



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

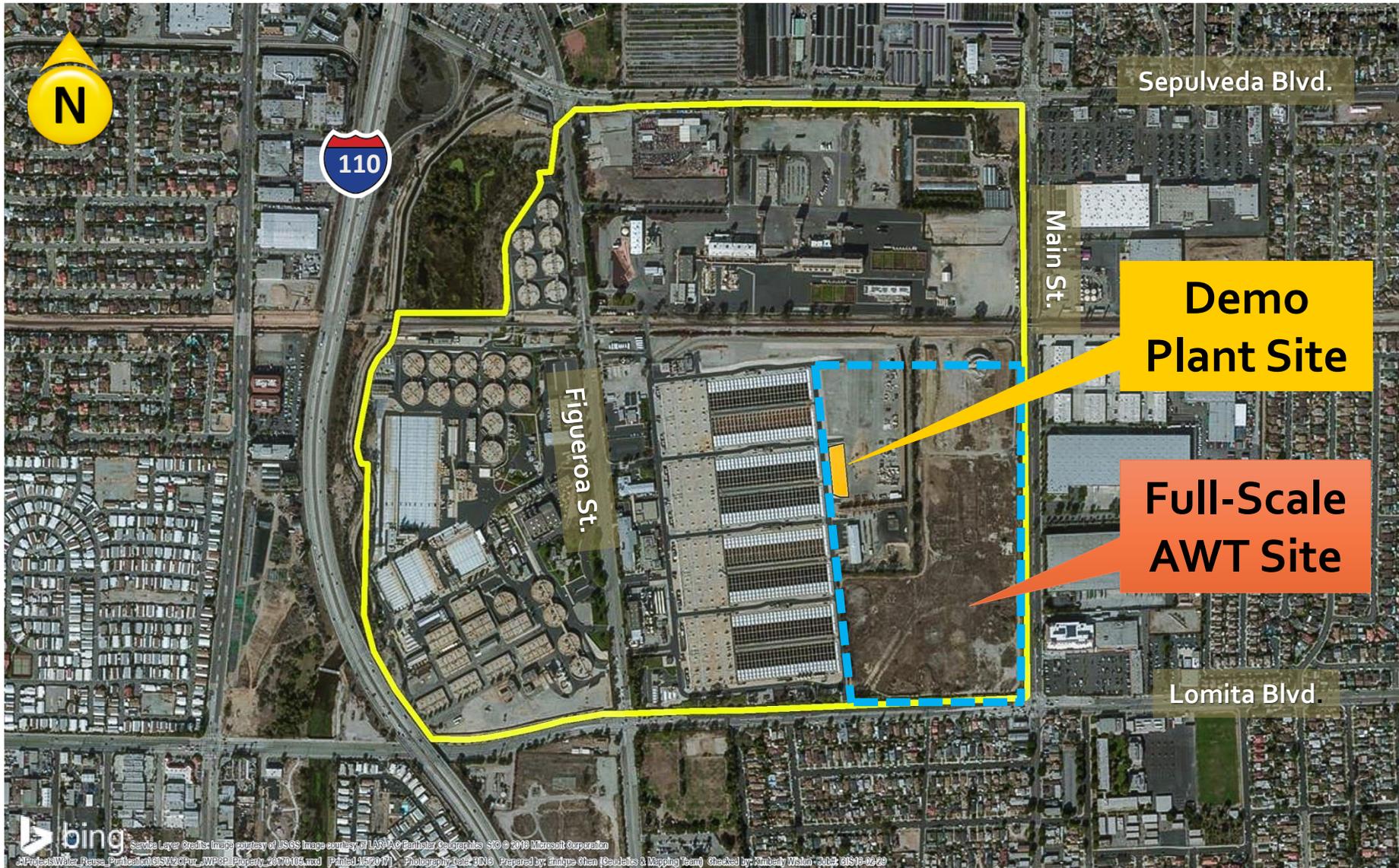
Item 3b

June 27, 2023



OUR SERVICE AREA

Joint Water Pollution Control Plant and Pure Water Southern California



Capacity of 400 million gallon per day (MGD)

Average flow of <250 MGD

Cleaned water flows to the ocean

Largest untapped source of treated wastewater

Recent Sanitation Districts' Led Technical Studies

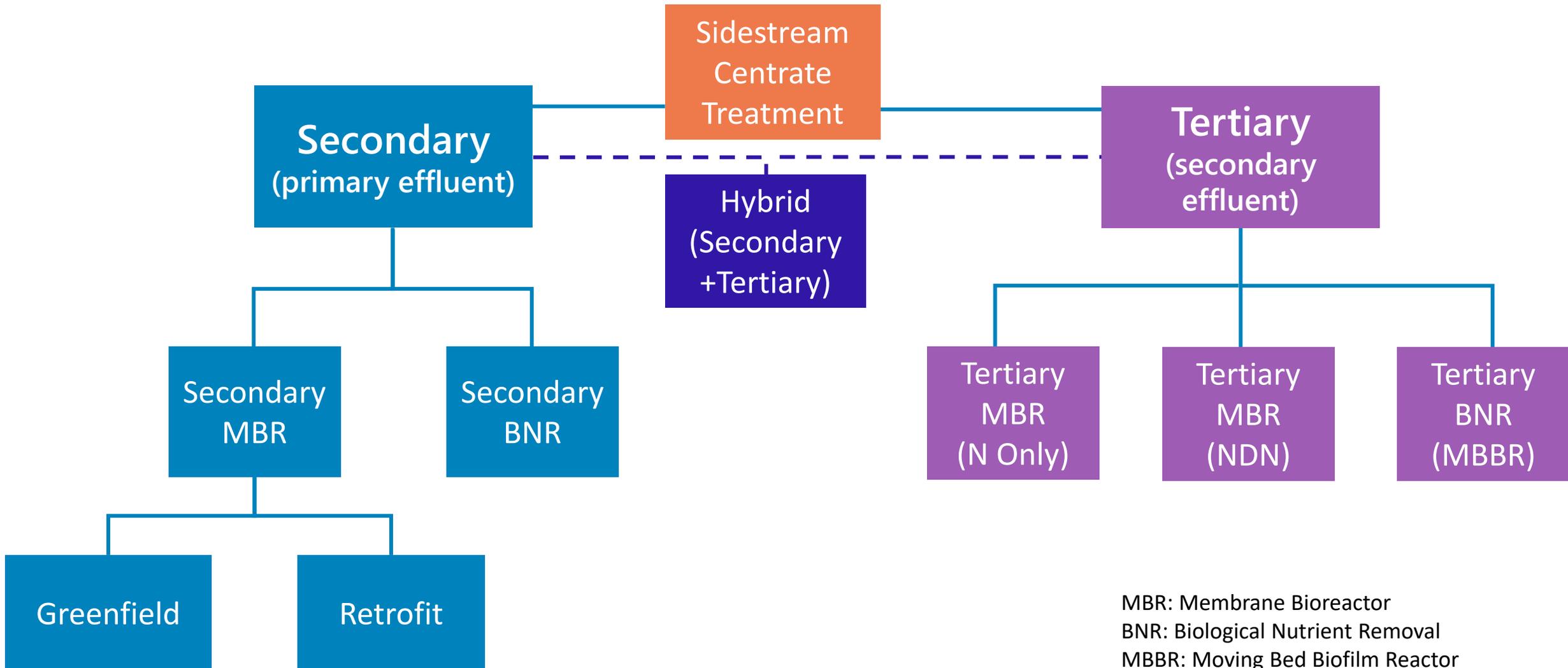
Nitrogen Management Studies

- 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



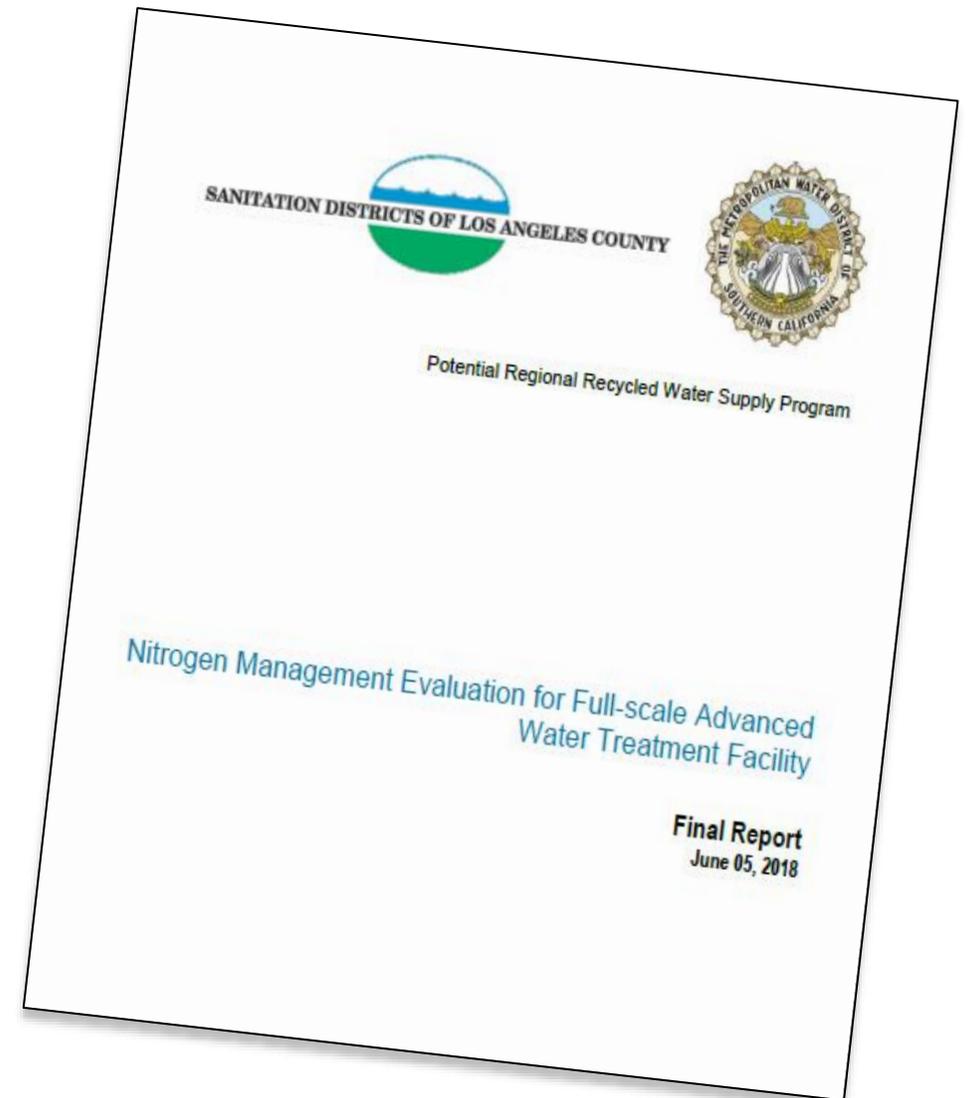
Nitrogen Management Studies

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)



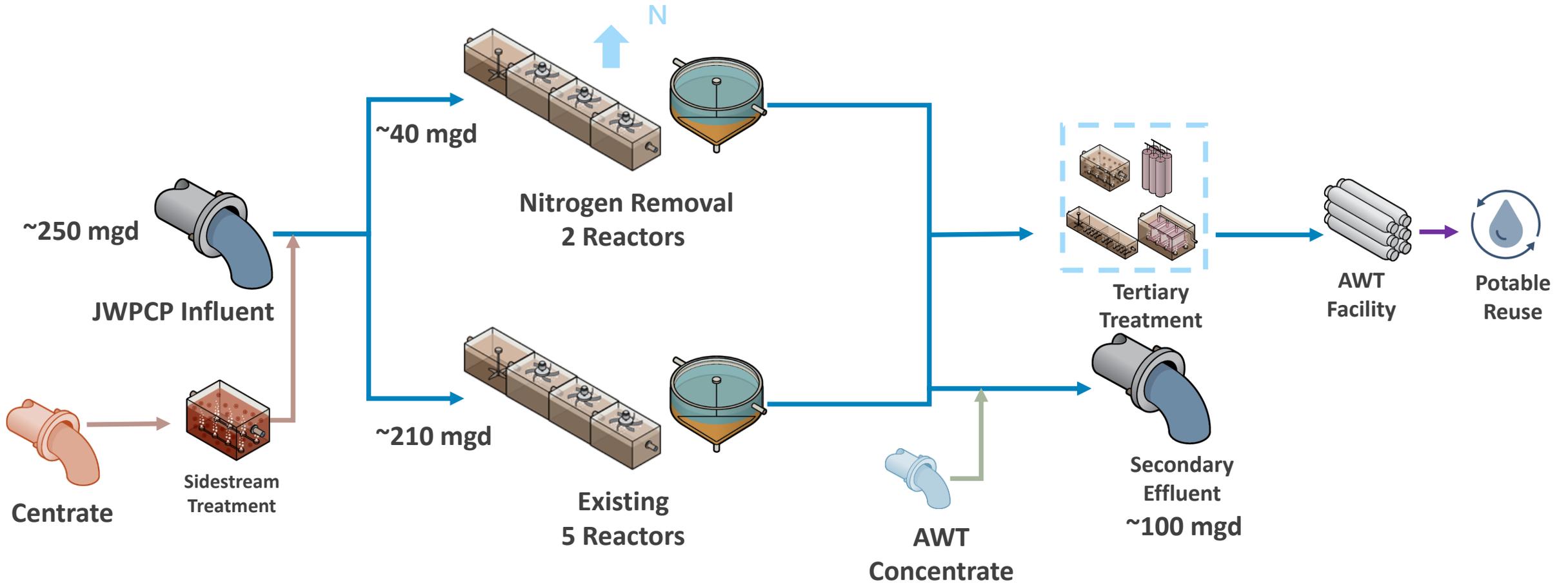
Tertiary MBR Pilot



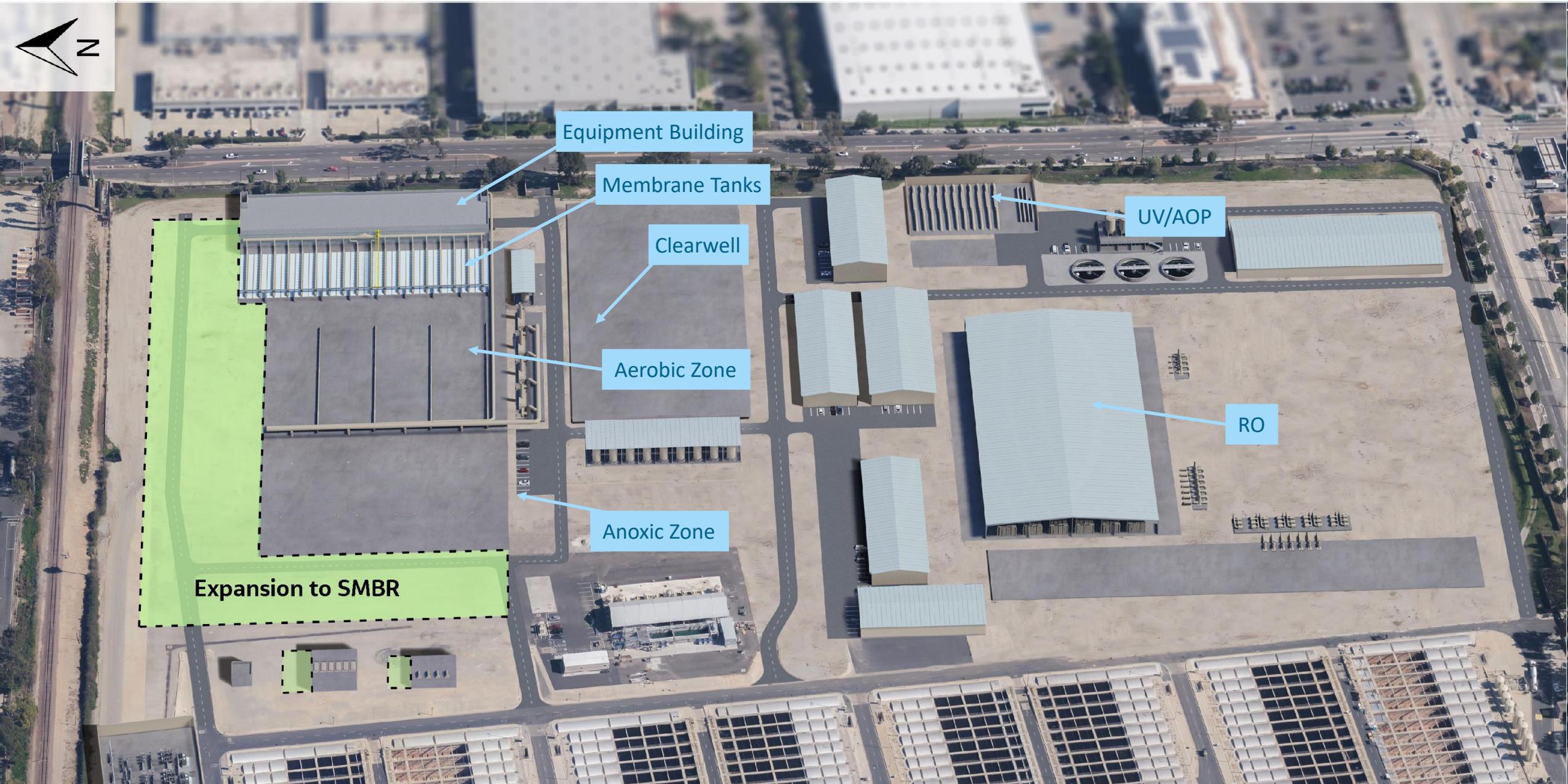
MBR Skid

Bio Tanks

Possible Process Flow



Flex MBR



Equipment Building

Membrane Tanks

Clearwell

Aerobic Zone

Anoxic Zone

UV/AOP

RO

Expansion to SMBR

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