## Fiscal Responsibility

- Justified value of improvements
- Holistic cost comparison
- Reduce Operating Costs

## Space Constraints

- Reliable biosolids management in space available onsite

## Aging Infrastructure

- Maintain reliable treatment processes

## Reliable Technology

- Tried and true technology
- Limited operational upsets
- Reliable technology

## Capacity

- Meet capacity requirements for flows and loads

# “Universe of Options” – Full list

## Pre-Digestion

**Thickening**

- PS Thickening
- WAS Thickening
- Co-thickening

**Sludge Conditioning**

- Moleaer
- Orege

## Digestion

**Class B**

- Mesophilic (SQ)

**Class A**

- Thermophilic
- TPAD (with batch reactors)
- Pasteurization

**Enhancements**

- Recuperative Thickening
- Acid-phase digestion
- IntensiCarb
- Microbial Hydrolysis (C. Bescii)
- Thermal Hydrolysis
- Thermo- Chemical Hydrolysis

## Post-Digestion

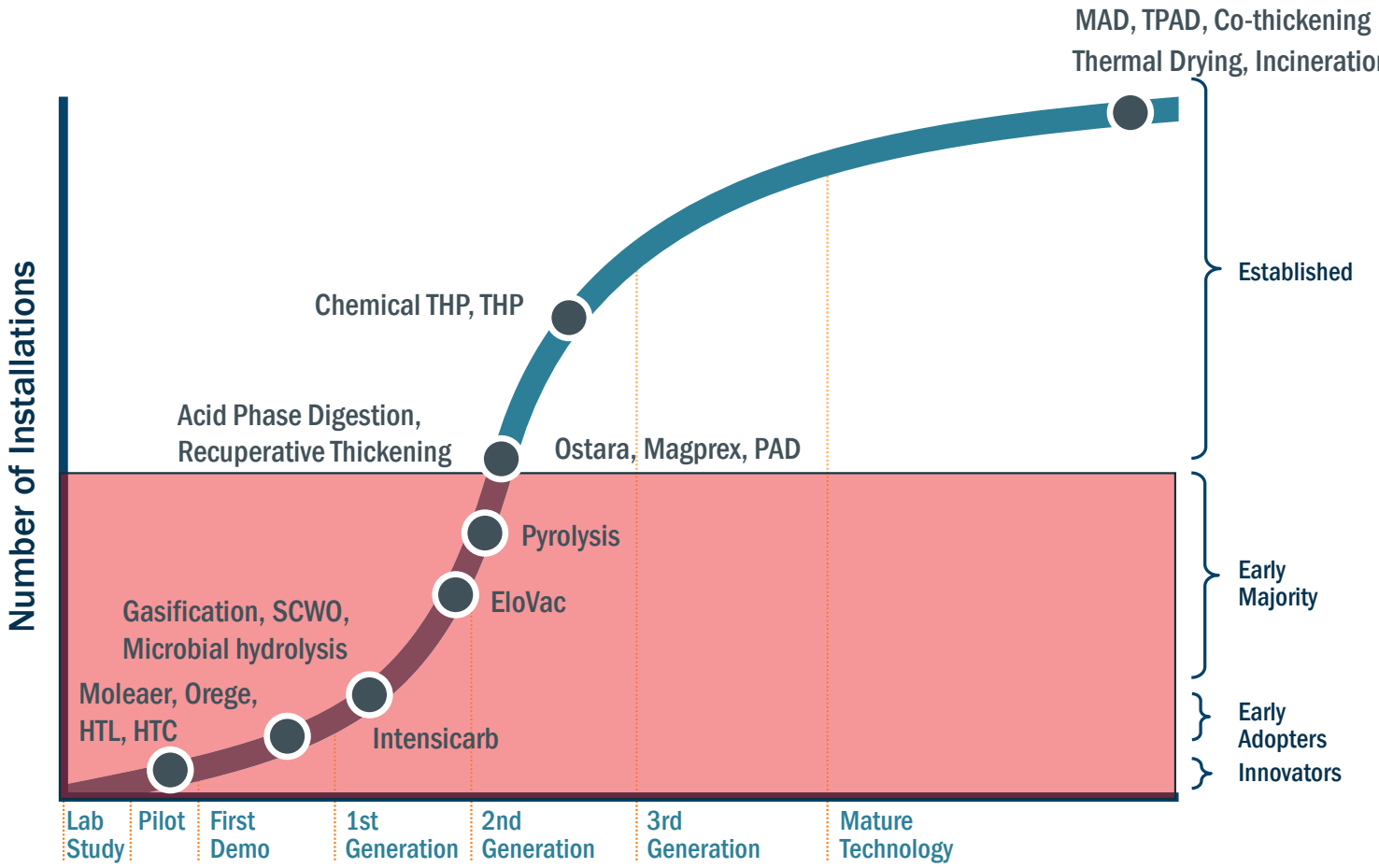
- Thermal Drying
  - GEA Biosolids Granulator
- Composting
- Pyrolysis
  - Heliostorm
- Gasification
- Chemical Thermal Hydrolysis (Lystek)
- Incineration
- Super Critical Water Oxidation
- Hydrothermal Liquefaction (HTL)
- Hydrothermal Carbonization (HTC)

## Optimization

**Nutrient/Struvite Mgmt**

- Ostara
- MagPrex
- EloVac
- Post-Aerobic Digestion
- Chemical Addition

# Technology Maturity and Risk Tolerance



# “Universe of Options” – Screening

| Pre-Digestion | Digestion | Post-Digestion | Optimization |
|---|---|---|---|

**Thickening**

- PS Thickening
- WAS Thickening
- Co-thickening

**Sludge Conditioning**

- Moleaer
- Orege

**Class B**

- Mesophilic (SQ)

**Class A**

- Thermophilic
- TPAD (with batch reactors)
- Pasteurization

**Enhancements**

- Recuperative Thickening
- Acid-phase digestion
- IntensiCarb
- Microbial Hydrolysis (C. Bescii)
- Thermal Hydrolysis
- Thermo- Chemical Hydrolysis

- Thermal Drying
  - GEA Biosolids Granulator
- Composting
- Pyrolysis
  - Heliostorm
- Gasification
- Chemical Thermal Hydrolysis (Lystek)
- Incineration
- Super Critical Water Oxidation
- Hydrothermal Liquefaction (HTL)
- Hydrothermal Carbonization (HTC)

**Nutrient/Struvite Mgmt**

- Ostara
- MagPrex
- EloVac
- Post-Aerobic Digestion
- Chemical Addition

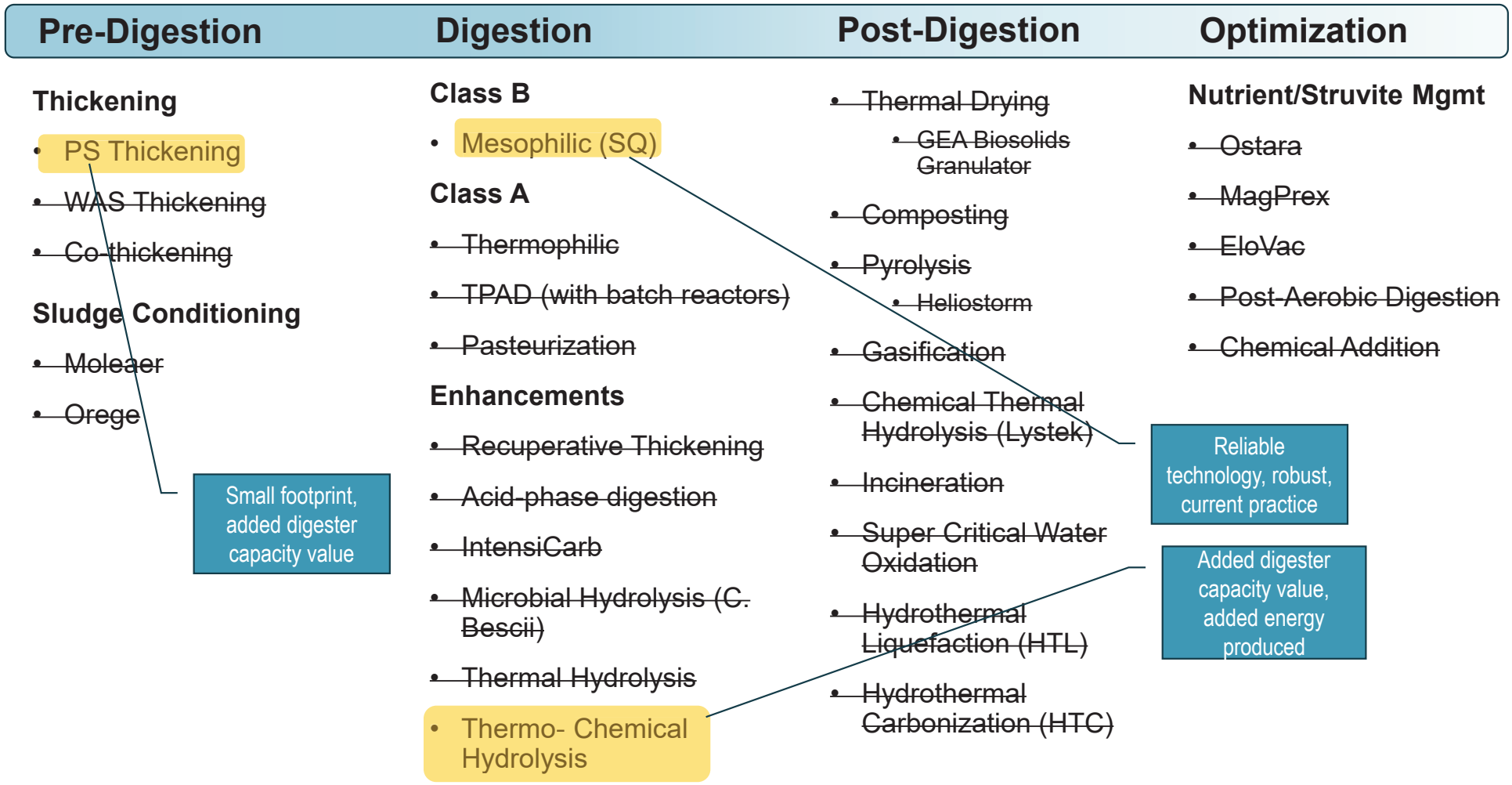
**Reasons for Elimination**

= Space Constraint

= Fiscal Responsibility

= Technology Maturity

# “Universe of Options” – Short Listed Alternatives



# Solids Alternatives Summary

| Alternative | Description | Key Improvements | MM Loading (lb/day) | Class |
|---|---|---|---|---|
| **Scenario A: Future Loading Represented by Historical Weighed Cake (2021-2025)** | | | | |
| **SA.1** | Minimal Improvements (Status Quo) – sub-Class B cake | WAS Pumps | 37,566 | Sub-Class B |
| **SA.2** | Some Improvements – Can meet Class B Requirements | WAS Pumps; Rotary Drum Thickeners | 37,566 | Class B |
| **SA.3** | Some Improvements – Can meet Class B Requirements (with TCHP) | WAS Pumps; Rotary Drum Thickeners; TCHP | 37,566 | Class B |
| **Scenario B: Future Loading Represented by the Modeled Loading to Digesters Using Historical Influent Flow and Concentrations (2021-2025)** | | | | |
| **SB.3** | By Primary Clarifier removal improvement | WAS Pumps; Rotary Drum Thickeners; TCHP | 46,000 | Class B |
| **SB.4** | Using influent characteristics and modeled solids numbers (E2 B, without OCWRP) | WAS Pumps; Rotary Drum Thickeners; TCHP; Upgrade Thickening & Dewatering System | 48,700 | Class B |

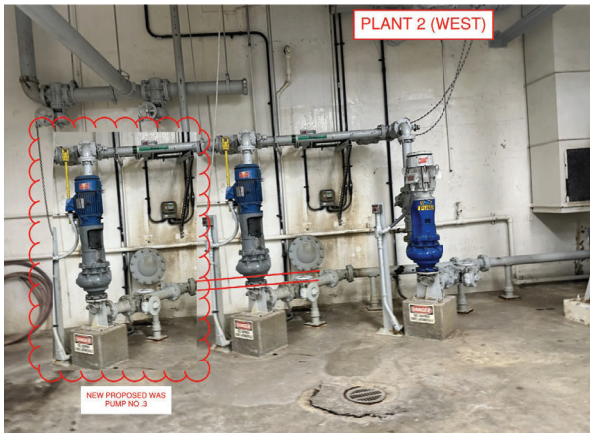
*TCHP = Thermochemical Hydrolysis Process

# Scenario A
# Alternative SA.1: Minimal improvements (Status Quo) to continue Sub-Class B

# Alternative SA.1: Same Solids Loading, Minimal Improvements (Status Quo, sub-class B)

- Improvements:
  - Increase WAS pump capacity = upsize WAS pumps and piping
  - Roadmap for improvements is by condition only
- Reasons to Evaluate:
  - If the cost of hauling for Sub-class B solids is the same as Class B solids
  - Evaluate our alternatives to the status quo




## ADVANTAGES

+ Lowest Capital cost
+ Lowest O&M cost

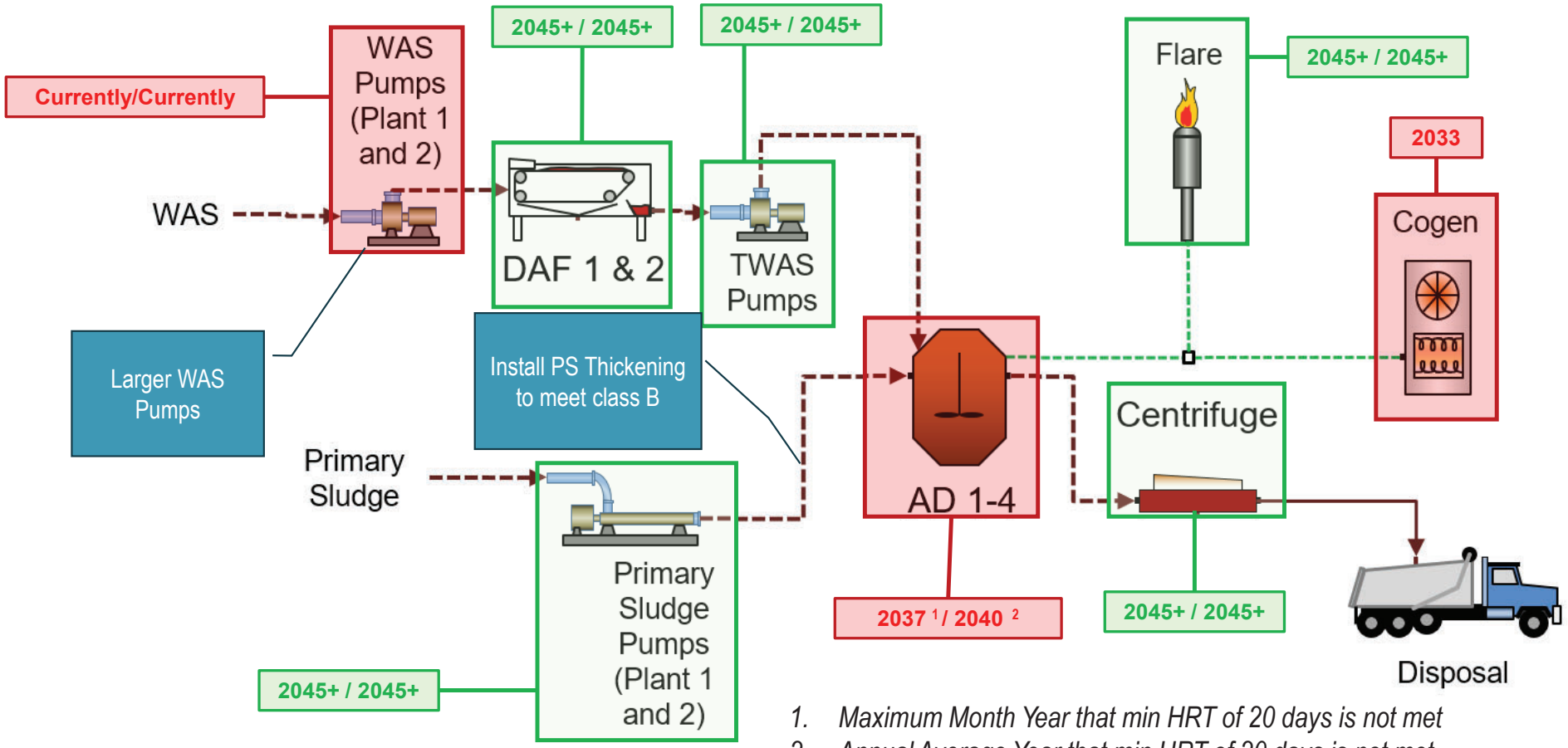
## DISADVANTAGES

- Low Biosolids Management Options
- Potentially higher biosolids management costs
- Higher risk to biosolids management changes
- More attention to biosolids management haulers and vendors

# Scenario A
# Alternative SA.2: Some improvements to meet Class B

# Alternative SA.2: Some Improvements – Can meet Class B Requirements

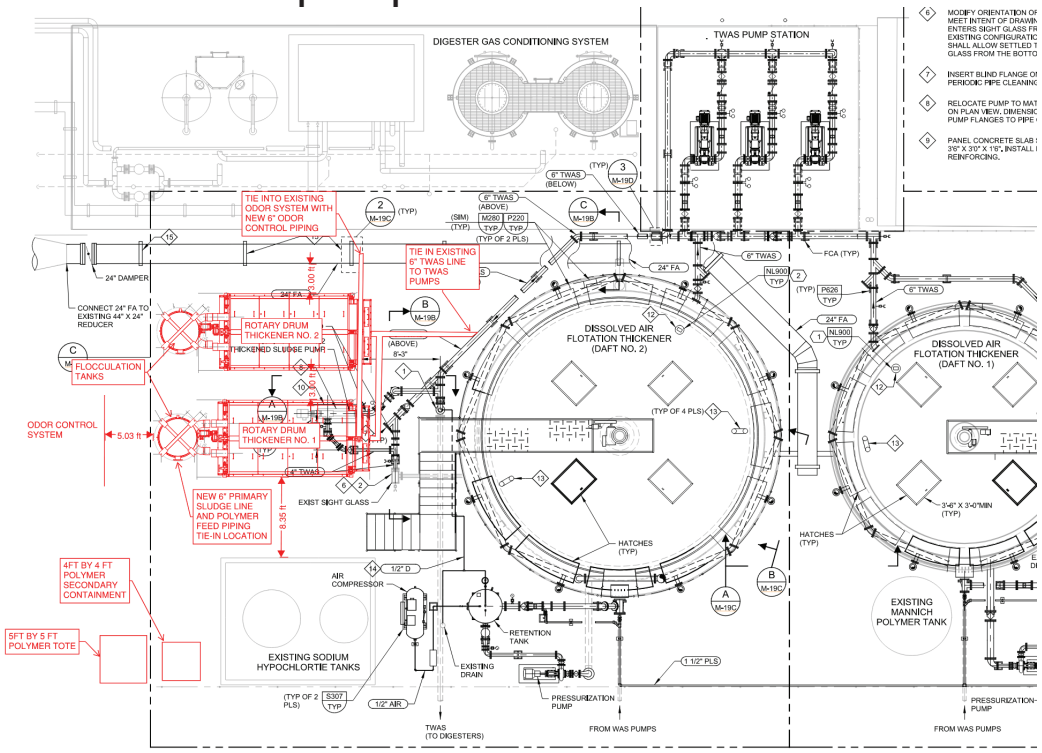
**Years shown indicate:**
Firm Capacity is exceeded/ Total Capacity is exceeded




1. *Maximum Month Year that min HRT of 20 days is not met*
2. *Annual Average Year that min HRT of 20 days is not met*

# Alternative SA.2: Rotary Drum Thickeners (RDT)

- (1+ 1) Rotary Drum Thickeners
- Includes Flocculation Tank
- Relocate pump



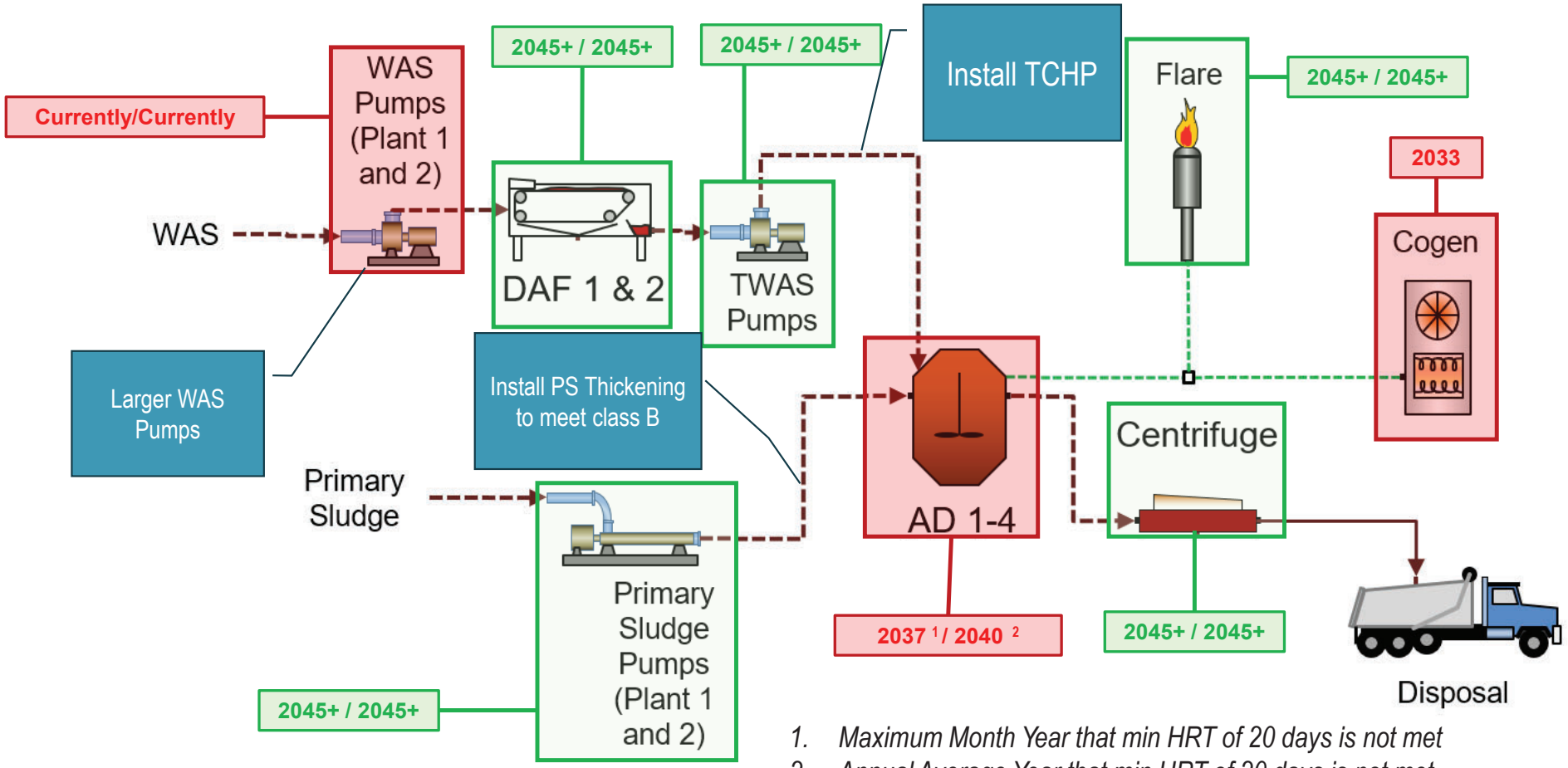

- Dimensions (each)
  - Length: ~18 ft, Width: 8ft
- Model: FKC RST-W775x3600L



# Scenario A
# Alternative SA.3: Some improvements to meet Class B (with Thermochemical Hydrolysis Process)

# Alternative SA.3: Some Improvements – Can meet Class B Requirements (with TCHP)

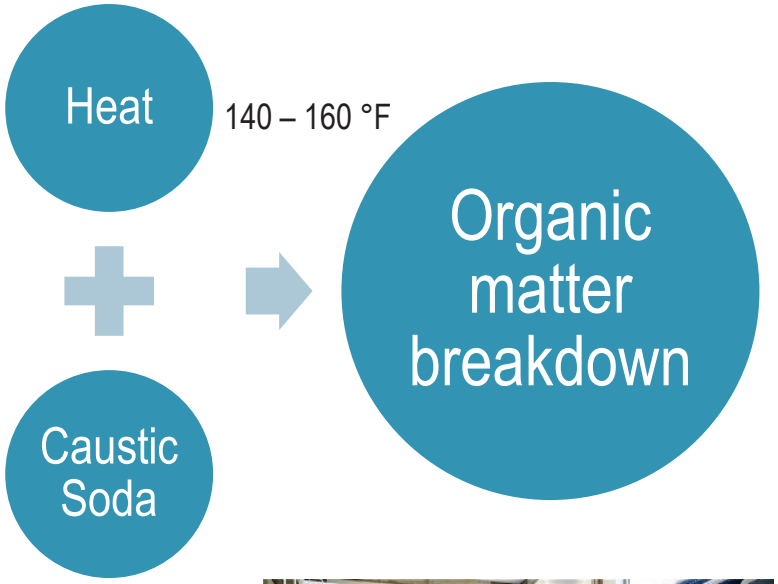
**Years shown indicate:**
Firm Capacity is exceeded/ Total Capacity is exceeded




1. *Maximum Month Year that min HRT of 20 days is not met*
2. *Annual Average Year that min HRT of 20 days is not met*

# Thermochemical Hydrolysis – PONDUS™

- No Pressure Vessel

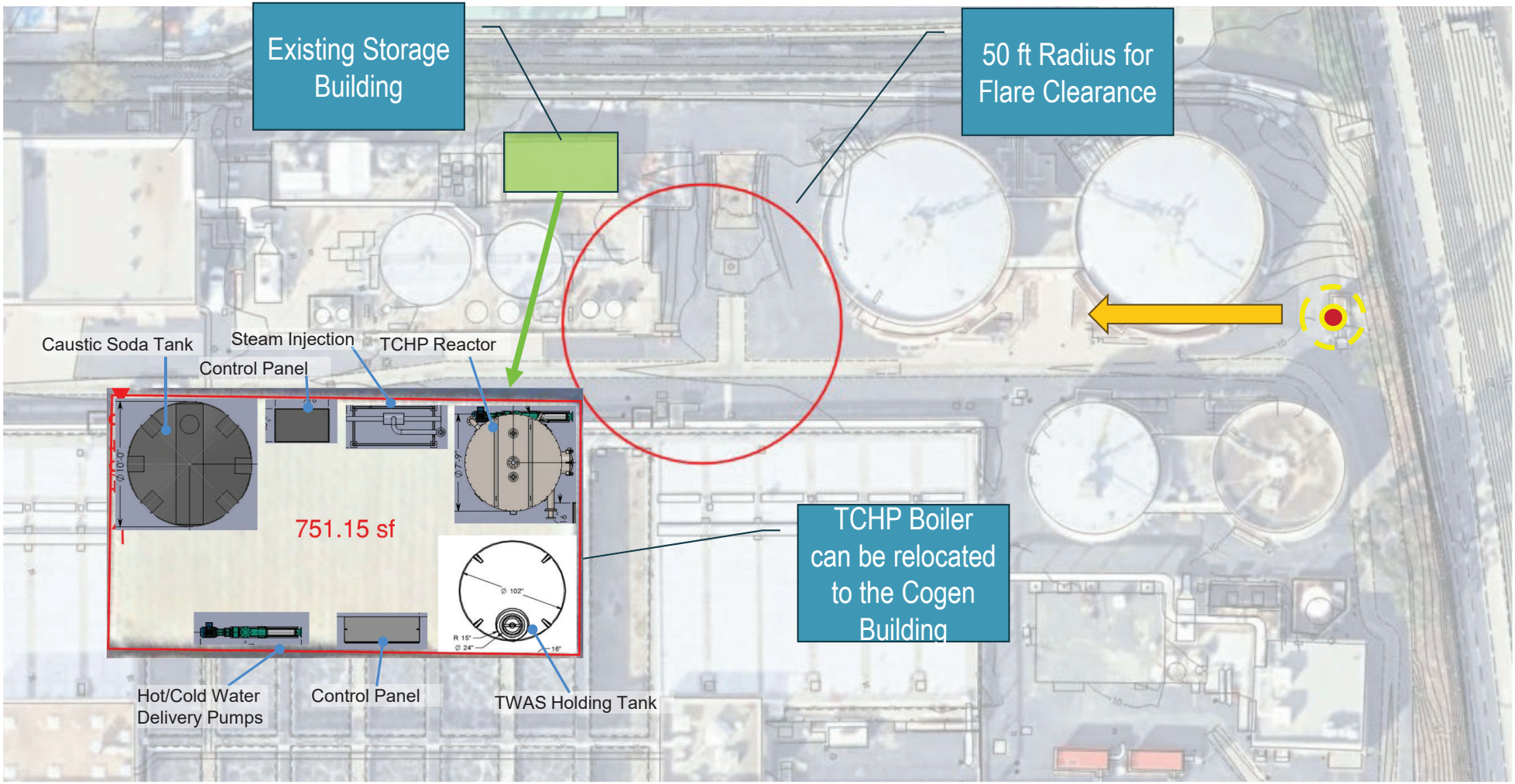





- Typically for 5%-7% TWAS
- Raise pH to 10
- 30-Min Reactor
- Cell Membrane Breakdown
- pH Naturally Reduced to Neutral

Advantage: Less complicated, low pressure and temp
Disadvantage: Max OLR of 0.25.

# Alternative SA.3: TCHP Layout



# Scenario B
# Alternative SB.3: Solids Loading Increases by Primary Clarifier Removal

# Alternative SB.3: Solids Loading Increases by Primary Clarifier Removal

- If improve PCL from 54% removal to 65% removal
  - Primary Sludge Loading increase from 14,000 lb/d to 17,000 lb/d
- Improvements:
  - Increase WAS pump capacity
  - Thickening Improvements to reduce digester flow
  - Roadmap for improvements is by condition + Class B standards
  - Same as SA.3, WAS Pumps, RDTs, and TCHP
- Reasons to Evaluate:
  - If the cost of hauling for Class B solids is reduced
  - Potentially more biosolids management options



*Thermal Chemical Hydrolysis Process (TCHP) Reactor*

**ADVANTAGES**

+ Less Stress on Liquid Stream process
+ Lower energy cost for aeration basin
+ More gas production (energy offset)

**DISADVANTAGES**

- Additional process to operate and maintain
- Capital Cost

# Scenario B
# Alternative SB.4: Using influent characteristics and modeled solids numbers (E2 (B, without OCWRP)

# Alternative SB.4: Solids Loading Increases by Using Influent Characteristics

- If use modeled solids number based on influent characteristics
  - PS loading increases from 21,991 lb/d to 24,800 lb/d
  - WAS loading increases from 15,575 lb/d to 29,000 lb/d
- Improvements:
  - Increase WAS pump capacity
  - Thickening Improvements to reduce digester flow (RDTs, DAFTs to Centrifuges)
  - Digestion Improvements from TCHP
  - Dewatering Improvements (already planned in SOCWA 2027 CIP Plan)
- Reasons to Evaluate:
  - Solids loading increases
  - Potentially more biosolids management options

| Option | Existing | |
|---|---|---|
| Technologies | | CAS |
| **E2 - Existing** | | |
| *Without OCWRP | ***E2** | ✓ |

**ADVANTAGES**

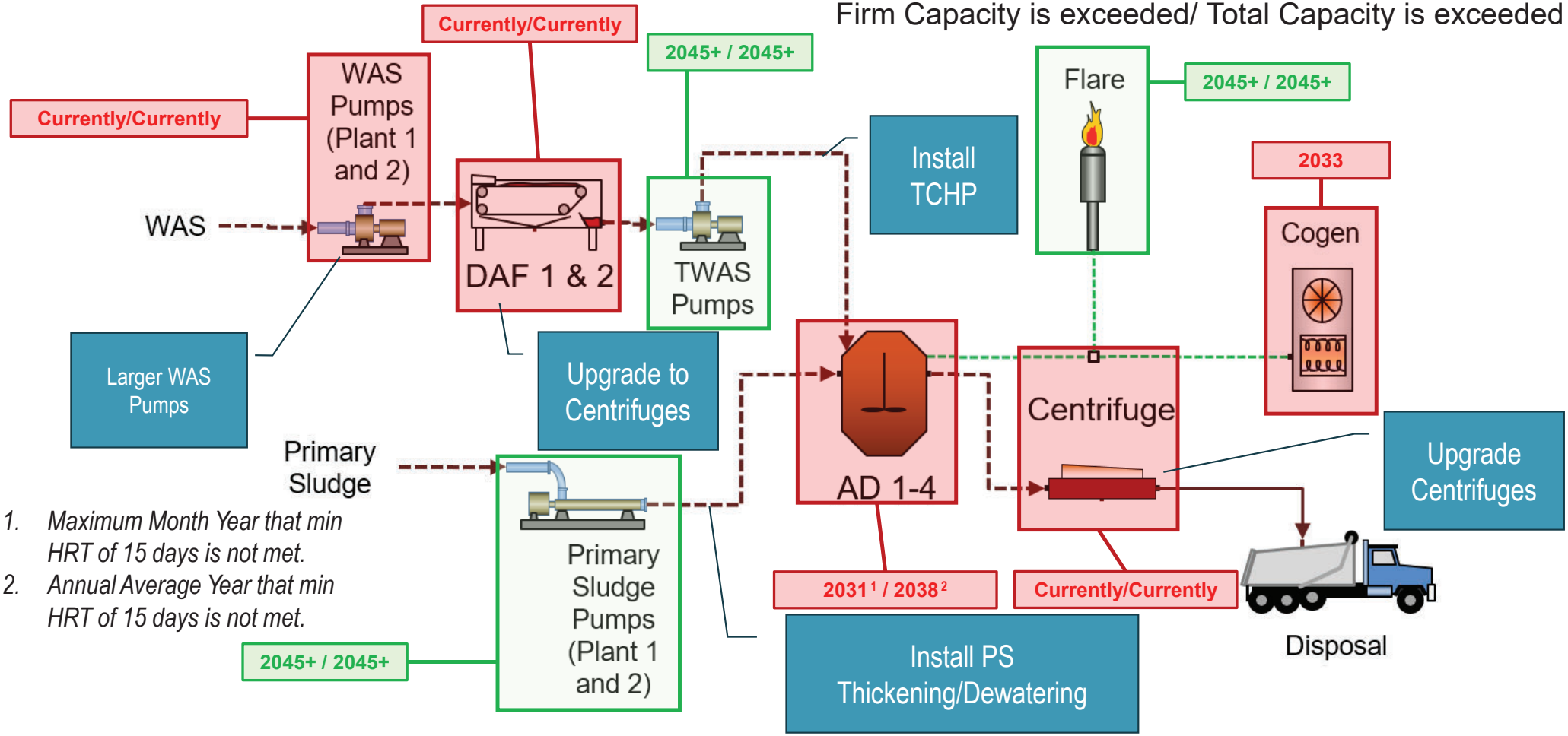
+ More gas production (energy)
+ In case more capacity is needed

**DISADVANTAGES**

- Additional processes to operate and maintain

# Alternative SB.4: Solids Loading Increases by Using Influent Characteristics

**Years shown indicate:**
Firm Capacity is exceeded/ Total Capacity is exceeded



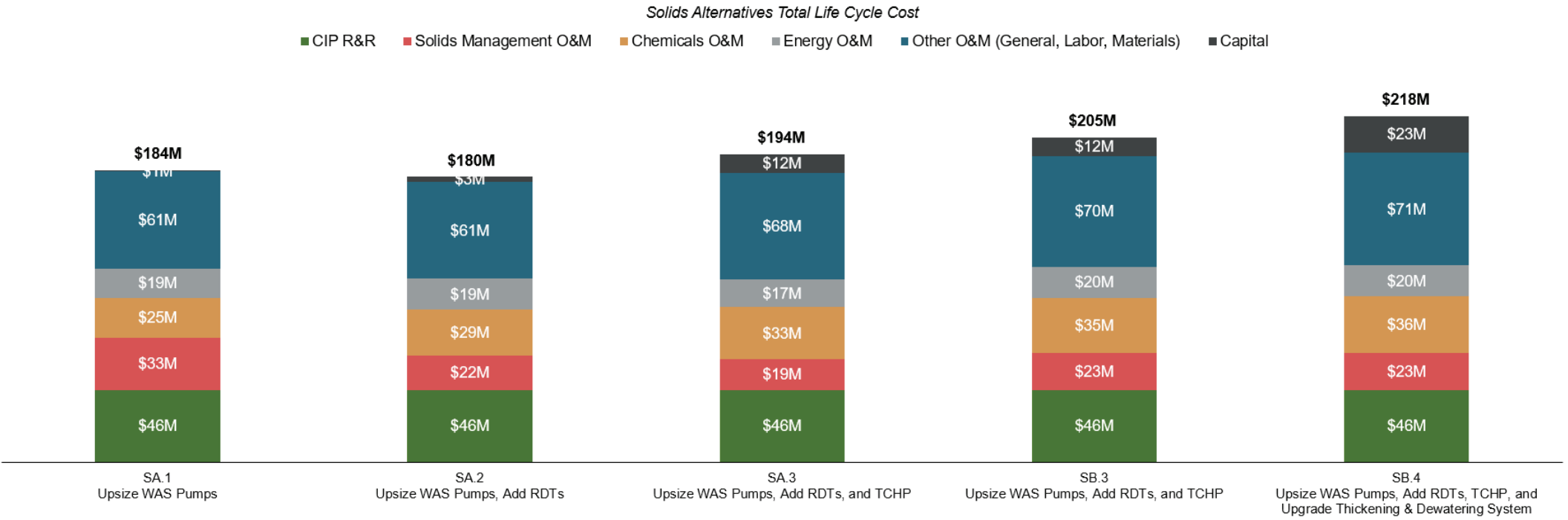

1. *Maximum Month Year that min HRT of 15 days is not met.*
2. *Annual Average Year that min HRT of 15 days is not met.*

# Solids Alternatives Costs

# Solids Cost Summary (2026 Dollars)

| No. | Name | Capital Cost at Base Year | Annual O&M Cost at Base Year |
|---|---|---|---|
| **Scenario 1: Future Loading Represented by Historical Weighed Cake (2021-2025)** | | | |
| **SA.1** | Minimal improvements (Status Quo) to continue Sub-Class B | $0.6M | $5.3M |
| **SA.2** | Some improvements to meet Class B | $2.8M | $5.3M |
| **SA.3** | Some Improvements – Can meet Class B Requirements (with TCHP) | $11.7M | $5.5M |
| **Scenario 2: Future Loading Represented by the Modeled Loading to Digesters Using Historical Influent Flow and Concentrations (2021-2025)** | | | |
| **SB.3** | By Primary Clarifier removal improvement | $11.7M | $6.0M |
| **SB.4** | Using influent characteristics and modeled solids numbers (E2 B, without OCWRP) | $22.9M | $6.1M |

# Solids Life Cycle Costs

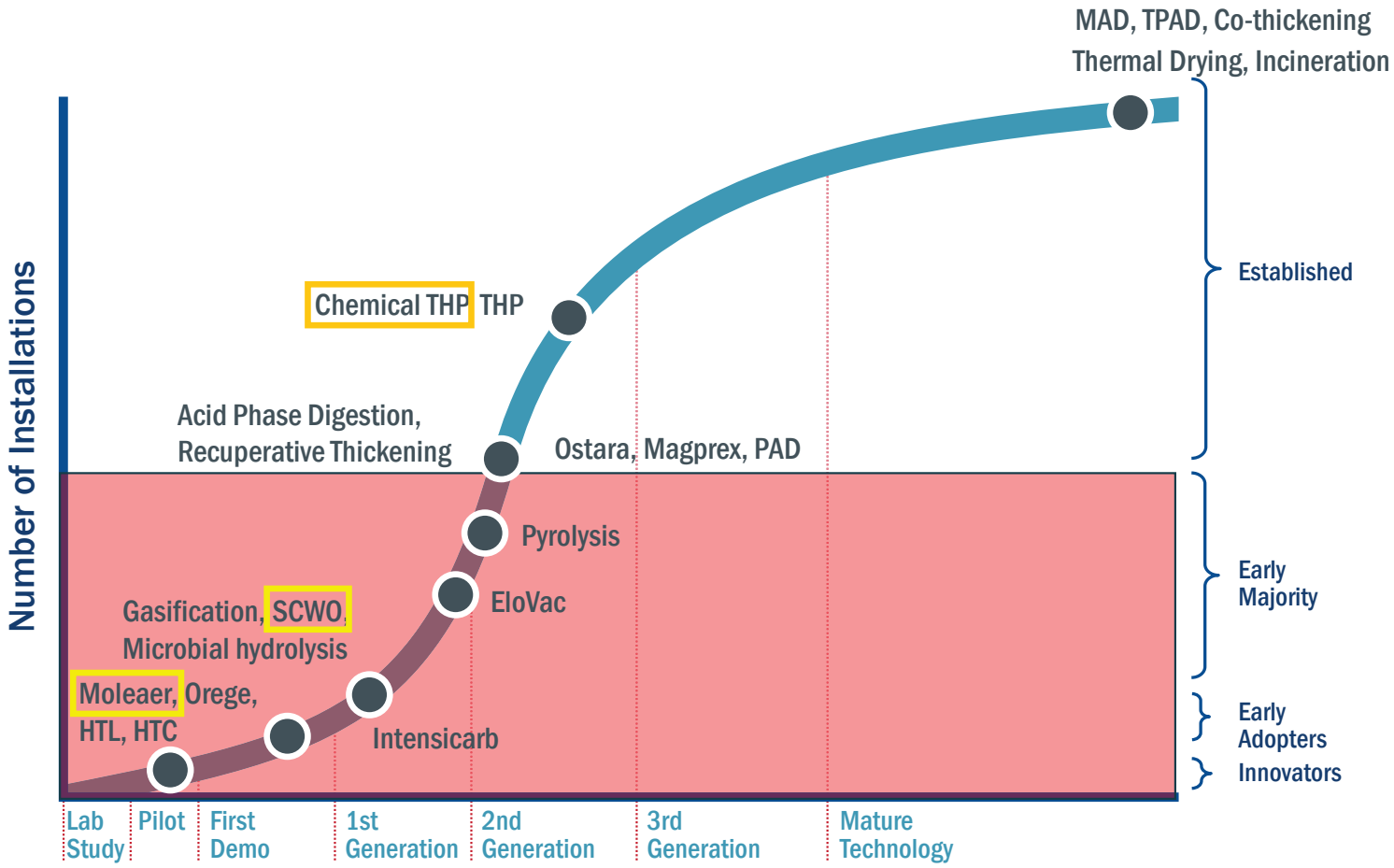



SA.1 (baseline) is more expensive due to sub-class B biosolids management (assumed 6% escalation vs 3.5% escalation for class B)

* CIP R&R provided by SOCWA.

# Emerging Solids Technology

# Technology Maturity and Risk Tolerance



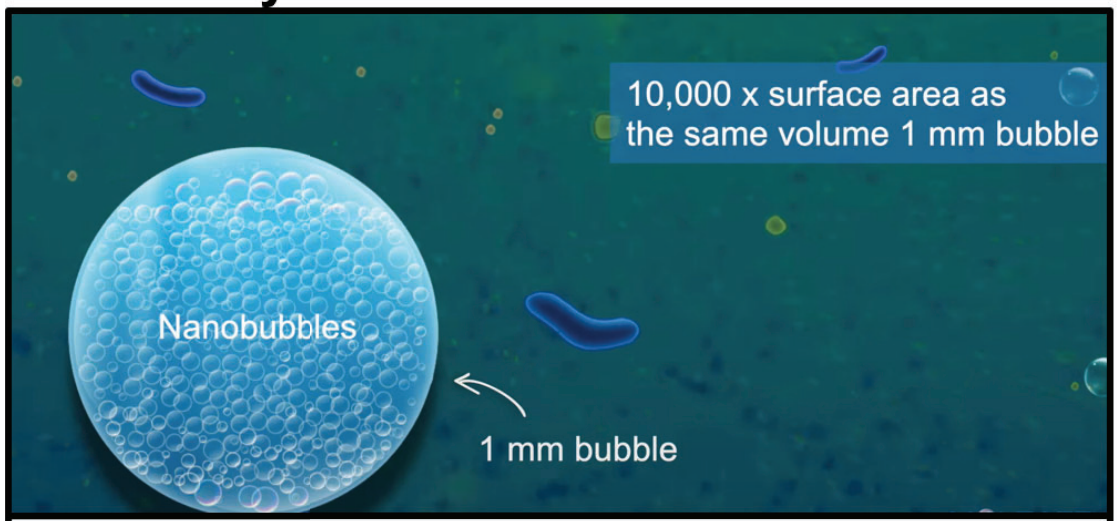
# Moleaer

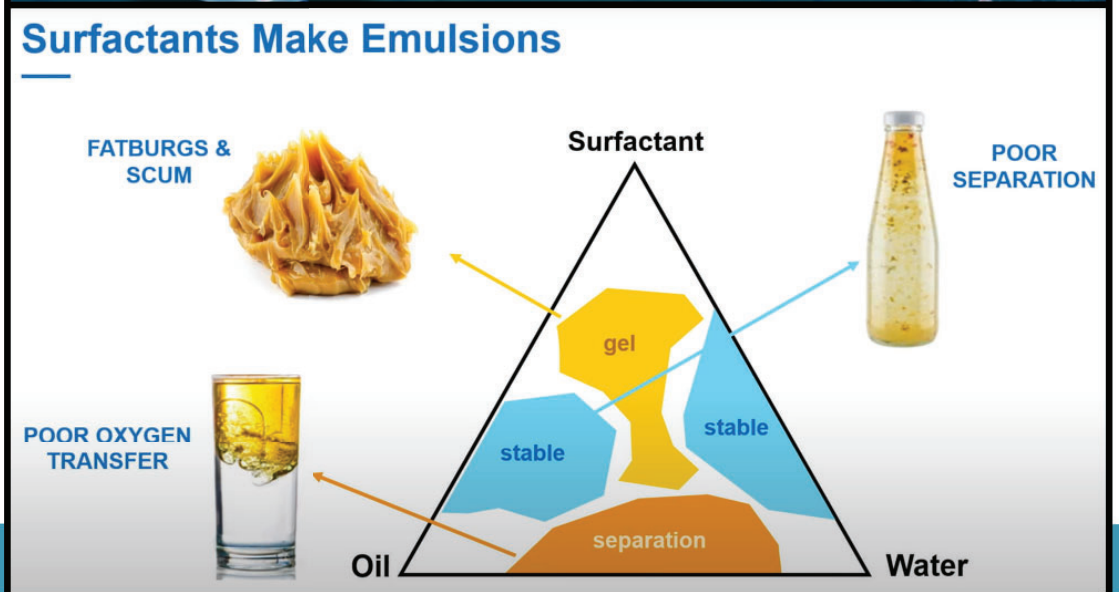
# Nanobubble Aeration by Moleaer

Aeration with Bubbles 1/10,000 grain of salt, 10,000x smaller than fine diffuser bubbles.

Stay suspended in liquid, do not coalesce

Improved breakdown (>50%) of amphiphilic compounds, surfactants, emulsions, anti-microbials, inhibitory compounds including (Microthrix and Nocardia)



# Nanobubble Aeration by Moleaer

Better broken-down sludge going to digestion system resulting in increases hydrolysis rate, therefore better VSR.

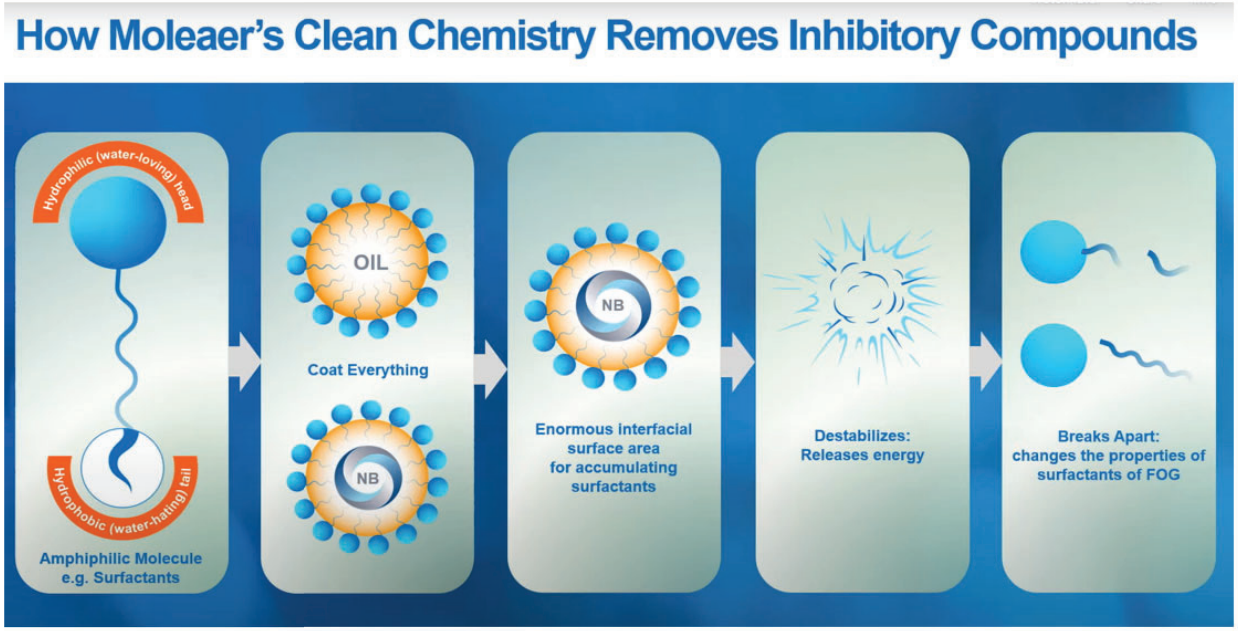
Case studies reporting up to 20% higher biogas production.

In addition to lower aeration energy, higher biological efficiency, reduced foam at secondary treatment, improved settleability

Implement at secondary treatment or in anaerobic digester recirculation loop

Considerations:

- Technology age
- Fouling of diffusers
- Effects of a failure



# Field Results: Multi-Site Field Validation Across Dewatering Applications

## Evaluating polymer demand and cake solids performance




**LA County Sanitation Districts**
**A.K. Warren, Carson, CA**

**Process:** 36 x centrifuges on plant water

**Pilot Goal:** Testing for polymer reduction and cake dryness increase

**Results: 15% polymer reduction OR ~1% increase in cake solids**




**Clean Water Services**
**Rock Creek WRRF, Hillsboro, OR**

**Process:** 2 x centrifuges on plant water

**Pilot Goal:** Testing for polymer reduction and cake dryness increase

**Results: 23% polymer reduction OR ~2% increase in cake solids**




**Greer CPW**
**Maple Creek WWTP Greer, SC**

**Process:** 2 x belt filter presses on city water

**Pilot Goal:** Testing for polymer reduction and cake dryness increase

**Results: 35% polymer reduction OR ~4% increase in cake solids**

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MOLEAER
ADVANCING NANOBUBBLE TECHNOLOGY

# Moleaer Impact at JBL

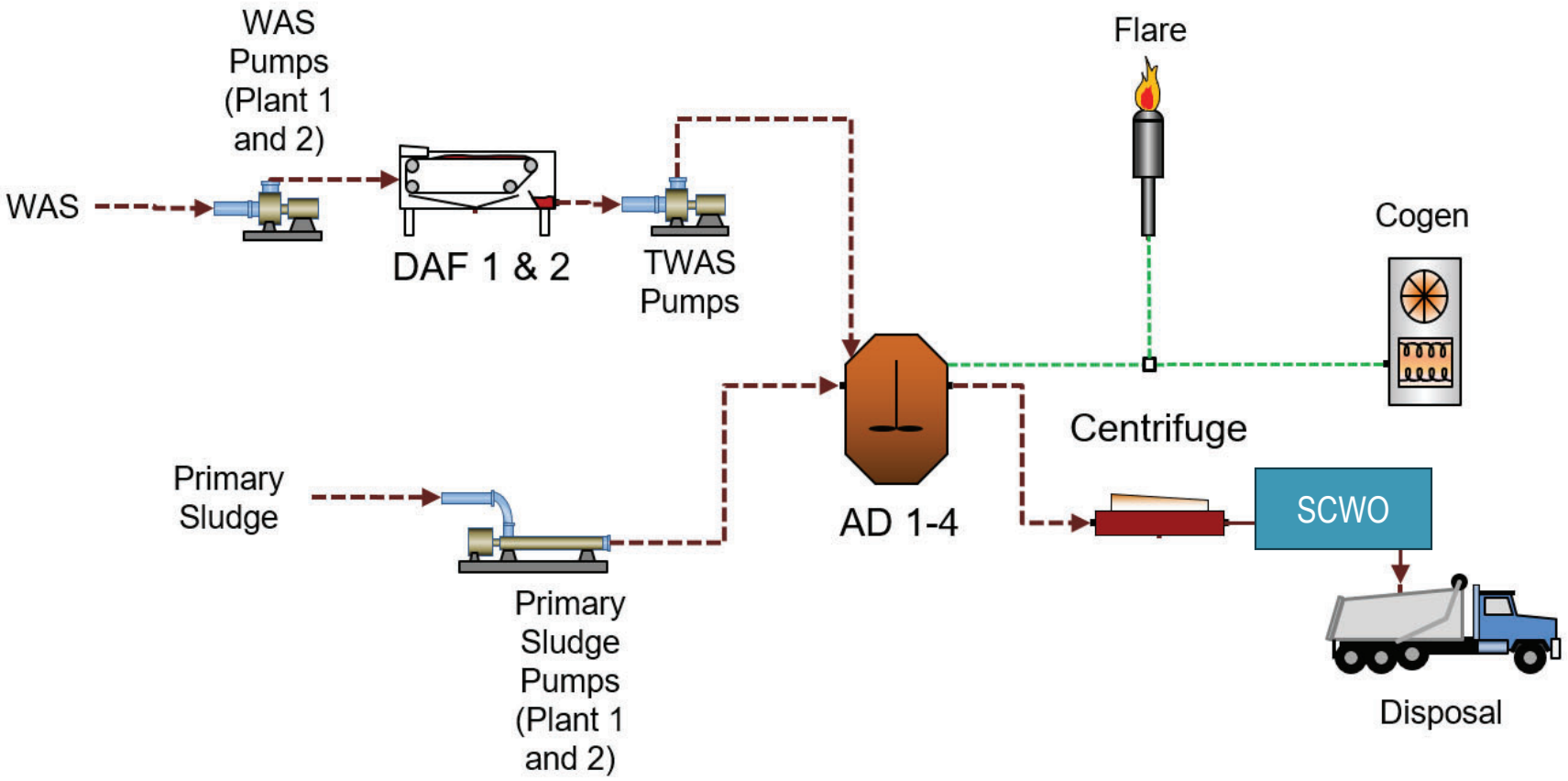
MOLEAER
ADVANCING NANOBUBBLE TECHNOLOGY

- Assume 15% reduction in polymer
- Annual polymer cost: $360k/yr
- Moleaer cost savings:
  - $54k at 15% reduction in polymer consumption
  - $72k at 20% reduction in polymer consumption

- Key equipment:
  - Nanobubble Generators in-series (Moleaer provided)
    - Footprint: 17.3” x 16.7” x 13.9” (LxWxH) each
    - Material: Stainless steel
  - Compressed Air (District provided): Up to 600 SCFM at a minimum of 60 psig
- Rental equipment cost for a minimum of 12-month piloting period: $16,800 per month ($201,600 per year)
- Standard lead time: 8-10 weeks

# Supercritical Water Oxidation (SCWO)

# Supercritical Water Oxidation



# Supercritical Water Oxidation

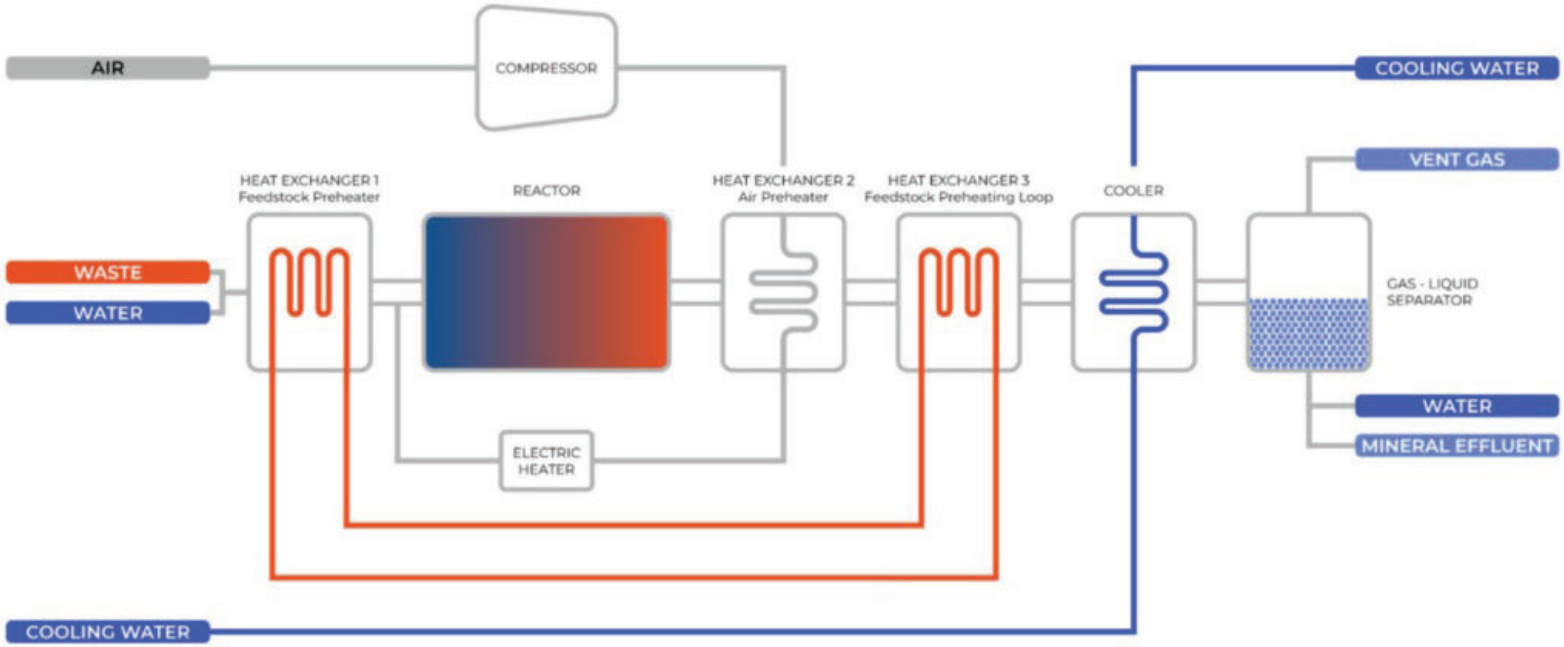



**Figure 2 - 374Water AirSCWO Process Flow**

# Supercritical Water Oxidation

374WATER°

| TABLE 1: CAPITAL SALE ESTIMATE | | ESTIMATE |
|---|---|---|
| AirSCWO System | System | $24,435,000 |
| One-time project fees [1] | Service | $1,275,000 |
| Consultancy engineering and design fees | Service | Out of Scope |
| Permits and regulatory compliance costs | Service | Out of Scope |
| **TABLE 2: ANNUAL ESTIMATED OPERATING COSTS** | | **ESTIMATE** |
| AirSCWO System Maintenance [2] | Out of Scope | $350,000 |
| Trim fuel per year | Out of Scope | $600,000 |
| Electricity costs @ $0.15/kWh (using 705 kW continuous load) | Out of Scope | $926,700 |
| Labor costs per FTE (annualized salary each) [3] | Out of Scope | TBD |
| **TOTAL OPERATING ESTIMATE (Labor not included)–** | | **$1,876,700** |

[1] See Appendix "One Time Fees" for included tasks/responsibilities

[2] Maintenance tasks may include labor and field service tech allowance for the replacement/repair/calibration of parts and instrumentation, replacement parts purchasing, and contingency for (planned and any unplanned) shutdowns and associated waste disposal costs.

[3] Additional ion of existing plant staffing and scheduling.

Break Even: $200/WT Hauling Cost

- Estimated Costs: $55M+, zero-scale installations

- Not included: SCWO Equipment Building, Sludge pre-processing, Sludge Screens, Plant Water Supply, Electrical Power Supply (**2000 Amps**), Spare Parts required

| APPENDIX: One time project fees breakdown | | ESTIMATES |
|---|---|---|
| **1. Engineering** | | |
| Site Planning | Site Assessment & Preparation Plan<br>Design Load Values<br>Support for Permitting & Compliance | |
| Mechanical Engineering | Equipment Layout<br>Materials Selection & Procurement Support<br>Mechanical Integration Planning<br>Piping & Connections Support Design | |
| Electrical Engineering | Control System Customization Design<br>Utility Connection, Wiring & Compliance Review<br>Electrical Drawings<br>Safety & Inspection Planning | |
| **2. System Installation** | | |
| Mechanical Installation | Equipment Delivery & Staging Support<br>Assembly & Mechanical Fit-up Support<br>Piping & Connections Support<br>Pressure & Leak Testing | |
| Electrical Installation | Power & Control Wiring<br>System Integration & Panel Wiring<br>Grounding & Safety Testing<br>Final Inspection & Certification | |
| **3. System Startup** | | |
| Functional Testing & Calibration | Mechanical System Testing<br>Electrical & Control System Verification<br>Software & Automation Setup<br>Performance Optimization<br>Troubleshooting & Adjustments<br>Initial Operator Training | |
| **4. System Commissioning** | | |
| Final Validation & Documentation | System Performance Evaluation<br>Operator Training (2-months of included training, starting 2 weeks prior to system startup)<br>Handover<br>Final Reports & Documentation<br>Post-Commissioning Support | |
| **TOTAL ESTIMATE** | | **$1,275,000** |

Estimated Project Fees: $1,275,000

374WATER

| APPENDIX: Scope of Supply / Scope of Division of Work | | | | |
|---|---|---|---|---|
| 374Water = 374, Owner = OWN, Consultant = EPC, Site Contractor = GC, Not Applicable = N/A , TBD = To Be Determined | | | | |
| **Equipment** | **Specify** | **Design** | **Supply** | **Install** |
| **GENERAL** | | | | |
| Building for equipment, offices, and staff | 374 | EPC | GC | GC |
| Electrical Supply - 480 3phase, 2000 Amp | 374 | EPC | GC | GC |
| Plumbing, and Water Supply, Drain | 374 | EPC | OWN | GC |
| Anchoring, ground rod insulation, conduits | 374 | EPC | GC | GC |
| **Pre-processing** | | | | |
| Sludge pre-processing | EPC | EPC | GC | GC |
| Sludge holding/buffer tank | 374 | EPC | OWN | GC / OWN |
| Sludge fill pump w/level control | OWN | EPC | OWN | GC / OWN |
| **PROCESS EQUIPMENT TO BE INSTALLED (inside the system boundary)** | | | | |
| AirSCWO System | 374 | 374 | 374 | 374/GC |
| Reverse Osmosis Unit | 374 | 374 | 374 | 374/GC |
| Glycol unit | 374 | 374 | 374 | 374/GC |
| Platform and Ladder (if needed) | 374 | 374 | 374 | 374 |
| SCWO Effluent Separation | 374 | EPC | GC | GC |
| **Process Control System** | | | | |
| Software | 374 | 374 | 374 | 374 |
| Programming | 374 | 374 | 374 | 374 |
| Ethernet Interface | 374 | 374 | 374 | 374 |
| Existing SCADA Screen Modification | 374 / OWN | OWN | OWN | OWN |

| Equipment | Specify | Design | Supply | Install |
|---|---|---|---|---|
| **Electrical - 374 equipment interconnects** | | | | |
| PDP for System Equipment | 374 | 374 | 374 | 374 |
| Wiring | 374 | 374 | 374 | 374 |
| Conduit, Cable & Raceways, etc. | 374 | 374 | 374 | 374 / Other |
| **UTILITIES / INFRASTRUCTURE (connections outside the system boundary)** | | | | |
| Valves at scope boundary for process water of non-potable quality to the RO unit | OWN | EPC | OWN | OWN |
| Valves at scope boundary: Plant reclaim water - | OWN | EPC | OWN | OWN |
| Biosolids sludge supply - see above details | OWN | OWN | OWN | OWN |

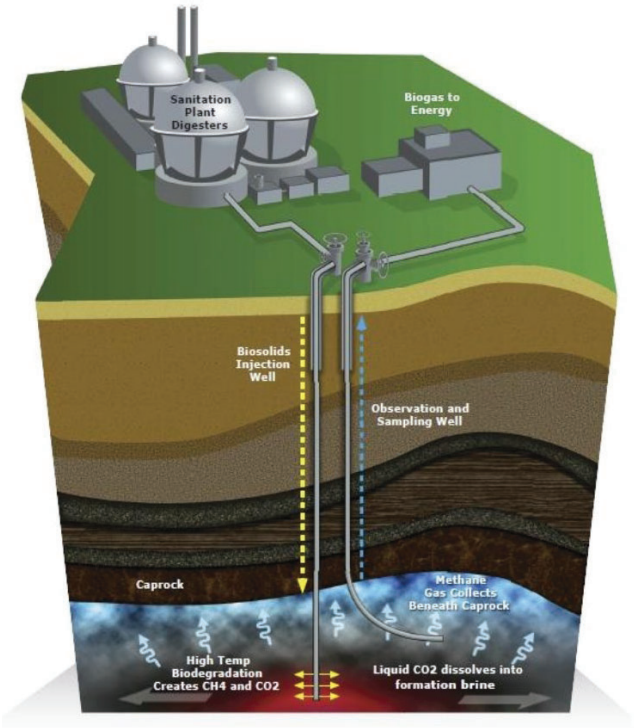
# Supercritical Water Oxidation



# Deep Well Injection

# Deep Well Injection

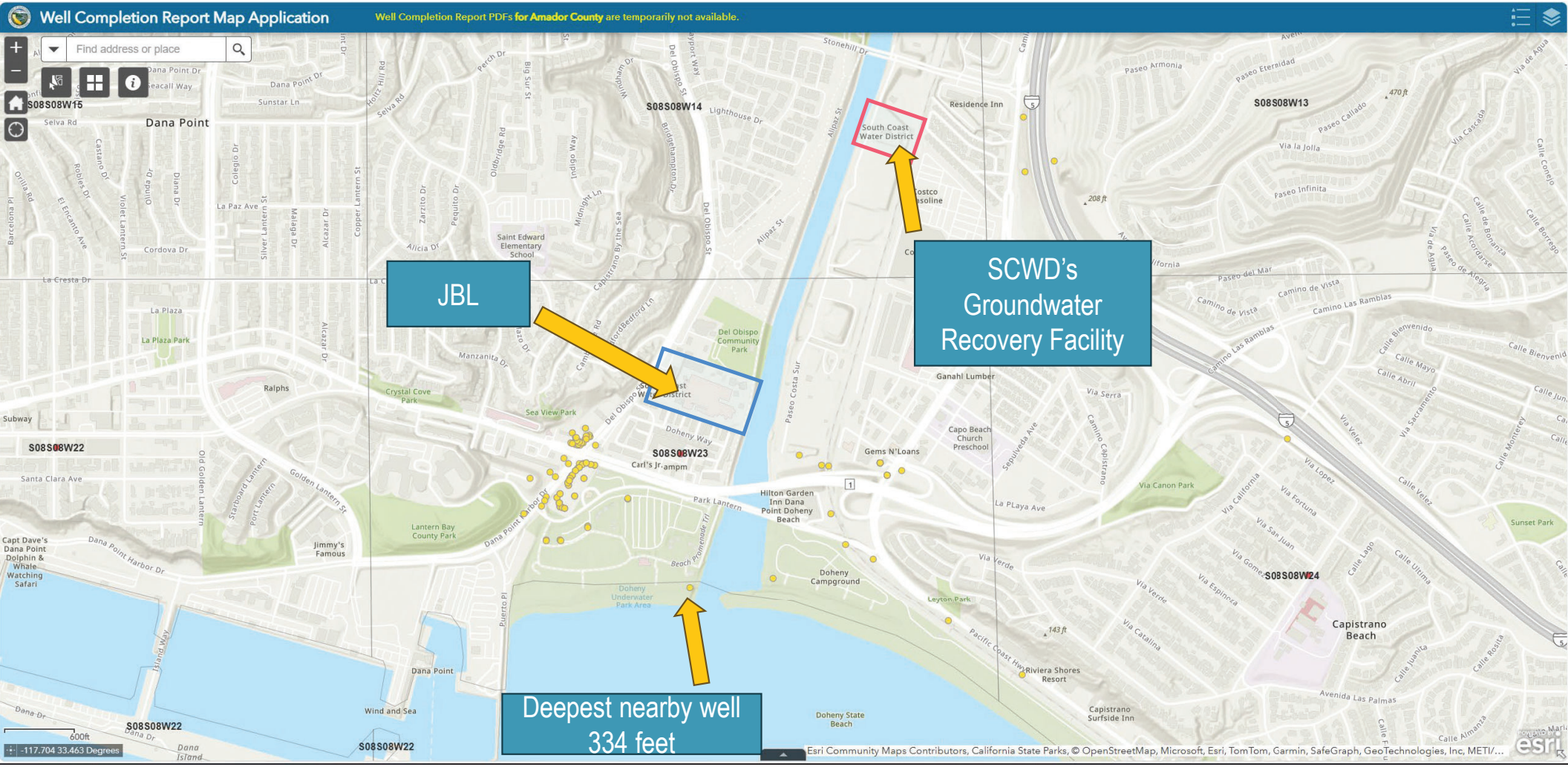
- Known Projects
  - Terminal Island Renewable Energy (LASAN) – July 2008; 4 wells; 5,300 feet below grade.
  - OC San – Feasibility Study Phase (February 18, 2026)
    - 5,000 to 7,000 ft deep well bores
- Advance Planning Requirements:
  - Hydro-Geo investigation: Mapping of Ground Water Basin
  - Seismic Risk Assessment
  - Regulations and permitting
  - Biosolids characterization and pretreatment evaluation
- Considerations:
  - Site Constraints
  - Constructability




Advantek, accessed 2026
https://advantekwms.com/wp-content/uploads/2022/06/Tire-Fact-Sheet.pdf

# Existing Wells Review

DWR, Well Completion Reports, accessed August 2026
https://dwr.maps.arcgis.com/apps/webappviewer/index.html?id=181078580a214c0986e2da28f8623b37



# Biosolids Deep Well Injection Feasibility Report: Plant No. 1 and Plant No. 2

Document No: 250613113517_6cc0c91b
Revision: Final

Orange County Sanitation District
PS24-01 Biosolids Deep Well Injection Feasibility Study
February 18, 2026



- OC San Permitting Matrix

Table 8-2. Permitting Matrix – Plant No. 1 and Plant No. 2

| No. | Permit Name | Issuing Authority | Projected Lead Time | Public Review Period | Obtained by | Remarks |
|---|---|---|---|---|---|---|
| 1 | Class V UIC Permit | EPA Region 9 | Up to 2 years | 30 to 45 days | OC San with assistance of Design-Builder | EPA application is required. EPA administrative review is followed by technical review of the application. Public notice and CalGEM coordination is part of this permit. |
| 2 | CEQA | OC San | Up to 2 years | 30 days | OC San with assistance from Owner Adviser | OC San is planning an IS/MND at minimum. An EIR May be required similar to the TPAD project. |
| 3 | EPA Well Drilling Permit | EPA Region 9 | 1 to 2 years | N/A | Design-Builder | Coordinate with Class V UIC Permit. CalGEM notification. |
| 4 | AQMD for Odor control – Permit to Construct & Title 5 | SCAQMD | 18 to 24 months | 30 days | OC San / Design-Builder | Permit length and effort depend on whether source is classified as a Minor source or Major source. |
| 5 | Local Well Permit | Orange County Health Care Agency | 3 months | N/A | Design-Builder | Well ordinance is enforced by City of Fountain Valley for Plant No. 1. OCWD is notified through this permit process. |
| 6 | Construction Permits | City of Fountain Valley (P1)<br>City of Huntington Beach (P2) | 3 months | N/A | Design-Builder | All other permits in hand before applying for construction permits. |
| 7 | NPDES | EPA Region 9 and California Regional Water Quality Control Board – Santa Ana Region (Region 8) | 1 year | N/A | OC San | Description of project must be included in NPDES updated permit. |
| 8 | Coastal Development Permit (Plant No. 2 only) | Coastal Commission / City of Huntington Beach | 6 months assumed, OC San to confirm | N/A | Design-Builder | Permit or variance may be required for Plant No. 2 biosolids receiving building if the final design height of the building exceeds 45 ft. |
| 9 | CalGEM Coordination | | | | EPA coordinates with CalGEM during the UIC permit process | CalGEM is notified by EPA during the permitting process. CalGEM provides EPA with a list of wells/ APs and may provide comments on risks during the EPA technical review UIC permit stage. |

# OC San Feasibility Report OPCC (February 18, 2026)

- Injection Wells
- Monitoring Wells
- Fine Screens
- Receiving Slurry Tank and loading
- Biosolids Pumps
- Injection Pumps
- Dilution Water and Pumps
- Odor Control
- Civil Site Work
- Electrical & I&C

Table 10-2. Capital Improvement Project Budget and Estimate Accuracy Range

| Site | Low Range -20% | Estimate of Capital Improvement Project Budget | High Range +75% |
|---|---|---|---|
| Plant No. 1 Site 1: Solids Area | $104,310,000 | $130,382,000 | $228,170,000 |
| Plant No. 1 Site 2: West Side Primary Clarifier | $103,640,000 | $129,542,000 | $226,700,000 |
| Plant No. 2 Site 1: North Main Facility | $141,080,000 | $176,350,000 | $308,620,000 |
| Plant No. 2 Site 2: South Main Facility | $137,710,000 | $172,130,000 | $301,230,000 |

# 05



# Draft Evaluation Criteria

# DRAFT Evaluation Criteria Summary

| Criteria | Liquids Alternatives Weighting | Solids Alternatives Weighting |
|---|---|---|
| Capital Cost | 50% | 50% |
| Operation and Maintenance Cost | 20% | 20% |
| Schedule & Implementation Complexity | 10% | 10% |
| Technical Feasibility | 10% | 10% |
| Resiliency & Reliability | 5% | 5% |
| Regional Beneficial Use – Liquids | 5% | - |
| Regional Beneficial Use – Solids | - | 5% |

| Qualitative Ranking | Extremely Low | Very Low | Low | Moderately Low | Moderate | Moderately Strong | Strong | Very Strong | Extremely Strong |
|---|---|---|---|---|---|---|---|---|---|
| Quantitative Score | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

# DRAFT Evaluation Criteria Definitions

| | Definition | Weight | Extremely Low (Score = 1) | Moderate (Score = 5) | Extremely Strong (Score = 9) |
|---|---|---|---|---|---|
| Capital Cost (50%) | The upfront cost to plan, design, build and start up the facilities. Lower costs mean less initial funding and a higher score. | 50% | The lowest-cost option scores 9. Higher costs earn lower scores based on how much they exceed the lowest cost. The 8 in the equation represents the span from 1 to 9. $$\boldsymbol{Cost\ Score = 9 - 8\left(\frac{Alternative\ Cost - Lowest\ Cost}{Highest\ Cost\ - Lowest\ Cost}\right)}$$ | | |
| O&M Cost (20%) | The ongoing cost to run and maintain the facilities, including staff, energy, chemicals and hauling. Lower costs earn higher scores. | 20% | The lowest-cost option scores 9. Higher costs earn lower scores based on how much they exceed the lowest cost. The 8 in the equation represents the span from 1 to 9. $$\boldsymbol{Cost\ Score = 9 - 8\left(\frac{Alternative\ Cost - Lowest\ Cost}{Highest\ Cost\ - Lowest\ Cost}\right)}$$ | | |
| Schedule & Implementation Complexity (10%) | How long and how difficult construction will be while keeping the plant running. Higher scores mean simpler, faster construction with less disruption to wastewater treatment. | 10% | Difficult construction with many steps and a high risk of delays. Major disruptions or temporary reductions in treatment capacity. | Some construction challenges and temporary disruptions, but the plant can manage them while continuing treatment. | Simple construction with fewer steps and a lower risk of delays. Little or no disruption to treatment. |

# DRAFT Evaluation Criteria Definitions

| Criteria | Definition | Weight | Extremely Low (Score = 1) | Moderate (Score = 5) | Extremely Strong (Score = 9) |
|---|---|---|---|---|---|
| Technical Feasibility (10%) | **Workforce Fit**<br><br>How well the process matches the skills and equipment experience of current operators. Higher scores mean less training or new expertise to run and maintain it. | 4% | Requires major training and new skills to operate and maintain unfamiliar equipment. | Builds on current staff skills, with some additional training needed. | Closely matches current staff skills and familiar equipment. Requires little additional training or outside expertise. |
| | **Maturity**<br><br>How well the process has worked at similar treatment plants, especially locally. Higher scores mean a stronger track record and more confidence in long-term performance. | 3% | Little or no experience at operating plants, especially locally. Long-term performance is largely unproven. | Successful use at similar plants, including local examples, provides confidence that the process can work reliably. | A long, proven record at many similar plants, especially locally. Strong confidence in successful operation over time. |
| | **Space**<br><br>How much usable tank space and land remain for other needs or future expansion. Higher scores mean more room to adapt as the plant's needs change. | 3% | Uses nearly all available tanks and land, leaving little or no room for other uses or future expansion. | Leaves some usable tank space or land for other needs or future expansion. | Leaves plenty of usable tank space or land, giving the plant flexibility for future needs. |

# DRAFT Evaluation Criteria Definitions

| Criteria | Definition | Weight | Extremely Low (Score = 1) | Moderate (Score = 5) | Extremely Strong (Score = 9) |
|---|---|---|---|---|---|
| Resiliency & Reliability (5%) | **Resiliency**<br><br>How well the process keeps plant operation when conditions change or problems occur, and how well it recovers. Higher scores mean more stable treatment and better protection of treatment quality. | 3% | Problems or changing conditions can quickly reduce treatment quality. The process has limited ability to absorb disruptions or recover. | Handles everyday changes and recovers from routine problems with staff adjustments. Bigger disruptions may need extra support. | Keeps treatment stable through major changes or disruptions, with built-in protection and flexibility to maintain water quality and meet requirements. |
| | **Redundancy**<br><br>How well backup equipment and extra treatment capacity keep the plant running during outages or storms. Higher scores mean more backup capacity and fewer interruptions to treatment. | 2% | Few backups or spare tanks. An equipment outage can sharply reduce treatment capacity or the ability to handle storm flows. | Enough backup capacity for routine outages and expected storms. Bigger disruptions may require adjustments or temporarily reduce capacity. | Strong backups and extra capacity keep treatment running when key equipment is offline, while helping manage storm flows and meet treatment requirements. |
| Regional Beneficial Use – Liquids (5%) | How widely recycled water can serve local agencies and communities. Higher scores mean more SOCWA PC2 member agencies can benefit. | 5% | Provides little or no reusable water benefit to local member agencies. | Provides useful recycled water for several member agencies, but not the whole region. | Provides useful recycled water for most or all member agencies, benefiting the widest part of the region. |
| Regional Beneficial Use – Solids (5%) | How useful treated solids (biosolids) are as a resource, based on their quality and available markets. Higher scores mean more practical reuse options. | 5% | Solids quality limits reuse to a few restricted uses, with little flexibility. | Supports established uses, such as applying solids to land or composting, with some options to recover resources or energy. | Higher-quality solids support the widest range of reuse options and greater flexibility for long-term regional needs. |

# Questions?

October 26, 2026

# Agenda Item 4

**Project Committee 2 Special Meeting**

**Meeting Date:** October 26, 2026

**TO:** Project Committee 2 Board of Directors

**FROM:** Amber Boone, General Manager

**STAFF CONTACT:** Jim Burror, Deputy General Manager / Chief Engineer
Roni Grant, Capital Improvement Program Manager

**SUBJECT:** J.B. Latham Facility Plan Assessment Update – Draft Evaluation Criteria, Weighting and Scoring Methodology [Project Committee 2]

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## Executive Summary

HDR will present the proposed criteria, weighting factors, and scoring methodology to evaluate the liquids and solids alternatives in the J.B. Latham (JBL) Facility Plan Assessment (FPA). Staff are seeking input from Project Committee 2 (PC 2) regarding whether the proposed criteria, weighting factors, and scoring methodology appropriately reflect the priorities of the PC2 Board Members. A draft summary of the project alternative scoring is provided to provide the Board with results based on the staff's recommendation of criteria.

## Background

SOCWA retained HDR to prepare a Facility Planning Assessment (FPA) for the J.B. Latham Treatment Plant (JBL) to evaluate existing facilities, identify future treatment requirements, and develop alternatives for long-term facility improvements over a 30-year planning horizon.

As discussed under Agenda Item 3, the FPA includes wastewater treatment and solids management alternatives under different future operating conditions. The FPA scope includes developing evaluation criteria and a comparative methodology to identify alternatives for further consideration. Establishing these criteria and their relative importance is an important step because the evaluation methodology can significantly influence which alternatives are recommended.

## Discussion

HDR has prepared draft evaluation criteria, weighting factors, and scoring methodologies to support a consistent comparison of the wastewater treatment and solids management alternatives. These proposed HDR criteria were provided to stakeholders for input, circulated to PC2 stakeholders on August 6, 2026, with feedback due by October 6, 2026. To assist stakeholders, SOCWA staff provided input reflecting SOCWA's historical emphasis on capital costs, long-term financial considerations, operational reliability, and regional priorities as a comparison to HDR's score is included in Table 1.

Table 1: Draft criteria and weighting factors

| **Evaluation Criteria** | **HDR Proposed Weight** | **Staff Proposed Weight** |
|---|---|---|
| Capital Cost | 30% | 50% |
| Operations and Maintenance Cost | 20% | 20% |
| Schedule and Implementation Complexity | 10% | 10% |
| Technical Feasibility | 15% | 10% |
| Resiliency and Reliability | 15% | 5% |
| Regional Beneficial Use | 10% | 5% |
| Total | 100% | 100% |

The same weighting framework is proposed for liquid treatment and solids management alternatives, with regional beneficial use evaluated separately based on recycled water or Biosolids management opportunities.

PC2 Members are requested to consider staff's recommendations:

- Capital and operating costs should represent 70% of the overall evaluation with less emphasis on technical feasibility, reliability, resiliency, and implementation considerations.
- Schedule and Implementation Complexity, Technical Feasibility, and Resiliency and Reliability should receive less consideration since all the options are similarly complex; only technically feasible options are being considered; and all options offer equivalent Resiliency and Reliability under current regulations.
- Regional beneficial uses should receive less consideration in evaluating recycled water and Biosolids management alternatives since they all produce similarly reusable recycled water and Biosolids.

Committee input will be used to refine the evaluation methodology and update the comparative rankings before identifying alternatives for further development.

**Financial Impact**

There is no immediate financial impact associated with reviewing the draft evaluation criteria, weighting factors, scoring methodology and draft scoring results.

The evaluation framework will influence the comparison and potential selection of alternatives involving significant future capital and operating expenditures. Any recommended capital improvements, project budgets, and funding authorizations will be considered separately through SOCWA's established approval processes.

**Recommendation:**

Staff recommend that the PC 2 Board adopt the weighting criteria proposed by SOCWA staff as shown in Table 1 of this report.

**Attachment:**

Draft Project Alternatives Scoring for Alternatives A and B

## Liquid Alternatives Criteria Evaluation – Option A (with OCWRP)

*JB Latham Facility Planning Assessment | Liquid Alternatives Criteria Evaluation (Updated with 2026$ Cost Summary) | DRAFT*

| Criterion (Weight) | A.0 Baseline with OCWRP | 1A.1 Plant 1 MBR | 1A.2 Plant 1 MLE | 1A.3 Plant 1 MOB/IFAS | 1A.4a Plant 1 N/Partial DN | 1A.4b Plant 1 N/Partial DN Designated Use | 2A.1 Plant 2 MBR | 2A.4a Plant 2 N/Partial DN | 2A.4b Plant 2 N/Partial DN Designated Use |
|---|---|---|---|---|---|---|---|---|---|
| **Capital Cost (50%)** | 9.0 – Extremely Strong ($0) | 1.2 – Extremely Low ($102.4M) | 4.7 – Moderate ($56.5M) | 4.6 – Moderate ($58.1M) | 4.7 – Moderate ($57.0M) | 6.0 – Moderately Strong ($40.0M) | 1.0 – Extremely Low ($104.8M) | 4.7 – Moderate ($57.0M) | 6.0 – Moderately Strong ($40.0M) |
| **Annual O&M Cost (20%)** | 9.0 – Extremely Strong ($5.98M/yr) | 1.0 – Extremely Low ($7.64M/yr) | 5.2 – Moderate ($6.77M/yr) | 5.0 – Moderate ($6.80M/yr) | 5.4 – Moderate ($6.76M/yr) | 8.0 – Very Strong ($6.21M/yr) | 1.0 – Extremely Low ($7.64M/yr) | 5.4 – Moderate ($6.76M/yr) | 8.0 – Very Strong ($6.21M/yr) |
| **Schedule & Implementation Complexity (10%)** | 9 – Extremely Strong | 3 – Low | 5 – Moderate | 7 – Strong | 6 – Moderately Strong | 7 – Strong | 4 – Moderately Low | 7 – Strong | 8 – Very Strong |
| **Workforce Fit (4%)** | 9 – Extremely Strong | 3 – Low | 7 – Strong | 6 – Moderately Strong | 7 – Strong | 8 – Very Strong | 3 – Low | 7 – Strong | 8 – Very Strong |
| **Maturity (3%)** | 9 – Extremely Strong | 7 – Strong | 9 – Extremely Strong | 3 – Low | 9 – Extremely Strong | 9 – Extremely Strong | 7 – Strong | 9 – Extremely Strong | 9 – Extremely Strong |
| **Space (3%)** | 9 – Extremely Strong | 6 – Moderately Strong | 4 – Moderately Low | 7 – Strong | 7 – Strong | 8 – Very Strong | 6 – Moderately Strong | 7 – Strong | 8 – Very Strong |
| **Resiliency (3%)** | 5 – Moderate | 9 – Extremely Strong | 6 – Moderately Strong | 8 – Very Strong | 5 – Moderate | 5 – Moderate | 9 – Extremely Strong | 5 – Moderate | 5 – Moderate |
| **Redundancy (2%)** | 9 – Extremely Strong | 5 – Moderate | 3 – Low | 6 – Moderately Strong | 6 – Moderately Strong | 6 – Moderately Strong | 7 – Strong | 7 – Strong | 7 – Strong |
| **Regional Beneficial Use – Liquids (5%)** | 1 – Extremely Low | 3 – Low | 5 – Moderate | 5 – Moderate | 7 – Strong | 5 – Moderate | 3 – Low | 7 – Strong | 5 – Moderate |
| **Total Weighted Score (1-9 scale)** | **8.48** | **2.13** | **5.05** | **5.15** | **5.41** | **6.65** | **2.17** | **5.53** | **6.77** |

*Notes: Scores are on a 1-9 scale (Extremely Low to Extremely Strong) from the criteria evaluation. Capital costs and Annual O&M are from the Liquids Cost Summary (2026 Dollars) slide. Total Weighted Score uses the stated criterion weights. Higher scores are better for all criteria. Green = Strong or better; Yellow = Moderate range; Red = Low or weaker. Option B (without OCWRP) is recommended for removal based on SMWD Board action to reconstruct OCWRP.*

## Liquid Alternatives Criteria Evaluation – Option B (without OCWRP) — Recommended for Removal

*JB Latham Facility Planning Assessment | Liquid Alternatives Criteria Evaluation (Updated with 2026$ Cost Summary) | DRAFT*

| Criterion (Weight) | B.0<br>Baseline without OCWRP | 1B.1<br>Plant 1 MBR | 1B.3<br>Plant 1 MOB/IFAS | 1B.4a<br>Plant 1 N/Partial DN | 1B.4b<br>Plant 1 N/Partial DN Designated Use | 2B.1<br>Plant 2 MBR | 2B.4a<br>Plant 2 N/Partial DN | 2B.4b<br>Plant 2 N/Partial DN Designated Use |
|---|---|---|---|---|---|---|---|---|
| **Capital Cost (50%)** | 9.0 – Extremely Strong ($0) | 1.1 – Extremely Low ($104.7M) | 4.4 – Moderately Low ($61.1M) | 4.7 – Moderate ($57.0M) | 6.0 – Moderately Strong ($40.0M) | 1.0 – Extremely Low ($106.9M) | 4.7 – Moderate ($57.0M) | 6.0 – Moderately Strong ($40.0M) |
| **Annual O&M Cost (20%)** | 9.0 – Extremely Strong ($6.70M/yr) | 1.0 – Extremely Low ($8.36M/yr) | 5.0 – Moderate ($7.52M/yr) | 5.2 – Moderate ($7.47M/yr) | 7.8 – Very Strong ($6.93M/yr) | 1.0 – Extremely Low ($8.36M/yr) | 5.2 – Moderate ($7.47M/yr) | 7.8 – Very Strong ($6.93M/yr) |
| **Schedule & Implementation Complexity (10%)** | 9 – Extremely Strong | 2 – Very Low | 6 – Moderately Strong | 5 – Moderate | 6 – Moderately Strong | 3 – Low | 6 – Moderately Strong | 7 – Strong |
| **Workforce Fit (4%)** | 9 – Extremely Strong | 3 – Low | 6 – Moderately Strong | 7 – Strong | 8 – Very Strong | 3 – Low | 7 – Strong | 8 – Very Strong |
| **Maturity (3%)** | 9 – Extremely Strong | 7 – Strong | 3 – Low | 9 – Extremely Strong | 9 – Extremely Strong | 7 – Strong | 9 – Extremely Strong | 9 – Extremely Strong |
| **Space (3%)** | 6 – Moderately Strong | 3 – Low | 2 – Very Low | 2 – Very Low | 3 – Low | 4 – Moderately Low | 2 – Very Low | 3 – Low |
| **Resiliency (3%)** | 5 – Moderate | 9 – Extremely Strong | 8 – Very Strong | 5 – Moderate | 5 – Moderate | 9 – Extremely Strong | 5 – Moderate | 5 – Moderate |
| **Redundancy (2%)** | 2 – Very Low | 1 – Extremely Low | 2 – Very Low | 2 – Very Low | 2 – Very Low | 2 – Very Low | 2 – Very Low | 2 – Very Low |
| **Regional Beneficial Use – Liquids (5%)** | 1 – Extremely Low | 3 – Low | 5 – Moderate | 7 – Strong | 5 – Moderate | 3 – Low | 7 – Strong | 5 – Moderate |
| **Total Weighted Score (1-9 scale)** | **8.25** | **1.81** | **4.72** | **5.04** | **6.28** | **1.91** | **5.14** | **6.38** |

*Notes: Scores are on a 1-9 scale (Extremely Low to Extremely Strong) from the criteria evaluation. Capital costs and Annual O&M are from the Liquids Cost Summary (2026 Dollars) slide. Total Weighted Score uses the stated criterion weights. Higher scores are better for all criteria. Green = Strong or better; Yellow = Moderate range; Red = Low or weaker. Option B (without OCWRP) is recommended for removal based on SMWD Board action to reconstruct OCWRP.*