



Wastewater  
Treatment



TRANSFORMING  
WASTEWATER  
TO RESOURCES



Recycled  
Water



Energy  
Production



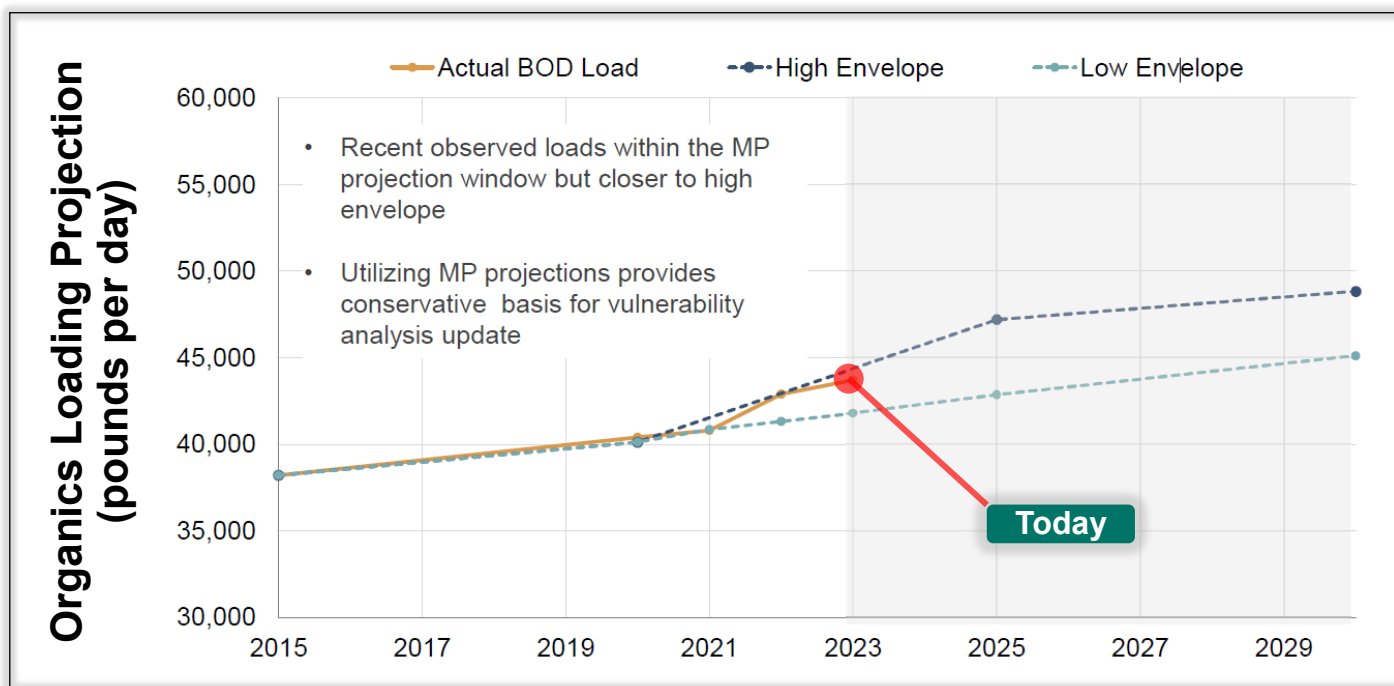
Biosolids  
Reuse

# Secondary Process Improvements Project Design Services Contract Award

Board of Directors Meeting  
November 8, 2023

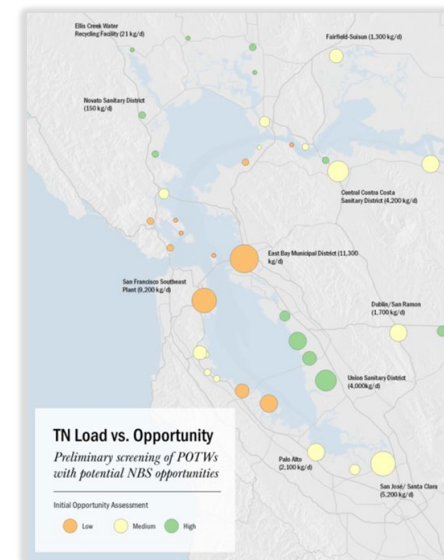
# Key Drivers: WWTP Capacity, Aging Infrastructure, Emerging Regulations

- Wastewater Treatment Plant (WWTP) Capacity Limitations
  - 2022 Resource Recovery Facility Master Plan (RRFMP) identified solids loading capacity limitation in secondary treatment processes
  - Future influent flow and loading estimates based on development projections in local agency planning documents



# Key Drivers: WWTP Capacity, Aging Infrastructure, Emerging Regulations

- WWTP Infrastructure Renewal Vulnerabilities
  - RRFMP recommends replacing aging tower trickling filters (TTFs) with increased aeration basin capacity
  - Significant regulatory compliance risk if TTFs fail
  - Continued investment in TTFs does not support nutrient removal
- Anticipated Nutrient Management Regulations
  - Regional Water Board expected to implement interim SF Bay-wide and individual WWTP effluent limits to be met immediately
  - Future aggressive, long-term SF Bay-wide limits based on current scientific information with 10-year compliance schedule
  - District informed BACWA of plans to achieve 30-35% removal in near term with this project





# Addressing Drivers with Project Specific Goals

## Overall Project Goal

Address aging infrastructure, mitigate regulatory compliance vulnerabilities, provide additional secondary treatment capacity to meet service area growth needs, and incorporate cost-effective partial nutrient removal processes at the District's WWTP

## Key Focus Areas

- Robust Alternatives Analysis
- Maximize Funding Opportunities
- Timely Permitting and Environmental Documentation
- Support Innovative Technology
- Asset Management Implementation
- Staff Training and Engagement



# Addressing Drivers with Project Specific Goals (cont'd)



- **Robust Alternatives Analysis**
  - Evaluate planning-level project alternatives with process diagrams, site layouts, and cost estimates to select the optimal project alternative that meets the District's regulatory compliance, infrastructure investment, and financial sustainability needs
- **Maximize Funding Opportunities**
  - Seek applicable external funding opportunities (i.e., grants, and/or low-interest loans) at the federal and state level to ensure the lowest cost of capital and value for the District's customers
- **Timely Permitting and Environmental Documentation**
  - Ensure completion of project permitting and environmental documentation to comply with external funding program requirements and facilitate construction initiation

# Addressing Drivers with Project Specific Goals (cont'd)

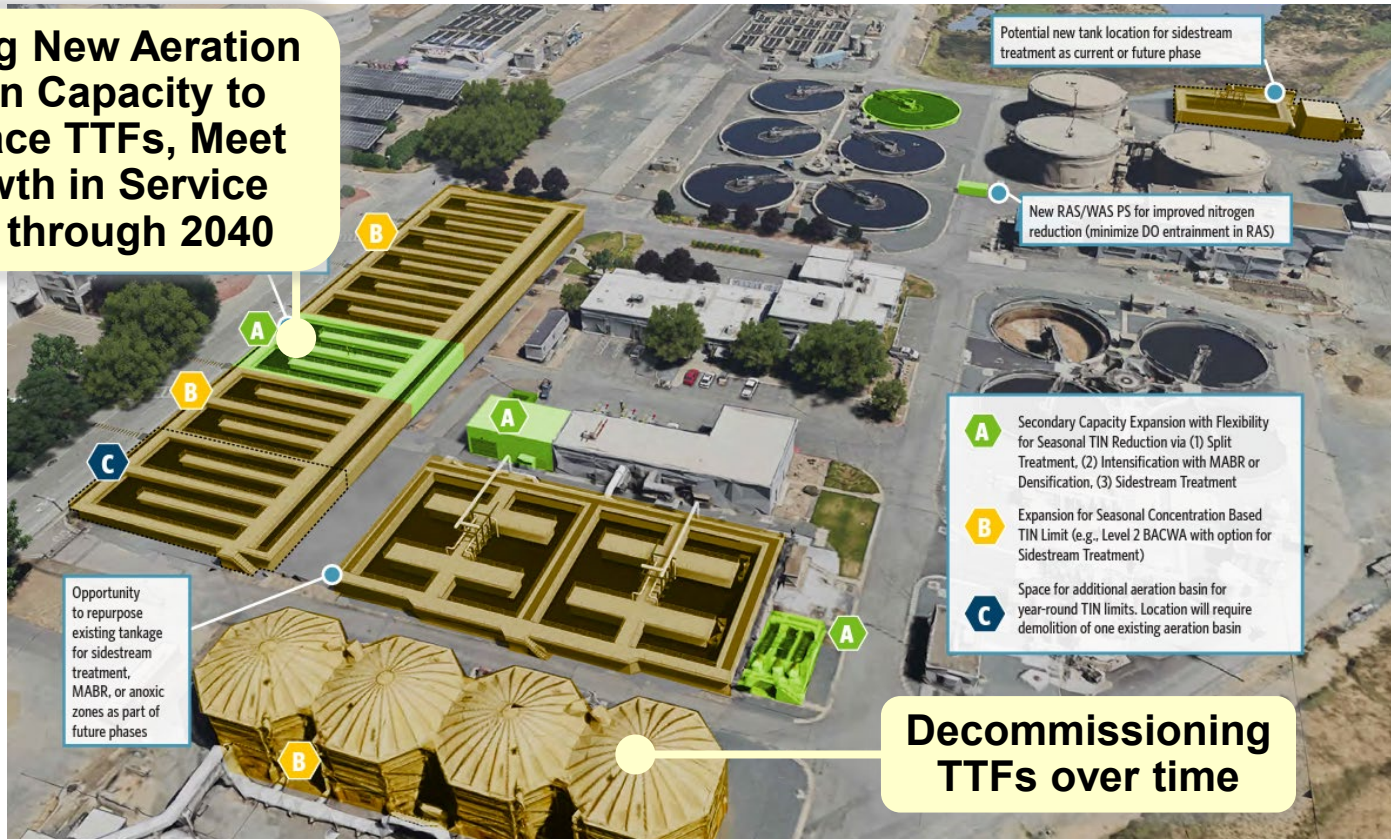


- Support Innovative Technology
  - Identify opportunities implement innovative process control and automation technologies to support regulatory compliance, system reliability, and labor optimization
- Asset Management Implementation
  - Integrate asset management principles (e.g., risk-based, likelihood of failure, consequence of failure, life-cycle cost accounting) in project delivery approach and ensure an effective and efficient transition in commissioning operations and maintenance of constructed facilities
- Staff Training and Engagement
  - Achieve a high level of District staff engagement, collaboration, and training through all project phases to support ongoing operations and maintenance during and after project commissioning



# Conceptual WWTP Infrastructure Improvements

**Adding New Aeration Basin Capacity to Replace TTFs, Meet Growth in Service Area through 2040**



Conceptual design demonstrates flexibility for future nutrient limit regulations and increased loading beyond the 2040 RRFMP planning horizon.

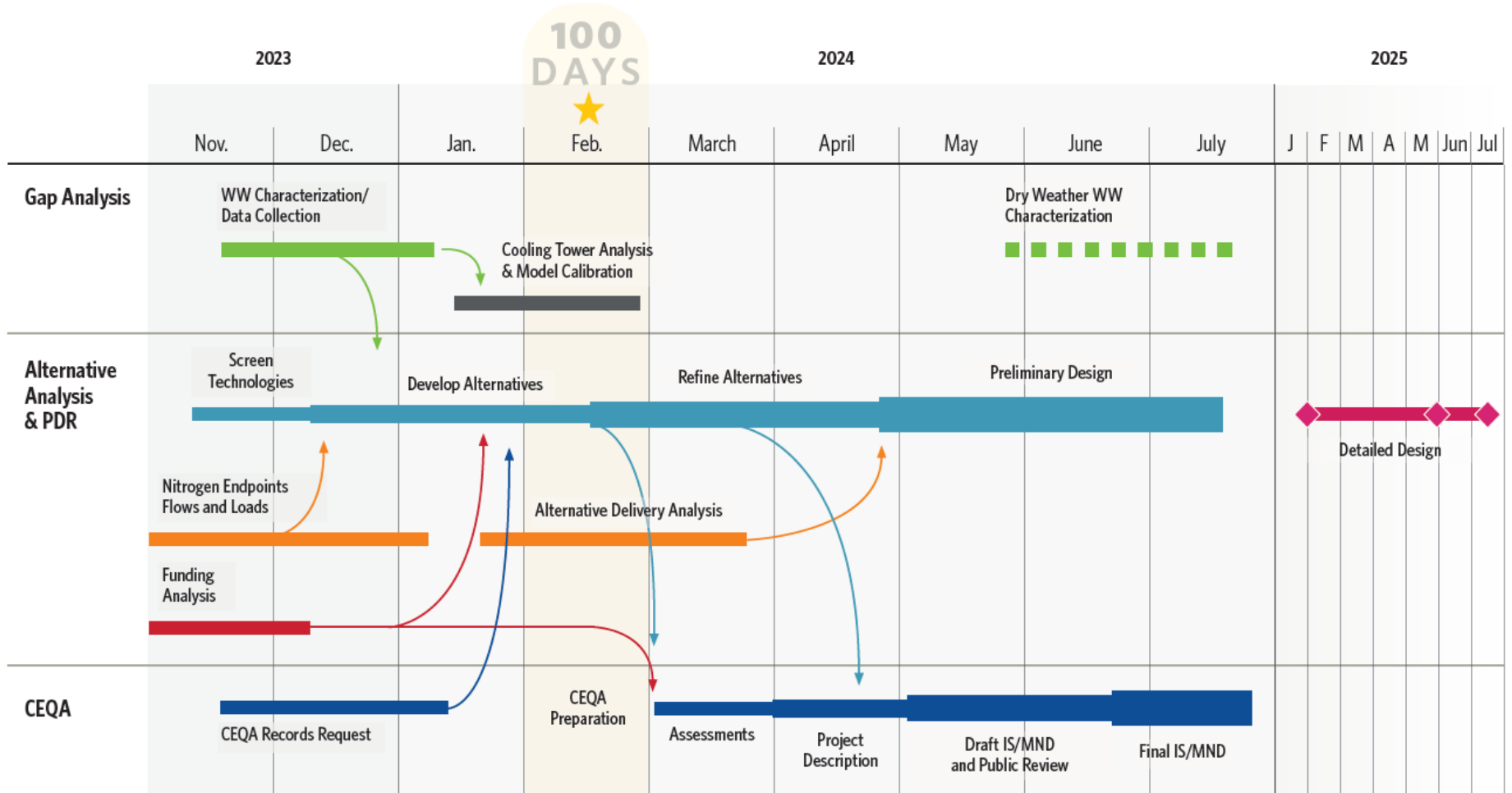
# Consultant Selection Process



- District issued an open Request for Proposal to provide design services in July 2023
  - Two consulting firms submitted proposals
- District evaluated proposals and elected to interview both consultant teams
  - **HDR, Inc. selected as most highly-qualified firm** to provide engineering design services
- Staff has negotiated scope of services and cost (\$6.3 million)
  - Alternatives Analysis (\$442k) – nutrient removal, site layouts, costs
  - Predesign Activities (\$457k) – refining preferred alternative
  - Funding Assistance (\$110k) – grants, debt issuance, WIFIA
  - Environmental Review/Permitting (\$318k) – CEQA, air, utilities
  - Detailed Design Activities (\$3.9 million)
  - Bidding Phase Support (\$73k)



# Preliminary Project Design Schedule



# Budget Considerations



- Current 5-year CIP includes a \$60 million total budget allocation (\$30 million debt funded)
  - Project cost estimate does not include nutrient removal
  - District is well positioned to utilize ~\$24 million in Advanced Treatment Fund for incremental nutrient removal upgrades
- Alternatives evaluation will include economic analysis to determine best value for capital investment and ongoing operational expenditures
  - Total project cost estimate will be updated during this effort
- Design contract cost is well within typical metrics for capital projects with similar size, scope, complexity
- Consultant to provide funding support services to maximize receipt of external grants and/or low-interest loans

# Recommended Action

Authorize General Manager to execute a consulting services contract with HDR, Inc. to provide engineering design services in an amount not to exceed \$6,322,253 for Secondary Process Improvements Project

