



LOS ANGELES COUNTY
SANITATION DISTRICTS

A Century of Service

Nitrogen Management Studies To Support PWSC project

Metropolitan Water District Subcommittee on Pure
Water Southern California and Regional Conveyance

Item 3b

June 27, 2023



OUR SERVICE AREA

N

110

Sepulveda Blvd.

Main St.

Demo Plant Site

Full-Scale AWT Site

Figueroa St.

Lomita Blvd.

bing

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Largest untapped
source of treated
wastewater

Recent Sanitation Districts' Led Technical Studies

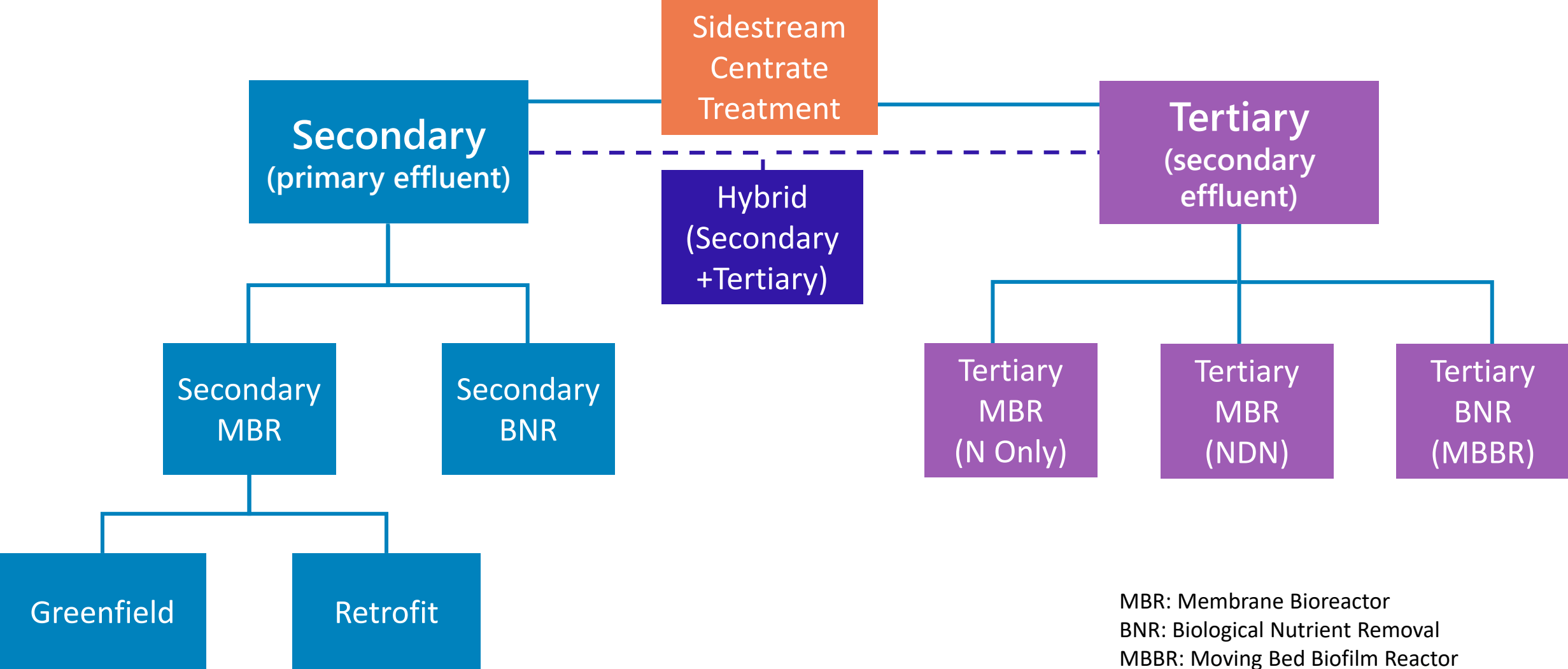
Nitrogen Management Studies

- Side stream centrate treatment for Nitrogen reduction
- Retrofit existing reactors for Nitrogen reduction
- Pilot scale studies of various treatment approaches
- Development of alternative treatment trains and facilities planning

Source Control

Residuals Management

Nitrogen Management Options Considered



MBR: Membrane Bioreactor
BNR: Biological Nutrient Removal
MBBR: Moving Bed Biofilm Reactor

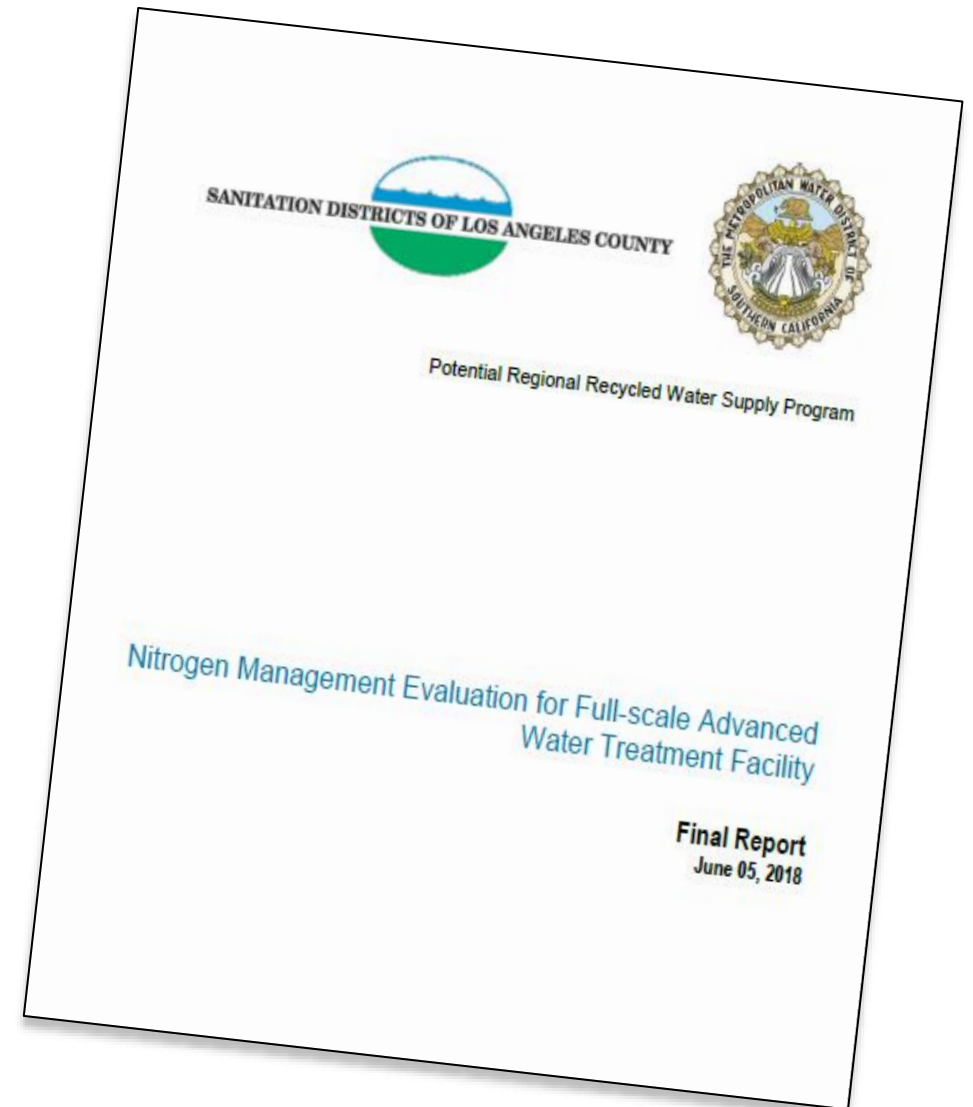
Nitrogen Management Studies

Nitrogen management committee (2017-2019)

- LACSD and Metropolitan joint effort
- Comprehensively evaluated approaches to meet nitrogen targets
- Recommended treatment process trains for further evaluation

JWPCP technical analysis (2020-Present)

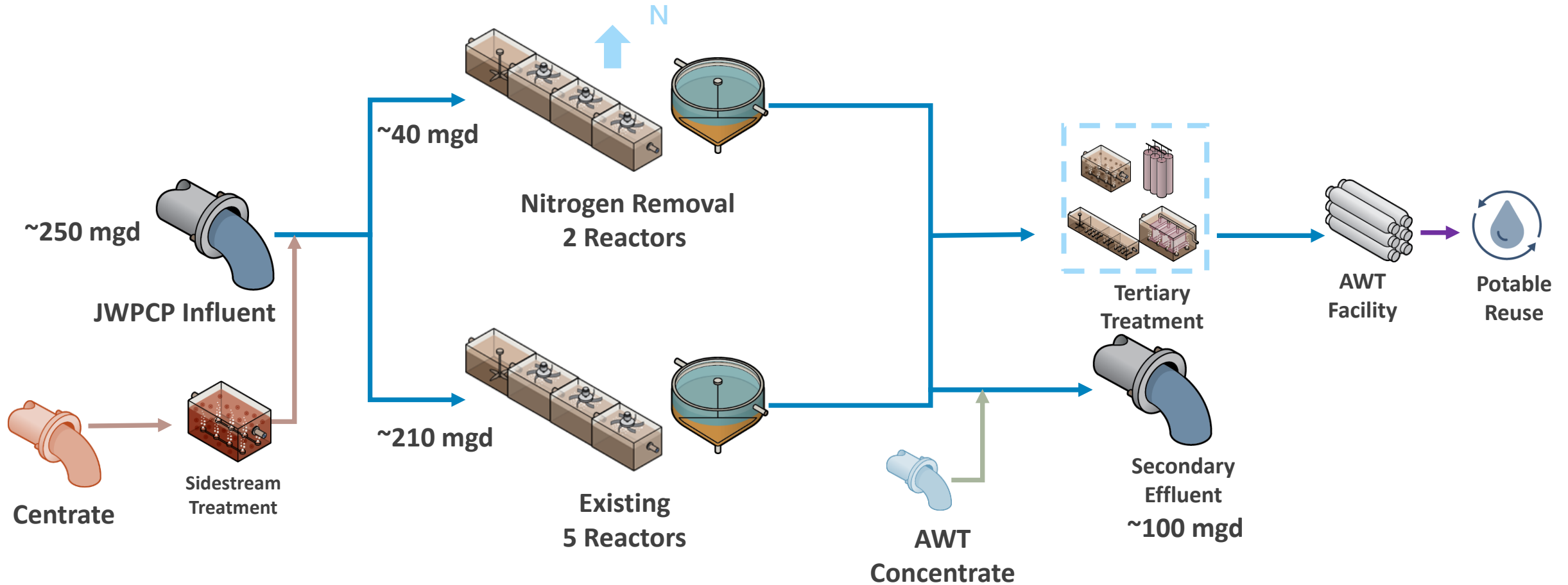
- LACSD nutrient removal study to refine potential alternatives
- Treatment options include tertiary and secondary MBR, and BNR (non-MBR)



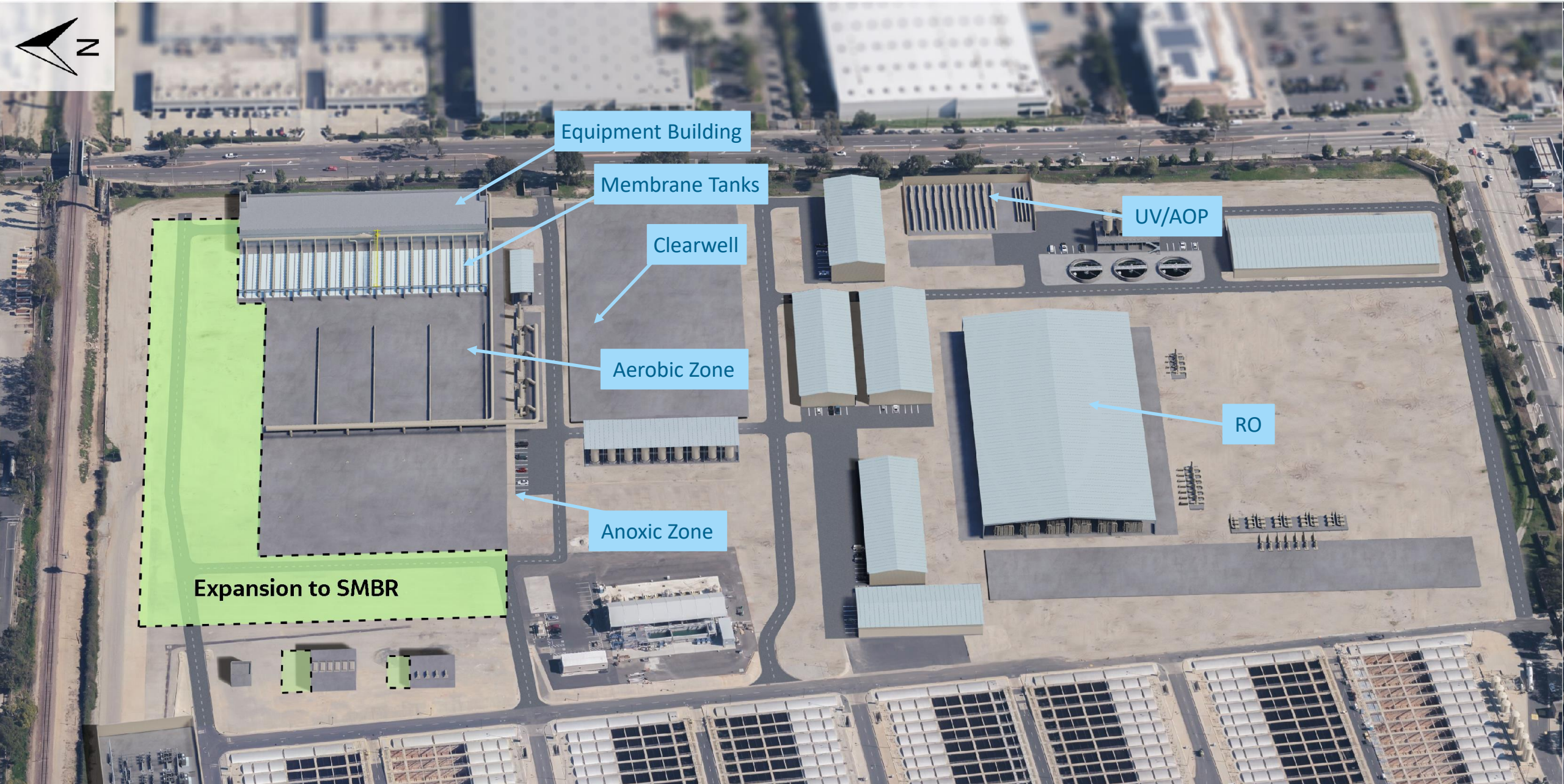
Tertiary MBR Pilot



Possible Process Flow



Flex MBR



Factors in Nitrogen Management Approach Selection

Objective – Identify optimal nitrogen management practice based on:

- JWPCP treats a high percentage of industrial waste streams
- Wet Weather Compliance
- Operational Complexity
- Operational Reliability and Redundancy
- Technology Maturity
- Cost
- Environmental Impact
- Constructability
- Flexibility to Adapt to Changes

Next Steps

July 2023

- Complete draft Facilities Plan

2023-2024

- Additional APC testing
- Compile and compare all APC data
- Include in Conceptual Facilities Plan

Late 2024

- Project approval



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QUESTIONS

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OUR SERVICE AREA