

Wastewater nutrient discharges to San Francisco Bay

San Francisco Board of Supervisors meeting
October 17, 2022

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C L E A N W A T E R
A G E N C I E S

POTWs: Largest Source of Nutrient Loads



BACWA is a joint powers authority formed by the five largest Bay Area Publicly Owned Treatment Works (POTWs)

7M+
SERVICE
POPULATION



37
WASTEWATER
TREATMENT PLANTS



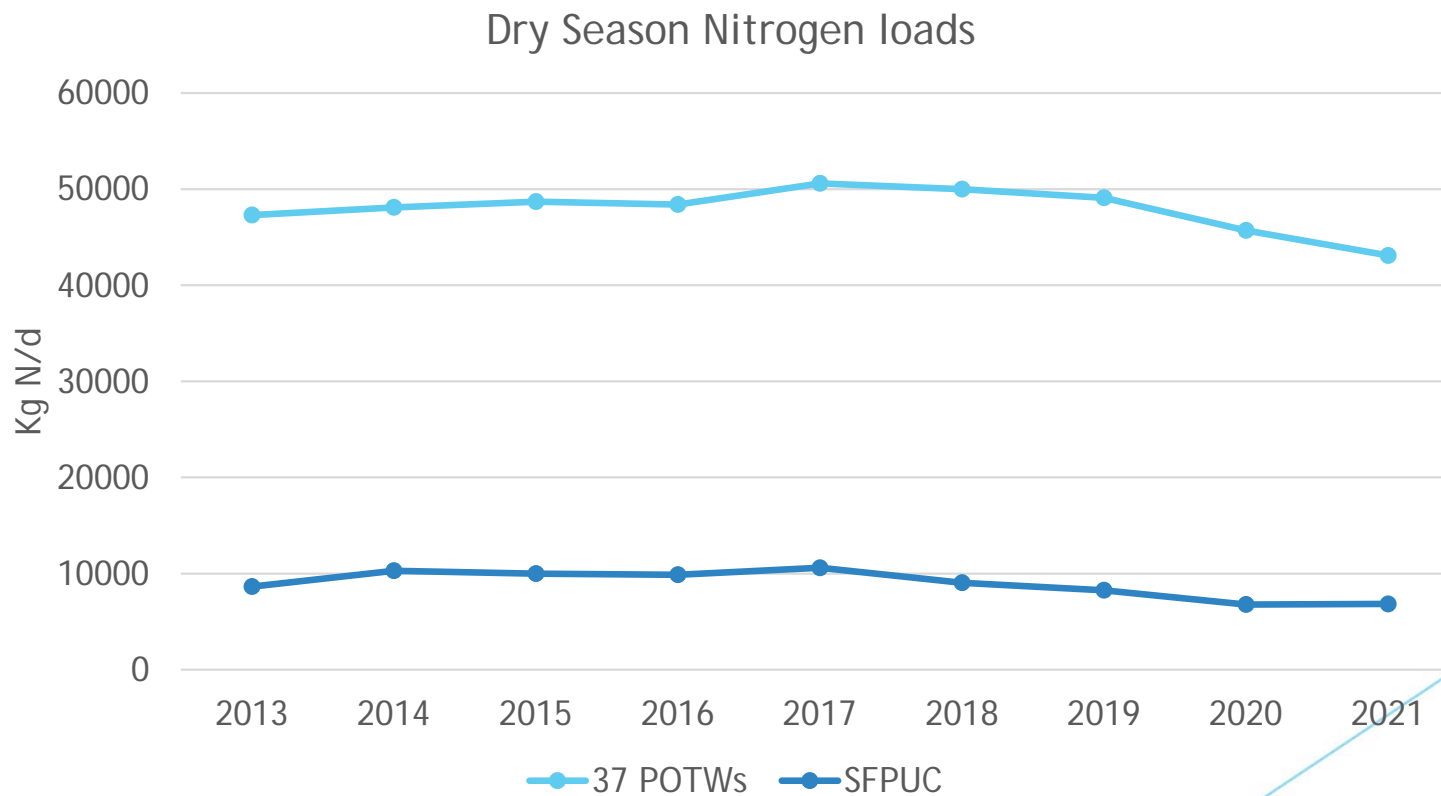
~450
MILLION GALLONS PER DAY
TREATED
EFFLUENT



2/3's
OF NUTRIENT
LOADS TO THE BAY



SFPUC discharges 15-20% of total wastewater nitrogen load



Bringing the science under one tent

- BACWA and the Regional Water Board envisioned stakeholder driven governance of the science program, recognizing that the Regional Water Board retained ultimate authority on regulatory issues.
- Retained facilitator to develop a Charter on a stakeholder driven process for overseeing the scientific investigation, with key tenet the creation of a Steering Committee
- The Nutrient Management Strategy kicked off in 2012
- Since 2013, BACWA has contributed >\$14M to study nutrients in the SF Bay

Working Together for Practical Regulation



BACWA
(wastewater utilities)



Regional Water Board
(regulatory)



San Francisco Estuarine Institute
(science)



SAN FRANCISCO
BAYKEEPER.

Non-Govt Organizations
(NGOs)

The approach in the Bay Area for managing nutrients has received national attention and lauded for its collaboration, as evidenced by receipt of a National Environmental Achievement Award in 2019 from the National Association of Clean Water Agencies (NACWA). NACWA is the nationally recognized leader in legislative, regulatory, and legal clean water advocacy.



2014 & 2019 Nutrient Watershed Permits

NO LOAD CAPS YET

SUPPORT FOR SCIENCE

GROUP REPORTING

REGIONAL STUDIES

Nutrient Reduction Study Report (June 2018)

- ▶ Main report summarizes study findings for all plants
- ▶ 37 individual plant appendices:
 - ▶ Existing plant data
 - ▶ Optimization
 - ▶ Sidestream treatment
 - ▶ Plant upgrades
 - ▶ Emerging technologies



Bay Area Clean Water Agencies
Nutrient Reduction Study

Potential Nutrient Reduction
by Treatment Optimization, Sidestream
Treatment, Treatment Upgrades, and Other
Means

Final Report
June 22, 2018



Regional Study Key Observations

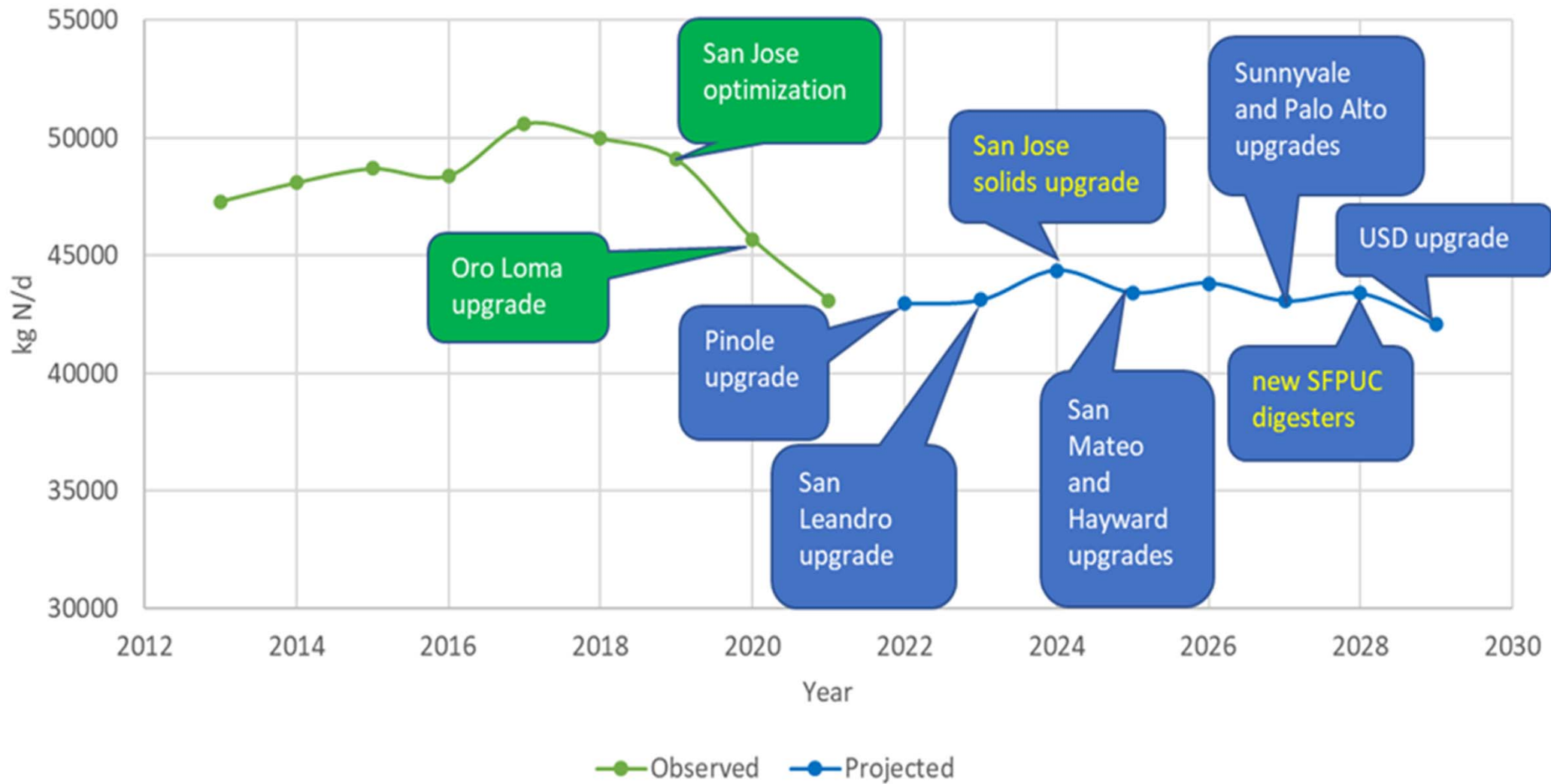


Bay Area Clean Water Agencies
Nutrient Reduction Study
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Strategy	TN Load Reduction to the Bay	Total Present Value (\$ Mil)
Optimization	7%	\$266 M
Sidestream Treatment	19%	\$766 M
Upgrade Level 2 (15 mg/L N)	57%	\$9.4 B
Upgrade Level 3 (6 mg/L N)	82%	\$12.4 B

Projected baywide TIN loads with 1% growth and increased recycled water



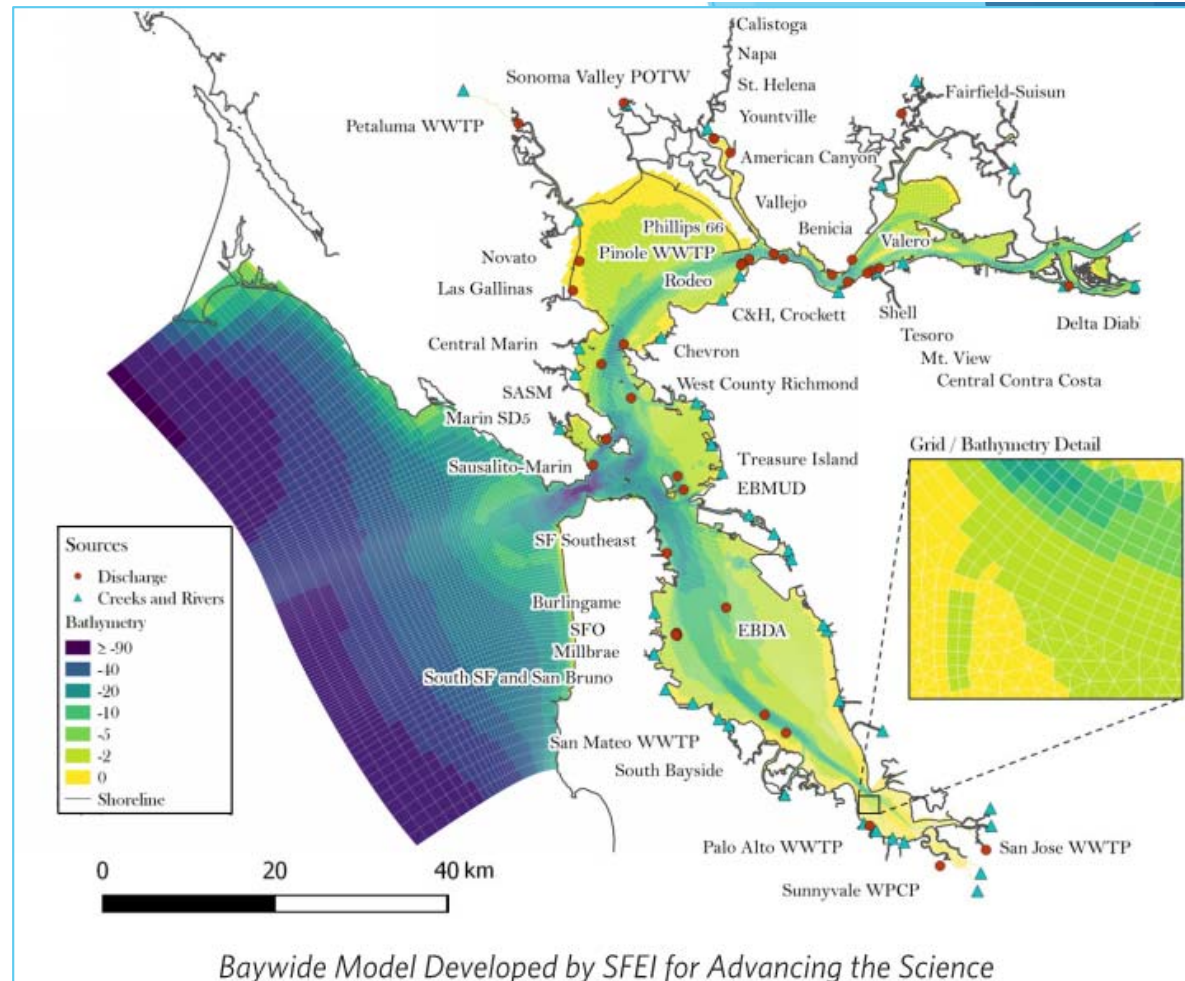
The now

- ▶ 3rd Watershed Permit will include nutrient limits, likely implemented on a Baywide basis
- ▶ BACWA's members will consider and propose load reductions:
 - ▶ Emergency response
 - ▶ Medium term optimization
 - ▶ Long term capital upgrades



The now

- ▶ Work closely with Science Team to predict the impact of nutrient reduction actions
- ▶ Guiding principle:
 - ↑ Cost
 - ↑ Benefits
 - ↑ Certainty of Water Quality Improvements



Paying for nutrient upgrades

- ▶ Adoption of 1972 Clean Water Act came with \$1B (\$7B in today's dollars) in construction grants
- ▶ Now, improvements are paid largely by ratepayers
 - ▶ Prop 218 requires that rates be set based on the cost of service, not affordability
- ▶ Federal investment is key to a more equitable funding solution



Questions?

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