



Wastewater  
Treatment



TRANSFORMING  
WASTEWATER  
TO RESOURCES



Recycled  
Water



Energy  
Production



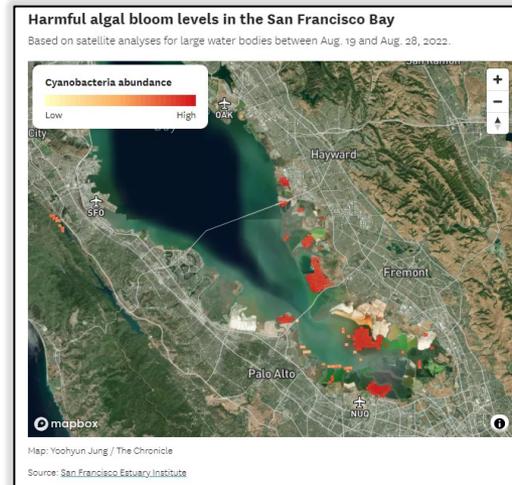
Biosolids  
Reuse

# Revised Approach to Nutrient Removal Regulatory Mandate and Secondary Process Improvements Project

Board of Directors Meeting  
October 29, 2025

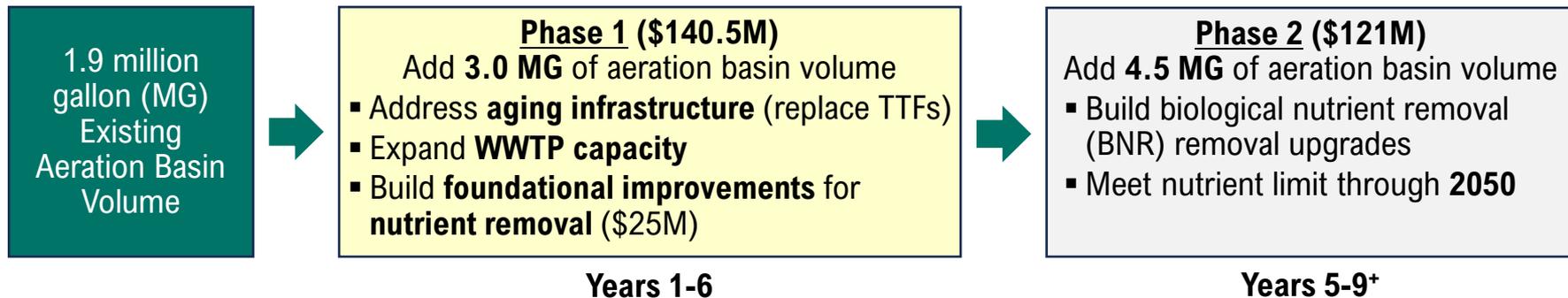
# Background Nutrient Removal Mandate

- In July 2024, San Francisco Bay Regional Water Quality Control Board (RWB) issued regulatory mandate to 37 wastewater agencies to significantly reduce nutrient loading
  - Key driver is reducing potential for algal blooms in SF Bay
  - Estimated regional cost = \$12-15B; cost to District = ~\$146M
  - 10-year compliance timeline



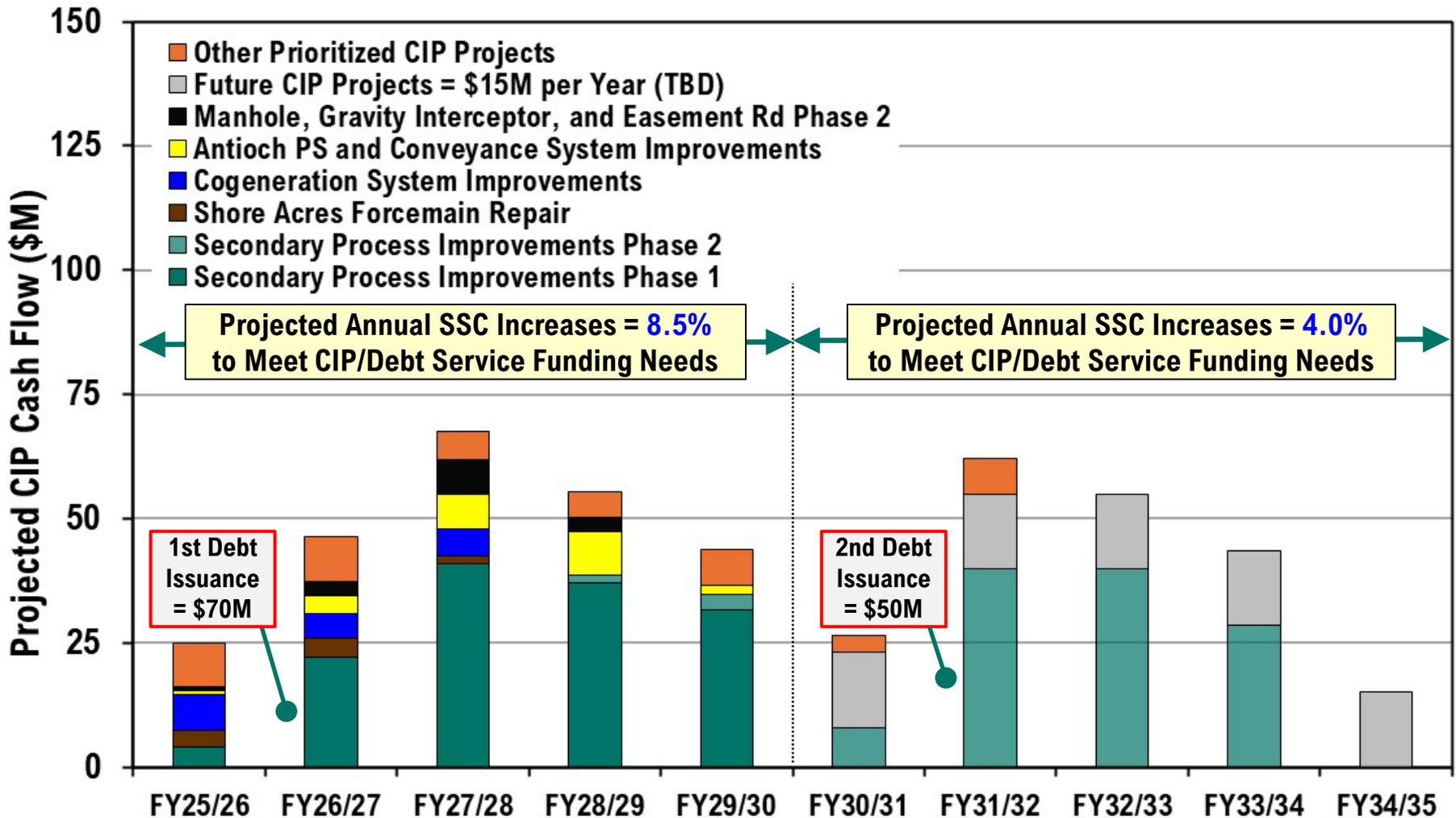
# Meeting the Nutrient Removal Regulatory Mandate Challenge

- Secondary Process Improvements Project (\$261.5M)
  - Developed large-scale, phased capital project (\$146M for nutrients)



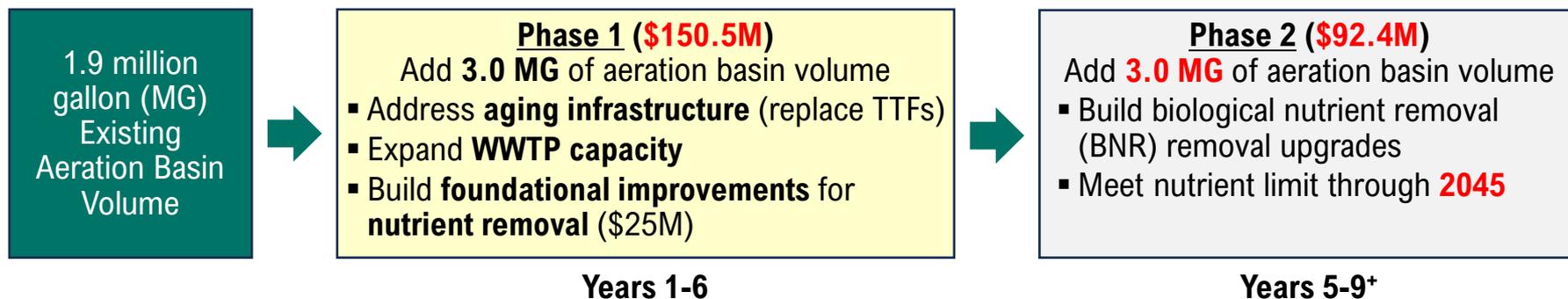
- In June 2025, Board approved 5-Year CIP (\$238.1M) and maximum annual SSC increases (+8.5%, FY25/26-FY29/30)
  - Key focus on managing capital and operating costs to stay below approved maximum SSC increases over next few years

# 5-Year CIP Planned Expenditures (w/Estimates for Years 6-10)



# Revised Baseline Cost Assumptions for Secondary Process Improvements

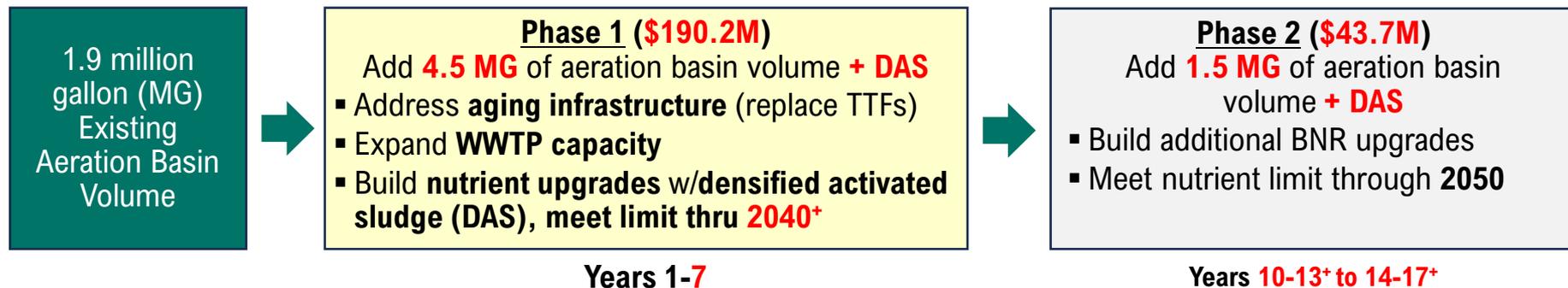
- Staff updated 50% design cost estimate in August 2025 with +\$10M increase for **Phase 1** (\$140.5M → \$150.5M)
- Significant internal focus on key design assumptions, detailed analysis, and level of conservatism yielded major cost reduction for **Phase 2** (\$121M → \$92.4M)



- Key Questions: Is there a **more cost effective** overall nutrient management solution? Should the District **accelerate timeline for meeting mandate** to ensure compliance?

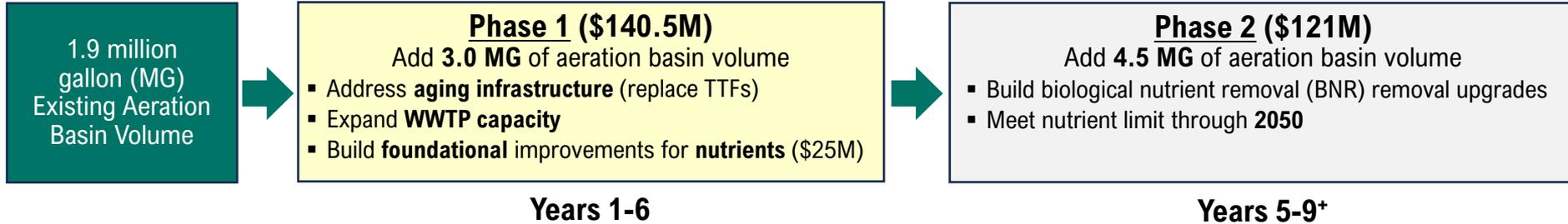
# Revised Approach to Nutrient Mandate and Secondary Process Improvements

- Challenged design consultant to revisit design alternatives
  - **Achieve nutrient removal in Phase 1**, defer Phase 2
  - Evaluate use of **nature-based solutions** (e.g., constructed wetlands)
  - Consider use of **innovative technologies** to “intensify”/“densify” process effectiveness and efficiency—“**do more with less**”
  - Conduct refined treatment process dynamic modeling
  - Resolve critical cost issue related to timing for construction of fourth digester (~\$40M)—not included in 10-year financial planning
  - **Provide District with “off ramp”** for Phase 1 (i.e., if bids are high, revert to Revised Baseline scope of work)



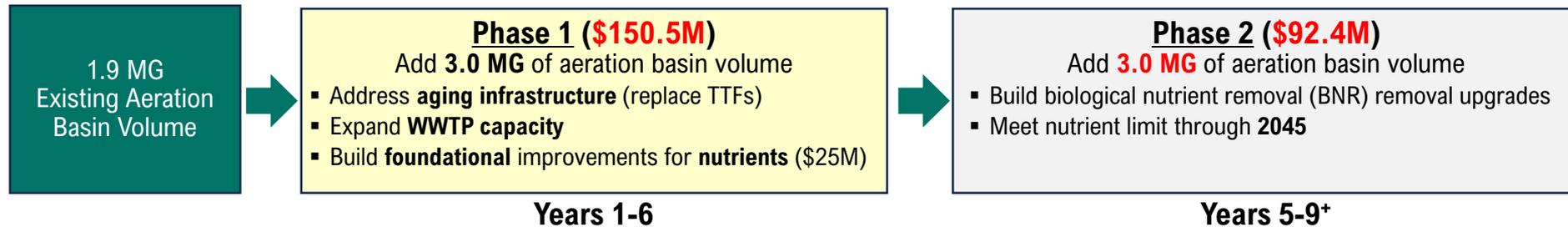
# Secondary Process Improvements Project

## 1 Original Baseline Project Approach – Total Project/Nutrient Removal Cost = \$261.5M/\$146M



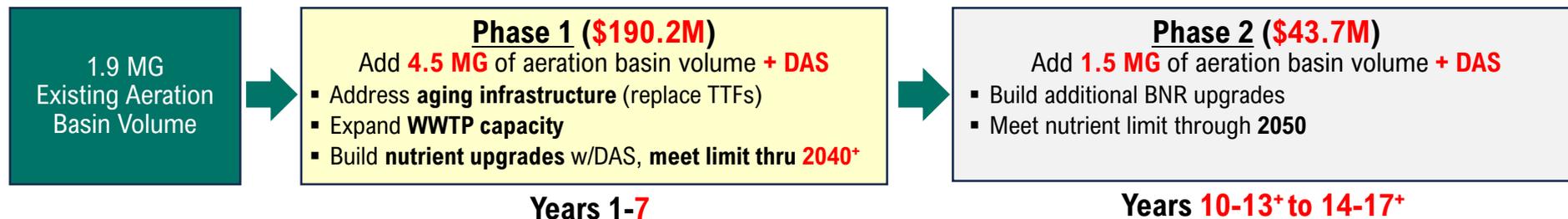
## 2 Revised Baseline Project Approach – Total Project/Nutrient Removal Cost = \$242.9M/\$117.4M

- Incorporate increased cost estimate for Phase 1 (**+\$10M**)
- Revise aeration basin volume required for Phase 2: 3.0 MG (not 4.5 MG); change in redundancy level

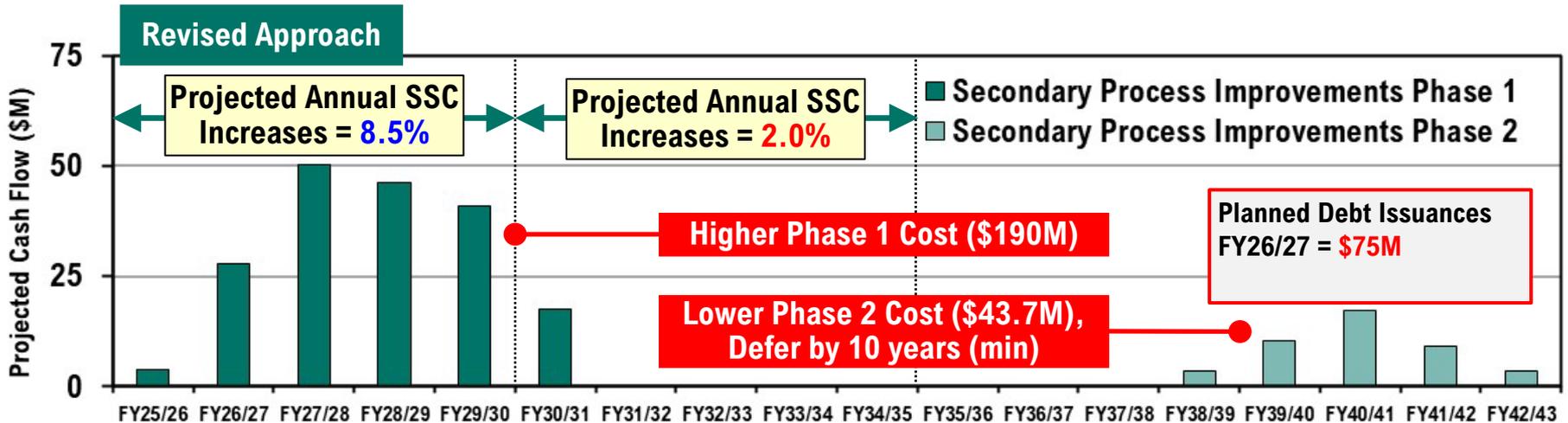
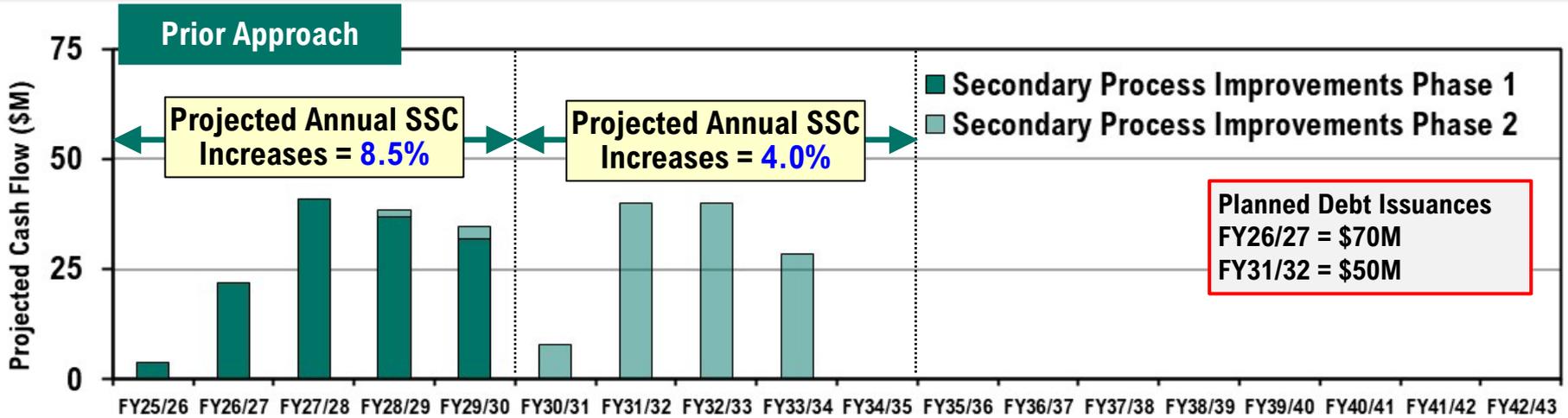


## 3 Recommended Revised Project Approach – Total Project/Nutrient Removal Cost = \$233.9M/\$84.2M

- Achieve nutrient removal in Phase 1:** Add 4.5 MG (not 3.0 MG) with **densified activated sludge (DAS)**
- Defer implementation of Phase 2**
- Include “off ramp” for Phase 1:** If construction bids are high, revert to Revised Baseline Project



# Demonstrating Cost Effectiveness of Revised Approach



# Demonstrating Cost Effectiveness of Revised Approach (cont'd)

- 1 Overall Cost**
  - Reduces overall capital cost from \$261.5M to \$233.9M (-\$27.6M)
  - Reduces nutrient removal cost from \$146M to \$84.2M (-\$61.8M)
- 2 Debt Needs**
  - Reduces total planned debt issuance from \$120M to \$75M (-\$45M)
  - Reserves some debt capacity for potential construction cost increase
- 3 Sewer Service Charge Impacts**

Maintains projected SSCs below +8.5% increases over next four years with reduction from +4.0% down to +2.0% increases in subsequent five years
- 4 Net Present Value Analysis**

Preliminary analysis indicates **cost savings of \$37M** over 25-year period
- 5 Regulatory Compliance**

**Increases likelihood of meeting 10-year compliance schedule**, provides time for potential construction delays, process optimization needs
- 6 Biosolids Management**
  - Eliminates short-term increase in solids production under original plan
  - Defers need to construct \$40M fourth digester to ~FY41/42
- 7 Risk Management**
  - Provides off ramp if construction bid results exceed financial resources
  - May reduce significant competition for limited contractor resources

# CEQA Documentation

- District adopted a CEQA Initial Study/Mitigated Negative Declaration (IS/MND) for the Secondary Process Improvements (SPI) Project in November 2024
  - Staff prepared an **addendum to IS/MND** to incorporate revised approach to project implementation
  - No new significant environmental impacts or mitigation measures
  - Not required to recirculate IS/MND for public comment or hold new public hearing

# Consulting Services Contracts



- Staff directed design consultant (HDR, Inc.) for SPI Phase 1 Project to incorporate Revised Approach into design basis
  - HDR contract amendment (\$3.4M) for **additional design activities**
  - Currently preparing 90% design submittal (due January 2026) with anticipated **issuance of construction bid documents in June 2026**
- Recommend awarding construction management services contract to Carollo Engineers (\$8.1M)
  - Directly supports conducting critical constructability, biddability, and design reviews, and construction contractor outreach prior to bidding
  - Provides construction management and inspections services during construction of SPI Phase 1 Project (through FY29/30)

# Recommended Actions

- Provide input and/or feedback on Revised Approach to nutrient removal regulatory mandate and Secondary Process Improvements Project
- Adopt CEQA Mitigated Negative Declaration Addendum and take related actions
- Authorize General Manager to execute consulting services contract in an amount not exceed \$8,106,000, Carollo Engineers, construction management services, Secondary Process Improvements Phase 1, Project No. 22126
- Authorize General Manager to execute Amendment No. 1 to consulting services contract in the amount of \$3,453,000, for a new total contract amount not to exceed \$9,775,264, HDR Engineering, Inc., engineering services, Secondary Process Improvements Phase 1, Project No. 22126